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All-Party Parliamentary Group on
dataanalytics

INVOLVING LOCAL PEOPLE IN DATA AND AI-BASED RECOVERY

# OUR PLACE OUR DATA

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Manchester Metropolitan University

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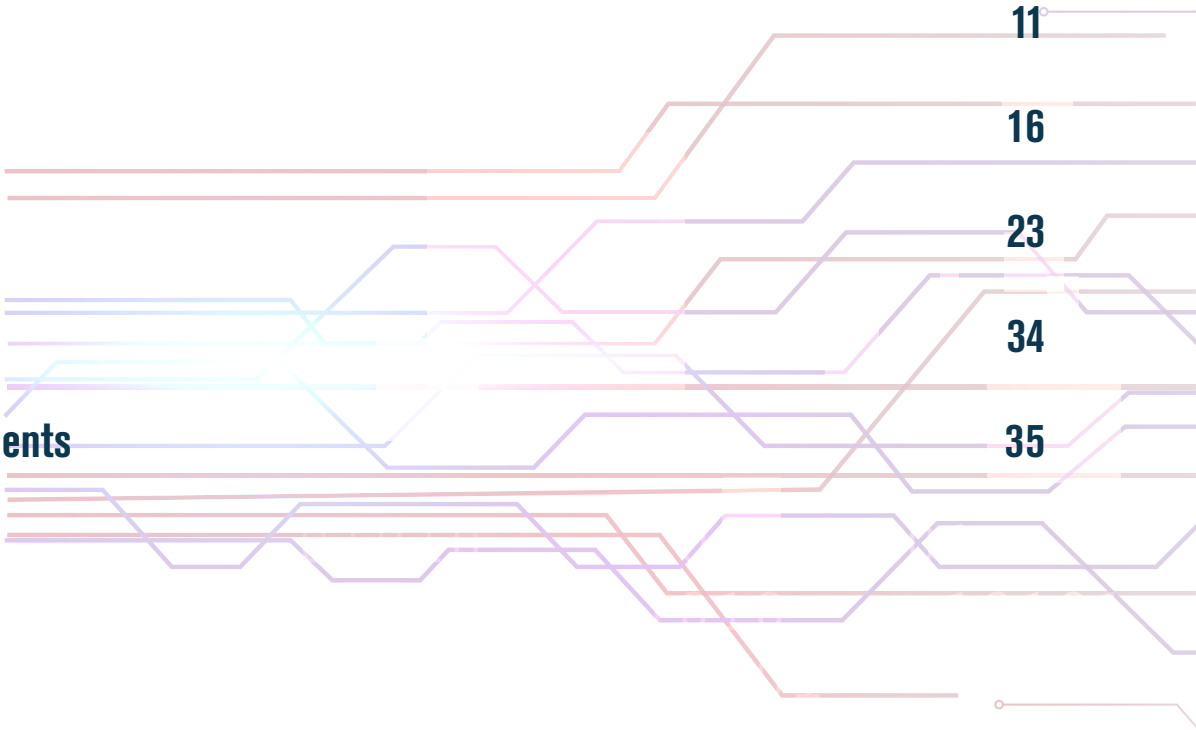

# Brakes were put on cars so that people could drive them faster.

Dr Natalie Banner, Lead, Understanding Patient Data, Wellcome Trust, at the APPGDA's event on patient data and the importance of ethics and regulation as an enabler to rapid growth, 29th October 2020.

# Foreword

If we are to have a new settlement with the public that allows innovative exploitation of data-driven technology this needs to be built on public consent, cooperation and trust. The All-Party Parliamentary Group on Data Analytics' October 2019 report ***Trust, Transparency and Tech – Building Ethical Data Policies for the Public Good*** set out the ways in which this agenda should be taken forward at the national level. The findings and recommendations in that report remain as valid and pertinent as ever.

In that report we described how the government should signpost the national direction of travel – towards ethical and innovative exploitation of data and machine-learning as part of growing the economy. The publication of the National Data Strategy consultation in September 2020 was a positive step. However, many of the APPG on Data Analytics' recommendations from 2019, since then echoed by others, remain to be implemented.

In 2020, we partnered with Manchester Metropolitan University on a follow-on project, to focus on where and how data analytics and machine-learning can truly transform lives and communities – at the local level. This follow-on inquiry found that if public services and businesses are to make the most of data-driven technologies a number of critical actions need to be led at the local level.

First is to enable close-up and personal engagement of individuals and of businesses – most of whom are small and medium sized. This cannot be done remotely in national capitals, but only in places and communities, where the right people can be brought round a single table - to create 'Islands of Trust' as one of our contributors described it.

Second, and related, 'levelling-up' relies on local ownership and leadership of the agenda, and the necessary capacity for that. A critical role for central government is to help through providing support and capacity. Such support might be in the provision by government of readily usable open data accessible to all, or in the research and innovation funding to help local areas fly. There is also the critical issue of skills. We welcome the government's recent 'Skills for Jobs'; our findings confirm that skills and education in digital and AI should be strong themes in its implementation

Third, this follow-on inquiry reinforced the need for the government to provide a strong and clear signal about the priority it places on becoming a digital nation by setting the Centre for Data Ethics and Innovation in statute, reporting independently to Parliament. This would leave no doubt about the government's intent that the UK should grow as an ethically data-driven nation irrespective of near-term politics, and would provide the Centre with the independence and stability to drive forward a longer-term perspective and programme of work. An additional element we now recommend is to include, in the legislation, a duty to work with the regions and nations. This will make the Centre firmly part of the levelling-up agenda through providing local places with the enduring support they need - all the more important this year as we emerge from the pandemic.

We would like to thank all those who contributed to this inquiry, especially Manchester Metropolitan University for their engagement, support and involvement in the inquiry. Particular thanks are due to Professor Keeley Crockett and Edwin Colyer for their support and engagement throughout this process. As ever, I am hugely grateful to all the members of the APPGDA, from both Houses and across all parties, for their contributions to this important work.

**Daniel Zeichner MP**

Labour MP for Cambridge Chair of APGDA

**The Lord Holmes of Richmond MBE**

Conservative Life Peer

**The Lord Clement-Jones CBE**

Liberal Democrat Life peer

# Recommendations

**1** In order to improve the way in which data can be collated and used to develop AI and machine-learning services and products, national government needs to support and enable local government and their place-based partners.

a. To create the right blend of strategic leadership and practical, citizen-faced guidance, the government should establish a Cabinet Committee, to be commonly known as the **'National Data Ethics Council'** to reflect its wider membership from the regions and nations, academia and industry.

b. This 'National Data Ethics Council' should be supported by the **Centre for Data Ethics and Innovation**, which should establish a **working group** for that purpose, bringing together representatives from across the UK to ensure that regional issues around data-driven technologies are taken into account.

c. The Centre for Data Ethics and Innovation should be **established in statute** and given a **duty to work** with local authorities to ensure that centrally provided guidance meets local needs and that local areas have enduring support.

**2** The government should review national level frameworks to ensure that central departments and their agencies provide a coherent and consistent **ethical umbrella for devolved public service delivery and public/private service partnerships**. This umbrella – which should have simplicity and flexibility at its heart - should include the following principles:

a. A requirement to 'do no harm' equivalent to the fiduciary duty for the highly successful UK financial sector.

b. A requirement for citizens to be involved at the start of AI/machine-learning design, and at regular stages thereafter.

c. A right to explanation for citizens from all public and private bodies using citizen data in AI-based products and services, so the citizen can have trust in the factors taken into account in decisions about them.

**3** The government should **publish open data sets of standardised, usable data, available to all sectors and all public authorities**, to provide the right conditions for local government and their place-based partners to drive forward with innovative citizen-focussed services and products.

**4** Local authorities such as Combined Authorities should work in partnership with local academic institutions and business organisations to develop **Data-Driven Technology Strategies**. These strategies should meet the following principles:

a. Citizen-focussed with citizens involved from the start and throughout.

b. Accessible to local SMEs so they have access to the **resources** and **knowledge-sharing** needed to make effective and ethical use of artificial intelligence and machine-learning.

**5** **Procurement contracts** at national and local level for public services that include artificial intelligence and machine-learning technologies should **formally incorporate a specific requirement for citizen involvement and continuous testing** and monitoring over the lifespan of the product.

# Executive Summary

In September 2020 the Secretary of State for Digital, Culture, Media and Sport, published a UK-wide consultation on the United Kingdom's first National Data Strategy. The relevance of the draft Strategy was exemplified by the number of responders - a week's extension had to be provided to allow the many interested stakeholders the time to respond. That level of interest is not surprising. Over the course of this inquiry, in the parliamentary roundtables supported by Manchester Metropolitan University, our partner in this work, and in evidence sessions carried out between June and December 2020, we kept bumping up against the fact that without effective governance around the data itself, it is impossible to progress to the next stage – that of data analysis and machine-learning to innovate and develop effective and trusted applications and technologies. Or, as the Minister for Media and Data put it, to "better use data in order to fuel our economy, drive the recovery and rebuild after the crisis is behind us".[1]

In the draft Data Strategy the government set out its objective of developing a data ecosystem[2] that has the trust of people, businesses and organisations. It commented that achieving this needs individuals and companies sufficiently skilled to operate effectively within the ecosystem, able to get access to data when they need it. The draft Strategy is intended also to provide coherence and impetus to the wide range of data-led work across government, while creating a shared understanding across the economy of how data is used.[3]

These objectives align with the findings and recommendations in the All-Party Parliamentary Group on Data Analytics' first major report, ***Trust, Transparency and Tech – Building Ethical Data Policies for the Public Good*** published by Policy Connect in October 2019. That report set out a number of critical recommendations to develop public trust in, and hence the acceptance of, data gathering and analysis to improve public services, whether delivered by the public or private sectors. As we set out later, many of our recommendations remain as valid as ever. Now that the government is starting to emerge from the overwhelming focus on the trade negotiations with the EU and the Covid-19 crisis, it should return to our recommendations. Indeed economic recovery from the pandemic depends on it.

