WHITE PAPER

Learning how to achieve operational excellence with AI

How European organisations are adopting AI to create a successful foundation for operational scale

Lead Analyst:

Spencer Izard

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INTRODUCTION

The term artificial intelligence (AI) has gained widespread use across IT solutions and services companies and enterprise organisations alike in recent years. This broad use of a singular term belies a diverse range of subset technologies within AI and an equally wide range of use cases. The growing acceptance of AI is not purely about the innovative nature of the technology itself.

The onset of the digital transformation megatrend over the past decade was driven by demand from consumers, citizens, and clients for rich data-driven experiences delivered in an ubiquitous manner anywhere and at any time. This required organisations to reassess the role of their data and how quickly they could deliver services. The demand for new digital services saw an exponential increase in data creation, transmission, and manipulation.

It became clear that existing IT architectures did not have the capability and scale to process the growing amount of data for various digital business processes. Around the same period, the technologies needed to make AI more accessible and cost-effective were maturing. This led to the application of AI to automate the operations of business services and technology solutions. It also led to the use of AI to automate the management of IT services.

When IT software and services companies applied it to their existing products to augment and automate their capabilities, this lowered the barrier of entry for an enterprise to gain access to its benefits. AI supports the reduction or elimination of low-value and high-volume repetitive tasks, assists with low/no code user experiences, and processes data to identify patterns at scale.

PAC expects AI's ubiquitous and varied use to become one of the most impactful and transformative innovations for European organisations. Adopting AI will significantly disrupt industry operating dynamics and support the creation of new products and services. However, the adoption of AI is still broadly nascent. Many organisations are still determining its applicability, what skills are needed, and how to scale from niche use cases to pan-organisational benefits.

What remains clear from this research is that European CxOs understand the overall value of AI but are still in the process of determining how they adopt it, what operational challenges they will face, and how to set themselves up for success. Given the range of cultural and organisational dynamics that can be seen across Europe, this whitepaper provides invaluable insight into lessons learned by CxOs so far—giving insight into the AI journey for those that are finding theirs challenging or have yet to embark on theirs fully.

KEY FINDINGS

- **48%** of European leaders are already **evaluating and testing AI**, with 36% planning on doing so within the next two years.
- **29%** of European respondents **felt they were behind** the AI usage of their industry peers though overall half believed they are on an equal footing.
- **Data security is the most important data management investment** for European organisations in 2022, but interestingly this pivots to moving data to a cloud-based platform over the next two years.
- Most European organisations are **still developing a clear roadmap** for implementing AI and **upskilling their employees** though the majority have already established an internal function to lead their AI initiative.
- **80%** of respondents believe they will see a **return on investment from AI within the next four years**.
- **Very few AI technologies are being used at scale across European organisations yet**. Natural Language Processing (NLP) is the most used AI technology at scale but only for 18% of those surveyed, followed by digital assistants at 13%.
- It is well understood that it is challenging for organisations to find talent for growing trends like AI across Europe. Interestingly, just over **60%** of respondents indicate that they have **already invested in training internal staff to drive AI adoption**.
- 61% of CxOs and senior leaders said that **business applications with embedded AI capabilities would be the predominant source of AI investments over the next year**. This strongly indicates that the main entry point for AI technologies into European organisations will be through the existing products and offerings of IT software and services companies.
- Despite European organisations indicating they are already investing in staff training for AI, **82% of those surveyed said they are challenged by their lack of internal skills** and know-how.
- When ranking the most significant operational challenges, European CxO and leaders indicated that a **lack of buy-in from their workforce is a significant issue** aside from a skills shortage.
- **78%** of European organisations surveyed said they agreed that **AI would improve their products and services' quality, efficiency, reliability, and durability**.

HOW FAR HAVE EUROPEAN ORGANISATIONS PROGRESSED WITH AI ADOPTION?

When PAC surveyed European leaders to understand how mature organisations considered themselves to be regarding their approach to digital transformation, data management, and their use of AI, almost 30% felt they were behind their respective industries' leaders regarding their digital transformation and AI initiatives. In recent years, PAC has witnessed digital transformation across European organisations treated as a fixed-point activity that will be done and completed. PAC strongly advises CxOs to consider digital transformation as an iterative rather than fixed activity. AI strongly aligns with this approach as it should not be seen as a transformation phase after digital but rather a rapidly maturing technology that further enhances, accelerates, and improves digital transformation through a subsequent iteration.

