OECD Going Digital Summit - Issues Note

## Session 15B: Artificial Intelligence – The Way Forward

AI holds potential to improve productivity and to help solve complex problems

Artificial intelligence (AI) is a new general purpose technology that is helping people and organisations to make better decisions. AI systems can detect patterns in enormous volumes of data and model very complex and inter-dependent environments. AI allows much more accurate and less expensive predictions, recommendations or decisions, promises to generate productivity gains and can help address complex challenges.

Sectors that are seeing rapid uptake of AI technologies include finance, transport, healthcare, security, defence, manufacturing as well as marketing and advertising. In scientific research, AI accelerates scientific discovery, facilitates reproducibility of experiments and lowers experimentation costs. For example, in December 2017 an AI program discovered a new planet by analysing data in the Kepler space telescope project.

At the same time, AI has been a growth area for investment and business development. After five years of steady increases, private equity investment in AI start-ups has accelerated since 2016, with the amount of private equity invested doubling from 2016 to 2017, to reach 16 billion US dollars in 2017 (Figure 1). These investment transactions are usually large scale, representing multi-million dollar deals. AI technologies are maturing and business models are developing, bringing AI technologies closer to mass scale roll out.

Figure 1. Total estimated equity investments in AI start-ups, by start-up location

2011-17 and first semester 2018
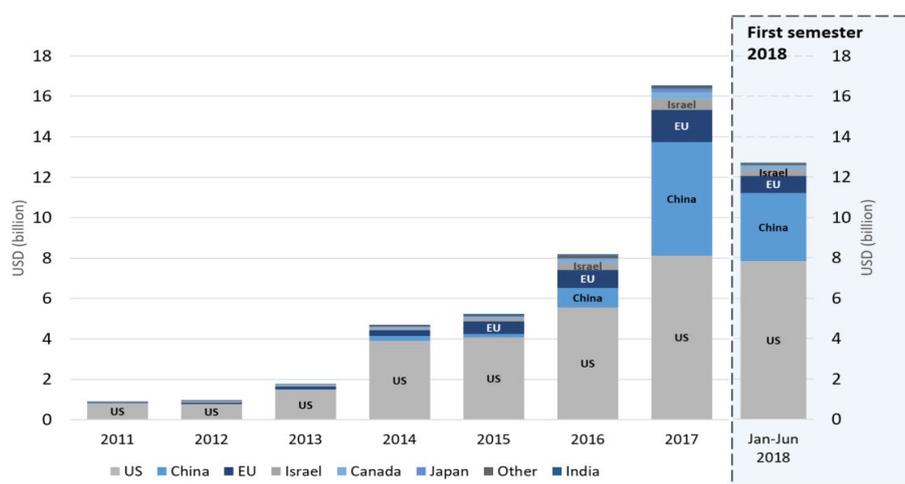
Source: OECD estimates, based on Crunchbase (July 2018), www.crunchbase.com.

Ensuring that AI is trustworthy is key to reaping its benefits

Alongside benefits, AI raises new challenges to ensure that AI systems are trustworthy, respecting people and society's need for privacy, security, safety and autonomy, fairness, and quality work, as well as transparency and accountability of AI-powered outcomes.

Many jobs in OECD countries are at high risk of automation, and others face a risk of significant change over the next 10 to 20 years. Policies will need to facilitate transitions as people move from one job to another. As the jobs change, so will the skills required of workers, who will need continuous education, training and skills development, inter-disciplinarity as well as AI theory and practice. Leveraging AI also requires data, models and computing power, and the capacity to adapt organisational processes. There are also growing concerns about SMEs' capacity, in particular, to navigate the AI transition.

AI – notably some types of machine learning – raises new types of concerns compared to previous technologies. Some of today's AI systems are so complex and use so much data that explaining how they reached a decision may be impossible. Designing systems that are transparent and accountable is a critical concern, notably for high stakes decisions in areas such as criminal justice or employment.

AI can also raise ethical and diversity concerns. Chief among them are questions of privacy and security, the safety of autonomous systems that iterate and evolve over time sometimes in unforeseen ways and the dangers of transferring existing biases from the analogue world into the digital world – including those related to gender and race. There is also apparent tension between accuracy of AI systems that requires vast quantities of data and privacy.

AI is a growing policy priority for all stakeholders

In view of the transformative benefits of AI as well as its risks, AI is a growing policy priority not just for governments but also for companies, technical organisations, civil society, and trade unions. Many countries have explicit AI strategies, like France and Canada, that consider AI as an engine of growth and well-being, and seek to educate and recruit the next generation of researchers. Japan has set up a strategic council and the United Arab Emirates has created a whole Ministry dedicated to AI. Inter-governmental initiatives on AI are also emerging, including at the G7, G20, OECD, EC and UN levels. The private sector, technical community, trade unions and civil society are also taking action, for example by the 'Partnership on AI' – begun by large AI firms – or by the IEEE standards organisation with its "ethically aligned design principles" for practitioners.

> **Q1:** How can policy respond to the rapid pace of AI development? How can policy makers foster innovation for trustworthy AI?
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> **Q2:** With AI policy issues spanning borders, is there a baseline of value-based norms applicable to everyone? What role can international cooperation play?
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> **Q3**: How can we foster consistency and complementarity of AI policy with technical implementation? What are the respective roles of policy and stakeholders?
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> **Q4**: What is the role of the OECD in addressing these concerns?