



Agency for
Science, Technology
and Research

SME

Innovation for Small and Medium Enterprises

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ISSUE 09 :: JUL - SEP 2016



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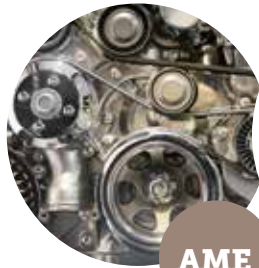
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Advancing the Frontiers of Research, Innovation and Enterprise (RIE)

The RIE2020 Plan

Government investment in R&D has grown 18% to S\$19 billion. With this opportunity, SMEs like you can now be part of Singapore's innovation-driven economy.



AME



HBMS



SDE



USS

The five-year Research, Innovation and Enterprise 2020 (RIE2020) Plan was announced in January 2016. S\$19 billion is budgeted in the RIE2020 Plan to bolster R&D activities and foster high-growth innovative enterprises in Singapore. This is an 18% growth from the previous RIE2015's S\$16.1 billion. RIE2020's budget is the biggest to date.

In RIE2020, four technology domains are prioritised as outlined below.

- Advanced Manufacturing and Engineering (AME)
- Health and Biomedical Sciences (HBMS)
- Services and Digital Economy (SDE)
- Urban Solutions and Sustainability (USS)

These four domains seek to deepen the technological capabilities and competitiveness of Singapore's industries. Public Research Performers will also increase their efforts to help local companies expand their capacities to adopt new technologies.

At A*STAR, we will continue to help SMEs sharpen their competitive edge through technology. Our

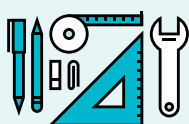
various programmes are designed to help SMEs upgrade their technical capabilities and improve their productivity. If you are a local company, and are unsure of how to proceed on your innovation/technology journey, do feel free to approach us.

We look forward to your continued support. The A*STAR SME Office wishes you an impactful year ahead.



Mr Liau Eng Soon
Director
Industry Development
Group (SME), A*STAR

Under RIE2015 (2011 to 2015), A*STAR has:



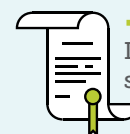
4,000

Projects worked on with local enterprises



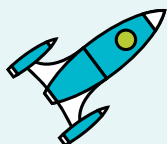
>1,800

Technology adoptions enabled



1,030

Licenses signed



>70% / 721

Licenses signed with SMEs and start-ups



339

Researchers, scientists and engineers seconded to ...

164

... SMEs

READY-
TO-GO



Innovating Lean and Light with OMNI-LITE

Achieve Productivity Gains within a Month

Adapted from the WSQ OMNI programme that was launched in 2010, WSQ OMNI-LITE is more compact and enables participants to complete 10 half-day sessions of classroom training and on-site mentorship in just a month.

Designed for SMEs who are keen to enhance their business efficiency and effectiveness, OMNI-LITE is a joint initiative by the Workforce Development Agency and the Singapore Institute of Manufacturing Technology (SIMTech), a research institute under A*STAR.

Participants will receive training on how to apply SIMTech's Operations Management Innovation methodology. Mentors from SIMTech will also provide guidance to participants at their workplace to help identify gaps, develop suitable initiatives and implement action plans to achieve lean outcomes.

With OMNI-LITE, SMEs can experience the benefits from the proven OmniMethodology™ and improve in-house productivity, without needing to send their staff for extended periods of training. Funding from WDA will be made available to Singaporeans, Permanent Residents and SMEs.

“ OmniMethodology™ provided us a holistic and clear picture of what needs to be improved and if the improvements are aligned to our business strategy and objectives. We found it easy to understand and apply. ”

*Alvin Foo, Mentor Media
a supply chain management solutions company*

RESEARCH &
DEVELOPMENT



Open SesAME

Unlock Opportunities in Advanced Manufacturing and Engineering

Singapore's manufacturing sector has come under intense pressure in recent years due to aggressive regional competition, domestic restructuring and rising business costs.

To sustain its competitive edge, the sector needs to move beyond adding value to what is being manufactured by MNCs, to empowering SMEs and local companies to create their own globally competitive products and services.