Only 18% of respondents indicated they felt ahead of their industry peers regarding using AI to deliver business value. This response aligns with PAC's engagements and discussions with European organisations. Most organisations believe their data management capabilities are equivalent to their industry peers. This is important given data management's essential role in driving AI value. Interestingly, despite the early adoption nature of AI, both Italian and Spanish respondents indicated a stronger belief that they are ahead in their use of AI than other countries across Europe.

Understanding the integral role data management has with AI

Whether a European organisation is looking to adopt AI through a bespoke model in-house or as an inbuilt capability within an IT vendor's product, the role of data management is core to its successful use. In 2022, organisations are rightfully focused on data security and digitising data and processes. Across all countries surveyed, there is a consistent focus on these two investment priorities. However, when looking at the survey results in more granular detail, the UK prioritises data security as the top priority at 38%, the Nordics next at 28%, and the rest in mid to low twenties. PAC attributes this to the overall maturity of the UK market and significant ongoing regulatory changes impacting data usage. Interestingly whilst the UK ranked digitising company data and processes highly, it was the lowest percentage to rank it as a top priority amongst its European peers, with Italy and Spain considering this their primary focus for 2022.

It is evident from the 2022 survey data that European organisations are in a transition phase regarding data management. They need to digitise organisational data and processes securely to allow them to move into higher value data management investments that AI has a core role in supporting. However, given the current operational complexities in driving value from AI, PAC strongly advises European organisations to embed an AI strategy during

data digitization initiatives. It will be far harder to apply AI retroactively, and it would likely incur further costs, commonly called regret costs, that could have been avoided if addressed at the start of data digitisation efforts.

The maturity of AI adoption by European organisations

PAC asked CxOs and senior leaders how relevant AI is strategically for their organisation. The overwhelming response, at almost 60%, was that AI is strategically important. So, the challenge for leaders is not understanding the value but rather determining how to adopt and realise the potential value AI can provide. However, a third of respondents said that AI is not strategically important but provides the basis for process improvements and automation. PAC interprets this as organisations who see adding AI to augment existing technologies as the critical value add rather than AI providing specific value on its own. This perspective is understandable as most organisations will indirectly access AI capabilities as vendors update their technologies. Given the complex nature of adopting AI across cultural, functional, and operational dynamics, Figure 1 demonstrates how far AI adoption has progressed in European organisations.

How far has your company progressed with adopting AI/ML?

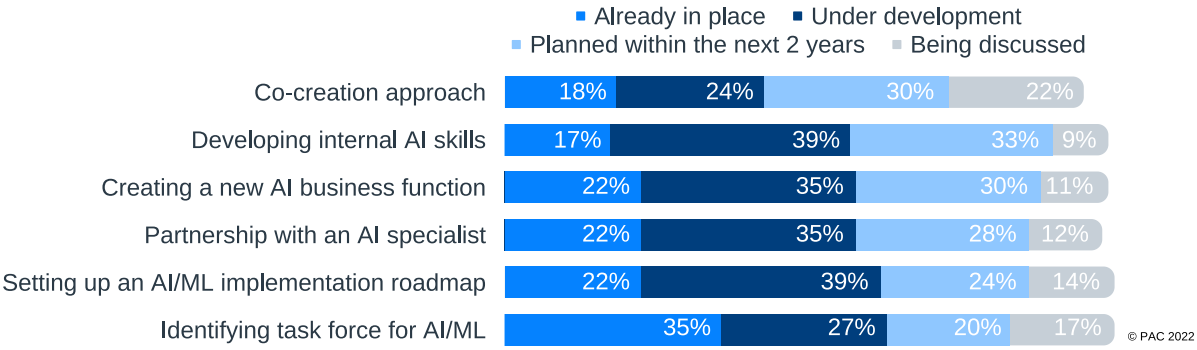

Fig. 1: How far has your company progressed with adopting AI/ML?[1]

From a maturity curve perspective, it can be seen in Figure 1 that just over a third of organisations have established a dedicated function to lead an AI initiative. This is, of course, an essential first step. Still, this has not translated into the same proportion of organisations with a roadmap, supplier partnership, or internal deployment team in place. When PAC engages CxOs we have seen a typical pattern in organisations creating proof-of-concept (PoC) projects for AI use cases that struggle to move from a PoC to operational use.

