

**SPEECH BY DR KOH POH KOON,
SENIOR MINISTER OF STATE FOR TRADE AND INDUSTRY
DURING MINISTRY OF TRADE AND INDUSTRY (MTI)'S
COMMITTEE OF SUPPLY DEBATE
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“Stronger through Innovation”

Preamble

1. Mr Chairman, as a small and open economy, Singapore must be nimble and responsive to developments in the global economy, in order to maintain our competitive advantage. Innovation is key.
2. We will foster innovation in Singapore by:
 - a. **Strengthening our innovation ecosystem, and**
 - b. **Leveraging innovation to transform our industries, and seize new growth opportunities.**

Strengthening the Innovation Ecosystem

3. We will strengthen the innovation ecosystem to help companies harness technological change and bring new ideas to market. Ms Foo Mee Har asked about the research landscape in Singapore. As part of our Research, Innovation and Enterprise 2020 Plan, we provide strong support to our companies in their innovation activities, including translating research into commercially viable products.
 - a. We have established technology consortia, which bring together companies and public sector researchers to collaborate on research projects. Companies can join these consortia to keep up with research trends, and tap on the expertise of our researchers.
 - b. Our Centres of Innovation (COIs) provide specialised expertise to help companies translate problem statements into technology requirements. This accelerates their product development process. The COIs have supported over 4,200 projects in areas such as technical consultancy, product development, and intellectual property commercialisation.
4. Mr Lee Yi Shyan asked about our digital ecosystem. In addition to our strong research and development capabilities, we are also constantly building up other aspects of our pro-innovation ecosystem, including access to skilled global talent and a vibrant startup ecosystem. We also set up the Digital Industry Singapore (DISG) last year to better coordinate Singapore’s efforts for the digital industry. Our suite of value propositions has helped us to grow our tech sector, where we have successfully attracted digital giants such as Google, Facebook, and Alibaba.
5. These strong interlinkages between research, innovation and enterprise do not just serve a commercial purpose. They have been essential to tackling COVID-19 too.

- a. Take Kronikare, a local startup. Kronikare has an AI wound monitoring software to help patients take care of their wounds. When COVID-19 struck, IHiS, the IT arm of our public healthcare sector, partnered Kronikare to quickly re-engineer this core technology to develop an automatic fever detection solution to aid other businesses in the fight against COVID-19.

Startups

6. Startups like Kronikare play an important role in the innovation ecosystem. They bring new ideas to the table, and spur the industry to do things differently. Over the past four years, through schemes like **Startup SG Equity**, the Government has catalysed over \$560 million in private sector funding into Singapore-based startups, helping them with product development and bringing these products into the market.

7. Mr Teo Ser Luck asked how we identify which startups to invest in. Investing in startups is inherently risky, and the Government does not possess enough information to make these assessments alone. That is why ESG co-invests with private sector investors who have the expertise in assessing the commercial value and viability of startups.

8. For deep-tech startups, it is especially important to have access to such funding that is backed by deep industry knowledge. As Mr Liang Eng Hwa and Ms Foo Mee Har noted, such startups typically require larger investments and longer gestational periods, because of the multiple iterations of prototyping and pilot production needed. Not all moonshot projects will succeed. But when they do, they break new ground that gives fertile foundation for future, incremental innovations to succeed.

9. We will therefore **enhance the Startup SG Equity Scheme** to help our deep-tech startups in the areas of pharmaceuticals, biotech and medtech, advanced manufacturing and agri-food tech.

- a. To ensure they have the necessary resources to bring their products to market, DPM shared during Budget that we will be topping up \$300M to the scheme. We will also enhance the scheme to double the maximum amount that each startup can receive, from \$4M to \$8M.
- b. A portion of the \$300M will be allocated to investing in global venture capital (VC) funds, through a **new “fund-of-funds” approach**. This not only increases the availability of investment funds, but also attracts experienced VCs into the Singapore ecosystem. Our deep-tech startups can then tap on their expertise and networks to accelerate their growth, such as seeking guidance on commercialisation and business operations, and meeting new business partners.

10. To encourage funds and fund managers to invest a larger proportion of their funds in Singapore-based startups, we will also **extend the relevant tax incentives** by 5 years. This also includes enhancements such as expanding the types of investments and incomes incentivised, and streamlining the requirements to invest in Singapore-based enterprises.

Leveraging Innovation to Transform Industries and Seize New Growth Opportunities

Advanced Manufacturing

11. Mr Chairman, innovation is not only about investing in R&D but also about transforming our industries for the future. Mr Lee Yi Shyan and Mr Leon Perera have spoken on Industry 4.0 (I4.0). I4.0 will have a deep impact on our industries, particularly in Manufacturing.

12. Over the years, Manufacturing in Singapore has evolved to compete based on the deep skills and capabilities of our workforce and companies, and the use of technologies such as robotics and automation. Our initial efforts have allowed us to anchor I4.0 activities from some of the best manufacturers in the world.

