



Let's get real about AI

A playbook for winning in the age
of Artificial Intelligence



OC&C
Strategy consultants

uncommon sense

Artificial Intelligence is important for your business

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We undertook this research to get under the skin of how Artificial Intelligence (AI) is really being used in business today. This report brings to life the scale of the impact AI will have on the future of business, and lays out a playbook for you to get started with AI.

This ground-breaking research sets out OC&C's playbook for using AI successfully. The insights in this report are based on the views of 400 C-suite executives and thought leaders across the US and the UK; respondents included a range of corporate executives from CEOs and CMOs, Chief Analytics and Data Officers alongside business school professors and software vendors. Throughout this report we draw on the quantitative results of the C-suite survey and use quotes from 80 deep-dive interviews (framed in quotation boxes throughout) to bring you the latest, cutting-edge thinking on AI.

The results highlighted the speed of adoption of AI to date and the magnitude of anticipated benefits. There is a sense of AI driving major disruption and creating new sources of competitive advantage through both productivity growth and efficiency savings.

Artificial Intelligence leaders are forging ahead and they have ambition



AI is poised to be one of the most important new technologies, ever. As one of our interviewees put it “bigger than the internet, bigger than splitting the atom”.

71% of our C-Suite survey respondents say that they have adopted AI already in their businesses; 86% say they have missed business opportunities by not using AI sooner.

85% of company leaders believe that new entrants will overtake their competitive position due to their use of AI.

Spending on AI has been huge: \$219bn was spent by businesses on AI globally in 2018, equivalent to c.7% of total enterprise IT spend. AI spend in the US was \$91bn in 2018, and \$12bn in the UK.

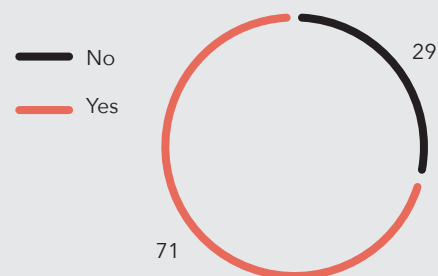
This spend is clearly linked to performance. Companies that outperform commercially tend to use AI irrespective of industry sector.

Against this backdrop, we project that AI spending will continue to grow strongly, reaching \$400bn annually by 2025 - equivalent to c.10% of all global Enterprise IT spend. We estimate that globally:

- 50% of jobs will have 50% of activities that are automatable by 2025 - this could generate \$5 trillion of additional profitability per annum
- Advanced robotics powered by AI will be a \$5 trillion industry by 2025
- Certain businesses, e.g. programmatic media buying, will be 100% AI by 2025

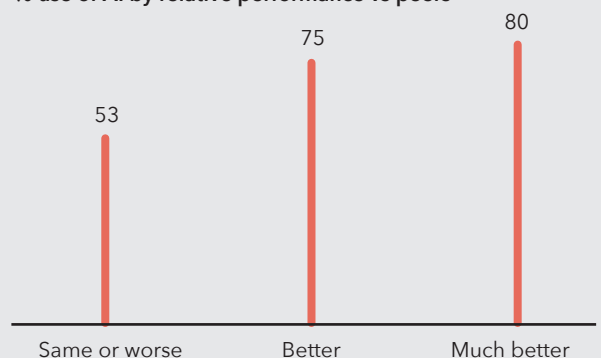
OVER TWO THIRDS OF BUSINESSES HAVE ALREADY ADOPTED AI

% of companies adopting AI Solutions



AI ADOPTERS ARE HIGH PERFORMERS

% use of AI by relative performance vs peers



What is AI?

Artificial Intelligence has no formal or precise definition. For the purpose of this report we are thinking of 'machines acting in ways that seem intelligent'.

At its simplest level, AI is any program that uses analytics to make a decision and then incorporates the feedback from that decision into future decisions. AI systems typically combine data capture (e.g. sensors, human input), data storage, advanced analytics and a set of rules to resolve a required decision based on prediction of the best outcome. The system will then have capability to act, to monitor the outcome, and to feed that outcome back into the system to inform the next decision. This allows the system to learn; becoming more 'intelligent' with every decision it makes.

For example, if an autonomous driving program decided that going off the road was a faster approach to getting to the destination, it would get feedback from the resulting crash and would be less likely to choose to go off-road the next time. As the AI becomes smarter, it is in effect creating or modifying its own rules as it gets more information, just as humans (mostly!) make better decisions with more experience of a situation. Often the 'rules' are non-linear (e.g. if x then y), but are based on complex calculation and inter-dependence of multiple factors.

This process of 'learning' is why people talk about 'training' an AI. This is normally done by providing the AI with a set of real world data so that the AI can learn to make more intelligent decisions before being deployed in real world situations.

Our off-road-happy autonomous car would be trained by being shown records of actual cars driving that showed that those who came off the road failed to reach the destination, so that each new car didn't have to learn to drive from first principles.

This is like giving a newborn baby the opportunity to learn a lifetime's worth of experiences in a day.

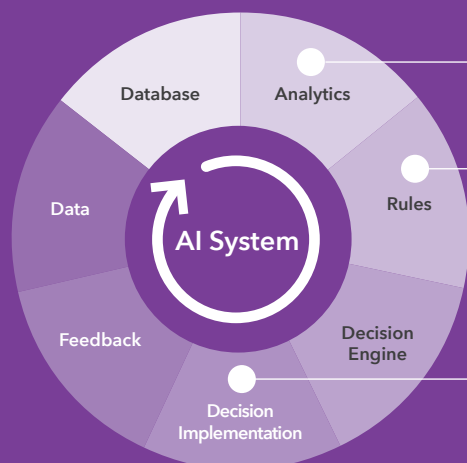
To allow AI to perform more complex tasks the prevalent approach is to link together many small, specific AI systems rather than to create a single super AI that could answer the whole problem. This makes the problem solving simpler for human designers of AI and allows humans to monitor the outputs of the AI at the connection points.

This makes building an autonomous car much simpler; a few example AI component systems might be:

- The image recognition that classifies the other objects on or near the road
- The prediction engine that estimates what a pedestrian is most likely to do next
- The decision engine that evaluates the best road placement to avoid a collision without endangering the driver

Today's AI systems are often built from multiple component AIs to simulate to mimic or improve on human decision-making.

