Leadership in AI 2021: boards, barriers and new beginnings

Research report by *Board Agenda* & Mazars in association with INSEAD Corporate Governance Centre

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Contents

Executive summary

BOARD AGENDA ASKED chief executive officers, chief finance officers, board chairs, executive and non-executive directors and company secretaries about their experiences with artificial intelligence (AI) technologies. We aimed to gauge the level of adoption and the perceived benefits of AI but also the constraints and potential impacts of AI on businesses and their cultures.

It is clear that despite considerable interest in AI and an expectation that over two-thirds of organisations will implement some level of AI in the next 12 months, many organisations and boards lack the knowledge and skills to make this happen. Legacy IT systems and poor data (37%), unclear business value (33%) and a company culture resistant to AI (31%) are also undermining AI adoption.

However, there is growing optimism in AI's ability to impact key areas such as customer service and experience, as well as finance and accounting, operations and R&D. The challenge for boards is how to identify which areas will have the maximum impact and how to measure value in any investments.

AI can have a multitude of benefits including reduced costs, efficiency gains, innovation and improved service delivery, but there is a gap between perceived values and actual AI implementation and ROI. The challenge for boards is to gain knowledge and understanding to drive AI automation in areas where they can get the most bang for their buck and actively transform their organisations into dynamic, data-centric businesses fit for the challenges that lie ahead.

AI in numbers

- 73% of respondents agree/strongly agree they are going to implement AI in next 12 months.

- 67% agree/strongly agree they will encounter strategic risks and poorer performance if they do not integrate AI.

- 72% say AI development plans are approved by the board.

- 67% cannot confirm the board or senior management keep up to speed with AI services and relevant legislation.

- 74% cannot confirm the board or senior management have assessed the skills and training required for AI.

- 77% cannot confirm that the board and senior management are sufficiently skilled and knowledgeable about technology and AI and its implications for business and industry.

- 76% agree/strongly agree there are significant ethical or cultural changes within firms which will need to be carefully managed.

- 80% believe there are constraints on adoption of AI—73% say this is due to lack of skills and 65% due to lack of understanding.

- 54% agree or strongly agree the pandemic has accelerated the adoption of AI.

Forewords

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Anish Venugopal, head of data & automation, Mazars UK and
Asam Malik, partner and head of technology consulting & assurance, Mazars UK

IF THERE IS one thing we have all learned over the past year, it's that we should take nothing for granted. As the pandemic has dramatically re-shaped lives and impacted the fundamental workings of businesses, everyone has had to adapt.

For boardrooms, this has meant digesting new information quickly and reacting at unprecedented speeds. This, in itself, has been an education and in many ways, one that should stand board members in good stead when faced with the onslaught of change we all expect to encounter in the near future. And by far the biggest technological challenge in the coming months will be managing the implementation and expectation of AI technologies.

The pandemic after all, has accelerated interest in automation as businesses have recognised the value of leveraging technology and not relying on staff to be physically be in an office to run the business.

This recognition of the value of AI at board level is significant but as we have found in our report, recognition, understanding and a plan of implementation are very different challenges.

It is perhaps a symptom of rapid technological advancement that many boards are struggling to fully understand AI. There would appear to be a considerable knowledge gap at the top of organisations about its transformative capacity and application. The impact of AI on business will be considerable, so a lack of understanding on boards will not only cause constraints but also significant risks for organisations.

The study reveals that 80% of organisations already believe there are constraints on AI adoption, such as lack of skills (73%) and a lack of understanding (65%) but a further 67% cannot confirm that the board or senior management are keeping up to speed with AI services and relevant legislation.

A total of 74% cannot confirm that the board and senior management are skilled and sufficiently knowledgeable about technology and the implications for business and industry. This illustrates a clear gap in boardroom capability to navigate the complex challenges ahead.

As a result, the outlook for successful AI adoption in the UK remains a little bleak, despite the fact that 73% of organisations claim they will implement some form of AI in the next 12 months.

Organisations could be prone to expensive errors unless boardrooms and management can increase their knowledge and understanding, to ensure that any AI adoption has clear return on investment and value to the on-going and future plans of the business.

This is not an easy challenge but for any organisation that wants to leap forward post-pandemic and build resilience and growth, meeting that challenge will determine their future.

Professor Theodoros Evgeniou, professor of technology management and decision sciences, INSEAD; member of the OECD Network of Experts on AI; advisor at the BCG Henderson Institute; World Economic Forum (WEF) expert for AI Governance and Leadership

AS THE SPEED of artificial intelligence innovation and data-driven business transformation accelerates, boards and executives struggle to grasp how these technologies will impact their business. While AI can enable new business models, products, revenue streams and efficiencies, it is also a source of new risks.
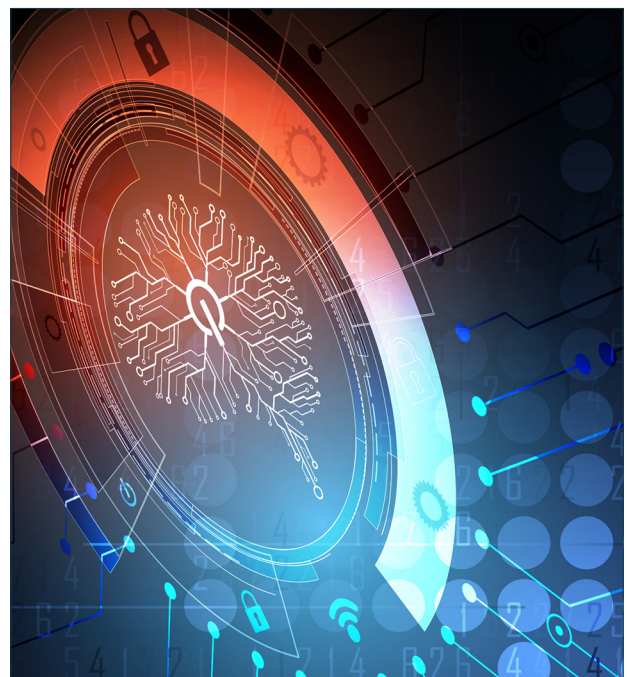
Our study reports that 72% of board chairs, directors, CEOs, CFOs and other executives confirmed that AI plans are approved by the board, yet at the same time 78% of respondents could not confirm that the board and senior management sufficiently understand the implications of these technologies for the business and industry—let alone for society or geopolitics. This knowledge gap is not limited to the top of the organisation: 76% of respondents identified lack of skills in their organisation to be the key barrier to the adoption and deployment of AI.

