Evidence Meeting 3 | Enterprise Adoption of AI: Implementation is a Parliamentary Brief based on the All-Party Parliamentary Group on Artificial Intelligence (APPG AI) evidence meeting held on 13 May 2019 at the House of Lords.

This meeting was chaired by Stephen Metcalfe MP and Lord Clement-Jones.

We would like to express our appreciation to the following people for their oral evidence: Dr. Matthew Howard (Deloitte), Shamus Rae (KPMG), Ray Eitel-Porter (Accenture), Kate Rosenshine (Microsoft), John Buyers (Osborne Clarke), Tim Gordon (Best Practice AI), and Sofia Ihsan (Ernst & Young).

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# Contents

EVIDENCE MEETING 3 OVERVIEW .................................................................................................................. 1  
Details ....................................................................................................................................................... 1  
Speakers ................................................................................................................................................... 1  
Questions .................................................................................................................................................. 1  
INTRODUCTION ........................................................................................................................................ 2  
Context ..................................................................................................................................................... 2  
Skeleton .................................................................................................................................................... 2  
1. CURRENT STATE OF AI ADOPTION ........................................................................................................ 3  
Potential of AI Adoption .......................................................................................................................... 3  
A Snapshot of the Current State ................................................................................................................ 3  
Key Differences Across Industries and Sectors ....................................................................................... 3  
2. KEY BARRIERS TO AI ADOPTION .......................................................................................................... 4  
Organisational Transformation ................................................................................................................ 4  
A New Mindset ....................................................................................................................................... 4  
3. GOVERNMENT’S ROLE IN ENTERPRISE ADOPTION ........................................................................... 5  
Best Practice ............................................................................................................................................ 5  
New Incentive Structures ........................................................................................................................ 5  
WRITTEN EVIDENCE APPENDIX ........................................................................................................... 6  
Dr. Matthew Howard, Director of Artificial Intelligence and Cognitive Analytics, Deloitte ............... 6  
Shamus Rae, Partner - Head of Innovation and Investment, KPMG ...................................................... 7  
Ray Eitel-Porter, Managing Director - Head of Applied Intelligence UK, Accenture ....................... 9  
Kate Rosenshine, Head of Data & AI Cloud Solution Architecture – Financial Services, Microsoft .10  
John Buyers, Partner - Head of Commercial, Osborne Clarke ............................................................... 11  
Tim Gordon, Founder & Partner, Best Practice AI ............................................................................... 13  
Sofia Ihsan, Trusted AI Lead UKI, Ernst & Young ............................................................................... 14  
ABOUT APPG AI ..................................................................................................................................... 16  

APPG AI | Evidence Meeting 3 Parliamentary Brief | Enterprise Adoption of AI
EVIDENCE MEETING 3 OVERVIEW

Details
- Date: 13 May 2019
- Time: 5:30 – 7:00 pm
- Location: Committee Room 1, House of Lords
- Participants: **147 registered attendees**

Speakers
- **Dr. Matthew Howard**, Director of Artificial Intelligence and Cognitive Analytics, Deloitte
- **Shamus Rae**, Partner - Head of Innovation and Investment, KPMG
- **Ray Eitel-Porter**, Managing Director - Head of Applied Intelligence UK, Accenture
- **Kate Rosenshine**, Head of Data & AI Cloud Solution Architecture – Financial Services, Microsoft
- **John Buyers**, Partner - Head of Commercial, Osborne Clarke
- **Tim Gordon**, Founder & Partner, Best Practice AI
- **Sofia Ihsan**, Trusted AI Lead UKI, Ernst & Young

Questions
- What are the biggest obstacles preventing enterprise from adopting AI?
- Do the barriers differ based on industry and/or size?
- How can Government help break these barriers? What is the role of regulatory bodies?
INTRODUCTION

Context

From increased productivity to improved services, the opportunities AI offers for enterprise are increasingly being realised. However, APPG AI findings reveal there are still many barriers that companies need to overcome to ensure they get adoption and implementation right.

For example, many companies across the UK lack the financial resources needed to roll out such a high-cost project. Furthermore, weak data infrastructure and employee backlash are other challenges enterprise must address if they want their organisations to transform holistically to adopt AI technologies successfully.

