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BIG INNOVATION CENTRE

THE ROLE OF EMERGING TECHNOLOGY IN TRANSFORMING GOVERNMENT IN THE UK

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Co-Chair of the All-Party Parliamentary Group on Artificial Intelligence (APPG AI)

THE POTENTIAL ROLE OF GOV-TECH AND ITS GOVERNANCE

First of all a bit of biography. I co-founded the All-Party Parliamentary Group on Artificial Intelligence (APPG AI) in January 2017 with the aim of exploring the impact and implications of Artificial Intelligence. I then chaired the AI Lords Select Committee which reported in April 2018.

AI IS HIGH ON THE UK GOVERNMENT'S AGENDA.

Two years ago at the World Economic Forum in Davos in 2018 the then Prime Minister Teresa May focused on Britain's strategy for the development of AI and how she wanted the UK to lead the world in deciding how artificial intelligence can be deployed in a safe and ethical manner.

Leading up to that we had a number of reports:

Growing the Artificial Intelligence Industry in the UK October 2017: Professor Dame Wendy Hall and Jérôme Pesenti

Industrial Strategy: Building a Britain Fit for the Future HMG November 2017 where AI is identified as one of the Grand Challenges.

Subsequently the AI Sector deal was published in May 2018 which heralded the founding of the Office for AI, the AI Council, the Centre for Data Ethics and Innovation and the Government Technology Innovation Strategy published in June 2019.

The House of Lords Select Committee in its Report AI in the UK: Ready Willing and Able? Published in April 2018 concluded that there was already a welcome and lively debate between the Government, industry and the research community about how best to shape AI's development but government and society must seek to actively shape AI's development and utilisation, or risk passively acquiescing in its many likely consequences.

We proposed five principles that could become the basis for a shared ethical AI framework. While AI-specific regulation is not appropriate at this stage, we believed that such a framework could provide clarity in the short term, and could underpin regulation, should it prove to be necessary, in the future. By establishing these principles, the UK could lead by example in the international community.

Our Select Committee called for these principles to form the basis of a cross-sector AI code, which can be adopted nationally, and internationally. There was an opportunity for the UK to shape the development and use of AI worldwide. The EU followed last year with their Ethics Guidelines for Trustworthy AI and the OECD and G20 with principles covering similar ground shortly thereafter.

The AI APPG and Big Innovation Centre did a survey by sector and investors of the AI landscape in 2018. It was apparent that Govtech -the use of AI in the public services was relatively underdeveloped in the UK. Nevertheless the potential application of AI combined with other technologies such as IOT and blockchain in a range of settings was considered to be significant, such as:

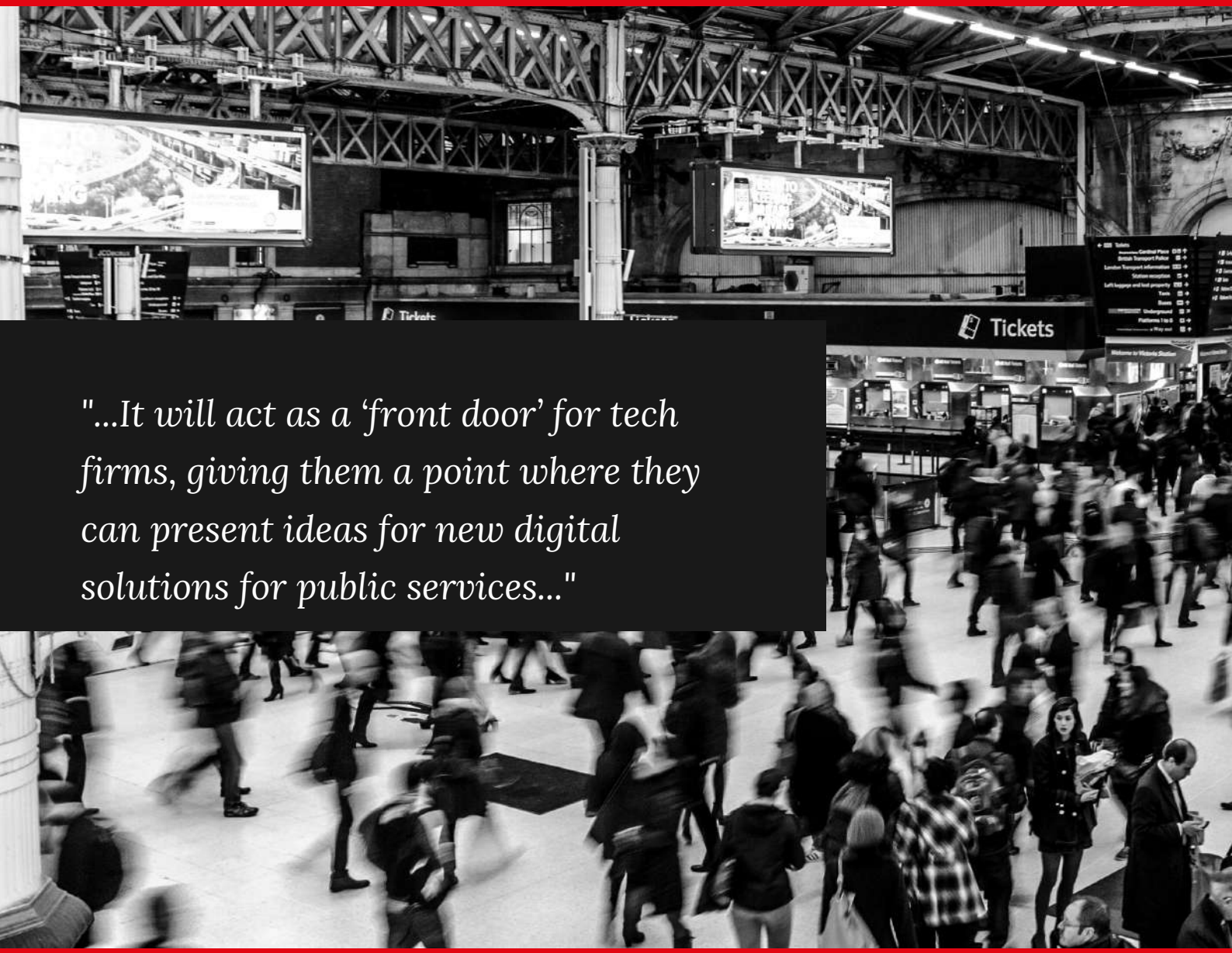
INTELLIGENT AGENTS DIRECTLY TO CONSUMERS AND CLIENTS (EG CHATBOTS)

INTERNET OF THINGS (EG CONNECTED HOMES)

DATA AND INFORMATION EXCHANGES

BLOCKCHAIN (EG PEER TO PEER 'SMART CONTRACTS')

PUBLIC PROCUREMENT OF AI



"...It will act as a 'front door' for tech firms, giving them a point where they can present ideas for new digital solutions for public services..."

In this context public procurement is of key importance. The new GovTech Catalyst is set to work with the Office for Artificial Intelligence to ensure the public sector can benefit from the development of the relevant technologies.

It is part of a £20 million initiative to support the development of new technologies in public services. It will act as a 'front door' for tech firms, giving them a point where they can present ideas for new digital solutions for public services.

Its work with the Office for AI will be an element of the challenge to make the UK a world leader in AI, along with support for the Digital Catapult's Machine Learning Garage programme in its efforts to train professionals from different industries in how they can apply AI, and promoting awareness of advanced data analytic technologies.

There are a number of guidelines now in place in particular, the Guide to using AI in the Public Sector published in June 2019. However, officials often lack experience in acquiring such solutions and many public institutions are cautious about harnessing this rapidly developing technology at a time when we are only beginning to understand the risks as well as the opportunities.

So the UK in October 2019 became the first government to pilot the World Economic Forum Procurement Guidelines for Artificial Intelligence across several departments.