This follow-on inquiry by the All-Party Parliamentary Group on Data Analytics (APPGDA) in partnership with Manchester Metropolitan University has found, however, that we need to build on our 2019 recommendations. They are still right, but need a significant additional element around 'place'. This is because, in examining the issues through the lens of Greater Manchester, its inhabitants, academics, public services and businesses, the APPGDA found that turning the draft National Data Strategy into practical steps also needs action and leadership at the local level. If we truly are to "build on UK strengths to drive better use of data – data use that is more secure, more innovative and more widely recognised as a force for good"[4], national government should encourage local areas to lead, and itself step into more of an enabling and supporting role.

[1] John Whittingdale, Minister for Media and Data speech at the open data Institute Summit 2020, published 11th November 2020 https://www.gov.uk/government/speeches/john-whittingdales-speech-at-open-data-institute-summit-2020.
[2] A data ecosystem is a collection of infrastructure, analytics, and applications used to capture and analyse data. Data ecosystems provide companies with data that they rely on to understand their customers and to make better pricing, operations, and marketing decisions. The term ecosystem is used rather than 'environment' because, like ecosystems in nature, data ecosystems are intended to evolve over time.
[3] https://www.gov.uk/guidance/national-data-strategy.
[4] Ibid.

A more equal partnership between central government and local areas towards a strong digital economy should include robust mechanisms for Ministers to hear from those making things happen on the ground, so the government better knows what it can do to help. At the strategic level, tackling the levelling up agenda through data and AI should be driven by a Cabinet Committee. We propose that Ministerial chairmanship and Departmental membership should be – for this Cabinet Committee - augmented by senior figures from local and regional government, industry and academia, to ensure data ethics is fully considered through the lens of 'place'. To reflect its inclusive character it could be known as the 'National Data Ethics Council' (drawing from the example of the National Space Council, also a Cabinet Committee). Critically, it should draw from those with first-hand experience in localities to allow joint decisions with Ministers on practical implementation strategies and the associated support needed for all parts of the UK to develop ethical data-driven technologies in the provision of public services and to support the growth of the private sector.

This new Cabinet Committee would draw on the advice of the existing AI Council[5] but would be distinguished by its strong implementation-focussed role, deciding on delivery issues and, through its Ministerial Chair and Whitehall representation, initiating action across the whole of government. To make best use of existing structures, we recommend the support for the new Cabinet Committee should in the first instance come from the Centre for Data Ethics and Innovation (CDEI), which already works across government.

Specifically, the CDEI should create a new Working Group dedicated to facilitating discussion and research on the use of AI and machine-learning technologies across the regions and nations – to test and ensure that central government initiatives and strategies meet the needs of all citizens and that public trust is being created through an ethically-based bottom-up approach.

Contributors to this inquiry returned to the recommendation in our ***Trust, Transparency and Tech*** report setting out the need for a consistent and long-term direction of travel, driven forward by an organisationally secure body that has the demonstrable trust of all parts of parliament and government. The inquiry heard clear views that - to achieve this objective - the CDEI should, as we previously recommended, be placed on a statutory footing, to demonstrate government support and long-term stability beyond the life of a single administration or parliament. We were pleased to see the option of placing the Centre for Data Ethics on a statutory footing in the National Data Strategy consultation, and urge the government to move quickly on this.

However, we would now go further in the light of what we have learnt about the importance of focussing data exploitation at the regional and local level, and propose that the CDEI should be given a duty in that legislation to work with the regions and nations. The draft National Data Strategy is explicit about using data to redress regional inequalities, and this would be an important way of developing stronger mechanisms to ensure this agenda remains at the forefront of practical implementation, with ethical concerns and considerations being fully addressed in the process. Alongside the regional Turing Hubs proposed[6] in the AI Roadmap, for example, a focus in the CDEI on devolution and levelling up would encourage and enable the sharing across local as well as central government of innovative practices in the use of data-driven technologies. The consequential expansion of the remit of the CDEI, required by such a duty, to work directly with Combined Authorities and councils would put the CDEI in an ideal place to support the development of new partnerships across local areas - with universities, industry and civic bodies outside London.

[5] We refer later to the AI Council's excellent "AI Roadmap" published 6th January 2021.
[6] Ibid.

The second overwhelming message from businesses, academia and local public services during this inquiry was that there is already a plethora of ethical policies and frameworks at the national and international levels. If the government is serious – as it indicates in the draft National Data Strategy – about "the development of a clearer policy framework to identify where greater data access and availability across and with the economy can and should support growth and innovation"[7], it must simplify the regulatory and policy "thicket" which is impossible to navigate by individuals and SMEs. Contributors to the inquiry described the draft National Data Strategy itself as hard to understand for the individual entrepreneur, and pointed to the existing plethora of frameworks. It is for this reason that we propose simplicity and flexibility in the necessary overarching umbrella of principles and values at national level, with the effort now put into supporting practical guidance and implementation at the local level.

The government has an important role in the provision of universal data standards, published under an open licence. The Minister for Media and Data, John Whittingdale MP, acknowledged this in his speech at the Open Data Institute Summit 2020. He indicated that "the first challenge was to try to increase the use of data across government. It's important that we set an example"[8]. The contributors to this inquiry felt that the government needed to build in the 'local' at the very start of its work, to avoid the development of data sets that do not work for businesses and people in the regions. For example, the nascent Data Standards Authority and Data Quality Hub should reach out beyond Whitehall immediately. This will ensure that standards developed centrally are fit for purpose, and that later on individual organisations do not have to try and find the capacity and capability to rework base data so that at the local level "data is findable, accessible, interoperable and can be used again"[9]. In short, government should do this once, so that the data can be used many times for data analytics by all local areas.

This inquiry learnt from the operational approaches that bodies such as the Greater Manchester Combined Authority have made in recent years, for example in the development of a regional digital strategy. Evidence provided to the inquiry showed the practical benefits of innovation through data within an area – the linking and sharing of data relevant to the local environment. This might be the linking of data on vulnerable people between the fire service and local groceries stores which, in a health emergency, avoids people being contacted an excessive number of times and ensures they don't miss out on individual services provided by local businesses. Or, the joining up of data around emissions from the local airport, its environs, and supply chain as part of aligning data around the local net-zero policy. Developing voice recognition software based on regional accents as opposed to 'Queen's English' was another example of making sure that innovation of services works for the particular place.

Lessons from the Covid-19 pandemic have shown that local public health teams have been able to respond more effectively to curbing the spread of Covid-19 than has the national NHS Track-and-Trace, despite having access to smaller data sets. But not all local authorities have the capacity to do this, which is to the detriment of their citizens and serves only to deepen regional inequalities. Evidence to the inquiry stressed that there is a huge amount of data owned by government that would help citizens if made available; one example mentioned was allowing council tax payment histories to be included into individuals' credit records.[10]

[7] Ibid, https://www.gov.uk/guidance/national-data-strategy.
[8] John Whittingdale, Minister for Media and Data speech at the open data Institute Summit 2020, published 11th November 2020 https://www.gov.uk/government/speeches/john-whittingdales-speech-at-open-data-institute-summit-2020.
[9] John Whittingdale, Minister for Media and Data speech at the open data Institute Summit 2020, published 11th November 2020 https://www.gov.uk/government/speeches/john-whittingdales-speech-at-open-data-institute-summit-2020.
[10] An initiative discussed between Rishi Sunak as LG Minister with consumer groups.

With the support of central government, each 'place' across England and the UK should be in a better position to develop their own capacity and skills to collect, analyse and use data, and especially to embed ethical procedures and citizen involvement on data use at the very start of any product or service design process, and at regular stages thereafter.

Although we have not set out recommendations, an additional benefit of this devolved direction of travel would be that some of the existing innovations such as around data trusts, AI foundries and other means of providing ethical access to data could be piloted at the local level, with government support and encouragement.

For our last recommendation we look at the powerful role of procurement in driving ethical and effective use of data in any AI tools and machine-learning technology bought by the public sector. The inquiry heard of work being done by the Crown Commercial Service to make procurement easier, eg through its new "dynamic purchasing system" AI procurement framework. This provides an opportunity to review standards on the ethical components that a company will need to demonstrate in order to be admitted onto the procurement framework.

Skills and education were not in the scope of our inquiry. However, we felt it necessary to draw attention to this strand, which we are pleased to see mentioned in the government's Skills for Jobs in January 2021. We will contribute to work on the implementation of this White Paper, by looking more deeply both at digital upskilling for jobs and at wider awareness training for communities so they can better understand and contribute to the development of trusted data and AI technologies and services.

# Chapter 1

## AI, data and trust – how much does trust matter?

In October 2019 Policy Connect published the All-Party Parliamentary Group on Data Analytics' first major report, *Trust, Transparency and Tech – Building Ethical Data Policies for the Public Good*. The report started from the basis of seeing data-driven technology as paving the way to revolutionise the way we work and live. It set out a number of recommendations for how parliament, government, industry and the public should work together, and how by defining the acceptable boundaries of data use and exploitation, the UK could become a world-leader in the ethical use of data to drive innovation in technology and services.

In particular, *Trust, Transparency and Tech* set out the priority for the government of creating a new 'settlement' between government and citizens that would pave the way to more trusted, and therefore greater and more effective use of data. Central to this should be that those organisations providing public services to citizens should meet new, consistent standards. Given the UK's mixed economy of public, private and voluntary organisations the APPGDA advised there should be a single set of principles for all those interacting with the citizen, with all such organisations being held to account for conforming to the highest standards of transparency and engagement as their 'licence to provide public services'.