In 2019, APPG AI launched the Enterprise Adoption of AI Pillar to better understand how to promote enterprise adoption across the UK. We will focus on:

- Unpacking barriers to enterprise adoption and the differences across industries and sectors
- Promoting organisational transformation and a shift in mindset amongst employers and employees
- Thinking in operational excellence of AI at all workplaces, service excellence from AI tools to workers, and high-quality product excellence for customers.

Although the primary audience for APPG AI are members from the House of Commons and the House of Lords, the group also aims to inform the general public and key stakeholders across business, academia, and civil society.

Skeleton

This Parliamentary brief is broken into three parts, highlighting the main takeaways from APPG AI’s first evidence meeting under the Enterprise Adoption of AI Pillar. The meeting, held 13 May 2019, was chaired by Stephen Metcalfe and Lord Clement Jones, and orchestrated by the Secretariat of APPG AI, Big Innovation Centre. It brought together key stakeholders to gather and share evidence on the barriers preventing enterprise from adopting AI.

First, the brief provides a snapshot of the current state of AI adoption in the UK. It looks at the key differences across industries and sectors - and tries to understand the potential if enterprise is to get enterprise adoption right.

The second section unpacks some of the critical barriers enterprise faces, preventing them from adopting AI in their organisations. Specifically, it focuses on the need to transform organisations holistically – horizontally, vertically, and across all functions.

Third, the brief sheds light on Government’s role in promoting enterprise adoption of AI. Building on the evidence gathered by the APPG AI, it focuses on the need to collect best practice and to rethink existing incentive structures.

Finally, the brief ends with an appendix with the written evidence provided by Dr. Matthew Howard (Deloitte), Shamus Rae (KPMG), Ray Eitel-Porter (Accenture), Kate Rosenshine (Microsoft), John Buyers (Osborne Clarke), Tim Gordon (Best Practice AI), and Sofia Ihsan (Ernst & Young).
1. CURRENT STATE OF AI ADOPTION

Potential of AI Adoption

AI has a significant role to play in transforming how UK businesses and organisations operate and position themselves, both on national and international levels. Currently, however, most popular use cases of AI are seen in consumers’ everyday lives, from smartphones to chatbots or healthcare devices to advertising. AI has yet to reach its potential in revolutionising business.

Although the potential is huge, adoption of these technologies within business is still at its early stages. Whether that is automating mundane administrative tasks, deriving intelligent insights, enabling higher quality engagement with customers, or improving operational efficiency and productivity – once adoption increases, enterprise will transform dramatically.

As proof-of-concepts are starting to mature and the socio-economic benefits of AI surface, more and more stakeholders are racing to create their strategies for when and how to adopt AI technologies into their products, business functions, or organisations as whole. Realising that potential means making UK companies more competitive and successful in the immediate and long-term future.

A Snapshot of the Current State

According to a recent report by MMC Ventures - ‘The State of AI: Divergence’ - AI adoption in 2019 has increased significantly. Specifically:

- AI adoption has tripled in 12 months
- One in seven large companies has adopted AI
- In 24 months, two thirds of large companies will have live AI initiatives

Furthermore, the landscape benefits from a growing supply of open source AI APIs, frameworks, standards and norms that enable quicker and better AI adoption.

In fact, a recent report by Gartner argues that AI is the fastest paradigm shift in history of enterprise technology as the proportion of companies with AI initiatives have grown from one in 25 to one in three in the course of three years.

All figures and trends show that adoption is on a clear rise.

Key Differences Across Industries and Sectors

However, businesses are adopting AI at a different rate depending on their industry, their sector, and/or their size. Large companies seem to adopt AI at a much faster rate while small companies are still challenged by lack of resources, leadership buy-in, poor data infrastructure, and more.

Some industries, including high-tech companies, telecom, and financial services, were early adopters of these technologies; although recently there has been a lot of growth for retail, health and media as well. On the other hand, other industries including education, government and charities are further behind.

Furthermore, AI adoption seems to differ depending on the business function. Service operations and product development are the two functions in which AI is commonly deployed.

Ultimately, whether a company ends up adopting AI or not is likely to cause a huge divide between leaders and laggards worldwide.
2. KEY BARRIERS TO AI ADOPTION

A New Mindset

 Businesses lack a clear understanding of AI and its potential. The panel at APPG AI’s Enterprise Adoption of AI Evidence Meeting agreed that a new mindset must cultivate in order to encourage AI adoption.