AI SYSTEMS TYPICALLY COMPRISE 7 KEY COMPONENTS WORKING AS A SYSTEM



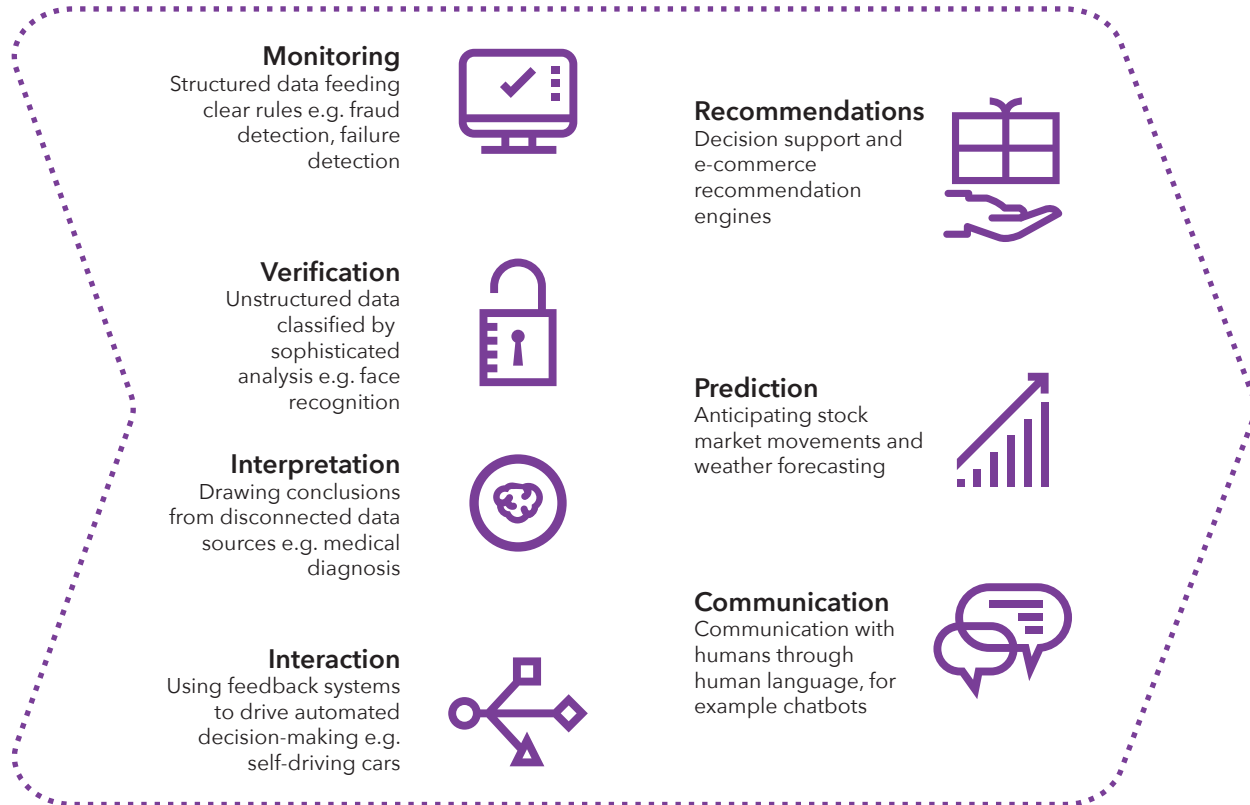
Model creation - Humans doing varying sophistications of analytics (from regression to deep learning) typically using tools and ML code libraries.

Model deployment - Typically starts with calibration where new rules are updated from analytics outputs. Sometimes the rules are transparent (e.g. stop at a red light); sometimes they are opaque (e.g. interaction layers within a Neutral Network creates a prediction that cannot be explained as simple rules).

Often machine to human, (e.g. chatbots) this is increasingly a network of machines solving point solutions by communicating with one another.

THE 7 CORE AI APPLICATIONS

These activities are the most prevalent use cases for AI; they enable us to identify levels of maturity and future growth opportunities



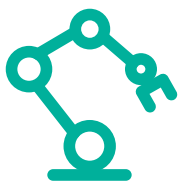
Specific and General AI

AI can be split into Specific and General AI. Within the foreseeable future, Specific AI will remain the most relevant to business.

- Specific AI – applications that can only address a certain task e.g. the AlphaGo program is the best Go player in the world but can't play chess. Chatbots, medical diagnoses or sales forecasting are examples of Specific AI. This is the AI that exists now, and is currently impacting business
- General AI – human level intelligence, including general learning that can solve problem types that the application is not familiar with. For example, AI is not able to identify a zebra in a picture from the description 'it is like a black and white stripy horse' – but there is much research going on around the world about how to achieve this

The appearance of General AI can be replicated within a field by connecting a set of specialised AI solutions together to create a system that can have a holistic interaction. For example, connecting a medical diagnostic application with a chatbot that discusses the diagnoses. However, these systems will have strict limitations beyond which they will still need human support.

The AI ecosystem



AI is one of a set of new technologies that are driving change across the business world.

Machine Learning and other Advanced Analytics techniques are the engine room of AI - but they form just one component of the emerging ecosystem of new technologies working together.

AI systems require decision engines that convert Advanced Analytics models into actions. AI depends on Machine Learning, but Machine Learning is not in itself AI.

Blockchain has brought us cryptocurrencies, but its use cases in business are so complex that they require AI to deliver e.g. control of a supermarket's fresh supply chain.

Augmented Reality and Virtual Reality increasingly rely on AI to decide what content is most relevant in a given situation.

The broader digitisation of business creates massive data sets but requires AI to convert these into insights. Equally, the data sets generated by digital-first business models are making AI-driven propositions possible and accelerating the transformation.

Ultimately it is AI combined with these other technologies that is driving transformation of businesses, not just AI alone.

It is therefore a critical part of our, 'AI playbook', to set out how your AI plans dovetail with how you use other new technologies.



AI is one of a number of emerging new technologies

- **AI** is a set of components (databases, analytics processes, decision engines, interface etc) working together to mimic human intelligence
- **Advanced Analytics** is a set of advanced statistical methods (including Machine Learning), which are not in themselves AI, but rather components of AI systems
- **5G connectivity** is the next generation of mobile phone standards that allows much faster data transfer to mobile devices - likely an important enabler for AI
- **Blockchain** is a distributed ledger technology i.e. multiple independent copies of a database that are constantly verified with many AI and Advanced Analytics inter-relationships. e.g. supermarket assurance of fresh supply chain; requires AI to process blockchain data
- **Cloud Infrastructure** has grown rapidly in the last few years - this increased access to remote processing power and storage capacity allows more complex AI analysis to be delivered to consumers
- **Machine Learning** is the growing set of algorithms and statistical models that are trained with data, without having to explicitly program responses
- **Robotic Process Automation** is the automation of processes, often not by physical robots but rather by computer algorithms, for example business reporting tools
- **IoT or Internet of Things** are products that are connected to the internet - mostly smart home and office products that you can interact with through a smartphone

Companies investing in AI are seeking to enrich their own data by buying - or partnering - to obtain additional data sets

Data fuels AI

AI systems and the Advanced Analytics that power them are very data hungry. To be an AI winner, you first need to build your data infrastructure.

You need lots of data to build AI models to feed the Advanced Analytics at the heart of AI. Moreover, the basics of cleaning data, removing zeros, N/As, and missing values have not gone away. Telematics data (derived from sensors and accelerometers in IoT devices) is especially 'dirty', which is just another challenge for autonomous cars.

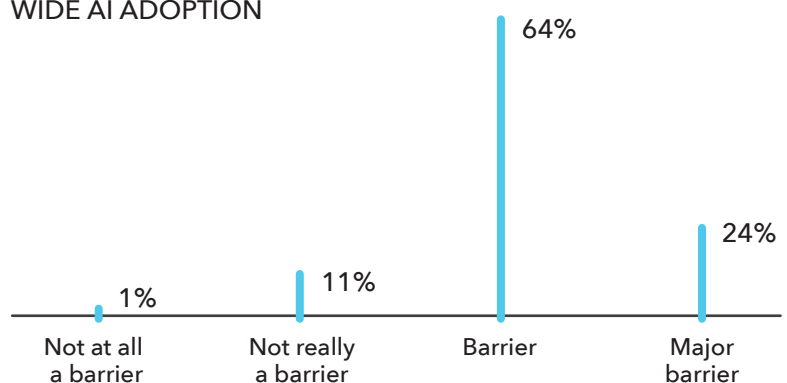
It is data that fuels AI. A lot of companies are seeking to enrich their own data by buying, or partnering, to obtain additional data sets. This is especially true in the US, where more relaxed data privacy rules compared to Europe mean one can append other data sources to a customer database. With AI in the mainstream, companies with access to more information will gain competitive advantage.