Looking at the results of Figure 1, European organisations are in the early stages of adopting AI. With the majority indicating that their AI roadmap is still under development or planned within the next two years. More than 70% of respondents stated that training employees on AI is also under development or planned to occur over the next two years. All this insight clearly shows, especially given the AI talent shortages across Europe, that whilst CxOs need PoCs to support business cases, there is a maturity gap in having the functional capabilities required to drive operational value out of AI. It will likely be at least two years before most European organisations have the necessary operational maturity. For an organisation looking to compress their AI adoption timeline, PAC strongly advises prioritising the identification of an external AI delivery partner to support addressing skill gap challenges and establishing operational deployments of AI. Figure 1 shows that just over 60% have identified delivery partners as currently under development or delivered within the next two years. This is understandable given all the other factors needing to be addressed to adopt AI successfully. Still, the 22% that already have one or more partners can leverage them tactically to bridge their capability gap whilst they establish and upskill internal AI teams.

[1] *Breakdown of responses, in % (n = 550), excl. 'don't know'*

When asked which CxO has the most influence on AI spending decisions, the leading response was the Chief Technology Officer (CTO), followed by a Chief Digital Officer (CDO). However, when combining the top three responses, the CTO came out on top, followed by the Chief Information Officer (CIO). Given the adoption maturity shown in Figure 1, it is typical for a CTO, who is commonly responsible for the assessment of innovative technologies, to lead the initial team assessing the role of AI. As an AI strategic roadmap, deployment function, and partnerships are established, PAC expects the CxO spending decision-maker to be a CIO in collaboration with the Chief Operating Officer (COO). This change in CxO accountability for AI adoption also supports addressing the challenges some European organisations are facing in driving the potential of AI PoCs into operational value. This correlates with the return-on-investment insight gained from the survey, as 80% of CxO and senior leaders expect to see AI generate tangible business value over the next four years, with 41% expect a return within two years.

WHAT ARE THE SPECIFIC USE CASES AND INVESTMENT TRENDS OF EUROPEAN ORGANISATIONS?

Now that it is understood how far European organisations have progressed with AI adoption, it is essential to understand the specific use cases it is being evaluated for or applied to. Of the European organisations surveyed, almost 50% are already assessing and testing AI technologies, with 36% planning to do so within the next two years. This response further reinforces the insights derived from the prior section of this report. European organisations are still broadly in an experimental phase and have yet to industrialise the use of AI in a widescale manner. However, 37% of respondents said they are already running AI integrated into existing business applications, with 26% planning to do so over the next two years. So, whilst the current broad state of AI adoption is still relatively minor, the results indicate a significant expected shift over the coming two years. Over the next year, European organisations are focusing their investments on AI embedded into business applications, AI supporting system integration, and AI to support business applications, but not embedded into them.

Adopting a new technology like AI often requires establishing a range of practices and adopting other tools. Figure 2 shows the responses of European organisations when asked what tools and best practices they use to accelerate their use of AI.

What tools / best practices (e.g., machine learning operations [MLOps]) does your company use to accelerate AI/ML adoption? Our company/organization…

