Artificial Intelligence in Europe

Finland

Outlook for 2019 and Beyond

How 277 Major Companies Benefit from AI

REPORT COMMISSIONED BY MICROSOFT AND CONDUCTED BY EY
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Finland is known as one of the leading countries in digital readiness and cloud adoption in the enterprise. AI gives Finnish businesses and organizations even more benefit and value. Taking advantage of the huge opportunities of AI requires risk-taking and the ability to turn experiments into scalable solutions, but perhaps most importantly – it requires continuous learning to adjust to the developments of the technology.

— Harry Shum, Executive Vice President of Microsoft AI and Research Group
Icon of Digital Success

AI will bring Finland a real and significant opportunity. In our first AI study*, we concluded that AI will generate an estimated GDP impact of €47 billion in Finland by 2023. Yet, we discovered that Finnish businesses are in the early phases of AI deployment.

This time, we’ve benchmarked Finland with 14 other European countries on their AI approach and capabilities. The interviewed Finnish businesses see AI with strong potential to help them optimize operations and engage with customers. Regarding AI capabilities, the Finnish businesses were most confident about applying advanced analytics, having clear leadership for AI and fostering an open culture. Surprisingly, emotional intelligence wasn’t seen as an important AI capability by the Finnish businesses. At Microsoft, we believe that technology must be complemented and driven by human intelligence to create value and responsibly develop global businesses and society.

We invite you to learn from AI leaders about expanding ongoing AI pilots into business solutions, and innovating for Finland’s future. We encourage you to strengthen your confidence in AI and focus on the new opportunities ahead. AI will enhance our lives, businesses and society, and we look forward to being part of this journey with you.

*Uncovering AI in Finland, Microsoft, 2018

Foreword

Human Ingenuity

The printing press, the automobile & the Internet are just a few technological achievements that have advanced our world. All were driven by human ingenuity: our innate creativity that inspires us to learn, imagine & explore. This spirit is what pushes us to challenge the boundaries of the possible to go ever forward.

Today, AI is helping to amplify our human ingenuity, opening up exciting new possibilities for how intelligent technology can shape our world. At Microsoft, our goal is to democratize access to AI for everyone through innovative & powerful platforms, & above all, we’re focused on ensuring that our AI tools & technologies are deployed responsibly & earn people’s trust.

And yet, we realize that AI is one of the lesser understood modern technological break-throughs. Many questions remain. How are companies applying this technology to empower employees, engage with customers, transform their business and optimize their operations? Where are they seeing benefits, and what are their blockers?

To provide answers, Microsoft commissioned this study to understand the AI strategy of major companies across 7 sectors & 15 countries in Europe. It examines these companies’ readiness to adopt AI, how they rate the impact and benefits from AI implementations, and what they perceive as risks & keys to success.

We hope you find these insights inspirational for your own journey toward adopting AI & realizing its benefits for amplifying human ingenuity.

Vahé Torossian
President, Microsoft Western Europe

Jussi Tolvanen
General Manager, Microsoft Oy
At a Glance

While the hype of artificial intelligence (AI) and its potential role as a driver of transformational change to businesses and industries is pervasive, there are limited insights into what companies currently manage their AI activities, and how they address the current challenges and opportunities ahead.

To get to the heart of this agenda, we received input from AI leaders in 277 companies, across 7 sectors and 15 countries in Europe, via surveys and/or interviews. Below is the brief summary of what they had to say.

AI is a “hot topic” - but more so on C-level than in daily operations
71% of the companies respond that AI is considered an important topic on the executive management level. This is significantly higher than on the non-managerial / employee level where AI is only considered an important topic in 28% of the companies. Interestingly, Board of Directors also came out lower with only 38% of respondents reporting that AI is important to their board.

Most impact expected from ‘optimizing operations’, with ‘engaging customers’ as a close second
89% of the respondents expect AI to generate business benefits by optimizing their companies’ operations in the future. This is followed by 74% that expect AI to be key to engaging customers by enhancing the user experience, tailoring content, increasing response speed, adding sentiment, creating experiences, anticipating needs, etc.

C-suite respondents scored ‘engaging customers’ highest of the AI benefit areas. Noticeably, 100% of the most advanced companies expect AI will help them engage customers, compared to only 63% of the less mature companies. Using AI to ‘transform products and services’ comes out slightly lower with 65%, and ‘empowering employees’ the lowest with 60% of the companies expecting AI-generated benefits in that area.

AI is expected to impact entirely new business areas in the future
57% of the companies expect AI to have a high impact or a very high impact on business areas that are “entirely unknown to the company today”. This is almost as much as AI is expected to impact the core of these companies’ current business with 65% expecting AI to have a high or a very high impact on the core business. With AI presumably pushing companies into totally new domains in the future, it is perhaps not surprising that AI is receiving attention as a key topic for executive management.

Very few of the 277 companies consider themselves “advanced” with AI
Despite the apparent sizable impact that companies expect from AI, only a very small proportion of companies, constituting 4% of the total sample, self-identify as being “advanced” in AI use. AI is increasingly becoming a hot topic for executive management.

What sets the most ‘AI mature’ companies apart?
They expect AI will be beneficial in ‘empowering employees’ (76% of ‘more mature’ companies* vs. 42% of ‘less mature’ companies)**

They report using a combination of structured and unstructured data for AI (65% of ‘more mature’ companies vs. 15% of ‘less mature’ companies), and data from both internal and external sources (68% of ‘more mature’ companies vs. 16% of ‘less mature’ companies).

They expect AI will help them ‘engage customers’ (85% of ‘more mature’ companies vs. 59% of ‘less mature’ companies).

They see AI predominately being driven from a combination of technology push and business pull (67% of ‘more mature’ companies vs. 32% of ‘less mature’ companies).

Finnish companies ahead on AI compared to European peers
When looking across the 22 companies that have participated in the study in Finland, it is clear that there are areas where they appear slightly ahead on AI compared to their European peers. Almost three quarters of the companies report that AI is currently considered an important topic at the C-suite level and 86% report that AI is as important as other digital priorities, if not more important. Furthermore, companies in Finland self-report as being more mature – 14% of Finnish companies are in the ‘advanced’ stage compared with 4% in the European aggregate.

Expected impact is high as well: the vast majority of Finnish companies report expecting AI to create some degree of impact across all business areas – core, adjacent and new.
Artificial Intelligence (AI) is not new. It has existed for decades: processing voice to text or language translation; real-time traffic navigation; dynamically serving targeted advertisements based on personal data and browsing history; predicting trends and guiding investment decisions in financial institutions. The current developments have been fueled by an exponential rise in computing power, increasing accessibility and sophistication of powerful algorithms, and an explosion in the volume and detail of data available to feed AI’s capabilities.

Reality vs. hype

Only recently started to see more widespread, scaled adoption of AI across sectors, value chains and ecosystems. Yet AI technology is quickly approaching a point where it is becoming a critical element in enabling companies across sectors to drive revenue, increase profits and remain competitive.

We hear many people in numerous companies talk about AI. While the hype is pervasive, not a lot of people fully understand its technological potential, where it can create value or how to get started. This report aims at providing a practical understanding of why European companies are investing in AI, what they are investing in, and how they are managing the complicated process of adopting this new technology and deriving value across business opportunities.

Perspectives, experiences, self-assessment, and benchmarks

From new surveys, interviews and case studies gathered from approximately 277 companies, we provide a snapshot of the current state of AI in 15 European markets. This includes analyzing AI’s relative importance on the strategic agenda, its expected impact and benefit areas, how mature companies are in terms of adoption, and examining self-reported competence levels regarding the capabilities required to succeed when implementing AI.

From the aggregate dataset we have been able to determine some benchmarks across the covered markets, which we compare the individual country with throughout the report. The report also covers a full spectrum of industry groups which tend to reveal interesting insights.

About this Report

What’s new?

Artificial Intelligence (AI) will make us more agile and adaptive.

— Stora Enso
Pulp and paper industry company

Straight from the executives

Where this report and extensive dataset adds new insights is primarily into how leading companies are approaching AI on a very practical level. We hear straight from executives how their companies are addressing current challenges, and how they apply AI to unlock new value pockets.

Based on the many interviews conducted, this report reveals some clear excitement and immense potential for using AI to bring new, improved products and services to market, create exceptional experiences for customers and employees, and create ways to operate that enhance performance across the board.

We learned that regardless of which use cases the companies pursue and the role that AI currently has, taking a strategic outlook to assess the implications for the business and responding accordingly are increasingly seen as crucial for any executive agenda.

Contributions from open-minded and collaborative companies

We are extremely thankful for the time and effort the many executives have put into participating in interviews and providing data for this study. We’re particularly appreciative of their willingness to openly share experiences and provide their perspectives on where the future is heading within AI.

While this indicate a general interest in the AI topic, it also speaks to the increasingly collaborative approach many leading companies are taking when entering new technology domains and embarking on journeys into unknown territories.

During the past few years, we have learnt what is easy, what is hard, what is realistic and what is only hype.

— DNA
Telecommunications company
This report combines multiple sources of data to answer the questions of why, where and how AI is currently being used in business. It provides an inside view across markets and sectors. It combines local and pan-European views, and adds value through a quantitative perspective on how advanced companies are with AI, and a qualitative perspective on how to develop the skills required to succeed with AI. We've spoken with over 300 different people from across 277 participating companies. This has resulted in a range of interviews and case studies as well as 269 company responses to our survey.

Extensive online survey data from business leaders in 269 companies

We have surveyed people with a leading role in managing the AI agenda in all the companies that have contributed to the study. This gives us an aggregate dataset that enables a perspective for each market and each sector, as well as comparative insights for the respective company types, sectors, and countries in Europe.

Qualitative in-depth interviews with senior business executives

In addition, we conducted deep-dive interviews to gain deeper, qualitative insights into how AI is affecting the executive agenda. Through conversations with business leaders, we report on where they expect AI will have an impact, how important AI is to their current and future business strategies, what benefits they hope to realize from implementing AI, and which capabilities they believe are key to advance AI maturity in their companies.

Recognizing and mitigating potential survey and interview bias

In terms of methodology, this report follows robust research design and protocol. Doing so minimizes potential bias, but does not eliminate it, as it is inevitable in market research. One potential type is social desirability and conformity bias, as the topic of AI receives lots of media and political attention. Response bias, including extreme responding, cultural bias, and acquiescence bias (“yea-saying”), are potential factors as we ask respondents to self-report on their respective companies’ experience. Therefore, while this report follows best practices, some bias is possible.

Nonetheless, with the combination of extensive survey data, interview data, investment data, and expert perspectives, we believe the report provides a solid foundation for an indispensable view of executive experience with – and future plans for – AI in business.

AI is so general that it can be applied to any problem, where there is enough data. But every business problem is unique so how companies apply AI will differ for each company.

— Peltarion Software company

Find and focus on the most relevant items with the easiest to reach outcomes now, get results to justify further work, and then ‘go big’ on AI, as opposed to finding the biggest challenges and trying to solve those first.

— Orion Pharmaceutical company

Rich Data

Which sources of information is the study based on?

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We also present case studies of specific companies, both local and international, to provide an understanding of what they are doing with AI and why, drawing on lessons learned and obstacles to overcome when putting AI to use for specific use cases and to derive value on a strategic level.

Proprietary AI investment data

We have supplemented the primary source input from the companies with acquisition data from numerous sources, to take the pulse of the AI investment market in Europe. These insights help provide a picture of the wider European AI ecosystem and its development.

AI expert perspectives

With this wider understanding of AI start-up acquisitions, partnerships, and investment funding, we outline how investments in AI are skyrocketing, where AI investment is taking place geographically, and which sectors are making bets. As we are on the cusp of widespread change driven by AI, we also reached out to AI experts from academia for an outlook of AI technologies going mainstream, and to gain an understanding of the macro scale of business effects that they expect will materialize when looking into a distant future.
Executive Perspective

Who are the respondents that have contributed to the study?

The data approach used allows us to identify trends across industries and countries based on input from various functional business areas. Consequently, we have captured a range of insights, learning, and perspectives from both strategic and technical points of view.

Respondents predominantly in senior level positions
To ensure that these insights and perspectives are relevant at the executive level, we surveyed and interviewed high-ranking officers with a responsibility for driving the AI agenda in their respective companies. With 60% of respondents being either part of top management or the executive management team, their input is likely well attuned to the general perspective and overall strategic direction of the companies they represent.

Functional diversity
The respondents cover very different functions, of which the most common are designated AI/digital department, followed by IT, and strategy/general management functions. This functional diversity increases the breadth of the report, with insights and perspectives covering widely different aspects of AI.

Surveyed companies span multiple sectors
The participating companies are spread fairly evenly across seven sectors, with the majority of companies belonging to Industrial Products & Manufacturing, followed by Financial Services, and Transportation, Energy & Construction. Services and Life Science are represented to a lesser extent.

A combined annual revenue of $2.3 trillion
Participants come from both major listed companies, privately held companies, and in some cases relatively small companies. In totality, they represent a combined revenue of approximately $2.3 trillion. Despite covering a significant part of total European business, our selection criteria have also favored more niche oriented companies with extensive AI experience and capabilities.