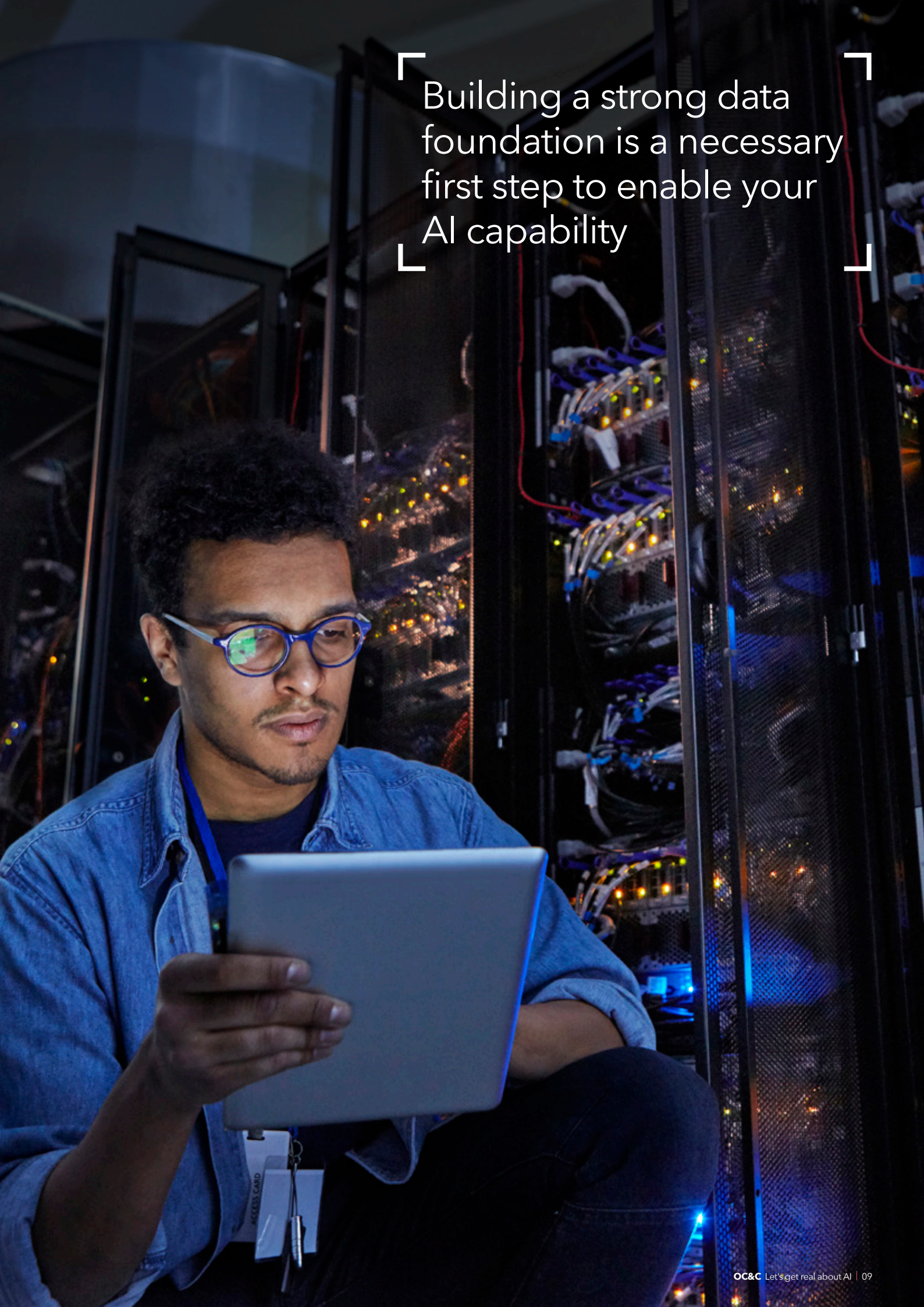
This increased value of data will result in even more intense competition to acquire it. In turn, this will solidify the role of the large technology companies like Amazon, Apple, Alphabet, Facebook and others as data harvesters and providers of data services. Taken further, data partnerships will become commonplace as the harvesting of data requires reach and infrastructure that is too costly for smaller or industry-focused companies.

The role of data needs to be considered against a backdrop of GDPR and changing privacy rules closely linked to AI through data, as well as the rights of subjects to understand the reasoning behind decisions. GDPR has driven an empowering of the CDOs. It is likely that their role will begin to take a more commercially prominent shape, as they typically hold the key to any data issues.

A lack of the right data will be a huge barrier to your business adopting AI. One of the most important steps in enabling AI is for executives to understand what data they actually have in their companies.

DATA IS A SIGNIFICANT BARRIER TO ENTERPRISE-WIDE AI ADOPTION



A man with glasses and a denim shirt is sitting in a server room, looking at a tablet. The room is filled with server racks and glowing lights. The text "Building a strong data foundation is a necessary first step to enable your AI capability" is overlaid on the top right of the image, enclosed in a white L-shaped frame.

Building a strong data
foundation is a necessary
first step to enable your
AI capability

Advanced Analytics: the engine room of AI

Techniques such as Decision Trees, Machine Learning and Neural Networks are the building blocks for answering the most complex questions.

Advanced Analytics such as Machine Learning and Neural Networks have made AI systems possible.

Practically, you can't have an AI system without Advanced Analytics. Generally, this is Machine Learning moderated by human analysts, but increasingly we are seeing automated analytics without human intervention. It is likely that in future these analytics components of AI will become increasingly automated, with the role of the operator relegated to configuring the tools.

Getting started successfully with AI typically requires a business to:

- See the benefits of analytics (before taking the next step into AI)
- Build on existing Advanced Analytics capability
- Have executives with a good understanding of the power of new Machine Learning analytics technologies

In many cases, AI incorporates rules derived from complex models by humans, so outputs are explainable. However, the rules in an AI system are increasingly 'learned' by the system itself. This means that the AI system may be unable to explain why a particular result was achieved.

One of the key challenges in using AI solutions is building trust in the answer. AI systems typically learn 'the rules' from exposure to outcomes rather than building up from simple rules, e.g. 'if x then y'.

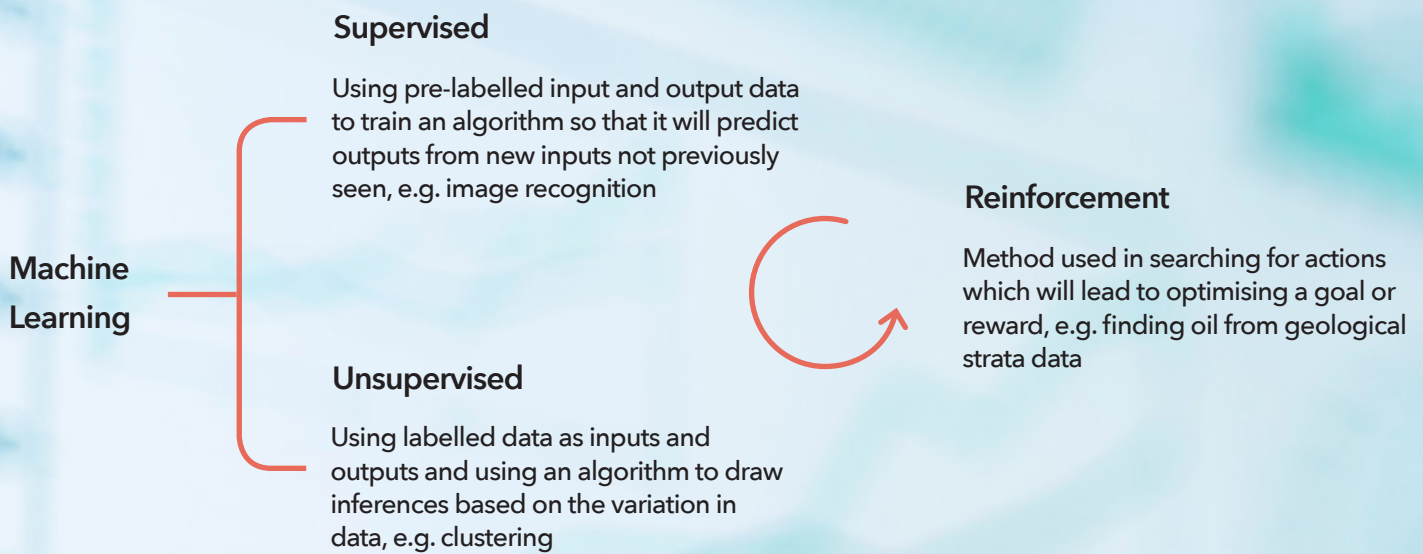
This means that the AI system may not be able to explain why a particular result was achieved; in turn, this can cause serious problems with trust in AI infrastructure and rejection of human operators, and/or fundamental problems with conforming to regulations.

