QUALITY AND STANDARDS – ENABLING THE FUTURE ECONOMY

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SKILLS FRAMEWORKS LAUNCHED FOR FOOD AND RETAIL SECTORS

With more food services and retail businesses transforming and implementing digital technologies, staff in these industries need to be equipped with the relevant skills to take on new roles and seize job opportunities.

To support this transformation, customised Skills Frameworks for Food Services and Retail were launched at the Adapt & Grow Food Services and Retail Day, held on 4 and 5 August.

The frameworks – jointly developed by Workforce Singapore, SkillsFuture Singapore and SPRING Singapore in consultation with various industry stakeholders – provide key information on career tracks and new job roles, existing and emerging skills required, and training programmes for skills upgrading.

They serve as references for food services and retail businesses to enhance career tracks and adapt to evolving market trends. ■

STREAMLINING HEALTHCARE PROCUREMENT PROCESSES

To help smaller healthcare SMEs such as private medical clinics enhance productivity and expand access to new medical supplies and equipment in the market, the Singapore Medical Association (SMA) launched its eMarket Procurement Portal on 24 August. Developed in partnership with the Association of Medical Device Industry and supported by SPRING Singapore's Local Enterprise and Association Development (LEAD) programme, the portal helps healthcare SMEs improve their procurement process and benefit from economies of scale when procuring basic medical supplies and equipment. Communication between healthcare SMEs and vendors is also made more seamless. Vendors can now host their medical supplies and equipment on the platform directly instead of approaching healthcare SMEs individually. ■

TOWARDS A MORE COLLABORATIVE LOGISTICS ECOSYSTEM

Supply Chain Asia (SCA) – with support from SPRING Singapore and Workforce Singapore (WSG) – launched a new logistics incubator, the Supply Chain & Logistics Innovation Playground (SCLIP) on 30 August.

It aims to groom 12 technology startups over the next 18 months and support them in piloting solutions for the logistics industry. The incubator will also help foster industry collaboration and technology adoption among logistics companies.

"We are building a collaborative ecosystem for large companies and startups alike, to develop and adopt innovative supply chain solutions," said Dr Koh Poh Koon, Senior Minister of State, Ministry of Trade & Industry and Ministry of National Development, at the official opening of SCLIP. "The Supply Chain & Logistics Innovation Playground will help strengthen Singapore's position as Southeast Asia's leading logistics hub, by being a key driver of innovation, industry partnership and capability development." ■

LEFT:
Dr Koh Poh Koon, Senior Minister of State for Trade and Industry and National Development (left) and Mr Paul Lim (second from left), Founder and President of Supply Chain Asia touring the exhibition.

Tech Depot Solution of the Month

SOLUTION OF THE MONTH: MANPOWER SCHEDULING SYSTEM LITE

Tech Depot, launched in April 2017, is a centralised platform that provides SMEs access to over 30 technology solutions across a wide range of industries and business functions. Local enterprises can visit this platform to discover digital solutions that can enhance their productivity and transform their businesses.

In this issue, we feature the Manpower Scheduling System Lite, a software application that helps boost business productivity by enhancing the efficiency of manpower allocation in any organisation. The system comprises three parts – a scheduling engine, database system and web-based mobile app.

Using information stored in the database system, the scheduling engine runs an algorithm to identify the best manpower allocation. The system allows managers to input task and staff details, generate schedules and assignments, and view dashboard reports. Companies can benefit from optimised labour utilisation, lower scheduling effort, as well as greater levels of customer satisfaction and staff welfare. Visit www.smeportal.sg/techdepot for more information. ■

ENABLING THE FUTURE ECONOMY

Quality and standards support innovation and industry transformation

Singapore has a robust quality and standards (Q&S) infrastructure. Over the years, through the adoption of standards and the use of accredited conformity assessment bodies, Singapore enterprises have enhanced their productivity and assured the local and global markets of the quality of their products and services.

Now, beyond reinforcing Singapore's long-held status as a trusted business hub, Q&S has a bigger role to play. It has been identified as a key enabler of industry transformation, supporting innovation and emerging areas under national initiatives such as the Research, Innovation and Enterprise 2020 Plan, Smart Nation, and the National Action Plan for Successful Ageing in Singapore.

"Through Q&S, Singapore enterprises will be able to differentiate themselves in terms of innovation and competitiveness. Q&S is a key competitive advantage in the future economy," says Ms Choy Sauw Kook, Assistant Chief Executive, Quality and Excellence, SPRING Singapore.

SPRING aims to achieve its vision of becoming a key pillar of the future economy through

four strategies: supporting industry transformation; focusing on emerging areas; deepening international and regional engagement; and building Q&S competency. Both the Singapore Standards Council (SSC) and the Singapore Accreditation Council (SAC), which are managed by SPRING, have also set in motion their strategic plans to help drive the Q&S ecosystem towards the vision.

