Transcript of Keynote Speech delivered by Minister for Communications and Information Mrs Josephine Teo, at Business China's Singapore Digital Economy Forum (23 Aug 2022)

Good morning,
Distinguished Guests,
Colleagues and Friends of Business China.

1. Thank you for inviting me to this very important forum. I am very happy to join you and also delighted that Business China is focusing on the Digital Economy.

2. The Ministry of Communications and Information works closely with the Prime Minister's Office to oversee our Smart Nation efforts. It is thus very relevant that we discuss developments in the digital economy and how we could best benefit from them.

3. Every now and then, developments in the world of digital technology create great excitement and curiosity. Web 3.0 and the Metaverse are two such examples. I am not surprised therefore, that the Forum has chosen to focus on these themes.

   a) Last year, venture firms invested more than US$33 billion in crypto and Web 3.0 start-ups, mostly those that are involved at the infrastructural layer.[1] I think many of you are familiar that when it comes to Web3.0, there is an infrastructure layer, protocol layer and the applications layer. Most of the early investments – US$33 million that was invested in start-ups – went to the infrastructure layer.
   b) It has been reported that in the first five months of 2022, investments in Metaverse were more than US$120 billion, more than double that in 2021.[2]
   c) When McKinsey put out an estimate that the value of Metaverse may reach US$5 trillion by 2030[3], even more people are bound to sit up and take notice.

4. Metaverse and Web 3.0 share some things in common, for example the use of blockchain-based tokens. But as you and many others also know, they are not one and the same thing.

5. Web 3.0 is understood to be the third evolution of the web, using blockchain as its core technology. What difference does this make?

   a) In Web 1.0, web pages were static and users consumed content.
   b) In Web 2.0, web pages became dynamic and media-rich. For users, it moved from "read-only" to "read-and-write", though users generally did not own much of everything that they were part of creating.
   c) Web 3.0 holds out the promise that users get to own their data, identity, content and algorithms, such as through NFTs which are tradeable.

6. Several artistes in Singapore, including Mark Lee 李国煌, have their own NFTs.

   a) In future, you may have to access your digital wallet and pay him directly using crypto currency, each time you want to hear his jokes!
   b) But good luck if you forget your password, because the world of decentralised finance (DeFi) as it is today may not offer you a way to reset the password so easily if you forget it!

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[1] Source: Galaxy Digital Research, 2021.
[2] Source: McKinsey's report on Value Creation in the Metaverse, Jun 2022.
[3] Source: McKinsey's report on Value Creation in the Metaverse, Jun 2022.
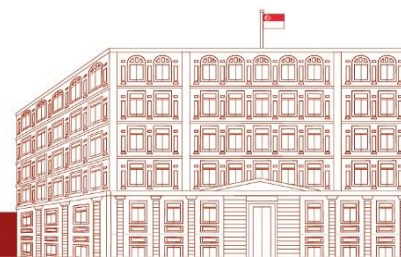
7. If Web 3.0 can be described as a back-end revolution closely tied to the use of blockchain, the Metaverse is more of a front-end revolution impacting how each of us experiences the internet and engages with one another through the internet.

8. In the last two decades,

    a) the time that we spent surfing the internet has shifted from desktop to web to mobile;
    b) the content that we shared went from text to photos to videos.

9. Will the internet morph into a much more immersive, 3D experience?

    a) A virtual world that is as much a part of our lives as the physical world?
    b) Can you picture Mark Lee's avatar in your virtual living room, entertaining your family members who are physically scattered around the world but gathered in your virtual living room and being entertained by Mark Lee's lifelike avatar during a weekend or a New Year gathering?

10. Promoters of Metaverse believe this is a logical evolution of our internet experience.

    a) This is partly because of human desire for more intensive interactions but also partly because some low fidelity form of Metaverse is already here and the foundational technologies - VR and AR - have increasingly matured.
    b) Even then, Mark Zuckerberg himself said the Metaverse will not fully materialise for another 5-10 years.
    c) One of the obstacles highlighted is inter-operability that allows the avatars and digital assets to move from one part of the Metaverse to another.

11. Whatever the scope and speed of developments, I'm glad to see Business China holding workshops to share with members the opportunities in these emerging technologies as they unfold.

12. In the audience today, I saw the programme sheet and looked at the names. I'm very confident that in the audience today, there are many experts with deep knowledge about new business models and markets that could spring up to take advantage of these developments.

13. Equally, I hope you can challenge them to advise you on how to separate hype from reality.

    a) For example, Web 3.0 is often touted as the "decentralised web".
    b) But there are sceptics, who believe that new centralised entities will emerge or have emerged, but just carrying different labels.

14. As with most technologies, while we are excited about the potential benefits, a part of us cannot help but worry about the potential harms.

    a) Due to perceived user realism in the Metaverse, anti-social behaviour can have real-life impact, more than even the doxxing or cancel-culture experienced today.
    b) In Web 3.0, the absence of KYC (know-your-customer) in general increases vulnerability to money laundering, frauds and scams. I know there are products supposedly to overcome these, but how secure they are, remains to be seen.
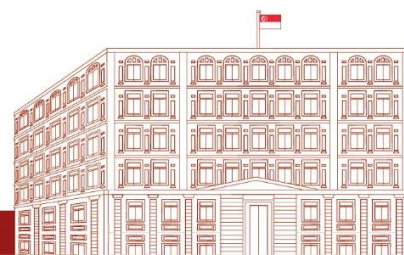
15. These harms are not trivial.

    a) Dealing with such tensions is also part and parcel of our work in architecting Singapore's digital future.
    b) Where necessary, we put in additional safeguards.

