



**Thailand Booting
Up Towards An
“Innovative State”**

**Jellyfish-Like Robots
Could Be Used to Clean
Up Oceans**

**Malaysia to Ride on
Industry 4.0 Wave**

COVER STORY

Diving into the Machinery and Equipment Industry Outlook

*Interview with Datin Lorela Chia, Vice President
1, and Mr. Tiong Khe Hock, EXCO Committee
of the Machinery & Engineering Industries
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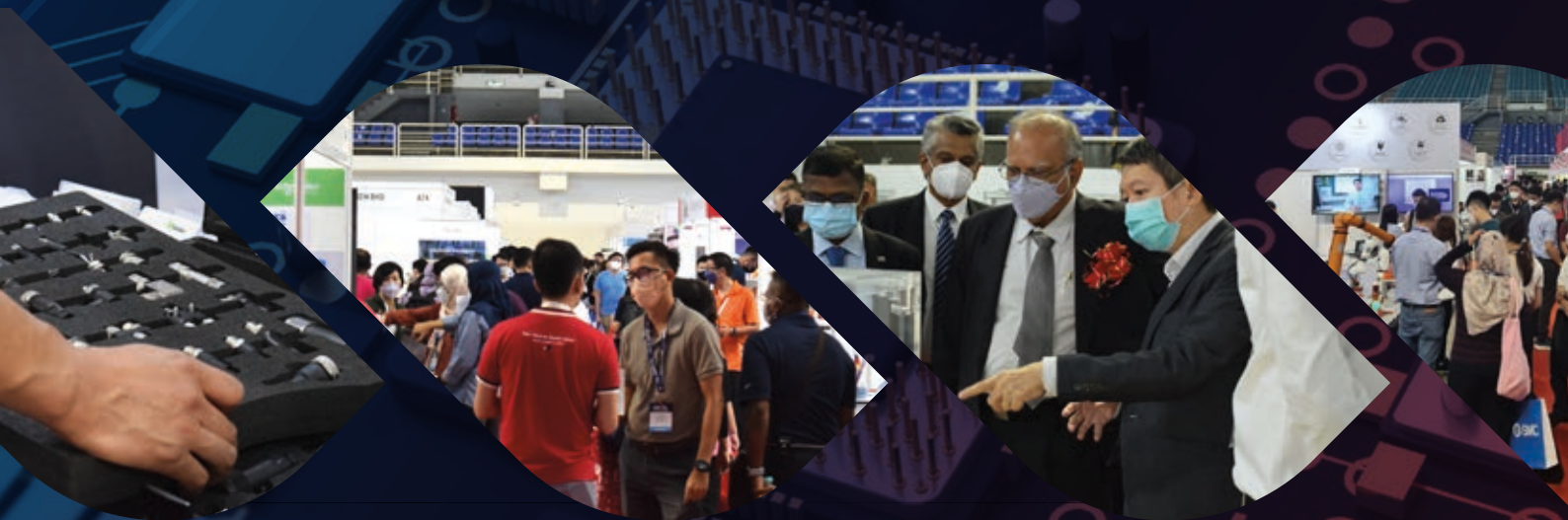
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Malaysia Turns to Smart Farming to Boost Food Security

The country hopes to ramp up domestic production and reduce import dependency using technologies such as the Internet of Things (IoT) and precision farming.

Malaysian farms could in the future be equipped with remote-controlled sensors, drones and robots to monitor, water and fertilise crops as the country looks to boost food security, according to Science, Technology and Innovation Minister Chang Lih Kang.

The country aims to ramp up domestic production using technologies such as the Internet of Things (IoT) and precision farming, in order to reduce import dependency.

“Farms can use IoT to control everything from the soil pH to temperature and humidity. They can even do long-distance

farming. Say you’re at home, you can see all the readings on your phone, so you can control it,” Mr Chang told The Straits Times.

“Everything is very precise; there is no wastage.”

IoT devices can also be used for greenhouse climate control, crop monitoring, precision fertilisation and other tasks.

Robots and drones can deliver smarter and more sustainable methods to automate farming activity and boost crop and livestock yields while reducing usage of water, energy and labour.

Seeking to emulate the success of a privately owned, pesticide-free aquaponic farm that rears tilapia and grows organic lettuce and spinach in Perak with the use

of IoT, the government is executing three similar pilot projects in the states of Perak and Johor.

It hopes that the use of IoT in agriculture – where Internet-connected devices monitor and carry out tasks on farms – will become more widespread and help solve food security issues.

“I think that is the way forward, especially when we are talking about food security. When you say food security, it is not only the food supply, but at the same time also the quality of food; whether or not it is safe to be eaten,” added Mr Chang.

Other technologies being tested include ways to shorten harvesting periods, as well as increase yield and resilience against pests.

One hurdle, however, could be the high initial cost.

For a farm of around 930 sq m, an IoT system is estimated to cost around RM50,000 (S\$15,000), excluding other requirements such as seeds and a greenhouse, all of which could set a farmer back around RM500,000.

Like many other countries, Malaysia relies heavily on imports for essential food products, despite an abundance of land and resources.

Some of the issues faced by the agriculture sector include labour shortages, low levels of automation and technology adoption, as well as high dependence on foreign labour.

In 2022, Malaysia suffered a poultry shortage following a global increase in the cost of animal feed due to the Ukraine war, leading to a ban on exports to Singapore.

Food security is now a priority for the new government.

Over the next two to seven years, Malaysia hopes to raise fish production from aquaculture from 26 per cent of total fish production to 60 per cent.

It is also aiming to increase the country's beef self-sufficiency ratio to 50 per cent by 2025. Malaysia's beef imports currently account for 82 per cent of demand.

Complementing these efforts, the National Grain Corn Industry Blueprint aims to ramp up production of corn for animal feed to 600,000 tonnes within the next 10 years, to cut dependence on imports by up to 30 per cent.

Malaysia currently imports almost 100 per cent of its grain corn, or about two million tonnes per year, from countries such as Argentina, Brazil and the United States.

Agriculture and Food Security Minister Mohamad Sabu told ST that the government has identified 400ha of land for this purpose, and will encourage more youth to become farmers or graduates in smart agriculture, as well as research and development.

The Ministry of Agriculture and Food Industry has been renamed the Ministry of Agriculture and Food Security to show how serious the government is about food security, he said.

"The new government is committed to guaranteeing the accessibility of sufficient food at reasonable prices to the people at a time when the country is facing food inflation," said Datuk Seri Mohamad.

The National Food Security Policy Action Plan 2021-2025 and the National Agrofood Policy 2021-2030 are being implemented as part of efforts to bolster food production with the adoption of modern technologies and economies of scale. The government also seeks to strengthen the food value chain and encourage sustainable agricultural practices.

"Our top priority remains to increase the local food production and self-sufficiency ratio of main food products (rice, vegetables, fruits, chicken, beef, egg, milk and fish), while, at the same time, we are also looking to diversify sources of food imports to meet domestic demand," added Mr Mohamad.



IoT devices can be used for greenhouse climate control, crop monitoring, precision fertilisation and other tasks. PHOTO: REUTERS

Malaysia To Ride on Industry 4.0 Wave



The World Economic Forum (WEF) and the Malaysian government established a center for the Fourth Industrial Revolution (Malaysian Centre for 4IR) in Malaysia. The center will focus on digital transformation and fast-growing sectors including green energy transition.

The center was jointly launched by Economy Minister Rafizi Ramli and World Economic Forum president Borge Brende.

Prime Minister Datuk Seri Anwar Ibrahim who delivered a video address before the launch said he hoped the center will prioritize two key areas – digital transformation and GovTech and energy transition.

“It is my wish for this center to further accelerate Malaysia’s transformation into an inclusive, digitally enabled and technology-driven high income nation and a regional leader in digital economy,” said Anwar in his pre-recorded speech during the event.

“The Malaysia Centre for 4IR will further strengthen Malaysia’s human-centered policy towards the Fourth Industrial Revolution and contribute towards our target of entering the Top 20 in the Global Innovation Index. We are confident that a resilience-oriented approach will also improve the nation’s People’s Wellbeing Index score and enhance productivity to create inclusive, balanced, responsible and sustainable economic growth,” Anwar added.

The center which comes under the aegis of MyDIGITAL Corporation will also focus on areas to accelerate Malaysia’s digital transformation and also the digital transformation of the Asean region.

There are 19 centers of 4IR in the world currently with the Malaysian outlet being the latest and the only one in the Asean region.

The Malaysian Centre for 4IR will play a crucial role in driving the advancement of the digital economy in Malaysia, with a focus on supporting the country’s digital transformation and advancements in fast-

growing sectors including green energy transition.

The center will serve as a public-private platform, bringing together leaders from government, business, civil society, academia and other sectors to advance new partnerships and initiatives that can unlock the value of technology for Malaysia’s economy and society. The center is hosted by a national initiative aimed at transforming Malaysia into a digitally-driven, high-income nation and a regional leader.

Meanwhile, Rafizi said, “Today’s launch reflects a critical insight in Malaysia’s innovation journey: Innovation is a team sport and collaboration are essential. The economic case for innovation has become indisputable through the decades. The Malaysian Centre for 4IR shall act as a necessary impetus, starting with a dual focus of energy transition and digital transformation.”

Addressing the leaders at the launch event, Brende said: “Malaysia’s leadership in the region and commitment to driving

the Fourth Industrial Revolution is commendable. Through the center for the Fourth Industrial Revolution Malaysia, we are excited to work together with the government, business, and civil society leaders to unlock the value of technology for the benefit of all Malaysians. This partnership will not only drive transformation but also help build a more sustainable, inclusive, and resilient future for Malaysia and the region.”

MyDigital CEO Fabian Bigar said, “MyDigital team is proud to be entrusted with the responsibility of making center for 4IR Malaysia a success in achieving its goals. Prior to this, we have been dedicating our efforts to driving quality growth in Malaysia’s digital economy guided by the Malaysia Digital Economy Blueprint and National 4IR Policy to spur



From left: Brende, Rafizi and Fabian at the launch.

Malaysia’s transformation into a high-tech nation by 2030. The establishment of the center for 4IR Malaysia aligns with and further fortifies our initiatives to catalyze homegrown technology development by enhancing collaborative opportunities

among stakeholders to unlock value in 4IR technologies, with a focus on supporting the country’s energy transition and digital transformation.”

Source: www.thesundaily.my

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Thailand Booting Up Towards An “Innovative State”

The country of Thailand is labeled as “the land of smiles.” It is referred to as a smile because a smile is greater than just a sweet gesture; it is the subtle art of interpersonal linking. The technical advancement in terms of adopting innovative algorithms has brought greater revenue for Thailand in the last decade.

Every business sector nowadays is struggling with IT-based developments and their effective integration within the systems. But why is the process of technical innovation a must-have thing for all the recent Thai businesses? To remain afloat, survive bear markets and evolve as

a progressive nature Thailand is on its way towards innovative enhancements, let’s explore how;

Manufacturing Sector to Adopt IoT

The major contribution of Thailand’s economy is its agricultural sector. Since the cultivating sector generates one-fourth of the revenue of its GDP, the institutions are deeply thinking to shift from the conventional agricultural processes.

Thailand’s government has announced the “Thailand 4.0 Initiative” as they are wary of converting traditional cultivating

mechanisms towards innovative ones. The initiative focuses on eliminating repetitive tasks and reducing man labor through smart and tech-friendly equipment.

The manufacturing industry has witnessed a shift from mechanical processes towards digitization via the adoption of IoT. Major Thai manufacturers like Royal Universe, UAC Global, Unitech Co. Ltd and AAPICO Hitech Public Company are successively deploying IoT for cutting down maintenance costs while improvising existential industrial mechanisms.