"Looking ahead, the challenging global environment, increasing global competition and rapid technological changes have sparked strategic reviews and new plans to chart Singapore's new phase of growth," says Mr Robert Chew, Chairman, SSC. "The new SSC strategic plan ensures that our standards development and promotion efforts remain relevant to support Singapore's economic priorities and our industries."

Mr Renny Yeo, Chairman, SAC, says that SAC has taken on a more active advocacy role. "The SAC champions the accreditation framework in Singapore by encouraging public agencies and the private sector to leverage SAC programmes or adopt best practices for new accreditation schemes," he says. "The engagement efforts will be stepped up to raise awareness of the value of accreditation and how it can improve businesses."

Supporting industry transformation

To be globally competitive enterprises that are able to capture growth opportunities in the future economy, Singapore companies must respond expediently to changes in the external environment. The Government is committed to building nimbler and stronger Singapore enterprises through the strategies mapped out in the Industry Transformation Maps (ITMs). These strategies cover

four areas, namely productivity, innovation, jobs and skills, and internationalisation.

Q&S is indispensable to the industry transformation efforts. Aligned with the ITM strategies, standards and accreditation programmes enable enterprises to improve productivity and support their development of emerging technologies. The workforce also needs Q&S knowledge to help their companies improve efficiency and enable innovation.

Furthermore, the adoption of standards helps enterprises access global markets. One

THROUGH Q&S, SINGAPORE ENTERPRISES WILL BE ABLE TO DIFFERENTIATE THEMSELVES IN TERMS OF INNOVATION AND COMPETITIVENESS. Q&S IS A KEY COMPETITIVE ADVANTAGE IN THE FUTURE ECONOMY.

"

MS CHOY SAUW KOOK
Assistant Chief Executive, Quality and Excellence, SPRING Singapore

such example is local company Osteopore, which has launched its 3D-printed bioresorbable scaffolds in new markets by meeting the stringent requirements of ISO 13485.

One of the world's most widely recognised quality management system standard for medical devices, the standard supports production of safe and effective devices, thus

opening doors to new markets for the company. (*See full story on page 10*)

Focusing on emerging areas

Given the rise of emerging areas like the Internet of Things, additive manufacturing and engineering, and advanced robotics, Q&S must move upstream to support the innovation process and to ensure alignment between new standards and novel technologies, products and services that are being developed.

These emerging areas will drive Singapore's future economy. As it stands, these areas have begun to contribute to economic growth. Take advanced manufacturing, for example. In 2016, manufacturing recorded a 22.1% year-on-year growth. This upswing was attributed in part to the sector's shift to advanced manufacturing.

Standards for emerging areas will ensure quality and interoperability so that innovative solutions can be deployed across different platforms and be commercialised successfully. They will unlock value from emergent technologies to enable Singapore enterprises to gain first-mover advantage.

V-Key is a case in point. By developing its V-OS software for secure online transactions with global industry standards such as Open Authentication (OATH), Trusted Execution Environment (TEE) and the Federal Information Processing Standard (FIPS) 140-2 Level 1, the digital security solutions provider has been able to gain customer confidence and penetrate new markets more easily. (*See full story on page 12*)

Deepening international and regional engagement

Singapore's international and regional engagement ensures

that its standards stay relevant for a globalised market.

Mr Chew says, "It is critical that we are plugged into relevant global Q&S developments, to ensure that our industries remain open and connected to international trade."

Global engagements also allow Singapore industries to play a part in developing new international standards, including for the emerging areas in support of Singapore's future economy. "The SSC will continue to deepen international and regional engagements, such as the development of international standards that are relevant to Singapore, to support our enterprises in their use of the standards to facilitate market access," Mr Chew adds.

Meanwhile, the SAC also works on a global level to help raise the international profile of Singapore's accreditation systems and set up mutual recognition arrangements with partners worldwide to facilitate regional and international trade. (*See full story on page 16*)

Building Q&S competency

To equip the workforce with the necessary skills, knowledge and mindset to help their companies improve efficiency and enhance market access through Q&S, SPRING has partnered institutes of higher learning and standards development organisations to incorporate Q&S modules into the national skills framework under the SkillsFuture initiative.

Ms Choy notes that Singapore companies can do a lot more to leverage Q&S at the individual and enterprise levels. "Q&S offers valuable strategic tools for achieving business objectives," she says. "We urge Singapore companies to improve their efficiency and seize growth opportunities through Q&S." ∎

GROWING WITH STANDARDS

STANDARDS FOR INDUSTRY TRANSFORMATION

Recently developed standards in support of industry transformation include the following:

1. **TR 48 on Bunker Mass Flow Metering**
   In support of the bunkering industry's switch to mass flow metering, SPRING, together with the Maritime and Port Authority of Singapore and the Standards Development Organisation at the Singapore Chemical Industry Council, launched Technical Reference (TR) 48. The standard sets out the requirements for measurement and system integrity, which provide a fair basis for custody transfer. SAC has an accreditation programme to ensure proper implementation of TR 48 for bunkering inspection.