How can boards and executives understand and leverage "the art of the possible" while managing "the risks of what is possible" with AI?

The challenges facing business leaders are, in part, a result of the accelerating rate of change in the field. AI is not simply transforming existing markets and industries, but also creating new ones.

AI is also a source of new concerns: 76% of respondents agreed "the use of AI in the firm will introduce significant ethical or cultural changes within the firm that will need to be carefully managed".

However, most respondents still regard AI in terms of the incremental changes it can deliver, such as efficiency gains (76%), cost savings (55%), or improved customer relationships (53%). A more incisive approach may be: "What would our organisation or sector look like if we could rebuild it from scratch, fully leveraging the power of AI, data and other technologies to maximise impact?"

If they are to control their technology-driven destinies, organisations must develop new capabilities at all levels to enable data-driven decision-making, AI-driven job augmentation (rather than replacement) and innovation, as well as new practices, processes and organisational structures. We hope this report ignites further reflections on the incredible possibilities created by AI and data technologies, as well as the business, ethical and existential risks that they raise.

Our study confirms that in the midst of the Covid-19 pandemic, there has been a rise in AI adoption and innovation. If technology can beat a global pandemic—and restart the global economy—it surely deserves a seat on the board and among executive teams.

Methodology

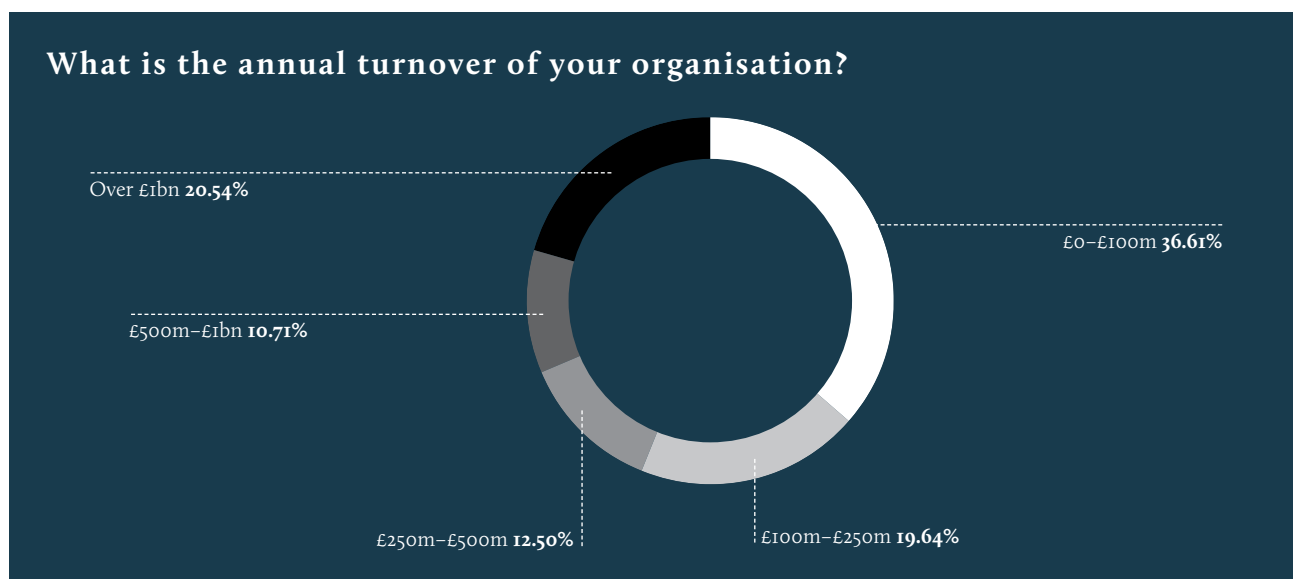The *Board Agenda* Corporate Leadership in AI survey was carried out between September & November 2020 among 121 senior business leaders, including chief executive officers, chief finance officers, board chairs, executive and non-executive directors and company secretaries.

Which of the following best describes the organisation for which you work?