There is a strong push towards 'explainable AI', often delivered by analytics experts, which enables humans to understand the decisions made. We have heard this requirement voiced by many of our interviewees.

To build a successful AI capability, you first need to have created an Advanced Analytics capability; your action plan needs to include getting started with Advanced Analytics.

Leaders need to educate themselves about the power of the Advanced Analytics that drive AI

EXAMPLES OF ADVANCED ANALYTICS



How AI will change your organisation

The people we spoke to repeatedly highlighted that using external resources alone to create AI capabilities is less successful than when AI is built on a foundation of existing analytics capabilities.

AI is relatively new and often found in pilots and proofs of concept. These initiatives are often led by functional leaders (e.g. HR, Supply Chain, Marketing) signing up outside vendors rather than being driven by the CIO, Head of Analytics or other central roles in the organisation's existing analytics or technology functions.

Because the components of AI systems exist in many functions, there are many individuals who stake a claim to AI, e.g. Data Analytics, CIO, Business Functions. Our research clearly highlights that AI is too broad a stretch across disparate topics for a Chief AI Officer to be credible across all possible applications.

The real question of how to organise around AI depends on where the business is in its maturity. In early stages of AI maturity, business function leaders are driving use cases on their own. This means AI is close to the benefits cases proposed to boards. However, with time (just like with Advanced Analytics) there will likely be a duplication of skillsets across multiple units. Our expectation is that in the medium term future AI initiatives will reach such a critical mass that it will be critical to organise around a hub-and-spoke model - a centralised AI team serving multiple business functions with local commercial expertise close to the application.

It is better to let business function leaders own AI for the moment and keep AI close to the business side. At some point, a critical mass of AI implementations might mean it will be better to centralise. But to be successful, the organisation's existing analytics expertise needs to be involved.





Build vs buy

Ultimately, businesses seeking to increase their AI capability need to consider whether to build or buy:

- Building allows you to create a solution tailored to your precise people and technology infrastructure
- Buying a service is generally a lower risk option in terms of time and investment, but may not be as well tailored to your needs

In general, we found that buying modular services is a better solution for most businesses seeking to optimise their existing operations. This allows companies to access best of breed specialists across a broad array of fields without incurring R&D risk.

However, when a business is seeking to use AI as an integral part of its proposition it should build (or acquire) the full required suite of AI capabilities. This allows the company to maintain its differentiation from the competition.

Build:

Internally we know best how to build and maintain the tools and how best to deploy them into our ecosystem

Buy:

Recruiting talent is a structural problem; for older companies that don't have a data DNA, this is too big a change, and that's where partnerships will be a really big thing

Driving efficiency by reinventing jobs

AI is going to remove the parts of people's jobs that can be automated, which will include white-collar as well as blue-collar tasks.

AI allows robots to perform more complex tasks which involve a more sophisticated level of decision-making than without AI. These principles are as true for the physical robots that we would recognise today on an assembly line as for virtual robots that may be scanning contracts. This is called Robotic Process Automation (RPA).

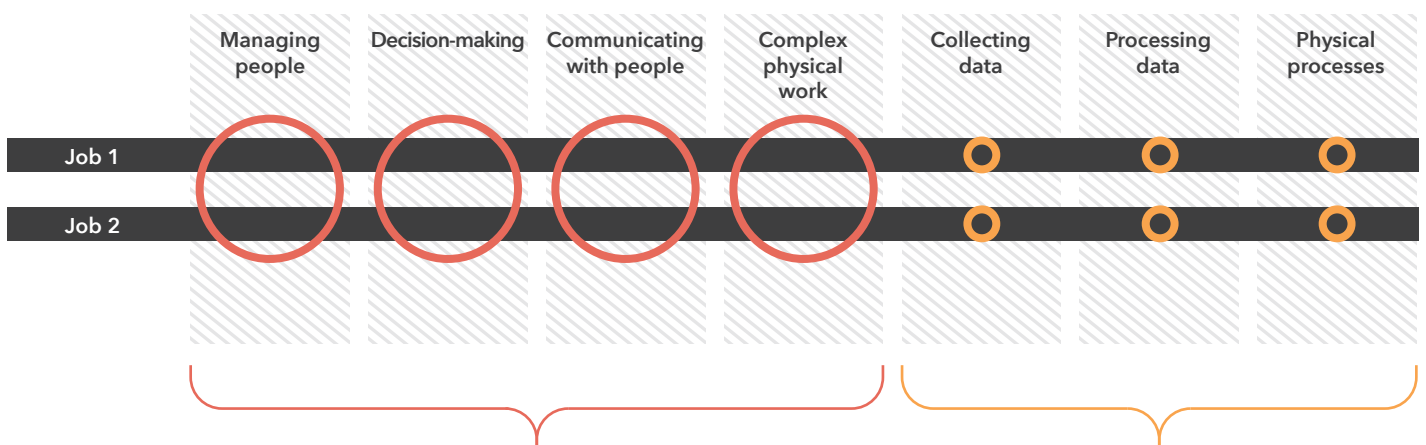
AI is a critical foundation to moving to a future of 'Pervasive robotics' - a world of robots performing a great variety of complex tasks, e.g. doing the grocery shopping, stocking shelves, packing boxes, autonomous shopping carts. For this to become a reality, it is necessary for robots to be able to sense, compute, move, interact and coordinate with people and other robots.

While robots may completely replace humans in some tasks, they will more frequently be used to enhance human capabilities, both physical and mental. RPA tools can sift through thousands of times more information in a fraction of the time a human would take and then present it pre-processed for humans to act upon.

Our interviews demonstrate the appetite in the near future for redesigning current jobs to make humans more productive - by using machines to do what they do best, leaving humans to do what they do best. For example, RPA tools can review CVs to provide a faster, less biased early-stage recruitment process, sending strong candidates for interview and borderline cases for review.

At present, AI business cases are often more successful on the basis of job cuts and cost reduction. In the long term, AI's business case will be much more about effectiveness than efficiency, and making employees more productive.

ROBOTS AND RPA WILL NOT TAKE WHOLE JOBS - BUT RATHER FRAGMENTS OF FTEs



Some jobs will be redesigned to focus on what people do best - possibly merging jobs

AI is likely to replace some of these tasks



「 The 'game' is not about replacing humans; the value of Robotics is providing leverage to humans and reshaping their roles 」

Evolution of AI investment to 2025

The path of AI adoption is different from what we saw with the emergence of Advanced Analytics, when boards often didn't even know what analytics was. With AI, nobody is under any illusion that this isn't huge. However, there is still a need to cut through the hype and figure out how to really get started.

Our interviewees are very clear that even the 'AI laggards' know that they are behind and that they need to do something about developing their AI capabilities rapidly.

Our interviewees said that their first AI implementation was almost always in cost reduction. This is an easier business case to get accepted, and allows the business to begin to understand AI capabilities before seeking to make more fundamental changes.

The medium-term future will see more networked systems composed of integrated AI components that are able to perform more complex tasks. The coming years will bring even more data through increased connectivity and continuous access to data through the cloud, as well as advances in Machine Learning.

We can see that the AI wheel of components will get short-circuited. Increased connectivity, for example, will bring better and cleaner data, and the cloud will circumvent the steps of creating databases: better analytics on more data will lead to RPA decisions with reduced human intervention.

