

OPENING ADDRESS BY MR S ISWARAN, MINISTER FOR TRADE AND INDUSTRY (INDUSTRY) AT A*STAR'S SME DAY ON TUESDAY, 5 APRIL 2016, 9.30 AM AT MARINA BAY SANDS, SANDS EXPO & CONVENTION CENTRE

Prof Raj Thampuran, Managing Director, Agency for Science, Technology and Research (A*STAR)

Distinguished Guests, Ladies and Gentlemen

Introduction

1. Good morning. I am pleased to join you at A*STAR's annual SME Day and T-Up Awards presentation ceremony. Today, we celebrate the successes of SMEs that have tapped on technology to transform their businesses and achieve continued growth.

2. Today's exhibitors include SMEs who have partnered A*STAR, local institutes of higher learning and other government agencies to enhance their innovation capacity. It is a good opportunity for all of us to learn how these companies have benefitted from these collaborations to tap on technology and innovation.

SMEs are the bedrock of our economy

3. SMEs are the bedrock of our economy. Beyond their sizeable direct contributions to employment and GDP, SMEs play other important roles in our economic ecosystem. They complement the large enterprises in our economic clusters by acting as essential partners and suppliers. And the formation of new SMEs is the entrepreneurial catalyst for the creation of new industries and sectors that can give renewed vigour to our economy.

4. The near-term economic outlook for businesses, including SMEs, remains challenging. Demand for our exports may not see a significant uplift this year due to continued slowdown in China, the services-driven nature of growth in the US, as well as in-sourcing trends in China and US. The low oil price environment has also led to challenging economic

conditions for firms in the marine and offshore sector, and negative spillover effects on precision engineering firms that support the oil & gas industry.

Innovation and R&D remain critical to enable our SMEs to compete and grow

5. As announced in this year's Budget, the Government is working on several measures to help SMEs overcome these near-term economic challenges and emerge stronger. These include enhancements to the Corporate Income Tax Rebate and the introduction of an SME Working Capital Loan.

6. At the same time, it is vital that we press on with efforts to help SMEs achieve innovation-led growth, so that they remain responsive and resilient to economic pressures and are well-positioned to seize future areas of opportunity. R&D, innovation and technology are critical tools to help our SMEs improve their business processes, cut costs and grow their top-line.

7. It is a promising indicator that our SMEs have been increasingly investing in R&D and technology to differentiate themselves from the competition. In 2014, SMEs' R&D spending reached a new high of approximately \$800 mil, an increase of 38% from 2013. We are also seeing more collaborations between SMEs and public sector research performers such as A*STAR. The number of joint projects by A*STAR and SMEs has increased five-fold from about 600 in 2006-2010 to nearly 3,000 in 2011-2015.

The Government is committed to help SMEs tap on innovation and technology to upgrade capabilities, create new value propositions, and enhance productivity

8. A*STAR and SPRING have put in place a continuum of measures to help SMEs harness innovation and technology. These include the Growing Enterprises through Technology Upgrade (GET-Up) programme to enhance in-house innovation capability; efforts by A*STAR to help

SMEs adopt its Intellectual Property (IP) to create new product offerings; and the Technology Adoption Programme (TAP) to help SMEs tap on ready-made plug-and-play solutions to enhance productivity.

GET-Up and T-Up Programme

9. Under the GET-Up programme, A*STAR provides technical advice, technology road-mapping services, and the secondment of researchers to help SMEs to sharpen their innovation capabilities.

10. Since its inception in 2003, GET-Up has assisted 530 SMEs with technology consultancy services. These services were enhanced in July 2015 to include modules on market and competitive intelligence to enable SMEs to make informed decisions before entering a new market, or making a technology investment.

11. Wavelength Opto-Electronics Pte. Ltd, an SME that designs and manufactures laser optics and industrial process heads, is a company that has benefitted from GET-Up's Operation and Technology Roadmapping (OTR) service. With the guidance of GET-Up advisors, Wavelength developed a 5-year roadmap to improve its product range. The successful implementation of the roadmap enabled the company to grow its revenue by 2.5 times to \$5 million in five years, and facilitated its public listing in China in December 2014.