Other **1.70%**

Co-operative organisation **0.89%**

Trade association **2.69%**

Pension fund **0.89%**

Professional/advisory firm **3.59%**

Partnership **2.69%**

Educational establishment **4.47%**

Publicly listed company/ quoted company **39.29%**

Privately owned company **27.69%**

Family-owned company **8.05%**

Not for profit/charity **2.69%**

State or government agency **5.36%**
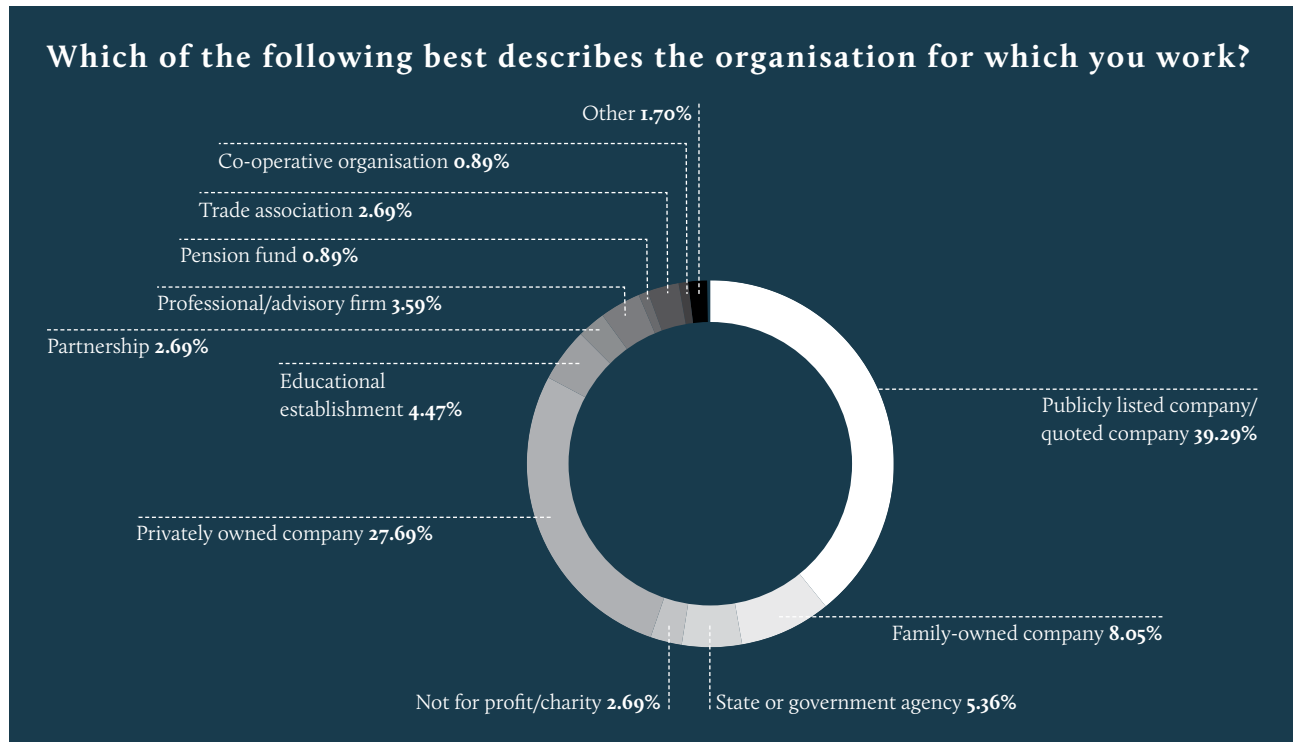
The respondents represented a mix of publicly listed companies (39%) and privately owned companies (28%), alongside family-owned companies (8%), government agencies (5%) and not-for-profits (3%).

What is the annual turnover of your organisation?

Over £1bn **20.54%**

£500m–£1bn **10.71%**

£0–£100m **36.61%**

£250m–£500m **12.50%**

£100m–£250m **19.64%**

A fifth (20%) of respondents were from companies with a turnover of over £1bn. Companies with a turnover of between £100m–£250m represented another 20% of respondents, with 37% coming from SME businesses (less than £100m turnover).
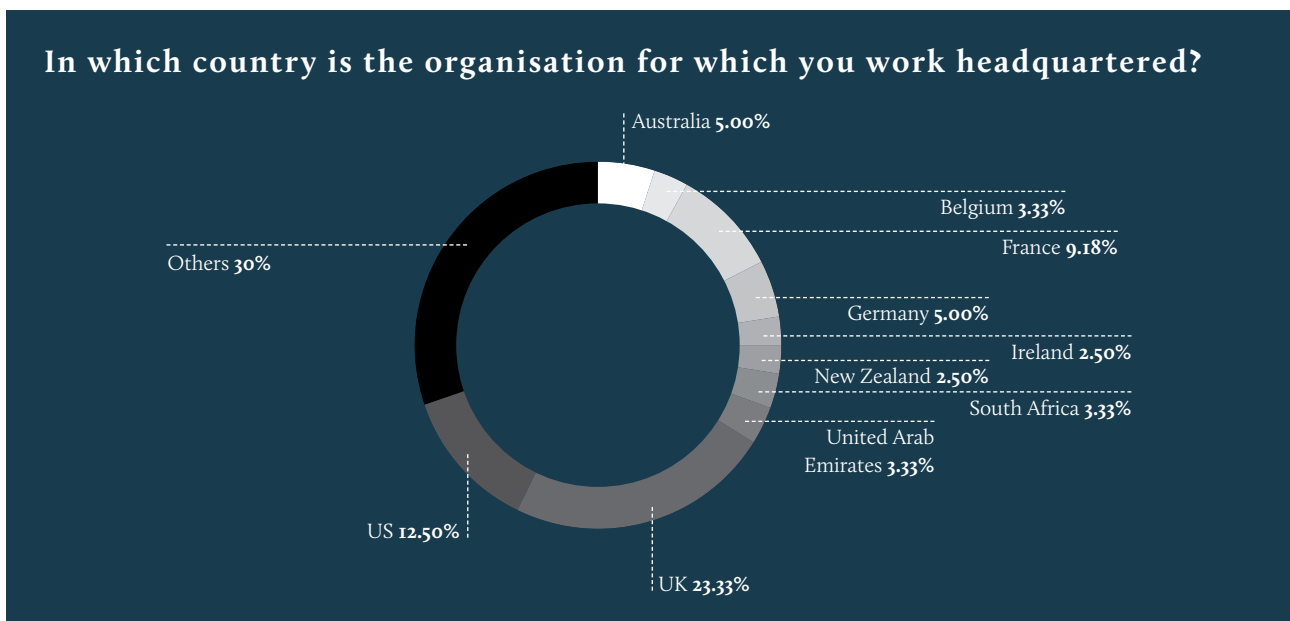
Which of the following best describes the principal industry of your organisation?

Advertising & marketing **3.33%**

Construction, machinery & homes **3.33%**

Education **5.83%**

Other **28.35%**

Finance & financial services **15.83%**

Healthcare & pharmaceuticals **7.50%**

Utilities, energy & extraction **6.67%**

Manufacturing **3.33%**

Telecommunications, technology, internet & electronics **10.83%**

Real estate **3.33%**

Professional services/business advisory **11.67%**

The respondents were from a broad range of industries across 30 countries. Finance and financial services (16%), professional services/business advisory (12%), telecoms/tech (11%), healthcare and pharma (8%) and utilities/energy/extraction (7%) were the top five vertical sectors represented. Although respondents from the UK (23%) and the US (13%) dominated, there were also sizable contributions from France (9%), Germany (5%) and Australia (5%).