Leaders, specifically, are still needing to be convinced of the transformative power AI technologies pose. In many industries, business decision-makers lack awareness about AI’s potential. Hence, managers (usually in the IT departments) often have to convince their leaders of the opportunities that could be achieved. Sometimes it is hard to persuade the C-suite because of the heavy costs involved in buying such technologies, lack of data governance structures, and overall resistance.

Resistance doesn’t come from just business leaders, however. Some employees are starting to show backlash towards new technologies like AI, worried about their job security and the risk of automation. Others simply don’t want to change the status quo and lack the skills or willingness to welcome these technologies.

Regardless, for enterprise adoption of AI to work, a new mindset must be promoted – one which accepts and collectively tries to build open innovation beneficial for society.

Organisational Transformation

Even if the will for AI adoption is there, most enterprise lacks a clear roadmap for how to adopt AI technologies in business. Many organizations still lack the foundational practices to create value from AI at scale—for example, mapping where their AI opportunities lie and having clear strategies for sourcing the data that AI requires.

This roadmap needs a holistic approach that will ultimately mean entire organisational transformation. Furthermore, the roadmap must be sustainable and oriented in the long-term. This can be challenging as business leaders, like politicians, often think only in the short-term horizon.

A big part of organisational transformation is ensuring employees have the skills to manage, use, and deploy these new technologies. Most of the companies already investing in AI and adopting it in their businesses are putting a lot of their focus on building a pipeline of talent who match these criteria; however, given the global skills gap, this has proved difficult and expensive.

For enterprise adoption of AI to truly transform business, the skills gaps must be addressed and all functions within a business have to be considered to transform the organisation fully.
3. GOVERNMENT’S ROLE IN ENTERPRISE ADOPTION

**Best Practice**
To promote AI adoption across UK businesses, the Government can invest, help build, and disseminate best practice frameworks and models.

Best practice can provide leaders in AI adoption an opportunity to showcase how they’ve successfully been able to implement new technologies in their business and also learn from other pioneers in the space. Furthermore, best practice can offer businesses who have yet to adopt AI the support needed for executive level commitment, a generic roadmap that can be tailored to their specific contexts, and lessons learnt.

At the APPG AI Evidence Meeting, Shamus Rae from KPMG shared how government should work with industry to create a cross-sector initiative for AI adoption. Embedded deep inside this is the need for fit for purpose data governance structures and 21st century infrastructure.

Furthermore, a sandbox approach can be applied to ensure businesses with good ideas can scale. ICO’s Regulatory Sandbox is a good example of such an approach. The sandbox will help companies and public bodies deliver new products and services of real benefit to the public, developing products and services that use personal data in innovative and safe ways.

Similar initiatives, collective efforts from business, government, and the wider society, must flourish to gather the best practice needed to realise the opportunities AI technologies pose.

**New Incentive Structures**
Given the socio-ethical implications embedded in AI technologies, government must also ensure the right incentive structures are in place in which AI can be deployed and adopted safely and ethically.

For example, one of the social fears of AI adoption is its impact on already existing inequality gaps. AI technologies have the potential to destroy many existing professions and the jobs most likely to be impacted will be those of the middle and low class. AI will augment all workers’ activities eventually but displace a greater proportion of their activities over time. Government must promote incentive structures so business can invest in retraining and reskilling their employees so that they remain competitive in the 21st century era.

Incentive structures such as these must be designed by evidence-based policymaking in order to encourage an innovation ecosystem which helps stakeholders realise AI’s benefits but also mitigates its potential harms.
WRITTEN EVIDENCE APPENDIX

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.

Written 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.

**Shamus Rae, Partner - Head of Innovation and Investment, KPMG**

Biography: Shamas has over 23 years’ experience in Back Office transformation cross-industry and a broad in-field knowledge of undertaking Operational Strategy work for various global clients, from Investment Banks through to major Leisure companies. In 1993 he disrupted the BPO industry by building the first multi-function, multi-client BPO business. Shamus later joined PWC Consulting as a Financial Services Partner before that was acquired by IBM. He then went on to build IBM's first BPO operation in India and followed that by building dozens of Shared Service Centres around the world and in 2004/5 was managing a series of centres with 17,000 staff in Asia, Europe and the Americas, delivering Banking Operations, Insurance Claims, Finance, HR, Procurement and Call Centre services to clients globally. With the
emergence of advanced automation Shamus is now leading the Automation Proposition covering everything from advanced robotics all the way through to Cognitive Computing. And all this in addition to his 120 km a week cycling addiction.