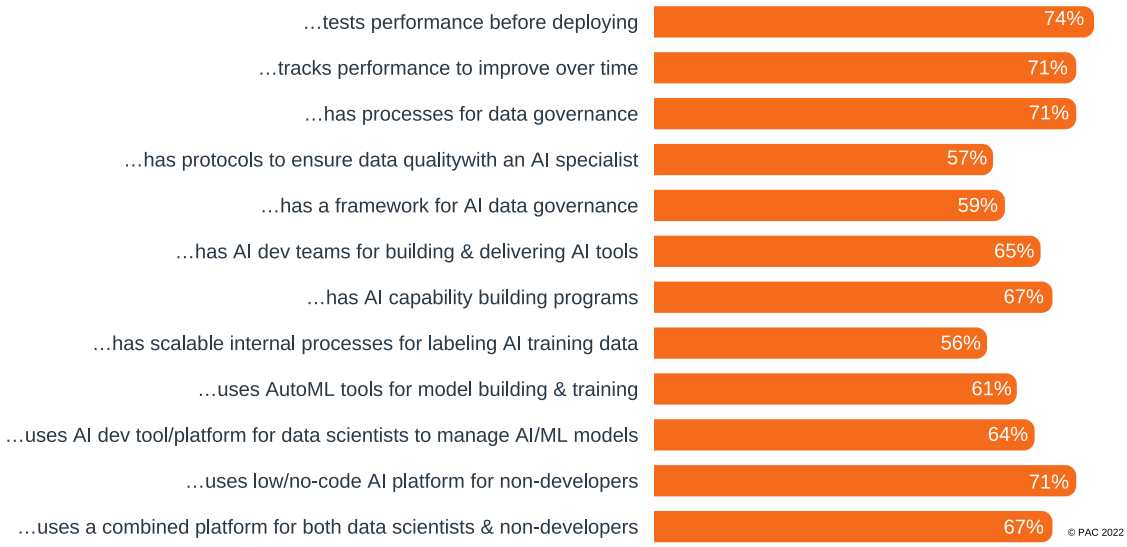

Fig. 2: What tools / best practices (e.g., machine learning operations [MLOps]) does your company use to accelerate AI/ML adoption?[2]

Rather than discussing the highest responses in Figure 2, PAC would like to highlight the lowest. The reason for this is the correlative cause and effect that concerns PAC where not addressing the lowest practices will adversely affect the highest responded practices. The practices least in place are scalable internal processes for labelling AI training data followed by having protocols in place to ensure data quality. Data quality, consistency, and accuracy are integral to determining whether an AI's algorithmic model operates effectively and as expected. In recent years, the most common form of AI has been supervised ML models that require data labelling to achieve results. Examples of supervised AI are fraud detection, market forecasting, image classification, and operational diagnostics. Unsupervised AI models, which do not require labelled data, are typically applied to extensive datasets to discover a structure or pattern within data, create data visualisations, and perform targeted marketing and customer segmentation. Data quality is critical whether an AI model is supervised or unsupervised; without addressing quality, the value of labelling training data and production data is further diminished. By not having best practices to manage these elements of AI operations, it calls into question the effectiveness of the highest-responded practice of testing the performance of AI models internally before deployment.

One practice can be significantly impeded without the effective use of another. The operational best practices needed to ensure AI is being used effectively can be best described as an interwoven eco-system where all are required to provide the overall operational effectiveness of AI.

As this survey has shown, European organisations are broadly in the early stages of AI adoption. However, it is very encouraging to see a 60% to 70% using AI-related tools to drive more substantial adoption. Around two-thirds of respondents use a combination of AI development platforms to manage data models, low/no code AI platforms for building models, and a combined database and end-to-end AI development platform. For organisations that need to apply AI to a complex array of large and small datasets, outside of a business application, there is a growing marketplace of IT solution providers with tools to operate the creation and management of AI models at scale for both data scientists and non-developer employees (e.g., business analysts). These tools are crucial to minimising operational complexity and accelerating the adoption of AI to run it at the scale an organisation requires.

[2] *Breakdown of responses, in % (n = 550), excl. 'don't know'*

Taking Figure 2 into consideration, it is essential to understand how the CxOs and leaders of European organisations consider a range of important statements regarding the complexities of culturally and operationally adopting AI.

How are European organisations navigating the challenges and identifying the opportunities?

European organisations committing to an AI strategy now have a range of potential risks and challenges. As with the mainstream adoption of any technology, initial challenges impede an organisation's ability to adopt it due to organisational and operational constraints and dynamics. European organisations that adopt AI over the coming years must also accept that as governments and industry bodies establish laws and regulations for AI, existing investments may be adversely impacted in requiring compliance. As shown in Figure 3, PAC asked respondents to identify how challenging a range of aspects is in their journey to adopting AI within their organisations.

