![Ministry of Communications and Information — An Engaged and Connected Singapore]

Speech by Minister Josephine Teo at
the Launch of the Future Communications Connectivity (FCC) Lab
on 19 Sep 2022

Professor Chow Tow Chong,

Distinguished Guests,

Colleagues and friends,

1. A very good afternoon to you. Thank you for inviting me to launch the Future Communications Connectivity (FCC) Lab.

2. I wish to thank the SUTD team for partnering with my ministry, as well as our statutory board, the IMDA, on this very significant programme to try and future proof our communications and connectivity infrastructure.

3. Digital connectivity has become essential in our daily lives. By now, very few people in Singapore are completely unconnected digitally. In our heartlands, elderly uncles and aunties routinely chat with one another and their families using messaging services. They use their mobile phones to redeem digital Community Development Council (CDC) vouchers at hawker centres and shops. Even if they did none of these things, at the most basic level, the free-to-air television they watch is now broadcast digitally, no longer analogue.

4. Like roads and electricity, modern life is hard to imagine without digitally-enabled means of communications – mobile for individuals on-the-go, fibre broadband for households and businesses.

5. Not surprisingly therefore, digital connectivity is a matter of great interest for me and my ministerial counterparts, some of whom I met recently at the G20 Digital Economy Ministers' Meeting in Bali.

6. Take for example our host country, Indonesia. With more than 17,000 islands to link up, satellite communications is unavoidable. Likewise, for another G20 member Brazil, which
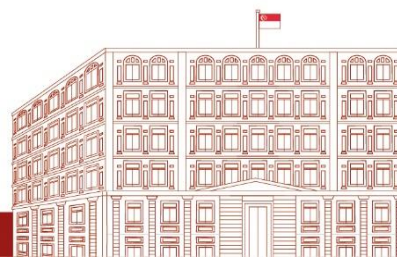
hopes to even out coverage across 8.5M square kilometres, an area over 10,000 times the size of Singapore.

7. For India, which has just announced its invitation to Singapore as a guest country, when it hosts the G20 meetings next year, the priority is to link up another 26,000 villages.

8. As policymakers, we see digital connectivity not just as a means for better efficiency and business innovation, which are of course important. It is very much about inclusion – providing every citizen access to opportunities, for education, work, or beyond. Equally important, it is about cohesion and unity – holding every community together and helping our nation move forward as one.

9. I say this because when we think about many of the things that we do with digital infrastructure, our National Broadband Network (NBN), 5G and even this type of investment into R&D, we tend to think mostly in terms of their economic objectives and financial returns over time. In fact, their value to society is far greater, and not always easy to quantify. By the same token, the loss can also be considerable if we neglect to enhance digital connectivity over time. We have to look at both sides of it – the gains if you strengthen and enhance digital connectivity and the loss if you fail to do so.

10. This is why, in Singapore, we have challenged ourselves to never be satisfied with our existing digital connectivity infrastructure, but to keep enhancing them to be future-ready, resilient, and secure. This includes not only our wireless networks, but also our wired networks. Beyond telecommunications, Singapore is also well connected via satellites and subsea cables.

11. Quite often, we need to build ahead of demand at considerable cost. But it is also the willingness to make such investments that makes Singapore one of the most digitally connected cities in the world and among the best places to do business.

12. Take our decision to shift to 5G standalone networks. There are many non-standalone services that are available today. But we took the decision that if we moved, it would have to be standalone networks. Today, our telcos have achieved at least 50% outdoor coverage and we are on track to achieve nationwide coverage by 2025, possibly earlier. This is even as use cases have not fully matured, though there are many promising trials that give us good reason to be confident.
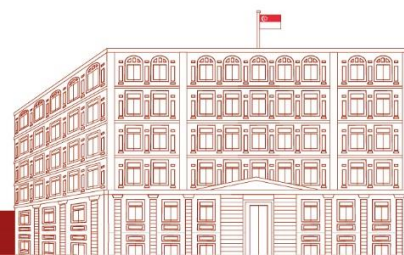
13. To advance into the next bound of progress, the government will need to work closely with a range of stakeholders.

14. First, we are partnering with industry stakeholders to expand Singapore's 5G ecosystem, to develop and scale up 5G use cases across various sectors. For example, in healthcare, IMDA partnered with the National University Health System (NUHS) to develop 5G-enabled 'holomedicine' technology that use new remote rendering capabilities. This could give surgeons a significantly enhanced view during operations, which helps them to anticipate potential difficulties. The key is that patients can have better clinical care.