These guidelines were designed to help officials keep up with rapidly developing AI technology and mitigate the risks.They set out the requirements a government official should address before acquiring and deploying AI solutions and services and the questions that companies should answer about their AI development and how the data is used and processed.

The guidelines are also designed to permit both established companies and start-ups and new entrants to the AI space to compete on a level playing field for government contracts, potentially accelerating the use of artificial intelligence in the public sector providing solutions in key areas such as transportation, healthcare and public services.

BARRIERS TO ADOPTION OF AI

Of course there are a number of barriers to the introduction of AI in the public sector which are similar to those in parts of the private sector.

01

LACK OF INFRASTRUCTURE.

Just as many companies realised legacy systems were holding them back from full digital transformation, so it is that a lack of appropriate infrastructure may be holding the public sector back from AI adoption, as well.

02

DATA ISSUES

Few companies have a strategy in place for accessing and maintaining the types of data necessary for AI to function effectively. On the same basis the public sector needs to invest in quality data management and procurement, until then their AI systems will not be effective and indeed may be unethical.

03

LACK OF TALENT

Attracting and affording the type of quality AI talent they need to create an effective AI strategy is difficult for some companies and may be a challenge for the public sector too. This may well put them at a disadvantage compared to large companies in successful AI adoption.

04

LACK OF VISION AT THE TOP

Senior leaders in the private sector show a lack of commitment to AI initiatives. The public sector is even more risk averse and leadership more difficult to find to espouse and develop digital transformation.

05

COST

Big companies can afford to invest. The public sector by contrast is beset by budget constraints and changing priorities which can limit consistent and adequate investment.

06

CHANGE ISSUES

Change is never easy, least of all in digital transformation. AI adoption itself has a particularly challenging learning curve whether in private or public sector.

BUT GOVERNMENT CAN IF THE POLITICAL WILL IS THERE, OVERCOME MANY OF THESE BARRIERS!

They do however need to focus on how to empower society to reap the benefits of AI and protect them from potential harms.

Data Governance

In achieving this, reassurance about the use of public data is crucial.

One of the pillars of the AI APPG's work this last year has been the question of Data Ethics or Governance. Who controls the data and who benefits from the data used? Lack of data control and agency are two of the key problems underlying the need for new data governance models. Increasingly people are feeling they are unable to control how their data is being collected and used by AI systems in both the private and public sectors.

There are several key issues which need to be addressed:

● Lack of Transparency

Organisations are often not as transparent as they could be about how their AI technologies rely on data, what data their AI technologies rely on, and how that data is collected and used by those AI systems to generate specific output. This lack of openness prevents individuals from being able to control their data from the very start.

● Lack of public awareness

Even if organisations are public about how AI systems collect and use data, the general public knows very little about it. Lack of public awareness means most people have no idea about how their data is being used even if that information is publicly accessible.

Currently, most organisations rely on privacy controls which users can choose to 'opt in or opt out' to inform individuals about how their data will be used.

Surveys show that the majority of citizens rarely take the time to thoroughly read these lengthy terms.

● Data Misuse

To add to the issues of data control, there have also been far too many real-world scandals of data being misused and overused, lost, and irresponsibly shared or sold.

● Data Bias

Evidence received by our APPG AI has also shed light on the biases – deliberate and accidental and sometimes unavoidable – ingrained within the datasets fed into AI systems. As AI-driven decisions are already playing a critical role in areas concerning our security, health, education, and wellbeing, the issue of biases and stereotypes ingrained within datasets is growing in priority and concern. This is particularly alarming as biases are often difficult to spot and diagnose. This is addressed below.

● Data Access

On the other side of data misuse and overuse is the issue of data under-use. Access to data is essential to maximise the public and private socio-economic value promised by AI technologies. Restricting access to data can stop breakthrough innovation from solving some of the most severe problems our societies face. It can be difficult for new entrants to markets to succeed if they don't have access to the data needed to make their technology work.

Many stakeholders across industries and sectors are calling for open access to increased datasets to create a level playing field to develop AI technologies.