Which of the following aspects are/would be a major, minor or no obstacle to your business realizing/ implementing AI/ML?

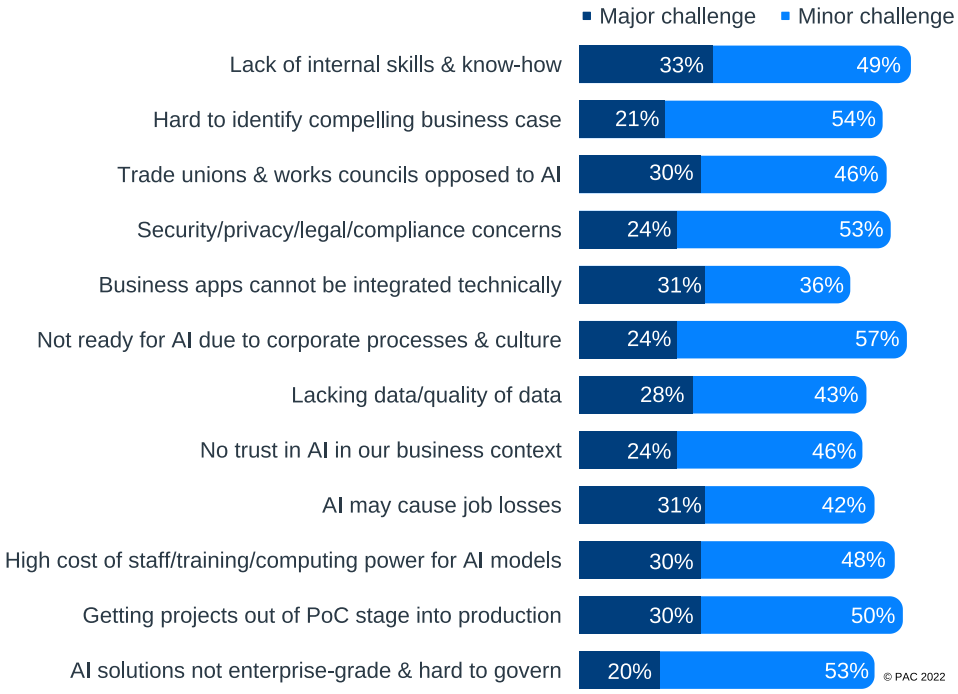

Fig. 3: Which of the following aspects are/would be a major, minor or no obstacle to your business realizing/implementing AI/ML?[3]

As mentioned, in-depth government and industry regulations for AI have yet to be adopted consistently across Europe. Countries across the region have significant societal and corporate differences regarding the use of data, ensuring its privacy, and the role of AI in manipulating it. The role of trade unions and works councils within each European country varies. Still, they often significantly influence the protection of employees in the face of new technologies being adopted that may impact roles. 76% of respondents in Figure 3 indicated trade union and works council opposition to AI is challenging their adoption, with 30% finding it already a major challenge. The pressing need for governmental and industry regulations to ease tensions in these areas is becoming increasingly important as AI continues to grow in its mainstream adoption within European organisations.

[3] *Breakdown of responses, in % (n = 550), excl. 'don't know'; No challenge at all" not shown*

As seen in Figure 3, European organisations are experiencing various challenges in adopting AI and realising business value. Over the past decades, disruptive technologies like AI have often caused different challenges to surface as organisations adapt and increase in maturity regarding its use. Whether through surveys or direct engagement PAC sees that European organisations are strongly challenged in moving AI projects from PoCs into production. This is reflected in Figure 3, where 80% of respondents raised this as a challenge they currently face. The transition from a PoC to production requires robust and scalable AI and data technology solutions combined with a transition plan focused on cost management, measurable outcomes, and process integration. Proving a technology can achieve or support a business goal is only one part of the planning needed to transition its value into a production-ready service or function.