2. **TR 46 on Last Mile Delivery – e-Commerce data interchange**
   TR 46 specifies a common dataset and document flow so that e-commerce retailers and logistics service providers can process orders and deliveries efficiently. One company that adopted TR 46 was Takatack Technologies, for its e-commerce platform Tackthis! *(See full story on page 8)*

3. **TR 58 on guidelines for developing food products that qualify for approved nutrition or health claims**
   TR 58 specifies how functional ingredients should be applied in food and beverage products to qualify for nutrition or health claims such as "low in

calories" and "sugar free". Using the standard, food manufacturers can strengthen their product innovation and accelerate market launch.

4. **TR 57 on guidelines on food safety and good hygiene practices for the vending industry**
   TR 57 provides food companies with guidelines for operating vending machines, such as food handling hygiene and temperature control for ready-to-eat meals.

STANDARDS FOR EMERGING AREAS

It is important to ensure alignment between new standards and novel technologies, products and services that are being developed. Recently developed standards to support emerging areas include:

1. **TR 45 on Remote Vital Signs Monitoring**
   Supporting the Smart Nation initiative is TR 45, which ensures that remote vital signs monitoring services are interoperable and the patient data that are collected can be integrated with the national Electronic Medical Record and Patient's Personal Health Record systems.

2. **Singapore Standard SS 618 – Guidelines on user interface design for older adults**
   In support of the silver industry is SS 618, which can help organisations reach out to the elderly. The standard guides application and service providers in designing digital devices and online services that make it easy for the elderly to access information and services.

IMPROVING LAST MILE DELIVERY EFFICIENCY

By adopting TR 46, Takatack Technologies is helping its clients fulfil customer deliveries seamlessly and efficiently through its e-commerce platform

Last mile delivery – the process where purchased items are delivered to the customer – is often costly and time consuming for online retailers as it involves switching between different data input formats when working with different logistics partners.

As a result, some retailers end up having to adopt a number of different processes just to fulfil deliveries. With these different formats and processes, there is a potential for error in data transfer, which can cause further delays to the last mile delivery process.

To address these challenges, Takatack Technologies adopted TR 46:2016 (TR 46), the world's first Technical Reference for Last Mile Delivery – eCommerce Data Interchange, for its Tackthis! e-commerce platform's last mile delivery service. Through the platform, merchants on Tackthis! can fulfil their deliveries through their courier partners seamlessly, which means that their customers get their orders delivered to them as quickly as possible.

With the adoption of TR 46, Tackthis! was able to offer its merchants a reliable, cost-efficient and quality online shopping experience for their customers as it helped improve buyer experience and logistics efficiency from order placement to last mile delivery.

A more seamless process

Launched in April 2016 by the Singapore Manufacturing Federation-Standards Development Organisation, Info-communications Media Development Authority (IMDA) and SPRING Singapore, TR 46 introduced guidelines for a standardised platform with fixed data input formats and processes, to ensure a more streamlined way of collecting data for inventory, order processing, delivery systems and logistics.

This streamlined approach gives online retailers and their logistics partners a smarter and more efficient way to transfer information across multiple systems, and reduces delivery data errors by 50%.

Takatack Technologies helped in the development of TR 46. "We responded to IMDA's call for collaboration to establish the framework for TR 46, as we believed that our experience in the field would contribute to making TR 46 practical for businesses," says Mr Dickson Gregory, Takatack Technologies' CEO and Co-Founder.

According to him, the common challenges faced by smaller e-commerce players are lack of manpower and software support, and high operating and integration costs incurred when trying to adapt to different procedures.

With the adoption of TR 46, Takatack Technologies is able to give its merchants on Tackthis! an all-in-one service dashboard that includes a more streamlined last mile delivery integration. Essentially, SMEs can manage all their processes using a single platform, with little to no errors in the last mile delivery process.

"Now when our merchants process orders on our Tackthis! platform, they can immediately send all order data, such as merchant pickup details and customer delivery information, to their logistics partners with just a click of a button and without having to input all that data a second time," he adds. Once a delivery is scheduled, a waybill is generated on the TackThis! dashboard. Merchants can print and attach this bill to the parcel, and their logistics partners will be notified of the new delivery pickup schedule.

Additionally, as TR 46 provides a standardised platform with fixed data input formats and processes, it is easier for Tackthis! merchants to fully integrate their backend processes with logistics service providers – who are also compliant to TR 46 – and their processes. "What used to take more than 60 man-days now requires only half the time," Mr Gregory says.