The recommendations in *Trust, Transparency and Tech* set out the following characteristics for this 'licence to operate' method of operating:

1. To build public confidence and acceptability, providers of public services should address ethics as part of their 'licence to operate'. A core principle should be that the public's views on data exploitation are proactively built into an ethical assessment at the service design stage.
2. The citizen should be given access to simple and meaningful information, akin to the transparency principles underpinning Freedom of Information. This duty should apply to all those using data exploitation to deliver public services, as part of their 'licence to provide public services'.
3. The citizen should have a 'right to explanation', via a duty on all those delivering public services to provide easy to understand information on the factors taken into account in algorithm-based 'black-box' decisions as they affect the individual.
4. There should be clear lines of accountability on data and algorithm use to the top of every organisation providing public services, including accessible complaints and redress processes. This could be achieved by extending the Data Protection Officer role and updating company director responsibilities.
5. To ensure a consistent experience for the citizen, all Departments' existing governance arrangements should be assessed to ensure they are providing a coherent ethics framework for devolved public service delivery such as NHS trusts and police forces, enforceable through respective regulators. Where necessary Independent Data Ethics Advisory Boards should be established, which could link to the UK Artificial Intelligence Council established in the Artificial Intelligence (AI) sector deal and to the Centre for Data Ethics and Innovation.

The report set out a number of recommendations for the work of the Centre for Data Ethics and Innovation, some of which have been taken forward in follow-on work.

Finally, ***Trust, Transparency and Tech*** proposed a more vigorous role for Parliament, to provide challenge and scrutiny just as it has in the past in addressing the big societal issues of the time, from public accounts to the environment, and over the past year – on responses to the pandemic.

1. To enhance parliamentary scrutiny, the legislation to establish the Centre as an independent statutory body should include the requirement for the Centre to submit their proposed annual report to parliament for scrutiny through the current Select Committee process.
2. Parliament should take a greater leadership role in assessing privacy issues and consider the need for an overarching Select Committee given the ever-growing importance for public trust and confidence of the data-driven and technology influenced world.

In carrying out a follow-on inquiry in 2020 the All-Party Parliamentary Group on Data Analytics (APPGDA) proposed to move the agenda on from trust around data gathering and use, to what might be regarded as the next stage – the application of data in machine-learning and AI-based technology and decisions in products and service delivery. We wanted to learn from regional ethical AI frameworks to consider whether and how these could be replicated nation-wide. To that end Policy Connect developed a partnership with Manchester Metropolitan University to examine the issues around AI 'in place', through parliamentary-led roundtables and a number of follow-on interviews involving representatives of both local and national bodies[11].

During this inquiry and other APPGDA events we found, however, that it was not so easy to move on from issues around public trust in the collection, ownership and governance of data. The basics of overcoming distrust and suspicion around data and algorithm-based decisions identified in ***Trust, Transparency and Tech*** kept re-emerging. For example, we were told by the NHSX that one of the themes of their data strategy would be that public trust on how data is collected and used is fragile and needs constant work[12].

Furthermore, although there have been a number of developments since our 2019 report, the overwhelming nature of the twin priorities in 2020 for the government of EU trade negotiations and the Covid-19 pandemic has inevitably meant delays in other, less immediate work. Many of the recommendations set out above remain outstanding, and now is the time to return to them as a matter of urgency. However, as we set out in this report, we now believe the government needs to add in additional factors. More needs to be done to enable all parts of England to join in a digitally-driven post-pandemic recovery. There are over 18,000 companies in Greater Manchester that have gone digital, second only to London, and huge potential across other regions. As the AI Council's 6th January 2021 Independent Report "AI Roadmap"[13] says, the UK is at a pivotal point and that – "if approached correctly" – there could be "huge benefits to the economy, to recovery and resilience, the environment and for people in all walks of life across all parts of the UK"[14], with estimates showing that AI could deliver a 10% increase in UK GDP in 2030.

[11] See end of report for list of participants.
[12] APPGDA roundtable on Patient Data, 29th October: https://www.policyconnect.org.uk/news/policy-connect-and-understanding-patient-data-host-webinar-future-health-data-partnerships.
[13] AI Council Independent Report "AI Roadmap" https://www.gov.uk/government/publications/ai-roadmap/executive-summary.
[14] AI Roadmap: An independent report, carried out by the AI Council, providing recommendations to help the government's strategic direction on AI, dated 6th Jan 2021: https://www.gov.uk/government/publications/ai-roadmap .

## Trust at the national level

The All-Party Group and Policy Connect were pleased to see recognition in the government's draft National Data Strategy, published in 2020, of developing a data ecosystem[15] that has the trust of people, businesses and organisations, with individuals and companies sufficiently skilled to operate effectively within the ecosystem, and able to get access to data when they need it. This chimes with our findings that it is critical to provide effective governance around the data itself if we are to progress to the next stage – that of data analysis and machine-learning to innovate and develop effective and trusted applications and technologies. As the AI Council indicated in its roadmap report, "The UK will only feel the full benefits of AI if all parts of society have full confidence in the science and the technologies, and in the governance and regulation that enable them. That confidence will depend on the existence of systems that ensure full accountability, clear ethics and transparency"[16].

> **We need to get the bread and butter right, first on data trust and sharing, and on AI governance, before building the AI systems.**
>
> Prof. Keeley Crockett, Professor in Computational Intelligence, Manchester Metropolitan University, 7th July 2020

However, overall trust in data-driven decisions and hence AI is not high. A survey conducted in November 2019 by the Open Data Institute found that only thirty percent of individuals trusted central government to use their personal information in an ethical way[17]. During the Covid-19 pandemic, government decisions that were seen to impact negatively on the lives of significant numbers of people started to be blamed on "mutant algorithms". The Prime Minister's use of the term in relation to the summer 2020 A-levels decision that saw the resignation of the Head of Ofqual seeped into wider use, with Andrew Griffith MP describing the formula for housing numbers in the new Planning White paper as a "mutant algorithm" in a Commons debate in early October 2020. In its inquiry on AI, published on 18th December ***AI in the UK: No Room for Complacency***, the HoL Liaison Committee concluded that "Artificial intelligence is a complicated and emotive subject. The increase in reliance on technology caused by the COVID-19 pandemic, has highlighted the opportunities and risks associated with the use of technology, and in particular, data. It is no longer enough to expect the general public to learn about both AI and how their data is used passively. Active steps must be taken to explain to the general public the use of their personal data by AI. Greater public understanding is essential for the wider adoption of AI, and also to enable challenge to any organisation using to deploy AI in an ethically unsound manner[18]."

[15] See Note 2 for description of a data ecosystem.
[16] Ibid, AI Roadmap.
[17] The Open Data Institute, 12th Nov 2019: https://theodi.org/article/nearly-9-in-10-people-think-its-important-that-organisations-use-personal-data-ethically/
[18] https://publications.parliament.uk/pa/ld5801/ldselect/ldliaison/196/196.pdf

In education, families' unhappy experiences with A-level and GCSE results during Covid-19 were summed up by the Education Secretary on 6th January 2021 when he admitted that the previous year's algorithm "did not deliver what they needed" and the impact was "felt painfully" by students and their parents. He added: "This year, we're going to put our trust in teachers, rather than algorithms"[19]. This comparison was made again the following month when the Education Secretary announced on 24th February 2021 that decisions on GCSE and A Level grades would be made by teachers, and algorithms would be ditched, saying "Grades will be awarded on the basis of teachers' judgment and will only ever be changed by human intervention"[20]. The juxtaposition of person versus machine exemplifies the importance of getting right the trust relationship between machine-learning and human decisions in taking forward an economy based on digital technology. On the one hand, the pandemic has led to far greater use of data, but on the other public awareness of the potential harm from algorithms has been raised. Examples globally include the significant level of refusal by Singapore citizens (who normally have a high level of trust in their government) to download a track and trace app onto their personal smartphones; and the role of social media in the extraordinary events in the USA in late 2020/ early 2021, in particular the use of Twitter by Donald Trump alleged to have incited violence in the run-up to January's US presidential inauguration, and his subsequent barring from the platform. One result from the events in the USA has been to intensify debate around the need for regulation, including of the big technology platforms.

Against this background, and drawing from evidence given to this inquiry, Policy Connect's response to the government consultation on the draft National Data Strategy included the comment that the pillars and missions needed to do more to put public confidence and trust central to its framework. Policy Connect specifically recommended that Mission 2 of the Data Strategy should be expanded to include the concept of 'data ownership', and that an additional pillar of data use be included entitled 'Ownership'.

## Building trust close to the citizen

Evidence provided to this inquiry, as was the case for our ***Trust, Transparency and Tech*** report, indicates that understanding and trust needs to be discussed at a practical rather than theoretical level, in relation to different types of products and services, and that a local approach has a much better chance of engendering trust. Manchester Metropolitan University described the proposed development of a Manchester Ethical AI Charter as needing to be "much more than a checklist for SMEs, rather a mechanism for getting together to develop practical solutions "[21].

[19] Gavin Williamson statement in the House of Commons, 6th January 2021, widely reported in the media.
[20] House of Commons, 24th February 2021, widely reported in the media.
[21] Prof Keeley Crockett, Manchester Metropolitan University, at the 11th June 2020 Roundtable on Place based Ethical AI held by the APPG for Data Analytics and Manchester Metropolitan University.