- a. Two of Singapore's factories, Micron and Infineon, joined the World Economic Forum's Global Lighthouse network as trail blazers earlier this year. This accolade is only offered to advanced manufacturers who show leadership in applying I4.0 technologies to drive change.

13. We will continue to support companies in their efforts to adopt innovative solutions through a multi-pronged approach. As a start, we launched the **Smart Industry Readiness Index (SIRI)** and the SIRI Priority Matrix in 2017. Since then, more than 250 companies have undergone the SIRI Assessments, and among them, about 30% were SMEs. The SIRI Assessments help our companies understand where they are at in their manufacturing transformation journey, and prioritise the improvements they need to make.

14. Another prong of our strategy is to build platforms that foster interaction and collaboration within the manufacturing ecosystem, to adopt I4.0 technologies.

- a. Mr Leon Perera and Ms Foo Mee Har asked about networking platforms and industry collaboration. To build a regional community, Singapore has been hosting Industry Transformation Asia Pacific (ITAP), the Asian Edition of Hannover Messe, the world's largest industrial fair. ITAP has provided a platform to help companies connect, discover the latest trends in technology and exchange best practices. We introduced a learning element into the 2019 edition, to ensure that our enterprises, workers and students were able to learn about I4.0 through guided tours and on-site learning labs.
- b. Beyond single touchpoints and events, we are also developing the Jurong Innovation District (JID) as a dedicated advanced manufacturing campus for different players along the value chain, such as researchers, technology providers and businesses, to work together on new ideas. It will also serve as an area for our SMEs to collaborate with our MNCs and large local enterprises. Over the next 20 years, companies in the JID are estimated to create 95,000 new jobs in research and advanced manufacturing activities.
- c. For our next phase of transformation, we will leverage what we have learnt from our Industry Transformation Maps (ITMs) and explore synergies across our sectors. This will allow us to identify more opportunities within the clusters

to promote innovation, deepen capabilities, and importantly, encourage partnerships.

15. To build on these efforts and give more local companies a boost in innovation, I am happy to share that we will launch a new **SIMTECH Innovation Factory** in the JID.

- a. This will be a co-working space to help companies ideate and design their own unique products. For a start, there will be a focus on equipment design, medtech devices, and electromechanical modules.
- b. It will be equipped with the necessary tools for companies to prototype their designs, and will have resident design and technology experts to help companies through their innovation journey. This is very useful for SMEs who do not have the scale or technical capabilities to do this on their own. We hope this will be a boost to their innovation efforts.
- c. After successfully designing their own products, companies can then go to one of the two A*STAR model factory facilities for pilot production.

16. To fully seize opportunities in I4.0, companies must also train and upskill their workers. I4.0 is not just about equipment and technology. Our experience implementing the ITMs has shown that industry transformation is more effective and pervasive when there is participation and ownership by workers. The Labour Movement has been advocating that for I4.0 to succeed there must be Worker 4.0. We will do more to enable this.

- a. We recently launched the SkillsFuture Work-Learn Bootcamp for Engineer 4.0. This is a three-year pilot programme that will train and place up to 200 engineers in areas such as lean manufacturing and Internet of Things.
- b. We have also introduced the **SkillsFuture Enterprise Credit**, with a portion reserved for training and job redesign, to encourage companies to invest in their workers.

Leveraging Innovation to Seize New Opportunities

Sustainability

17. Innovation is also about turning challenges into economic opportunities. Just as we had turned our vulnerability with water into a strength, we can do likewise with climate change as Ms Cheryl Chan and Ms Anthea Ong have discussed.

18. First, by reducing our carbon footprint. Last week, Senior Minister Teo announced the **Long-Term Low Emissions Development Strategy** which details Singapore's approach towards a low carbon future and how our industries and Singaporeans can contribute to the global effort.

- a. The Energy & Chemicals sector is a valued pillar of Singapore's economy, contributing 2.3% of our GDP and employing around 26,000 workers in 2019.

We have been working closely with companies in the industry to ensure that new or upgraded facilities meet higher standards of efficiency.

- b. Companies, such as ExxonMobil, are also taking active steps to improve their energy efficiency. From 2002 to 2018, ExxonMobil's efforts to reduce their energy consumption in Singapore have led to energy efficiency gains of over 25 per cent. This is equivalent to the removal of more than 550,000 cars from Singapore's roads.
- c. Ms Cheryl Chan would also be pleased to know that there are existing platforms to facilitate exchange of best practices, such as those organised by industry associations like the Sustainable Energy Association of Singapore. We also organise the annual Singapore International Energy Week (SIEW), which brings together global policymakers, thinktanks and industry players to discuss trends and challenges in the energy landscape.

19. Second, by developing new sustainable solutions. Given the increasing global demand for sustainable products and services, there are economic spin offs to be captured here.