Takatack Technologies has also incorporated a delivery status system into its TackThis! dashboard. "This system periodically pools data from logistics partners to give merchants and their customers the latest updates on their orders without the need for tracking numbers, thus making the process easier and transparent for all sides," Mr Gregory adds.

With this added transparency, customers need only to log into their TackThis! dashboard to check if their order has been received, processed, packed or out for delivery, thus giving them more assurance.

This new dashboard, together with the adoption of TR 46, enables TackThis! merchants to provide an easy and hassle-free online shopping experience for their customers.

Opening new doors

The adoption of TR 46 has opened new doors for Takatack Technologies in regional markets as a pioneer in integrated logistics solutions to help merchants and their logistics partners increase productivity. Today, Takatack Technologies has a presence in Malaysia and the Philippines, with over 1,500 SMEs and large enterprises listed on Tackthis!

Mr Gregory and his team are now working on enhancing the company's offerings to help more businesses kick-start their e-commerce journey. The company also keeps a close eye on its merchants' needs and constantly thinks of new solutions that can help them achieve their e-commerce business goals.

The company is also exploring collaboration opportunities with bigger logistics players in the region to strengthen the e-commerce ecosystem for SMEs, especially those that have yet to make the digital transition.

"There is a large, untapped market of businesses that have yet to cross over to digital platforms. We hope to help them transition quickly and efficiently with an all-in-one service solution that is set to the right standard [TR 46], and build a good foundation in the e-commerce sector," Mr Gregory says. ■

> NOW WHEN OUR MERCHANTS PROCESS ORDERS ON TACKTHIS!, THEY CAN IMMEDIATELY SEND ALL ORDER DATA TO THEIR LOGISTICS PARTNERS WITH JUST A CLICK OF A BUTTON AND WITHOUT HAVING TO INPUT ALL THAT DATA A SECOND TIME.
>
> **MR DICKSON GREGORY**
> CEO and Co-Founder,
> Takatack Technologies

key takeaways

- Standards adoption can help businesses streamline and standardise their processes to boost productivity.

- Visit www.spring.sg/CDG to find out how SPRING can help you in your standards adoption journey.

BUILDING GROWTH OVERSEAS WITH STANDARDS

For local medical technology company Osteopore, adopting standards is the way into new markets

When Osteopore was set up in 2004, its goal was to commercialise 3D printed bioresorbable scaffolds for tissue regeneration – in other words, materials that can be broken down by the body and do not require mechanical removal, such as sutures – which is useful for bone healing.

Osteopore became the first company in the world to do so, soon after attaining US Food and Drug Administration (FDA) clearance in 2006.

When entering the world of medical device manufacturing, top of the local company's agenda was to ensure compliance to standards, as safety and quality are non-negotiable in the industry.

"We wanted to make sure consistent processes were in place and that we could meet international quality benchmarks. These would make it easier for us to obtain the certification needed to bring the product to market in various countries," explains Mr Goh Khoon Seng, CEO, Osteopore.

The company's processes were designed from day one to meet the quality and manufacturing specifications required of ISO 13485, a quality management system that focuses on improving patient safety.

ISO 13485 is the world's most widely used medical device quality management system standard.

Meeting this was essential to ensure compliance with the requirements expected of major medical technology companies.

Solving a problem

It can be a painful and expensive journey to recovery for patients suffering from head injuries that require surgical repair to their bones. The damaged skull is usually mended with either bone harvested from another part of the body or a titanium plate. Still, it is often not easy to find a replacement bone.

While titanium implants are more readily available than harvested bone, they carry the risk of infection and can be very costly in the long run if there is a need to treat the complications or conduct revision surgery.

A safer and more efficient solution lies in the products developed by Osteopore. The company develops implants that work as natural scaffolds. These encourage bone tissues to regenerate, while the scaffolds gradually get absorbed by the body as it heals. This significantly reduces the risk of infection as

well as the potential for revision surgery which adds to costs.

Osteopore took two years to design its processes, such as ensuring that its manufacturing methods met safety and hygiene criteria. In achieving ISO 13485, the company also met the requirements for other standards like ISO 11137 for sterilisation, ISO 11607 for packaging, ISO 14644-1 for CleanRoom and ISO 10993 for biocompatibility.

These achievements not only helped Osteopore obtain the ISO 13485 certification, but also helped the company build the credibility of its products in new markets.

Certified quality

In 2006, after achieving ISO 13485 certification, Osteopore attained the US FDA certification – an important milestone as the certification is one of the world's most widely recognised quality benchmarks.

"With each certification, it became easier to obtain the next one for new markets as the track record helps build trust and serve as references. This cuts down on compliance and paperwork significantly – allowing us to go to market without much difficulty," says Dr Lim Jing, Chief Technology Officer, Osteopore.

In 2007, Osteopore applied for a Health Sciences Authority

HAVING THE RIGHT PROCESSES FROM THE START HELPED US EXPAND OUR OVERSEAS PRESENCE.