Covid-19 has demonstrated these tensions relating to national and local trust levels very clearly. Pre-pandemic there were relatively high levels of trust in the use of data by GPs and hospitals. For example, a 2019 study by the British Heart Foundation on the use of anonymised data showed that 85% were happy with such data use for the diagnosis of medical conditions[22]. However, our inquiry heard time and again that trust should not be taken for granted even in relation to its use by the NHS: "Trust in data use is fragile and needs to be re-earned"[23]. In particular, trust in the local GP/hospital does not equate to trust in national institutions. The confusion and concern engendered in those over 80 by poorly-worded NHS England letters in early January 2021[24] apparently telling elderly people to travel many miles to a bulk vaccine centre echoed the public response to the instruction to travel hundreds of miles to Covid-testing centres in the early stages of Track & Trace.

A somewhat more positive view, especially for data sharing at the local level, is presented in the findings of a report launched by the Centre for Data Ethics and Innovation in February 2021. Of those surveyed, 65 percent of respondents claimed that they would be comfortable with their personal data being shared by the NHS and other healthcare providers[25]. The same polling also indicated 50 percent of people want to engage with their local authority on how data is used to make decisions. General concerns were most likely to include scepticism about data being used securely or effectively by local authorities, and a lack of understanding as to how such data would be used[26].

For many citizens, their day-to-day engagement with public services is at the local level. The pandemic has seen an increase in the innovative use of data at the local level. The Centre for Data Ethics and Innovation (CDEI), in a February 2021 report[27], refers to a growing conviction both inside and outside of government that data can transform the way public services are delivered, and that data capabilities are worth investing in. For itself, the CDEI acknowledges the importance of councils in achieving better, more trusted public services, and has set itself a goal of improving the scope and scale of its engagement with councils and combined authorities.

Getting national engagement with citizens wrong risks undermining trust in institutions that are more local to the citizen. This is important because – as the inquiry heard from a roundtable with the ReEn Trust in early December on their upcoming report[28] – data trust issues relate as much to the platform or institution as they do to the technology used. If the institution is trusted, that spills over into trust in the algorithmic tools used by that institution. This reinforces the inquiry's conclusion that the balance of citizen involvement on data development and trust needs shifting to the local. As one of the APPGDA's interlocutors said, what is needed is diverse efforts all around the country, encouraged by central government[29].

[22] British Heart Foundation and All Party Parliamentary Group (APPG) on Heart and Circulatory Diseases' inquiry into patient perspectives on the use of artificial intelligence in healthcare. https://www.nationalvoices.org.uk/blogs/putting-patients-heart-artificial-intelligence.
[23] Dr Natalie Banner: Lead, Understanding Patient Data, at the Wellcome Trust. Policy Connect Event "What next for Health Data Partnerships" 29th October 2020.
[24] Daily Telegraph 11th January 2021: Local NHS chiefs said they had been blindsided by the letters, suggesting they had been "confusing" for elderly and vulnerable people. Dave Evans, the chief officer at the Telford and Wrekin Clinical Commissioning Group, told the BBC: "We did not know the letters were coming out, which was probably not as helpful as could have been. It was sent out centrally. I think we could have taken a more proactive approach to try and allay some of the anxieties."
[25] HM Government, Local government use of data during the pandemic, 4th February 2021, pg. 44.
[26] Ibid pg. 46.
[27] Ibid HM Government, Local government use of data during the pandemic, 4th February 2021, pgs. 33-35.
[28] Policy Connect, APGDA and ReEnTrust host webinar on rebuilding and enhancing trust in algorithms, 3rd December 2020.
[29] Policy Connect, What next for Health Data Partnerships, 29th October 2020.

# Chapter 2

## Learning from local and regional developments

### Why localities and regions matter for digitally driven economic growth

London has historically dominated the UK's digital economy, but other cities such as Manchester, Reading and Bristol are growing rapidly in both economic and employment terms[30]. Greater Manchester is home to the largest digital and creative culture outside London, with a sector worth £5 billion, supporting over 18,000 businesses and employing 86,000 people[31]. The Government's AI Sector Deal (April 2018) acknowledged the importance of place in developing the economic benefits of data-driven technologies. It committed a range of public and private sector funding to promote the adoption of AI and machine-learning across the country, working with business groups such as Tech UK and Tech North[32]. In a review of the deal in the year following publication, the Government noted the success of their place-based approaches, including the development of five centres for digital pathology, funding for 1000 new PhD programmes over a five year period, and the establishment of the Bayes Centre for Artificial Intelligence in Edinburgh[33].

However, there is much more to be done across the regions and nations if UK's cities are to become net contributors to the economy. The Centre for Cities has set out why UK cities are so important to the levelling up agenda. They point out that, apart from London, many large UK cities lag behind their continental comparators on a range of indicators, especially on skills, innovation and productivity. This affects their ability to attract business investment, create jobs and grow both their own economies and in turn the UK economy as a whole. In addition, unlike many other developed economies, UK cities have not become more productive as they get bigger. In Germany and France, to take European counterparts only, there is a positive relationship between city size and productivity, as measured by GDP per worker. But – again apart from London – this is not the case in the UK: a number of small cities, such as Slough and Swindon, are more productive than expected but most large cities are less productive[34]. More generally, these examples from European neighbours shows that it is possible to have economically vibrant regional cities without an adverse impact on the capital city, and for the capital city to grow without detracting from the regions.

### Driving digital growth through business-university partnerships

One proven way of achieving growth across the regions is to tap into the expertise and talent in British higher education outside London, with economic strategies building on a sense of place by bringing together academia and business to drive the innovation agenda. Proposals such as the Greater Manchester Digital Blueprint indicate that this message is one that is taking hold amongst local policy makers. By emphasising the importance of connectivity[35], the Blueprint acknowledges that the key to a successful digital strategy is one that builds on existing strengths to foster a culture of collaboration. An example of this can be seen with the establishment of the Greater Manchester AI Foundry[36], an initiative spearheaded by local universities out of the existing Cyber Foundry project[37]. Although not applicable to all areas of the country, this model nevertheless demonstrates the benefits that can emerge from successful partnership building.

[30] The Data City – ODI Leeds, The UK digital technology census, June 2019, pg. 15.
[31] GMCA, The Greater Manchester Digital Blueprint, January 2020, pg. 8.
[32] HM Government, Industrial Strategy: Artificial Intelligence Sector Deal, April 2018, pg. 10.
[33] HM Government, AI Sector Deal: One Year On, May 2019, pg. 6.
[34] Centre for Cities, why big cities are crucial to levelling-up, Feb 2020, https://www.centreforcities.org/wp-content/uploads/2020/02/Why-big-cities-are-crucial-to-levelling-up.pdf
[35] GMCA, The Greater Manchester Digital Blueprint, January 2020, pg. 13.
[36] https://gmaifoundry.ac.uk/about/
[37] Greater Manchester Cyber Foundry, What is a GMCF Cyber Project?, November 2019.

# CASE STUDY

## Greater Manchester (GM) AI Foundry and Cyber Foundry

In July 2020 Manchester Metropolitan University, Lancaster University, the University of Manchester, and the University of Salford received an ERDF award of £3 million to establish the Greater Manchester AI Foundry, a three year project to promote innovation and business growth using AI among Greater Manchester SMEs.

The GM AI Foundry uses the complementary AI research strengths of the four universities (e.g. machine-learning, deep learning, text mining, robotics, advanced manufacturing optimisation and ethical application of AI) to facilitate knowledge transfer. Crucially, it combines business expertise with research excellence to drive technology innovation and hence business growth. The Foundry uses Smart Specialisation, seen as the optimal government strategy for transferring research into industry. The project works with SMEs at mid to late technology readiness levels (TRLs 3 – 9), when companies are looking to upscale.

The first phase focuses on business development and identifies SMEs with high potential for business growth through the application of AI. The second phase creates, under the supervision of researchers, proof of concept prototypes, developed by Foundry technical analysts, for a minimum of thirty-three SMEs. This innovation model has already been applied successfully by the partners in the GM Cyber Foundry.

There is demand from SMEs who worked with the Cyber Foundry to take advantage of opportunities from the AI Foundry. The GM AI Foundry is working with a minimum of 170 SMEs in the four themes of strength identified in the Local Industrial Strategy: advanced materials and manufacturing, clean growth, digital, creative and media and health innovation, as well as professional and financial services SMEs.

The partnership working between the universities has the additional benefit of providing co-ordination for action on industry-academic collaboration, the AI/CS talent pipeline and responding to local/national government initiatives. The GM AI Foundry will help increase the economic impact of AI in the city-region and contribute significantly to Greater Manchester's strategically important digital and creative sector.

Initiatives such as the AI Foundry give small and medium sized enterprises (SMEs) access to resources that they would be unable to develop on their own. Since over 99 percent of British businesses are SMEs[38], such engagement is critical but – not surprisingly – is difficult for central government and national institutions to achieve effectively. Research by the Manufacturing Commission in 2020 highlighted the essential role of SMEs both in their own right and in the supply chain for larger businesses, as well as a perception that these firms are largely ignored – or lack the capacity to engage - in national-led discussions about industrial strategy[39]. This is further exacerbated by a lack of information about where businesses can go to for information about new and emerging technologies[40].

## Examples from authorities working at the local level with the private sector

Technologies that make use of personal data can only be successful if the data that they use is itself gathered and used effectively, with trust issues addressed at the start of the process. There are numerous examples of good practice from various regional bodies.

The Greater Manchester Combined Authority has developed data policy for areas such as the digitalisation of healthcare records and the establishment of the Greater Manchester Digital Platform[41], with benefits for over two million citizens. For example, in October 2020 an agreement was signed between eight Greater Manchester NHS Trusts and the medical imaging company Sectra. The deal established a region-wide platform for sharing patient-data images, such as X-Rays and MRI scans, improving the speed and reliability by which medical professionals can access patient details[42]. The new picture archiving and communication system (PACS) incorporates AI as a means of helping to process the information, and to assist with reaching accurate and efficient diagnoses. It is the patients that benefit from this speeding up of their pathway to diagnosis and treatment.