Written Evidence

We have surveyed Internal Auditor from across nearly 300 clients and it is clear that over half of them have started to see AI systems being investigated with a view to systems becoming operational within the next year. Whilst this may look like excellent news there are some serious stumbling blocks for the UK companies going forward.

We may have been at the forefront of AI horizontal development and further investment is required to maintain that position but we need now to fold this in to the vertical industries. Different industries are deploying at different speeds built nearly all legacy companies go through 3 phases:

1. Play or shiny toy syndrome. To some extent this is a required phase where organisations can start to understand the potential of AI, what is real and what is not.

2. Operational Efficiency. Organisations move to further optimise current processes - removing frictions/tasks

3. Business Model change

There are key problems with getting through these steps.

1. Active Inertia (Prof. Donald Sull MIT) - companies get stuck at the play stage. Happy to investigate but not deploy.

2. Data - actually a large amount of the cost for AI development is cleaning up data. This creates large upfront costs and a barrier to entry for new entrants

3. Finally the danger is our industries get stuck on stage 2 and aren’t brave enough to get to stage 3.

Government can and should help:

1. Clearly it’s essential we look at future skills - we need more data scientists but we also need more bridges/shapers people who can take industry understanding and bridge it back to AI capability.

2. We need to educate leadership - too many of our leaders are technology laggards

3. We need to find data sets, cleaning them up and make them available to ecosystems of start ups. I fundamentally believe that we should have government and industry invest in data exchange platforms to allow data to be shared more widely but in a controlled and value exchange way.

4. We have the opportunity to create the equivalent of fintech for various industries - proftech for accounting and legal for example. Proactive government support/engagement on data sets like health, corporate back office data etc along with academia could open-up industries, create flourishing new ecosystems and drive business focused research. This should be done with a focus to expand away from simply the Cambridge/Oxford/London triangle.
Ray Eitel-Porter, Managing Director - Head of Applied Intelligence
UK, Accenture

Biography: Ray Eitel-Porter is a managing director with Accenture Digital, leading the UK & Ireland Analytics Practice. Since joining Accenture in 2013, he has led work to define the global information and analytics strategy and operating model for a major CPG company. He has also been driving quality and supply chain analytics for a manufacturer, leading a project to design and test a data monetization proposition for a cross-industry service provider, and overseeing an analytics maturity/capability assessment for a pharmaceutical major. He chairs the government’s Data Skills Taskforce and sits on techUK’s Big Data & Analytics Council.

Written Evidence

Our survey shows that nearly 70% of executives believe AI will transform their business but only 45% are yet seeing the results.1 Achieving the potential of scalable AI requires new mindsets and skills around capabilities, data and value.

Three enablers of enterprise AI adoption

- Human + Machine - by 2020, AI is expected to create 2.3 million jobs, while eliminating 1.8 million.2 Enterprise must prepare for new human + machine collaboration and proactively drive the creation of new roles to maximise the potential of this human augmented capability. Wilson and Daugherty outline six new categories of jobs in “Human + Machine: Reimagining Work in the Age of AI”.

- Data = fuel - fundamental to realising the benefits of AI are data veracity and access. 70% of employees say they don’t have access to the right data for their job and 30% of it is inaccurate.4 To unlock value, businesses must manage their data as a supply chain, enabling it to flow easily through the organisation to make decisions at the point of need.

- 10x, not 10% - traditional companies often get trapped into thinking about incremental gains rather than transformational improvements, through creating a new digital business model. Whereas potential was once limited by technology, leadership imagination is now often the limiting factor, as cloud platforms enable easy and cheap access to immensely powerful capabilities.

Do barriers differ based on industry / size?

Regulated industries are required to ensure AI explainability, however, all organisations face the same implicit obligation given trust is key to sustainable growth. Whilst regulated industries may be faster to adopt, others should follow, if not lead.

Larger companies typically find it easier to access the talent and technology currently required for advanced AI. However, with the rapid acceleration of cloud platform capabilities available via APIs and simple tools, the barrier to adoption will be awareness within SMEs. Government has a role to play here: for example, the Data Skills Taskforce focuses heavily on SMEs and the regions.
Government enablers

The Government has made clear its commitment to, and investment in, making the UK a leading power in AI. Continued focus should be on:

An agile regulatory framework for the use of technologies rather than the technology per se. Aligned to the Regulatory Pioneers Fund, the UK should implement an AI focused regulatory sandboxing scheme, based on the FCA model, that will enable businesses to test AI in a safe environment.