"

MR GOH KHOON SENG
Chief Executive Officer, Osteopore

certification in Singapore, followed by the CE Mark in 2009 that opened access to European Union markets like Germany. It also obtained the Korea FDA certification in 2011.

The adoption of standards raises the confidence of customers and the industry. "Having these

standards definitely helped in successfully applying for certifications," adds Dr Lim.

Both Dr Lim and Mr Goh believe that having both standards and the necessary certifications helped the company gain traction globally, especially in clinical sales.

Since acquiring the US FDA and CE Mark certifications, Osteopore has been able to go beyond the United States and Europe markets, and step up its presence in Indonesia, Thailand, Malaysia, Korea, Vietnam, Myanmar, and the Philippines. The company's clinical sales grew three times in 2016 compared to 2015, and expects to triple its growth again in 2017.

On the right track

Moving forward, Osteopore believes maintaining standards will be just as important as meeting new ones. It undergoes audits for re-certification of its various standards and licences every few years and, in some cases, annually.

The current processes in place also mean that it will be easier for the company's newly developed products to meet standards. It is currently developing new materials and technology to enable their scaffolds to be implanted in other parts of the human body.

"It typically gets easier because we already have everything in place. That is why it is important to have the right processes designed from the start, and to regularly keep your staff updated with the latest industry trends and criteria," Mr Goh says. ∎

Introducing the 'Medical Devices – Quality Management Systems' accreditation programme

On 4 September 2017, the Singapore Accreditation Council (SAC) launched the 'Medical Devices – Quality Management Systems' (MDQMS) accreditation programme to boost industry confidence in MDQMS certification. The programme aims to provide third-party assurance on the competency and impartiality of accredited MDQMS certification bodies (CBs).

Through the programme, CBs that certify biomedical and medtech companies to ISO 13485 are required to follow a systematic and impartial approach when assessing the quality management

system of a company involved in one or more stages of producing a medical device. Some of these processes include design and development, storage and distribution, as well as disposal.

CBs will be accredited based on the international standard ISO/IEC 17021-1. This provides assurance to companies and industries, both locally and overseas, that these CBs meet internationally recognised standards and requirements.

CBs interested to find out more about the MDQMS accreditation programme can contact SAC at sac@spring.gov.sg or visit https://sacinet.spring.gov.sg/SACiNET

key takeaways

- Adopting standards can help you enter new markets easily.

- Visit www.spring.sg/CDG to find out how SPRING can help you in your standards adoption journey.

STANDARDS: A VEHICLE FOR GROWTH

Adopting standards has been crucial to V-Key's journey in developing the world's first virtual solution for secure online transactions

Most people still use hardware tokens for authentication, which can be cumbersome as you need to carry it around. It is even more of a hassle if you have several bank accounts. For service providers, this method is also expensive in terms of deployment and replacement costs.

In 2011, when V-Key Pte Ltd was established, its main goal was to eliminate this costly, burdensome customer authentication method and strengthen mobile security with a smarter, more efficient and cost-effective solution.

"We thought, 'Why can't we use software tokens instead?' The response we received from industry players was that there was no such solution in the market," explains Mr Joseph Gan, Co-Founder and President of V-Key Pte Ltd.

Strengthening its position
Mr Gan and his team came up with a virtual software, V-OS, that could help companies offering online services, especially financial institutions, provide more secure online transactions. The solution provides advanced data protection – without the need for any physical tokens – and works on both iOS and Android devices.

The V-OS was also designed to match global cybersecurity standards so that it can be easily integrated and accepted in overseas markets. According to Mr Gan, adopting industry standards like Open Authentication (OATH) – a global open standard that allows companies to draw users' account information without

exposing their password – was the fastest way to deploy the software and gain customer acceptance and confidence.

"Fortunately, OATH standards were already widely accepted and adopted by authentication servers by the time we launched the V-OS," he adds. "Adopting it allowed us to easily enter local and global markets and interoperate with existing systems."

Building trust and confidence
In 2014, V-Key teamed up with a major smart card manufacturer – also one of the world's largest digital security company that produces hardware-based security solutions, such as credit cards, smart cards and SIM cards – to improve the design of the V-OS and ensure that it meets the requirements of Trusted Execution Environment (TEE) standards.

The TEE ensures secure storage and processing of sensitive data and trusted applications within an electronic device. Companies that use TEE standards have trust built in their platforms right from the start.

V-Key launched a more flexible version of the V-OS in 2015. It featured a modular and scalable architectural foundation, which made it easier for the company to open up the software to new functions and possibilities, such as creating more transaction options for end users and other value-added services that handle sensitive information.

According to Mr Gan, adopting TEE standards not only ensured

that V-Key's solution delivered on its functions of providing an easier, safer and more cost effective secured operating system, it also made the company a pioneer in this field.