The utilization of smart equipment works on the integration of real-time data analytics. It connects manufacturing systems with digital solutions. For instance, plant managers are just a click away to see the agricultural data, inventory needs or production challenges on their mobile phones via an app.

A Wide Spectrum of Blockchain-Supporting Mechanisms

Along with the deployment of the Thailand 4.0 scheme, the regulatory authorities are also prioritizing the integration of blockchain-based solutions. The Thai government is aware of cryptocurrency overtaking the conventional financial system.

It is why they are linked with reliable trading bots' sites like bitcoin 360 ai and others too to entertain the region's investors. While promoting the art of trading among potential traders who are stuck in mainstream operations and possess a genius-head.

Back in 2017, Thailand introduced blockchain technology for its sitting, warehousing, shipping and delivering processes to elevate international trade via blockchain's end-to-end encrypted algorithms.



In the meantime, the Digital Identity initiative of the Electronic Transactions Development Agency (ETDA) has resulted in a Memorandum of Understanding (MoU) between the EDwwwTA and local blockchain start-up Omise Co., Ltd.

In 2019, the Thai government explored blockchain mechanisms in the lanes of agriculture, copyright and trade financing regions to boost credibility with respect to intellectual asset management. On the same side, the ministry of finance started utilizing blockchain for the tracking of taxes in order to prevent tax fraud, locally and internationally.

It's now time that Thailand emerged as a blockchain-friendly region among other Southeast Asian sectors. Several industries, including those concerned with food safety, royalties, property, IP, and assets, are expected to use blockchain technology.

Many trade analysis forums have elaborated on the significance of blockchain mechanisms in overcoming the finance to healthcare retail to manufacturing challenges of the Thai region. However, some Thai startups recognize the value of blockchain and acknowledge how it will aid their future business.

Robotic Process Automation as The Key to Smart Productivity

Robotic Process Automation (RPA) is behind the conversion of manual tasks into smart tasks. RPA's value is highly recognized by the developers of Thailand as the fuel behind new investment opportunities with improvised productivity.





According to a Japanese consulting firm ABeam, 13% of Thai businesses are already using RPA, 66% are still unaware of the efficiency of RPA's professional productivity and 21% are considering robotic process automation. The numbers indicate that the room for RPA adoption will grow.

The recent consumers of RPA systems in Thailand are the manufacturing, insurance, energy, beverage and financial institutions.

The main functions of any RPA system are to study your consumers, smoothify the delivery process and cut off the maintenance process. The time to implement and see effective results from an RPA-optimized system ranges from 6 to 12 weeks. Quick enough?

Thus, the spectrum of productivity by RPA is not only increased in Thailand, a global wave of cost-effective operations may occur.

Encouraging The Digital Shield of Protection

Data security services, together with information security and cyberspace security services, help businesses and organizations prevent data breaches,

protect themselves from cyber-attacks, and respond effectively to data breaches that do occur.

The term "data protection" refers to the steps taken to prevent data from being compromised or lost. It addresses all methods an organization can employ, from data backups to data recovery to data reuse, to guarantee that all of its data is safe, accessible, and invariable for use in all of its goods, services, and operations.

With the enhancement of a city's digital mechanisms, the confidentiality of its users and the protection of data become concerning challenges. Under the banner of the National Health Act and Financial Institution Business Act, the Thai government has been generating a digital shield to maintain data confidentiality. Though these limitations are not strong enough especially for the trading sector if the consumer is not linked with trustworthy trading bots like bitcoin 360 AI.

The National Legislative Assembly passed two bills on February 28 addressing cybersecurity and the protection of personal information. The Acts have been drafted to regulate the acquisition, retention, and utilization of sensitive information. These laws seek to establish

constitutional protections for individuals' right to privacy and national security online.

With the increase of digitization, even the user has become aware of the significance of cyber-security. So, if your new Thai company is not registered with legal authorities or lacking a decentralized system, we are sad to tell you that you are going to lose a lot of potential investors.

Future Thailand Is Better Than Today

For becoming an innovative country that holds the magnetic power of grasping most of its tourist attractions while sustaining its locals, Thailand has to upheaval innovatively.

So, the legal forums must collaborate with technical institutes, local administrative institutions, young leaders of the region, academic and research centers and mostly urban residents who are willing for positive contributions towards innovative principles.



Thailand maintains its rank in the Top 50 of the Global Startup Ecosystem Index with four of its cities ranked among the 1000 most innovative cities globally. The future metamorphic process, development of the finest infrastructure and fostering resources for eco-friendly Thai setups is brighter than ever in the coming innovative age of digitalization.

SMRT Gets Shareholders' Nod to Go All in On IoT Solutions Business

SMRT to dispose education arm, acquire remaining 36% stake in Internet of Things (IoT) subsidiary.



SMRT Holdings Bhd has been given the go ahead by shareholders to dispose 100% of its education segment SMR Education Sdn Bhd to Special Flagship Holdings Sdn Bhd for RM49.5 million in cash to focus on its fast-growing technology business in the Internet of Things (IoT).

Apart from this acquisition, the group was also given the go ahead to acquire a 36% equity interest in its subsidiary N'osairis Technology Solutions Sdn Bhd (NTS) from Permata Kirana Sdn Bhd for RM72 million in cash.

A proposed establishment of a share grant plan of up to 20% of the total number of issued shares (excluding treasury shares) for directors and employees of SMRT and its subsidiaries was also given the nod.

These proposals are expected to be completed by the second quarter of 2023.

In a statement, SMRT said the acquisition of the remaining stake in its technology subsidiary NTS would enable it to fully reflect the financial performance and growth potential of IoT solutions.

IoT describes objects with sensors, processing ability, software and other technologies that connect and exchange data with other devices and systems over the internet or other communications networks.

SMRT group managing director Maha Palan said the vision for the future of the company is essentially to transform SMRT into a "pure play" IoT solutions provider.

"The acquisition of the remaining stake in NTS provides us with great flexibility in strategic planning and implementation," he said, adding SMRT will be able to fully capitalize on the robust growth prospects of NTS.

"We are upbeat on the outlook of the group, underpinned by the aforementioned factors and our clear growth plans supported by a stronger financial position upon completion of the proposals," Palan said.

For the year ending Dec 31, 2021, NTS' revenue rose 27.4% year-on-year (y-o-y) to RM51.1 million from RM40.1 million a year earlier. Profits attributable to owners of the company rose 42.5% y-o-y to RM20.1 million compared to RM14 million for 2020.

The statement noted the double-digit top and bottom-line growth were driven by higher orders for NTS' IoT services and as well as the progressive recovery of existing contracts in hand since 2019.

SMRT is an investment holding company listed on the ACE Market since 2007.

The Technology Pillars for Process Optimization in Manufacturing

With more and more technological advancements, implementing an achievable process optimization plan is now plausible. However, you must first find the technologies and approaches that work best for your manufacturing operation. The key to optimizing a manufacturing process is to embrace some of the advanced Industry 4.0 technologies available today. By understanding which technology is best for your manufacturing business, you will be one step closer to optimizing your process. Let's dive a bit deeper into what this means and into the main technology pillars of process optimization in manufacturing.

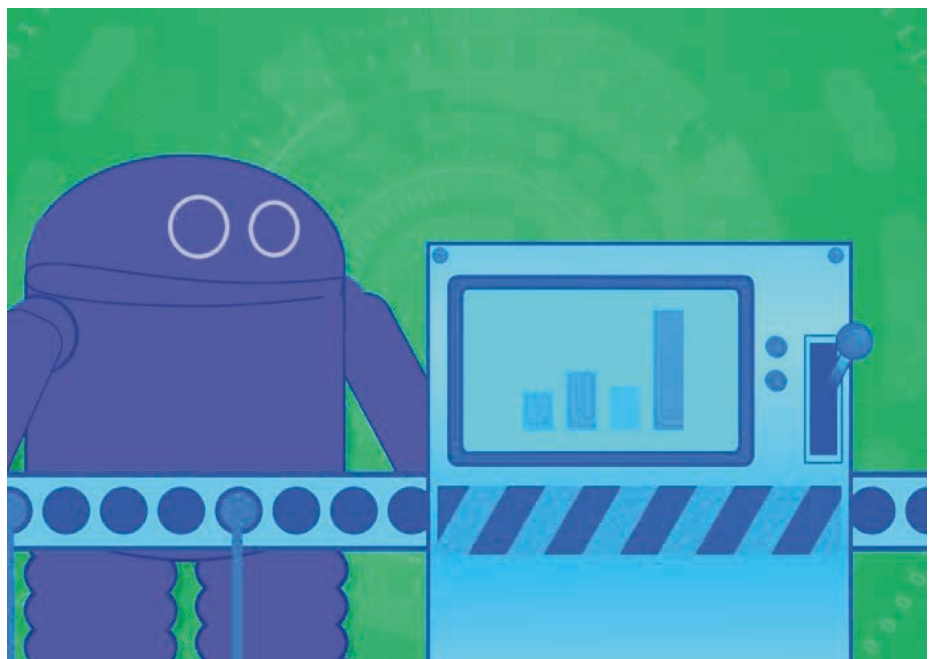


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“The key to optimizing a manufacturing process is to embrace some of the advanced Industry 4.0 technologies available today.” -Augury

Adopting Industry 4.0 Technologies

The implementation of automation and use of data in manufacturing is what's called “Industry 4.0,” with use cases such as predictive maintenance and predictive quality. Industry 4.0 includes the following technologies critical to process optimization:

- 1. Real-time data connectivity and capture:** Use industrial IoT connectivity to securely connect to the production line assets and capture data in a central time-series repository – either on-premises or on-cloud.
- 2. Process-based machine learning:** Use process-based artificial intelligence to get a holistic, detailed view of the full manufacturing process and to discover and surface process issues that need attention. By using machine learning algorithms to process and analyze real-time data, not only can process inefficiencies be identified but they can also be predicted and even avoided.
- 3. Digital Twin visualization:** A digital twin is a virtual representation that matches the attributes and operational metrics of a “physical” production line through the captured production-line data. A digital twin of the production line enables you to quickly pinpoint performance anomalies and their root cause, providing you with actionable insights and presenting them in the context of the production line. With this technology, there is no need for data scientists – the system is easy-to-use and accessible for production teams.

Primary Causes of Process Inefficiencies

As mentioned above, process engineers can identify inefficiencies by implementing process-based artificial intelligence, such as the formation of undesired side products, process instabilities, impurities, and more. This can be done with Automated Root Cause Analysis.

Before understanding how this will help you achieve process optimization, let's take a look at the difference between traditional root cause analysis and automated root cause analysis.

Firstly, traditional root cause analysis takes time – often measured in days – and expert resources from multiple teams. With massive amounts of data captured

Source: www.iotforall.com

from thousands of tags every minute, it's almost impossible to find correlations between the operational variables that lead to process inefficiency.

The longer the analysis takes, the more process inefficiency happens in the production line. For this reason, production teams need a faster and more accurate way of finding early events that lead to production failures.

Automated root cause analysis enriches historical and real-time asset data and applies machine learning algorithms to automatically trace the causal chain of events leading to production failures. By doing so, investigation teams get fast and accurate insight into early symptoms of process inefficiencies, making it easy to pinpoint and mitigate the root causes.

Predicting Process Inefficiencies



Having the ability to identify why process inefficiencies in your production line happen is priceless. But if you take this one step forward, you can also anticipate exactly when they will happen.

