

APPG AI Findings 2017

1 Key Recommendation
6 Policy Focus Areas

All-Party Parliamentary Group on Artificial Intelligence



**BIG
INNOVATION
CENTRE**



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About Us

The APPG AI was set up in January 2017 with the aim to explore the impact and implications of Artificial Intelligence, including Machine Learning.

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Big Innovation Centre is the appointed APPG AI Secretariat.

STAY IN TOUCH



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GROUP SUPPORTERS



2017 APPG AI Activity & Engagement

15 Events

7 EVIDENCE MEETINGS

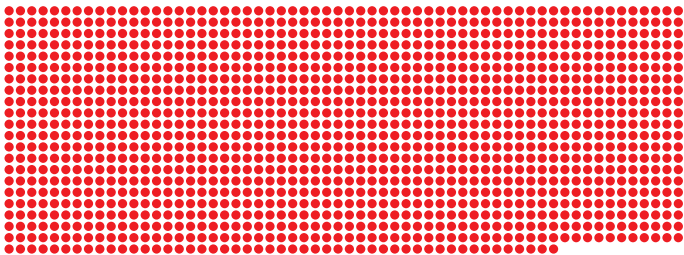
4 ADVISORY BOARD MEETINGS

2 DINNERS

2 RECEPTIONS

1309 People

1309 total participants, based on RSVPs per event..



Parliamentary Engagement

45 MPs
7 Lords
5 Parliamentary Researchers

10 Publications

THEME REPORT

Theme Report 1:
What is AI

THEME REPORT

Theme Report 2:
Ethics and Legal in AI:
Decision Making and
Moral Issues

THEME REPORT

Theme Report 3:
Ethics and Legal in AI:
Data Capitalism

THEME REPORT

Theme Report 4:
Markets and AI-Enabled
Business Models

THEME REPORT

Theme Report 5:
Governance, Social
and Organisational
Perspective for AI

THEME REPORT

Theme Report 6:
Inequality, Education,
Skills, and Jobs

THEME REPORT

Theme Report 7:
International
Perspective and
Exemplars

THINK PIECE

Future of Trade

PROVOCATION

'Society as a
whole is becoming more
and more conscious of
the impact of AI'
by Lord Clement-Jones

SUBMISSION TO
THE LORDS
COMMITTEE



TWEETS
1200

FOLLOWERS
1000

LIKES
2150



8,500 unique visitors
193,000 hits
5 pages per visit

1 Key Recommendation:

The All Party Parliamentary Group for Artificial Intelligence (APPG AI) recommends the appointment of a Minister for AI in the Cabinet Office.



KEY ROLE OBJECTIVES

- 1 To bring forward the roadmap which will turn AI from a Grand Challenge to a tool for untapping UK's economic and social potential across the country.
- 2 To lead the steering and coordination of: a new Government Office for AI, a new industry-led AI Council, a new Centre for Data Ethics and Innovation, a new GovTech Catalyst, a new Future Sectors Team, and a new Tech Nation (an expansion of Tech City UK).
- 3 To oversee and champion the implementation and deployment of AI across government and the UK.
- 4 To keep public faith high in these emerging technologies.
- 5 To ensure UK's global competitiveness as a leader in developing AI technologies and capitalising on their benefits.

6 POLICY FOCUS AREAS

The role of Minister for AI should be based on six policy areas:

- 1 Data
- 2 Infrastructure
- 3 Skills
- 4 Innovation & Entrepreneurship
- 5 Trade
- 6 Accountability

The policy focus areas are discussed in more detail overleaf in pages 6-11.



FOCUS AREA

Data

Findings Summary

AI builds on Data (often personal data) and AI creates data.

AI and Data have developed a codependent relationship in which one cannot evolve without the other.

Hence, in regards to governance, it is irrational to separate the former from the latter. Data governance and AI governance should adapt a coherent strategy, addressing key areas of growing concern, including: **user-rights, privacy, right to explanation, consent, rogue data, and accessibility.**



Call For Action

- 1 Create a National Data Charter.** Based upon economic and ethical considerations, clearly define how data can be used and reused. The charter must shift data protection policy towards a policy which opens and releases data and creates incentives for responsibly and purposeful data use. The Intellectual Property Office is well placed for this task.
- 2** Position the new Centre for Data Ethics and Innovations as a **stewardship body** for both data governance and AI governance.
- 3** Make the 'to be established' Data Trusts across the UK responsible for Data awareness and public trust in data use.
- 4** Make the **public sector a lead user** in using big data and data analytics with AI for delivering public services (health, energy, transport, education and social housing) matching the private sector ambitions for big data infrastructure.
- 5** Ensure the public sector has **access** to private data, just as the private sector has access to public data. Ensure the regulators enforce data use-practices fit for the AI economy.
- 6** Commission further research to understand the current data legislative regime and its impact, looking at policies such as the EU General Data and Protection Regulation (GDPR) and the UK Data Protection Act (DPA). The Intellectual Property Office is well placed for this task.



FOCUS AREA

Infrastructure

Findings Summary

An ambitious investment in physical and digital infrastructure will make the country AI-ready throughout the economy – from smart grids, to road sensors for autonomous vehicles and insurance of high speed broadband everywhere plus intelligent homes.

In the past year, the UK has made a committed attempt in building digital infrastructure, increasing broadband coverage and access to 4G.