Moving forward with standards
Mr Gan aims for Singapore to become a global leader in mobile security standards, to position Singapore businesses as experts who are able to provide solutions for companies worldwide.

Appointed as Chairman of the Security & Privacy Standards Technical Committee (SPSTC) in April this year, Mr Gan is working with the Government and industry to design a new protection profile for mobile security. The SPSTC is part of the Information Technology Standards Committee under the Singapore Standards Council.

When asked why he volunteered to be part of the SPSTC, Mr Gan says he felt it was important to work with the rest of the industry to come up with new standards to enable and drive nationwide interoperability and encourage standards adoption in new areas that are relevant to Singapore's Smart Nation vision.

On the potential of Singapore becoming a leader in standards development, Mr Gan had this to say: "With a thriving digital ecosystem, Singapore is well-placed to take the lead in designing and introducing digital identity standards, and ensuring that they interoperate with existing systems and standards." ◼

key takeaways

- Building standards into your IT-related products from the start can ensure interoperability and easy deployment.

- Visit www.spring. gov.sg/cdg for details on how SPRING can support your efforts to adopt standards.
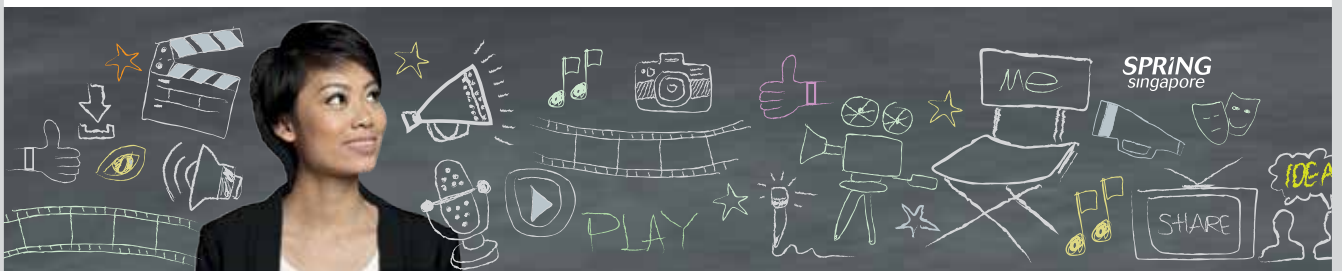
> **WITH A THRIVING DIGITAL ECOSYSTEM, SINGAPORE IS WELL-PLACED TO TAKE THE LEAD IN DESIGNING DIGITAL IDENTITY STANDARDS, AND ENSURING THAT THEY ARE INTEROPERABLE WITH EXISTING SYSTEMS AND STANDARDS.**
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> **"**
>
> **MR JOSEPH GAN**
> Co-Founder and President
> V-Key Pte Ltd

We're on YouTube!

www.youtube.com/springsingapore

PASSION FOR STANDARDS

Mr Yeoh Pit Wee, Director of Manufacturing, AP/EMEA at Rockwell Automation Asia Pacific Business Center, and Dr Lim Soh Min, Director and Chief Marketing Officer of Cadi Scientific Pte Ltd, speak about their motivations behind their involvement in standards development.

Mr Yeoh is the Industry Chairman of the Smart Manufacturing Technical Committee (SMTC), while Dr Lim is a member of the Health Informatics Technical Committee (HITC). Both committees are part of the Singapore Standards Council, which develops standards in partnership with the public and private sectors.

When did you get involved in standards development?

Mr Yeoh Pit Wee (PW): It was around April this year when a group of SPRING Singapore representatives visited Rockwell Automation to find out more about our smart manufacturing brand. I shared with them the impact of our solutions, challenges faced by the manufacturing industry, and our role in smart manufacturing. SPRING saw the value we could bring to the table as a company that has successfully adopted smart manufacturing technologies. A few weeks later, I was invited to join and lead SMTC in the direction of meeting industry requirements.

Dr Lim Soh Min (SM): Cadi Scientific has been deploying healthcare IT patient tracking and vital signs monitoring solutions in Singapore hospitals since 2007. It was in November 2014 that Cadi Scientific was invited to join HITC when it had just been established by the IT Standards Committee (ITSC).

What were your motivations for joining SMTC and HITC?

PW: It gives me the opportunity to work closely with industry experts and academia to influence, adopt and develop standards for Singapore's manufacturing industry, and to make it more competitive and sustainable. Since smart manufacturing is a key enabler in the manufacturing sector, there is a need for standards in this area to support the Committee on the Future Economy and Research, Innovation and Enterprise 2020 initiatives, and to help local SMEs in their smart manufacturing journey.

SM: Over the years, Cadi Scientific has gained valuable insights from different hospitals' operational processes and best practices. Aware of the fact that there are still gaps in the healthcare sector, we decided that a membership in HITC would be a good opportunity and platform for us to contribute. Through this, and together with other healthcare industry partners, we can further improve the industry's efficiency and interoperability.