A global AI ethical framework driven by the CDEI, with the UK coordinating action to shape governance for the responsible development of AI that puts people at the centre and supports principled decisions where regulation may not (yet) exist.

A framework for data access and sharing building confidence in provenance, accuracy and security (including privacy). We advocate further support for Data Trusts and research into Privacy Enhancing Technologies.5

The above can be amplified through a strong partnership between government, business, academia and societal groups.

Kate Rosenshine, Head of Data & AI Cloud Solution Architecture – Financial Services, Microsoft

Biography: Kate leads the Data and AI Cloud Solution Architect team for the Financial Services Microsoft UK. Prior to joining Microsoft, she worked in companies focused on applying behavioural analytics to augment decision making for insurance companies, financial institutions and governments. Kate comes from a science background in neurobiological genetic engineering, where she focused on leveraging genetic data to predict behavioural patterns.

She holds a MSc in Molecular Biology from Bar Ilan University and a MBA from Tel Aviv University.

Written Evidence

As AI increasingly becomes a core part of the technological toolkit, it is fast becoming a crucial component to remain sustainable as an organization. With that, we are in the early stages of understanding what AI systems will be capable of. AI systems today are very good at achieving certain goals which we outline for them, like recognizing photos or words. But these systems are very far from the ability to understand the world, use judgement and be creative, which is the domain of humans.

Reliability and accountability are both crucial to ensure that AI technology is successfully and sustainably deployed in the future. We currently see two main trends for leveraging existing methods to help achieve this goal – globally consistent scientific methods and procedures; and, a rethinking of IT operations and software best practices.

First, learning from globally consistent scientific methods, where the premise of everything you do relies on protocols and controls. This premise creates globally shared best practices, that ensure that new information being released has gone through some degree of due diligence by the scientific community. Though this is not always perfect, it sets standards.
Second, rethinking the role of software procedures in an AI world. Adopting these procedures for AI is now becoming a key part of operationalizing AI at scale, as it allows organizations to manage their AI pipelines in a way that ensures enterprise standards. This is a crucial step in moving from experimentation to industrialization. With this in place, organizations can track and audit what data and libraries were used, how models were trained and how products were defined.

As AI systems get more sophisticated and start to play a larger role in people’s lives, it’s imperative for companies to develop and adopt clear principles that guide the people building, using and applying AI systems. Among other things, these principles should ensure that AI systems are fair, reliable and safe, private and secure, inclusive, transparent and accountable. To help achieve this, the people designing AI systems should reflect the diversity of the world in which we live.

**John Buyers, Partner - Head of Commercial, Osborne Clarke**

Biography: John is a commercial outsourcing and information technology specialist with over twenty years’ experience of large-scale domestic and international transactions.

He joined Osborne Clarke in 2013, and leads the firms commercial practice. He is very experienced in the creation and negotiation of large scale managed services agreements, including outsourcings, system integration agreements and SaaS based licenses. He has a diverse practice, which also includes exposure to Middle Eastern markets in the United Arab Emirates, Qatar and Saudi Arabia.

John leads Osborne Clarke’s international AI and machine learning client team, and has just written a book on the legal implications of these new and innovative technologies. He is currently advising a number of private sector and public sector clients (including a large UK healthcare trust) on the use and implementation of machine learning systems, and recently advised a global software services company on the liability issues of deploying AI within Europe. He recently completed a large outsourcing on behalf of a big four accountancy practice to implement an AI powered solution for an international bank to automate its client due diligence processes.

**Written Evidence**

**Overall premise and perspective**

The overall premise of Osborne Clarke’s evidence will be to illustrate the approach of AI enterprise adoption from the perspective of lawyers and lawfirms, and specifically on the issue of transacting for AI systems.

**Transactional barriers to enterprise adoption**

In the legal transactional space there are typically several barriers or risks to enterprise adoption which need to be resolved successfully. In our experience, these risks can be categorised into seven separate areas:

1. **AI and the intersection with the GDPR**

   Enterprise users remain very concerned about the intersection of GDPR (the EU’s General Data Protection Regulation) and artificial intelligence.
We have seen instances of AI solution purchase being deferred because customers have been unable to reach what they perceive to be a satisfactory position on GDPR compliance.