More than +300 participants
Number of participants interviewed and/or online surveyed in the study

27 of +300 are Finnish companies

Surveyed companies are well represented across each of the 15 European markets
Number of online surveyed companies per country

7% of surveyed companies are from Finland

Majority hold a top management or executive position
Organisational level of person participating in the study

Primarily listed companies represented in Finnish data
The vast majority of respondents in Finland are major listed companies or companies privately held by foundations. All the participating companies in Finland had a combined total annual revenue of over $103 billion in 2017.

Seven major sectors covered in the study
Representation of participating companies per sector category

- Life Science: 9%
- Industrial Products: 21%
- Finance: 17%
- Services: 7%
- Consumer Products & Retail: 13%
- TMT: 16%
- Infrastructure: 17%

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277 Companies


Note: Of all contributing companies, 14 chose to be anonymous, 0 of them being from Finland

Finnish companies All companies, excluding Finnish companies

Note: Of all contributing companies, 14 chose to be anonymous, 0 of them being from Finland
Setting the Scene Setting the Scene

Bits and Bytes
What technologies and data solutions are within the scope of the study?

AI can be defined as the ability of a machine to perform cognitive functions which are normally associated with humans. This includes reasoning, learning, problem solving, and in some cases even exercising human behavior such as creativity.

Advanced AI applications are not yet widespread
AI holds the potential to transform business in a radical way given its wide variety of use. Quite simply, business leaders need to understand AI in order to grasp the opportunities and threats the technologies pose.

While companies acknowledge the significant potential of broader, more advanced AI technologies such as computer vision, speech recognition, and virtual agents, they are currently not in common use by companies in Europe. Companies surveyed are currently focused on narrower and more specific use-cases that support existing business. These efforts will undoubtedly help companies build capabilities that are necessary to deploy more advanced AI solutions in the future.

Machine Learning
The most commonly used AI technology among the surveyed companies is Machine Learning. This is inarguably due to its wide-ranging applicability, making it relevant for a variety of use-cases across the value chain. Of the different types of Machine Learning, the most common is supervised Machine Learning, where software is fed structured data and finds patterns that can be used to understand and interpret new observations.

While companies historically have primarily used internal data for supervised Machine Learning, many have begun exploring the possibility of combining internal and external data-sets in order to produce even deeper insights.

Machine Learning and Smart Robotics were found to be the most useful. It is not clear from the study if this is because they are simply the most common starting points before deploying more advanced technologies, or if they also longer term hold the most wide and significant application potential.

A broad definition of technologies are included in this AI definition
Technologies included in the definition of AI used in this study:

- Natural Language Processing
- Computer interpretation, understanding, and generation of written natural human language.
- Text Analysis
- Computational analysis of texts, making it readable by other AI or computer systems.
- Biometrics
- Analysis of human-physical and emotional characteristics – used also for identification and access control.
- Virtual Agents
- Computer-generated virtual personas that can be used to interact with people in both B2C, B2B, and B2B contexts.
- Machine Learning
- A computer’s ability to learn from data, either supervised or non-supervised.
- Neural Networks and Deep Learning
- Machines emulating the human brain, enabling AI models to learn like humans.
- Computer Vision
- Given computers the ability to "see" images similar to how humans see.
- Speech Recognition
- Enables computers to interpret spoken human language and to transform into written text or to treat it as commands for a computer.
- Smart Robotics
- The combination of AI and robots to perform advanced tasks compared to traditional non-intelligent robots.
- Computer Understanding
- High-level intelligence, such as creativity.

Companies are using a combination of on-premise and cloud solutions
Companies are increasingly using cloud-based AI solutions for both storage and on-demand computing power - 83% of companies reporting using Cloud technology to some extent to enable their AI capabilities. Key benefits of cloud solutions mentioned by many respondents are the flexibility to swiftly scale systems up and down to accommodate changing demand, a variable cost structure, and access to larger data sets. However, many companies are still relying on on-premise solutions, not least due to existing data infrastructure.

Companies are using a mix of Data Sources and Storage
Solution: How are you primarily dealing with the computing demands needed for AI?
Data Source: 1. Are you currently using unstructured or structured data types in your AI process? 2. Are you currently using internal or external data sources in your AI process?

Companies are using a mix of Data Sources and Storage

<table>
<thead>
<tr>
<th>Solution</th>
<th>Cloud</th>
<th>On Premise</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>27%</td>
<td>17%</td>
<td>56%</td>
</tr>
<tr>
<td>Out</td>
<td>73%</td>
<td>83%</td>
<td>44%</td>
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</table>

Data Source

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Structured</th>
<th>Unstructured</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>32%</td>
<td>7%</td>
<td>43%</td>
</tr>
<tr>
<td>External</td>
<td>36%</td>
<td>18%</td>
<td>56%</td>
</tr>
<tr>
<td>Both</td>
<td>24%</td>
<td>14%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Affirmative responses, 15 European markets

<table>
<thead>
<tr>
<th>Machine learning</th>
<th>Smart robotics</th>
<th>Natural language processing</th>
<th>Neural networks and deep learning</th>
<th>Text analysis</th>
<th>Virtual agents</th>
<th>Speech recognition</th>
<th>Computer vision</th>
<th>Biometrics</th>
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</thead>
<tbody>
<tr>
<td>86%</td>
<td>64%</td>
<td>50%</td>
<td>41%</td>
<td>39%</td>
<td>26%</td>
<td>21%</td>
<td>28%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Affirmative responses, Finland

<table>
<thead>
<tr>
<th>Machine learning</th>
<th>Smart robotics</th>
<th>Natural language processing</th>
<th>Neural networks and deep learning</th>
<th>Text analysis</th>
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<th>Computer vision</th>
<th>Biometrics</th>
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</thead>
<tbody>
<tr>
<td>77%</td>
<td>66%</td>
<td>50%</td>
<td>40%</td>
<td>39%</td>
<td>26%</td>
<td>21%</td>
<td>28%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note: Remaining percent ‘Don’t know’ responses
A few big AI transactions influencing the overall picture
Company AI investments in mUSD and transaction volume per market (accumulated 2008-2018)

<table>
<thead>
<tr>
<th>Sector</th>
<th>mUSD</th>
<th>Deals</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT</td>
<td>$330M</td>
<td>21</td>
</tr>
<tr>
<td>Private Equity / Venture Capital</td>
<td>$21M</td>
<td>37</td>
</tr>
<tr>
<td>Industrial Products</td>
<td>$131M</td>
<td>79</td>
</tr>
<tr>
<td>Finance</td>
<td>$47M</td>
<td>29</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>$75M</td>
<td>17</td>
</tr>
<tr>
<td>Life Science</td>
<td>$110M</td>
<td>14</td>
</tr>
<tr>
<td>Services</td>
<td>$24M</td>
<td>21</td>
</tr>
<tr>
<td>Sweden</td>
<td>$3M</td>
<td>3</td>
</tr>
<tr>
<td>Portugal</td>
<td>$520M</td>
<td>140</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$728M</td>
<td>33</td>
</tr>
<tr>
<td>Denmark</td>
<td>$43M</td>
<td>45</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>$107M</td>
<td>165</td>
</tr>
<tr>
<td>France</td>
<td>$47M</td>
<td>17</td>
</tr>
<tr>
<td>Austria</td>
<td>$155M</td>
<td>70</td>
</tr>
<tr>
<td>Other European Markets</td>
<td>$152M</td>
<td>72</td>
</tr>
<tr>
<td>Finland</td>
<td>$30M</td>
<td>17</td>
</tr>
<tr>
<td>Norway</td>
<td>$254M</td>
<td>73</td>
</tr>
<tr>
<td>Ireland</td>
<td>$38M</td>
<td>10</td>
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<tr>
<td>Spain</td>
<td>$22M</td>
<td>14</td>
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<tr>
<td>Switzerland</td>
<td>$368M</td>
<td>12</td>
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<tr>
<td>Austria</td>
<td>$70M</td>
<td>41</td>
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<tr>
<td>United States</td>
<td>$494M</td>
<td>220</td>
</tr>
<tr>
<td>Private Equity / Venture Capital</td>
<td>$7,453M</td>
<td>1,027</td>
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Over $24 million invested in AI start-ups in Finland in the past decade
In Finland, there were 21 transactions over the past decade involving companies working with AI. Of these, 17 reported deal value totaling $24 million. All but three of the investments in Finnish AI start-ups were by private equity or venture capital firms. Of the AI companies in Finland that received investments or were acquired, 67% focus primarily on machine learning technology, likely due to its wide applicability across a range of business problems and sectors.

The acquisition data from numerous sources enabled us to explore the European AI ecosystem and gain insights into investment activity.

An exponential increase in AI investment over the past decade
Looking at AI transaction activity across Europe, there has been a steep consistent growth trend over the past 10 years, totaling 1,334 transactions involving AI by 2017 – with a six-fold increase in activity in the last 5 years alone. This trend is on track to continue, with an exponential increase in interest in AI driving more large companies to invest in AI or acquire AI capabilities from innovative start-ups. Of the 15 markets surveyed, some include one or two transactions that are significantly large deals.

Majority of investments in AI from private equity and venture capital
Private equity (PE) and venture capital (VC) firms are significantly more active investors and acquirers of AI than corporates, accounting for 75% of deal volume in the last 10 years. This is an indication that AI companies are in the early stages of high-risk/high-growth dynamics. It also indicates that, for large corporates, acquiring or investing in external AI businesses in order to obtain AI capabilities is relatively limited. This is confirmed by our survey results where only 10% of companies are seeking to obtain needed AI capabilities through external investment or acquisitions, and is also much in line with what we’re seeing when comparing with the US and Asia.

Investment activity concentrated in major European markets
It comes as no surprise that a lot of investment activity is in the UK, France, and Germany, having attracted 87% of investment in AI companies over the past decade. The UK leads significantly in this regard, with 533 of the total 1,362 AI transactions in Europe. From an investment perspective, it is also worth noting that in April 2018, the EU committed to a 70% increase in investment in European AI by 2020, suggesting further growth and potential in the region.

Steady increase in European AI investment
AI companies invested into, transaction volume, Europe (from 2008-2018)**

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<tbody>
<tr>
<td>Total Investment</td>
<td>$78.35bn</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
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<td>148</td>
<td>224</td>
<td>327</td>
<td>393</td>
</tr>
</tbody>
</table>

**Including governmental investment

Note: Several transactions in the dataset did not have publically disclosed deal values, suggesting that actual total values are higher than those shown above.
Successful Value Creation

DNA

DNA’s systematic AI journey started in 2015. First, the focus was more on technology, like cloud computing, but it has shifted more to customer interface. DNA sees AI as an important and strategic topic in its business and recognizes that it cannot be separated from other digital initiatives. To date, DNA has gained a thorough understanding on what is realistic with AI: what is easy, what is difficult, and what is “hype”. At DNA the AI is driven through a hybrid model: Centralizing a development team which drives AI but the team members are included in business functions at the same time. AI is part of DNA’s strategy which is well being implemented by the development teams. DNA sees that the impact of AI is expanding all the time. For example, customer interaction is becoming more efficient, marketing can be targeted better. DNA sees that the key challenges in releasing full potential of AI relate to the AI models which have not become standardized yet, and so known best practices are mostly missing. According to DNA, the most essential capabilities needed to realize the potential of AI are 1) appropriate technological platform and capabilities, 2) competent and experienced development teams, and 3) ability to understand the possibilities and concrete AI related phenomena on business side. To build up the needed capabilities, DNA has been recruiting skilled people and arranging trainings. Acquisitions and strategic partnerships have not been ruled out.

We also spoke to a range of leading AI experts from business and academia to gain insights into the kind of change which we are on the cusp, and the role AI is expected to play as part of a broader transformational wave.

What next?

In the future DNA will develop and strengthen the usage of AI in several functions and areas: Understanding customer needs and behavior better, which already are in a good shape, will benefit from e.g. improved test and voice recognition and analytics. Product and service recommendations will develop to the level of real time personalization with the help of combining and exploiting all the gathered data. Usage of AI will also increase in R&D and technical networks. DNA will continue AI related trainings and recruiting of people with appropriate profile, not forgetting the possibility of acquisitions or partnerships.

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AI is entering the mainstream and here to stay

One thing was clear from the experts we spoke to: as far as the peaks and troughs of hype and technological leaps surrounding AI go, there is no doubt that we are living through a particularly prominent peak, with no indication that the buzz nor the potential will fade away any time soon. In a world increasingly dominated, disrupted and driven by innovative tech powerhouses, large and small, it is no understatement to suggest that AI will be a chief protagonist in the change transcending all elements of business in what has been labelled the Fourth Industrial Revolution.

Business-minded people will drive the transformation

The AI experts confirmed some of the key ingredients necessary for AI in organizations: a combination of domain and technical expertise, the appropriate technology, the right talent, and lots and lots of data. While letting tech-savvy individuals drive innovation is great for building understanding, true transformation will not come until business people start suggesting problems for AI to solve - not the other way round.