What are the objectives of SMTC and HITC, and what do your roles entail?

PW: SMTC aims to develop, adapt and facilitate the use of Industry Internet of Things (IoT) standards. This is to ensure greater security and interoperability of the machines and devices for the convergence of OT (Operations Technology) and IT (Information Technology). My role is to bring an industry perspective to the standards that we want to adopt – to ensure that they are practical, relevant and can help the industry, especially local SMEs. This is important as many international standards in areas such as cyber-security are developed with large companies in mind, and the costs of implementation can be considerably high. Hence, it is crucial that we adapt standards to support both the needs of MNCs and local players.

SM: HITC focuses on the standard-isation of health data, including their structure, electronic exchange between health informatics systems, collection and processing, and security. As a member, I am able to share our industry experiences and concerns, and work as a team to come up with solutions.

Why is there a need to establish a better IT infrastructure for the manufacturing industry?

PW: There are many companies leveraging IIoT to connect their

BELOW: Dr Lim Soh Min aims to improve interoperability between systems and standards in smart healthcare.

assets like plant machinery, and the aim of both Rockwell and SMTC is to ensure that their assets are safe and secure from cyber attacks. These attacks can manipulate the programming of plant machinery, shutting down communication systems or bypassing safety sensors of machines – all of which can lead to public safety issues, such as explosions or oil spills, once the system is compromised.

Why is there a need for better interoperability between systems in smart healthcare?

SM: Interoperability between systems ensures that vital information can be shared instantly and efficiently. If there are no standards for interoperability, industry partners will have to spend more time and effort to develop different interfaces for different devices or systems, thus increasing the cost of implementation significantly. Hence, better interoperability standards in smart healthcare will allow device data to be shared among industry partners with minimum customisation effort. End users will be able to choose from a wider range of devices from different vendors without worrying about data loss, as all data will be consolidated in one central location.

What standards are the SMTC and HITC working on developing?

PW: Singapore's smart manufacturing industry is relatively small compared to those in countries like the United States, Germany or China. That is why it is harder for us to develop our own standards. For example, in the race to define what Industry 4.0 standards are, we have to take reference from major manufacturing nations that are leading the pack. SMTC's current role is to help companies adopt the most relevant and useful international best practices for new Singapore Standards or Technical References. We are

also looking to develop easy-to-use guidelines to make it easier for our SMEs to adopt smart manufacturing solutions.

SM: We are currently working on increasing the adoption of TR 45 (Technical Reference for remote vital signs monitoring) among industry partners. TR 45 was developed to make processes such as the recording and

interoperability of patient data smoother and more accurate, and to consolidate different devices' interfaces into a single dashboard. These devices include blood pressure monitors, blood glucose monitors and thermometers. Our goal is to have industry players seamlessly connected on the same platform, using the same interface protocol to shorten deployment time and reduce costs for all.

What are the benefits of being a volunteer in standards development?

PW: It is a good platform for like-minded industry and academia experts to exchange ideas and perspectives, and build a network of people who collaborate for standards development. Personally, it helps me keep my finger on the pulse. It also allows me to understand the latest development

in standards that will affect my industry and organisation, and enables me to keep my organisation agile and responsive to business challenges and new opportunities.

SM: It allows us to be part of the team that is shaping the future of healthcare IT solutions through standards development and adoption in Singapore and the region.

What advice would you give to other individuals who might be interested in being part of standards development?

PW: Being a volunteer requires passion – it has to come from the heart. Find something that you are really passionate about and devote your time and effort to it. At the end of the day, it is the satisfaction of knowing that you have contributed to the progress of Singapore's manufacturing sector through the development of key standards.

SM: You need to have the passion to work with other industry players and to improve the industry as a whole. Be prepared to dedicate time and effort as part of giving back to the industry. Always trust that if you give, you will get! ∎

ABOVE: Mr Yeoh Pit Wee believes that there is a need for standards in the area of smart manufacturing.

MINIMISING BARRIERS TO MARKET ACCESS

Accreditation can smoothen the path for Singapore companies looking to enter international markets

Part of having a successful business is building trust through quality and excellence. The role of accreditation is to ensure that this trust remains uncompromised.

Conformity Assessment Bodies (CABs), which are testing and calibration laboratories, certification bodies as well as inspection bodies, play a key role in helping companies comply with the requirements of standards for their products and services.

CABs are accredited by the Singapore Accreditation Council (SAC), the national authority for the independent attestation of the competency, impartiality and reliability of testing, calibration, certification and inspection services. The SAC is managed under the aegis of SPRING Singapore.

Essentially, the SAC's role is to build trust in Singapore's products and services by strengthening the infrastructure for conformity assessments.