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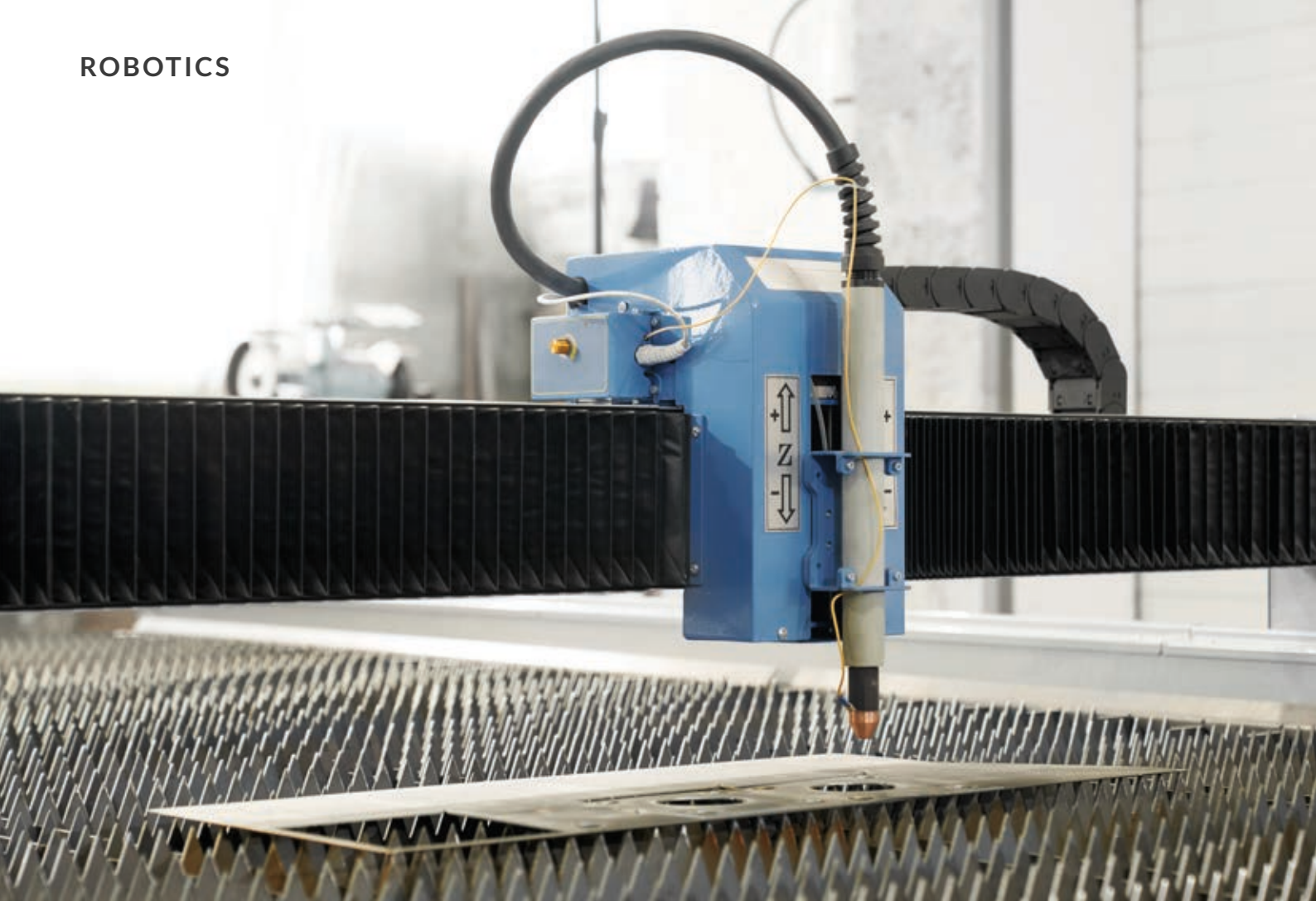


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Malaysia Pins High Hope on Robotics Industry

The Malaysia Robotics market is projected to reach 103.1 billion RM (23 billion USD) by 2030, surpassing the set target in the National Robotics Roadmap 2021-2030, according to the Ministry of Science, Technology and Innovation (MOSTI).

The Malaysia Robotics market is projected to reach 103.1 billion RM (23 billion USD) by 2030, surpassing the set target in the National Robotics Roadmap 2021-2030, according to the Ministry of Science, Technology and Innovation (MOSTI).

Speaking at a conference held by the Malaysia Robotics and Automation Society (MyRAS), Deputy Secretary-General of MOSTI Mohd Nor Azman Hassan said the market value of the robotics industry, especially service robots among others in 2022 was about 92.29 billion RM, despite the detrimental effect of COVID-19 towards the economy.

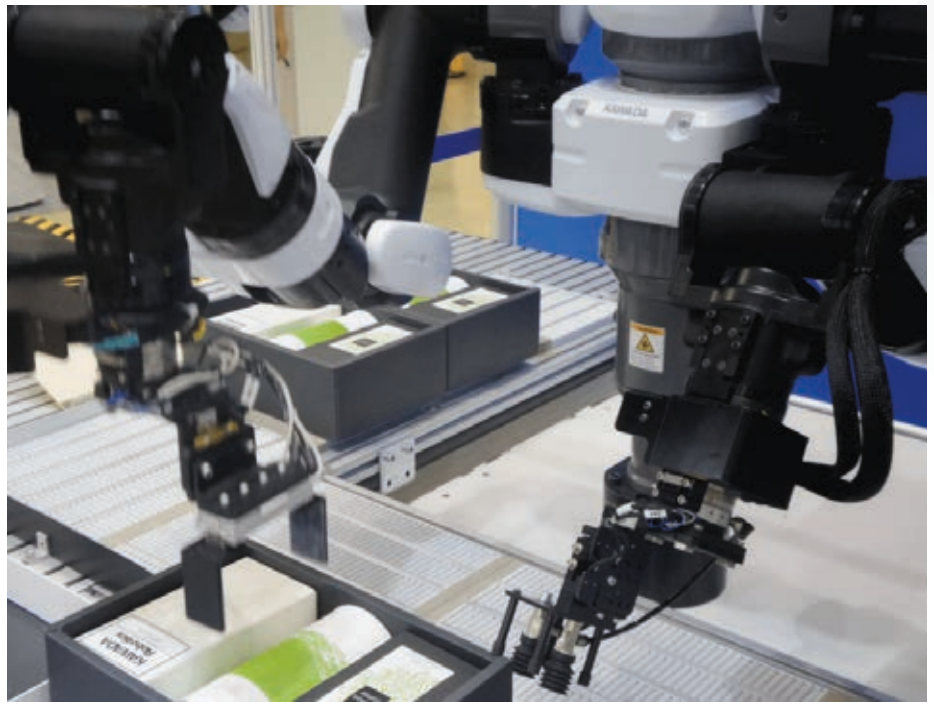
However, he said the disparity of contribution by micro, small and medium-sized enterprises (MSMEs) compared to multinational corporations (MNCs) needed to be addressed beforehand.

The MSMEs' contribution is far less than MNCs with a market share of 3-5% over the forecast period, he said.



Meanwhile, MyRAS President Prof. Dr Ishkandar Baharin said NRICR aims to shift the Malaysian robotics ecosystem from value add to value creation that is sustainable through high-impact innovative solutions in realizing the vision of the National Robotics Roadmap 2021-2030 for Malaysia to become a regional robotics hub in services, agriculture and manufacturing by 2030.

In the same statement, MRANTI chief executive officer Dzuleira Abu Bakar said it will set up a national robotics hub at MRANTI Park in Bukit Jalil in collaboration with MyRAS, MARii and other robotics industry players to support the expansion of the robotics ecosystem players in Malaysia.



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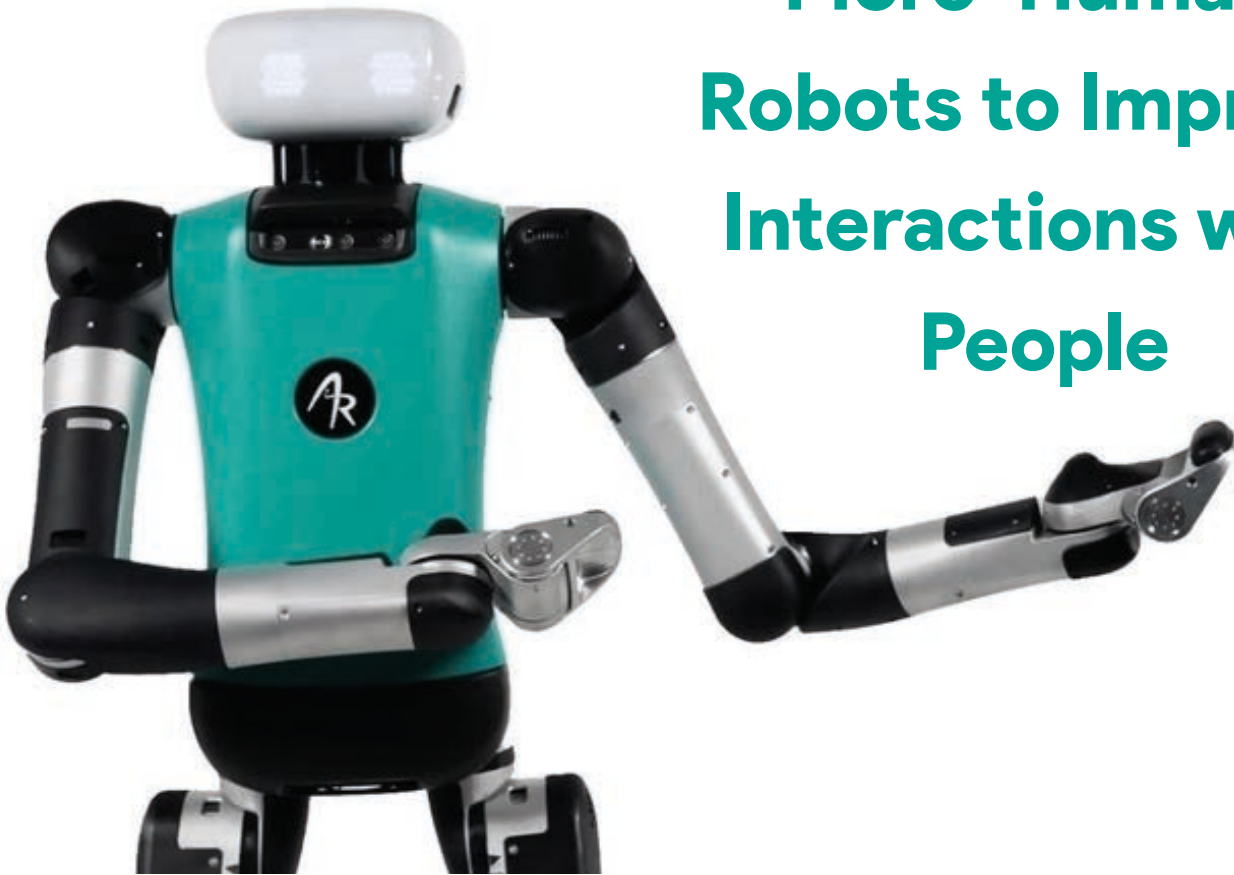
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More 'Human' Robots to Improve Interactions with People



Robots will soon be able to express some form of emotion, like with a smile or a look, sometimes by means of simple LED lights.

Many robots have a humanoid form, but they can still lack that “human” touch. American start-up Agility Robotics wanted to make its new generation Digit robot more human.

This is a two-legged robot designed for warehouse work, intended to perform many automated and repetitive tasks, mainly the thankless and often dangerous missions that, in the long term, may be entrusted to robots. It can handle materials of varying weights in warehouses or distribution centres.

Digit is able to work autonomously on several predefined tasks. But what distinguishes it from most of the other projects currently being developed in

laboratories is that it is equipped with illuminated eyes, actually LEDs, designed to convey “emotions” and thus improve interactions between the robot and its human “colleagues.”

