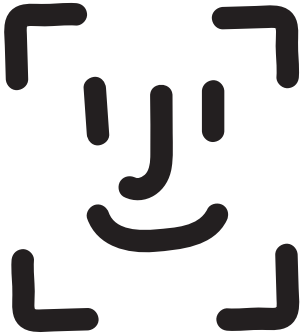
Tortoise· NOTES

AI & us
Data rules



Headline partner

HENKEL^x VENTURES

A Tortoise ThinkIn • January 2020
Notes by Tortoise Intelligence Team

Artificial intelligence and government

"Algorithms and machine-learning techniques, in which computers analyse large amounts of data to detect statistical patterns and develop models that can be used to make accurate predictions, are rapidly becoming key tools for governments."

AI Trends

Potentially useful applications of artificial intelligence in areas of government include:

Traffic management using real-time data from traffic lights, cameras, and other sources enabling traffic flow optimisation

Service provision centers using chat bots and robots to dispense services including tax guidance, legal and citizens advice, and employment counselling

Healthcare diagnostics and patient management organised by machines could provide the right care more rapidly, and save lives

Defence at one extreme autonomous weaponry but well before then, for intelligence gathering, cybersecurity and optimising command and control functions.

Food security, safety and environmental outcomes combined with sensors to provide plant-by-plant optimal growing conditions, minimising waste, and combined with blockchain to deliver fuller information along the supply chain.

There are many other opportunities for improvements in the efficient and effective use of AI by the state – but, as they have gained public prominence, so automation, robotics and artificial intelligence have become increasingly contentious .

Concerns over the safe and fair use of artificial intelligence

- Can we prevent conscious and unconscious bias from influencing algorithms based on historical data?
- Can we ensure that machine-learning models remain explainable, and understandable by more than just those data scientists designing them?
- Can regulators ever be adequately informed about this rapidly developing technology?

Artificial intelligence in our businesses

72 per cent of business decision-makers say AI can liberate humans to concentrate on meaningful work. *PwC Bot.me*

81 per cent of executives agree that, within the next two years, artificial intelligence technologies will work next to humans in their organizations, as a co-worker, collaborator and trusted advisor. *PwC*

76 per cent of CEOs are most concerned with the potential for bias and lack of transparency when it comes to AI adoption. *PwC*

72 per cent of executives report that their organisations seek to gain customer trust and confidence by being transparent in their AI-based decisions and actions. *Accenture Citizen AI*

Widespread effects

AI-powered voice assistants will reach 8 billion in number by 2023. *Juniper Research*

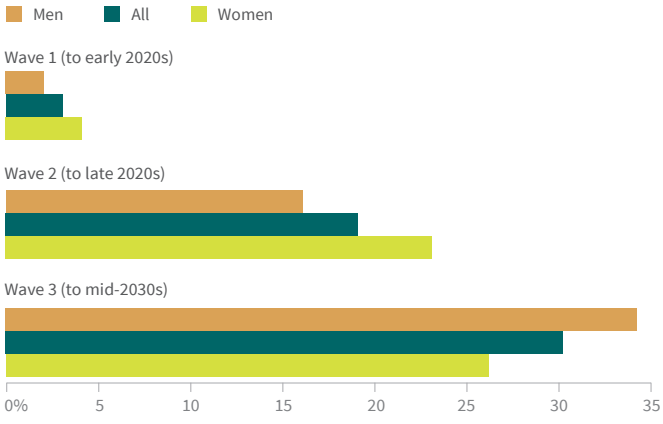
By 2025, the global AI market is expected to be almost $60 billion. *TechJury*

41 per cent of consumers believe artificial intelligence will improve their lives in some way. *Strategy Analytics*

Automation: The process of replacing human labour with automated processes carried out by machines – is often linked to artificial intelligence

PwC predicts up to 38 per cent of U.S. jobs could be at high risk of automation by the early 2030s, higher than Germany (35%), the UK (30%) and Japan (21%). *PwC UK Economic Outlook*

Percentage of existing jobs at potential risk of automation



Source: PwC estimates based on OECD PIAAC data (median values for 29 countries)

Discrimination: Artificial intelligence and bias

"We've seen time and again that mathematical models can sift through data to locate people who are likely to face great challenges, whether from crime, poverty, or education. It's up to society whether to use that intelligence to reject and punish them – or to reach out to them with the resources they need. We can use the scale and efficiency that make [predictive models] so pernicious in order to help people. It all depends on the objective we choose."

Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*

"Individuality has always been a crucial part of what it means to respect people's humanity, and I hope we don't lose sight of that as non-human elements play a larger role in our lives."

Malcolm Gladwell

Anti-discrimination legislative framework, notably the Equality Act 2010, protects individuals from discrimination, whether generated by a human or automated decision-making system.

The General Data Protection Regulation (GDPR) is intended to complement the Equality Act 2010, supposedly protecting data subject's "fundamental rights and freedoms" throughout the processing of their data. GDPR also notes that measures to prevent "discriminatory effect on natural persons" are paramount. *Information Commissioner's Office*

What is the upside?

– Diagnosing cancers of different kinds using advance image recognition models.

– Generating synthetic speech to help victims of stroke, epilepsy and A.L.S using machine learning.

– Detecting and preventing suicide using samples of communications to detect patterns of depression and emotional crisis.

– Predicting the development of weather events; including typhoons, to mitigate natural disasters.

Data privacy initiatives around the world

Australia	Privacy act 1988 and amendments (last amended in March 2014, including 13 Australian Privacy Principles
Brazil	General Data Protection Law (LGPD – Law 13.709) entering into force in February 2020
Canada	Digital Privacy Act (2015), reforming the Personal Information and Protection and Electronic Documents Act (PIPEDA)
Chile	Proposal Data Protection Law (still in drafting stage)
China	Personal Information Security Specification (May 2018)
EU	Privacy Regulation (still in drafting stage)
India	Personal Data Protection Bill 2018 (expert committee issued draft, parliamentary bill expected in December 2018)
US	Federal Data Privacy Law (not yet in drafting stage)
California	Consumer Privacy Act (entering into force in July 2020)

WFA Global Knowledge Base

Google has briefed federal lawmakers about AI. Its parent company, Alphabet, spent more than any other company on lobbying last year – a total of $22 million.

In January, Google issued a white paper arguing that although the technology comes with hazards, existing rules and self-regulation will be sufficient "in the vast majority of instances."

Tortoise Intelligence recently published *The Global AI Index; a comprehensive investigation of capacity for artificial intelligence around the world*. This year, we will widen our investigation to include more of the landscape of ethics and regulation.

Find out more at **www.tortoisemedia.com/intelligence/ai**

Notes

Reading time: 4-minute read
Published: January 2020