The beneficial opportunities of AI for the European Organization

It would be fair to ask why an organisation would invest in AI, given the challenges faced by organisations shown in Figure 3. The leadership teams of European organisations continue to be challenged by operating inefficiencies and time to delivery/market scalability based on accelerated service delivery expectations. This requires organisations to seek out technologies to reduce friction, compress delivery timescales, and scale operational capabilities based on peaks in demand. Over the last decade, European organisations have invested heavily in data analytics and management capabilities in conjunction with automation tools to eliminate operational frictions from low-complexity high-frequency tasks. AI is the natural progression for data-driven pan-organisational operational efficiency projects and existing processes to enhance data management and automation investments. To this end, Figure 4 shows how the leadership teams of European organisations currently consider AI's benefits.

In your opinion, to what extent would AI provide benefits for your company in each of the following areas?

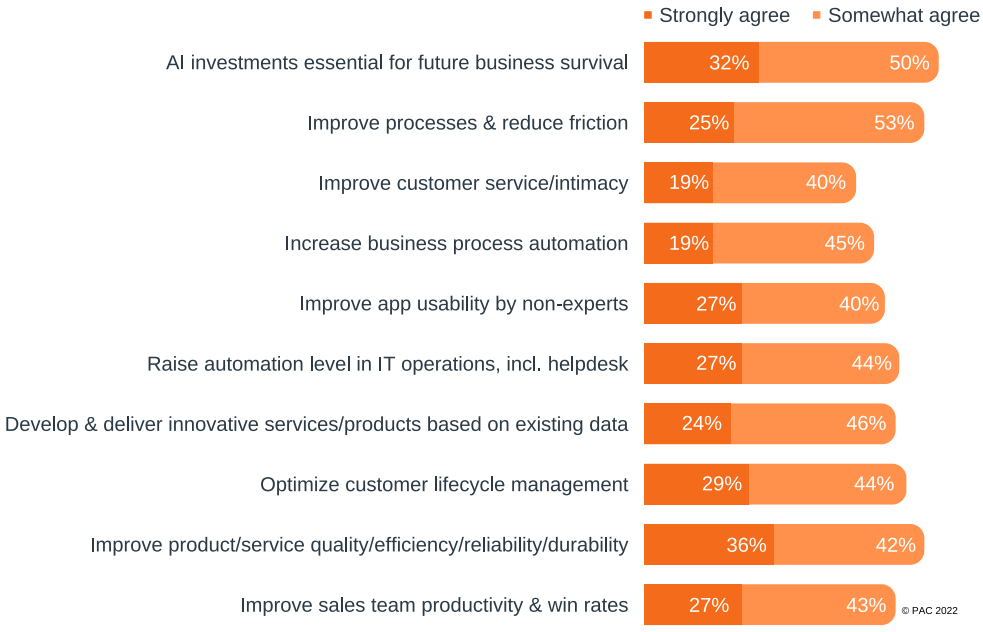

Fig. 4: In your opinion, to what extent would AI provide benefits for your company in each of the following areas?[4]

It is clear from Figure 4 that European organisations strongly agree that strategically adopting AI is an inevitability. The challenge, as already discussed, is creating an environment within organisations that enable, and does not inhibit, the successful application of AI across business processes. Respondents strongly agreed that AI is essential to improving products and services, which drives the future survival of their organisations, at 36% and 32%, respectively. However, Figure 4 also allows a more cautious interpretation of how European organisations currently

[4] *Breakdown of responses, in % (n = 550), excl. 'don't know'; "Somewhat disagree" and "Strongly disagree" not shown*

consider the benefits of AI. It can be seen across all responses that a more significant proportion of those surveyed somewhat agrees rather than strongly.

PAC attributes this to the current nature and immaturity of AI adoption across Europe and expects to see this type of response shift over the coming years as AI establishes itself as a mainstream commodity technology with an accessible talent pool supported by new governmental and industry regulations. At 78%, European organisations agree that further reducing internal process friction and improving underlying processes is a crucial value to be derived from AI in driving benefits from automation. As mentioned throughout this report, the most common exposure to AI for many organisations will occur through existing business applications. The IT solutions and services sector is rapidly applying AI, and its many subset technologies, to their existing products and services to provide suggestion assistance, automate processes, and provide decision support to enhance further an organisation's investment in existing business application software.