Indeed, working harmoniously with humans should help improve the performance and efficiency of both robots and employees. As such, it’s a win-win situation.

In fact, Agility hopes to deploy Digit in partner companies’ warehouses in the near future for its first tests in a real-world environment.

In recent months, many often spectacular humanoid robot projects have been unveiled, including one recently presented by the start-up Figure, which promises to be the most advanced ever developed.





Digit hopes to communicate with people through its light-up eyes. © Agility Robotics

Known for its famous robot dog Spot, Boston Dynamics recently unveiled Atlas, a model capable of lifting, handling and moving heavy loads, like a human worker.

For its part, Xiaomi is working on the CyberOne, a robot capable of perceiving space in 3D, but also recognizing individuals as well as their gestures, expressions and emotions.

Combined with artificial intelligence, it could interact directly with people. Finally, even Tesla is working on its own humanoid robot project, code-named Optimus.

Source: www.freemalaysiatoday.com

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The collage features a high-speed train on the left, a wind turbine in the background, and a large black connector housing in the foreground. A central cluster of hexagonal icons displays various HARTING products:

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Jellyfish-Like Robots Could Be Used to Clean Up Oceans

Jellyfish-Bot could be used to help in environmental cleanup.

Credit: Freepik

Most of the world is covered in oceans, which are highly polluted. Ocean covers 70% of the Earth's surface, but 80% is unmapped. Devices that operate underwater are essential for environmental applications. However, current prototypes frequently employ large, noisy actuators and limited configurations.

Roboticians at Stuttgart's Max Planck Institute for Intelligent Systems (MPI-IS) have created a jellyfish-inspired underwater robot that they hope can collect waste from the ocean's bottom. The almost silent prototype can trap things under its body without physical touch, allowing for safe interactions in sensitive situations like coral reefs. Jellyfish-Bot has the potential to be a major tool for environmental restoration.

They have created an underwater robot inspired by jellyfish that is adaptable, energy-efficient, and practically noise-free. Due to electrical motors or hydraulic



pumps, the robot is designed to explore and sample in complicated and unstructured situations. It is hand-sized and capable of analyzing and sampling in complicated and unstructured surroundings.

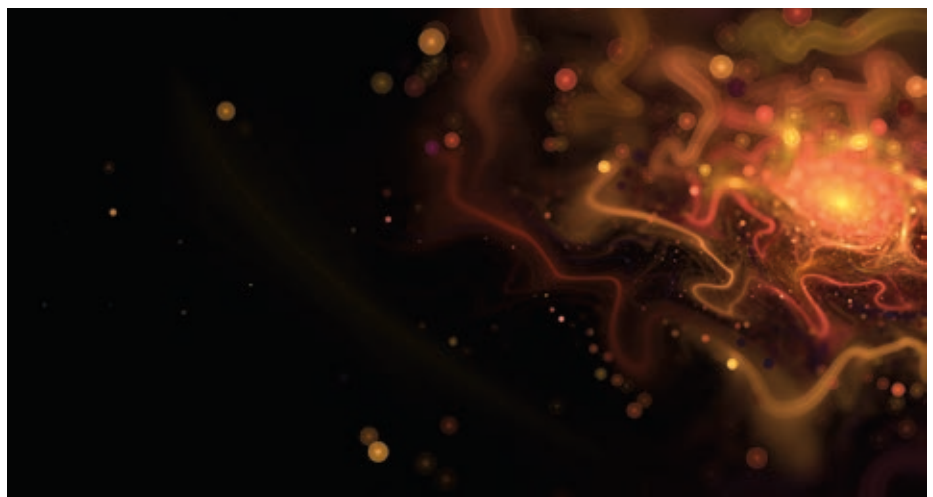
The Physical Intelligence and Robotic Materials groups of MPI-IS worked together to create Jellyfish-Bot. For the robot to be stable and watertight,

electrohydraulic actuators, air cushions, and soft and rigid components were used in its construction. The muscles contract and stretch due to periodic electricity flowing through thin cables from a power source, which enables the robot to swim beautifully and produce swirls underneath its body.

Tianlu Wang, a postdoc in the Physical Intelligence Department at Max Planck Institute Intelligent System, said, “When a jellyfish swims upwards, it can trap objects along its path as it creates currents around its body. In this way, it can also collect nutrients. Our robot, too, circulates the water around it. This function is useful in collecting objects such as waste particles. It can then transport the litter to the surface, where it can later be recycled. It is also able to collect fragile biological samples such as fish eggs. Meanwhile, there is no negative impact on the surrounding environment. The interaction with aquatic species is gentle and nearly noise-free.”

His co-author, Hyeong-Joon Joo from the Robotic Materials Department, continues: “70% of marine litter is estimated to sink to the seabed. Plastics make up more than 60% of this litter, taking hundreds of years to degrade. Therefore, we saw an urgent need to develop a robot to manipulate objects such as litter and transport them upwards. We hope that underwater robots could one day assist in cleaning up our oceans.”

They can operate alone or in groups of several to move and trap items without making physical contact. The Jellyfish-Bots work more quickly than other related creations, with a top speed of 6.1 cm/s. Suppose the polymer material isolating the robot is torn apart.



In that case, they have a low input power requirement of approximately 100 mW and are safe for people and fish. The robot's sounds can't be separated from the ambient noise in the meanwhile. Jellyfish-Bot behaves similarly to its real-life equivalent by delicately interacting with its surroundings without upsetting them.

The robot is made up of various layers, including stiffening, flotation, and a polymer layer that acts as floating skin. HASELs are artificial muscles embedded in the layers—liquid dielectric-filled plastic pouches with electrodes on the outside. When a high voltage is applied across an electrode, it charges positively, while the surrounding water charges negatively.

This creates a force between the positively charged electrode and the negatively charged water, which pushes the oil inside the pouches back and forth, simulating the action of a proper muscle.

HASELs can withstand the high electrical stresses caused by charged electrodes and are water-resistant due to an insulating layer. This is significant since HASEL muscles have never before been employed to construct an underwater robot.

The initial stage was to create Jellyfish-Bot, which had a single electrode and six fingers or arms. The scientists then divided the single electrode into various

groups to activate them individually in the second phase.

Hyeong-Joon Joo said, “We achieved grasping objects by making four of the arms function as a propeller and the other two as a gripper. Or we actuated only a subset of the arms to steer the robot in different directions. We also looked into how we can operate a collective of several robots. For instance, we took two robots and let them pick up a mask, which is very difficult for a single robot alone. Two robots can also cooperate in carrying heavy loads. However, at this point, our Jellyfish-Bot needs a wire. This is a drawback if we want to use it one day in the ocean.”

A buoyancy unit was added to the robot's top, and a battery and microcontroller were attached to the bottom. They then took their innovation for a swim in the Max Planck Stuttgart campus pond, where they successfully directed it. So far, though, they have been unable to direct the wireless robot to alter course and swim in the opposite direction.

Tianlu Wang said, “We aim to develop wireless robots. Luckily, we have achieved the first step towards this goal. We have incorporated all the functional modules like the battery and wireless communication parts to enable future wireless manipulation.”



Advanced Technology Made Easy

High-precision height profiles and true 2-D surface images for diagnosis and documentation. The unique SmartRunner technology combines both in one compact device.

Laser Light Section Technology: Precise and Reliable



Complex vision systems are often used for high-precision identification and analysis of object shape and position. These kinds of automation tasks can include quality control for finished components, positioning parts correctly on an assembly line, and aligning pieces before they are gripped by a robot. The vision systems used are notoriously difficult to set up and operate, and they require highly skilled users.

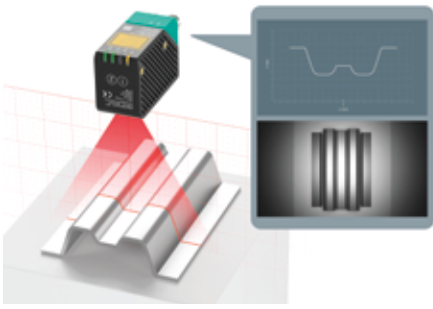
Pepperl+Fuchs' new SmartRunner technology makes the functionality of vision systems available in affordable, easy-to-use digital-output sensors. Based on the proven light section method, SmartRunner technology employs a laser line and a camera to precisely detect height profiles using the triangulation principle. Especially in difficult environmental conditions, the advantages of the light section method compared to a typical vision sensor become clear. So even with low-contrast objects like metal on metal or monochromatic plastics, no external lighting required. Different surfaces or colors and extraneous light also do not affect the measurement result.

The SmartRunner vision sensors can be easily adjusted using an intuitive user interface with operating wizards. The exchange and duplication are very simple and easy thanks to the parameterization via teach-in and data matrix control codes without specialist staff actionable.

The laser profile sensors are each optimized for a specific application area --

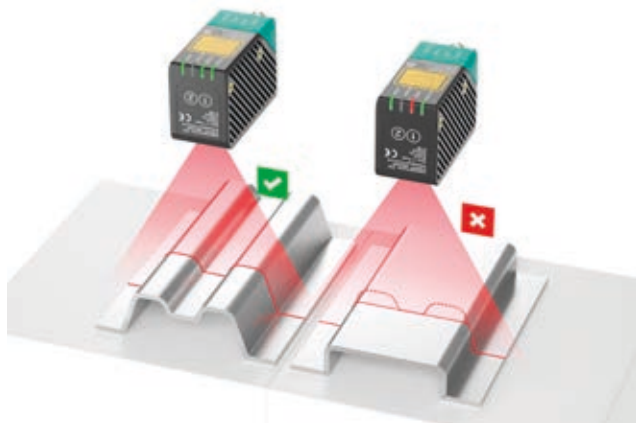
SmartRunner Explorer: The Specialist for Height Profile Output

The SmartRunner Explorer offers the unique combination of height profile and 2-D image output in one compact sensor. The device is able to capture precise height profiles and makes these available as raw data for further external processing. In addition, 2-D surface images can be output and used for diagnosis or documentation purposes. It can be easily integrated into PC programs via Ethernet TCP/IP and the supplied DLL. This enables the individual implementation of applications such as the measurement or quality control of components.

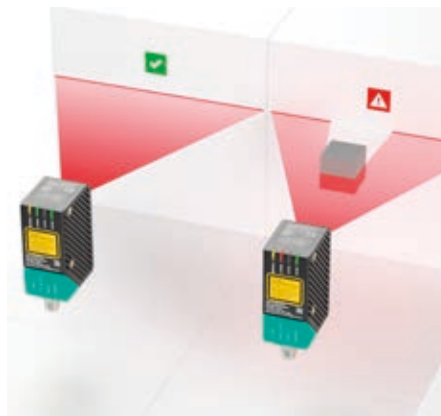


SmartRunner Matcher: The Specialist for Profile Comparison

The SmartRunner Matcher from Pepperl+Fuchs is a compact, camera-based light section sensor that combines both the evaluation process and the interfaces in one device. The device features a specially preconfigured firmware that enables it to specialize in extremely precise profile comparisons. The user simply has to input the required reference profile using the teach-in mode. After initial setup and configuration-the user simply inputs the required reference profile using the teach-in mode-the Matcher captures an image of each object's line profile. Using LEDs and a 2D camera, the SmartRunner Matcher compares the current profile to the taught-in reference profile. When the scanned profile matches the reference profile, the Matcher sends a "good" signal. When the profile deviates from the reference, a "bad" signal is sent. With up to 32 profiles saved in the sensor, it is perfect for positioning, presence detection, and completeness checks of components on a conveyor.