[38] House of Commons Library, Business statistics, July 2020, pg.6.
[39] Policy Connect, Level Up Industry: Strengthening Regional Manufacturing, March 2020, pg. 11 .
[40] Ibid pg. 15.
[41] Ibid, pg. 26.
[42] Computer Weekly, NHS trusts across Greater Manchester embark on diagnostic imaging project, 5th October 2020.

# CASE STUDY

## Transport for London passenger data tracking to improve passenger journeys

Following a successful pilot scheme, since July 2019 Transport for London (TfL) has tracked data from mobile devices connected to the public Wi-Fi network at London Underground stations.

A successful trial in 2016 saw over 509 million pieces of data collected from 5.6m mobile devices on 42m journeys, including tracking individual journeys across the network, revealing 18 different ways to get between King's Cross and Waterloo, and that it takes an average of 86 seconds to get from the ticket hall to the platforms at Victoria[43].

Since the network-wide rollout of the scheme, TfL developed firmer security details to ensure that the data collected would be fully pseudonymised, replacing the original use of the device's MAC address with an identifier that cannot be tied back to any personal information. TfL say that the new method is a "more sophisticated mechanism" than was used during the trial period, with approval from both the national Information Commissioner and TfL's in-house cybersecurity team. Collated data is only available to a small number of vetted data scientists and other professional users at Transport for London.

According to TfL's Chief Data Officer, Lauren Sager Weinstein, "the benefits this new depersonalised dataset could unlock across our network – from providing customers with better alerts about overcrowding, to helping station staff have a better understanding of the network in near-real time – are enormous. [...] by better understanding overall patterns and flows, we can provide better information to our customers and help us plan and operate our transport network more effectively for all"[44].

The initiative has given TfL access to far more individual journey information to improve how the operator provides services. Previously, the only data available to TfL was the start and end of journeys from either Oyster or contactless card transactions, but not the details of people's routes whilst on the network. Given access to the greatly increased data sets, TfL have been able to model how passengers react to delays or other issues on the network - such as the alternatives people take if a line or service is suspended. With the growth in mobile transport planning apps such as Google Maps and CityMapper, TfL is also able to provide data to suggest alternative routes based on real-time information, such as overcrowding in ticket halls.

[43] Transport for London, Wi-Fi data collection, July 2019.
[44] Wired, TfL is going to track all London Underground users using Wi-Fi, 22nd May 2019

# CASE STUDY

## Ethical issues arising from public–private collaboration in the use of live facial recognition technology

In January 2021, the Biometrics and Forensics Ethics Group (BFEG), an advisory non-departmental public body sponsored by the Home Office, released a report into the use of live facial recognition technologies (LFR) following a spate of controversies about their use[45]. In particular, the owners of the King's Cross estate in London[46] and the Trafford Centre in central Manchester were both cited as examples of overreach by LFR technologies by public-private partnerships[47].

Such technologies have a number of cited benefits over traditional security cameras, especially the ability to use machine-learning to automatically recognise individuals based on their physical appearance and behavioural characteristics, especially their facial image, but increasingly other personal tendencies, such as voice and gait. LFR systems are typically used to assist the recognition of persons of interest on a criminal or security watchlist. After being flagged by the automated systems, human operators are then required to verify or override a possible match identified by the system and make a decision on what actions, if any, to implement.

In the case of the use of the technologies at the Trafford Centre, the pilot scheme monitored visitors to the area with the support of Greater Manchester Police for a six month period, before being paused after allegations of insufficient legal oversight. Similar issues were raised by the Metropolitan Police's involvement in the King's Cross scheme.

The BFEG investigation also cited a number of ethical issues raised by the Surveillance Camera Commissioner. Chief amongst these is the tendency for existing technologies to be more likely to misidentify women than men, and conflate darker-skinned individuals with others. In her 2020 speech to the Royal United Services Institute, the Metropolitan Police Commissioner, Cressida Dick, nevertheless defended the "proportionate limited" use of LFR as a necessity for modern policing[48].

While facial recognition technologies will have a growing role to play in the UK's approach to law and order ethical concerns remain, especially associated with their use by private companies with oversight over publicly accessible spaces. The report by the Biometrics and Forensics Ethics Group therefore recommended the establishment of an independent ethics group to oversee the deployments of biometric recognition technologies by the police and the use of biometric recognition technologies by public-private collaborations, such as the pilot schemes seen within the King's Cross and Trafford Centre pilots.

[45] HM Government, Briefing note on the ethical issues arising from public– private collaboration in the use of live facial recognition Technology, January 2021.
[46] BBC News, Met Police gave images for King's Cross facial recognition scans, 6th September 2019.
[47] Manchester Evening News, Greater Manchester Police monitored every visitor to Trafford Centre for SIX MONTHS using controversial technology until they were told to stop, 15th October 2018.
[48] RUSI, Annual Security Lecture, 24th February 2020.

## CASE STUDY

### Manchester Metropolitan University's collaboration with the ICO and Alan Turing Institute

In May 2020, the Information Commissioner's Office and The Alan Turing Institute published good practice guidance on 'Explaining decisions made with Artificial Intelligence'. Since its publication, the ICO have looked to assess the impact of the guidance, how widely it is being used and its effectiveness. One route to this was through a collaboration with Manchester Metropolitan University's, using a place based approach involving both SMEs/micro-businesses and Local Authorities and public service providers in the Greater Manchester region. SMEs/microbusinesses were invited to take part, including those who were part of the first cohort on the GM AI Foundry.

Manchester Metropolitan University's collaborated with the ICO and the Alan Turing Institute to deliver two 3 hour virtual workshops in Greater Manchester, one with the private sector and one with local authorities.

The aim of these workshops was to present an overview of the Explain guidance and to discuss how businesses can practically apply it. The workshops featured two cases (developed by The Alan Turing Institute) for participants to work through using the guidance. The first concerned an AI-assisted HR Recruitment Tool and the second machine-learning for Children's Social Care. The Explain guidance identifies six kinds of explanation type: rationale, responsibility, data, fairness, safety and performance, and impact, each with an accompanying checklist. Specific explanation types were worked through and applied to each case study. General discussion in the workshop focused on the usability and effectiveness of the guidance.

At the end of the private sector workshop, in response to a general question on readiness of business to implement this guidance, one participant stated that the market needed to be educated, both businesses and also the public with examples of AI decision-making being done correctly.

## Lessons from Covid-19 – missed opportunities

Contributors to the inquiry[49] also reflected on lessons from Covid-19, concluding that more effective local services could have been provided had the issues around 'licence to operate' identified in ***Trust, Transparency and Tech*** already been addressed. Some noted that the introduction in 2020 by the government of Control of Patient Information Notices to require the sharing of data between healthcare organisations, GPs, Local Authorities and arms-length public bodies had raised challenges for authorities, and revealed the lack of local frameworks to allow action at pace. Contributors reflected that local authorities would have been able to move faster to make life easier for vulnerable people had trusted frameworks existed that already involved local citizens. For example using public health and supermarket data to ensure people required to shield did not suffer delays in food deliveries. Other examples from Covid-19 around the disjointed relationship between public and private sector data was the absence of knowledge, in the health service, of which individuals had been inoculated against flu by Boots and other chemists.

[49] Place-based ethical AI roundtable by the APPG for Data Analytics and Manchester Metropolitan University, 7th July 2020.

# Chapter 3

## Regions and nations - working better together

### Strengthening the framework for national-local engagement

#### Recommendation 1

In order to improve the way in which data can be collated and used to develop AI and machine-learning services and products, national government needs to support and enable local government and their place-based partners.

a. To create the right blend of strategic leadership and practical, citizen-faced guidance, the government should establish a Cabinet Committee, to be commonly known as the **'National Data Ethics Council'** to reflect its wider membership from the regions and nations, academia and industry.

b. This 'National Data Ethics Council' should be supported by the **Centre for Data Ethics and Innovation**, which should establish a **working group** for that purpose, bringing together representatives from across the UK to ensure that regional issues around data-driven technologies are taken into account.

c. The Centre for Data Ethics and Innovation should be **established in statute** and given a **duty to work** with local authorities to ensure that centrally provided guidance meets local needs and that local areas have enduring support.

There have been a number of positive developments since Policy Connect's *Trust, Transparency and Tech* report, such as the government's publication of their draft National Data Strategy at the end of August 2020. It was helpful that the Strategy recognised the need for it to apply across the whole of government - "a whole-government approach driven from the centre"[50]. Data-rights should be universal across different areas - someone in Barrow should not have fewer rights or a poorer provision of service than someone in Basingstoke. The importance of an England-wide approach (and UK-wide, where appropriate) was for example supported by the majority of responses to a consultation carried out by the Information Commissioner's Office (ICO) and The Alan Turing Institute into explaining AI guidelines, which also emphasised the importance of clarity across the country[51].

The post-consultation version of the National Data Strategy has real potential to help drive the economy in all parts of the UK through better use of AI, by ensuring that trust issues around the collection of data on which AI and machine-learning depend are at its heart. Given the importance – from the public's perspective – of engaging at a local level, the Strategy should demonstrate the government's intent to support regional and local authorities to raise the level of understanding and hence confidence about data collection and use. We have already proposed[52] that this could be achieved through the inclusion of an additional mission setting out the government's intention to support local and regional authorities in the development of public confidence in how data is collected and used.

There are three practical ways in which the government could achieve both their desire to drive the agenda from the centre, to provide universality of citizen-facing standards, and also ensure that all sectors and regions benefit from data as we move into an increasingly digitally-facilitated environment. The way that businesses have adapted and innovated (pivoted) their products and services, and ways of working under Covid-19 restrictions provides a springboard for further data-enabled growth.