The Industrial Strategy's public investment of £1 billion, including £176 million for 5G and £200 million for local areas to encourage roll out of full fibre networks is a step in this direction.

There now needs to be a push for these investments to fairly and evenly distribute the benefits across the regions.



Call For Action

- 1** Commit to Universal Basic Infrastructure, guaranteeing **all UK regions** have access to **reliable and safe** physical and digital infrastructure. This includes access to **5G coverage and full fibre**.
- 2** Update the National Cyber Security Strategy to protect networks from internal and external security threats.
- 3** **Decide on a target date** where UK has a completed AI friendly infrastructure, such as 2025 for the basic version.



FOCUS AREA

Skills

Findings Summary

The UK risks a shortage in skills needed to create, manage, and use AI because of:

- (i) lack of talent in the domestic labour market, and
- (ii) lack of foreign talent coming in from abroad.

Hence, the UK must be agile in preparing its future generations with the skills they will need to compete and succeed in the future.

In the Industrial Strategy's AI Grand Challenge, the development of maths, digital, and technical skills have already been identified as one of four priorities moving forward.



Call For Action

- 1** Expand the skills section in the Industrial Strategy to include the development of **problem-solving, creativity, interpersonal, and adaptability skills** - as these group of skills are those that humans have a long-term competitive advantage in.
- 2** Place AI in curriculums of all education levels, introducing children to neural networks, data bases, and probability from a young age.
- 3** Through the National Retraining Scheme, invest in **specialised courses for data management** and make them accessible across the country and across all age groups.
- 4** Through the National Centre for Computing Education, create diplomas to train teachers to be better equipped to prepare future generations. In the short-term, as most AI technologies rely on computer science, this means upskill teachers to a level in which they can teach GCSE CS confidently over the next 5 years.

Innovation & Entrepreneurship

Findings Summary

Although the potential for AI technologies is high, the current adoption of AI in the UK private and public sector is low.

UK SMEs, but also large companies, are currently lagging behind their potential in applying AI to their business models.

Start-ups that are successful in generating initial rounds of investment often leave the UK during the scale-up stage or are acquired by foreign tech giants.



Call For Action

- 1** Incentivise SMEs through financial and non-financial mechanisms to invest in new AI technologies and apply them in their business models. The new AI Council and Government Office for AI are appropriate vehicles for designing this ambition.
- 2** Monitor the technological advancement across industries and give mandate to Innovate UK to support funding and investing to companies exploring synergies between emerging technologies.
- 3** Invest in high growth companies that are rich in Intellectual Property and Intangible Assets.
- 4** Launch an education campaign for individuals and corporates to understand how to **better present intangible assets** to for reporting on finance and investment purposes.



FOCUS AREA

Trade

Findings Summary

Globally, AI is changing the factors for success across all industries. AI technologies are now **tailored to the personalised preferences and needs of each customer. Also, AI technologies make products and services accessible to a wider group of individuals** - breaking conventional geographic and social boundaries.

For UK to benefit from these two key AI trends, the nation needs to build an innovation ecosystem which encourages the shift from e-commerce to AI-commerce.

We need to ensure that UK invests in the new market institution platform solutions (using big data and data analytics, intelligent agents (as chat-bots), Internet of Things, blockchain, and other emerging technologies) which the public and private sector can subscribe to or adopt in their route to markets.



Call For Action

- 1** Through the industry-led AI Council, gather an evidence base and 'what works' **use cases for different business models and trade models using AI**. The use cases should be curated to create a set of 'Best Practices' for other companies to adapt and implement.
- 2** Embody within TechNation, an AI specialised trade body to push UK AI-enabled exports domestically and internationally.
- 3** Commission research analysing the current taxing frameworks to ensure UK's policies align with those of the international arena (e.g. OECD), breaking trade barriers and weak incentives to import/export in the UK. Specifically, the country should be conscious of double taxation which currently deters many companies from engaging in trade.

Accountability

Findings Summary

Algorithms are having far-reaching impacts on the UK's economy and society, as they are increasingly being used in decision-making processes for important matters related to **healthcare, education, employment, security, and finance**.

Most algorithms, however, are opaque, making it impossible to follow the rationality behind the process leading to a given output. This could be potentially dangerous, especially when the systems are based on flawed, unreliable, and/or biased data.

For this reason, algorithmic transparency must be encouraged and accountability frameworks must be established.



Call For Action

- 1** Make organisations **accountable for the decisions made by the algorithms** that they use.

Establish a standard for organisations to monitor and keep clear records of their decision-making processes and models.
- 2** records should follow a standardised approach, clearly illustrating the progress from one step to the next.
- 3** Through the Centre of Data Ethics and Innovation, establish **AI auditing mechanisms** to ensure companies are held to highest standards for the decisions they have made. The auditing mechanisms must serve as a watchdog to ensure safe, ethical and ground-breaking innovation.
- 4** Incentivise corporate **'Ethics Boards'** inside organisational structures. These boards can help share and improve the transparency of innovation.
- 5** Incentivise industry-led international collaborations such as Partnership on AI. There is need for an international **forum on AI Global Governance** to horizon scan the future of AI technologies and its effect of AI use, AI commerce and wider ethical and welfare implications. The forum can also convene the wider international dialogue across all stakeholders by researching and addressing the international responses from governments and industry on the emerging rules, norms and standards governing this new brave world.



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