- a. Today, we ensure resilience in our energy supply by encouraging our natural gas importers to diversify and import from multiple sources. This addresses the energy security considerations that Mr Leon Perera has raised. Our LNG terminal has the capacity to cover all our gas demand even if our piped natural gas supply were to cease today. On nuclear energy, countries that deploy nuclear energy have to be accountable to their populations and their regions, and ensure that high safety and security standards are adhered to. We are working with ASEAN countries to strengthen cooperation on nuclear safety, and emergency preparedness and response systems.
- b. Security is not just about ensuring the robustness of our current energy supply. It is also about looking at our energy future. Hence, we welcome Ms Anthea Ong's suggestions on studying the potential of renewable and alternative energy options. Such reviews are important because they can provide useful insights on how we can work with companies to overcome the growth risks, and capture the economic opportunities arising from global climate change developments.

20. One area of growing interest is the idea of a **circular economy**. A "circular economy" seeks to improve resource efficiency and recycle resources in a loop to maximise their value.

- a. JTC is thus partnering with companies on Jurong Island and other government agencies, like NEA and PUB, to conduct a **Jurong Island Circular Economy Study**. The study will map out the flows of water, energy and waste on the island and identify system-level gaps. This will allow companies to come together to develop solutions to address these gaps, testbed solutions on Jurong Island, and then export these solutions globally.

21. Individual companies across diverse industries can also benefit from adopting a circular economy concept. In the food manufacturing sector for example, ESG has helped to connect food businesses with tech solution providers, to convert food waste into higher value products.

- a. Last week, I visited **SinFooTech**, a food technology company co-founded by two young entrepreneurs, Jonathan and Jian Yong. Jonathan shared how their patented fermentation technology upcycles soy whey, a food waste by-product of tofu manufacturers, into a higher value-added alcoholic beverage named Sachi.
- b. This is the first alcoholic beverage in the world to be made from soy whey, and it was fascinating to understand the science behind how soy whey can be converted into an alcoholic drink with a slightly sweet, fruity and floral taste. I'm glad to hear that SinFooTech is looking to sell their technology licence overseas, and will also be setting up a factory to scale up their production of Sachi.

Agri-Food Tech

22. Companies like SinFooTech contribute to Singapore's broader agri-food tech industry. This is a sector of growing importance as the world looks for innovative solutions to feed our growing population amidst climate change and resource constraints.

23. Mr Liang Eng Hwa and Ms Foo Mee Har asked how the government will support the development of emerging sectors. Last year, I announced that we will establish an **Agri-Food Innovation Park (AFIP)** in Sungei Kadut, to allow leading high-tech farming operators to testbed and commercialise their technologies. Infrastructure and land preparation works for Phase One of AFIP have started, and we will be ready to welcome companies by the first half of 2021.

24. The Government must be prepared to relook our rules and regulations as we grow new sectors. As with any new sector, there will be a learning curve for both businesses and the regulator. But we must not be afraid to try.

- a. Even before the setup of AFIP, agencies such as the Singapore Food Agency (SFA) and ESG have already been engaging Singapore Agro-Food Enterprises Federation and other farm operators to address the issues that they face with existing regulations. This includes areas that are important for Agri-Food Tech operations, like building infrastructure, fire safety and other regulatory issues.
- b. We will expand these efforts into a **regulatory sandbox for High Tech farms at AFIP**. This will allow us to review more regulations for AFIP tenants quickly, in a more streamlined manner. The lessons learnt from the sandbox will then be extended to benefit the wider farming industry.

25. As we help our agri-food tech companies to increase their food production capacity through the use of high-tech farming equipment, we must also help them to access new markets and expand their customer base overseas. This is why we have

started an inter-agency workgroup, the **Food Regulatory Connectivity Initiative**, to develop Singapore as a trusted food trading hub.

- a. We will work with trading partners to boost recognition of Singapore's food regulatory system, and improve market access for food produced in or exported through Singapore. We are also partnering accredited private bodies based in Singapore to provide the necessary checks that fulfil foreign import requirements.
- b. For example, we are engaging China's regulators on the recognition of meat and seafood products. This will help Singapore companies to export their food products to new markets which previously did not permit this.

26. As we continue to anchor and seek out new growth areas, new exciting jobs will be created. I hope to see Singaporeans seizing opportunities to work in these exciting sectors.

Conclusion

27. Mr Chairman, Innovation is key to our continued success. Our resilient and agile economy was not built overnight. It is the product of strong and consistent investment, over decades. Not every individual project or enterprise will succeed – but collectively, we will move forward. We must not be afraid to venture into new frontiers, to reap undiscovered rewards, for present and future generations.

28. In the years to come, we will continue to strengthen our innovation ecosystem, and transform our industries through innovation, so that Singapore and Singaporeans can continue to thrive.

29. Thank you.