[50] National Data Strategy consultation 28th August 2020: https://www.gov.uk/government/consultations/uk-national-data-strategy-nds-consultation/uk-national-data-strategy-consultation.
[51] Information Commissioner's Office, Summary of responses to the consultation on ICO/Turing draft guidance on Explaining AI decisions, with comments, January 2020.
[52] Policy Connect's response to the draft Data Strategy consultation, 8th December 2020.

## Establishing a whole of government Cabinet Committee – a 'National Data Ethics Council'

Achieving a "whole-government approach" that drives both the national and regional agenda will need strategic leadership and accountability at national, regional and local level. Our inquiry heard that a Cabinet Committee, under the chairmanship of a Cabinet Minister while also drawing in key players from the regions and nations, as well as industry and academics, would provide a driving force for an area in which the UK could excel globally. The House of Lords in its 15th December 2020 report[53] recommended the establishment of a Cabinet Committee to provide more and better coordination, to start at the top, with Terms of Reference that include the strategic direction of Government AI policy and the use of data and technology by national and local government. From the evidence we have gathered about the needs of local government and the regions, while we agree with their lordships about the need for a Cabinet-level Committee focussed on driving action, we strongly conclude that its membership needs to have a broad geographical 'whole of government' base involving key regional and local players. It is for this reason we recommend what we have called a 'National Data Ethics Council', in the same way that the National Space Council is also a Cabinet Committee.

As well as being chaired at Cabinet level with relevant Ministers as members, this whole of government 'National Data Ethics Council' should draw from those with practical experience at regional and local level to ensure that data-driven technologies are being developed ethically – both in the provision of public services and to support the growth of the private sector. It would seek advice and input from the existing advisory AI Council and cutting-edge research. It would initiate work – such as from the Centre for Data Ethics and Innovation through the new Working Group we set out below – to test and ensure that the National Data Strategy meets the needs of all citizens and that public trust is being created through an ethically-based approach. Its Ministerial members would have the resources of the relevant departments and local authority representatives the weight of regional and local government. The consequential increased visibility and accountability would allow innovative practices in the use of data-driven technologies to be shared across local and central government. The government's National Data Strategy is explicit about using data to redress regional inequalities, and this would be one way in which strong mechanisms can be put in place to ensure this happens, with ethical concerns and considerations being fully addressed in the process.

## Giving the Centre for Data Ethics (CDEI) the role of supporting the 'National Data Ethics Council'

Over the last year the CDEI has continued its work to inform and influence, such as through its barometer reports. It has developed relationships with national bodies with a regulatory focus, in particular the Office for AI, the ICO, and the Regulatory Horizons Council (RHC) set up by the government in early 2020 to scan the horizon and identify the areas where regulation needs to adapt to support emerging technologies. The CDEI has also been doing some work with regional partners, as seen with the November 2020 review into algorithmic bias, which included contributions from a range of local stakeholders including the Local Government Association, Bristol City Council, and West Midlands Police[54]. This provides a good basis for the CDEI to bring to our proposed 'National Data Ethics Council' a deep perspective of issues around public trust and accountability to support innovation.

[53] https://publications.parliament.uk/pa/ld5801/ldselect/ldliaison/196/196.pdf
[54] Centre for Data Ethics and Innovation, Review into bias in algorithmic decision-making, November 2020, pg. 144.

The CDEI, with its links across departments, could help the new Council to ensure a fully "whole-government approach". The CDEI already provides an effective means for pooling expertise and coordinating the roles of other national institutions such as the Alan Turing Institute and the Open Data Institute. To achieve cross-regional and national join-up, the CDEI would need a formal regional as well as national responsibility. To that end, the CDEI should convene a working group that reflects the place-based interests of the 'National Data Ethics Council'. Such a working group would facilitate discussion and research regarding the use of AI and machine-learning technologies at the regional level; draw lessons from the regions for wider dissemination; and enable the development of new partnerships with universities and other civic bodies outside London. This would improve policy making by government, ensuring that national government and departments understand and take account of the needs of regions and localities in the data-driven "levelling-up" agenda. In consequence, it would help ensure that guidance for regional political and economic leaders, as well as the distribution of R&D, innovation and skills funding, is based on the region's practical needs and potential for growth.

## CDEI as a statutory body with a duty to work with the regions

Finally, the CDEI should be put onto a statutory basis, as is proposed in the government's draft National Data Strategy. This would achieve a number of objectives raised by contributors to our inquiry:

- Demonstrate the government's intent that the CDEI would not be adversely impacted by future changes of administration. Giving the CDEI operational and legal independence through statutory status would allow it to develop a longer-term perspective and programme.
- Give strength to its developing role of providing transparency and hence reassurance to the public that "someone is keeping a lookout for things starting to go wrong"[55] – a basic pre-requisite for increasing public confidence.
- Raise CDEI's profile with Parliament, the nations and regions, industry and academia. More generally it would help with the CDEI's visibility and make it the go-to public body for industry and academics specialising in data ethics and innovation.

Our inquiry has shown that 'joining up' with the regions and nations must be a constant theme across government's work on ethical data and digitally driven recovery. To ensure it continues to be a golden thread, the legislation setting the CDEI on a statutory basis should include a duty for the CDEI to work with the regions. This is more than a duty to 'consult'; it needs to be framed in law such that the needs of the regions and nations are embedded in the work of the CDEI, and by extension the work of the government, through the new Cabinet-level Committee, the 'National Data Ethics Council'. Such a focus embedded through a 'duty' would be mutually reinforcing with the AI Council's recommendation in its 6th January 2021 report that The Alan Turing Institute should be cemented as a truly national institute, "with a set of regional investments that draw on strengths from across the UK"[56].

[55] Lord Wallace at the APPGDA's 2nd December 2020 event on Algorithms and Trust.
[56] AI Council report, 6th Jan 2021, https://www.gov.uk/government/publications/ai-roadmap/executive-summary.

## Good governance and transparency to support innovation

### Recommendation 2

The government should review national level frameworks to ensure that central departments and their agencies provide a coherent and consistent **ethical umbrella for devolved public service delivery and public/private service partnerships**. This umbrella – which should have simplicity and flexibility at its heart - should include the following principles:

a. A requirement to 'do no harm' equivalent to the fiduciary duty for the highly successful UK financial sector.
b. A requirement for citizens to be involved at the start of AI/machine-learning design, and at regular stages thereafter.
c. A right to explanation for citizens from all public and private bodies using citizen data in AI-based products and services, so the citizen can have trust in the factors taken into account in decisions about them.

Some argue that innovation requires unleashing everything and taking away governance, but we heard from many sides that in reality it works the other way around, because things will go wrong, and therefore it is necessary to have the right governance environment to be resilient to problems and controversy - an environment that is trustworthy and can cope with set-backs, so that a set-back does not become a screeching halt. The HoL Liaison Committee in their 15th December 2020 report expressed concerns around governance and regulation, having heard evidence such as that from the Ada Lovelace Institute hearing "time and time again from members of the public that their trust in technologies is contingent on external oversight of those technologies". Their Lordships concluded that there is a clear consensus that ethical AI is the only way forward, and that the government should now operationalise this. We agree, and our evidence gave pointers on what needs to be 'operationalised'.

In the financial sector, for example, contributors to the inquiry advised that transparency is a competitive advantage and helps rather than hinders innovation. Equifax described the level of accountability and transparency around their AI tools for doing credit-worthiness assessments. US legal and regulatory requirements mean that if a lending request is declined based on the use of algorithms, the applicant has to be told the top 4-5 issues that reduced their score. This transparency allows the applicant to take corrective action.

This kind of communication with the individual means the algorithms cannot be designed as opaque 'black-boxes' - it must be necessary to be able to explain to consumers how and why lending judgements were reached. Equifax tests the performance of its AI models against traditional models and against criteria such as "giving everyone the right explanation 100% of the time". Ethics is built in from the very start of product design, and reviewed and monitored continuously, driven by a legal and regulatory compliance regime that is specific to the sector and has the confidence of the public. All of this is done under an umbrella purpose that is focussed not on the industry but on the consumer: to "help people to live their financial best"[57].

[57] Equifax interview with Policy Connect 20th August 2020.

These and other examples provided to the inquiry reinforced the evidence gathered for the APPGDA's ***Trust, Transparency and Tech*** report that led to our recommendations around the practical aspects of ethical AI: the need for transparency, right to citizen explanations, and the importance of building in citizen involvement around ethics both at the start and then throughout the service delivery phase. Looking through the consumer and local lens, however, drew out the importance of sector or service specific ethics work. A roundtable participant used the example of health data and the fire service: if communities are asked whether firemen should know where the most vulnerable households are, they would express surprise that the fire service didn't already know this. But asking if firemen should have access to medical data would result in a different, more suspicious response: the key is to be able to answer the question 'why' by demonstrating the benefit to the local community or individual.

Such arguments persuaded us that trying to build national frameworks that aim to fit all services and sectors is not possible, but that there is huge value in an overarching 'umbrella' at strategic level with clear and simple requirements or data ethics 'values'. A number of contributors also felt that the UK was too timid in introducing AI regulation, and that the heavily-regulated financial sector was a clear example of the benefits of "putting brakes on cars so that people can drive them faster".

## A single, overarching national umbrella with government departments leading by example

Central government has a key role in ensuring the wider economy can benefit from expanding data use and making it more open. First, it should lead by example, across all government departments, public bodies and agencies. In doing so, it should include protections to prevent organisations and private sector bodies taking data that citizens have provided for better public service provision, and using it for commercial exploitation without sharing and making transparent their data processes.