12. A total of 620 scientists and researchers have also been seconded to 340 local SMEs since 2003 under the GET-Up programme or "T-Up". These seconded scientists have been instrumental in innovation projects that have led to new or enhanced products, processes, and services in their host companies. The T-Up Excellence Awards were introduced in 2011 to recognise their contributions to industry and the research community.

T-Up Excellence Awards

13. This year's awards go to Mr Ao Yintai, to the team comprising Dr Xavier Le Guezennec and Dr Xiao Yang, and to Mr Ling Yii Leong.

14. Mr Ao Yintai from the Singapore Institute of Manufacturing Technology (SIMTech) was seconded to LHT Holdings, a timber company specialising in manufacturing wooden pallets, cases and crates. LHT had earlier licensed SIMTech's Integrated Track and Trace Solution Platform, a logistics tracking system that Mr Ao co-created. During his secondment to LHT, Mr Ao developed and added two modules to the system, one for raw materials management and the other for business activity monitoring, to meet LHT's needs.

15. Mr Ao's enhanced system equipped LHT with near real-time visibility of stock levels. This eliminated the need for manual inventory management and reduced LHT's manpower requirements, reducing business costs by \$130,000 per year. The system's Radio Frequency Identification (RFID) tracking capabilities also enabled LHT to provide the adjacent service of leasing RFID-tagged pallets, which increased LHT's revenue by 15% from 2014 to 2015.

16. The second award goes to Dr Xavier Le Guezennec from the Institute of Molecular and Cell Biology (IMCB) and Dr Xiao Yang from the Institute of Materials Research and Engineering (IMRE). The two scientists were seconded to Curiox Biosystems, an SME which manufactures bioinstrumentation systems.

17. Dr Xiao extended the shelf life of Curiox's DropArray™ (DA) microplate surface from one week to two years by developing a special coating for the DA plate which enhanced its ability to withstand repeated use and washing. Previously, a DA plate would be unusable after four washes, due to its diminished ability to retain cells. With the coating, the DA plate retained up to 90% of suspension cells even after four washes.

18. Dr Le Guezennec developed a method to further increase the number of cells retained per well in Dr Xiao's coated DA plates.

Previously, due to their low cell retention ability, DA plates were not compatible for use in flow-cytometry, a fluid analysis process requiring high cell concentrations¹. Dr Le Guezennec's process made the DA plate usable in this process, allowing Curiox to expand into the flow-cytometry market, thereby securing a new revenue source.

19. The combined efforts of Dr Xiao and Dr Le Guezennec enabled Curiox to launch new products and double its revenue from 2013 to 2015. The company was also able to expand its reach and now has offices in Japan, Korea, and Silicon Valley in the US. More than 10 of the world's largest bio-pharmaceutical companies are Curiox's customers.

20. The third award goes to Mr Ling Yii Leong, formerly from the Institute for Infocomm Research (I²R), who was seconded to LDR Technology Pte Ltd. He has since joined LDR's R&D department as the Head of Information Technology.

21. Mr Ling was seconded to LDR after the company licensed A*STAR's Snap-to-Tell Authoring Platform in 2012. Based on this technology, he developed Learning-on-the-Move (LOTM), a GPS-based platform which allows users to record virtual checkpoints of their physical locations via geo-tagging and image recognition. This enabled LDR to develop a mobile app, Pocket Trips, which allows teachers and students to create learning journeys using their mobile devices.

22. Thirteen of the Ministry of Education's schools in the South 1 cluster currently use Pocket Trips to create trails documenting Singapore's heritage. LDR has also secured a trademark for Pocket Trips and is currently applying for a patent. In 2015, LDR licensed the Mobile Augmented Reality software development kit from A*STAR to further enhance Pocket Trips with new features for augmented reality.

¹ Flow cytometry is a technology that is used to analyse the physical and chemical characteristics of particles in a fluid. Cell components are fluorescently labelled and then excited by the laser to emit light at varying wavelengths. This process requires a high enough concentration of cells to be retained on the microplate apparatus.