Agile culture enables AI

Culture was a recurring theme as well. It can either stifle forward momentum in organizations, or be the silver bullet that enables the potential of AI to be realized from top to bottom. Some of the experts even argue that it’s not only technical skills that hold up AI projects, it’s also the need for a culture of experimentation.

Companies that are more natively digital or have gone down that road understand the value of experimenting and iterating. They don’t think in traditional terms of committing to year-long projects that need to produce specific outputs, but rather to explore and test ideas before scaling.

When it comes to AI, knowledge is power

Expert opinion also seemed unanimous in that most people not directly involved with AI must still have quite a basic understanding of what AI is and what it can actually do. Therefore, the task is to educate and improve understanding, from C-suite leadership teams to employees at the coal face. This also ties in with the importance of partnering to get started and access the expertise needed to use AI. While partnering and collaborating solves the perennial AI challenge concerning the scarcity of talent, the significant cost and substantial benefit that can be gained from AI means that organizations also need to be cognizant of building capabilities in-house for the long-term.

Finally, as AI develops, we are also going to see innovation and expertise spreading outside of the dominant clusters of the likes of Silicon Valley, as governments, businesses and universities increasingly invest in building knowledge, resources and capabilities.

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From the Horse’s Mouth*

*From the highest authority

The full extent of the AI story remains in its early stages. What we do know is that big data, computing power and connectivity are changing the industrial landscape. The opportunity rests in accelerating the digitization of businesses, making them more data driven by building applications that deliver machine-assisted insights.

— Mona Vernon, CTO, Thomson Reuters Labs

In some cases, there is too much hype, but paradoxically, the potential opportunities and benefits of AI are still, if anything, under-hyped. Often, the impact of new technologies is overestimated in the short term and underestimated in the long term, and while there is a lot of noise regarding AI, there’s been a lack of in-depth discussion and analysis of how it’s actually going to transform businesses.

— Nigel Duffy, Global AI Innovation Leader, EY

We believe that every organization is going to have to write their own AI manifesto: what they believe about AI, how they’re going to use or not use data, how they’re going to publish data, and make the consumers of their products and services aware of that. The creation of those manifestos is going to become a gateway to the success of AI.

— Norm Judah, Chief Technology Officer of Worldwide Services at Microsoft

If you have a ton of data, and your problem is one of classifying patterns (like speech recognition or object identification), AI may well be able to help. But let’s be realistic, too: AI is still nowhere near as flexible and versatile as human beings; if you need a machine to read, or react dynamically, on the fly, to some kind of ever changing problem, the technology you seek may not yet exist. Intelligence is a really hard problem.

— Gary Marcus, Founder & CEO, Geometric Intelligence [acquired by Uber] professor, NYU, contributor to The New Yorker and The New York Times

AI is a general purpose technology, so will eventually affect all industries. However, this impact can be slowed by the lack of data in particular industries. There’s also more innovative cultures inside different organizations, that can either drive adoption or prevent it.

— Marc Warner, CEO, ASI Data Science
A Strategic Agenda

Where is the AI conversation currently taking place?

A good starting point to understand how large European companies are handling AI is to look at who in the organization is driving the AI agenda, whether it be the Board, the C-suite, managers, or employees.

**AI is particularly relevant at higher organizational levels**

From driving strategic considerations at the Board level to being a topic of interest or concern at the employee level, the results are clear: AI is important and resides across all levels at many of the organizations we interviewed.

Only a few companies stated that AI is not currently an important topic at any level of the organization – while the vast majority of companies view AI as generally important regardless of how advanced they are, or how much AI is being considered for deployment in the near future.

**Active C-suite and Board of Directors involvement**

In 71% of the companies surveyed, AI is already an important topic on the C-suite agenda and across various roles – from cost-focused CFOs looking for efficiency through automation, to CDOs with customer-oriented ambitions as part of wider digitalization efforts, to the CTOs who are often still responsible for a type of AI Center of Excellence.

Companies more advanced in AI tend to have stronger involvement of the C-suite and the Boards of Directors than the rest. They focus less on the technology itself and more on the business problems that AI can address.

Relatively speaking, the AI topic seems to not yet having reached the same level of importance at the non-managerial level (employees) than at the top. Speculating about the reason, it could both pertain to job insecurity and to the fact that AI is still a highly abstract topic for many when it comes to proving day-to-day business value.

**AI an important topic among executives in Finland**

In Finland, AI is an important topic across most levels of the organization. This is particularly the case at the C-suite level, where 73% of the Finnish companies surveyed report that AI is an important item on their agenda. At 45%, companies in Finland are among the highest in Europe in terms of considering AI to be an important topic at the Board of Directors level.

**Role of AI in European Business**

There is a lot of hype surrounding AI at the moment, and few doubt its potential. We examine how important is AI compared to other digital priorities and where AI fits on the strategic agenda.

We look at the impact of AI on the company’s core business, as well as adjacent and new areas of business.

We also examine the current AI maturity levels across sectors and markets, the potential drivers for deploying AI, and where AI is applied within organizations, across customer-facing functions, operations, product development, and internal business support.

### Active C-suite and Board of Directors involvement

<table>
<thead>
<tr>
<th>Role</th>
<th>Affirmative responses, 15 European markets</th>
<th>Affirmative responses, Finland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board of Directors level</td>
<td>45%</td>
<td>10%</td>
</tr>
<tr>
<td>Executive Management level</td>
<td>73%</td>
<td>38%</td>
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<td>Managerial level</td>
<td>59%</td>
<td>56%</td>
</tr>
<tr>
<td>Employee (non-managerial level)</td>
<td>23%</td>
<td>28%</td>
</tr>
</tbody>
</table>
Among Friends

What is the importance of AI against other digital priorities?

In a business era driven by innovation and tech-led disruption, AI is obviously not the sole priority.

**AI as a digital priority**

When asked on a scale of 1 to 5 how important AI is to the business relative to other digital priorities, the majority of respondents told us that it is about equal. Very few organizations said it was their most important digital priority, or not formalized as a digital priority at all, with the spread of responses leaning slightly towards the upper end of the importance spectrum.

This slant is likely to increase as many companies expect AI to become more important, as the technology develops and use-cases become more clear to companies.

The participating companies are generally in the process of understanding the potential of existing data, including what it can be used for, and how to capture and leverage it.

Furthermore, many of the companies are focused on building the appropriate data infrastructures or modernizing legacy systems as a top digital priority, both being prerequisites for introducing AI into the company. Considering that AI is heavily reliant on data as its fuel, this development suggests that the foundations are being laid for further AI integration in the years to come.

**AI seen as slightly more important vs. other digital priorities in Finland**

Many companies surveyed in Finland are engaging in successful pilot projects and Proofs of Concept, or have AI initiatives that are released into production. When it comes to their prioritization, respondents in Finland on average consider AI slightly more important than other digital priorities, a ranking above the European aggregate. Additionally, 9% of Finnish companies report AI is the most important digital priority for their organization, one of the highest results across all participating countries. Although AI is not the highest digital priority for all, it is gaining importance and companies are taking the steps necessary to move their AI initiatives forward.

**AI is seen as one of many digital priorities - but rarely the most important**

How important is AI relative to your company’s other digital priorities?

To understand the drivers behind the adoption and deployment of AI in the companies, we took a closer look at how AI is approached in a top down-bottom up management context, and from a functional tech-vs. business driven dynamic.

**AI driven from a combination of technology push and business pull**

The contributing companies are quite evenly split across deploying AI as a top down process, as a bottom up, or as a combination of the two. However, when looking at the self-reported most advanced companies, they are more top down than bottom up in their approach. It was clear from speaking with them, that this is partly a result of AI being increasingly important in the company, and playing an increasingly significant role in the overall strategy.

**AI driven from a combination of technology push and business pull**

According to a large part of the companies, and despite still being a technologically complex thing that requires many specially skilled employees, AI is most often deployed as a combination of business pull and technology push.

This resonates well with one of the most consistent inputs from the executives on the most sought after AI profiles which centered in on the hybrid profile that understand the business needs and the ability to match them to the technological possibilities.

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**Ready, Set…**

What is the maturity of AI in different sectors?

While working with AI should be considered a continuous journey, the AI maturity of surveyed companies provides a tangible indication of the level of advancement of current initiatives.

**Multiple use cases, limited scalability and advanced use**

The majority of companies have begun exploring use-cases, while some companies have made early investments with the intention of taking a leading position in AI. The levels of advancement also vary in that some companies are focusing on narrow use-cases to support their existing business, while others are taking an explorative approach. Among the small group of companies with no or only little AI activity to date, several respond that they are planning to drastically ramp up efforts soon.

**Technology immaturity and internal data quality are key obstacles**

Many companies that have already implemented AI initiatives in their businesses are seeing tangible benefits. Consequently, many of them are exploring more use-cases and structuring their learnings from previous AI projects into a modus operandi that can speed up new initiatives.

Meanwhile, a substantial number of companies have intentionally chosen to take a ‘follower’ position, reporting the perceived immaturity of AI technologies as a key reason. Another reported obstacle to rolling out broader AI initiatives is rooted in data and data infrastructure, where companies have separate projects aimed at improving the structure of existing data, collection of new data, and data access in general. However, the trend is clear: AI maturity is on the rise as adoption of key technologies accelerates and internal capabilities grow.

The vast majority of European businesses are currently either conducting pilot projects to test selected use-cases, or have commenced implementing AI in the business. When talking with executives, it is evident that many companies are struggling with how to integrate pilot projects into daily operations.

**Clear sector patterns, with TMT, Services, and Finance on top**

Companies currently leading the way in terms of AI maturity are in TMT, Services & Hospitality, and Financial Services. Companies in those sectors gravitate towards grading their AI maturity as ‘Released’ (AI in active use, though selectively or not with very advanced tasks), or ‘Advanced’ (AI actively contributing to many processes and enabling advanced tasks). A logical explanation for the maturity in TMT and Finance is their tendency to be digitally advanced and more savvy with analytics, favoring these companies to progress beyond piloting by having data science capabilities in place to evolve towards more advanced AI stages.

**Infrastructure and IP with relatively many projects in ‘piloting’ phase**

The Infrastructure and Industrial Products sectors both stand out as having no companies responding that they are ‘Advanced’ in AI at this stage.

**Life science and CPR have fewest released projects**

Consumer Products & Retail companies have a broad spread in terms of AI maturity, where 25% state they have no plans at present for how and when to use AI – much higher than other sectors – while others in the same sector are already at the ‘Released’ or ‘Advanced’ stage of AI maturity. Several companies in both Consumer Products & Retail and Services & Hospitality cited the challenges of knowing what relevant AI technologies are available, utilizing unstructured data, as well as affording the payback period where there may be large upfront costs and undetermined returns on investment.

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**With AI, we must find a way to identify unknown unknowns.**

— Metso
Industrial machinery company

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**TMT sector with largest percentage of companies that are either released or advanced**

How would you describe your company’s general AI maturity? Sectors arranged by maturity based on Advanced and Released

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**Role of AI in European Business**

<table>
<thead>
<tr>
<th>Sector</th>
<th>None</th>
<th>Planned</th>
<th>Piloting</th>
<th>Released</th>
<th>Advanced</th>
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</thead>
<tbody>
<tr>
<td>TMT</td>
<td>2%</td>
<td>10%</td>
<td>40%</td>
<td>45%</td>
<td>2%</td>
</tr>
<tr>
<td>Services</td>
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<td>22%</td>
<td>27%</td>
<td>27%</td>
<td>18%</td>
</tr>
<tr>
<td>Finance</td>
<td>4%</td>
<td>22%</td>
<td>14%</td>
<td>36%</td>
<td>4%</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>9%</td>
<td>17%</td>
<td>46%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Industrial Products</td>
<td>4%</td>
<td>25%</td>
<td>44%</td>
<td>27%</td>
<td>18%</td>
</tr>
<tr>
<td>Life Science</td>
<td>4%</td>
<td>25%</td>
<td>49%</td>
<td>17%</td>
<td>4%</td>
</tr>
<tr>
<td>CPR</td>
<td>25%</td>
<td>23%</td>
<td>9%</td>
<td>9%</td>
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</tr>
</tbody>
</table>

This indicates slower technology adoption lead times in these slightly more conservative sectors. Yet, with 74% of companies being in the ‘Piloting’ or ‘Released’ phases, the infrastructure sector also seems to be evolving onto more advanced AI maturity.
Majority of companies are in the ‘Piloting’ or ‘Released’ stage

We asked companies to self-report their current AI maturity level, grading themselves at None, Planned, Piloting, Released, or Advanced - as defined below.

**None**
Not yet thinking about AI

**Planned**
AI is being planned, but not yet put to active use, not even in early stage pilots

**Piloting**
AI is put to active use, but still only at early stage pilots

**Released**
AI is put to active use in one or a few processes in the company, but still quite selectively, and/or not enabling very advanced tasks

**Advanced**
AI is actively contributing to many processes in the company and is enabling quite advanced tasks

Companies in Finland among the most AI mature

In terms of AI maturity, companies in Finland have a strong position compared to the European aggregate. All Finnish companies surveyed are using AI to some degree - among them, 14% report to be in an advanced stage, where AI is actively contributing to several processes across the organization. However, half of them are still in the piloting phase. These findings imply that most Finnish companies are advancing on their AI journey. Yet, there is still some work to be done before reaching full maturity.
State your Business

Where is AI currently deployed across the companies’ value chains?