CONCLUSION

Evolving operating dynamics within and across European industries demand organisations to drive deeper insights from data. This requires greater levels of integration and automation from the operational and business applications across an organisation's IT estate. More significant volumes of data are being created within organisations and sourced from outside at increased velocity. The use of AI across a range of existing technologies supports operational and business function automation, analysing and processing data, and supporting the user experience of business applications through response assistance and low/no code interfaces.

The diversity of use cases and AI's potential to innovate is core to its value. However, the role of AI in organisations is still considered nascent. This is because uniformity of use cases has yet to be fully established, and understanding what skills and governance are needed within organisations is still maturing. This survey clearly shows that whilst leaders of European organisations understand AI's value and importance, significant cultural, ethical, and functional changes are still needed to realise AI's long-term value fully. Skills in AI are still hard to find across Europe, irrespective of the expertise required to utilise AI for specific operating dynamics unique to a particular industry.

PAC believes that CxOs are ideally placed to identify how AI can further enhance their data management needs and optimise business process operating dynamics. It is essential for European organisations not to treat AI as a thing to implement but rather as a complimentary technology for existing technologies that further innovate how they operate. Doing so will help transition AI proof-of-concept (PoC) projects into production-level functions supporting business processes. This skills shortage will continue to be a challenge over the coming years. It is essential to partner with IT solutions and services companies to leverage their talent pool to determine what AI skills are needed within the organisation and what can be sourced from partners in the long term. AI is an integral component of an organisation's ongoing cycles of digital transformation, so now is the time to build a strategy for how it can enhance an organisation's operations.

METHODOLOGY

In this report, we have gathered data and insights from an extensive survey designed to deliver a detailed picture of the complex operational adoption dynamics of Artificial Intelligence (AI) in European organisations[5]. To do this, PAC interviewed over 550 senior business leaders across the UK, France, Germany, Spain, Italy, Benelux (Belgium, Netherlands, Luxembourg), Nordics (Denmark, Finland, Norway, Sweden), and Austria and Switzerland. The field research was undertaken during the second quarter of 2022 and included participants from all major industries within the manufacturing, services, public, and healthcare sectors. Furthermore, to track differences in decision-making, strategy and vision across Europe, PAC has balanced the sample between technology and business leaders.

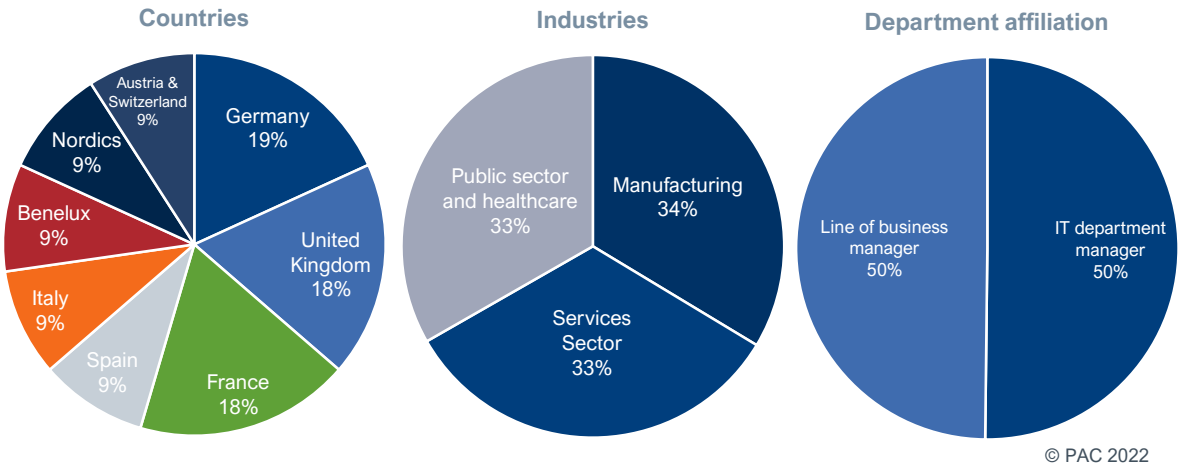

Fig. 5: Composition of sample

[5] *CxO Survey 2022: AI and ML in action*

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LIST OF FIGURES

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Contact:

Spencer Izard
Research Director
PAC

sizard@teknowlogy.com
www.sitsi.com