

**Speech by Minister for Communications and Information, Josephine Teo,
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Turning Challenges into Opportunities – What’s next for Singapore?

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1. I want to thank all of you for inviting me to this year’s IBM THINK Singapore conference.
2. As Paul mentioned earlier, IBM marks its 70th anniversary in Singapore. I want to begin by thanking the company for its longstanding contributions to our country since 1953 - well before independence and governance.
3. It is not an exaggeration for me to say that IBM has supported Singapore’s development with its technology. Our first mainframe computer was installed at the Central Provident Fund Board (CPF Board) in 1963, and it was the IBM 1401. IBM was also an important partner in driving our national computerisation programme¹ in the 1980s. Today, IBM continues to be a valued partner in talent and skills development, and in the R&D of AI, quantum computing, and sustainable ICT.

Innovating with transformative new technologies

4. This morning’s theme asks us, “how do we turn challenges into opportunities?” This is the very question Singapore asks itself every day.

¹ In 1981, the National University of Singapore (NUS) and the then National Computer Board approached IBM to help drive Singapore’s national computerisation programme, at a time when Singapore was trying to speed up its adoption of computer technology. The partnership spawned the Institute of Systems Science (ISS), which is now the NUS-ISS.



5. Among other challenges, the growth of our average total labour force has slowed to 1% per annum in the last decade. Well before that, we already decided it was necessary to pivot to productivity-led growth. As a result, we encouraged and incentivised firms to adopt technology on a wide scale. Programmes were put in place to nurture a skilled workforce capable of seizing opportunities in new growth clusters. Doing so not only allowed us to overcome our manpower constraints, it also transformed us into a global technology hub.

6. In many ways, we share similar experiences as IBM in your century-long history. With every new wave of technology, we both had to reinvent ourselves to stay relevant. For example, the advent of cloud computing and virtualisation threatened all on-premise mainframe computers; they could be replaced by on-demand remote access to vast compute capacity. In the face of this challenge, IBM reinvented itself by offering the hybrid Cloud. This strategy allowed IBM to continue tapping into its traditional expertise in hardware, and opened up new opportunities to provide cloud-based software solutions and IT services.

Singapore government takes lead in AI experimentation; harnessing AI for Public Good

7. Today, AI is the transformative technology that presents tremendous opportunities and challenges.

8. Significant advances over the past year in Foundational Models, including large language models or LLMs, have highlighted AI's productivity-enhancing potential. Singapore is excited about this new stage of AI deployment, because we believe AI has the power to unlock and uplift human and economic potential. AI-enabled innovations can benefit a wide range of industries, such as logistics, finance, healthcare, and even in Government.

9. AI can also help to address Singapore's major challenges. For example, to meet the healthcare needs of an ageing population, AI can be a vital tool for



prescribing more precise and optimal drug dosages based on patient's medical data. This will improve clinical outcomes and patient well-being.

10. AI also has the potential to accelerate our push towards green computing, for example, through optimising energy consumption in data centers. This will help us meet our net-zero sustainability goals.

11. On our part, the Government has been actively innovating to harness AI for Public Good. We have encouraged AI experimentation and adoption across Government agencies since the *National AI Strategy* was launched in 2019.

12. **[Update]** By 2022, 85%² of our Ministry Families have implemented at least one high-impact solution that taps on AI to boost productivity. Many more exploratory projects are under way.

13. **[Update]** To ride on this good momentum, we will step up AI innovation to develop an initial tranche of scalable, productivity enhancing, and rapidly-deployable AI products that transform the delivery of government services to citizens.

14. We are piloting the integration of LLMs in the **Support Recommender** tool on the **SupportGoWhere** platform. As you may know, **SupportGoWhere** is a one-stop portal for individuals and families in Singapore to easily find and apply for social services and government support programmes. Instead of browsing for information or filling out a pre-defined form, LLM integration allows citizens to describe in their own words their background situation and needs. The Recommender then identifies and generates relevant support schemes and services that meet the financial, caregiving, employment, and healthcare needs of citizens.

15. Singapore is also harnessing the potential of AI in urban planning. For instance, our Urban Redevelopment Authority, or URA, is using machine learning to analyse

² Note: 17 of 20 (or 85% of) Ministry Families have achieved the Digital Government Blueprint's KPI of achieving at least one high impact AI project for service delivery, operations, or policy making. The "high impact" is measured in terms of cost and time savings, enhanced performance, improvement in business or operational processes and/or refined existing policies.



public feedback and identify actionable insights that are organised by topics of concerns and geographical areas. This **feedback analytics prototype** will support urban planners to formulate plans that are more anticipatory and effectively address residents' concerns. The URA is also developing a suite of AI-enabled tools under its **PLAN.AI** strategy. These include the application of AI models in **spatial and data analytics**, so that urban planning can become more agile to meet Singapore's evolving needs.

16. We believe these AI developments are best enabled by an open exchange of ideas and collaboration. We aim to provide such a robust environment with access to AI capabilities, compute resources, talent, and communities of innovation.

17. I invite you to partner Singapore in this journey to experiment, build, and scale AI-enabled solutions that address the challenges of our time.

Ensuring trustworthiness of AI systems

18. While we collectively develop and use AI for Public Good, it is equally important to ensure the trustworthiness of AI systems for consumers and business users. Guardrails will be necessary for the responsible implementation and use of AI, and for AI products to be "safe for all" by design.

19. At the same time, we are mindful that the pursuit of AI safety does not stymie its innovation and adoption. All of us must therefore do our part to ensure the responsible deployment of AI and instill confidence in its use.

20. In this regard, Singapore adopts a pragmatic and balanced approach to AI governance, which aims to expand opportunities for our people, strengthen trust and safety as well as promote a sense of community.

21. Singapore launched the **Model AI Governance Framework** in 2019 to encourage the responsible development and adoption of AI. The Framework promotes explainable, transparent, and fair AI, while ensuring that it is practical and implementable by companies.



22. Last year, we also introduced **AI Verify**, an AI governance testing framework and software toolkit. The **AI Verify** Minimum Viable Product has garnered interest from over 50 organisations, including IBM.

23. Earlier in June, we made **AI Verify** open-source and set up the **AI Verify Foundation** to further accelerate its development. I am pleased to note that IBM is one of the seven AI leaders contributing to the **AI Verify Foundation** as premier members who will collectively set the strategic direction and development roadmap for **AI Verify**.

24. Now that **AI Verify** has been made available to the global open-source community, we invite system developers, solution providers, and researchers from across industries to contribute to the development of more trustworthy and responsible AI.

25. We also welcome the efforts of industry players to encourage the responsible deployment of AI. For example, I understand that IBM is set to offer³ its own AI governance toolkit, **WatsonX.Governance**.

Conclusion

26. Even as we focus our attention on turning challenges into opportunities with AI today, we must look further ahead to keep abreast of other emerging technologies such as quantum computing.

27. As you sit through the rest of today's presentations, I encourage you to explore the opportunities and Public Good that transformative technologies like AI can bring. I also encourage you to think about how we can jointly address the broader real-world challenges, such as sustainability and cybersecurity.

³ IBM's *WatsonX.governance* product has been launched for technical preview, and IBM expects its general availability in December 2023.





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28. And on this note, and I wish you all a very good, fruitful conference. Thank you.