Looking at the business functions that most commonly use AI provides a good indication of where companies are placing their bets. These functions are driving the company AI agenda, influencing the future direction of the company’s AI efforts.

Many AI in R&D and IT/Digital functions
On top of an expected high prevalence of AI within IT departments, AI is also commonly used within R&D functions. This primarily comes down to three factors: employees in R&D are often engineers who tend to have a good understanding and appreciation of AI; the R&D function is often already wired towards taking an experimental, agile approach which is key to AI; and the R&D function often sits on significant amounts of useful data leading to high potential use-cases.

Online customer interactions generating front-end data
Customer-facing, commercial functions such as Marketing, Sales and Customer Service are also heavier users of AI, partly driven by their digitization levels. Although AI is generally adopted more slowly in customer facing interactions than in back-end functions, the abundance of data from increased use of online channels is expected to make these functions obvious candidates for AI technologies in the future. Operations and back-end functions use AI to increase efficiency by automating processes and informing decision-making. The key enabler is data infrastructure, and many companies – currently limited by legacy systems and processes that impede capture and retrieval of data – need to upgrade their infrastructure.

Limited use in HR and Procurement
There are several functions where AI is hardly in use among the participating companies. This includes people-intensive functions such as HR and Procurement. This is not due to lack of potentially valuable AI use-cases, which in the case of HR include talent acquisition (avoiding human bias), onboarding (Q&A), performance evaluation (analyzing data), etc. but rather seems to be a result of prioritizing other functions and priorities first.

AI applied across a broad array of business function in Finland
Among companies surveyed in Finland, usage spans 12 out of the 13 business functions presented. The distribution of AI usage across business functions within companies surveyed in Finland is concentrated in a number of areas, with highest usage in IT, Technology & Digital (41%) and R&D & Product Development (41%). In addition, AI usage within Sales (32%) and Marketing (32%) is considerably higher than the European aggregate.

— LEGO
Toy company
The European AI Landscape

We take a look at how important the digital transformation agenda is on the highest executive level vis-à-vis other strategic priorities. We dig deeper to understand whether digitalization is primarily a key lever to improving and sustaining the current core business, or rather a lever for building tomorrow's business focusing on adjacent or even entirely new business areas. And we summarize how progressed the companies are on their overall digital transformation maturity journey.

Business Benefits and Risks

As a number of industries are beginning to reap the benefits of AI, we investigate what AI is actually doing for businesses today and what is expected in the future. We look at how big an impact executives expect AI will have in terms of driving growth or causing disruption in their industry, and examine AI's basic and more advanced uses - highlighting examples of these functionalities in operational mode.

We also present a strategic approach to understanding AI's four benefit domains from a business perspective, summarizing the value executives expect to generate by using AI, and touching on what business leaders see as the most prevalent business risks.

Metso

Metso expects AI to significantly improve the efficiency of its customers' equipment and processes. AI will help to optimize operations e.g. in terms of energy and water usage, optimize yields, as well as improve maintenance and machine health with predictive maintenance.

Internally at Metso, AI is a roadmap item in many development projects, especially where integrated automation of smaller processes is important.

Multidisciplinary knowledge and teams are seen as the most important capabilities for developing and benefiting from AI. To release the full potential of AI, in addition to having enough knowledge of AI, you need a holistic view of the application: What are the customer's processes? How do the kinematics, mechanics, and automation work? If you do not take these into account, AI may propose results that are not even possible according to the laws of physics.

To obtain this holistic view, having enough data with the right context is important. When the data comes from the customer’s processes, this might become a challenge. Because the data is often sensitive, the entire end-to-end data collection and analysis process needs to be built with highest levels of cybersecurity in mind. Finally, within the AI application areas, there are many unknowns, and finding out about them requires many experiments.

What next?

Metso sees that AI's impacts on the competitive landscape depend a lot on the industry. Clearly, with industrial machinery, the rate of change is slower than e.g. in the media, finance, or telecom industries. However, intelligent and autonomous machines and related service processes are evolving rapidly.

Metso is currently piloting an IoT program, where the system collects data from crushers and other minerals processing equipment. The program uses AI to analyze and predict which component might break or has already broken.

What next?

Metso is a world-leading industrial company offering equipment and services for the sustainable processing and flow of natural resources in the mining, aggregates, recycling and process industries. Metso’s products range from mining and aggregates processing equipment and systems to industrial valves and controls. Customers are supported by a broad scope of services and a global network of over 80 service centers and about 6,000 services professionals. Metso has an uncompromising attitude towards safety. Metso employs over 12,000 persons in more than 50 countries.

AI knowledge is essential, but it needs both business and application context to be useful.

Applying AI to business is a complicated process that requires multidisciplinary knowledge.
Another World

What is the expected impact from AI within the next 5 years?

Of the surveyed companies, 81% believe that AI will have a high or significant impact on their industry within the next five years. Digging deeper into the data, many of these companies expect AI to fundamentally change their competitive landscape, driven by increasing risk of competition, including from new types of start-ups and companies from adjacent industries. The majority of companies also believe that AI will play a key role in their efforts to continuously cut costs to stay competitive.

Countries expect different impact from AI

When approaching impact from a country perspective, the tendency remains: very high expectations across the board. Portugal stands out with most ‘high’ impact responses. In the opposite end of the expected impact scale, Ireland, Austria, and Spain, in that order, are the countries where most companies expect only ‘some’ impact from AI or less.

Services the sector with the highest expected impact from AI

How much impact do you expect AI will have on your industry within the next 5 years?

Relatively low expectations of high AI impact in Finland

At 9%, companies in Finland have the lowest score across Europe when it comes to expecting AI to have a high impact on their industry in the future. However, when combining respondents that reported 4 on a scale of 1 to 5 regarding AI impact, the share goes up to 86%. These results suggest that Finnish executives might be more cautious when assessing AI’s impact and gravitate away from the upper ends of the scale. According to the executives, some of the ways in which AI will disrupt industries relate to complete automation of business processes, higher quality controls or faster product development process.

Strongholds and premiums to change as AI gains ground

Many companies expect competition to intensify due to the ‘winner takes all’ dynamic often associated with the massive scale that AI and digital can create. They also expect significant impact on their products, increasingly in the form of new services, and they believe the speed of developing new products and taking them to market will drastically decrease - making current competitive strongholds less viable in the long-term.

This is particularly clear in R&D-intensive sectors such as Pharma, where big data sets and intelligent algorithms to speed up the drug discovery process (10x mentioned as realistic) can impact the dynamics towards existing peers, while new AI based entrants (e.g., intelligent devices) can influence how premiums are distributed in future value chains.

Across sectors, executives expects significant impact

Services comes out on top in the ‘High Impact’ category, but all sectors expect a significant degree of impact from AI. An overwhelming share also anticipate that AI will result in entirely new products, services, and business models.

Companies from Industrial Products and CPR expect relatively least ‘high’ impact from AI, but even in these sectors, more than 30% expect the industry to be disrupted.

Limited sync of maturity and expected impact

The biggest disparity is within Finance, specifically Pension and Insurance where ambitious companies are making significant investments in building data infrastructure and AI capabilities, while others are taking a waiting stance, and will jump on the AI train when the technology is more mature.

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AI Here, There, Everywhere

What is the proximity of AI’s future impact to core business?

Companies expect impact across all horizons
To what degree do you expect AI will create impact for your company within each of the following areas?

<table>
<thead>
<tr>
<th>Core Business</th>
<th>Adjacent Business</th>
<th>New Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary areas of the company’s current business</td>
<td>Business areas on the edge of the company’s core business</td>
<td>Business areas entirely new to the company</td>
</tr>
<tr>
<td>Not at all</td>
<td>To some degree</td>
<td>To a very high degree</td>
</tr>
<tr>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>5%</td>
<td>4%</td>
<td>16%</td>
</tr>
<tr>
<td>29%</td>
<td>28%</td>
<td>31%</td>
</tr>
<tr>
<td>17%</td>
<td>14%</td>
<td>32%</td>
</tr>
<tr>
<td>Avg. Score: 4.0</td>
<td>Avg. Score: 3.6</td>
<td>Avg. Score: 3.3</td>
</tr>
</tbody>
</table>

Many of the participating companies are expansive, with diversified business units offering a range of products and services. We questioned where they expect AI to have an impact – in their core, adjacent and/or new business.

AI will impact across the board, but less consensus on timelines
Companies expect AI to have a relative-ly equal impact on core, adjacent and new areas of their business. In interviews, they say impact depends on the timeline, for instance AI impacting the core business now, but adjacent and new business later on. The range of answers for “Adjacent” and “New” across Europe are more split and contain more “Don’t Know” responses than for “Core” – perhaps because there is an inherent challenge in making predictions about AI’s impact on new business areas where business results are not yet real-ized, and where the role of current and upcoming AI technology is not clear.

Yet, interestingly 32% feel confident AI will impact areas that are “entirely new to the company.” This is not far behind the 37% of respondents who expect a very high degree of impact on the core areas of the current business.

Finnish companies expect high impact from core to new
At least 50% of companies in Finland expect AI to have a high or very high impact across core, adjacent and new business areas. Specifically at the core business is where Finnish companies expect AI to create the biggest impact, a ranking in line with the European aggregate. Some respondents reported they anticipate AI to have a bigger impact on the core business in the short to medium term, but more so on new business models and products in the longer term.

We are finding ways to exploit AI in all areas of our business.

Stora Enso

There is strong support for AI within Stora Enso. The group leadership is aware of the possibilities of AI and AI projects are given sufficient resources. Digital and AI capabilities form Stora Enso’s Digital Office, which supports the projects within business divisions and functions. However, some of the functions have some own digital and AI capabilities so that they are able to exploit AI fully. Finance has its own RPA & Data Analyst teams, although they co-operate tightly with the group-wide digital unit. On lower level, Stora Enso’s target is to train 1,000 employees in AI so that they are able to identify its possibilities in the business. Business controllers will have data analytics training organized together with Aalto University Executive Education.

Stora Enso believes that AI will make it more agile and adaptive as a whole. The more they have systems that can automatically adapt to changing situ-ations, the quicker they can react to them. AI will be most visible in operations and logistics because of massive amounts of data. Although the focus of Stora Enso has been in optimizing the current business model, there have been some initiatives in new services, such as Intelligence packaging that collects data which can be further analyzed and sold to customers or other players in the supply chain.

However, before AI can be exploited in full extent, the processes and especially the master data must be suitable. Currently, data is not all in the same place, and Stora Enso has an on-going project to improve the situation.

What next?
One large future area of AI use is predictive maintenance. The machines have been automated starting in 1970’s, but the expensive maintenance breaks are made in a same schedule. With predictive maintenance solutions, machines could be stopped only when the maintenance is actually required, and not only because it has been a year since the last one. Also, Stora Enso expects that the AI resources will be-de-centralized in the future and new applications, e.g. in law, will be found. New products and services are also a possibility.

We think AI is one of the most important digital initiatives at Stora Enso.

Stora Enso is one of the oldest corporations in the world (dating back to 1288) and a leading provider of renewable solutions in packaging, biomaterials, wooden constructions and paper on global markets. Its customers include packaging producers, brand owners, paper and board producers, publishers, retailers, print houses, converters, and joinery and construction companies. Its aim is to replace fossil based materials by innovating and developing new products and services based on wood and other renewable materials. Stora Enso employs some 26 000 people in over 30 countries.
Use It or Lose It
How is AI put to use in companies today?

AI enables a wide range of uses, broadly split into personalizing, automating, predicting, prescribing and generating insights. We asked companies how relevant each was to their business and found a significant degree of variance in terms of what executives expect to use AI technologies for.

Prediction is the top use
With 74% of companies seeing prediction as a relevant use of AI, this functionality, which includes churn analysis, predictive analysis, and predictive maintenance, comes out as the top use. Companies with a large customer base use churn analysis to identify and proactively engage customers with exit potential. Sales teams use predictive analysis to identify leads with the highest likelihood of conversion. Companies that sell or use advanced costly machinery use predictive maintenance to save money through decreased downtime.

Intelligent automation for effectively dealing with routine tasks
Smart automation is seen as widely applicable by 74% of companies surveyed. With estimates that 20–30% of current tasks can be done without human intervention, a substantial number of companies are currently in the process of training chatbots to transform the way information is acquired.

Generating insights to make informed decisions
Focusing on generating insights based on internal and external data, 58% of companies view AI as a way to make better decisions. This requires a sophisticated data infrastructure. Companies reliant on R&D are using AI to speed up the process of analyzing data for new product development and to inform future research.

Personalization is becoming a common feature
Among the surveyed companies, 44% are using AI to personalize the user experience, for instance by tailoring content to individual interactions as an effective way of driving mass-personalization. Next steps in personalization include chatbots and virtual assistants, where some companies already have fully automated customer front-end solutions in place.