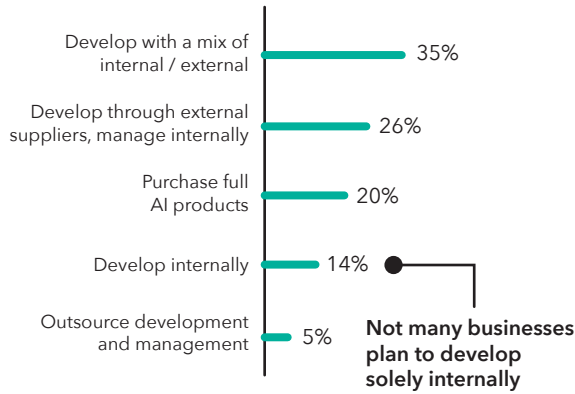
Nevertheless, the ability to explain the outcome will become more important than it is today, especially due to GDPR. We envisage that a significant part of the evolution of AI will be the 'explainable AI'. At OC&C, we already use a number of tools to unlock AI 'black boxes' which involve complex layers of interactions between different inputs.

DOES YOUR BUSINESS HAVE ANY PLANS TO DEVELOP OR PURCHASE AI SOLUTIONS OVER THE NEXT 12 MONTHS?

**Yes
67%**

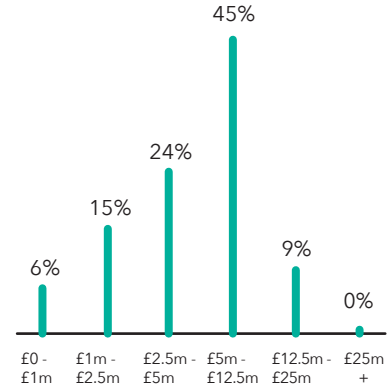
How will your business achieve these AI solutions?

(Respondents not currently investing in AI but with plans to do so in the next 12 months)



How much does your business plan to invest in AI solutions over the next 12 months?

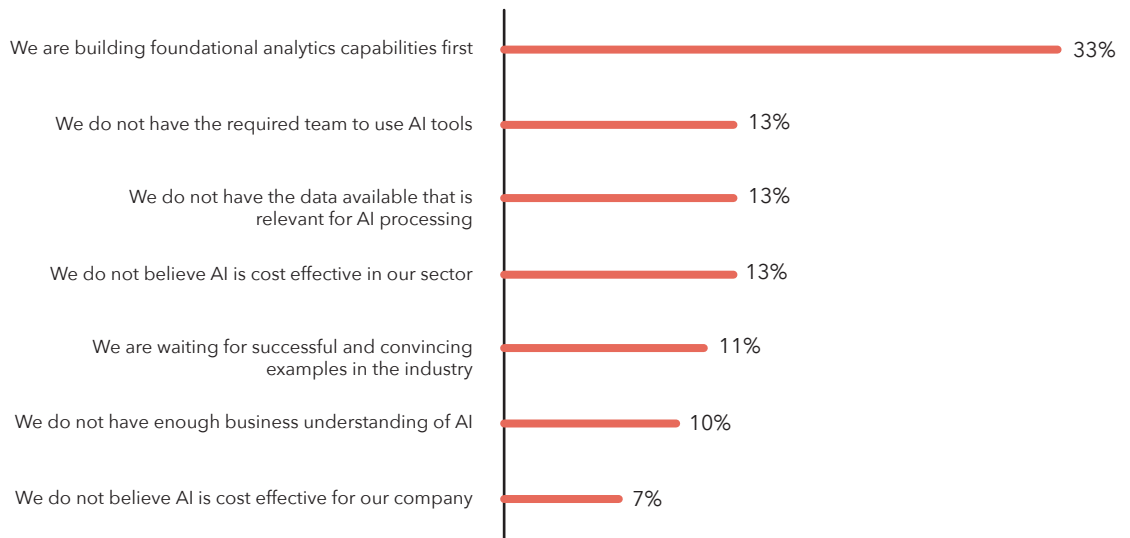
(Respondents not currently investing in AI but with plans to do so in the next 12 months)



**No
33%**

Businesses with no future AI roadmap are currently building their analytics capability

(Respondents not currently investing in AI, and with no plans to do so in the next 12 months)



AI 2025-2050

We can't be sure how AI will develop by 2050. But the implication for your action plan now is that you must think about more dramatic transformation. You can reset your ambition state as something far bolder.

The change that AI will bring is enormous. Just imagine for a second what is coming towards us:

- A handheld computer with 1 million times greater processing power versus 2019 (combination of Moore's law and new types of processor)
- Connectivity speed at least 1,000 times greater than 2019 (each generation represents a 10x increase over roughly 10 years)
- Proliferation of data capture units and wearables (sensors, mobile chips and implants) on every aspect of human and machine activity

This will yield a billion times more intelligence (even without any further advances into different areas of AI) than now. To think of AI as a 'fad' is simply naive. It is here to stay and it will only get bigger.

The key questions for any company have to address how to leverage AI to improve performance:

- Where can AI provide the highest impact now and in the coming years?
- How can we best organise to leverage the technology?
- What parts should I build myself and which parts should I use as a service?

The 2050 opportunity for AI at your fingertips will be a billion times greater than now



AI will bring a huge, almost incomprehensible, change to the whole world by 2050. There's never been anything that's such a fundamental shift in how we live, work, and invest

Setting up AI for success

Our survey respondents believe that cost and a lack of technical skill are the major barriers to the adoption of AI.

Increases in available data and analytical knowledge alongside the decreasing cost of technology are seen as key enablers for AI.

Our interviewees report that the more simple the use case for AI, the more frequent and successful are the implementations. By starting with highly specific AI solutions, organisations are more likely to have a successful implementation, and retain the agility to aggregate these systems to solve more complex tasks as their capabilities mature.

Business leaders are considering a wider range of concerns for AI implementation that could be potential barriers:

- Compatibility with regulatory controls, e.g. GDPR
- Trust in decisions that impact the business coming out of a 'black box' and how to make AI transparent and explainable
- Privacy, security and cyber hacking
- Disruption to the ownership of decision-making powers caused by AI enabling cross-functional decision making
- Changes in operating model and processes required

Our AI playbook accepts that these challenges exist; our recommendation is that you face them head on, and include mitigation plans in your roadmap.



The biggest barrier is (drumroll...) budgets! Whilst the promise of AI might be out of this world, I am competing for budget with so many other people. I have to be able to show quick wins from AI, but the whole point of AI is to completely reimagine our business. This is a frustration

Process / workflow change is required for businesses to harvest the full value of AI

AI and Advanced Analytics create opportunities that business operating models have not caught up with; we are already seeing AI creating cross-functional opportunities but the organisation is unable to seize them because decision-making rights are devolved

Based on the expectation of multiple AI solutions networked together, my advice is to align behind set data standards, agreed protocols, APIs etc. with your industry partners, and align behind the right platform for your business, e.g. Google, Amazon Web Services, Azure, etc.





Your playbook for AI

Winning with AI requires many components to come together in your business, e.g. technology, organisation design and processes.

Our work with clients to date has identified 7 steps that are required for AI implementation, starting with creating a robust vision through to completing a holistic roadmap for your AI-powered business. It is vital that you identify where AI can have the biggest commercial impact and focus on the change needed to deliver that.

It is likely that an AI transformation will require a change in far more than just technology - the impact will be felt in processes, skills, organisation design, operating model and culture. To deliver the transformation businesses need to plan carefully and communicate clearly.

Interestingly, and perhaps ironically, our experience shows that one of the biggest challenges for a successful implementation of AI is dealing effectively with the human transformation rather than the machines.

OC&C'S AI PLAYBOOK



Sector focus

It is clear that AI will have a significant impact on all industry sectors in the medium- to long-term future

In the short-term, there are significant differences in the adoption of AI tools and systems by different sectors. This is driven in no small part by their data and technology readiness; for example, unified databases of different aspects of customer behaviour, sensor data, maturity of analytics applications. Most interestingly, in some industries use of AI will create a significant competitive advantage as a small proportion of businesses start to use AI widely across functions, while many others are yet to start on the road to AI.