● Data Monopolisation

The last challenge is the risk of few, wealthy players dominating the entire arena. A 'winner-takes-all' model has been created. A small number of companies with huge quantities of data have massive advantage in developing and deploying AI technologies. These few companies have a unique competitive advantage over all others hence making market competition little to none.

● Valuing Data

It is now clear that while data has become one of the driving forces of the AI revolution, the value it generates is not fairly distributed.

Organisations rely on the collection of personal data to build large datasets which they feed into their AI systems. Huge profits are produced from the output of these AI technologies, however that value rarely trails down to the original source: the individual.

The Role of Government in Data Governance

Governments around the world have a key role to play in the data governance ecosystem. APPG AI's evidence in this area highlighted the need for policy makers to build public awareness and to ensure as great a number of stakeholders as possible engage with the process of building new data governance models.

Wider society must be informed of the many implications and pilots of new data governance models must ensure they promote public good and respect human rights simultaneously.

Data trusts, or other new data governance models, could potentially be the solution to the challenges of some of these approaches.

The Government's Industrial Strategy established the role of the Centre for Data Ethics and Innovation (CDEI) . Roger Taylor Chair of the CDEI explained to our APPG AI the significant role it can play in the creation and implementation of new data governance models such as data trusts.

The current programme of the CDEI will be focused on analysing and anticipating the opportunities and risks posed by data-driven technology and putting forward practical and evidence-based advice to address them. The first two areas they are focusing on are 'online targeting' and bias. Snapshot Papers have now been published on AI and Insurance, Smart Speakers and Voice Assistants and Deepfakes and Audio Visual Information.

Retaining Public Trust - Citizen Participation

The retention of public trust is of prime importance particularly where algorithmic decision making is involved.

We need to engage citizens in the conversations around what AI is, what it is not, how it is being used, what is its potential, and what are its implications. Ultimately, AI should be developed and deployed based on the values of society, as articulated through a deliberative and inclusive dialogue between experts and citizens.

This means that in putting together a trusted governance model we need to develop models of citizen participation designed to explore ways of

- Building AI awareness
- Building Knowledge of Opportunities and Risks
- Forming a dialogue between experts and citizens
- Promoting diverse & inclusive engagement in AI governance debate

The last is particularly crucial. AI is impacting all of us – regardless of demographics, industry, discipline, or region - it is absolutely critical to engage a diverse set of voices in the discussions around AI governance. AI technologies do indeed promise us many opportunities on a national, social, and individual level; but these AI technologies also have complications and hazards.

Once citizens are aware of AI and its consequences they will be empowered to engage in making decisions around it. Helping citizens understand AI's impact in each of their daily lives will hope to make AI something of today and not the future.

IS THERE A NEED FOR REGULATION?

"...making sure that standards such as transparency, fairness, and explainability, are set for algorithm use in local authorities and the public sector."

There may well be circumstances however where Government Guidelines whether on use or procurement are simply inadequate in relation to the civil liberties issues at stake. At the end of the day governance may need to give way to regulation even in the public sector.

Over the past few years we have seen a substantial increase in the adoption of algorithmic decision making and prediction across central and local government, including in criminal justice, child welfare, education, and immigration. Detecting problems in these systems requires oversight and monitoring. It also requires access to data that is often neither available to advocates and the public nor monitored by government agencies.

Governance of Automated Decision Making and Prediction

The Science and Technology Select Committee Report, Algorithms in Decision Making of May 2018, made extensive recommendations and urged government departments to publicly declare where and how they use them and introduce a legally enforceable “right to explanation” that allows citizens to find out how machine-learning programmes reach decisions affecting them – and potentially challenge their results.

They also recommended that we appoint a Minister who is responsible for making sure that standards such as transparency, fairness, and explainability, are set for algorithm use in local authorities and the public sector.