Prescriptions’ potential is big
Prescription is the laggard among the five AI uses, with current use-cases typically being early stage, such as suggestion engines and decision recommendations for salespeople and advisors. AI for advanced prescription such as complex decision making lies in the future, as it requires collecting large amounts of data and understanding which variables are significant, including some that are difficult to digitize.

Prediction and automation relevant to most companies
What are the relevant uses of AI in your company?

- **Prediction**
  - Anticipate events and outcomes
  - AI will help make our products more reliable and allow real predictive actions based on various data sources.
  - Siemens (Mobility Division) Mobility solutions company

- **Automate**
  - Handle tasks without human intervention
  - Within the company, choices on AI topics are mainly managed centrally and for this reason, it is often possible to speed up processes by setting up tools and processes that can be automated across the business.
  - Now TV Telecommunications company

- **Insights**
  - Identify and understand patterns and trends
  - We use AI to find trends across R&D datasets that would normally be very time consuming or even impossible to find. The potential for AI within R&D is huge, as it will speed up the pace of drug discovery.
  - Lundbeck Pharmaceutical company

- **Personalize**
  - Tailor content and user-experience
  - We can provide a more personalized service to our guests, both before check-in, during the stay and after check-out. Content personalization and recommendations will further improve customer engagement.
  - Grupo Pestana Hotel chain

- **Prescribe**
  - Suggest solutions to defined problems
  - We use Natural Language Processing to group customer inquiries and suggest which of our 300+ templates we should use in response. Our employees only need to confirm the choice or tweak it slightly. This dramatically lowers the time it takes to respond.
  - PFA Pensions and insurance company
Making AI Simple
What is a good framework to map the potential benefits from AI?

The contributing companies generally expect to benefit in all four key domains as outlined in Microsoft’s Digital Transformation framework: optimizing operations; engaging customers; transforming products and services; and enabling employees. Each domain draws on underlying AI functionalities — ‘reasoning’ through learning and forming conclusions with imperfect data; ‘understanding’ through interpreting the meaning of data including text, voice, and images; and ‘interacting’ with employees, customers and other stakeholders in natural ways.

Applying AI to these domains can be transformational to a business, ultimately changing the landscape of the business itself and the industries and ecosystems in which it operates.

Let’s look in more detail at what that entails.

Improved production and efficiency through optimized operations
While digital transformation in general is based on customer engagement, optimizing operations is what companies first look to when putting AI to use. It draws on multiple levers such as: intelligent prediction, e.g., identifying chronic diseases, anticipating non-performing products, or adaptive modeling to flag corrective actions; operational efficiency, e.g., optimizing forecasting and order-to-fulfillment flows across the value chain, or processing huge sets of documents in a fraction of the time; and deep insights, e.g., detecting anomalies to surface irregularities such as fraud, or identifying new pockets of opportunity before competitors do.

Engaging customers more effectively through AI
After optimized operations, companies look to customer engagement as the domain in which to seek most business benefits. Early examples of AI applications in the customer engagement space involve levers such as conversational agents, e.g., bots providing personal recommendations and transactional advice; personal assistants, e.g., guiding decision-making, shortening conversion cycles; and self-service, e.g., options to help customers reduce time to resolution.

Staying ahead of the competition by transforming products and services
Transforming products and services, and enabling employees, came out on the same level, slightly below the two other domains when it comes to where companies expect to generate future business benefits.

Transforming products and services, ultimately giving rise to entirely new business models, is mostly favored in R&D-heavy sectors where companies consider AI and advanced analytics as levers to speed up the product innovation and discovery process. In B2C-oriented sectors, AI enables provision of new services via multilingual cognitive tools, geo-location suites, sentiment analysis, cognitive robotic advisory capabilities, personalized service agents and more to transcend the sectors to a new level of value-add - with significantly increased scale and reach in real time.

Enabling employees to be more efficient and capable
Across sectors, numerous AI use-cases focus on increasing employee productivity or serve to enhance the human ingenuity and the ability to fulfill a given function. AI helps employees in B2C companies expand organizational knowledge by analyzing vast customer behavior datasets in order to adapt online and offline store layouts, driving conversion and sales. Customer personalization is used at scale, powered by AI solutions that reveal real-time customer insights, identifying the best next actions for up-sell and cross-sell opportunities, as well as predictive models that obtain a 360-degree view of the customer by integrating customer data and sentiment to generate targeted offers.

Business Benefits and Risks

Artificial Intelligence impacts business in four benefit domains
Companies must consider how they approach the benefit domains in their AI strategy formulation:

- Engage your customers: E.g., provide customers advice, shorten conversion cycles, and reduce time to resolution.
- Optimize your operations: E.g., improve planning and reduce costs through intelligent prediction, operational efficiency, and deep insights, predictive maintenance.
- Enable employees: E.g., increase employee efficiency through predictions, enabled support, and automation of repetitive tasks.
- Transform your products & services: E.g., speed up product innovation cycles, enable new value add services, and provide real time support.
Where Value Hides
What benefits do business leaders particularly expect from AI?

Respondents were asked to assess the potential of AI within each of the four benefit domains.

Optimizing operations and engaging customers to deliver most value
Among all companies surveyed, 89% expect AI to prove beneficial in optimizing operations, with use-cases most highlighted by executives being monitoring results, predicting trends, and prescribing future solutions. A lot of focus is given to intelligent automation, such as making compliance cheaper and more robust, improving risk analysis, optimizing supply chains, providing predictive maintenance capabilities, and more.

Not surprisingly, the ability to structure repeatable processes and reduce human error and bottlenecks is something most executives can get behind from a cost-saving perspective. 74% of companies surveyed expect AI to help them engage customers and enhance the user experience, including tailoring content, increasing response speed, adding sentiment, creating experiences, and anticipating needs.

Fewer expect products and services and employee engagement
Although executives speak of the potential in making sense of existing and new sources of data to introduce higher margin services to product portfolios, expedite new product development, and introduce innovative new offerings, only 65% expect AI to help transform products and services.

Even fewer (60%) expect AI to provide benefit from empowering employees to improve productivity, enable innovation, support problem solving, etc.

What we did hear overwhelmingly, however, was the importance of bringing all employees along on the company’s AI journey. This involves getting internal buy-in that AI will be a force for good, generating excitement about working with intelligent technologies, and making existing jobs easier and more engaging.

Higher expectations for optimizing operations than other countries
In Finland, the share of companies expecting benefits from using AI is above the European aggregate in each of the selected four benefit domains. At 95%, companies in Finland expect AI to optimize their operations through the automation of processes, or by forecasting maintenance and capacity. 82% believe AI will benefit customer engagement, for instance by targeting content or improving suggestions; and 77% expect AI to transform their products and services. Lastly, 73% of Finnish companies expect AI to empower employees in ways such as substituting rule-based processes with intelligent task assistance.

Most companies expect to generate benefit from optimizing operations
What business benefit do you expect AI to generate?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Affirmative responses, 15 European markets</th>
<th>Affirmative responses, Finland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimizing operations</td>
<td>89%</td>
<td>95%</td>
</tr>
<tr>
<td>Engaging customers</td>
<td>74%</td>
<td>82%</td>
</tr>
<tr>
<td>Transforming products &amp; services</td>
<td>85%</td>
<td>77%</td>
</tr>
<tr>
<td>Empowering employees</td>
<td>66%</td>
<td>73%</td>
</tr>
</tbody>
</table>

A.P. Moller – Maersk

There is no doubt that AI has the potential to transform Transportation & Logistics, giving rise to a new class of intelligent logistics assets and operational models. Data science is not new to A.P. Moller – Maersk, yet only recently has AI become a part of Maersk’s core strategy as a functional technology with tangible applications. As a designated new discipline positioned close to the core of group strategy, Maersk is developing AI capabilities as part of a broader transformation of the business.

Maersk takes a broad view of AI, applying intelligent technology to three main areas: product offerings, (using AI to develop new products and services and improve existing products and services); enhanced customer experience (service delivery, issue resolution, empowering customer-facing employees); and operational efficiencies (for example via network optimization).

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What next?
Maersk is developing a platform to leverage company data to develop products, partly by optimizing the company’s data architecture to ensure faster development. To meet these demands, Maersk is changing its approach to attracting talent. AI also requires an entire new skillset among company leaders, transforming them into AI leaders who are deeply engaged in implementing AI in the business.

At Maersk, we build things that have deep business sponsorship and add value.

There’s good awareness about what AI can bring to the shipping industry. In the future, Maersk won’t just be a shipping company, but an integrated forwarder of logistics.
Executives surveyed and interviewed in the various sectors recognize the distinct benefits of AI, speaking about the myriad of ways they see AI transforming their businesses and industries. Although there are clear patterns to discern, executives from different sectors often speak to different benefit areas from which they particularly hope to capitalize from.

**Services companies expect the most benefits from AI**
Services companies reported the highest expected benefits across all four domains, expecting significant value from AI through engaging customers and empowering employees, for example via improving resource and skills allocation across their large human capital pools. (Note: the Services sample is the smallest of all sectors.)

**Expedites drug discovery and disease prediction in Life Science**
Executives in Life Science are among those most excited about benefits pertaining to transforming products and services. Many see AI leveraging existing internal and external datasets to speed up the drug discovery process and enable the transition towards precision medicine.

Deep learning with huge datasets is expected to play a vital role in the Life Science sector, where the potential for AI to revolutionize the drug discovery process is immense. Executives hope to use AI to transform traditional drug discovery and development processes, reducing time to market and costs.

**AI to revolutionize Financial Services firms**
Finance companies reported some of the highest expectations for AI benefits across the four domains, which can explain the sector’s current focus on using AI to reduce costs of reorganizing businesses, and engage customers in new ways in the front office.

By shifting focus towards the more complex and spending less time on simple, mundane tasks, we can be real advisors, shifting focus away from high volume routine tasks that create little value.

— DNB
Financial services group
To really benefit from AI, you need technological capabilities, people with high level of know-how, and an understanding of the business opportunities.

— DNA Telecommunications company

AI will be an enabler for large scale digitalization and automatization of various financial services processes. This will lead to significant cost efficiency. It will also open lots of new innovations and disrupt how we will interact with customers. Disruption is inevitable.

— OP Financial Group Bank

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There are inevitable concerns about the business risks associated with AI, as many of the applications of the relatively new technology are still in their early development while receiving significant media and political attention. However, from what business leaders tell us, they are balancing their excitement about AI’s potential with some healthy reflections on key business risks, not at least the risk of investing in a technology that may not prove its commercial value if not done correctly.

Broad concern with regulatory landscape

Over half of all companies surveyed expressed concern regarding regulatory requirements. This concern can broadly be split into compliance with existing requirements and navigating the nascent, often ill-defined regulatory landscape for AI. For the former, companies need to take advantage of solutions in accordance with everything from GDPR to cybersecurity concerns. For the latter, the lack of clarity around AI regulation can slow down scaled implementation as business leaders worry about investing in solutions when the rulebook is still being written. Many first movers within our AI report feel they need to write the rules themselves and hope for the best.

Concern with the human in the new machine age

A prevailing risk many companies were also concerned with was impact on personnel. The need for employees across the organization to buy in and adapt to working with AI touches on all industries and markets. The instinctual fear of job losses among personnel is one that needs to be managed as AI will often transform the daily tasks of employees, rather than replace them altogether, allowing for more people-oriented or creative work. There is also a larger task in training employees to work together with AI, usually a challenge and risk in itself.

Seeing the wood for trees

A further dominant risk articulated by several surveyed business leaders is about feeling information overload. AI can help make sense of huge quantities of data, but setting up AI and learning to use it effectively requires feeding the technology the right data and working out what is useful versus what is noise. A further element in the risk of overload is understanding the different AI technologies and solutions available and making sense of technological as well as market developments to know where to make strategic use of AI.

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Concern with the human in the new machine age

A prevailing risk many companies were also concerned with was impact on personnel. The need for employees across the organization to buy in and adapt to working with AI touches on all industries and markets. The instinctual fear of job losses among personnel is one that needs to be managed as AI will often transform the daily tasks of employees, rather than replace them altogether, allowing for more people-oriented or creative work. There is also a larger task in training employees to work together with AI, usually a challenge and risk in itself.

Seeing the wood for trees

A further dominant risk articulated by several surveyed business leaders is about feeling information overload. AI can help make sense of huge quantities of data, but setting up AI and learning to use it effectively requires feeding the technology the right data and working out what is useful versus what is noise. A further element in the risk of overload is understanding the different AI technologies and solutions available and making sense of technological as well as market developments to know where to make strategic use of AI.

There are inevitable concerns about the business risks associated with AI, as many of the applications of the relatively new technology are still in their early development while receiving significant media and political attention. However, from what business leaders tell us, they are balancing their excitement about AI’s potential with some healthy reflections on key business risks, not at least the risk of investing in a technology that may not prove its commercial value if not done correctly.

Broad concern with regulatory landscape

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Learn from the Leaders

The promise of AI lies in creating business value.