In most other industries, AI is largely focused on individual functions; most businesses plan to increase the breadth of usage of AI (and wider analytics) across the company - as seen in Retail and most B2B Services industries. The companies that are lagging are looking to kick-start AI usage by implementing off-the-shelf solutions rather than highly customisable ones.

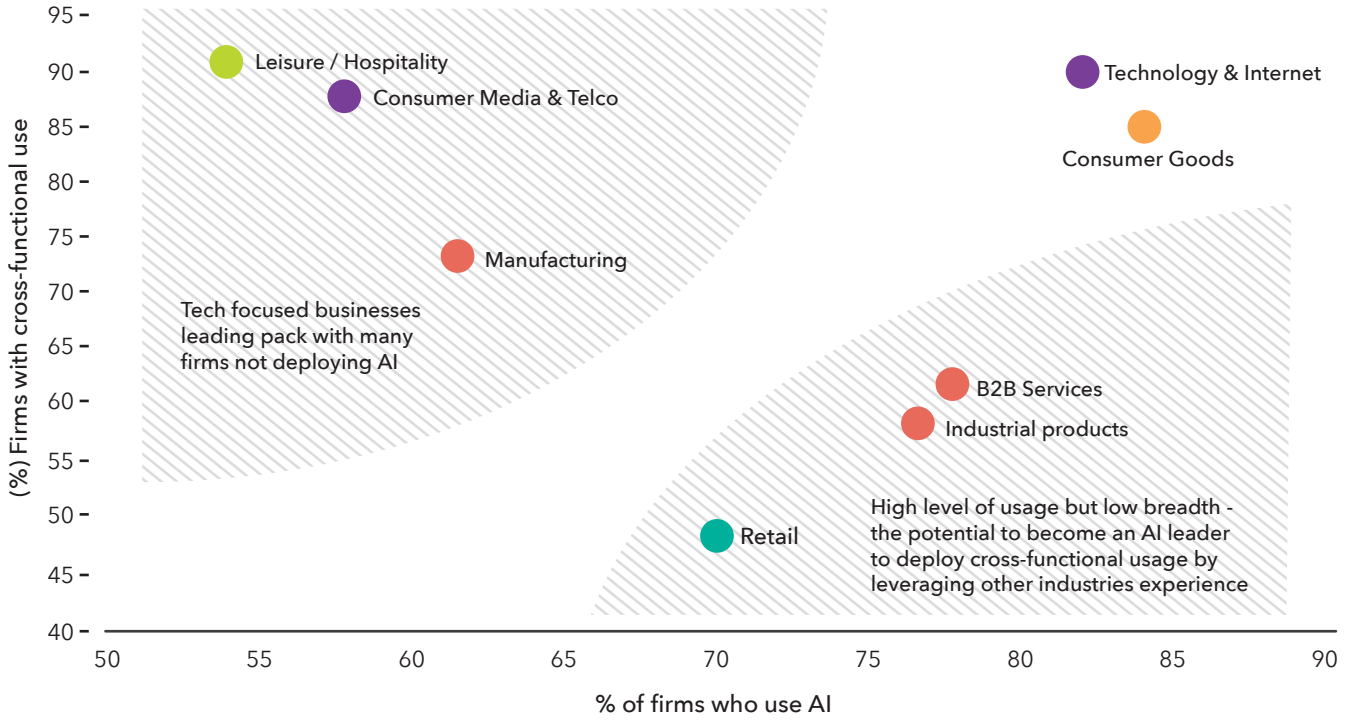
Where in the value chain AI can be most transformational varies considerably by sector and by company. The means of 'winning' as a retailer, for example, might be to use AI to create an advantaged supply chain, or it might be to improve customer experience; AI will force companies to think deeply about their businesses advantage and where exactly in their value chain they want to differentiate.

In speaking to businesses implementing AI it was clear that cost-cutting business cases are likely to be the first to be accepted by boards. However, we believe that cost cutting alone will quickly run out of headroom, and as AI matures more cases will be built around new customer propositions and revenue growth. Even in the examples of using AI to create competitive advantage in supply chain and logistics, as AI matures the business case shifts towards customer benefit.

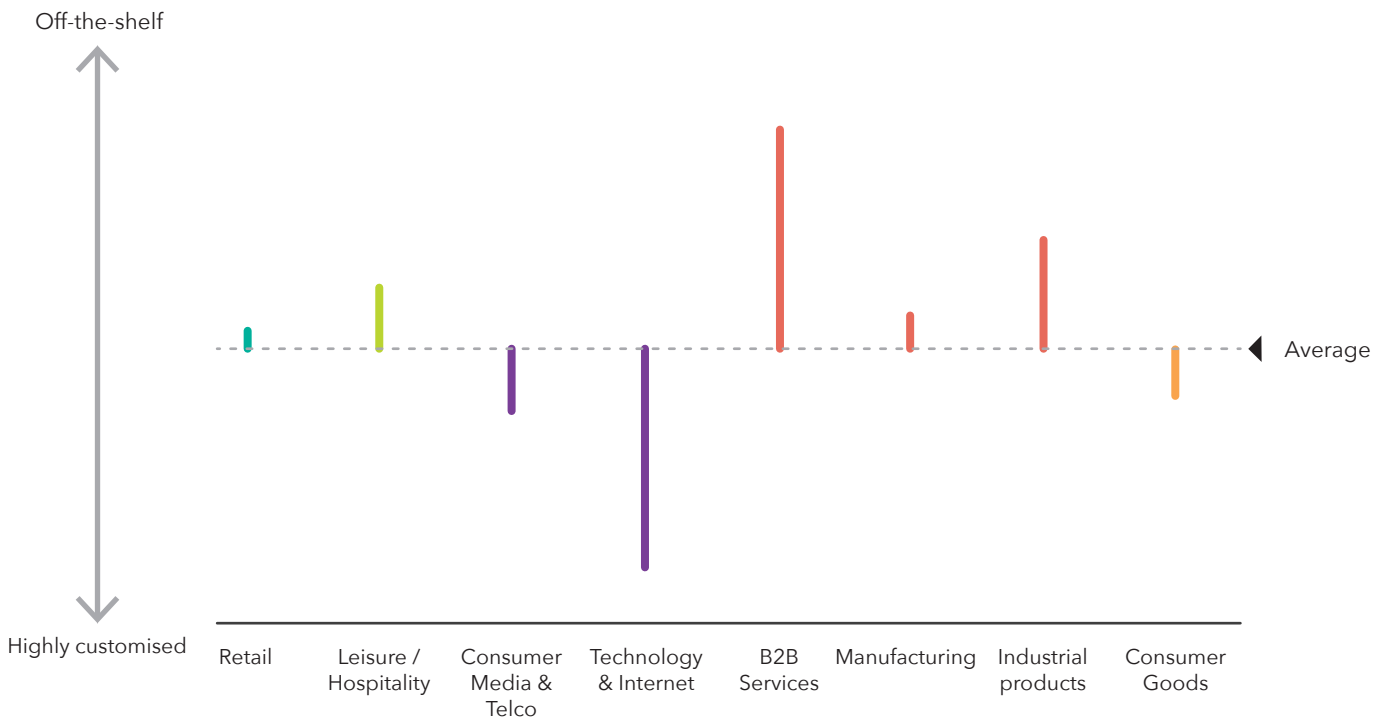
Indeed, business leaders recognise the current focus of the investment cases but were very optimistic in terms of the future direction - with over 30% expecting the tide to shift to increasing revenue.

THERE IS A WIDE VARIETY OF AI USAGE ACROSS INDUSTRIES

Pattern of AI usage across industries (% , %)



TYPE OF SOLUTION SOUGHT IN THE NEAR TERM



Retail

Retail is awash with AI solutions across the entire value chain; so the challenge is identifying where AI can have the biggest impact on propositions.