Nesta last year in Thea Snow’s report ”Decision-making in the Age of the Algorithm” for instance set out a comprehensive set of principles to inform human machine interaction for public sector use of algorithmic decision making which go well beyond the Government guidelines. This, as Nesta say, is designed to introduce tools in a way which:

Is sensitive to local context
Invests in building practitioner understanding
Respects and preserves practitioner agency

As they also say “The assumption underpinning this guide is that public sector bodies will be working to ensure that the tool being deployed is ethical, high quality and transparent” If governments do not act soon they will find ourselves in the same position as the Netherlands where there was a recent decision that an algorithmic risk assessment tool ("SyRI") used to detect welfare fraud breached article 8 of the ECHR.

The Legal Education Foundation has looked at similar algorithmic 'risk assessment' tools used by some local authorities in the UK for certain welfare benefit claims and has concluded that there is a very real possibility that the current use of governmental automated decision-making is breaching the existing equality law framework in the UK, and is “hidden” from sight due to the way in which the technology is being deployed.

The independent Committee on Standards in Public Life last March chaired by Lord Evans decided to carry out a review of AI in the public sector to understand the implications of AI for the Nolan principles and examine if government policy is up to the task of upholding standards as AI is rolled out across our public services.

THE COMMITTEE CHAIR LORD EVANS SAID ON RECENTLY PUBLISHING THE REPORT:

" Demonstrating high standards will help realise the huge potential benefits of AI in public service delivery. However, it is clear that the public need greater reassurance about the use of AI in the public sector….

"Public sector organisations are not sufficiently transparent about their use of AI and it is too difficult to find out where machine learning is currently being used in government.

It found that despite the GDPR, the Data Ethics Framework the OECD principles and the Guidelines for Using Artificial Intelligence in the Public Sector, the Nolan principles of openness, accountability and objectivity are not embedded in AI governance and should be. To those instruments which still don't guarantee those principles we could add the new WEF AI Guidelines for procurement of AI in the public sector being piloted.

THE COMMITTEE'S REPORT PRESENTS A NUMBER OF RECOMMENDATIONS TO MITIGATE THESE RISKS, INCLUDING:

GREATER TRANSPARENCY BY PUBLIC BODIES IN USE OF ALGORITHMS

NEW GUIDANCE TO ENSURE ALGORITHMIC DECISION-MAKING ABIDES BY EQUALITIES LAW

THE CREATION OF A SINGLE COHERENT REGULATORY FRAMEWORK TO GOVERN THIS AREA

AND PROPER ROUTES OF REDRESS FOR CITIZENS WHO FEEL DECISIONS ARE UNFAIR

Live Facial Recognition Technology

In recent months Live Facial Recognition Technology has been much in the news. Despite having been described by as potentially Orwellian by the Metropolitan Police Commissioner, and deeply concerning by the Information Commissioner the Met have now announced its widespread deployment.