In which country is the organisation for which you work headquartered?

Australia **5.00%**

Belgium **3.33%**

France **9.18%**

Others **30%**

Germany **5.00%**

Ireland **2.50%**

New Zealand **2.50%**

South Africa **3.33%**

United Arab Emirates **3.33%**

US **12.50%**

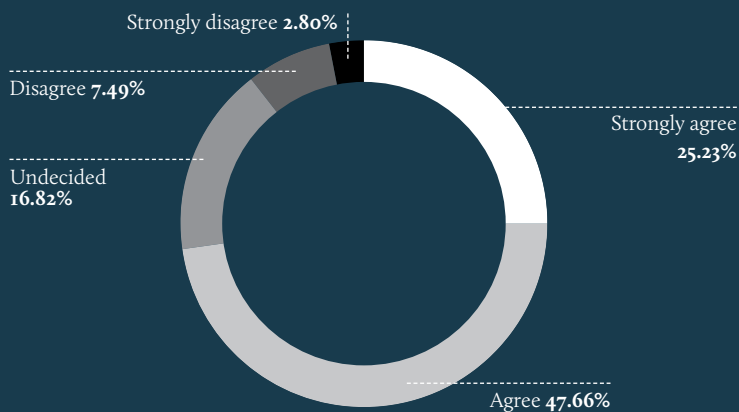UK **23.33%**

Key findings

Covid-19 and demand for increased efficiencies is driving interest in AI

An overwhelming majority (73%) of organisations are currently using or planning to use AI within business operations in the next 12 months. There has been widespread growth in AI use this year, interestingly in operations. This concurs with other industry report findings, such as McKinsey, which recently revealed that its research had seen a 25% year-on-year increase in the use of AI in standard business processes[1]. One of the key drivers here is efficiency gains. Over three-quarters of respondents (76%) cite increased efficiencies as the key opportunity from increased use of AI. Just over half (55%) cite reduced costs. Given the current challenges enforced by the Covid-19 pandemic, it is understandable that more organisations are investigating how to use leading-edge technologies such as AI to improve the day-to-day running of the business.

According to our research, Covid-19 has indeed increased interest in AI, with 54% of respondents

Your organisation is using or planning to use AI in its business operations within the next 12 months

Strongly disagree **2.80%**

Disagree **7.49%**

Undecided **16.82%**

Strongly agree **25.23%**

Agree **47.66%**

[1] *Entering a new decade of AI: The state of Play:* McKinsey, June 2020

claiming it has already accelerated adoption or plans for future adoption of AI. Again, McKinsey backs this up, claiming AI is a main ingredient for digital recovery post-Covid[2]. The pandemic has certainly focused attention on the critical value of digital transformation projects and AI is central to this. While data and analytics are increasingly vital for organisations, AI can turn that data into effective actions and value.
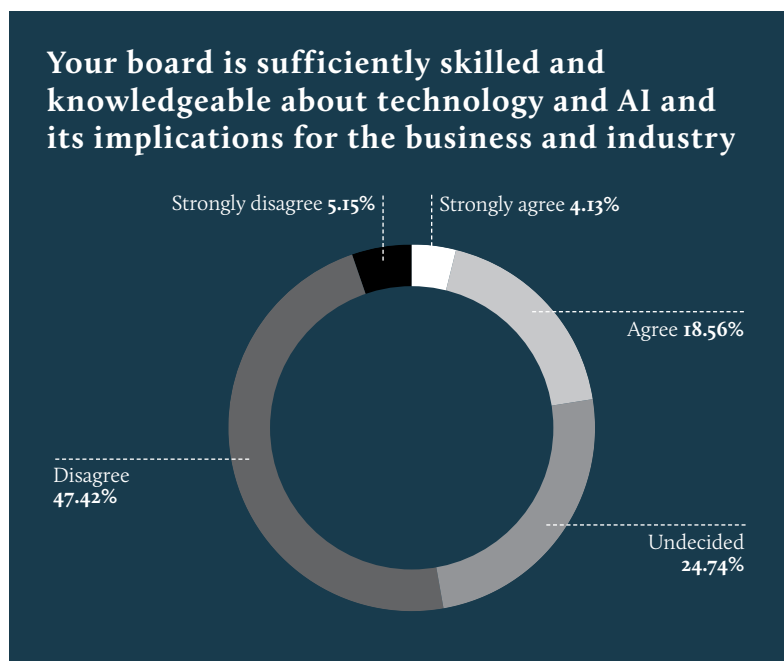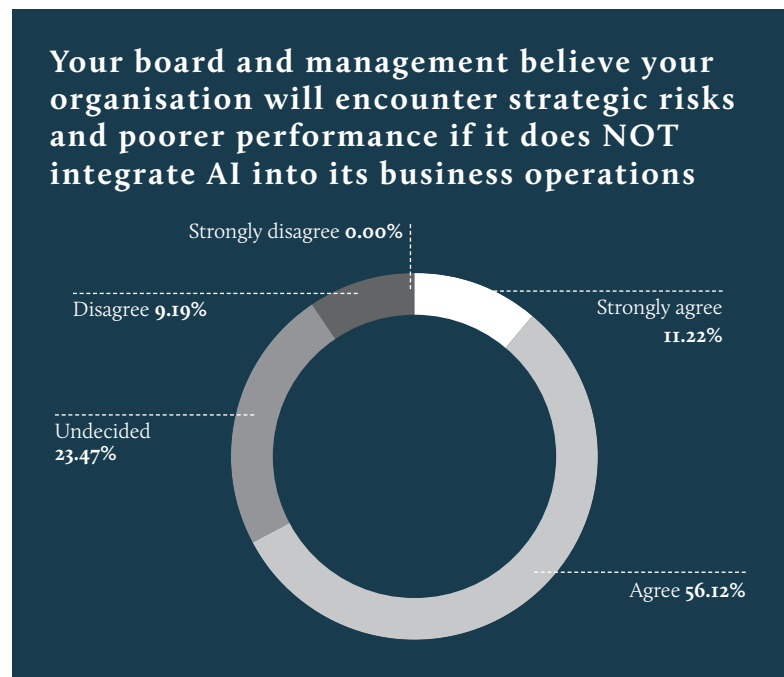
Poor boardroom knowledge and a lack of skills are limiting AI use