AI can create competitive advantage in retail through improving the customer experience (such as via personalisation) and through improving efficiency (such as via demand forecasting). An increasing number of retailers are achieving high growth by using AI to deliver a new customer proposition, such as predictive fulfilment (or zero-click retail) based on subscription or 'try before you buy' models. However AI innovation is not just in the online space. Bricks and mortar retailers are using demand prediction to identify when there are issues in their stores by alerting store managers to underperforming lines where, for example, a promotion label might be missing.

This dynamic field is forcing retailers to adopt AI (even in a limited capacity) just to keep up, and results in our research showing that Retail is one of sectors with the highest AI penetration.

Data remains Retail's double-edged sword - the shift to online has given retailers a huge swathe of useful consumer data, but legacy systems make it hard to extract and integrate.

Retailers need to evaluate where they can improve their proposition using data, and seek out a solution to provide it. The market for retail solutions is so large that only rarely will building a custom solution internally be the most cost effective.

Leisure

Leisure businesses typically have the lowest uptake of AI. There is a huge variance across players in this sector; many do not use AI at all, while others use and rely on AI across most organisational functions.

The biggest AI benefit that Leisure operators envisage in the short term is improved interaction with customers and the overall customer experience through better recommendation and service. In the medium term, though, Leisure leaders expect that AI will become embedded into the core of their operations and will significantly increase their competitive positioning through operational efficiency. For example, predictive maintenance and process automation.

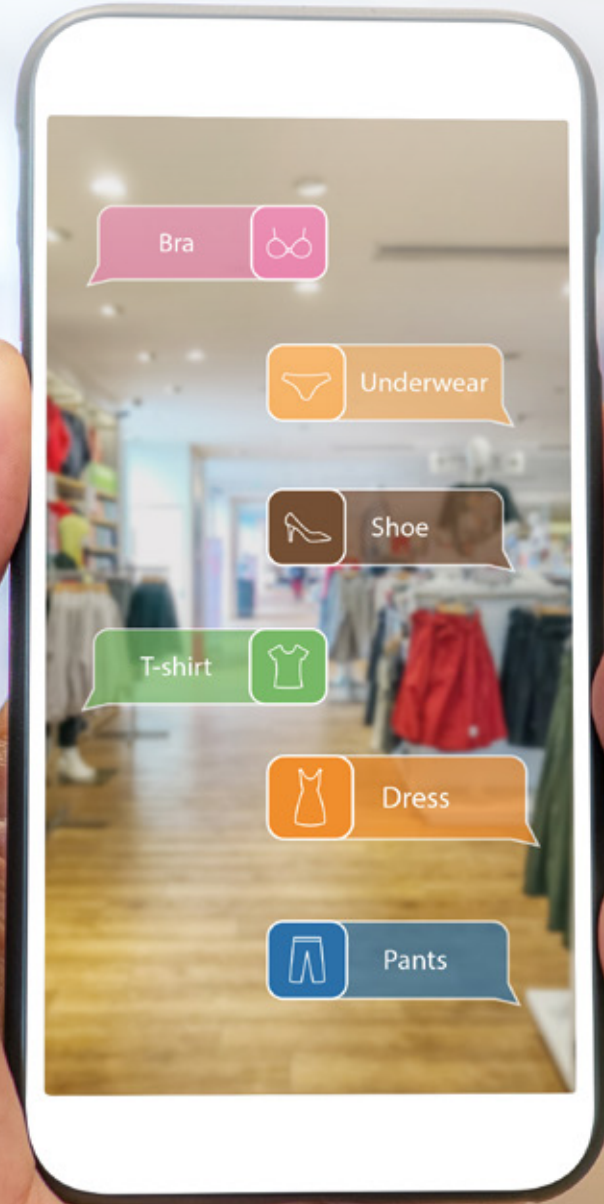
Most Leisure businesses expect to use off-the-shelf solutions rather than home grown ones; many interviewees quoted a lack of internal skilled talent as one of the key barriers:

"Third party providers have a big role in this as many companies can't afford to build their own."

"The most important thing is to start somewhere and experiment and adapt, rather than wait for a perfect solution."

"We are seeing a polarisation - the leaders in this space are forging out and they have ambition."

What holds Retail back is that AI is quite expensive to do and they are not sure what they should be spending their money on - so they don't spend any



Consumer Goods companies are looking at how efficiencies can be made across the whole business - but they need to partner to be able to deliver it

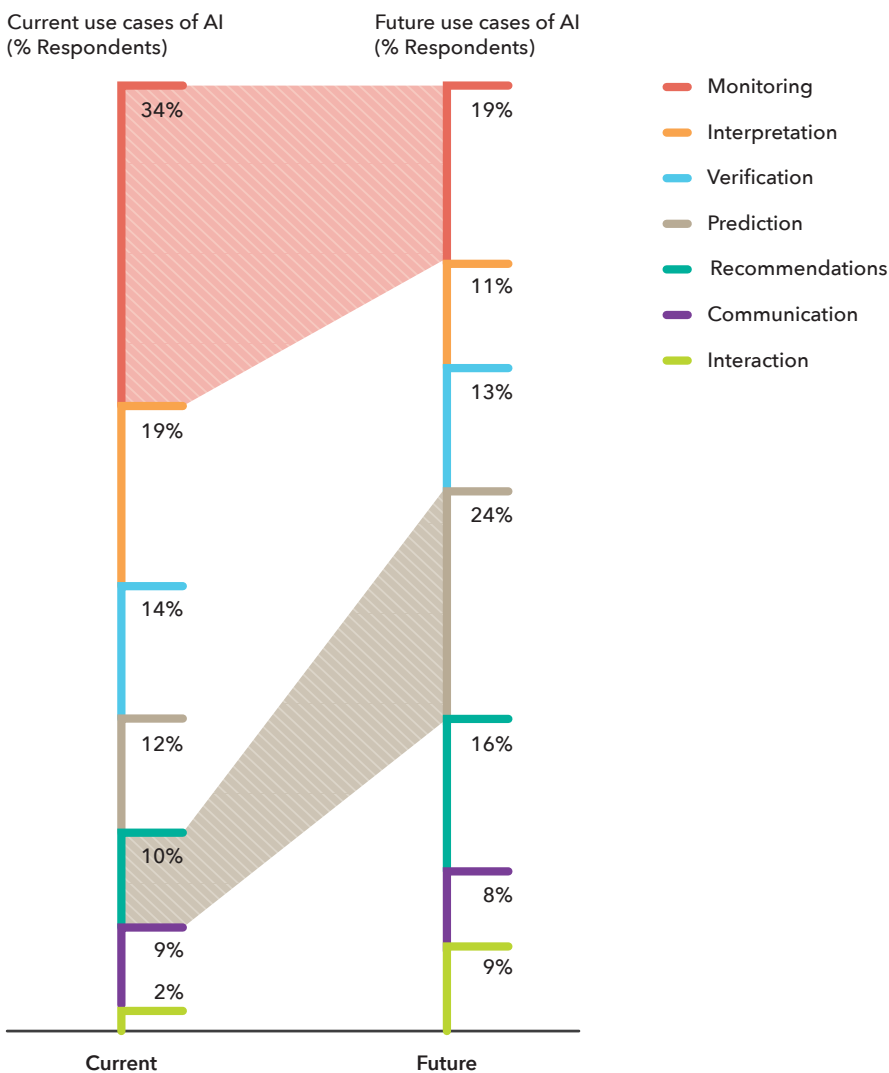
Consumer Goods

Consumer Goods companies are often multinationals with a vast array of products and brands. Thus it is somewhat surprising that Consumer Goods firms seem to use AI extensively and across functions; this is one of the sectors with the highest usage of AI.