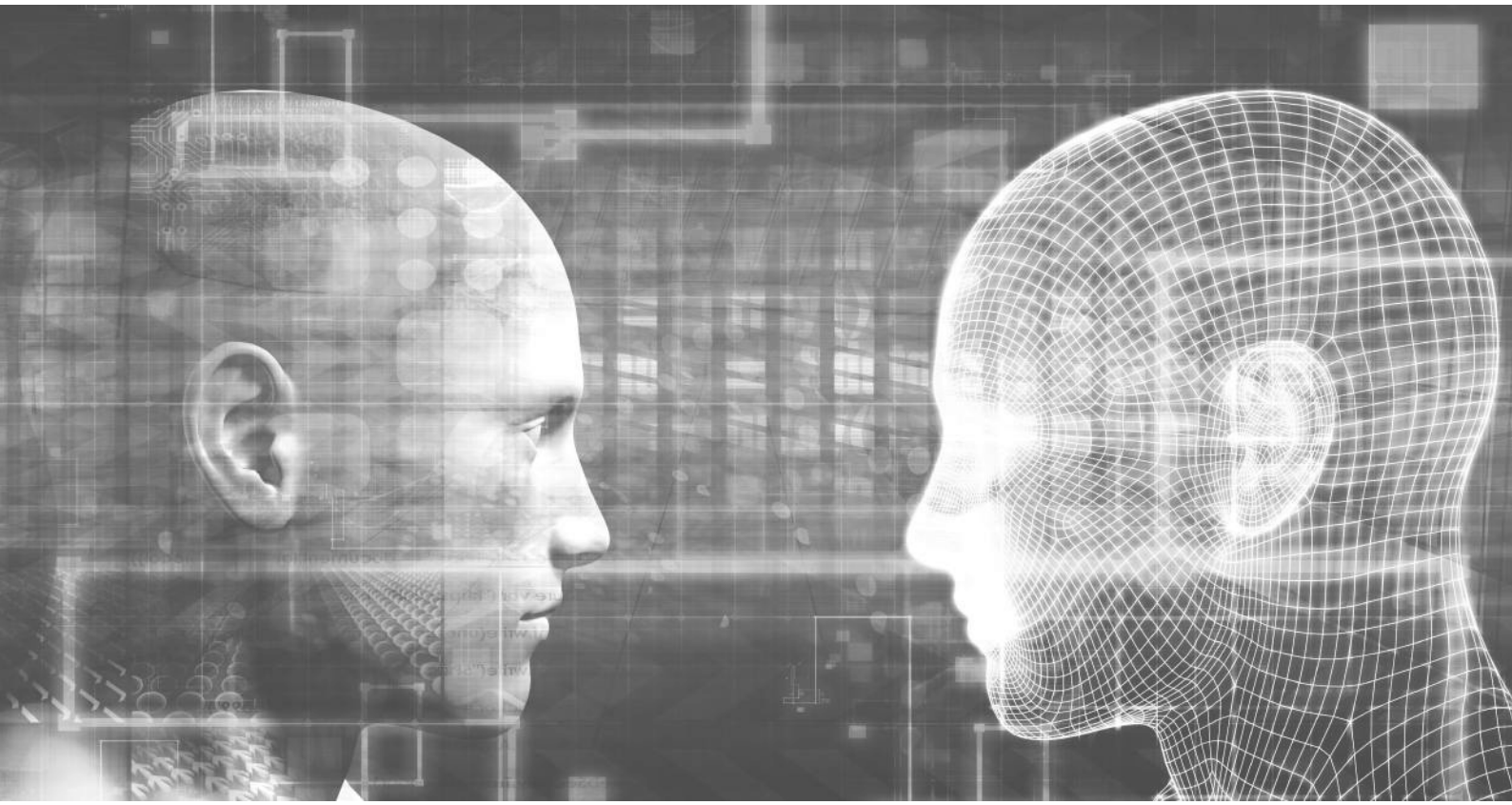
The Ada Lovelace Institute in Beyond Face Value reported similar concerns. The technology has been banned in many US cities and states.

The Information Commissioner has been consistent in her call for a statutory code of practice to be in place before facial-recognition technology can be safely deployed by police forces saying “Never before have we seen technologies with the potential for such widespread invasiveness...The absence of a statutory code that speaks to the challenges posed by LFR will increase the likelihood of legal failures and undermine public confidence.”

The University of Essex in its independent report last year demonstrated the inaccuracy of the technology being used by the Met. Analysis of six trials found that the technology mistakenly identified innocent people as “wanted” in 80 per cent of cases. Even the Home Office’s own Biometrics and Forensics Ethics Group has questioned the accuracy of live facial recognition technology and noted its potential for biased outputs and biased decision-making on the part of system operators.

As a result the Science and Technology Select Committee last year recommended an immediate moratorium on its use until concerns over the technology’s effectiveness, accuracy and potential have been fully resolved.

A moratorium is a vital first step. We need to put a stop to this unregulated invasion of our privacy and carefully review the technology for bias, civil liberties and privacy concerns. We can then debate if or when its use is appropriate and whether and how to regulate its use. This might be absolute restriction or permitting certain uses where regulation to ensure privacy safeguards are in place, together with full impact assessment and audit. If it is used at all it should only be in clearly defined and permitted circumstances



ABOUT

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