Despite the rapidly growing interest in AI technologies, actual deployments are still being held back, partly as a result of economic uncertainty due to Covid-19 but also because of poor knowledge and understanding about how organisations can benefit. When asked "What are the principal reasons acting as constraints on the introduction of AI into your organisation?" the majority of respondents (73%) say that a lack of skills in AI and emerging technologies within the organisation is a key factor. Perhaps unsurprisingly, 65% also cite "a lack of understanding in some parts of the organisation".

This is understandable because AI is still relatively new and evolving rapidly. As an MITSloan and BCG report revealed in 2019, AI can be a challenge[3]—while some organisations have got to grips with AI and its value to the business, many have not. While the report describes AI as "a source of untapped opportunity" it is also "an existential risk", and this is where organisations are struggling, especially around ROI.

This is certainly reflected in our research. Despite having the power to assess and approve AI in 72% of organisations, over half (52%) of boardrooms surveyed are failing to take advantage of potential opportunities due to a lack of knowledge and understanding about AI and how it will be used. The research also found that just 25% of company boardrooms have looked at the skills and training required for AI and just 23% have assessed potential implications on governance and compliance. As one respondent told us: "AI adoption will require a change of business model." While this may not be the case for everyone, it will almost certainly require a boardroom-led strategy.

Your board and management believe your organisation will encounter strategic risks and poorer performance if it does NOT integrate AI into its business operations

Strongly disagree **0.00%**

Disagree **9.19%**

Strongly agree **11.22%**

Undecided **23.47%**

Agree **56.12%**

Your board is sufficiently skilled and knowledgeable about technology and AI and its implications for the business and industry

Strongly disagree **5.15%**　　Strongly agree **4.13%**

Agree **18.56%**

Disagree **47.42%**

Undecided **24.74%**

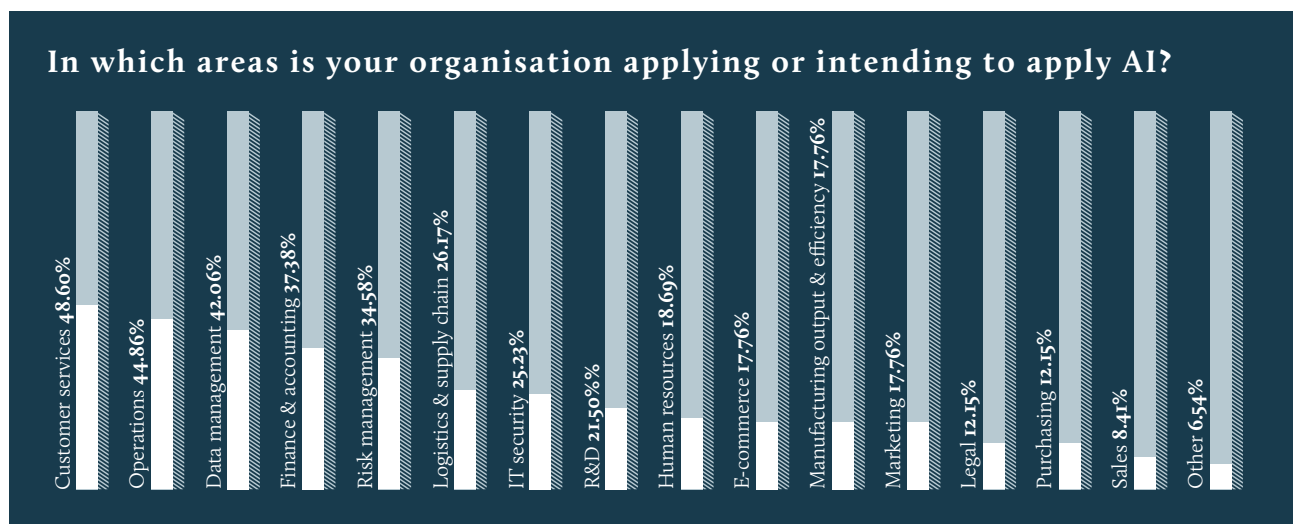[2] *The Covid-19 recovery will be digital: A plan for the first 90 days:* McKinsey, May 2020

[3] *Winning with AI:* MITSloan / BCG, October 2019

AI applications
The rise of customer experience

Where and how AI is applied to organisations is broad and varied, according to our research. While AI is increasingly being used in many aspects of well-established enterprise applications, we wanted to determine the extent of AI-driven automation within specific business functions. We asked the question: "In which areas is your organisation applying or intending to apply AI?" with the resulting statistics highlighting five main areas of AI application.

Just over half of respondents select customer services. This almost certainly reflects the rise of AI chatbots and AI-centric CRM over the past couple of years. A recent IDC report on the global growth of AI backs this up. IDC found that CRM AI applications and Enterprise Risk Management (ERM) AI applications are the two largest segments, with 20% and 17% share of the AI applications market[4].

In which areas is your organisation applying or intending to apply AI?

