

**Speech by Minister Josephine Teo at
Lien International Conference on Good Governance on 25 August 2023**

Digital Governance in a Complex and Uncertain World

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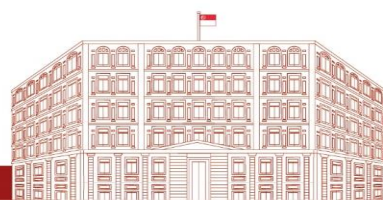
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Distinguished guests, ladies and gentlemen

Introduction

1. Thank you for inviting me to speak at the Lien International Conference on Good Governance.
2. The theme for this year's conference is 'Good Governance for the Common Good'. Governance is about the decisions we take collectively as a society. As much as we would like the decision-making process to be representative of and the results fair to everyone in society, this ideal is very hard to reach.
3. A few days ago, at our National Day Rally, Prime Minister Lee Hsien Loong spoke about HDB's dilemmas when pricing HDB flats. It is just one of the many decisions regarding *public* housing, which is a subset of housing policies in general, which is itself a subset of social policies, which must cohere with policies around employment, the economy, land use, urban development, transport, and others.
4. Achieving the common good is a noble ideal to work towards. It means doing what is right for the whole of society and not just some in society. It also means taking on board the views and concerns of people who may not themselves be involved in the decision-making processes, or whose interests are not immediately obvious.

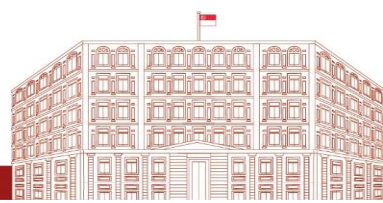


5. But it does not mean there are no difficult trade-offs. Sometimes, when these cannot be avoided, we have to proceed while finding ways to mitigate the impact on specific groups of citizens. The alternative could be endless hand-wringing or gridlock, which is usually bad news, and in Singapore's case, a recipe for failure.
6. At the birth of our nation, our founding Prime Minister Mr Lee Kuan Yew already warned, "Either we learn to think in terms of the national interest, instead of sectional interests, or we are in trouble¹". This reminder bears repeating as we mark the 100th anniversary of his birth.
7. The challenges of good governance are no less acute in the digital age, which is the focus of the rest of my speech. There are very few tried and tested formulas of good digital governance.
8. Unlike in other areas of governance, there are no ready playbooks for digital that Singapore can adapt from. Our task is further complicated by rapid change in the sophistication and use of technologies, as well as the global nature of their reach.
9. I therefore seek your understanding that everything we do remains very much work-in-progress, or using a more common phrase in software development, a "minimum-viable-product".

Scan of International Digital Governance Efforts

10. Let me start with a quick scan of what my colleagues around the world are attempting, and the difficulties they face.
11. In 2018, the UK published its Online Harms White Paper, which contained recommendations for regulating online platforms to address harmful material such as child sexual abuse material and terrorist content. By all standards, this was a progressive and admirable initiative, well worthy of praise.
12. But the far-reaching extent of the proposals also unleashed an insatiable appetite for expansion, which boomeranged as a tsunami of protests. Ironically, there

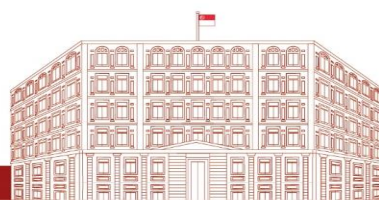
¹ Speech by Mr Lee Kuan Yew, when he opened Trade Union House and Singapore Conference Hall at Shenton Way on 15 Oct 1965



were as many criticisms of inadequacy as there were of over-reach. Five years on and five ministers later, a bill is still coursing its way through Parliament.