16. For instance, in data protection, we are committed to two objectives:

    a) To ensure adequate protection for consumers' personal data; and
    b) To strengthen Singapore's economic competitiveness and status as a trusted data hub.

17. Online safety is also a priority for us. You may be aware that Singapore is considering two new Codes of Practice to enhance online safety for Singapore users of social media services.

18. We will continue to adopt a multifaceted approach, to support our people and enterprises in realising the potential of emerging technologies in a safe and sustainable way. Let me outline three features of our approach towards emerging technologies such as Web 3.0 and Metaverse.

19. One, the Government will seek to build infrastructure for emerging technologies to thrive.

    a) For the vast volume of data transmission and compute that will be in demand, 5G connectivity is essential.
    b) In this regard, our telcos have achieved at least 50% outdoor coverage in Singapore in 5G standalone (SA) services. We are on track for nationwide outdoor coverage by 2025, likely earlier.

20. The Infocomm Media Development Authority (IMDA) is partnering the industry to increase 5G adoption, with some examples already showing potential for Metaverse application in future.

    a) For instance, Infinite Studios and its partners will be creating the region's first 5G-enabled AR experience at the Marina Bay area.
    b) Tourists and consumers can then enjoy a cinematic and immersive experience of Singapore's founding success story at the Marina Bay Sands boardwalk.

21. Two, we will continue to invest in R&D. We seek to promote innovation in digital technologies that can transform lives and businesses in positive ways.

    a) Overall, Singapore is investing S$25 billion over five years under our Research, Innovation and Enterprise (RIE) 2025 Plan, focusing on technology translation and strengthening enterprise capabilities.
    b) Part of this will support R&D in the Smart Nation and Digital Economy Domain.

22. Among other projects, IMDA is investing close to S$70 million in the Future Communications R&D Programme (FCP), with a focus on the next bound of communications and connectivity beyond 5G.

    a) For instance, Singapore is collaborating with Finland's 6G Flagship and the Korean Institute of Communications and Information Sciences.
    b) Through these collaborations, we organised the "Asia 6G Research Initiative Open Workshop", and will conduct joint R&D and educational projects on 6G.
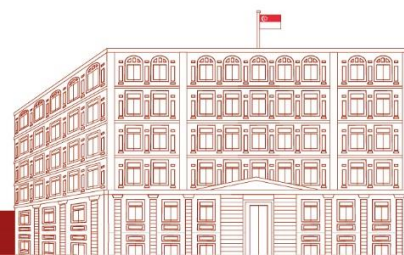
23. Another initiative is the Digital Trust Centre.

    a) It was launched recently to lead Singapore's R&D efforts in trust technologies, such as privacy-preserving technologies and technologies to help developers build AI that is explainable and can be trusted.

    b) Besides research, the centre will also help businesses understand these emerging technologies better and translate research ideas into market-ready solutions.

24. Three, our skills development programmes will be sharpened, to enable more Singaporeans to access opportunities created in new digital domains.

    a) This requires us to work closely with our industry partners to ensure that our existing ICT workforce remains relevant.

    b) Tech companies and institutes of higher learning (IHLs) have joint interest to nurture a strong pipeline of talent to catch up with the demand and hopefully, train people slightly ahead of demand.

25. For instance, to meet the growing demand for talent in the FinTech sector, IMDA has partnered with MAS and SIT to launch a new Bachelor of Science in Applied Computing, with specialisation in FinTech.

    a) Financial institutions, such as banks, help to curate the curriculum and ensure its relevance.

    b) The students in this specialisation will be trained to acquire tech skills in blockchain and machine learning, and be ready to fill high-demand roles in FinTech.

26. To support the aspirations of our tech professionals, we will also partner industry leaders like Whale Cloud (an Alibaba subsidiary), Google, as well as Grab, to groom talents, including in advanced technical skills like AI and Cloud.

27. At the same time, we will continue to strengthen international collaborations and forge global partnerships.

28. We want to open doors for businesses, especially SMEs, through collaboration on cross-border data flows, and compatible e-invoicing and e-payment systems.

    a) The Singapore-China (Shenzhen) Smart City Initiative (SCI) and the China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity (CCI) are two such examples.

    b) Through these initiatives, businesses in Singapore and China enjoy greater access to new markets and business opportunities between Singapore, the Greater Bay Area (GBA) and Western China, conferring benefits to ASEAN as well.

29. We are also working with regional and international partners to establish norms that support data flows.

    a) With more countries having data protection laws, these usually require overseas data transfers to be protected to an equivalent standard.

    b) Given the global nature of the digital economy, fragmentation of such standards poses serious problems to enterprises that have cross-border operations.
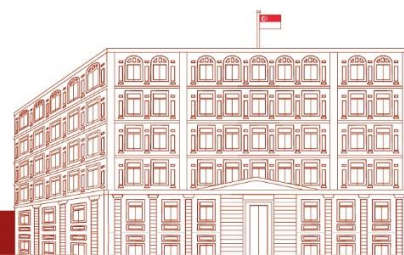
30. This is why we work with partners to enable cross-border data flows regionally and globally.

    a) One example is the ASEAN Model Contractual Clauses – contractual terms recognised by all ASEAN Member States which enterprises can use for inter-company transfers of personal data across borders.
    b) We are also happy to participate in the upcoming G20 Digital Ministers' Meeting hosted by Indonesia, where cross-border data flows will be one priority area for discussion.

31. As the Government puts in place more building blocks for the digital economy, I encourage businesses to forge new paths forward. Your bold ambitions will create growth opportunities for yourselves and our business community, and enable positive changes for our people.

32. I wish you success on this journey, so that we can maximise the benefits from emerging technologies, to build a vibrant and secure digital future for Singapore.

33. Thank you.