We have identified the eight most recognized capabilities needed to successfully create value from AI, and assessed how competent companies are within each.

Perhaps more importantly, the executives we spoke with highlighted the importance of these 8 competencies as those needed to successfully create value from AI.

Capabilities. How?

What competencies are required to get AI right?

This section explores the necessary eight capabilities to develop AI maturity, realize tangible business benefits, and minimize risk. As exhibited in the chart on the following page, we asked the companies to rank the importance of these capabilities in terms of incorporating AI into their business, as well as to self-assess how competent their companies are with regards to each AI enabling capability.

The human element and technology

Some of the eight capabilities center around human elements: AI Leadership; Open Culture; Agile Development; Emotional Intelligence. Others are more technology-oriented: Advanced Analytics; Data Management; Emerging Tech; External Alliances.

Ranking of key capabilities for realizing AI potential

Advanced Analytics comes out on top as the most important AI enabling capability among the companies surveyed. Data Management is second. AI Leadership is perceived as the third most important capability. Open Culture refers to collaboration and the ability to embrace change and uncertainty.

Understanding how to deploy the right Emerging Technologies in a future proven way is ranked fifth, followed by Agile Development, where self-organized teams are characterized by shorter project cycles, the ability to work with constantly evolving technology, and transparency regarding success and failure that leads to wider buy-in and scaling.

Entering into External Partnerships ranks second to last in terms of importance, perhaps because it’s the area that resonates most with existing capabilities and where business leaders perceive themselves most in control.

As the majority of companies we spoke to are looking to supplement their in-house skills with external partners when building their AI solutions, particularly for pilot projects, it is not due to a general lack of relevance.

Bringing behavioral science into play via Emotional Intelligence to build solutions that understand and mimic human behavior, and make it easier for humans to interact with the technology, is seen as the relatively least important AI enabling capability. An explanation for this could be that the technical skills are still so relatively complex for companies to grasp and establish, that more advanced human cognitive skills become less of a priority at this stage.

Noticeable sector deviation

As exhibited in the following chart where business leaders are asked how competent their company is in relation to the most important AI enabling capabilities, the sector aggregate scores land at or just above the median. Sectors that are more mature in using AI are those that report higher competency in Advanced Analytics – particularly TMT (Telecom, Media/Entertainment & Technology), as well as Finance (including Banking, Investment & Insurance), and Life Sciences (including Healthcare & Pharma) all report lower competency in AI Leadership. A possibility is that in the pharmaceutical industry, AI chiefly resides in R&D, and has yet to affect the broader organization on the wider strategic level.

Companies intend to use various levers to obtain these AI capabilities. Companies are relatively evenly split between using recruitment (60%), training (56%), partnering (57%). Only 10% of the companies use acquisition of teams or businesses as a way to fast-track building much needed AI capabilities.

1. Advanced Analytics

Obtaining and deploying specialized data science skills to work with AI by attracting talent and working with external parties

2. Data Management

Capturing, storing, structuring, labeling, accessing and understanding data to build the foundation and infrastructure to work with AI technologies

3. AI Leadership

The ability to lead a transformation that leverages AI technology to set defined goals, capture business value and achieve broadly based internal and external buy-in by the organization

4. Open Culture

Creating an open culture in which people embrace change, work to break down silos, and collaborate across the organization and with external parties

5. Emerging Tech

The organizational-wide capability to continuously discover, explore and materialize value from new solutions, applications, and data platforms

6. Agile Development

An experimental approach in which collaborative, cross-functional teams work in short project cycles and iterative processes to effectively advance AI solutions

7. External Alliances

Entering into partnerships and alliances with third-party solution providers, technical specialists, and business advisors to access technical capabilities, best practices, and talent

8. Emotional Intelligence

Applying behavioral science capabilities to understand and mimic human behavior, address human needs, and enable ways to interact with technology and develop more human-like applications

8 capabilities

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AI Competency Model

Advanced Analytics and Data Management considered most important AI capability
How competent is your company within these organizational capabilities?
How important is each of the organizational capabilities for your success with AI?

TMT leads the other sectors in AI competency
How competent is your company within these organizational capabilities?

Note: ‘Don’t know’ answers not included in average score.

Average competency and importance for the Finland and 15 European markets (1: lowest – 5: highest).
Capabilities ranked according to highest importance in 15 European markets.

Note: ‘Don’t know’ answers not included in average score.
Average competency by sector (1: lowest – 5: highest).
1. Advanced Analytics

Obtaining and deploying specialized data science, data engineering, data architecture and data visualization skills by training employees, attracting talent and co-creating with external partners

The backbone of AI is made up of skilled, intelligent minds who are capable of understanding business problems at the granular level, and deploying AI to effectively solve or support others in solving these problems. This requires technical data science and mathematical engineering skills, to hybrid profiles with sufficient business acumen to decode problems and ability to tackle them using quantitative methods.

A self-fulfilling talent prophecy

It is evident from the study that there is a major lack of technical data skills to meet the drastically rising demand for AI. As a result, the hunt for AI experts has become extremely competitive, and it is far from uncommon that functional AI experts are paid higher salaries than their superiors are - in some cases leading to new HR policies to reflect evolving requirements. Several business leaders state that the lack of AI talent is the greatest barrier to implementation within business operations. Interestingly, companies that have chosen an early adopter strategy for AI have been successful in attracting senior professionals who again have been able to build out sizeable AI teams in their companies – based on the premise that talents seek talent – making AI recruitment a self-fulfilling prophecy for these pioneering companies.

In other words, the longer you wait, the harder it can be to get the right people. Consequently, a ‘wait-and-see’ strategy can be risky for companies that are AI followers due to the scarcity of talent, which may prove impossible to attract once the company is ready to make a more ambitious move into AI.

While many companies struggle with acquiring AI talent, we also experienced companies - even in traditional industries such as Transportation and Industrial Products – with AI teams of +25 experienced data scientists holding Ph.D.'s in mathematics, astrophysics, etc., from high profile universities. Most often, these companies have been first movers on AI and attracted senior practitioners tasked with building out sizeable AI communities to work on the most strategic business agendas.

Hybrid profiles becoming the hardest currency

One of the most consistent inputs from the executives was the need for people with deep domain knowledge combined with strong technology proficiency. This hybrid profile is essential to identify relevant use-cases in the business with possible AI solutions.

Contrary to data scientists, software engineers, and even data architects that can be recruited externally, the hybrid profile is often nurtured by training existing employees from the line of business and adding AI skills. To succeed however, a fundamental appreciation for technology is required.

The way we manage and plan operations will change dramatically through data capabilities.

— Finnair

Airline

What to learn from AI leaders:

1. Providing interesting problems, good data, and a freedom to thrive in a non-corporate environment is key to attracting talent.
2. A wait-and-see follower strategy can prove risky and put companies in a talent scarcity trap.
3. Training existing staff with deep business intrinsics is key to make AI work - and effective when access to talent is challenged.

Telecom is advanced and challenging technologically so we need to combine the best minds in deep domain competence with the best minds with deep knowledge in machine learning and AI. So we are working with talent on multiple layers.

— Ericsson

Telecommunications company
2. Data Management

Capturing, storing, structuring, labeling, accessing and governing data to build the foundation and infrastructure to work with AI technologies

Companies tend to focus their AI efforts in areas where they already have relevant data. We found that the amount of available data varies significantly by sector but regardlessly, a significant proportion of the time companies dedicate to AI is spent on data management related tasks.

Data governance is no trivial task
One of the major hurdles companies face regarding data is governance, particularly who ‘owns’ it, how data is stored, how to access it, and who may access it are all essential questions when working with AI. Questions that used to be about efficiency suddenly become highly strategic and complex to respond to without rethinking governance structure and policy. Governance aside, the most common obstacles to using data are organizational silos or legacy systems built for specific purposes, resulting in decentralized storage that limits access.

Companies reported that they typically spend 2–3 years building the appropriate data infrastructure for AI, and many respondents with the most ambitious AI visions are still spending the majority of their time fine-tuning their infrastructure.

Data privacy regulations
Data infrastructure is not only a prerequisite for effectively working with AI, but is increasingly needed to comply with data privacy regulations, which respondents see as a key risk. The recent implementation of GDPR in the EU has highlighted the need to govern what data is being used for. AI-specific regulation is in many ways still immature, and AI leaders find that a lack of clear guidelines can limit their progress.

Advanced companies (also) appreciate external and unstructured data
To build precise and useful AI solutions, companies not only need a lot of data, but also accurate data that is appropriately structured and labeled. Data is often reported to be in a state that it is simply unusable, as it could lead to undesirable or unreliable outcomes.

While most companies are preoccupied with cleaning, structuring and migrating historical data, some have chosen to build new data structures from scratch to collect the correct data going forward. Interestingly, we found that while companies that are less mature in AI tend to use mostly structured data from internal data sources, a significant 80% of the most advanced companies also use both structured and unstructured data, and an equivalent 80% use data from both internal and external sources.

Similarly, 60% of these self-rated most advanced companies report use of hybrid architectures of on-premise and cloud based storage, while the less advanced predominately rely on on-premise platforms.

Data Management is a key priority for companies in Finland
Finnish companies rate Data Management, together with Advanced Analytics, as one of the most important of the eight capabilities necessary to succeed with AI (4.5 average on a scale of 1 to 5). In terms of the level of competency, 82% of companies surveyed in Finland consider themselves moderately competent or above in Data Management. However, the average score is only slightly above moderately competent (3.2). This suggests that some companies have developed a Data Management foundation but are still midway before achieving the capability level that will fully back their AI systems. Introducing an adequate data governance structure and finding the right quantity and quality of data is essential according to many of the companies interviewed.

What to learn from AI leaders:
1. Make sure that the value of data is understood and prioritized throughout the organization.
2. Engage the C-suite in defining data governance and strategy - it is key to getting AI right.
3. Build your data structure to embrace unstructured data, also from external sources - advanced companies indicate that you may soon need it.

We need the whole company to think data, be data-driven and understand that data has value we need to put in our products.

— Husqvarna Consumer equipment

With increasing amounts of data, everyone in the supply chain must understand cybersecurity.

— Metso Industrial machinery company
3. AI Leadership

The ability to lead an AI transformation from top to bottom - by articulating a vision, setting goals and securing broad buy-in across the organization.

As with any corporate transformation, the foundation for successful deployment of AI is executive leadership buy-in and sponsorship. The C-suite must be aligned in what they want to achieve, and AI must be placed on the strategic agenda to ensure that AI efforts are an integrated part of the company’s overall strategic goals, that capital is allocated, and employee time is dedicated.

AI Leadership among the lowest competency of all capabilities

Given the relative importance of AI Leadership (avg. 4.2 across all sectors), it is interesting to see that business leaders self-assess their level of competency as among the lowest of all eight AI enabling capabilities, with an avg. competency of only 2.9; 66% of respondents state that their companies have moderate, little or no AI Leadership competency. Many executives are realizing that business acumen is not enough in itself for understanding how AI is impacting the business. As AI technologies become increasingly complex, leaders must be able to launch, support and, where necessary, challenge relevant AI initiatives against strategic business imperatives. The disruptive potential that companies believe AI will have also means that leaders should anticipate and prepare for a broader change management exercise aimed at embracing the change from AI on multiple levels.

Significant variation in AI conversations from top to bottom

Interestingly, data revealed that AI is considered an “important topic” on the C-suite level among 73% of the companies surveyed. However, less so on the Board of Director level where it is only considered an important topic in 38% of companies, and even less so on the operational employee level with 28%.

We observed in the interviews that companies very rarely have AI capable leaders across the Board of Directors, Executive Management, and Functional Management layers. Senior AI leaders can sometimes be found on one of the levels, but rarely with any speaking leadership colleagues to challenge ideas. This leadership vacuum was often pointed to as an issue from lower level AI experts.

Going from talking and building to doing means that you take it to the decision point where leadership has to decide A or B, based on an AI-generated result. From an intellectual perspective, it is easy to say that you will follow AI results. But when the moment comes where you choose between recommendations based on old methods and AI, if you choose AI, that is when change truly happens.

— EQT
Private equity group

A large proportion of companies consider themselves to have limited or no AI Leadership competency

How competent is your company within AI Leadership?

A general characteristic of this challenge is that leadership needs to accept that it will lose some control. Projects will increasingly be explorative, bottom-up and have less certain outcomes, requiring leaders to be ready to adjust the overall direction of the company more frequently. Increasingly, AI projects will rely on open source code and off-site cloud solutions, building on collaborative capabilities outside the company.

What to learn from AI leaders:

1. The organizational transformation driven by AI will be continuous - this requires seeing AI as a process, not a project.
2. Leadership must be accustomed to AI technologies to understand how it will affect the company.
3. Articulating a clear AI vision is key to achieving buy-in and motivating exploration of use-cases with uncertain outcomes.

Teams working with AI need to understand the high-level strategy – and the strategy needs to be put into practice.

— DNA
Telecommunications company
4. Open Culture

Creating an open culture in which people embrace change from AI, navigate confidently in uncertainty and ambiguity, work to break down silos, and collaborate seamlessly across the organization.