It is also responsible for developing Mutual Recognition Arrangements (MRAs) with overseas partners for recognition of reports and certificates to facilitate regional and international trade. This is vital to businesses that want to attain standards to enter regional markets with ease. With these MRAs, SMEs can also benefit from cost-savings as there is no need for re-testing of their products in new markets, thus enabling faster time-to-market.

To date, the SAC has accredited over 350 CABs, and established 15 MRAs for testing, inspection, calibration, medical testing, proficiency testing providers, product certification, and quality, food safety, environmental and energy management systems certification.

Accreditation opens doors

Ms Chang Kwei Fern, SPRING's Director of Accreditation, believes

that accreditation opens doors to overseas markets.

While large enterprises can depend on their established brand and network, Ms Chang says SMEs can rely on having a trusted quality assurance mark to boost their credibility and competitive edge in international markets.

"Accreditation is like a global passport that can help companies access markets and minimise technical barriers to trade," she adds. "The SAC accreditation system is also well recognised globally and regionally, thus eliminating the costs of re-auditing and re-testing in overseas markets for companies."

This means that companies engaging SAC-accredited CABs are assured of the reliability of their testing reports or certification and that their goods and services will be accepted regionally and internationally.

One company that has benefitted from SAC's accreditation is Ugene Laboratory Services Pte Ltd, a local testing laboratory founded in 1997, specialising in microbiology.

Through SAC's accreditation and MRAs – such as the Asia Pacific Laboratory Accreditation Cooperation MRA and International Laboratory Accreditation Cooperation MRA – Ugene Laboratory's reports are readily recognised not just locally but internationally, enabling the company to gain a foothold in international markets like Australia, Japan, the United States and Germany.

"Our customers have confidence in the quality of the services we provide," says Ms Eunice Ng, Technical Director of Ugene Laboratory. Now Ugene plans to further expand its business in Southeast Asia.

Certificates and reports that are issued by SAC-accredited CABs help show that local SMEs, like Ugene Laboratory, meet equivalent standards used by overseas buyers and regulators, paving the way for smoother regional and international trade.

Setting the bar

Ms Chang is also Chair of the Pacific Accreditation Cooperation (PAC) – a role she took up in 2016. PAC was formed as a regional forum to plug into the global system that grants international recognition of certification or registration of CABs.

Being part of PAC gives SAC a global perspective on market trends, and the opportunity to influence and chart the direction of accreditation policies on a regional and global level. This helps build the Singapore brand and leadership in the quality and conformance arena.

ACCREDITATION IS LIKE A GLOBAL PASSPORT THAT CAN HELP COMPANIES ACCESS MARKETS AND MINIMISE TECHNICAL BARRIERS TO TRADE.

"

MS CHANG KWEI FERN
Director, Accreditation,
SPRING Singapore

One example is its recent Memorandum of Understanding (MoU) with the Department of Research and Innovation (DRI) Myanmar, where SAC was appointed as its Partner Accreditation Body.

This MoU allows the SAC accreditation system to be used in accrediting facilities in Myanmar – mostly in areas of infrastructure development, such as road and utility development, and food – thus providing greater trust in Myanmar's products and services.

It also opens up opportunities for Singapore and Myanmar companies that are able to provide and make use of accreditation services respectively.

The partnership allows CABs in Myanmar – after they have been accredited by SAC – to use the well-recognised SAC brand name in their marketing to attract more customers.

Keeping an eye on the future

The SAC accredits CABs across different sectors, not just those in infrastructure and manufacturing.

According to Ms Chang, there has been a growing interest in accreditation for Energy Management Systems and Environmental Management Systems.

This seems to point towards a growing demand for sustainability assurances, she says, as more companies move to adopt practices to reduce their carbon footprint.

"There has also been a lot of focus on skills and personnel," she adds. For this, the SAC has developed an accreditation scheme for personnel certification bodies. The scheme provides a transparent system for the assessment and recognition of competence and qualifications of workers, which is needed to support Singapore's workforce development efforts of public and private sectors.

As more local companies strive to enter global markets, Ms Chang assures them that the SAC will continue to support their assurance needs for internationalisation efforts and keep a close eye on trends and key areas.

"We work closely with different industries to identify emerging areas and when necessary, develop programmes to support Singapore's business and infrastructure growth."

Beyond that, SAC is also exploring ways to develop more MRAs to facilitate a more efficient and productive global trading process for Singapore companies. ∎

key takeaways

- Companies can benefit from SAC's MRAs to enter international markets.

- Visit www.sac-accreditation.org.sg for more information on how you can leverage accreditation to boost your business' credibility and competitiveness.

Raising Standards and Building Trust

SPRING Singapore thanks all our Standards and Accreditation partners from the industry, government agencies and academia for their commitment to Singapore's quality and standards programmes. Our initiatives to build trust in Singapore products and services would not have been possible without your support.

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