One advantage of SmartRunner technology compared with standard vision sensors is the lack of dependence on object contrasts. A 2-D vision sensor requires significant object contrasts for it to perform a viable evaluation. In comparison, the Matcher "sees" succinct shapes and edges, as the projection of a sharply defined laser-line enables clear and unique evaluations. This makes the system noticeably less sensitive to disruptive extraneous light, reflections, and the influence of various object colors and surfaces. As a result, the SmartRunner Matcher light section sensor can cover a wide range of applications.



SmartRunner Detector: The Specialist for Precise Monitoring

The SmartRunner Detector precisely monitors sensitive machine parts. Using laser light section technology, even the smallest faults are reliably detected and reported.

In addition to the SmartRunner portfolio, Pepperl+Fuchs also introduces the SmartRunner Detector. This light section sensor is optimized for high-precision monitoring, detecting even the smallest of faults. The focus of the Detector is on protecting expensive components and increasing machine availability. It detects even the smallest unauthorized parts, overlapping, and overhangs. The Detector reliably identifies objects with a minimum size of 0.25 mm in a trapeze-shaped measuring range with a width of 350 mm at a maximum range of 700 mm. Since the SmartRunner Detector evaluates both the laser line on the object as well as the background, the sensor results are always reliable.

Crucial Industrial Vision Simplified

Image processing is one of the most crucial and challenging sensor technologies of the future. Until recently, integrating vision sensors into practical applications was difficult and extremely expensive. The SmartRunner Explorer, SmartRunner Matcher and SmartRunner Detector by Pepperl+Fuchs offers ready-to-use vision sensors that can be implemented in a wide variety of industries and applications, providing cost and time-saving advantages over standard solutions in difficult sensing environments.

About Pepperl+Fuchs

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[pepperl-fuchs.com/
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Trends and Predictions for Asia Pacific's Industrial Business in 2023

By Alfred Lee, President Industrial, Schaeffler Asia Pacific



Asia Pacific (APAC) is home to some of the world's fastest-growing economies and industrial sectors and accounts for 48.5% of the world's manufacturing output today.

On balance, the outlook for the industrial sector in APAC is favorable, supported by projected long-term growth drivers in population growth, trade volumes, and rapid infrastructure advancements which will drive increased demand for goods manufactured in the region.

Having demonstrated continued strength in 2022, the manufacturing sector will continue to build on the momentum and outperform forecasts from previous years.

Setting benchmarks in the robotics business field

Recent technological breakthroughs are massively accelerating capabilities and adoption. The industrial manufacturing and logistics sector has led the way in robotics adoption as game-changing catalysts to curb wage inflation, labor shortages, demographic trends, and supply chain transformation.

A 2022 McKinsey Global Industrial Robotics Survey reported that many companies across the industrial world are expected to invest 25% of their capital expenditure on smart manufacturing solutions and automated systems over the next five years – with expected benefits in output quality, efficiency, and uptime.

As a leading global supplier to automotive and industrial sectors, Schaeffler recently presented a new portfolio of precision strain wave gear for lightweight robots and cobots. These gear units come with precision, silence, and consistency and are characterized by a torsional backlash that is ten times lower and a service life that is three times longer than the average market standard.

Just last year, Schaeffler purchased a global manufacturer and supplier of linear technology components and systems, Ewellix Group. This acquisition strengthens Schaeffler's market position, now with a robust portfolio across technology, electromechanical industrial actuators, and lifting columns that can be used in robotics and mobile machinery. This accession also represents a step in the diversification of their business.

Schaeffler also acquired CERASPIN, with over 25 years of experience in developing premium ceramic products processed into rolling elements for various applications. The addition of high-quality ceramic components to the industrial division's capabilities is valuable – with bearings manufactured based on this technology widely used in strategic growth areas such as wind energy and medical equipment due to its characterized low friction, reduced wear, and particularly high accuracy and precision.

While advanced manufacturing capabilities help businesses resolve the challenges of tomorrow, such technologies also play a crucial role in achieving decarbonization goals.

Navigating the winds of change for a sustainable future

With an increasing awareness of climate change and the need to reduce carbon emissions, there is a growing demand for renewable energy sources such as solar, wind, and hydroelectric power. Sustainability is driving the flight to quality across APAC markets, with set ambitious energy targets and heavy investments in renewable energy infrastructure.

Schaeffler sets an example by priming sustainability as a central component of its Roadmap 2025 corporate strategy. By 2040, the group will have achieved climate neutrality for its own production and supply chain, such as expanding its renewable energy generation at multiple sites and securing green electricity from wind power for convertible uses.





Last year, Schaeffler acquired a solar farm in Hammerstein, Germany – enough to supply 2% of the required electricity by Schaeffler’s locations in the country. This acquisition represents a further key milestone in the company’s decarbonization strategy, which aims to meet 10% of its global energy requirements from self-generated renewable electricity by 2025 and 25% by 2030.

In addition, the group also signed a letter of intent with French hydrogen producer Lhyfe, which produces and supplies green hydrogen for mobility and industrial applications. The switch from fossil fuels to renewable energy is crucial to achieving climate-neutral production while meeting the demands of green hydrogen in the commitment towards industrial sustainability.

To help industrial business build their predictive maintenance capabilities in an eco-friendly manner, Schaeffler’s acquisition of ECO-Adapt SAS strengthens their position as an innovative market leader for condition monitoring based on electrical signal analysis and systems for optimization of energy consumption. ECO-Adapt SAS is a complement to the group’s existing condition monitoring solutions, such as the OPTIME ecosystem, by offering reliable predictive maintenance solutions for industrial machinery based on signal analysis, providing additional security against potential failures of electrical components holistically and sustainably.

From market-leading rolling bearing solutions for wind power plants to renewable energy production, Schaeffler

offers both mechanical and digital solutions for the energy-efficient operation of machines and plants.

Localization to stay ahead of the competition

Localization has been a focal point for many businesses as it provides them with the ammunition to be agile, resilient, and efficient. Not only does it help companies improve supply chain resilience by reducing dependence on global supply chains, but it also helps increase competitiveness by tailoring products to meet local market demands and better compete with global competitors.

Schaeffler is consistently working on strengthening its local footprint, cost competitiveness, and business mix to create a positive impact on the entire supply chain ecosystem, with capacity expansion for plants in India and Vietnam underway. For example, as the Indian market continues to flourish, the Group has invested in building state-of-the-art R&D centers and incorporated the latest engineering tools and testing equipment to support future mobility projects.

As more companies race towards achieving net-zero carbon emissions, the adoption of additive manufacturing capabilities, advanced materials, and sustainable practices will help them accelerate decarbonization efforts, reduce waste production, and lower energy consumption for a greener future.

Find out more on how Schaeffler can help your company stay ahead with future trends with its latest technologies and innovation here.



Making Indonesia 4.0 with ifm electronic Indonesia



Discover the latest addition to ifm's global network - our new location in Jakarta, Indonesia, opened in March 2023.

Join us in the pursuit of technical excellence with our range of sensors, network and control systems, software, and engineering services. As part of Making Indonesia 4.0, ifm electronic Indonesia is your one-stop-solution for Industry 4.0 in Indonesia.



Michael Marhofer, Chairman of the Board and co-CEO of the ifm group of companies welcomes Federal Chancellor Olaf Scholz and Indonesia's President Joko Widodo at Hannover Messe 2023.





Pure and Ultra-Pure Water Treatment Systems

Not just clean, but pure. For more than 30 years, EnviroFALK GmbH has been designing, manufacturing, and selling pure and ultra-pure water systems for a wide range of industries worldwide. Fundamentally, water, as it comes out of the tap, does not present a challenge for process sensors. Ultra-pure water, however, is a whole different story. The sensors used in these treatment processes have to be much more efficient and robust.

Everyone who has tried to clean a surface with tap water is familiar with the effect: You might find that unsightly stains appear. On window panes or drinking glasses, this effect may only disturb our aesthetical perception, but in industrial processes, it can seriously compromise the quality of products. For example, where treated water is used to rinse processed metal parts to remove oils and coolants, to prepare them for subsequent coating or electroplating. Or in the optics industry and in medical technology, where rinsing water must not leave any residue after drying.

The solution: Pure water. This water contains no dissolved minerals, salts, or bacteria. Depending on the quality grade, the term pure or ultra-pure water is used.

Another eye-catcher of the products is the SU-type ultrasonic flow meter for precise flow rate measurement of ultra-pure water.

Also relevant to the customer is the quantity of pure water available at the end

of the treatment process. During reverse osmosis, the feed stream is separated into a pure water stream, referred to as permeate, and a concentrated stream, which contains the particles. For example, by comparing both quantities, the plant operator can see that filters require maintenance or that the feed stream is heavily contaminated with foreign substances. To obtain an exact result, the flow rate must be precisely measured at several points in the system.



“

With IO-Link, I have full transparency right down to each individual sensor via the HMI and the controller.

-Maximilian Meurer
Measurement and Control Engineer
at EnviroFALK



For this purpose, sensor specialist IFM has developed the SU-type ultrasonic flow meter for ultra-pure water applications, which can detect flow rates of up to 1,000 l/min with high precision. Thanks to ultrasound technology, this also applies to ultra-pure water with low conductivity as it is produced in the plants at EnviroFALK. In combination with the conductivity sensors of the LDL family, reliable control of the quality and quantity can be established in the filtration process. The measuring pipe of the flow meter is made of higher-grade stainless steel and is free of measuring elements, seals, and moving parts. This means that faults caused by deposits, damage, leaks, or blockages, which can occur in mechanical systems such as impellers or turbines, or design-related pressure drops as they occur with other measuring principles, are excluded from the outset. The measuring pipe

made entirely of stainless steel eliminates the need for material compatibility tests of electrodes or seals and allows easy, complete, and residue-free cleaning. The LED, which can symbolize signal strength, serves as an additional visual indicator of a stable process. A dropping value can be an indicator of particles, air bubbles, or deposits on the inner wall of the pipe.

It is in IFM interest to contribute to the successful implementation of the digitalization initiative ‘Making Indonesia 4.0’; “By offering our expertise locally, we will from now on provide Indonesian companies with even more tailor-made support in the digitalization of their

production processes” explained Michael Marhofer, Chairman of the Board as Indonesia’s President Joko Widodo and German Federal Chancellor Olaf Scholz visited IFM stand at the Hannover Messe April 2023. To do so at the beginning of March, IFM opened a new location in Jakarta, Indonesia to accompany the digitalization of the Asian economic area with a stronger presence.

Get in touch with us today at sales.id@ifm.com or call us at +62 21 8967 7410 and learn how we can help you optimize your technical processes and seamlessly integrate our solutions into your organization. Let’s work together to drive your business toward success.



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Diving into the Machinery and Equipment Industry Outlook

Interview with Datin Lorela Chia, Vice President 1, and Mr. Tiong Khe Hock, EXCO Committee of the Machinery & Engineering Industries Federation (MEiF)

About MEiF



Datin Lorela Chia

Vice President of Small and Medium Enterprises Association (SAMENTA)



Mr. Tiong Khe Hock

Immediate Past President of Malaysia Automation Technology Malaysia (MATA)

Vision

- To be the Principal Advocate for the Development of a World Class in Malaysian Machinery and Engineering, Manufacturing, and Services Industry.

Mission

- To integrate and transform local players into the world-class global value chain by facilitating and assisting members in enhancing productivity and technology to provide new, better, and more competitive products and services.
- To provide a consultative resource to government and government-related agencies in policy advocacy, strategy formulation and implementation, incentives, and assistance programs.
- To facilitate in reformation, rationalization, and harmonization of regulatory requirements relating to the industry.