New technologies have often disrupted how work is conducted. AI is no different. Establishing an open, collaborative culture to minimize resistance and enable human performance can prove efficient to prepare the organization for transition. However, this may be difficult, as the magnitude of impact driven by AI can imply a fear of uncertainty, ambiguity, and a general resistance to change.

Risk to employees less of a concern among most advanced companies

Companies reported that employees generally have a positive attitude towards AI. Yet, one thing is having a positive attitude in general, another is to retain an open attitude once new technologies start impacting the way work is done.

To achieve buy-in, business leaders must make the changes due to AI tangible to reduce organizational uncertainty. However, companies expect a significant impact from AI which will drive a fundamental transformation and increasingly assist in tasks previously performed by humans.

Interestingly, the companies that self-rated as most advanced see a lower risk to personnel than the less advanced (only 20% of advanced reported this risk as a concern vs. 43% for the companies still in the “planning” phase).

Relatively small competency gap

With a relatively small gap between importance (avg. 3.9) and competency (avg. 3.2), creating an Open Culture is one of the capabilities where business leaders feel most comfortable.

An obstacle mentioned by many respondents is the ability to work collaboratively across the organization despite AI most often being put to use towards quite narrow use-cases. With benefit areas being limited to specific domains or functions, it is often not seen as relevant to involve the organization in a broad and collaborative approach on AI.

Furthermore, many companies have had difficulties in carrying out effective AI programs, which are closely modeled on the lean processes of startups. The primary purpose of such programs is to enable brief, agile projects to gauge the applicability of AI use-cases, requiring a substantial change to company culture. Silos between departments in the company have to be broken down in order to promote a culture where AI-teams work in conjunction with the rest of the company to create value, circumventing needless complexity and time-consuming processes.

Another issue relates to the concept of sharing data openly, when the value of the data largely remains unknown until it has been treated, processed or combined with other datasets.

Cooperation across the organization

Many of the most advanced companies that have been able to produce several AI projects have also managed to establish links and cooperation across the organization. These cases indicate that the benefits of an open work culture far exceed the difficulties and associated risks.

An obvious obstacle to an open culture is the fear of job losses with the introduction of AI. According to respondents, the fear of workforce redundancy has some merit, but the concern should not overshadow the significant benefit potential of AI. A pivotal task for company leaders is to proactively articulate a tangible vision for AI initiatives. This will make it easier for employees to understand the AI opportunities on a personal level, and thereby embrace the change ahead.

You cannot only have data scientists do it. They have a super important role but you also have to complement them with designers. Because you need to find the use cases where you apply those types of technologies. Even though it is the fantastic technology that can bring fantastic results, it has to be embedded in a design approach to meet the customer needs and solve real problems.

— IKEA Group
Furniture retail company

What to learn from AI leaders:

1. Establish cross-organizational projects to foster collaboration and learning across functions.
2. Ensure employee buy-in by being open and clear about on-going projects and desired outcomes.
3. Ensure that governance structures support collaboration through projects co-owned by AI experts and business leaders.

Essentially the use of AI involves enabling employees and the creation of energy in the organization to fully exploit the solutions. The will of employees to share their knowledge and to be able to recycle it in the rest of the organization is also an essential capability in order to use AI.

— Aegon
Financial services group
5. Emerging Technology

The organization-wide ability to continuously discover, deploy, and create value from intelligent solutions, applications, and data platforms

Evidence of the rapid pace of technological change are plentiful in today’s digital world. What we have seen is that there is a definite correlation between companies that are ahead of the pack with AI and with the wider technological adoption. That AI benefits from being able to identify and implement emerging technology may seem intuitive and obvious, yet finding the right formula is no trivial exercise.

How strong is your tech radar?

With an average score of 3.3, the ability to explore and implement emerging technology is an area where business leaders perceive their companies to be most competent across the eight AI enabling capability areas. One factor in working with emerging and rapidly developing technology to build a stack fit for AI is a well-calibrated ‘radar’ by which large companies pick up on the trends outside of their own walls. Many companies mention that being unable to quickly integrate innovative trends and cutting edge technology due to the burden of legacy systems, siloed business units, and complex governance processes is proving a real challenge for their AI adoption.

While there is some truth behind such stereotypes, we also heard from several executives who are able to build radars that pick up what’s happening in technology domains and applications that this continuous exploratory process is serving them well to get an overview of workable AI solutions that could prove successful in production.

Do you enable or hinder innovation?

Once companies are able to selectively source new solutions from the outside world, the challenge is then how to enable it. This can be a case of actively encouraging enabling, or at the very least not hindering it. Many companies treat AI as a crucial piece of a wider digital puzzle, where dots need to be connected across technologies. This means success with established technologies, from cloud and SaaS platforms to getting the basics right with analytics, is key to building on what is already there.

Working with emerging technology also relates to agile development and the ability to trial, test and experiment in iterative, short cycles. This kind of working culture allows companies to work with less stable, untested technology. Enabling innovation requires an outlook from the very top of the organization that accommodates longer investment horizons and at times uncertain financial returns. This is particularly key when working with AI technology that, according to the executives, is often not as mature as the digital solutions deployed for other purposes.

Not all that glitters is gold

Despite the need to explore and navigate a tech sea characterized by uncertainty, a recurring theme when interviewing executives is the importance of balancing excitement with new technology and commitment to an innovative mindset, with one foot planted firmly on the ground.

Seeing past the hype, remembering the business model, and not wasting finite resources on every shiny object is also important. In other words, remembering as a leader that while experimenting is crucial, not all that glitters is gold.

There is a risk associated with betting on the correct technology, for example investing in the wrong technology due to having insufficient data to make correct decisions.

— Aprila Bank

Bank

The importance of execution

Finally, this capability is also effective execution. Many companies we surveyed across Europe had developed prosperous use cases supported by robust concepts and AI applications - on paper. But technical limitations tend to get in the way of implementation.

Employees with limited technical ability often need upskilling to work with new technology. IT and business may need to work closely together and speak each other’s languages to reach common goals. In addition, organizations need to learn to move more quickly and nimbly in this space — whether to complete an acquisition of new tech, to ensure compliance with IT standards, or simply to pair new tech with legacy systems. This ability is often also about speed, not far from the development pace that characterizes the emerging tech itself.

Emerging Technology is the AI-enabling capability with most ‘Moderately Competent’ replies

How competent is your company within adopting Emerging Technology?

The importance of execution

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Emerging Technology, an important capability for Finnish companies

Finnish companies consider Emerging Technology to be an important capability to succeed with AI (4.3 average). However, their competence within Emerging Technology is relatively low compared with the other seven capabilities (3.3 average) — same as the European average. The executives report to be on the lookout for new and potentially disruptive technologies while assessing the impact these may have for their company and industry.

What to learn from AI leaders:

1. Build a radar to pick up on merging tech trends and connect them to market opportunities.
2. Look past the technology hype and remember the business model - it may likely need to change in the not so distant future.
3. Cloud solutions can be helpful to engage with multiple datasets across sources - increasingly a priority to capture value from new pockets.

A big challenge is to follow all the rapid evolutions in the market and match that to the right business initiative.

— DAF Trucks

Manufacturing company
6. Agile Development

An experimental approach in which collaborative, cross-functional teams work in short, iterative project cycles to effectively progress AI solutions

Considering that many AI technologies are still in their infancy, working with them is far from plug and play. To overcome this, many of the companies that are successfully working with AI tend to take an agile, iterative approach to projects. Using this approach, these companies greatly increase their ability to explore AI potential due to a drastically reduced project cycle time and dynamic risk reduction. Short project cycles result in project teams receiving constant feedback on what works and what does not, to continuously steer the direction of the project. This creates a process centered on learning and experimentation, helping to build internal knowledge and capabilities.

Most advanced companies deploy top down or via a hybrid model

With an average competence level of 3.2, Agile Development is an area where companies are self-reported to be reasonably skilled. Quickly establishing proof of concept is key to organizational buy-in, and many companies report that an agile, iterative approach helps them build evidence and proof in a fraction of the time it takes for a more traditional project.

This has great significance, as they find that tangible proof of concept instrumental in achieving buy-in and understanding in the wider organization. Efforts to develop proof via agile development processes are often orchestrated by a central unit that collaborates with business units to identify use-cases. Of the most advanced companies, 80% deploy AI into the organization via top down only or a via hybrid of top down and bottom up.

It varies whether these central units take a leading role in pushing the agenda, or instead focus on gathering knowledge and experience from already existing efforts that are decentralized in the organization.

Agility provides the opportunity for informed changes of direction

Taking an iterative approach can also help mitigate risks. Frequent feedback loops allow the project team to better identify, understand, and correct undesired outcomes before the AI application is put into production, potentially doing harm. This flexibility does not only apply to risks, as agile projects can generally use continuing knowledge and experience to make informed changes of direction and avoid the “black box” syndrome.

Contrary to agile projects, ‘big bang’ projects are more destined to fail as they skip the learning process, and lack the important feedback loop pivotal to developing good AI solutions. The world of AI is simply too complex for humans to foresee potential issues, and therefore an agile approach is better.

We totally believe in an iterative, agile process where you have POCs, then train the bot enough, release it and program the next flows, instead of doing a big bang solution that will probably fail as these things are not simply plug and play. Start small and then grow it. We are also using same bots to train new people within the organization.

— Com Hem
Telecommunications company

What to learn from AI leaders:

1. Agile development is effective in engaging people across functions, fostering collaboration, and bridging tech and business.
2. Iterative processes promote quick internal learning due to their frequent feedback loops.
3. Fast experimentation with pilot projects and use-case testing can quickly show how to create value through AI.

It is important to work with AI in an agile way and start with small steps, otherwise it will drown in long and costly projects.

— Egmont
Media company
7. External Alliances

Entering into partnerships and alliances with academia, solution providers, and AI specialists to access technical capabilities, best practices and talent

AI leaders are increasingly opening up to create collaborative alliances with external partners, enabling them to tap into a significantly larger pool of capabilities and talent, and to reduce the time it takes to develop or deploy working solutions.

This trend seems to be the new modus operandi, unfolding across markets and sectors. It is also the capability with the smallest gap between perceived importance and competence level among the participating companies.

Technology, data, and service delivery partnerships

Development of AI and delivery of related projects are most often done with a mix of internal and external stakeholders. The rationale is multifaceted—some companies are simply struggling to obtain the needed talent, whereas others see a partnership approach to be a faster, more flexible solution. These external alliances typically come in two forms: being focused on technology and technical AI knowledge, or focused on strategy and business development.

"We will definitely pursue a partnership strategy. Instead of trying to build everything in-house we will join forces with other to build a strong ecosystem.

— Nilfisk
Manufacturing company

To address one of the biggest prerequisites of working with AI, access to large amounts of data, companies state that they are increasingly looking to entering into data partnerships where they either buy or exchange data with other parties. This is a way for companies to get hold of data that they are unable to capture themselves, or simply a way of quickly increasing the size of their datasets.

Others report that they look to pre-developed, out-of-the-box algorithms, in order to increase the speed of bringing quality solutions in to product.

Academia playing a more noticeable role in collaborating with companies

It is becoming increasingly common for companies to enter into partnerships with universities in order to position themselves within AI and get access to crucial knowledge.

Companies also see this as a way of establishing a pipeline of AI talent already familiar with their business and the problems they face. Some of the more ambitious companies have a strategy of positioning themselves within AI, comprised of active conference participation and multiple university partnerships in which they actively participate in developing courses and programs.

Documentation of code is proving a challenge - also to externals

The lack of code documentation for self-learning algorithms was often mentioned as very practical issue with AI in general. This led some companies to prefer internal teams and individuals in order to ensure that despite poor documentation, the knowledge about the code at least stays inside.

Companies generally consider themselves moderately to highly competent forging External Alliances

How competent is your company within building External Alliances?

Companies in Finland consider External Alliances among their highest competencies

Companies in Finland consider themselves to be on average above moderately competent in External Alliances (3.3). This capability is among the highest ranking in terms of competency. However, in terms of importance, External Alliances is the second least important for Finnish companies (3.8). The results suggest that Finnish companies see the value of collaborating with outside experts and have already gained some experience from previous collaborations. Yet, they are in the early phases of deploying AI and are still trying to figure out what to develop internally and when to collaborate with third parties.

What to learn from AI leaders:

1. Make sure to have internal people in the receiving end before widely engaging with external partners.
2. Academic partnerships are an increasingly sought after way to access innovative eco-systems, gain new insights, and explore emerging AI opportunities.
3. Partnerships can pose a challenge to many business processes; consider involving key functions like legal early, to ensure a productive partnership structure and effective collaboration model.

Until now we were heavily focused on experimenting through partnerships and now we have started to focus on building those capabilities internally by ourselves. Partnership influence is still quite heavy as it is such a specialty area. They are needed to accelerate and stay relevant.

— IKEA Group
Furniture retail company
8. Emotional Intelligence

Applying behavioral science to understand and mimic human behavior, address needs, improve human-machine interactions, and ultimately create more human near applications

It is given that we will see the rise of AI. All the big tech companies are spending money on AI capabilities. They have explicit visions to master human thinking and behavior. That may or may not happen in the next five years but certainly within a certain time frame. When you combine it with computing power, it will be inevitable.