Customer services **48.60%**
Operations **44.86%**
Data management **42.06%**
Finance & accounting **37.38%**
Risk management **34.58%**
Logistics & supply chain **26.17%**
IT security **25.23%**
R&D **21.50%%**
Human resources **18.69%**
E-commerce **17.76%**
Manufacturing output & efficiency **17.76%**
Marketing **17.76%**
Legal **12.15%**
Purchasing **12.15%**
Sales **8.41%**
Other **6.54%**

One driver is almost certainly customer experience (CX), a rapidly developing function within sales and marketing. For CX to work effectively and enable informed decision-making, it demands real-time data analytics. This in itself requires AI automation to cope with the volume of data and also to develop actionable insights and enable other functions such as predicative analytics.

In our research, 42% of respondents say that data management is another key function for AI deployment, with 35% citing risk management. Using AI for data management has a double benefit. As we have already suggested, there are strategic benefits in quick and accurate data insights but this is also about reducing errors and risks in data handling. As such, AI-driven automation will eventually feed and manage the data and workflow throughout organisations, something which is borne out by the fact that just under half of respondents (45%) say AI is, and will be, increasingly used in operations.
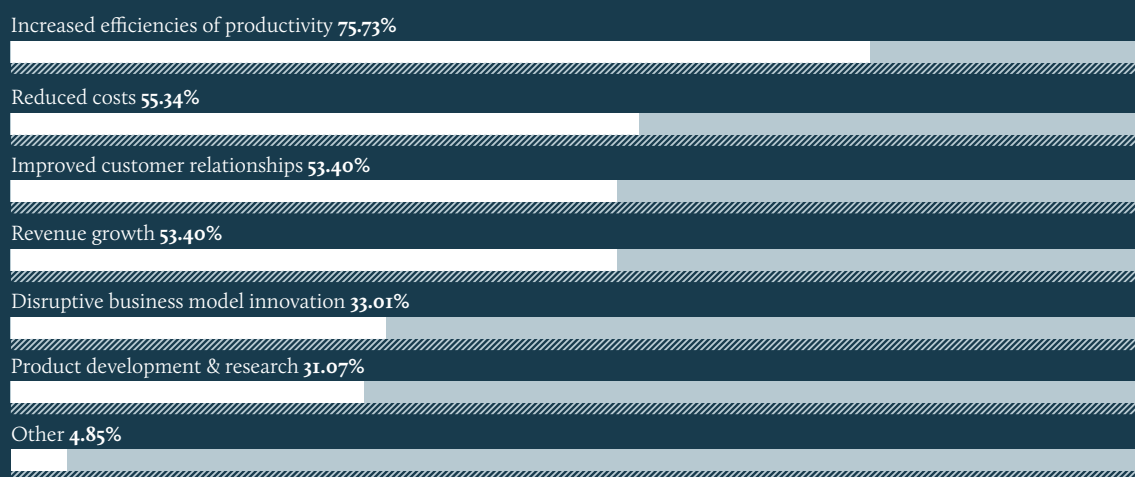
Another function worth noting is finance and accounting, which 37% of respondents say is an area for current or future AI application. A key feature here is the increasing use of AI-enabled robotic process automation (RPA) to manage repetitive tasks. AI technologies can deliver time and cost-saving functionality to financial management, reducing errors and freeing up accountant time. The challenge for all businesses here and in other departmental areas is how to strike a balance between AI-driven automation and human interaction. After all, AI should not be regarded as a replacement for human workers, rather as a technology that enables those workers to be more efficient, creative and productive.

[4] _AI market forecast:_ IDC, Aug 2020

The benefits of AI
Efficiencies and reduced risk are just the start

What do you perceive to be the opportunities from applying AI to your business?

Increased efficiencies of productivity **75.73%**

Reduced costs **55.34%**

Improved customer relationships **53.40%**

Revenue growth **53.40%**

Disruptive business model innovation **33.01%**

Product development & research **31.07%**

Other **4.85%**

When asked for their opinions on the principle differences AI would make to their specific businesses, most respondents reference cost savings, improved customer service and efficiencies.

"Improved customer service, stronger control environment, more efficient internal processes and cost reduction," said one respondent.

"Improve product effectiveness, increase speed to market and make better business decisions," said another.

With a large majority of respondents (76%) claiming increased efficiencies as the principle benefit of AI and just over half (55%) claiming cost savings, this is perhaps unsurprising, but it is really only a small part of the benefits story.

For example, 53% of respondents expect increased revenues, but that is a broad and perhaps arbitrary reflection of the overall difference that AI can make to a business. How has AI actually influenced earnings? Are these increased earnings from reduced costs or is AI having an impact on revenue? Industries will of course vary on this—for example, we are already seeing use cases[5] showing increased production output, increased production quality and reduced maintenance costs, particularly in industrial sectors such as energy and manufacturing.

This is key. For a business to identify ROI for AI implementation, understanding how organisations are gaining not just competitive advantage but productivity and revenue increases is fundamental to assessing AI's potential impact. Clearly enough respondents from our research have seen positive signs within their organisations already to suggest that the potential can be realised.

[5] _Opportunities for AI:_ European Union, June 2020

Given the expected growth in AI-enabled CRM and customer service tools, it correlates that 53% would also choose "improved customer relationships" as a key benefit. This also ties in with the idea of increased revenues. If CX can increase customer loyalty and reduce churn, it stands to reason that it can also attract new customers and therefore boost income.

Interestingly a significant number of respondents also see AI positively impacting their company's ability to innovate (31%) and disrupt service delivery (33%). Again, there are correlations with other findings. With greater insight into customers through real-time data analytics, businesses can make more customer-led decisions on what products and services are required. Innovation is more targeted and quicker to deliver.

"Data access and interpretation," said one respondent, when asked about the benefits of AI to the business. "Improved risk-based decision-making; improved service delivery."