Role of MEiF

- Enhancing productivity and global competitiveness
- Seminars, consultation guidance and information exchange about the industry
- Promotion of international trade, investment co-operation and joint-ventures
- Investigation, research and compilation of information on domestic and global machinery and engineering supporting industries
- Research and survey on development of machinery and engineering supporting industries
- Protection of member's legal rights

1. MEIF is deemed Malaysia's lead voice of machinery and engineering, what are the significant contributions from MEIF to the industry?

Mr. Tiong: The Machinery & Engineering Industries Federation (MEIF) was formed several years ago when MIDA mooted the idea of uniting the associations in Malaysia's machinery & equipment industry under one umbrella to present a collective and cohesive voice. MEIF was to play the essential role of establishing the vital linkages to build a stronger comprehensive ecosystem together with multiple stakeholders, focusing on talent, skills, productivity, and innovation.

Since we were formed, we represent industry, and advocate for policies that support the growth and the development of the industry. We provide industry insights, such as market trends, industry challenges and opportunities to help M&E companies make informed decisions and develop strategies to grow. We are also

in a position to facilitate collaboration with sectors that look into developing industry standards. Right now everyone is talking about the ESG framework. We can represent the M&E sector collectively to help to develop these standards. Plus, we support workforce development by developing more holistic training programs, and even apprenticeships towards building a skilled workforce with the expertise and knowledge that keeps up with technology evolution.

Datin Lorela: Let me also point out that M&E is not solely limited to machine makers. It encompasses a much broader spectrum, including engineering support services (ESS) that covers technical guidance, troubleshooting, and maintenance support to ensure the smooth operation of manufacturing processes. M&E also includes manufacturing related services (MRS) that encompasses a wide array of services, such as prototyping, quality control, supply chain management, and logistics, which are crucial for

optimizing efficiency and productivity in manufacturing operations.

Together, this comprehensive M&E ecosystem supports and enhances all facets of manufacturing, driving innovation, productivity, competitiveness, and sustainable growth in various industries. It is the backbone that ensures seamless operations, efficient production, and the delivery of high-quality products.

2. Briefly share with us what the initiatives MEIF and other associations provide in assisting SMEs in the current industry.

Mr. Tiong: Since its establishment, MEIF has been championing the interests of the M&E sector. M&E was identified as one of the important areas as it cuts across all industries and is the backbone for our manufacturing industries to move towards Industry 4.0. We have four WorkGroups, Work Group 1 is on Manpower & Talent



COVER STORY

Development, Work Group 2 is on Technology & Efficiency, Work Group 3 is on SME Empowerment & Development, and Work Group 4 is on Ecosystem (Policies & Procedures). Over the years we have come up with different programs that are addressing specific industry pain points. For example, we came up with an industrial skills framework for the M&E industry in collaboration with HRDC, as a guide for M&E companies to understand the categories of skills required and for the training providers to identify the training programs required. We have also successfully carried out a Process Improvement Program (PIP) which is an industry-driven training program, to prepare our TVET graduates to be more future-ready.

Another ongoing program is the Smart Factory Transformation Program where we focus on helping M&E companies on their digitalization journey towards smart factories. This program includes visits to companies that had successfully implemented digitalization in Taiwan.

Datin Lorela: I think I'll just add on two more items that are in progress. One is the industry cluster. We thought that if we can group, identify certain clusters, and put them together, it will make sense for us to market this as a Malaysian solution



to the world. That is in the pipeline. The other one we're doing is the M&E industry capability mapping exercise. As of right now, all the programs and everything that we're talking about in the M&E sector are based on pre-pandemic statistics and landscape. This will be the first M&E capability mapping exercise post-pandemic. We are going to start rolling this out in June, and we target to have a report out by the end of the year. I also want to add that we're going to officially launch the PIP program Mr Tiong was mentioning, at the Metal Engineering Expo (MTE) at the end of this month.

Besides that, we thought that since we are helping the companies to increase

and improve themselves, we need to start marketing them as well. Last year, we started an international outreach program. The first one was in the Industrial Transformation Asia Pacific (ITAP) exhibition which was held in Singapore last year. It was the very first Malaysian pavilion organized by MEIF. There were pros and cons, and improvements that can be made, but I think it's important that we started, and the results were quite promising. We found a lot of very useful feedback about people looking at Malaysia in terms of sourcing. Based on the meetings we had and the feedback collected, we will make certain decisions about how to proceed this year.

So these two areas are the bulk of the work that we do, to enhance and fortify, and boost outreach.

3. One of the main concerns of Malaysia's M&E industry is the various non-tariff barriers imposed by countries on M&E imports. In your view, how can the government and MITI help in this?

Mr. Tiong: Malaysia is a country that has a very large number of FTAs with many countries, but most FTAs deal with trade issues. There are non-trade areas



that FTAs do not officially address. We are ready to work with MITI to conduct a comprehensive analysis of the non-tariff barriers imposed by the different countries on M&E imports in key export markets. I'm quite sure MITI must be conducting some level of research on this, but we can offer our industry expertise to help them look into this. This can include an assessment of trade policies, technical regulations, standards, and certification requirements. By working together, we can identify specific barriers that Malaysian exporters are facing, and work towards addressing that. The data collected can also be analyzed to identify trends and patterns, which can help policymakers in their decisions and negotiations with partner countries.

Datin Lorela: Once we collect enough data and analyze it cohesively, we can identify the exact challenges, and design proper training and capacity-building programs to help Malaysian companies better navigate and comply with technical regulations and standards in target export markets.

MEIF currently already has capacity-building programs with the Malaysia Productivity Corporation (MPC) under the Machinery & Equipment Productivity Nexus (MEPN) in relation to the skills gap, talent development, and productivity

enhancement, and once we analyze the data collected on non-tariff barriers we can design more programs for this specifically.

Next is to establish a task force to address the non-tariff barriers that are faced by many sectors in Malaysia. This task force should comprise representatives from MITI, MEIF, and other relevant stakeholders, with a clear mandate to identify and address the specific non-tariff barriers that are impacting the industry. The task force should have a strong focus on evidence-based strategies and should work closely with the Malaysian government to advocate for the needs of the industry.

After we have done all that, we need to develop a strong strategic communications plan to raise awareness of the non-tariff barriers faced by Malaysian exporters. The plan can include outreach efforts with industry stakeholders and foreign governments, with targeted messaging to Malaysian exporters to gain support and create a conducive environment for policy change. At this stage, we would be ready for more collaboration with like-minded countries and international organizations where we can work towards recognizing technical regulations, and conformity assessment procedures, promote the use of international standards, and reduce the burden of compliance. This can include organizing and participating in international forums and working groups to share information and best practices.

And finally, what we need moving forward is a change in mindset and the way change is coordinated. We must remember that we're actually in the same boat together and we are not each other's enemy. While we call for the industry and SMEs to upgrade our skills, the government also should invest in training for the officers, especially when technology is improving and evolving so fast.





4. What are the few other concerns that MEIF would like to highlight to the government that can benefit the players and the economy?

Mr. Tiong: One of the most commonly raised issues is the skill gap amongst our fresh graduates. A skilled workforce is essential for the growth and development of the industry. More emphasis needs to be given to investing in education and skills development to create a pool of skilled workers with the necessary technical expertise and knowledge. This includes the more conventional skills such as mechanical engineering, electrical engineering, welding and fabrication, CNC programming and machining, industrial automation and mechatronics, and quality control and assurance. But it also includes emerging skills such as data analytics and machine learning, cybersecurity, 3D printing and additive manufacturing, and industrial and

autonomous robotics. These are all critical to increasing productivity, quality, and competitiveness in the industry.

Another issue would be access to financing and government incentives. There are already many grants offered by various government agencies that are more capex oriented and some are still under-utilized. For these, there needs to be more refined targeting for each specific outreach program to achieve better results of grant application and utilization. Other financing and incentive programs can include OPEX-oriented packages and assistance. The criteria for the incentives offered should be more flexible, and easily accessible to SMEs.

Datin Lorela: At the beginning of the pandemic, we ran a series of transformation webinars trying to help SMEs in the M&E sector make sense of the pandemic. We wanted to help equip them with some strategies, or at least

some kind of confidence, to start planning better for what their companies want to do. Technology adoption was a big part of it. One of the things that we did back then was to run polls at every webinar asking a variety of questions to get a feel of their mindset, their needs, and their pain points. The answers were sometimes not what we expected.

One of the questions we asked was how they preferred to adopt technology, and whether they preferred to own or lease the technology. We thought that a lot of companies would be more fixated on owning either the machine, the solution, or even the software. To our surprise, 51% of the companies indicated they would prefer to lease the technology, but own the data and run their analytics. 43% didn't care so long as they got the outcomes they wanted. Only 6% of the companies wanted to own the technology they adopted. Most of the available grants out there are CAPEX-driven. Many are matching grants, for the companies that invest to own the technology. But these days a lot of SMEs are more mindful of overheads, and the cash flow to keep operating. They prefer to look at more OPEX-driven things. It would be good to have more of these sorts of financial incentives and funding assistance.

Mr. Tiong: Let me add one more point. If you take a look at our existing industry players, we have many players who are very strong in the backend semicon testing and packaging processes. Many of them are exporting their machinery to more advanced countries. However, few players can do their R&D and conduct proof of concept (PoC). If the industry players were to do everything on their own, it would be very costly. One of the things the government can do to help the M&E players is to set up more centers of excellence to assist them in conducting PoC and developing various prototypes.



Prototyping is one. The other is linking R&D to commercialization and innovation. Universities are doing their research, totally independently of the industry. Industry players, especially the bigger companies, are trying to set up their centers of excellence. If the government can come up with some kind of initiative that marries the industry and the educational institutions that are doing actual research, the results will be quite forthcoming. EPU is looking into initiatives for R&D, commercialization, and innovation to move SMEs up the global value chain. The industry players lack the resources and capabilities to do their R&D, while the research institutions have all the resources made available to them but they don't know what the industry needs. I think the government can play a bigger role to bridge this gap.

5. The recent CPTPP ratification is expected to enable enhanced access to new markets such as Canada, Mexico, and Peru. Could you share with us your hopes and expectations from this?

Mr. Tiong: When we talk about enhanced market access, the most obvious benefit that can come out of that will be

increased exports and market share. We get to export cheaper and easier. We get to diversify our customer base and reduce reliance on traditional markets. Once we can increase our sales volume and move up our value chain, we can create more value-added jobs for our employees.

Datin Lorela: Enhanced market access also means widening sourcing and procurement channels at the same time. We were not able to source effectively from Canada, Mexico, and Peru in the past. Once we announced our ratification, Canada organized a trade mission related to grains very quickly. Traditionally, we take our grains from Ukraine but because of the war, the supply has gone down, and that's why grain-related product prices have shot up. But once Canada introduced their grain exporters to Malaysia, Malaysian importers could look at Canada as a stable source of supply. That's just one example. Of course, that's not M&E but it works the same way. This is just one example of how the widening of sourcing can look like. It makes us more competitive.

The enhanced market access can also provide Malaysian M&E companies with new opportunities to improve their competitiveness, by leveraging local

knowledge and niche expertise to develop innovative solutions that meet the specific needs and requirements of customers in these countries. This can help them gain a competitive advantage and differentiate themselves from the competition. Competitive pricing, innovative and high-quality products, and excellent customer service are all areas for differentiation.

Of course, by demonstrating the ability to enter new markets and meet the specific needs of customers, Malaysian M&E companies can also enhance the reputation of our industry globally as a whole. This can help attract more foreign investments, looking to the Malaysian M&E industry as a gateway to gain access to the wider Southeast Asian market. This translates to more opportunities for collaboration and partnerships within the industry, leading to more opportunities for sustainable growth and development.

It is important to note that all of the above hopes and expectations are feasible, but will require significant effort, investment, and collaboration from all stakeholders involved, including the government, industry associations, and individual companies. MEIF can play a critical role in facilitating this to help achieve these goals.