One of the big issues with such a complex footprint is connectivity across different parts of the firm. For this reason, awareness of the need for clean data is higher here than anywhere else. Over 80% report significant initiatives aimed at gathering new internal as well as external datasets.

Most of the current usage is in monitoring but we expect this to pivot towards more complex areas such as prediction, particularly in regard to consumer demand.

THE FOCUS OF AI IN CPG WILL SHIFT FROM MONITORING TO PREDICTION



TMT

Many TMT companies are blessed with a significant amount of data and are often able to relate it to individual consumers. Indeed, some of the individual technology companies are the most advanced users of AI. The focus in these companies is on customer interaction, customer service and marketing. These firms have often been built with data at their core. Other firms across the sector with a longer history, e.g. media companies, see issues with data connectivity across different systems and are focused on aligning disparate data sources and systems that do not interact easily.

Companies across the sector expect AI to significantly improve customer engagement and experience. These technology savvy companies are also well used to working with AI and have processes to continuously test and improve solutions. More than in any other sector, TMT companies aim to build their own solutions. However, if there is a particular aspect of the solution missing they are not averse to buying companies rather than individual solutions.

TMT businesses see AI as an important source of competitive advantage. It is in TMT that we see the greatest desire to build AI systems in-house. We heard from respondents:

“Internally we know best how to build and maintain the tools and how best to deploy them into our ecosystem.”

“Our competitors are constantly on our heels, we need highly customised solutions that leverage our advantages rather than off-the-shelf ones.”

IoT is likely to be a big driver of AI adoption (as it requires ‘intelligent’ understanding of huge amounts of data). For example connectivity will give a boost to AI, reducing latency and improving real-time analytics. In TMT, the adoption of AI is linked to other new technologies such as IoT and 5G connectivity.

Business Services

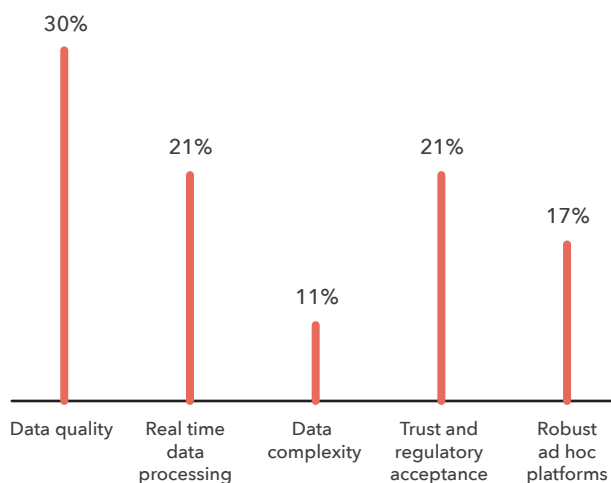
The B2B Services sector is broad, ranging from Specialist Financial and B2B Services to Industrial Products and Manufacturing. Despite this wide variety of activities, all (apart from the larger Financial Services businesses) report significant issues with rolling out AI solutions across multiple areas, mainly due to data quality. The challenge of poor data capture, with data distributed across multiple disjointed systems, has historically been and continues to be a significant challenge across businesses in this sector.

The expectation from AI is mostly in process automation, with focus on monitoring and interaction solutions likely constrained within individual functional areas in the near to medium-term future. Compared to other industries, most of the companies in this sector are currently investing in building basic analytics capabilities in the attempt to gain competitive advantage over their peers.

With respect to AI, the majority would prefer to buy off-the-shelf solutions rather than build their own.

DATA QUALITY IS A MAJOR OBSTACLE IN AI SERVICES

Current challenges to AI use



62% of challenges data related



Our competitors are constantly on our heels. We need highly customised AI solutions that leverage our advantages rather than off-the-shelf ones

「 We often have a problem understanding whether the people selling the AI solution are the owners of the IP or whether they have infringed on someone else's



Private Equity

The Private Equity firms we spoke to were overwhelmingly positive about AI.

PE investors at present do not see AI as a board agenda item but rather an operational management issue. As investors, they tend to look at opportunity as easily measurable efficiency improvement and process automation. At the same time, they are also quite sombre about difficulties in realising any savings. The main thrust is in empowering humans to achieve more with AI-enabled tools. Indeed many are looking at manually intensive white-collar processes and decisions that can be significantly improved and sped up, often by an order of magnitude improvement in time. The tendency is to buy the tools already built and customise them whenever possible.

AI can be a real source of value for PE owned businesses. But they're careful to unravel the truth versus the hype.

As investors in AI providers, many companies have expressed a concern about IP risk as many AI solutions use a mix of technologies and often it is quite difficult to disentangle where the IP sits. Nevertheless, there is a recognition that AI is booming and will attract significant investment in the coming years.

"We often have a problem understanding whether the people selling the AI solution are the owners of the IP or whether they infringed on someone else's."

"It may not currently give you a better answer than a human one, but it enables you to get to it quicker."

"Investors prefer physical products which provide 'stickiness', like a box in a car, kit in a hotel room, and makes it difficult for a user to switch provider."

From an investor point of view, we're not just interested in AI-as-a-service (AlaaS), but actually physical boxes (monitoring roads, nuclear power plants etc) that will have a degree of stickiness and assured future revenue streams

Our conclusions and your next steps

Business leaders need to seize the opportunities of AI today and plan for the changes that AI will bring tomorrow. This is more than incremental improvements; in some businesses it will be a complete reimagining of the business and operating model.

What do you do right now?

One of the challenges with AI today is the lack of understanding of how best to deploy it. Most use cases of AI in traditional companies are still small scale, even though many executives are concerned that their competitors will use AI to get ahead. The opportunity is to grasp AI as a wholly transformational catalyst – not merely as disjointed proof of concepts, pilots and / or experiments addressing a narrow functional problems.

The first step is to demystify AI: treat it like every other investment, by understanding how it supports and enables your existing vision and enhances your firm's capabilities or reduces costs.

Secondly, you should think creatively about how AI could change or disrupt your business model. AI can increase the whole capability of your business, but investment prioritisation necessitates you identify the transformational pivot points for AI across your value chain or functional map. In practical terms, this also means getting external support – even we were surprised by some of the inventive uses that AI is being put to – and leaders cannot be expected to creatively devise new AI applications without stimulus.

Having identified the pivot points where AI will make the biggest impact, you need to decide how to get there: whether to build or buy. Our research showed that having a foundation of analytics capabilities makes AI more successful, but your decision should rest on the level of differentiation you stand to gain from owning your own AI development.

At all stages in this process you will need to build a business case that ties back to your strategic goals.





Planning for tomorrow

The impending AI revolution means you also need to do some long-term planning to ensure you aren't left behind as your industry evolves. This is where there is real value in leadership because the business case will be harder to build; but great leaders will future-proof their business for AI.

Invest in your data: Consolidate your data infrastructure so you have your owned data available

Build analytics foundations: Build in-house analytics capabilities to support and complement AI

Re-imagine your workforce: Plan for the changes needed to your workforce if 25% of tasks were to be automated

Make processes agile: AI unlocks better cross-functional decision-making; the organisation may need to adapt to be able to realise this

There are also some watch-outs in the AI journey, in particular:

- Build trust in AI by ensuring that you are able to explain any decisions it has made; it is unlikely that AI will be able to take on legal liability for its decisions in the foreseeable future
- Pre-empt and avoid any upcoming regulatory constraints on the horizon that will impact AI - for example in data management, transparency and explainability

OC&C's AI playbook will help make AI part of your success story:

1. Create a future-state vision to work towards
2. Frame AI use cases within the business's functional map or value chain
3. Identify and prioritise transformational pivot points in the value chain
4. Develop and quantify business cases, listing barriers and enablers
5. Rethink the organisation, processes, workflows and tech ecosystem
6. Create a people plan and highlight outsourcing / partnering decisions
7. Create a granular short- and long-term implementation roadmap

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