13. Even when laws are passed, there can be persistent questions about their effectiveness and drawbacks.
14. The EU has enacted landmark “horizontal” regulations in the past decade, including the General Data Protection Regulations (GDPR) and the more recent Digital Services Act and Digital Markets Act. However, its trailblazing approach has attracted concerns about over-regulation and the potential negative impacts on innovation and legitimate use-cases.
15. In the rapidly developing area of AI technologies, countries are compelled to move quickly while it is still unclear what the best approaches are. Even with its AI Act, the EU acknowledges it had not expected the sudden surge of capabilities in Generative AI, as seen through the likes of ChatGPT.
16. Further to the east, China has pioneered regulations on publicly available generative AI models to prevent the generation of false and harmful information. The Carnegie Endowment for International Peace described China’s regulatory approach as “vertical and iterative”.²
17. China’s regulations are vertical in that they focus on specific applications of the technology, and iterative because new regulations will be introduced to address gaps or expand the scope of existing regulations. However, until the various regulations come together to create a “comprehensive, horizontal piece of legislation” on AI, it is possible that Chinese businesses may experience “confusion” in complying with the different pieces of regulation.
18. Over in the US, the White House recently secured the voluntary commitments of seven leading companies to mitigate the risks of AI. These commitments signal a promising shift towards Big Tech companies assuming greater responsibility for their products and services. However, some observers say the commitments

² Matt Sheehan. 10 July 2023. Carnegie Endowment for International Peace. China’s AI Regulations and How They Get Made.



lack concrete enforcing mechanisms to hold companies accountable for their promises.

19. In the meantime, the US Security and Exchange Commission (Chair Gary Gensler) has warned that AI would be the “centre of future financial crises”. This follows an advisory in May issued by the US Surgeon-General (Vivek Murthy) declaring “a national youth mental health crisis” largely driven by social media.

20. Across the board, governing in a digital age has proven to be trickier than expected. Even if well-intentioned policies and programmes are developed, implementing them carries considerable risk. Just last month, Japanese Prime Minister Kishida had to apologise for technical and administrative errors arising from the newly implemented national identification card system known as ‘My Number’.

21. The events I mentioned are therefore only a sampling of the challenges of digital governance. We have not even discussed the lawsuits that have been mounted on privacy as well as discrimination concerns.

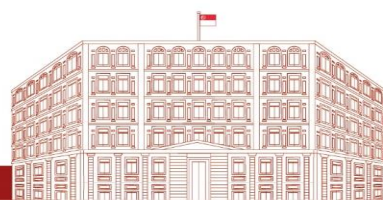
22. Despite these difficulties, a responsible government cannot be frozen into inaction. But to govern digital for the common good, we must first be clear about our aims.

Aims of Digital Governance

23. Governments have differing priorities. For Singapore, three key objectives drive our approach to digital governance for the common good – expanding opportunities, ensuring trust and safety, and strengthening community.

Opportunity

24. We want our citizens to live better and more prosperous lives and have the assurance of a promising future. To help achieve these goals, we need the digital economy to generate opportunities for our people and businesses. This is easier said than done.



25. First, technology diffusion has tended to be slow and uneven. A few frontier firms benefit quickly and enormously, while many others languish. Hence, we need to ask ourselves – how can we equip more firms and their workers to benefit from digitalisation?

26. Second, many workers experience increased anxieties over job security. Unlike previous waves of automation, the accelerated development of AI tools is expected to displace more white-collar and knowledge-workers. The jobs that may disappear aren't bad at all. How do we create new and better jobs, and equip our citizens for them?

Trust & Safety

27. Equally, we must ensure that digital spaces are trustworthy and safe. Without it, digital participation will recede.

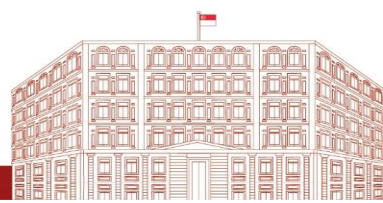
28. You may have heard that “a lie travels halfway around the world while the truth is still tying its shoelace.” Misinformation from user-generated online content spreads even further and faster. By the time they are corrected, the damage is already done.

29. Our citizens' sense of trust and safety is also compromised by their experiences with scams and ransomware. Globally, these cases have risen dramatically. In Singapore too, they have overtaken physical and other crimes. The victims include young digital natives and businesses whose momentary lapse left them exposed.

30. Governments and industry alike will need to do more to limit citizens' exposure to bad actors, so that we navigate online spaces safely and preserve trust in society.