— Skandia

Pensions and insurance company

AI has for long focused on cognitive capabilities and skills within mathematics, statistics and logical reasoning. Adding human emotion and intelligence, these capabilities move to a new, more complex level: the understanding of human behavior, and the ability to interact accordingly with technology.

Changing the way people interact with technology
One of the limits of traditional AI has been the inability to understand human traits such as emotional state, for instance exhibited in writing, physical condition, or tone of voice. With AI’s cognitive intelligence capacities within reach, machines are increasingly able to sense, recognize, and decode human traits.

This holds the potential to fundamentally change the way people interact with machines, making technology capable of handling more complex tasks and ultimately augmenting humans to an extent previously unachievable.

Emotional Intelligence in its infancy
Except for advanced companies, survey results indicate that companies view the adoption of emotional intelligence in AI processes as the least important capability, and the one where they have the lowest competency. When asked to address why this is, companies across sectors and markets note that they are still at a relatively low maturity stage where more immediate requirements such as Advanced Analytics, Data Management and AI Leadership are more prevalent and relevant.

However, when taking a deeper look at the companies that have assessed themselves to be ‘Advanced’ in terms of general AI maturity - meaning that AI is actively contributing to many processes and enabling quite advanced tasks in the company - it is interesting to see that they perceive the Emotional Intelligence capability as more important with a score that is noticeably higher than the average score for all companies.

Many advanced companies perceive this to be either ‘very’ or ‘highly’ important. Notably, these companies come from five different markets and a wide variety of industries, including Life Sciences, Financial Services, TMT, CPR, and Services & Hospitality.

Value in customer-facing applications
The need for behavioral science to understand human needs is expected to increase with the integration of AI in smart devices, and in customer-facing applications such as chat bots, roboadvisories, customer inquiries processing, etc. The most advanced companies’ AI technologies are beginning to decode human emotions from text, such as irony, anger, and frustration. This will obviously become more valuable as it is increasingly applied in customer-facing solutions with the ability to learn and improve.

Human centricism requires strong leadership
While emotional intelligence holds great potential that could lead to early adopters gaining a competitive advantage, long-term success is dependent on not only technological development, but also leadership.

Leaders must drive the transformation that will make humans comfortable with intelligent technology, as a prerequisite for harvesting its potential benefits. What the most advanced companies have shown is that this transformation must augment human ingenuity to become truly effective.

What to learn from AI leaders:
1. The most advanced companies are putting emotional intelligence to use within their AI applications, despite its relatively infant stage.
2. Companies must develop their behavioral science capabilities to mimic human behavior and translate it to technology.
3. Many have virtual assistants, chat bots, and NLP a powerful way to get started with building emotional intelligence into AI solutions.
Deep machine learning is used to make smarter, real-time decisions on handover between different frequencies and cells. In managed services, it allows predicting incidents within the network prior to them happening.

Both solutions provide better uptime and customer satisfaction, combined with lower costs. AI is also used in smart automation, including client-facing and internal processes such as HR and Finance.

Progress is not possible without the right data. There is a simultaneous effort at Ericsson to keep its data ‘open’, meaning gathering more data, and improving structure and governance so the data can be easily reused across the organization. Not in one place or function, but as part of the AI infrastructure.

Ericsson started its journey with AI in 2007, primarily through its Research team, initially focusing on machine learning and process improvements. In recent years, interest in AI has expanded significantly across the organization, and today AI is an important topic in every business area.

The company’s success with AI was driven by combining minds in both deep domain competence and competence in AI. Building talent has been a long, multi-layered journey, including training internal staff in data science, through hiring new talent, and via mergers and acquisitions. Partnerships, including research with UC Berkeley, lets the company focus on developing solutions that bring a competitive edge, and buying the underlying technology when suitable.

Better tools mean better analysis and decisions. Telecom is data-rich, and AI provides the tools to make sense of the data and ensure better outcomes.

Ericsson uses that to leverage AI at the very core of its business: network management. Machine Learning is used to make smarter, real-time decisions in the network, for example smarter handover between different frequencies and cells. In managed services, it allows predicting incidents within the network prior to them happening. Both solutions provide better uptime and customer satisfaction, combined with lower costs. AI is also used in smart automation, including client-facing and internal processes such as HR and Finance.

Progress is not possible without the right data. There is a simultaneous effort at Ericsson to keep its data ‘open’, meaning gathering more data, and improving structure and governance so the data can be easily reused across the organization. Not in one place or function, but as part of the AI infrastructure.

The challenge is that AI will be available in many different places so you will need to manage all AI and machine learning in all your products and services. It is not in one place or one function, it is all over the place.

— Ericsson Telecommunications company

It’s about having the right mindset. It’s not that tomorrow everything will be different. It’s all about building up capabilities and speeding up constantly. The power of technology in general is overestimated in the short term and underestimated for the long-term and I think that’s the case with AI too.

— VodafoneZiggo Telecommunications company

What next?

Ericsson connects communications throughout the world using its networks and sees great potential in leveraging AI for intelligent applications, industries, and cities. These areas are actively being explored to create new business opportunities. In addition, the company continues its journey within intelligent automation, using technology to streamline existing operations even further, both internally and in client-facing applications.

The challenge is that AI will be available in many different places, so you’ll need to manage it across products and services. Not in one place or function, but all over the place.
Fast Forward

How to get started and take AI to the next level?

1. Choose a step-by-step approach in getting familiar with AI
   Given the wide scope of AI and variations in use cases, it is key to start out by identifying what problems to solve and what opportunities to pursue. High-level prioritization between engaging customers, optimizing operations, empowering employees, and/or transforming products and services adds clarity, is helpful to structure the discussion on a strategic level, and ensures a step-change approach to taking the company to the next AI level. Identify the problems you aim for AI to solve, prioritize the value with business owners, and acknowledge the capability gaps to get there. You need to get on the AI train, but do not jump on the AI wagon blindly. AI should serve your business plan, not vice versa.
   Read more in the blog on LinkedIn about “AI for businesses: Not if, but when and how” by Michel van der Bel, Microsoft President, EMEA.

2. Display executive leadership and approach AI from a position of strength
   Leadership comes from the top, also in the case of AI. For this to happen, executives must understand AI essentials and strategic perspectives, and they must communicate a clear AI ambition to the organization. AI leaders must actively sponsor and mobilize AI adoption at all levels, from the Board and Executive levels, through Management and the operational employees. Staying ahead in the accelerating AI race requires executives to make nimble, informed decisions about where and how to employ AI in their business. When doing so, look to strongholds before bringing in the AI ‘twist’. Amplifying existing company strengths is an excellent way to catalyze motivation and internal support.
   Read more customer stories to see how others are using AI to transform their business, and learn from Microsoft Research on how AI is solving the most pressing challenges.

3. Hire new skills ahead of the curve – or focus relentlessly on training existing talent
   A key challenge for putting AI to productive use and accelerate intended outcomes is the war for skills and talent. This not only relates to data scientists and software engineers, but also to skill sets and experience within human and behavioral science. Opting for a follower strategy and being late to the game can prove risky, as talent seeks to go where talent is already. If aggressive poaching for insourcing talent is difficult to embrace, then work bottom-up by training the engineers you already have on the new AI paradigm and collaboratively ride on the backs of the others. Regardless of strategy, focusing relentlessly on building required skills and talent is key to staying ahead and progressing along the learning curve.
   Learn more in the Microsoft AI School about the open-source cognitive toolkit (previously known as CNTK) and how to help train deep learning algorithms.

4. Build a data strategy and technology stack purposefully fit-for-AI
   Training your AI products essentially requires significant data. Useful data. Valid data. Establishing a solid data strategy and practice in your organization to proficiently acquire data, identify data, clean data, measure data, and manage data will ultimately make your organization flourish with AI. Build your AI resources around data engineers who organize the data, data scientists that investigate the data, software engineers who develop algorithms and implement applications. Make sure that your structure and governance harness the power of data, and that your technology stack across products, solutions, and applications nimbly enables your AI priorities. When doing so, remember that your business model is likely to change.
   Learn more about how to build a flexible platform and portfolio of AI tools and next generation smart applications where your data lives - whether in the intelligent cloud or on-premise.

5. Beyond all, engender trust and enable human ingenuity
   When designed with people at the center, AI can extend companies’ capabilities; free up creative and strategic endeavors, and help achieve more. Humans are the real heroes of AI – design experiences that augment and unlock human potential. Opt for a “people first, technology second” approach. This entails designing AI for where and how people work, play and live, bridging emotional and cognitive intelligence, tailoring experiences to how people use technology, respecting differences, and celebrating the diversity of how people engage. Thereby putting people first, reflects human values and promotes trust in AI solutions.
   Learn more in the Microsoft Trust Center and the book ‘The Future Computed’ by Brad Smith and Harry Shum from Microsoft on artificial intelligence and its role in society.

Success of tomorrow starts today

Artificial intelligence is here to stay, and it is expected to bring great financial and societal benefits. With strong technical capabilities, high-quality readiness in device cloud adoption, Finland and Finnish business have a strong basis to build their next wave success with artificial intelligence. Now it is time to act.

What we together need is an open mindset for change, courage to think big, consistency in fostering an open culture, and passion to learn.

Learn about our AI platform to innovate and accelerate with powerful tools and services that bring AI to every developer.

Explore Intelligent applications where you can experience the intelligence built into Microsoft products and services you use every day.

Learn about AI for business. Use AI to drive digital transformation with accelerators, solutions, and practices that empower your organization.

We at Microsoft are committed to sharing best practices, telling inspiring examples, facilitating conversations, bringing education to targeted groups, and supporting technology adoption with our vast network of partners. If we all take our next steps today, as a country, business ecosystem, communities and individuals we will be better equipped for the future, now.
Who to Contact
from Microsoft

The team in Finland that can empower your company to achieve more with AI.

Andreas Korczak
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Andreas Korczak, COO at Microsoft Finland, is leading strategy and digital transformation work and shaping how to set and execute a complex change agenda successfully. He evangelizes how new technologies find their paths to customer solutions in the market and how mobility and data intelligence enhance our daily work and life. Andreas is passionate about developing high performing, diverse teams with growth mindset, capable to solve the challenges of tomorrow.

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Antti Alila, Cloud & AI Business Group Lead at Microsoft Finland, is helping customers and partners to drive digital transformation with innovative technologies. What motivates Antti the most is seeing successful customer examples on how AI can change the way people across different industries work every day.

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Kari Aarvala, Enterprise Sales Director at Microsoft Finland, is responsible for helping our Enterprise customers in their digital transformation journeys. Kari’s passion lies in discovering how technological innovations can benefit all and makes everyone’s life better. He focuses on transformation and practical cases and examples of technology in action.

What’s Next for You?
The team in Finland that can empower your company to achieve more with AI.

Who to Contact
from Microsoft

The team in Finland that can empower your company to achieve more with AI.

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Andreas Korczak, COO at Microsoft Finland, is leading strategy and digital transformation work and shaping how to set and execute a complex change agenda successfully. He evangelizes how new technologies find their paths to customer solutions in the market and how mobility and data intelligence enhance our daily work and life. Andreas is passionate about developing high performing, diverse teams with growth mindset, capable to solve the challenges of tomorrow.

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Antti Alila, Cloud & AI Business Group Lead at Microsoft Finland, is helping customers and partners to drive digital transformation with innovative technologies. What motivates Antti the most is seeing successful customer examples on how AI can change the way people across different industries work every day.

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Kari Aarvala, Enterprise Sales Director at Microsoft Finland, is responsible for helping our Enterprise customers in their digital transformation journeys. Kari’s passion lies in discovering how technological innovations can benefit all and makes everyone’s life better. He focuses on transformation and practical cases and examples of technology in action.
What’s Next for You?

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Esa studied Information Systems Science in Helsinki School of Economics and before moving to strategy consultancy and M&A, he spent his early career years working with Analytics and Business Intelligence. He has lead several technology, software and automation driven strategy and commercial due diligence engagements, mainly with Private Equity clients. He is continuously helping clients to understand how digitalization, intelligent automation, cognitive solutions, and AI are shaping industries.

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Ellen holds a PhD in technology, policy, and management from MIT. Her masters are in engineering management and system design from MIT and in applied statistics from the University of Oxford. Ellen advised this study on research design, methodology, and analysis. Ellen is engaged in the EY EMEA Center of Excellence on innovation, analytics, and digital. She has previously worked with global organizations and start-ups, having recently served as the head of R&D for a precision Ag startup that uses AI to assist farmers.

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Riku has 20 years of experience across various industries in several continents, and has consulted extensively with Finnish and global clients, working in innovation management, digital strategy and transformation. He has also lead several engagements across omni-channel, customer experience, cognitive and AI enhanced analytics and insights.

Riku is currently focused on helping clients to address their transformational needs with the latest digital concepts and technologies such as IoT, AI and blockchain.

Based in Copenhagen. Based in Zürich. Based in Helsinki. Based in Helsinki.