As one of the four technology domains prioritised under RIE2020, the Advanced Manufacturing and Engineering (AME) domain seeks to deepen the technological capabilities and competitiveness of Singapore's manufacturing and engineering sectors.

R&D and technology initiatives under the AME domain will receive at least S\$3.3 billion in funding over the next five years. SMEs and local companies in the manufacturing sector will be able to capitalise on advanced technologies and disruptive innovation to grow their business.

For example, SMEs and local companies can tap on A*STAR's technology expertise in the following areas:

- Industrial Internet of Things (IIoT)
- Robotics & Automation Systems
- Additive Manufacturing
- Advanced Materials

Assistance from A*STAR to support local companies:

- Capitalise on new growth niches in the economy
- Develop innovative and differentiated new products and services
- Embark on R&D projects with leading experts and researchers
- Be ahead of competition with the latest proven technology

www.a-star.edu.sg/sme

Contact A*STAR now and make us your first stop for technology advice and solutions.

Ready-to-Go

Deploy technology packages quickly for productivity improvement from our technology depot

GET-Up

Develop R&D capabilities and strategies with A*STAR scientists and engineers

A*STAR's Research Institutes

Collaborate with a vast and diverse pool of R&D talent from A*STAR

Simplified Licensing of Intellectual Property

Accelerate technology transfer and time-to-market for SMEs

Headstart

Royalty-free and exclusive foreground IP licenses for first 18 months

START-UP



Developing Smart Products through Collaborative Synergy

Smart Electricity Plug That Saves Costs

Founded in 2012, Intraix is a start-up that focuses on delivering solutions to improve energy efficiency and reduce consumption.

In 2014, Intraix sought to develop its own range of smart energy plugs for consumers. But as a young and small start-up, it lacked the R&D capabilities to create a product that is competitively priced and differentiated from those in the market.

Through a Research Collaboration Agreement (RCA), Intraix and Institute for Infocomm Research (I²R), an A*STAR Research Institute, worked hand-in-hand to design and prototype the smart plug. The co-development process also allowed Intraix to gain valuable insight and knowledge on product development, and the selection of electronic parts.

“It was an eye-opening experience to work with top researchers and experts from I²R. The knowledge that we gained during the RCA has given us a head start in developing our next few product lines.”

Darrell Zhang, co-founder of Intraix

The end product was a high-quality and cost-effective smart plug, with the following key features:

- i. Users can monitor the electricity consumption of any device connected to the smart plug through a mobile app, or even switch it off remotely.
- ii. Users can integrate the smart plug and its connected device into a wireless network of other smart home devices.

BENEFITS TO INTRAIX



Accelerated time to market

6 months to complete R&D, with commercialisation expected by end 2016



Enhanced business competitiveness

20-30% more cost-effective than similar devices in the market

SME



Towards a Smart Factory

User-Friendly Software That Improves Operational Efficiency and Service Level

Sanwa's efforts towards a smart factory began with the digitalisation of its production data and records.

Founded in 1977, Sanwa Plastic Industry Pte Ltd (Sanwa) manufactures precision engineering plastic components. Their staff have been relying on paper records to keep track of parts and orders. It can take hours and up to 3 staff to search for the right document. Paper records also deteriorated over time. Sanwa decided to look for a technology solution that can help boost productivity and cost effectiveness.

In 2015, Sanwa approached the Singapore Institute of Manufacturing Technology (SIMTech), an A*STAR Research Institute, to implement a production planning and tracking system. Sanwa's then paper-based processes became digitalised with the introduction of the High Mix Low Volume (HMLV) software. Sanwa staff underwent a 2-day training to learn the

“The software was very user-friendly even for those not familiar with computers and programming. Our older and non-English speaking floor operators picked it up very quickly. It has not only motivated them to work together more efficiently but also offers improved response time to our clients and value-added service.”

Alvin Lee, Production Engineer

software. SIMTech trainers conducted site visits to follow up on system fine-tuning and feedback from the staff.



An All*STAR Team-Up Recognising Research Excellence

In April 2016, four A*STAR researchers were presented the T-Up Excellence Award for their outstanding R&D impact and contributions towards SMEs.

The recipients were under A*STAR's Technology for Enterprise Capability Upgrading (T-Up) scheme. T-Up helps SMEs build up their technical capabilities through the secondment of A*STAR's talent pool.