23. Mr Ling also helped LDR's R&D staff to better understand software development. With the readiness of LDR's staff to adopt relevant IT tools, Mr Ling has encouraged LDR to deepen its investment in R&D. LDR expanded its R&D team from 3 to 5 members in 2015, and plans to hire another 2 R&D staff in 2016.

Helping SMEs to create new products with A*STAR

24. A*STAR is also committed to help SMEs leverage its IP to build new capabilities and create new products.

25. An SME that has benefitted from A*STAR's IP is Film Screen Pte Ltd, a traditional printing company offering large format printing services for outdoor advertising. Through Exploit Technologies Pte Ltd (ETPL), A*STAR's commercialisation arm, Film Screen licensed SIMTech's technology to deposit electrically responsive ink on lightweight materials to create an ultra-thin light-emitting film. Film Screen also co-developed the film together with SIMTech to adapt it for commercial use, resulting in the eLumiNEX™ product.

26. eLumiNEX™ has become one of Film Screen's key differentiated product offerings. The film not only requires low capital investment to manufacture, but is also easy to install and can be overlaid with high-resolution graphics. This makes it suitable for deployment on buses as electric billboards with adjustable light intensity. As of February 2016, eLumiNEX™ has been installed on 18 SMRT buses for commercial trials, with more than 30 advertisements from brand owners such as Huawei, Disney, CIMB, and MediaCorp FM95. With eLumiNEX™, Film Screen was able to venture into the untapped market of illuminated large area advertising.

27. The effective deployment of eLumiNEX™ requires a power source which can support up to 10 square metres of printed lighting. ETPL helped Film Screen to source for a partner which could provide this capability. Goldpower Pte Ltd was eventually brought in to develop the electronics to power the eLumiNEX™ film and this helped both companies to tap on

synergies in their products, as well as to develop a mutually beneficial partnership.

Technology Adoption Programme (TAP)

28. In addition to helping SMEs to sharpen their innovation capabilities and tap on IP to develop new capabilities and products, A*STAR helps SMEs to adopt ready-to-use technology solutions to achieve productivity gains. Thus far, about 1,170 companies have benefited from the Technology Adoption Programme (TAP) which was launched in July 2013 for this purpose. These companies have achieved an average productivity improvement of more than 20 percent.

29. One beneficiary is Decks Pte Ltd, a fashion and lifestyle retailer, which adopted three technology solutions from A*STAR. The RFID-based Item Management and Tracking System (IMTS) has helped Decks to reduce the time taken for inventory management by 2,370 hours and achieve \$27,000 in cost savings per month. To create a better customer experience, Decks also adopted the Virtual Try-On (VTO) and Video Analytics System (VAS). The VTO allowed customers to see how clothes would look on them without trying them on physically, and the VAS provided insights on customer behaviour, enabling Decks to optimise the display location of its products.

30. Another company, Goodrich Global Holdings, which specialises in wall-coverings, had difficulty locating its products as its staff could not easily distinguish between its intricate and complex wall-covering designs, many of which looked similar. Through TAP, Goodrich was matched with Visenze, a local system integrator, which was able to deploy its Image Search Engine to automatically identify visual samples of Goodrich's products and locate them within its inventory. This reduced the time taken by Goodrich staff to search for products by 90%.

Conclusion

31. The continued competitiveness of our SMEs depends on their ability to adapt quickly and to adopt new business models through innovation.

32. I urge our SMEs to continue partnering A*STAR, SPRING and other Government agencies to tap on innovation and technology to continue the transformation to innovation-led growth.

33. The Committee on the Future Economy (CFE) is studying how technology can be further tapped by our companies to improve their operational efficiency and business capabilities. In particular, the CFE's Sub-Committee on Corporate Capabilities and Innovation will study how technology can enable new business models. I take this opportunity to thank industry partners who are contributing to the Committee's deliberations, and invite all of you to contribute your ideas. With your valuable insights from an industry perspective, we will be able to better tailor our support to address our companies' needs.

34. I wish you a productive conference, and urge you to make full use of this invaluable opportunity to better understand how R&D can improve your business, and forge collaborations and partnerships with other businesses and our public sector agencies.

35. Thank you.

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