2. Data Ownership Issues

Distinct from EU GDPR issues, Data ownership is proving to be a huge issue when these systems are licensed and implemented on an enterprise wide basis.

As the current market perception is that data is the "new gold", securing ownership of this seen as a growing battleground.

3. Liability for failure of "black box" models

Commercial customers and risk governance committees remain inherently nervous about causation and liability issues arising from the use of "black box" machine learning systems.

4. IP ownership issues

Intellectual property issues are a significant additional battleground for acquirers and sellers of AI systems. This issue is closely related to that of data ownership, described earlier.

A failure to adequately manage these can cause real complications in relation to the enterprise use of AI.

5. Competition and Trade issues

We have also seen issues in relation to the adoption of AI systems in markets which are typically dominated by a few oligopolistic (or monopolistic) providers, or in situations where the use case of a particular AI system may have trade distortive effects. This appears to be having a "cooling effect" on enterprise adoption.

6. Empirical verification and quality management issues

In deep machine-learning models, we have seen difficulties in determining consistent service baseline and service quality.

This is inherently unsatisfactory as an approach where more guarantees as to performance are likely to be required, for example in heavily regulated sectors, such as that regulated by the FCA.

7. Ethical use issues

Finally, Increasingly businesses are being prompted by boards and shareholders (as well as customers) to ensure that any third party AI being used by the business conforms to ethical standards in relation to e.g. transparency and accountability.

What should be done by Government

- Provide clarification to businesses on areas of uncertainty in law, and if necessary legislative intervention – there needs to be a wide-ranging review by the Law Commission of the impacts of the technology on areas such as data governance, legal causation, IP and Trade & Competition law (in line with recommendations made by recent House of Lords Select Committee report on AI)
- Consider the formal adoption of a clear set of guiding principles around the use of AI, encompassing both legal and ethical considerations.
Tim Gordon, Founder & Partner, Best Practice AI

Biography: Tim Gordon has over twenty years’ international leadership experience in growing businesses and digital and data transformation in the media, financial services, consumer, not-for-profit, campaigning, local search and lead generation industries. He has served in senior roles at companies including the Financial Times, the Boston Consulting Group (BCG) and in private equity-backed business and was the Chief Executive of the Liberal Democrats. He has introduced machine learning for key business processes. Tim has advised start-up entrepreneurs, FTSE 100 management teams, international organisations and UK Cabinet Ministers.

He studied at Cambridge University, holds an MA from the College of Europe and an MBA from INSEAD.

Written Evidence

About Best Practice AI

- Best Practice AI aims to help organisations find sustainable competitive advantage through adopting AI. Clients include start-ups, corporates and investors
- We have published the world’s largest open library of AI use cases and case studies – available at www.bestpractice.ai
- The firm recently helped the World Economic Forum (WEF) produce their Empowering AI Leadership Board Toolkit. Based on this we were invited to become the first UK AI firm to join the WEF’s Centre for the 4th Industrial Revolution and to become a member of the Global AI Council.

Some common issues emerge with enterprise adoption of AI in the UK

1. Baseline for adoption: do we know where things stand?
2. Executive education around AI. We need a shift from “what can the technology do” to “what is the ROI on this?”
3. Access to talent. From data scientists to data engineers and AI-savvy managers
4. Challenges around data (access, wrangling, labelling, bias)
5. Breaking out of the Proof of Concept (POC) zone. In a recent US study 95% of executives cited cultural and organisational issues as the biggest barrier to adoption.
6. Trust – still early days but ethical / regulatory concerns raise potential barriers

Four main vectors for AI diffusion / delivery in UK Enterprise

1. Embedded AI via mobile phones, speakers, Google searches etc – (provision by almost entirely non-UK entities)
2. Pure play AI (start-up) suppliers trying to create and offer new AI technology
3. Vertical / category-redefining (start-up) players where AI is a tool rather than the main point
4. Established firms using ML to strengthen their current operating model (relatively few SMEs)
Government can and should

1. Measure and track level of AI take-up in the UK. Provide international comparisons.
2. Support executive education – especially on the business benefits and risks
3. Decide on a focus and follow through. China has social control and internal security. The US has big data platforms and shareholder returns. The UK? (Ideas exist)
4. Focus guiding institutions and give them the resources necessary
5. Hold its nerve. If a downturn comes do we keep investing? Others will.