Among the winners were 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). They were recognised for their R&D breakthroughs at Curiox Biosystems Pte Ltd (Curiox), an SME that manufactures bioinstrumentation systems.

“ Teaming up with A*STAR has helped Curiox develop new products and file new patent applications. Revenue has shot up by 200% to 350% year-on-year. The company has now expanded its reach to Canada, China, Europe, Japan and South Korea. ”

Dr Namyong Kim
CEO of Curiox Biosystems Pte Ltd

Both researchers had helped Curiox achieve significant product innovation and revenue growth during their secondment. The T-Up also provided both researchers valuable industry experience and international exposure, where they were able to network with leading industry players and top scientists from all over the world.



Four winners of the T-Up Excellence Award
From left: Dr Xavier Le Guezennec, Dr Xiao Yang, Dr Raj Thampuran, Minister S Iswaran, Mr Ao Yintai, Mr Ling Yii Leong

continued from Towards a Smart Factory

The HMLV software, with its easy and intuitive user interface, was well-received even by staff who were not IT savvy. Records are now automatically created by the software in tandem with production and stored on a central Cloud server. Staff can retrieve accurate and reliable records almost immediately.

Alvin Lee, the production engineer who oversees floor operations, found that the system has helped him save precious hours on retrieving records, verifying their accuracy and generating reports. The HMLV software allowed Alvin to monitor and control the flow of parts across the production floor, as well as the productivity of each operator. This greater visibility of floor operations enabled him to manage physical and manpower resources efficiently. The management also had better visibility over shop floor processes.

Sanwa's success with the HMLV software has inspired it to tap on other new technologies, such as automation and robotics, to enhance its competitive edge. These technologies have paved the way for Sanwa's journey towards its smart factory vision.



BENEFITS TO SANWA



Enhanced productivity
>80% time saved on report generation from 60 mins to 5 mins



Improved customer service standards
Faster response time to customers



Greater cost effectiveness
Reduction in erroneous reporting of defects



Inspiring a Community of Innovative Enterprises

A*STAR SME Day 2016

Held on 5 April 2016, A*STAR SME Day 2016 attracted a huge crowd of 1,100 participants from the industry and partner agencies to MBS Expo and Convention Centre.

The annual event provides a platform for SMEs to learn more about how they can grow their business with technology by tapping on A*STAR's initiatives and assistance schemes. The theme this year was "Moving up the Value Chain through Innovation".

Event highlights include the new programmes – "Marketplace" and "Show & Tell Sessions", where innovation leaders were invited to share their success stories with the SME community. For those who have missed this year's event, do look out for us next year!

Event Highlights

Marketplace



The new Marketplace exhibition brought together 73 exhibitors booths, including 29 from SMEs. These SMEs showcased their innovative products and solutions, as well as shared their journey of productivity and innovation with the other SMEs.

Show & Tell Sessions



At the newly introduced Show & Tell Sessions, speakers from the industry were invited to share their first-hand experience on how they have benefitted by leveraging technology to drive productivity and innovation.

UPCOMING

Face-to-Face with A*STAR

SME Expo 2016 and MSE 2016

A*STAR is bringing exciting collaboration opportunities to SMEs at these upcoming trade exhibitions at Suntec Singapore Convention & Exhibition Centre.

SME XPO
2016
中小企业博览会

17 - 18 August 2016
Suntec City Singapore
Exhibition Halls
404-406, 9am to 5pm.

Register now!
Visit <http://english.sccci.org.sg/index.cfm?GPID=1925>

MSE2016
MANUFACTURING SOLUTIONS EXPO

12 - 14 October 2016
Suntec City Singapore Exhibition Halls
401-402, 10am to 6pm. www.ms-expo.com

Interested SMEs can visit our exhibition booths to experience the latest business innovation and productivity solutions from our various Research Institutes and Centres of Innovation. Talk to our representatives to find out how A*STAR can help your company grow your business through technology.



Agency for
Science, Technology
and Research

A*STAR SME Office helps SMEs sharpen their competitive edge through technology. Email us to subscribe to our newsletter. Contact us now to know how we can help you.

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