Ministry of Communications and Information
An Engaged and Connected Singapore

Transcript of Speech by Minister for Communications and Information Mrs Josephine Teo at the Asia Tech x Artificial Intelligence (ATxAI) Conference (7 Jun 2023)

Excellencies,
Industry Partners,
Friends.
A very good morning to you

Excitement about AI

1. Since last year when we met, there have been significant breakthroughs in AI. If asked a year ago what ChatGPT was, people may have guessed it was a dating app! Generative AI and its potential, multiplied by the scale and speed of change, have been nothing short of stunning.

2. Last month, in San Francisco, I visited a Hacker House at Alamo Square. This area is now referred to as "Cerebral Valley", reflecting the concentration of AI activity. There were startup founders, along with researchers and investors. Academic papers published on a Friday were being prototyped over the weekend.

3. Happily for me, there were also passionate Singaporeans in the Bay Area, who are themselves at the forefront of this tech revolution. Everyone has come alive to the transformative potential of generative AI. Thankfully, not all were chasing the hype.

4. Thoughtful leaders are still exploring alternative AI architectures and approaches. They cautioned me about AI's dangers.

5. What does all of this mean for Singapore and where do we go from here? In discussions with non-tech communities, I have found it useful to draw the comparison of AI and electricity. Electricity itself brings us little benefit. But when used to power appliances and equipment, we get so much more in convenience, productivity and capabilities.

6. What AI delivers is a different kind of power. It is the power of human-like intelligence, potentially a very high form of it, at far reduced cost. This is especially valuable for Singapore where human capital makes all the difference.

7. If as Deputy Prime Minister Heng Swee Keat put it last night, we can harness this power to make it "Augmented Intelligence", to support rather than replace people, our citizens will have a lot to gain. At the same time, just as the improper use of appliances and equipment can cause electrocution, inappropriate use of AI can also do great harm.

8. Guardrails are therefore necessary to guide people to use it responsibly, and for AI products to be "safe for all of us" by design.

Singapore's Efforts in Establishing AI for Public Good

9. This is why in Singapore, we believe we must do all we can to harness AI for the Public Good. Fortunately, we are not starting from scratch.
Innovators in our public service are already building AI products to improve governance and service delivery.

10. Allow me to share a few examples:

- Since 2015, we have used machine learning to process citizen feedback on repairs needed in their neighbourhoods, such as when someone sees a broken swing at the playground, or a lamppost that's not working. Citizens benefit from faster responses, by the right people.

- Last year, close to 10 million containers and consignments crossed our shores. Another 50 million parcels came through air shipment. We need cargo clearance to be fast but also safe.

These twin objects are better achieved by the use of AI to detect anomalies in scanned images of these shipments.

- More recently, we have started using AI-enabled image and text comparisons to detect scams. Our phishing detection tool combs through 120,000 websites daily to take down spoof sites used for fraudulent purposes.

Without such AI in its arsenal, law enforcement agents will hardly have the capacity to focus on scam prevention or to recover the assets of victims.

11. These are a few of the obvious uses of AI for the Public Good.

Other use cases to tackle challenges of our time

12. AI can also help address the bigger challenges of our time.

- By 2030, 1 in 4 Singaporeans are expected to be over 65 years old. For an ageing population with growing chronic disease burden, AI will be a vital tool for Singapore to improve clinical diagnosis and patient well-being. It can also reduce costs for families as well as hospitals. Afterall, half of what we spend on hospitalisation is incurred in the last three months of our lives.

- There's more. In cancer preventive care, our AI platform can already prescribe the optimal drug doses based on data about a patient's condition. We are mapping the DNA of 100,000 Singaporeans and sequencing whole genomes. AI can be used to better understand genomic-clinical data linkages, for the practice of precision medicine.

- Another big challenge is sustainability. Singapore has committed to becoming net-zero by the mid-century. Singapore is also a city in a garden. But as with all cities, buildings are an issue. Globally, they contribute 40% to energy consumption.

- There are many ways AI can improve their energy efficiency, from building design and simulation to energy monitoring and optimisation. At the broader level, there are already AI solutions and applications that balance electricity supply and demand in real time. This can optimise energy load deployment and storage. The irony of course, is that AI itself must become more energy efficient. This is a collective challenge for us all!