AI-enabled applications clearly have huge potential across the board. The challenge for boardrooms is to determine which benefits will have the greatest impact for their particular business and therefore have a better chance to realise ROI more quickly.
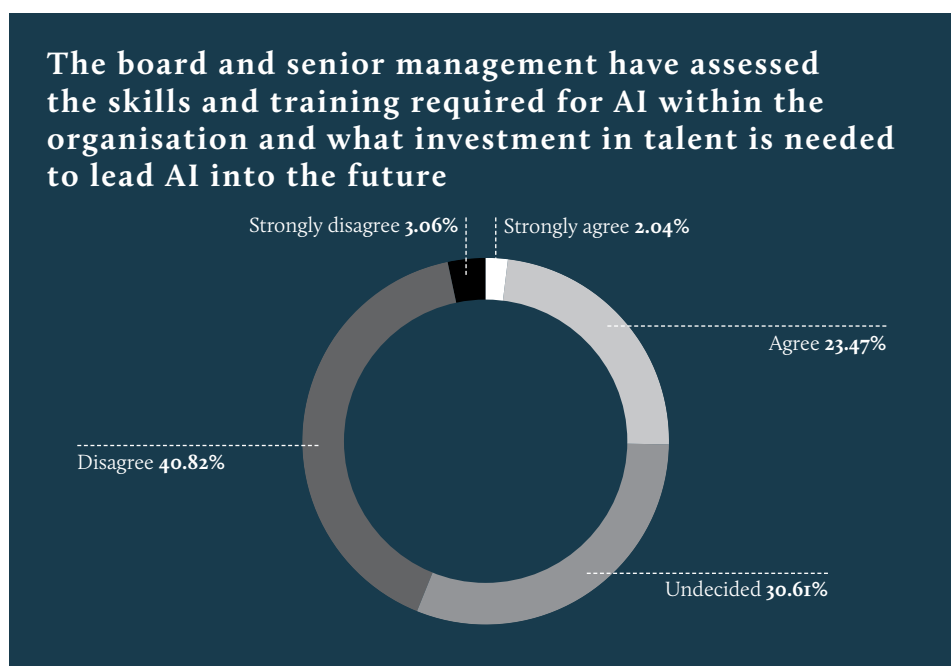
The boardroom bottleneck:
AI skills and knowledge are lacking

When asked if their board and management believe their organisation will encounter strategic risks and poorer performance if it does not integrate AI into its business operations, 67% agree. Clearly there is an understanding that AI has intrinsic value to businesses; and yet there appears to be a limit to what the board is actually doing about it, despite 72% of respondents saying their boards approve all AI and digital development plans.

Over half of respondents (53%) claim that their boards are not sufficiently skilled and knowledgeable about technology and AI and their implications for the business and industry. In these organisations there is clearly a knowledge gap that needs addressing if they are to take advantage of AI-enabled applications.

When asked whether the board and senior management had assessed the necessary skills and training required for AI within their organisation, 44% of respondents claim they have not.

The board and senior management have assessed the skills and training required for AI within the organisation and what investment in talent is needed to lead AI into the future

Strongly disagree **3.06%**
Strongly agree **2.04%**
Agree **23.47%**
Disagree **40.82%**
Undecided **30.61%**

This perhaps correlates with the 53% of boardrooms that lack knowledge. A similar statistic (43%) was returned when we also asked if boardrooms had kept up to date with AI services available and relevant legislation that could impact on the company's use of AI.
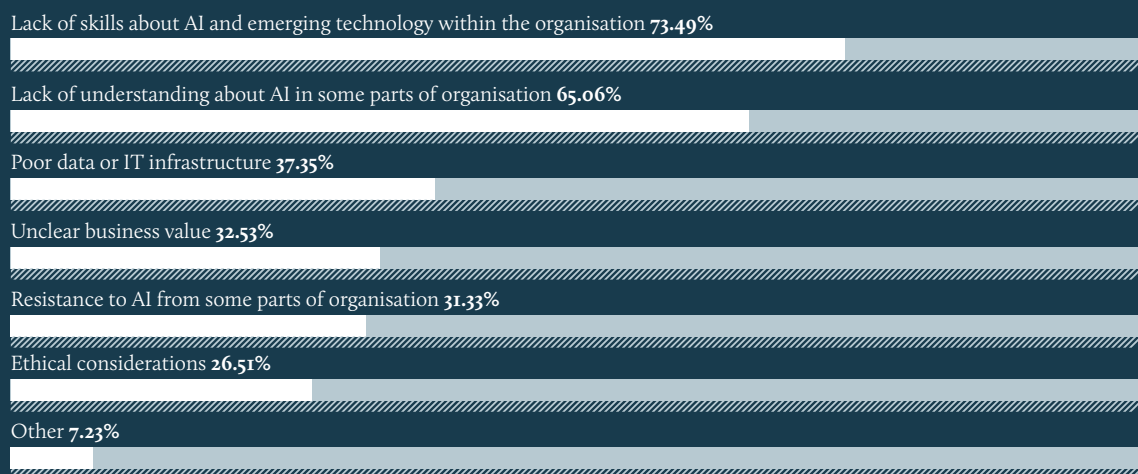
As one respondent said: "There's a lack of awareness in the company of the likely impact of AI in our sector, so it's still too early to work on training and development of AI in our business."

It's a worrying indicator and suggests urgency is required for those companies lacking knowledge to get up to speed quickly on where and how AI can help improve their organisation.

Barriers to entry
An overview of constraints

What are the principal reasons acting as constraints on the introduction of AI into your organisation?

Lack of skills about AI and emerging technology within the organisation **73.49%**

Lack of understanding about AI in some parts of organisation **65.06%**

Poor data or IT infrastructure **37.35%**

Unclear business value **32.53%**

Resistance to AI from some parts of organisation **31.33%**

Ethical considerations **26.51%**

Other **7.23%**

A resounding 73% of respondents believe that a lack of skills and knowledge of AI within the organisation is a major constraint to its adoption. This is closely followed by a lack of understanding in some parts of the organisation (65%), illustrating the need for greater awareness and education of the benefits of AI to specific business leaders and departments.