31. Community

32. As a country rather than commercial entity, the aim of governance must ultimately be to foster a sense of solidarity and commitment for society to move forward together. Digital governance should also contribute to this objective.



33. Ironically, while digital technologies have drawn the world closer, we sometimes feel more disconnected from our next-door neighbours and even friends. Thus, we need to ask what it will take to preserve bonds between people and communities.

34. We can digitise and digitalise a great number of things. But can we also use technology to strengthen relationships, our shared values, shared purpose, and shared love of country?

Strategies of Digital Governance

35. To mount a suitable response to the challenges of the digital age and achieve the aims of digital governance, there are several strategies available to the government. They include a) infrastructure investments, b) capability development, c) laws and regulations, d) whole-of-society involvement, and e) international cooperation.

Infrastructure Investments

36. Digital infrastructure can be expensive to build.

37. Earlier this year, Singapore published our first Digital Connectivity Blueprint. Two items alone – new subsea cables and green data centres – will need around S\$20 billion to materialise. Most of the investments will be made by the private sector. Sometimes, however, the government must take the risk for the common good.

38. One such example is the development of our nationwide fibre broadband network (NBN) in the early 2000s. Then, most people were happy with speeds of 30 megabits per second. Few people thought they would ever need speeds of one gigabits per second. Why was the Government spending up to \$1 billion in public funds for something unnecessary?

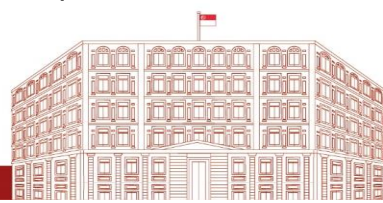
39. As if the answer was not clear enough when Netflix subscriptions soared, COVID-19 erased all doubt. Without high quality broadband access, it would have been much more difficult for so many SMEs pivoting to online sales, workers to remote work, and students to home-based learning, all at the same time.



40. When building ahead of demand, the Government's role can be essential. However, it must also be clear-eyed that not all bets pay off in the same way.
41. Take our attempt to build up a Smart Nation Sensor Platform. Like several other cities, we experimented with using lampposts as shared infrastructure for different agencies to place sensors on.
42. However, as mobile sensor tech solutions matured, sensor deployment could be more flexible and less costly than using shared infrastructure. The bigger payoff in this project shifted from the sharing of infrastructure to the development of data exchange platforms and governance models that facilitated access to sensor data across agencies, which we will need well into the future.

Capability Development

43. In capability development, we have made special efforts to help SMEs adopt digital solutions. Unlike bigger companies, they tend to lack resources, know-how and sometimes know-why. From becoming more data-driven to developing cyber hygiene, agencies like IMDA and CSA have created resources to better equip SMEs.
44. The government must also help to build new capabilities through research and development, especially for trust and safety.
45. For example, advances in quantum computing poses threats, which some have said are more dangerous than the impact of AI. Classical cryptography, which has been relied upon to secure information systems and digital communications, may no longer be unbreakable.
46. Our cyber experts have been tracking such developments, aided by the deep reservoir of knowledge and insights at the NUS Centre for Quantum Technology (CQT). In 2022, Singapore launched the National Quantum-Safe Network (NQSN). Technical trials have since demonstrated the feasibility of deploying quantum-safe technologies in our communications networks.
47. Along with enterprise and R&D capabilities, we also actively nurture workforce capabilities. For example, we set up the Singapore 5G & Telecoms Academy even before 5G coverage and applications were widespread.



48. Our polytechnics and universities have expanded intakes into ICT-related courses and infused the curricula of almost all disciplines with digital components. More broadly, for the entire workforce, a whole ecosystem of continuing education and training promotes digital mastery, supported by the national Skillsfuture movement.
49. These efforts pay off in the form of sustained high employment, low unemployment, and wage growth.