But, for all the reasons we have set out – especially that of ethics rules fitting the specific service and meeting the practical day-to-day concerns of citizens – national frameworks can only establish high-level principles, not the actionable guidance that individual organisations need in both the public and private sectors. Furthermore, the ethical issues around capturing data, for example, from local transport networks, or ensuring that facial or voice recognition is tailed to a particular population, can only be tested with the public at a local level taking account of the specific characteristics of their communities. We propose therefore, that the government should seek to provide very simple ethical principles and provide local partnerships with the space – and if necessary guidance and capacity – to work through local and sectoral ethical frameworks that result in "practical solutions"[58]:

a. A requirement to 'do no harm' – a principle that data collected from the citizen will only be used for their benefit, not for the commercial gain of the shareholders of an organisations. For example, to avoid the equivalent of the miss-selling of PPI insurance or pensions advice. Without this overarching requirement, it is difficult to see how it will be possible for governments to overcome the mistrust engendered for example by Covid-19 track and trace.

b. A requirement for citizens to be involved at the start of AI/machine-learning design and at regular stages thereafter. We heard from Greater Manchester about the Trafford Centre initiative to find missing persons, but lack of involvement of the public at the start to get buy-in to the purpose and methodology meant that it was seen to be an over-reach into personal privacy.

c. A right to explanation for citizens from all public and private bodies using citizen data in AI-based products and services, so the citizen can have trust in the factors taken into account in decisions about them. This means that the outcomes from the use of data must be local, explainable, and right every time.

Participants in the inquiry stressed the need for simplicity and flexibility. For example, a representative from Visa told the inquiry that there are already 100+ ethical frameworks globally. It was suggested that what is now needed is more guidance on how to put them into practice – especially in a way that fits with the UK's regulatory landscape and market context. It is very important than any ethical framework is adaptable to new and emerging data-driven technologies and market trends[59].

This approach would also follow the principles espoused by the recommendation made by the APPG in 2019 in ***Trust, Transparency and Tech***, that the government should ensure that all Departments are providing a coherent ethics framework for devolved public service delivery. We would add that, rather than creating more ethical frameworks, central government's priorities should be on making them all mutually consistent, simple and flexible, tested against the principles we set out above. The government's value added will then be to assist in their practical application by sector and in place.

[58] Dr Keeley Crockett, Manchester Metropolitan University, at the APPDGD's 11th June 2020 roundtable.
[59] Roundtable by the APPG for Data Analytics and Manchester Metropolitan University, Tuesday 7th July, 2020.

## Open data sets relevant to local areas as well as national public bodies

### Recommendation 3

The government should publish open data sets of standardised, usable data, available to all sectors and all public authorities, to provide the right conditions for local government and their place-based partners to drive forward with innovative citizen-focussed services and products.

During the course of the inquiry we heard of the significant challenges for individual organisations in finding the time and resource to work through issues around data adequacy and standardisation. While some places, such as the Greater Manchester Combined Authority, have made progress in recent years such as developing a regional digital strategy, for many areas this is simply beyond their capacity. One participant described the problem as follows: 95% of data analytics work is the 'hidden' process of getting data into a state suitable for analysis. Finding ways to reduce this through common standards and consistent format and approach could be transformative.

The establishment of the Data Standards Authority in April 2020 with its remit of helping to implement data standards that meet user needs is a good step forward. If its work is to be relevant to all public authorities and all industry sectors, as potentially envisaged in the draft National Data Strategy, the Authority should be reaching out to local government now, at the same time as working across government departments and public bodies, to ensure that it and the ONS draw in and make available open data sets relevant to the local level. The government, including through the Data Standards Authority and ONS, should act in a supporting and enabling role to achieve the kind of national and local data join-up that England would have benefitted from during Covid-19. It should work internationally and with other nations including the EU to ensure agreements on data adequacy allowing for the legal transfer of data across borders.

The UK government was ground-breaking with its development of gov.uk; it now needs similarly to be ground-breaking in ensuring real-time open data sets are available to and usable by all regions and sectors. All data collected by central government should be interrogated to determine whether or not it is ethical to be shared, and whether its use as open data will make machine-learning systems fairer, less biased, and more explainable. If not, government should question why and how the data was collected and structured. Our proposed 'National Data Ethics Council' could provide challenge on these issues, providing the evidence for Minister to press for government data collection to be ethical and published under an open licence as quickly as possible. If data sets are clearly available and the process by which they were gathered and structured are made clear, then public confidence in any technologies and developments resulting from them is likely to be higher.

[58] Dr Keeley Crockett, Manchester Metropolitan University, at the APPDGD's 11th June 2020 roundtable.

## Local data-driven technology standards – what local areas can achieve

### Recommendation 4

Local authorities such as Combined Authorities should work in partnership with local academic institutions and business organisations to develop **Data-Driven Technology Strategies**. These strategies should meet the following principles:

a. Citizen-focussed with citizens involved from the start and throughout.
b. Accessible to local SMEs so they have access to the **resources** and **knowledge-sharing** needed to make effective and ethical use of artificial intelligence and machine-learning.

As we have set out earlier, trust in data and AI requires the involvement of local people representative of their communities. Simon Madden, NHSX[60] recommended mapping "Islands of Trust" - building trust in a smaller group and then working out from that. Other contributors suggested that such mapping could work effectively on both a sectoral and geographical basis, and pointed to the importance of local beliefs, culture and values, which are relevant to place and population. Trust frameworks developed nationally will not capture and respond to local values. For all these reasons it is regions and localities who need to lead on engaging citizens, albeit enabled by the strengthened governance and support described above.

Turning to the relationship with businesses and especially SMEs, in Chapter 2 we set out the benefits of projects such as the Greater Manchester Cyber and AI Foundries. However, such examples – while right for their place - may not be replicable everywhere else: others may not have the same concentration of research institutions or resources as are available in Greater Manchester.

Instead, this inquiry recommends that Combined Authorities establish suitable strategies to facilitate the development of links between universities and businesses to ensure that local SMEs have access to the expertise and knowledge-exchange resources required for them to take advantage of data-driven technologies. As well as the GM AI Foundry example, there is the STEAMhouse Innovation Centre[61] established at Birmingham City University with the support of the West Midlands Combined Authority[62]. For other Combined Authorities, it may be as straightforward as forming a single registry of relevant academics and research hubs for firms to access. This is one of the areas in which our proposed Working Group of the CDEI, supporting the new 'National Data Ethics Council', could help to provide advice across the regions and nations. Such an approach would complement the proposals in the government's ***Skills for Jobs*** White Paper of 21st January 2021 to: put power in the hands of the locality for the development of skills priorities; and provide a fund for the establishment of College Business centres for business development and innovation in particular sectors[63].

[60] The APGDA event "What next for Health Data Partnerships, 29th October 2020.
[61] Birmingham City University, STEAMhouse Prospectus, September 2018.
[62] West Midlands Combined Authority, Strategic Economic Plan, 2016 pg. 17.
[63] HM Government, Skills for Job White Paper, January 2021.

## Citizen involvement throughout procurement

### Recommendation 5

Procurement contracts at national and local level for public services that include artificial intelligence and machine-learning technologies should formally incorporate a specific requirement for citizen involvement and continuous testing and monitoring over the lifespan of the product.

One of the key outcomes noted by the roundtables is that data-driven technologies are moving at a pace of change which many public bodies are struggling to respond to in their procurement processes. There was a strong feeling that procurement tends to focus excessively on the immediate purchase not the whole-life experience, which for AI-based services or products fails to take account of the learning from practical experience in the balance between benefits and risks.

A good example of changing the parameters over the course of service delivery drawn to our attention by an academic at the University of Cambridge is the South Korean track and trace app. From listening to public surveys, the government understood that they had initially got wrong the level of detail to be captured of a person's movements (how long they had stayed in a particular place, what time of day or night it was). They responded to that trade-off between privacy and ability to do precise tracking, and removed some of the less relevant data. One participant[64] suggested that the use of Key Ethics Indicators in contracts could help the customer focus on the whole-life contract not just the up-front offering, which would allow AI procurement to monitor compliance and the balance between outputs and risk of unethical data use.

SMEs often struggle with public procurement processes and despite government being the greatest single commissioner of digital technologies in the country, many small businesses find themselves unable to successfully bid for contracts, partly due to lack of expertise and partly due to the complexity of processes for the procurement of digital services. One of the benefits in developing local data strategies is the influence that Combined Authorities are able to bring on the procurement process. Public sector procurement is able to engage with large procurers to develop their own ethics criteria, such as by stating how they would want the ethics systems of their supplier to be evidenced and evaluated. In 2019 the Open Systems Lab – working in collaboration with the Connected Cities Catapult and Tech UK – developed a new 'checklist' for new procurement processes with a specific focus on local and regional authorities[65].

During the inquiry, officials from the Greater Manchester Combined Authority noted the need to update the current guidelines to ensure better value for money for taxpayers, as well as allowing officials more discretion in terms of purchasing software. This finding also came out of a consultation on the procurement of AI-based technology set out by the Information Commissioner's Office (ICO). The report made a number of recommendations to ensure compliance with GDPR and other data-protection regulations for data-driven programmes. These include: specifying requirements during the procurement period rather than ex post[66]; regularly reviewing for statistical accuracy[67]; and ensuring sufficient information sharing[68].

[64] Ibid.
[65] Parvin A, After the crisis: let's fix procurement, 19th April 2020.
[66] Information Commissioner's Office, Guidance on the AI Auditing Framework, February 2020, pg. 30.
[67] Ibid, pg. 51.
[68] Ibid, pg. 74.