Interview with Jens Bohnwagner, Chief Executive Officer, XSQUARE Technologies

Automated Warehouse System Solutions with XSQUARE

Jens Bohnwagner

Chief Executive Officer,
XSQUARE Technologies

Jens Bohnwagner is the CEO of XSQUARE Technologies, a growing intelligent warehousing solutions company headquartered in Singapore. Since assuming its helm in 2022, he has been responsible for leading the strategic growth and direction of the business, managing its fundraising efforts, and has overseen its rapid expansion into the APAC region.

Jens is a seasoned entrepreneur and IT veteran with over 20 years of engineering and product development experience across various domains. He served as CTO and co-founder in several international start-ups.

Jens studied Computer Science and holds an undergraduate degree in Electrical Engineering. He has an eye for innovation and simplicity and is passionate about technology and its possibilities, always looking for ways to combine business and customer needs with technical solutions to make a business thrive. He has under his belt a broad spectrum of knowledge including application development, cloud technologies, distributed team management, start-up ventures, quality methodologies, development and deployment, and problem-solving.





XSQUARE Technologies, a Singapore-based intelligent warehousing solutions provider, recently underwent a rebranding and introduced their brand-new suite of Autonomous Mobile Robots.

1. How did XSQUARE Technologies form under Goldbell Group, which has 40 years of experience in the MHE and warehouse industry?

An astute intrapreneur from Goldbell identified the prevailing gaps within the warehousing industry, specifically a growing labor shortage and the need to automate in a brownfield environment, which are significant concerns for established warehouses that are transitioning toward automation. It became evident that the conventional Autonomous Mobile Robots (AMRs) were inadequate in addressing the industry's evolving needs.

Leveraging Goldbell's four decades of rich expertise in material handling equipment and deep understanding of the warehousing industry, XSQUARE Technologies was founded. Our driving force stems from a passionate commitment to addressing the challenges faced by the industry, with a mission to transform intelligent warehousing in the Asia Pacific with proprietary intelligent warehouse automation solutions.

2. Share with us the real-life challenges that warehouse operators face when undergoing warehouse automation. How XSQUARE overcomes that?

Our general observations from these on-the-ground studies in the region are that the majority of the warehouse operators have concerns over three potential problems namely high investment costs, integration and compatibility issues, and the ability to co-exist with their manned operations.

XSQUARE believes that complete end-to-end interoperability is the key to success in automation. As such, XSQUARE's complete range of Autonomous Forklifts and Intelligent Warehouse Orchestrator software system is engineered to interwork seamlessly and safely in manned and existing environments without the need for reconfiguration, optimizing warehouse operations and workflow for maximum operational efficiency.

Also, XSQUARE firmly believes in acting as success agents, accompanying

our customers on their automation journey. We dedicate ourselves to thoroughly understanding their needs, challenges, and pain points. By taking the time to listen and comprehend their unique requirements, we forge a strong partnership built on trust and collaboration.



IN THE HOT SEAT

Firstly, our team of engineers will first consult our clients on their automation needs and goals to gather information and knowledge about their operations before discussing in detail the solutions that will be made available to them. This discussion will revolve around their budgeted investment versus the throughputs and benefits that they can derive from XSQUARE's solutions. Secondly, we will assess if there is a need to integrate our hardware and software with existing solutions that the warehouse already has in place. The beauty of our solutions is that our research scientists have designed our hardware and software to be interoperable with other brands of solutions, ensuring that they are compatible so that warehouse operators do not need to overhaul existing warehouse infrastructure and sub-systems. This is especially important for warehouse operators that have previously failed in their automation journey or are seeking an upgrade. Our ability to interoperate the existing systems will also eliminate operational downtime. Lastly, we will also provide training services to workers at the warehouse once the journey of automation is completed. This would ensure that the workers who are well-versed with the systems will now take on the role of a conductor and oversee the new orchestration of warehouse operations.

Our tailored approach ensures that we develop solutions that address the unique needs of each customer. We work closely with them every step of the way. Through this collaborative partnership, we strive to create a seamless integration of our intelligent warehouse solutions into their existing operations from end-to-end for true interoperability. We are committed to not only providing cutting-edge technologies but also offering the expertise and guidance needed to navigate the complexities of warehouse automation successfully and achieve their automation objectives efficiently and effectively.



3. What is the role intelligent warehouse solutions providers play that will determine if the transition to warehouse automation will be a success?

While the concept of warehouse automation has been simplified over the years, with just the implementation of AGVs and WCS, what determines success is whether or not the solutions will meet the needs and goals of warehouse operators. Every warehouse faces different challenges and will need different solutions. In other words, a one-size-fits-all solution is inadequate. Here are some key aspects that will help with success:

1. Expertise and Consultation:

Diagnose the problem while assessing warehouse needs before recommending solutions.

2. Easy Transition:

Simplify the transition process by ensuring that the proposed solutions can easily integrate and work harmoniously with manned and existing warehouse configurations.

3. Interoperability:

All components whether hard- and software solutions must interwork seamlessly with one another, enabling interoperability between diverse warehouse operations for effortless intralogistics.



4. Significant Productivity Improvements:

Optimise processes and implement automation solutions to solve challenges and drive significant productivity improvements.

5. Ongoing Support and Maintenance:

Offer continuous support even after implementation, monitoring automation system performance, providing troubleshooting assistance, and making necessary adjustments to ensure customers are meeting their automation goals.

6. Operational and Safety Training:

To ensure that operators understand how to efficiently use the solutions to optimize workflows and maximize productivity, as well as how to safely interact with the autonomous forklift to avoid potential hazards, and respond to emergencies.

4. What are the driving factors behind XSQUARE's adoption of warehouse automation?

Our success at XSQUARE is driven by our commitment to achieving interoperability for our clients, allowing them to experience the true benefits of automation. We pride ourselves on delivering tangible results and effectiveness, even in brownfield or hybrid operating environments. Our track



record of repeated orders from satisfied customers serves as a testament to our accomplishments.

The COVID-19 pandemic has further accelerated the adoption of automation solutions in the APAC region. Businesses are investing in robotics, autonomous mobile robots (AMRs), and warehouse control systems (WCS) to ensure social distancing, reduce human contact, and improve operational efficiency. Our solutions have proven its worth for warehouse operators to implement a 'third shift' as well as resume operations even when workers are unfit for work, yet without replacing workers completely as our technology still works hand-in-hand with human operations, fostering a harmonious collaboration.

5. Can you share with us the key factors to consider when adopting warehouse automation?

The implementation phase of warehouse automation will become complex or even troublesome if the conceptualization phase is not well thought out. When adopting warehouse automation, operators should bear in mind the following factors:

1. Needs Assessment:

Conduct a comprehensive assessment of your current warehouse operations and identify areas that can benefit from automation. Operators should first understand your specific requirements, pain points, and goals to determine the most suitable automation solutions for your business.

2. Integration with Existing Systems (if any):

Assess how the proposed automation solutions can integrate with your existing warehouse management systems (WMS), inventory management systems, and other software. Seamless integration is crucial to ensure smooth data flow, real-time visibility, and efficient coordination between different systems.





3. Demonstrate Tested and Proven Results:

Assess vendors based on their track record of successful projects with other customers. Look for evidence that their solutions have been tested and executed effectively to ensure credibility.

4. Employee Training and Adaptation:

Plan for proper training to upskill your workforce to ensure a smooth transition to automated operations. Involve your employees in the adoption process, communicate the benefits of automation, and provide training to ensure they can effectively work alongside the automated systems.

5. Safety and Risk Mitigation:

Assess the safety measures and risk mitigation strategies provided by the automation solutions. Ensure that the systems comply with relevant safety standards and regulations. Implement proper safety protocols, including training employees on working safely with the automated equipment.

6. Long-term Support and Maintenance:

Consider the availability of ongoing support, maintenance, and software updates from the vendor. Ensure that

you have access to technical assistance and that the vendor can address any issues promptly to minimize downtime.

By carefully considering these key factors, you can make informed decisions and successfully adopt warehouse automation that aligns with your business needs and maximizes the benefits of automation technologies.

6. There have been a few controversial takes on warehouse automation, specifically the narrative and constant debate on how it will replace human jobs. What's your view on this?

While automation has the potential to automate repetitive and routine tasks traditionally performed by humans, it does not necessarily mean widespread job replacement. Instead, it leads to a transformation of job roles and the creation of new opportunities for workers.

Implementing warehouse automation can break traditional barriers that warehouses face, such as labor shortages, operational inefficiencies, poor inventory management, and suboptimal order fulfillment. By automating repetitive tasks,

workers can be freed up to focus on more complex and value-added activities that require human skills such as problem-solving, critical thinking, and customer interaction.

Additionally, automation can enhance the productivity of the workforce through multi-skilling. Workers can be trained to operate and manage automated systems, thereby expanding their skill sets and making them more versatile in the evolving workplace. This multi-skilling approach not only enhances individual productivity but also strengthens the overall workforce and creates opportunities for growth and career advancement.

It is important for businesses and stakeholders to proactively address concerns related to job displacement. This can be achieved by implementing appropriate measures such as reskilling and upskilling programs, providing training opportunities, and fostering a culture of continuous learning. By embracing automation as a tool to augment human capabilities rather than replace them, businesses can create a harmonious balance between technology and the workforce.



UNIVERSAL ROBOTS



Universal Robots Showcases Innovative Collaborative Robots to Help Drive Higher IR4.0 Adoption in Malaysia's Manufacturing Sectors

Danish cobot leader to exhibit cutting-edge robotics technology & automated solutions at Malaysia's largest metalworking and automation exhibition from 31 May to 3 June 2023

MALAYSIA, 29 May 2023 – Universal Robots (UR), the Danish collaborative robot (cobot) manufacturer, will showcase its innovative collaborative robots and automated solutions at Malaysia's largest metalworking and automation exhibition. Metaltech and Automex 2023 is scheduled to take place from 31 May to 3 June 2023 and draw up to 15,000 trade visitors across 45 countries. Held yearly since its

inception in 1994, the trade fair is back to being a fully physical event at Malaysia International Trade and Exhibition Center (MITEC) after hybrid and virtual renditions in previous years due to the COVID-19 pandemic.

“After a fully virtual exhibition in 2021 and a hybrid arrangement last year, we are excited to finally showcase our

cobots to a fully physical crowd this year,” said Marvin Ming, Country Manager Malaysia, Universal Robots. “Through a hands-on experience with our cobot, visitors will have a better understanding on what they have to offer, and envision how best they can be implemented within their businesses.

EVENTS HIGHLIGHTS



According to the Ministry of Science, Technology and Innovation (MOSTI), Malaysia's robotics market is projected to reach RM103.1 billion by 2023, surpassing the target set in the National Robotics Roadmap 2021-2030. In addition, Malaysia's robotics market is forecasted to produce over 4,742 units of robots at a compound annual growth rate (CAGR) of 16.77 percent by 2027.

A recent working paper on Industry 4.0 (IR4.0) Technology Adoption in Malaysian Manufacturing by Asian School of Business - Centre of Technology, Strategy and Sustainability, revealed that the Malaysian manufacturing sector, which comprises mostly second or third tier suppliers, rely mainly on labor-intensive production of low complexity products at high volume. Compounded by seasonal customer demand, these

companies are not inclined to invest in expensive capital machinery.

“We hope to give businesses eager to make the progressive shift towards automation more insight and a better understanding as to how cobots can help them move up the value chain through working hand-in-hand with humans,” added Ming.

A diverse range of UR cobots will be on show, with the UR3e, 5e, 10e, and 16e set to demonstrate their wide reach of applications — such as palletizing, machine tending, and welding capabilities live. From the UR3e's lightweight 11.2kg design, to the 16e's payload capability of 16kg, the cobots on display can satisfy the varying needs of different businesses looking towards automating their workflow.