Laws and Regulations

50. Another strategy – laws and regulations – requires great wisdom and care, on what to do and when to do.
51. The Computer Misuse Act, which came into effect about three decades ago, was relatively straightforward. In the 2000s, we amended our Copyright Act to clarify protections for digital media, updated our court procedures to facilitate e-filing of documents, and empowered our law enforcement agencies to handle electronic evidence. Through the Electronic Transactions Act, Singapore began to recognise the legality of electronic records and signatures.
52. In the last decade, with digital and online experiences coming to dominate the way we live and work, we have moved with greater speed and agility to update our laws and regulations. Laws for Personal Data Protection, Cybersecurity and Protection Against Online Falsehoods, as well as the recently enacted laws on Online Safety and Online Criminal Harms including scams, will likely need more frequent updates as new concerns emerge, demanding fresh interventions for the common good.
53. In fact, since 2018, we have gone through the full parliamentary process for enacting new laws for digital *at least* once a year. This is in addition to guidelines and frameworks we have introduced in areas where the effectiveness of legislation is not yet clear.

Whole-of-Society Involvement



54. In all the strategies I have described above, it is important that the Government does not act alone. The private and people sectors can and should be encouraged to do their part.

55. Partnerships for Inclusion:

For example, to promote digital inclusion for the most vulnerable, telcos have offered free data plans while tech companies have supported social service agencies to design useful devices for the frail elderly. They do this under the aegis of the nationwide Digital for Life (DfL) movement, where the spirit of *gotong-royong* has come alive again in our cyber domain.

56. Partnerships for Knowledge-building:

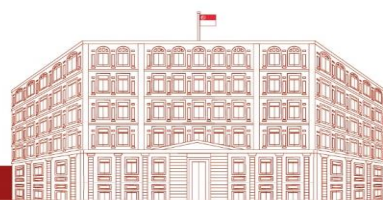
In the area of AI governance, the government works closely with industry partners and the research community, to advance understanding and promote sound principles for responsible AI deployment. This is how we have built on the Model AI Governance Framework to develop a software testing and evaluation toolkit known as AI Verify. Earlier this year, we decided to open source AI Verify and set up a Foundation with members including Temasek, IBM, Microsoft and Google, to steer its development.

International Cooperation

57. The global reach of digital technologies means no country can hope to succeed in governing all of them on their own. Instead of decoupling, we should be seeking greater interoperability.

58. This is why Singapore is one of the first countries in the world to enter into bilateral digital economy agreements, first with Australia and later with the UK. Together with New Zealand and Chile, we founded the multi-lateral Digital Economy Partnership Agreement (DEPA). Since DEPA's launch, countries like South Korea, Canada and China have applied to come on board.

59. At a regional level, Singapore cooperates closely with ASEAN member states, for example to establish norms for seamless and secure cross-border data flows. We were one of the first countries to sign up for the APEC Cross Border Privacy Rules (CBPR) and subsequently the Global CBPR initiatives.



60. We also help to lead some of the workstreams in the International Counter Ransomware Initiative which involves over 40 countries. At the UN, Singapore's Permanent Representative chairs the Open-Ended Working Group for ICT Security. More recently, we convened the Digital Forum of Small States, and have committed to do more to support capacity building.

Building Governance Capabilities

61. Having outlined the aims and strategies of our digital governance, what else must we pay attention to? In fact, it is the capability to govern digital effectively. Here, I venture that there are at least three aspects.

Capability (1): Deep Understanding of Digital Technologies

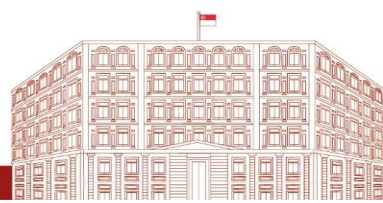
62. To govern digital, we must know how it works.

63. For example, how do people receive SMSes on their phones and why were scammers able to insert themselves in the conversation threads between the device owners and their banks? Without this understanding, we would not have mandated the use of Singapore Sender ID Registry (SSIR) for organisations sending SMSes to their customers using alphanumeric headings. Nor would scams perpetrated through SMSes have declined so sharply.

64. The battle against scammers is not over of course. Today, scams have become much more elaborate, involving malware and Remote Access Trojans (RAT) that can take over devices surreptitiously. It simply means we must up our game, to master the technology and design new ways to protect our citizens from harm.

