Dr. Matthew Howard, Director of Artificial Intelligence and Cognitive Analytics, Deloitte

Biography: Matthew leads Deloitte’s AI and Cognitive Next Generation Services team. His background includes academic research, start-up biotech, Big Pharma, IBM Watson, and Deloitte Innovation. He works cross-industry to help customers understand the opportunities of rapidly evolving technologies, how to innovate using them and how to move from the hype to real use cases and implementation.

Matthew has deep experience in Digital Healthcare and has worked extensively at the public-private interface to build analytics systems to understand patient data that meet a wide range of needs and recognize the complexity of working with granular healthcare data.

SUMMARY OF EVIDENCE

Investment in AI is growing fast. Deloitte’s latest State of AI in the Enterprise research – a global cross-sector survey of almost 2,000 IT and business executives involved in their company’s AI strategy, spending and implementing – found that 93% of the UK organisations surveyed are currently increasing their investment in artificial intelligence compared to last year.

Despite this progress, the UK appears to be behind other countries like the UK, China and Australia when it comes to moving beyond the prototype stage. The survey cites the biggest obstacle to this as integrating AI into the company’s roles and functions – a problem particularly felt in the UK. These findings closely correlate with the integration challenges we encounter day-to-day at Deloitte in our work helping clients implement AI into their operations.

As we have discussed in previous APPG sessions, AI has a significant role to play in improving the performance of British businesses and help deliver scale productivity gains to the UK economy. To help UK companies overcome these implementation issues and keep pace with our global counterparts, we see a pressing need to support them in three key areas: infrastructure, risk management and workforce preparation.
Infrastructure: Underinvestment in companies’ technology backbone is an issue often discussed within the industry. However, it is easier to implement and integrate AI into modern, well-designed technology infrastructures rather than highly complex legacy ones. This often impacts our work where integration is complicated by existing, often old, technology. Organisations need to build long-term sustainable enterprise technology roadmaps that are based on new technologies, such as cloud computing. This migration of organisations to cloud has major implications for AI – it not only provides the opportunity to move off outdated architectures but also to take advantage of new cloud-based AI services that can drastically reduce the cost of using AI at scale.

Risk management: Only 24% of UK executives say their company is fully prepared to address the potential risks associated with their AI initiatives – the lowest rate of preparedness amongst those countries surveyed. The two risks executives were most concerned about were regulatory non-compliance and cybersecurity vulnerabilities, particularly surrounding the use of personal data in algorithm decision-making. For many use cases, regulatory correct practice is clear-cut, such as the use of predictive analysis in calculating a mortgage offer versus automating film recommendations based on viewing history. However, there is a grey area, and the Government can help companies better understand the right way to do things in easily understandable, practical guidelines. For example, in our healthcare automation work, we have found the NHS’ code of conduct for the use of AI (and the related 10 principles to follow) useful and intuitive. We would like to see these extended to other areas and industries. This is particularly critical for small and medium sized businesses where compliance management can prove a major cost and time barrier to getting projects running. Similarly concerning cyber security, one of the challenges to successful AI deployment is around helping companies work out the correct regulation, so they can test algorithms in a controlled environment with real data. This is another area where the Government can play an important role in providing practical guidelines on how to take a compliant, secure approach to data management and automation.

Workforce issues: 73% of UK executives think their company has a moderate, major or extreme skills gap in meeting the needs of their AI projects. We believe this is a significant barrier for many of our clients. Like all technologies, AI-based approaches require maintenance, such as regular testing and retraining. To do this, companies not only need the right hardware, but also the best people which is why it is important for them to retrain their employees, whether it be helping those in technical IT roles adapt to managing AI systems (i.e. model governance and maintenance), or preparing staff across the organisation to use them.

Bridging this skills gap requires a reassessment of our education system and the future incoming skills into the labour market, but we also need to reach those already in work. Part of this will demand greater collaboration between academia, business and government to provide more flexible AI management courses and business incubation programmes. Companies also need best-practice guidance on how to develop and
source the skills and expertise they need for their projects. For larger companies, this may mean considering company-wide AI centre of excellences or AI “boot camps”. Whereas smaller to medium-sized companies may require greater support in how to best source AI developers and tap into flexible talent networks. Organisations of all sizes though must address the enduring diversity issue within technology and make the field as inclusive as possible.