**Sofia Ihsan, Trusted AI Lead UKI, Ernst & Young**

Biography: Sofia Ihsan is the Trusted AI Leader for UKI and was a lead architect in the development of their Trusted AI methodology. She lead the first global pilots of the methodology and is engaged with academics, regulators and clients in trying to help shape the approach to building trustworthy AI that considers both the benefit and potential detriment to individuals, organisations, government, society and the environment. In her 21 years at EY she has undertaken a number of roles including cyber security, transaction advisory and client secondments across industries.

**Written Evidence**

Whilst there is much excitement at the potential economic and social benefits of AI, our clients tell us that one of the main barriers to the adoption of AI is a lack of trust. Broad consensus on the conditions necessary to build trust in AI are that it should:

- Be Compliant with ethical and social norms, including corporate values not historically mainstream for technology such as moral behaviour, respect, fairness, be unbiased and transparent - Ethical
- Consider local and macro social impact, including its impact on the financial, physical and mental well-being of humans and our natural environment - Socially Responsible
- Have a clear line of accountability to an individual and clarity on how it operates, the data that it uses and the decision framework that is applied - Accountability
- Perform as intended, not just during the initial training or modelling but also throughout its ongoing “learning” and evolution whilst in use - Resilient

Further AI is probabilistic by its very nature and the predictions and insights it provides will sometimes be wrong. The key therefore in building trust to enable broader adoption is not only to implement robust controls through development to help ensure that it is fit for purpose and delivers to the required level of accuracy but also to have controls in place to help identify, challenge and correct when it’s wrong.

Early learning in using EY’s Trusted AI framework to look at the governance, control and therefore trust gaps through AI development and deployment has identified some common themes across organisations in different industries:

- There is no overall ownership or governance structure over AI with a resultant lack of visibility of where AI is being used or built, how the risks arising from this are being managed to help ensure that it is fit for purpose, in line with ethical and societal norms
and compliant with applicable regulation. This impacts how an organisation can ultimately demonstrate the AI’s trustworthiness and therefore accelerate adoption.

- Whilst there may have been some consideration of ethics, there are often no formalised, accessible, up to date and embedded ethical design policies and standards including an AI ethical code of conduct and AI design principles. The absence of these make it difficult to demonstrate an ethical approach.

- There is insufficient consideration of the level of interpretability and explainability required to demonstrate that the predictions and insights provided by the intelligent agent are based on sound logic, can be trusted, are not rooted in bias and treat users equitably.

- There is inadequate consideration of monitoring requirements when the agent is deployed to confirm that it continues to operate to the required level of accuracy and in line with ethical and social norms as it dynamically learns from interactions with users and evolves its decision frameworks.

- There are no formal guidelines for the procurement of AI components which require additional considerations such as confirmation that they are fit for purpose, built ethically and do not contain biases.

This is an evolving area where regulation is lagging the technology and feedback from clients starting to harness AI is that there is limited guidance as to what they should be doing. However, as the power and responsibility being entrusted to AI increases at pace, it is essential to have a set of guiding principles that enable safe and ethical innovation and build business, and consequently consumer confidence and trust to enable broader adoption. Conversely, without trust organisations and consumers may be unwilling to share the data upon which tomorrow’s innovation lies. We believe that the acceleration of this guidance must be a key priority for government.
ABOUT APPG AI

The All-Party Parliamentary Group on Artificial Intelligence (APPG AI) was set up in January 2017 with the aim to explore the impact and implications of Artificial Intelligence.

The APPG AI is co-chaired by Stephen Metcalfe MP and Lord Clement-Jones CBE.

The Group Officers are Chris Green MP, The Right Reverend Doctor Steven Croft, Baroness Kramer, Lord Janvrin, Lord Broers, Lord Holmes of Richmond, Lord Willetts, Baroness McGregor-Smith, Justin Madders MP, Mark Hendrick MP and Carol Monaghan MP.

The Group supporters – Accenture, Blue Prism, British Standards Institution, CMS Cameron McKenna Nabarro Olswang, Creative England, Deloitte, Ernst and Young, KPMG, Megger Group Limited, Microsoft, Osborne Clarke, Oracle, PwC, and Rialto – enable us to raise the ambition of what we can achieve.

Big Innovation Centre is the APPG AI Secretariat.