65. Part of this comes from dedicating resources to establish new centers of excellence within Government, such the set-up of the Cyber Security Agency of Singapore (CSA) in 2015, GovTech in 2016, the Home Team Science and Technology Agency (HTX) in 2019, as well as the Digital and Intelligence Service (DIS) in 2022. Another line of effort comes from rallying the public to be vigilant in countering threats in digital, such as the addition of 'Digital Defence' as the 6th pillar of our Total Defence.

Capability (2): Being Agile



66. Effective digital governance also demands great agility.
67. Take the CDC vouchers for example, which helps households pay for essential purchases from heartland merchants. When the decision was taken to shift from paper vouchers to digital vouchers, extensive user testing led to many improvements, such as making the vouchers available in the same denominations as paper notes. This makes them more familiar and easier to transit to.
68. But the tests also showed that the population was not ready for a full digital roll-out. What's good for the administrators and for environmental sustainability did not feel good at all for a significant number of citizens.
69. This is why paper vouchers continue to be made available, although with each successive roll-out, more people are opting for digital. This realisation has also led the Government to clarify its approach as 'digital-first, but not digital-only'.

Capability (3): Becoming Data-Driven

70. Increasingly, digital governance must be data-driven.
71. Without good data, we can only rely on our impressions and limited interactions to guess the problems, why they exist and what we can do about them. Given how much of digital is about the movement of bits and bytes, the lack of good quality and internationally comparable data for policy-making in digital is both ironic and unsatisfactory.
72. For example, there is no standard measure of the digital economy. How does one treat influencer marketing, telehealth consultations, 5G-enabled manufacturing, e-transactions in financial services, retail and entertainment spending that have shifted online? Countries can therefore make outlandish claims about how big their digital economies are. It all depends on what they include.
73. As a result, we cannot really analyse the factors that have contributed to the growth of the digital economy and compare them across countries as a way of informing our own considerations. Neither can we easily identify the gaps and take steps to close them for the common good.



74. At a more fundamental level, there is also no unified approach to collecting new data that would shed light on digitally-enabled activities. For example, no one can say how much cross-border data flows there really are, and whether our international cooperation mechanisms have been helpful.
75. Even with these limitations, IMDA has started to put together its first-ever report on the digital economy, which we will publish in the next few weeks.
76. Our purpose is to shed light on how the digital economy is contributing to Singapore's economy, and to monitor the direction and pace of change over time. We will also take stock of the progress of efforts to grow our tech workforce and help businesses transform through digitalisation.
77. While still in its drafting, some trends are worth noting.
78. The Information and Communications sector was the fastest growing sector between 2017 and 2022. It was the key driver of our digital expansion and engine of growth for the economy.
79. The value added in other sectors³ that is directly attributable to investments in digital technology, has also registered rapid growth over the same period, outpacing the rest of the economy.
80. Expectedly, SMEs still lag behind larger companies in technology adoption. It is however encouraging that 94%⁴ of SMEs had adopted at least one digital solution in 2022, compared to 74% in 2018. A 20%-point improvement over five years is quite commendable, especially when the base was already quite high.
81. This report is again a “minimum viable product”. We are committed to learn more about the different dimensions of the digital economy and to capture their contributions more comprehensively over time.

³This refers to the value generated from investments and spending in digital technologies across all other non-I&C sectors of the economy. This includes firms outside the I&C sector that invest in digital technologies to better reach customers, optimize business processes, improve productivity, as well as for product and service innovation.

⁴ Among SMEs, the technology adoption rate (% of firms adopting at least one digital tool) grew from 74% in 2018 to 94% in 2022. For non-SMEs, the technology adoption rate in 2022 was 100%.

Source: IMDA



Conclusion

82. Let me now conclude.

83. I have taken some time to cover different aspects of digital governance. In fact, this is the longest speech I have made since becoming Digital Minister. And still I fear I have not done the topic justice.

84. Societies around the world are being tested on our ability to govern digital for the common good. Our aims are often aligned. But the strategies will differ, and equally our capabilities and results.

85. In the absence of easy playbooks, there is much to be gained through more frequent sharing of observations and exchanges of experiences. However daunting our tasks may be, we owe our citizens in the present and future the determination to try.

86. Thank you once again for inviting me. I wish you have a fruitful conference.

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