In June 2020 the UK Government published Guidelines for Artificial Intelligence (AI) procurement. The purpose of the Guidelines is to draw on good practice and provide central government departments and other public sector bodies with a set of guiding principles for purchasing AI technology, and it does set out some considerations for the procurement process[69]. However, there is little focus on engaging the public during the procurement process, let alone thereafter. The Crown Commercial Service (CCS) is responsible for procurement frameworks across the public sector, and in autumn 2020 published a "dynamic purchasing system" (DPS) procurement framework for public sector purchasers of AI[70]. CCS engagement with Combined Authorities would help to develop these new practices to be relevant to local bodies and SMEs, and build in local citizen involvement. The current procurement reform process (Green Paper on Transforming public procurement, December 2020[71]) also provides an opportunity to address the challenges and take advantage of the opportunities outlined in this section. We welcome the proposal that the central platform mooted be "designed and delivered in line with the Government Digital Service's Technology Code of Practice and Service Standard". However, while the Service standard requires that the public servants "consider the Data Ethics Framework"[72], and the framework directs its users to consider questions of public engagement, this also does not go far enough in ensuring that citizen involvement and continuous testing are part of the deployment of all publicly-procured machine-learning technologies and AI tools.

Further work might include updating and reforming the guidelines associated with the acquisition and running of data-driven technologies to ensure that they both provide value for money, and also ensure that ethical considerations are developed throughout the procurement process. There would also be scope to bring together representative bodies for SMEs, such as the AI Foundry, to help encourage participation in the procurement processes by smaller, more innovative firms, who may currently be unable or unwilling to compete with major players in bidding for public sector contracts. A more locally-focussed approach to developing CCS-led processes could help move away from a generalised tick-box approach to procurement to one that acknowledges the need for co-production of services, to take account of local issues around the balance between novel use of AI and risk of unethical events. Given the power of public procurement in economic growth, a more locally-sensitive approach will be a key element of the levelling-up agenda.

[60] The APGDA event "What next for Health Data Partnerships, 29th October 2020.
[61] Birmingham City University, STEAMhouse Prospectus, September 2018.
[62] West Midlands Combined Authority, Strategic Economic Plan, 2016 pg. 17.
[63] HM Government, Skills for Job White Paper, January 2021.

## Capacity, skills and education

Finally, although we did not take specific evidence in this inquiry, a number of contributors raised the question of the capacity of, and skills within, regions and localities across England to gather and use data, and to develop the community engagement tools needed. This is especially the case if authorities are to reach out beyond the usual self-selecting local groups – as we were advised during this inquiry they must – since it will also involve ensuring that local communities understand ethical AI issues.

Since we completed our evidence gathering, the government has published its Skills for Jobs White Paper[73], in which it rightly emphasises the importance of digital skills for all, and advanced technical skills for the workforce. It is very welcome that the government, in August 2020, introduced the digital entitlement for adults, with flexibility so that all adults can gain essential digital skills at a time and place that suits them. Similarly welcome is the focus in the White Paper on advanced and higher technical skills. These proposals go some way towards meeting the challenges and opportunities identified in Policy Connect's Skills Commission's report of March 2020, ***England's Skills Puzzle***[74], that data and digital technologies present to the wider workforce, and towards implementing the Skills Commission's recommendation that the White Paper should "recognise that skills and training, both for those in full-time education and the wider population, are a core part of data foundations and ensuring that it is fit for purpose"[75].

Messages from our inquiry hearings reinforce the case studies set out in the ***Skills for Jobs*** White Paper showing the power of collaboration 'in place' around skills, such as the examples on the Greater Birmingham and Solihull (GBS) Institute of Technology, and the West Midlands "Beat the Bots Bootcamp". We also heard about the importance of local authorities having the capacity to engage with their communities on data, AI and trust, and of the communities themselves being educated in these issues if such engagement is to be exploited to the full. In other words, this is both about digital skills for businesses and authorities, and about ethical skills in society so that local citizens know how to question, probe, and challenge.

We intend to explore the essential issues of capacity, skills and education further in follow-on roundtables, as part of our contribution to the implementation of the ***Skills for Jobs*** White Paper.

[74] England's Skills Puzzle, published by Policy Connect, March 2020 https://www.policyconnect.org.uk/sites/site_pc/files/report/1298/fieldreportdownload/englandsskillspuzzle-piecingtogetherfurthereducationtrainingandemployment.pdf
[75] Ibid.

# Contributors

## First Roundtable by the APPG for Data Analytics and Manchester Metropolitan University, Thursday 11th June, 2020

| Name | Position | Organisation |
|---|---|---|
| Daniel Zeichner MP | Chair, APGDA | House of Commons |
| Iain O'Gara | Health and Public Service | Accenture |
| Myrna Macgregor | Lead Ethics | BBC |
| Louise Pakseresht | Senior Policy Advisor | Centre for Data Ethics and Innovation |
| Michelle Lee | Manager - Risk Analytics | Deloitte |
| Keith Miller | Lead | GM AI Foundry |
| Steven Heales | Head of Science and Innovation Policy | GMCA |
| Phil Swan | Chief Information Officer | GMCA |
| Beena Puri | GM Digital Innovation and Partnerships Lead | GMCA |
| Hadleigh Stollar | Customer Director | Graphnet |
| Amy Khalfay | Advanced Analytics Consultant | IBM – Manchester |
| Katie Gallagher | Managing Director | Manchester Digital |
| Edwin Colyer | Impact and Engagement Manager | Manchester Metropolitan University |
| Keeley Crockett | Reader in Computational Intelligence | Manchester Metropolitan University |
| Julian Tait | CEO | Open Data Manchester |
| Luke Abberley | Lead Data Scientist | Synectics Solutions (SME) |
| Florian Ostmann | Policy Fellow | The Alan Turing Institute |
| Rachel Ann Jones | Chief Information Officer, Senior Business and People Leader | Valuation Office Agency, HMRC – Manchester |

## Second Roundtable by the APPG for Data Analytics and Manchester Metropolitan University, Tuesday 7th July, 2020

| Name | Position | Organisation |
|---|---|---|
| Daniel Zeichner MP | Chair, APGDA | House of Commons |
| Lord Wallace of Saltaire | Member, APGDA | House of Lords |
| Lord Oates | Member, APGDA | House of Lords |
| Sahar Denesh | Government Engagement Manager | BSI |
| Lawrence Key | Senior Policy Advisor | Centre for Data Ethics and Innovation |
| Natalia Domagala | Head of Data Ethics | DCMS |
| Phil Swan | Chief Information Officer | GMCA |
| Camilla Ravazzolo | Head of Policy and Standards | Market Research Society |
| Mark J Lumsdon-Taylor | Director of Audit | MHA Macintyre Hudson |
| Keith Miller | Vice Chair of the Council of Professors and Heads of Computing | Manchester Metropolitan University |
| Edwin Colyer | Impact and Engagement Manager | Manchester Metropolitan University |
| Keeley Crockett | Reader in Computational Intelligence | Manchester Metropolitan University |
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| Caroline Jay | CEO | Open Data Manchester |
| Rachel Ann Jones | Chief Information Officer, Senior Business and People Leader | Valuation Office Agency, HMRC – Manchester |
| Ali Hessami | Director | Vega Systems |
| Tulsi Parida | AI & Data Policy Manager | Visa |

A number of follow-up interviews and document reviews were also carried out, including drawing from an All Party Parliamentary Health Group round-table chaired by the Rt Hon the Lord Hunt of King's Heath, entitled "What next for health data partnerships?" held on Thursday 29th October 2020; and a further round-table held in conjunction with the EPSRC Research project ReEn Trust, chaired by Daniel Zeichner MP, "Rebuilding and Enhancing Trust in Algorithms" on Wednesday 2nd December 2020.

# Acknowledgements

This report, its recommendations, views and opinions expressed herein are the responsibility and the work of Policy Connect and the All-Party Parliamentary Group on Data Analytics.

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We also wish to thank our many partner organisations that were consulted and provided invaluable evidence and input over the course of this inquiry.

We recognise that these are complex and potentially controversial issues and expect that not all of those listed as contributors will agree with every part of the report.

## The All-Party Parliamentary Group on Data Analytics

The cross-party group's aims are to connect Parliament with business, academia and civil society to promote better policy making on big data and data analytics. This report follows the Group's first report in May 2019 entitled ***Trust Transparency and Tech: Building Ethical Data Policies for the Public Good.***

## Policy Connect

Policy Connect is a cross-party think tank with four main policy pillars; Education and Skills; Industry, Technology & Innovation; Sustainability and Health & Accessibility.

We specialise in supporting parliamentary groups, forums and commissions for which Policy Connect provides the secretariat and delivers impactful policy research and events programmes. Our collaboration with parliamentarians through these groups allows us to influence public policy in Westminster and Whitehall. We are a social enterprise and are funded by a combination of regular membership subscriptions and time limited sponsorships.

We are proud to be a Disability Confident, London Living Wage employer and a member of Social Enterprise UK.

This report is part of Policy Connect's work to support the programme of the All Party Parliamentary Group on Data Analytics. This project was undertaken by Policy Connect's Industry, Technology & Innovation policy team, in particular Jack Tindale, former Policy Manager, and Floriane Fidegnon, Head of Industry, Technology & Innovation.

Special thanks go to Oona Muirhead CBE, Jonathan Shaw, and Ben Carpenter Merritt, formerly of Policy Connect.

## Manchester Metropolitan University

Manchester Metropolitan University is a great, modern university, with roots in higher education that date back to 1824. Located in the global city of Manchester, the University works closely with partners, businesses, the community and academic peers – locally, nationally and on the international stage.

With 34,000 students and more than 1,000 undergraduate, postgraduate and professional courses, the University educates and trains large numbers of legal and business professionals, scientists, engineers, teachers, health workers and creative professionals.

Manchester Metropolitan achieved the Silver award in the Teaching Excellence Framework. The University has 14 research centres, and in the last Research Excellence Framework 85% of its research impact was rated world-leading and internationally excellent.

The Centre for Advanced Computational Science conducts world-leading theoretical and applied research in computer science, distributed across four main themes: machine intelligence, data science, smart infrastructure and human-centred computing.

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