The future of data

KPMG Board Leadership Centre

As the speed of artificial intelligence (AI) innovation and data-driven business transformation accelerates, boards and executives are wrestling with how these technologies will impact their businesses. While data and AI can enable new business models, products, revenue streams and efficiencies, they are also a source of new risk. The challenge for boards is to actively transform their organisations in an enduring way into dynamic, data-centric businesses fit for the challenges that lie ahead. We set out below some key considerations for boards.

Putting data at the heart of every conversation

Data professionals need to be connected to policy-making, governance, transformation skills and capability. It is no longer a back office thing but something to be embedded within the fabric of the business. Data informs all conversations, enables those conversations and is also a product requiring change in many of those conversations. The question is how does this happen without data people swamping the conversation with the hygiene factor of how they do their job.

Using the right language

It is not uncommon for data, AI and digital transformation conversations to lapse into technical jargon. The board should insist that data, information security and IT professionals speak in plain English and in a business context – i.e., the implications for strategy, risk and reputation.

Investing in data

Data needs real capabilities and that requires investment. Moving to the cloud, or going virtual, or investing in new technology, or developing AI doesn't of itself create great data or great data people. These things need to be invested in specifically and explicitly – data is a conscious capability, not a by-product of something else. Companies need to invest in the leading edge (which creates appetite within the business), but not at the expense of core data capabilities. You can't have one without the other.

The people challenge

Boardrooms need to be able to manage the culture and support the executive in educating the workforce on the value of data and AI and their ability as tools to help employees do their work rather than take their jobs.

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 data and AI could define their organisation's future.

Skills

Software can accelerate the extraction of data without having to rebuild core legacy infrastructure, but companies still need access to the data skills to understand the data as well as skills in data engineering and data software. Such skill sets are rare and in great demand.

There are broader questions as to whether our education system (and a world in which individuals are constantly distracted by the next incoming email, Twitter, or WhatsApp) is equipping our young people with the deep thinking, deep listening, and deep focus skills required for a future where AI will do all but the most complex of tasks.

Privacy concerns at an inflection point

There is a very live and visceral conversation around 'privacy'. What is and isn't appropriate in today's world are blurring as traditional privacy concerns are being challenged by businesses, consumers and others looking for information to be shared more widely. Information needs to move efficiently (whether in corporate life or the security services), but locking it down is getting harder and harder.

Beyond technical compliance with privacy laws and regulations – including GDPR – companies need to manage the tension between how they legally use customer data and customer (and societal) expectations about how that data is used. As customers, employees, regulators, and other stakeholders pay great attention to data privacy issues, this tension poses significant reputation and trust risks for companies. To that end, data hygiene should be front and centre.

Are we collecting or holding data we don't really need? Who has access to our data, including vendors and third parties? Are the right people in the policy, law and ethics conversations as the traditional silos are increasingly inappropriate? A helpful touchstone for boards to keep in mind during data conversations is 'just because we can, doesn't mean we should'.

Bias

Our algorithms are only as good as the data put into them and the frameworks around them. They are, in effect, trained by historical data sets collected by real people. As such, they are almost always laced with the unconscious (or conscious) bias inherent to humans – especially given that only 12% of artificial intelligence researchers and 6% of software developers are women, and that people of colour remain significantly underrepresented.[1]

From an ethical, reputational and commercial standpoint, managing and mitigating bias is therefore critical for any company that uses AI. Companies need to look to whether they have the right governance, the right frameworks and the right training in place to ensure the quality of data.

Control and morality

"*Once the machine thinking method had started, it will not take long to outstrip our feeble powers. At some stage therefore we should have to expect the machines to take control.*"

Alan Turing, Essay on computer machinery, 1950.

Whether or not this is a dystopian view of the future, businesses need to learn to live with AI and mitigate against any material risks. While most businesses understand AI's transformative potential, few have real clarity on how to ensure – and on who is responsible for ensuring – its ethical use.

Using data and AI in an ethical way is simply good business. Companies which proactively address ethical issues will maximise their value, mitigate risks, and avoid falling out of favour with increasingly discerning consumers. But, where does ultimate responsibility lie for the ethical use of data, AI and technology; and is there a coherent strategy for the ethical use of data and AI and a framework of responsibility for its governance?

Humanity

People are still important – the human in the loop – nevertheless, algorithms are the future and there is a debate still to be had about the long-term moral implications of AI-driven high automation replacing low automation and manual processes. While most experts agree that technological innovation will not lead to mass unemployment, there are still esoteric questions around what our contribution will be as humans if algorithms are doing all our work? And how does the huge pervasiveness of data and AI change us as people including our sense of responsibility and our ability to make wise decisions?

[1] Data, ethics and accountability; MBS Group, 2022
[2] Awad, E. et al. Nature, 2018

Ownership

Ownership and who gets prosecuted if things go wrong are important questions. For example, genomics will release a treasure trove of information about risk and longevity and that could be 'terrifying' if there is no consideration given to who owns the data. Would a business employ an individual if the data suggested they would die soon?!

Global standards?

With more open access to data – data crosses national boundaries and can no longer be locked down – the old constructs that prioritise the state, the citizen or government have broken down. We are also seeing a battle between continents with the EU and US taking polarised positions regarding the big tech giants. Global treaties on data protection and how data is used (akin to the global treaties on nuclear proliferation) would be beneficial, but difficult to achieve in practice.

There are some areas where defining universally acceptable ethical rules for AI might be particularly fraught with difficulty. For example, self-driving cars might soon have to make ethical judgements on their own – but settling on a universal moral code for such vehicles could be near impossible as research[2] suggests that the moral principles that guide a driver's decisions vary by country.

The environmental impact

Artificial intelligence can have a multitude of benefits including reduced costs, efficiency gains, innovation and improved service delivery, but data processing and storage is expensive and consumes huge amounts of energy. Space could revolutionise the way data is processed and stored. In space, energy and capacity is free. Expect to see data farms in space soon.

East versus West

Artificial intelligence comes with colossal opportunities, but also threats that are difficult to predict. Whichever country leads the way in AI research may well come to dominate global affairs – a possibility that has raised AI development up the list of national security concerns in recent years. It is China and the US (not Russia) which are seen as the two frontrunners, with China having announced its ambition to become the global leader in AI research by 2030.

China's population (nothing produces data quite like humans), its permissiveness when it comes to users' privacy, and its ability to deploy AI in ways that might not be acceptable in the West all compare favourably with European countries and their 'citizen-centric' legislation when it comes to rapidly building AI capability.

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