15. In the maritime sector, we are extending 5G standalone coverage to sea. With the possibility of real-time data exchanges, Singapore may become one of the first countries to automate ship movement and also introduce remote pilotage. And by doing so, it will significantly transform the role of a harbour pilot, enhancing their safety and efficiency.

16. Second, we are partnering with research stakeholders to invest in R&D upstream. As part of our RIE plans, Singapore will invest close to S$70 million in the Future Communications R&D Programme (FCP).

17. Today's opening of the Future Communications Connectivity (FCC) Lab represents an important milestone. The mission of the FCC Lab is to lead Singapore into the next bound of communications and connectivity technologies, through unlocking new opportunities and breakthroughs in leading cutting-edge research to support emerging technologies such as holographic communications. It is also the first physical lab in the region to integrate R&D in AI and 6G.

18. I hope the FCC Lab will not only be a focal point for 6G research in Singapore but also serve as a global node of research excellence. Singapore is already working with Finland's 6G Flagship - the world's leading 6G R&D programme. You bring a different dimension with the inclusion of AI. We are also collaborating with the Korean Institute of Communications and Information Sciences.

19. I look forward to visiting the demonstration booths to learn more about the experimental testbeds and technologies, which will deepen our capabilities and broaden their use.
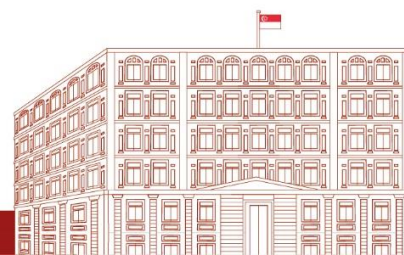
20. Another important infrastructure is our National Broadband Network (NBN). Before we started rolling out the national network 15 years ago, our internet connectivity was underpinned by copper infrastructure. Back in the mid-2000s, we could get internet speeds of up to 30mbps. Users were happy with the speed, and few could imagine why higher speeds would be needed. Nonetheless, the government pushed through to fibre up Singapore ahead of demand, enabling broadband access of 1Gbps.

21. Our National Broadband Network has since become the foundation for our ongoing transformation into a smart city and leading digital economy. 1Gbps plans are now the standard among households and 98% are on broadband. Online collaboration, remote working, home-based learning are increasingly the norm.

22. During the pandemic, our strong connectivity contributed to Singapore's resilience, allowing our lives and livelihoods to transit digitally. It was one of the reasons employers kept people on their payrolls, because work could continue. These benefitted many of our seniors and women, who were more vulnerable to retrenchment in many other countries.

23. For our children and youths, learning was disrupted but not decimated. The lost years observed in some places will not be recovered; they are cautionary reminders not to take our digital connectivity for granted.

24. Therefore, we should not underestimate the value of Singapore being consistently ranked as having one of the fastest broadband speeds in the world. At the same time, we should not believe that this position can be maintained without effort. As far as I can see, no city will want to be caught "quiet quitting" in terms of their broadband access. On the contrary, many are stepping up and in fact, seeking to leapfrog those who are currently ahead.

25. For example, Seoul has an ambitious goal of reaching 50% adoption of 10Gbps services by end-2022. The Philippines has started a pilot for 10Gbps-capable fibre connectivity. This is no small task because the Philippines as you know have at least 7,000 islands.

26. In Singapore, we are planning to upgrade broadband speeds by around ten-fold. To be sure, there are economic objectives. Blockchain-enabled Web3 applications, developments in AR/VR and the metaverse, all demand greater bandwidth.
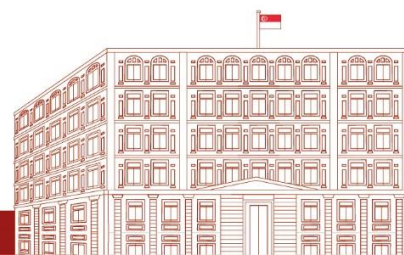
27. But as I have explained, it is also about inclusion, cohesion, and unity in our society. We must enable widespread and affordable access to high quality digital connectivity, just as we make it possible for ordinary citizens to have access to quality education, healthcare, and housing.

28. To conclude, Singapore's approach in advancing our connectivity infrastructure has put us in a good position. But keeping ourselves at the leading edge will require collective effort involving industry and research partners, and bold steps to invest ahead of demand. There are powerful economic reasons to do so, but equally important are our social objectives of inclusion, cohesion, and unity.

29. My colleagues look forward to working with SUTD to succeed in our future communications and connectivity R&D efforts. I wish you all a fruitful event.

30. Thank you.