The respondents identified a number of other constraints on AI adoption, including poor data or IT infrastructure (37%) and unclear business value (33%), while 31% claim there is resistance to AI from some parts of their organisation.
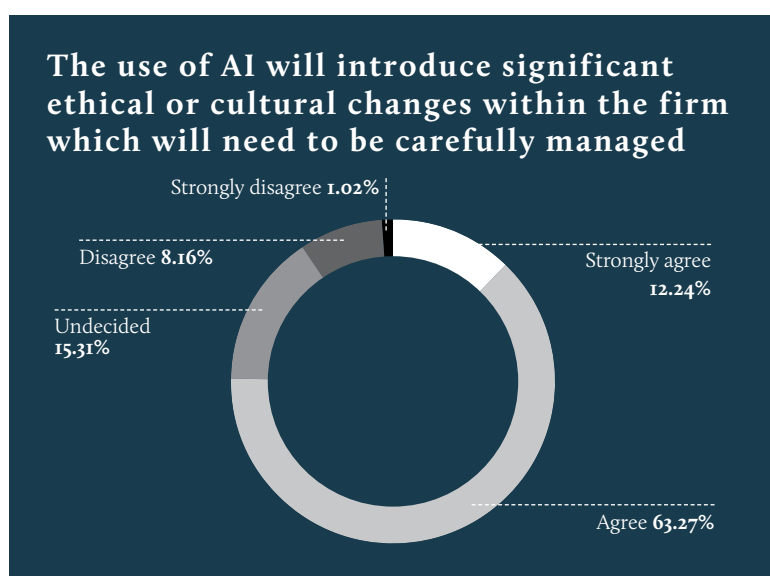
These are typical barriers to entry that focus on the unknown and fear of change, especially around the popular idea of AI taking people's jobs. This was borne out in our research. "Robo-advisers will replace human advisers in the wealth management sector" was the prediction of one respondent, although with the caveat that "for some client segments" that would mean employing "younger, more digital-savvy" human advisers.

The idea that AI will take jobs is difficult to get away from, as automation will re-shape processes and procedures and with that, the people needed to do the work. Is this a justifiable constraint? Is this the business looking for greater efficiencies?

In terms of technology, this too is a common issue. Legacy IT systems and data quality are still concerns for even the most progressive businesses given the fast-paced nature of AI technology development. Gartner puts this and the idea of a lack of skills and knowledge down to enterprise maturity, one of its three main barriers to AI adoption[6], a great yardstick for any business looking at where they currently sit, both practically and mentally.

A cultural challenge
The ethics of AI

The use of AI will introduce significant ethical or cultural changes within the firm which will need to be carefully managed

Strongly disagree **1.02%**
Disagree **8.16%**
Undecided **15.31%**
Strongly agree **12.24%**
Agree **63.27%**

The cultural and ethical questions often raised around the deployment of AI really centre on two areas—data and people. There is widespread interest in how organisations source and manage the data that feeds AI, as understandably there are concerns over data bias and transparency. However, not all regions are equal. While the EU has its own set of AI ethical guidelines[7] drawn up by regulators, they differ from the US and China. In a sense, how an organisation uses data will be central to its core values and business needs. There are regulatory constraints but each organisation will have to decide on its data policy and transparency.

In our research, we posed the following statement: "The use of AI in the firm will introduce significant ethical or cultural changes within the firm, which will need to be carefully managed" and 76% of respondents agreed. Built into this is the idea that AI will demand a reworking of internal structures and this will directly impact employment and working patterns.

As one respondent said: "AI will change the business model from a physical operating [model] to a data and digital operating model." Another respondent was fearful that "jobs will be replaced by AI".

As McKinsey suggests, a cultural shift is necessary to take full advantage of AI but it has to be managed.

"Automation poses more challenges to the workforce because of the need to upgrade skills and shift the culture to support continual adjustments to the way people do their work. We have found that providing employees with hands-on experience and live demos early, clearly explaining constraints, and discussing design decisions in partnership with development teams are crucial for the workforce to adopt new automation programs."[8]

[6] *Three barriers to AI adoption: Gartner, Sept 2019*
[7] *Ethics Guidelines for Trustworthy AI: European Union, 2020*
[8] *Driving impact at scale from automation and AI: McKinsey, Feb 2019*

Conclusion

Most organisations accept that to some degree, AI can have a positive impact on their business, although it seems that for many, how AI will actually do this and what impact it will have on the culture of the organisation is not yet clear. However, this has not tempered any desire, with over two-thirds of respondents claiming their organisation will have adopted some form of AI in business operations in the next 12 months.

While the impact of Covid-19 on industry is almost certainly influencing the growing interest in automation and AI, there remain many constraints on actual adoption. Not least is a lack of skills and knowledge within organisations and a lack of understanding at board level. What is clearly required is proven ROI. Boards need to be able to start small, match AI investments with specific functions and measure returns.

According to Gartner, by 2024 50% of AI investments will be quantified and linked to specific key performance indicators to measure return on investment[9], so it is not unreasonable for boards to actually build ROI into any AI development plan. The key is information and transparency. While our research has identified considerable benefits to business, especially in terms of reduced operational costs, improved efficiencies and customer experience, identifying where AI can have an immediate impact and ROI will be a challenge for every organisation.

And then there is the people question. Boardrooms need to be able to manage the culture, to educate organisations on the value of AI and its ability as a tool to help employees do their work rather than taking their jobs. Yes, roles may change due to automation, but new roles will be created and new skills will be needed. To that end, how boardrooms respond to the challenges of AI could actually define their organisation's future.

Key questions for boards

1. Does your board fully understand the positive impact AI can have on the business and if not, is there a plan to improve knowledge and information sharing?

2. Has the board identified a potential starting point for AI use within the organisation by investigating existing use cases and potential impact on costs and profitability?

3. Has the board set up a task force to investigate how automation will impact the workforce in terms of required skills, recruitment and re-training?

4. Has the board considered how AI could require a change in the business model and looked at what this will mean in terms of processes and procedures?

5. Is the board sufficiently skilled to investigate possible risks and governance issues that may arise from AI adoption?

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[9] *Three barriers to AI adoption:* Gartner, Sept 2019

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