- Beyond healthcare and sustainability, we see opportunities for AI in education. What if teachers' time can be freed up from tasks like grading assignments and managing student records? How about individualised learning plans and tutoring support for children from disadvantaged backgrounds? Imagine how this can moderate inequality and uplift everyone in our next generation!

<u>Enhancing Singapore's AI ecosystem</u>

13. These opportunities are why Singapore is making a rallying call for all of us to harness AI for the Public Good. Allow me to share some thoughts about how we may proceed.

14. First, we believe the government can lead the way in widespread AI experimentation and adoption, as well as scaling. One could even argue that the government is uniquely positioned to have oversight on both the scale of the problems, and the resources to make such experimentation impactful.

15. Second, we believe AI proficiency can be built through a combination of deep skills development as well as ground-up learning. These are important foundations, akin to enriching the soil conditions for a thousand flowers to bloom.

16. Third, we believe in responsible AI deployment for Public Good. We will encourage experimentation and adoption. But we will also strive to shield society from the most serious AI risks.

17. To make progress on all that I have just mentioned, the government cannot do it alone. The private sector and the research ecosystem have rich expertise. They *can* and must be encouraged to participate meaningfully to advance AI for the Public Good.

<u>Innovations and opportunities within the ecosystem</u>

18. This is already happening. Companies here are playing an active role in growing our ecosystem. SAP, CISCO, Sea and Grab have anchored AI labs in Singapore. They have created thousands of good jobs and enabled Singaporeans to be tech leaders in their fields.

19. There is even a partnership between AI Singapore, our national AI programme, and the World Wide Fund for Nature Singapore, to use AI-enabled tools to combat illegal wildlife trade.

Uplifting proficiencies across the board

20. One challenge is that the breadth and depth of talent cannot keep up with demand. We will continue to grow our training capacity. But even as training curriculum is updated, it risks becoming outdated all too soon.

21. It is a plus therefore that the skills acquisition in AI does *not* always need to come through formal education. In fact, many people have succeeded through independent experimentation and learning-by-doing.

22. We therefore encourage employers to take this wider aperture for spotting talent. With AI, neither age nor academic qualifications are barriers. If we embrace this, we come closer to realising AI as "Augmented Intelligence". AI that broadens the pathways for success must surely be more inclusive and a force for good.

Singapore's AI Governance Roadmap

23. Let me now turn to the topic of responsible AI use. A strong desire for AI safety need not mean pulling the drawbridge to innovation and adoption. As we have seen in transportation, brakes, speed limits, seatbelts and airbags can promote confidence among road users.

24. In AI, safety mechanisms and shared standards will equally instil confidence in its use. But effective safeguards will take time and good research to discover.

25. Meanwhile, we have developed several frameworks to promote accountability and trust. Some of you may recall that Singapore published our Model AI Governance Framework in 2019. It was and remains the first of its kind in Asia.

26. Last year, we introduced AI Verify, a Governance Testing Framework and Toolkit. This minimum viable product has since attracted interest from over 50 companies. You can check out the showcase featuring companies like IBM, UBS and Singapore Airlines.

Partnerships to strengthen AI governance and promote safe and responsible use

27. **In support of AI for the Public Good, Singapore has decided to open source AI Verify and launch the AI Verify Foundation.** We believe that system developers, solution providers and the research community can all use and contribute to AI Verify. Crowding-in their expertise will also promote the growth of new and better testing tools.

28. The Foundation will set the strategic directions and development roadmap of AI Verify. Current members include IBM, Google, Microsoft, Red Hat, Salesforce and Aicadium. They will be our ambassadors to gather the community to develop better frameworks, standards and best practices. And we welcome more interested partners to join in.

29. We will also enhance our suite of governance tools. **IMDA and Aicadium are releasing a joint discussion paper today, highlighting key areas of concerns in generative AI**. We hope it will spark many conversations and build awareness on the guardrails needed.

Part IV: Building an AI-ready Singapore

30. To conclude, we believe AI is the next big shift since the internet and mobile. Amidst very real fears and concerns about its development, we will need to actively steer AI towards beneficial uses and away from bad ones. This is core to how Singapore thinks about AI.

31. In doing so, we hope to make Singapore an outstanding place for talent, ideas and experimentation. We also aim to be a vibrant node within a global network where efforts are directed towards trusted AI systems and responsible use. This will be where AI for the Public Good will truly come alive.

32. So to everyone here today, our story is just beginning and we invite you to be a part of it!

33. Thank you!