Palletizing

The exhibits will feature a UR10e in a palletizing application with various UR+ products such as Schmalz suction-based gripper, Ewellix LIFTKIT and SICK nanoScan3. This is a simple demonstration of a machine that runs at the end of production lines stacking heavy boxes onto pallets with the assistance of the Schmalz gripper. Ewellix LIFTKIT is a useful tool to tackle challenges in stacking additional layers onto the pallet. A combination of these solutions will be beneficial in both eliminating Repetitive Strain Injury (RSI) in operators and creating a safe workplace for all.

Machine Tending

The machine tending application has a UR16e robot performing loading and unloading process into a mock CNC machine together with Schunk MTB application kit, consisting of a robot-mounted Dual gripper and Vise, plus

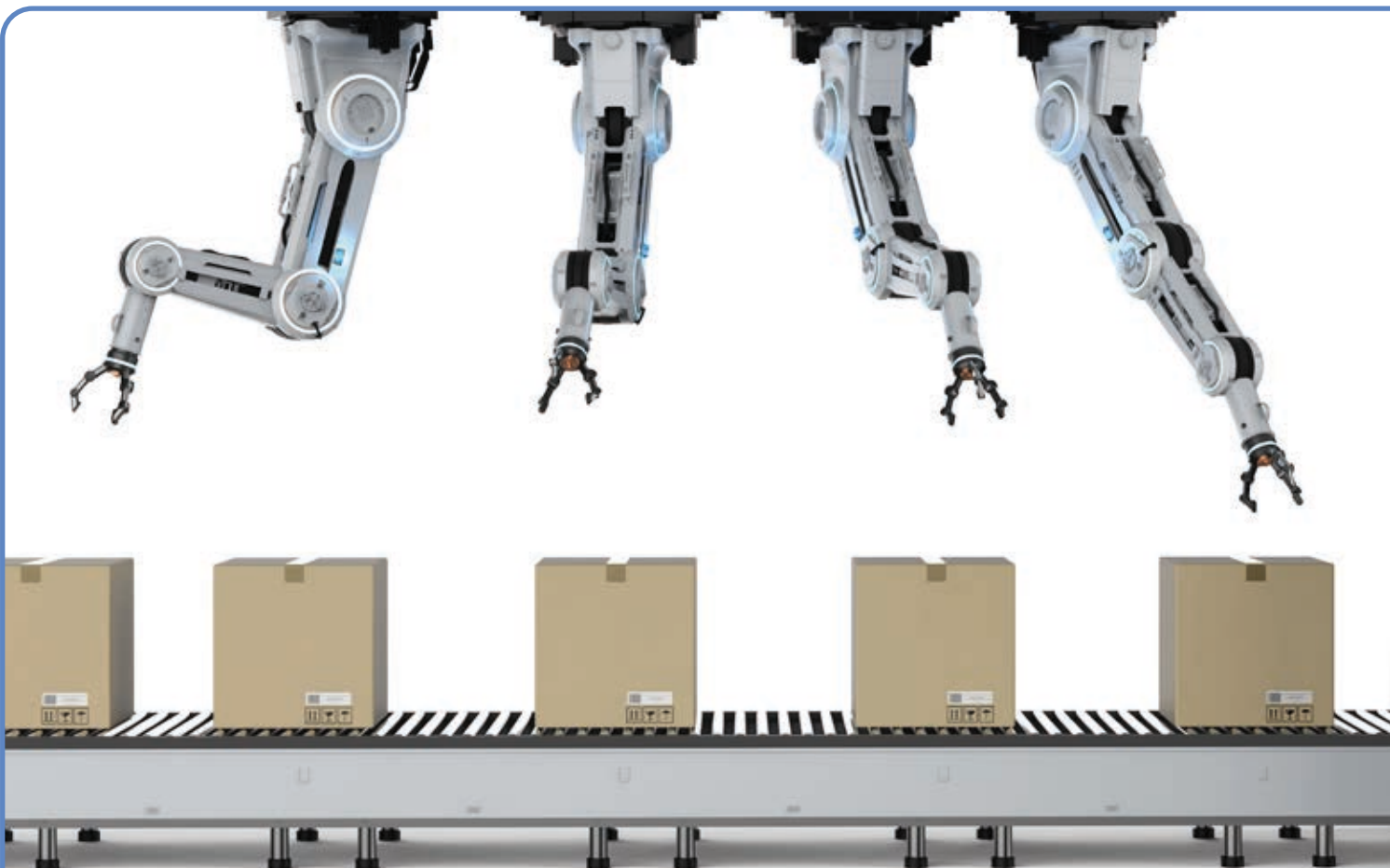
Zimmer gripper as a simulated chuck. The robot picks raw materials from an infeed tray, and loads it into the CNC machine for it to perform its process. The Dual gripper has an attached blower which serves to blow away unwanted machine debris and fluids before unloading the workpiece from the vise or chuck and loading in a new blank and outfeed tray. Cable management is greatly assisted with the Igus triflex energy chain that conceals the pneumatic hoses and electrical wiring, preventing unintentional damage to them. This demo shows the use of the robot for a task that is repetitive, freeing up the human operator for more value adding processes.

Welding

A welding cobot — the UR5e, will be set up with an easy-to-use welding package, SmoothTool, to utilize a welding torch mounted at the end of the robot. It can be easily taught to replicate a series of

motions to replicate what a human welder would weld. The thick welding cable is secured snugly and nicely on the robot with Iigus' cobot mounting bracket. The intention of the welding robot is to allow the welder to teach the robot to weld the simpler parts, ultimately freeing up the person to focus on more complicated welds.

“Cobots have grown in popularity over the years and have been widely embraced by the local market - especially since the onset of COVID-19. Labor shortages have been a real concern for manufacturers locally, and cobots deliver a cost-effective yet low-risk solution that is easily deployable and flexible for a multitude of applications,” concluded Ming.





ITEX DRIVES INVENTORS TO REVERSE CLIMATE CHANGE THROUGH TECHNOLOGY

Prioritizing climate change, ITEX is encouraging inventors to push the boundaries of creativity and innovation to drive new climate technology

Kuala Lumpur, 11 May 2023 – The International Invention, Innovation, and Technology Exhibition (ITEX) 2023 has taken a bold step towards addressing the climate crisis by uniting inventive minds from around the world to create sustainable climate technology solutions. The exhibition, which runs from **11 to 13 May** at the **Kuala Lumpur Convention Centre**, is a crucial platform for showcasing ground-breaking innovations designed to reverse climate change and protect our environment.

At the opening ceremony of ITEX, YBhg Academician Tan Sri Emeritus Professor Datuk Dr. Augustine S.H. Ong, the President of the Malaysian Invention and Design Society (MINDS), emphasized the significance of this year's theme, "Technology Reversing Climate Change". Tan Sri Ong stated, "Climate change is a complex problem that requires a concerted effort from all sectors of society. ITEX's theme aims to spur the industry towards adapting technologies that can reverse the damage of climate change and help us do better as stakeholders of the environment."

Yang Berhormat Tuan Chang Lih Kang, the Minister of Science, Technology, and Innovation, also expressed his enthusiasm for the impact ITEX can have on addressing climate change. He said, "With ITEX's theme 'Technology Reversing Climate Change,' I am excited to see the innovative, new solutions that have been



built on technology that is energy efficient or uses renewable energy sources, cuts carbon emissions, and uses recycled or reusable materials."

The Minister also commended ITEX for its role in advancing invention and innovation in the country and encouraging the growth of local inventors, in line with 'Daya Cipta' or Innovation in the Malaysia MADANI acronym. He noted that the exhibition works in tandem with the Government's ambitions to spearhead future-oriented policies crafted to spur home-grown creativity and expertise, as well as empower the rakyat to develop solutions toward a peaceful and prosperous Malaysia.

ITEX 2023 received over 700 invention entries, with more than 80% focusing on climate technology solutions. Local

institutions and individuals made up nearly 60% of the participants.

This year's exhibition saw 19 countries and regions participating, marking a return to fully in-person events after three years.





Held concurrently with ITEX is the World Young Inventors Exhibition (WYIE), which unites young inventors from Malaysia and across the globe. WYIE includes the Asian Young Inventors Exhibition (AYIE) and Malaysian Young Inventors Exhibition (MYIE), providing a platform for inventions to reach the market through funding opportunities for commercialization and patent registration.

ITEX offers a unique opportunity for inventors to connect with investors, venture capitalists, industry experts, and key stakeholders to turn their innovative ideas into marketable realities. Participants can also benefit from a wide range of programs, including TechTalk@ITEX, Pitch4Fund, and Young Inventor Showcase.

The exhibition exuberantly celebrates inventors' achievements through a series of distinguished awards, applauding their hard work and unwavering dedication. The pinnacle of this recognition is:

- Malam Budaya Cipta: A star-studded awards gala night that serves as the grand finale of the exhibition, paying tribute to the most exceptional inventors in a spectacular and unforgettable evening of glamour and prestige.
- Local and International Awards: Acknowledging successful inventors and their ground-breaking contributions.

Key ITEX special awards include:

- Asian Invention Excellence Award
- ITEX Golden Award (awarded to the organization with the most gold medals)
- ITEX 2023 Best Inventions Awards
- ITEX 2023 Best Woman Inventor Award
- ITEX 2023 Best Women Invention Award
- ITEX 2023 Best Green Invention Award
- WYIE Best Young Inventor Excellence Award
- AYIE Best Young Inventor Award
- MYIE Best Young Inventor Award
- Local & International Sponsored Awards

ITEX 2023 is jointly organized by the Malaysian Invention and Design Society (MINDS) and C.I.S Network Sdn Bhd (C.I.S). For more information on ITEX and to register for ITEX 2023, visit www.itex.com.my.

About ITEX

The International Invention, Innovation & Technology Exhibition (ITEX) is an annual exhibition that features the best innovations from Asia and beyond. Initiated by the Malaysian Invention and Design Society (MINDS) in 1989 as MINDEX, today ITEX is the region's leading exhibition to showcase new inventions, technologies, and products, targeted at securing investment, manufacturing, and commercialization

prospects and partners. The exhibition features inventions across more than twenty categories related to innovation or technology. ITEX is Malaysia's longest-running invention, innovation, and technology exhibition.

The World Young Inventors Exhibition, incorporating the Asian Young Inventors Exhibition and the Malaysian Young Inventors Exhibition are held concurrently at ITEX. This component aims to encourage STEM education among primary and secondary school students.

About MINDS

Founded in 1986, the Malaysian Invention and Design Society (MINDS) is the largest body in Malaysia representing individuals, universities, and companies who pursue excellence in invention, creativity, innovation, research and development, and industrial design. MINDS is responsible for promoting high standards of invention and design, fostering professionalism, and encouraging continuing professional development amongst its members.

About C.I.S

C.I.S is an established regional trade and lifestyle exhibition organizer based in Kuala Lumpur, Malaysia. Formed in 1994, the company has built a strong reputation for organizing trade and lifestyle exhibitions in Malaysia and Indonesia.

C.I.S — the acronym of its name stems from Concept, Innovation, and Strategy. Its vision is to deliver its commitment to its clients through a shared vision and strategic partnerships in creating high-powered, multi-pronged exhibitions and events.

Smart Manufacturing and Logistics Exhibition: Gateway to Saudi's Industrial Landscape

By Dr. Akram Masri, Chief of Operations, Riyadh Exhibitions Company

Saudi Arabia has undergone significant transformations in recent years, particularly in its industrial sector, with the implementation of smart manufacturing and logistics technologies. With the government's emphasis on diversifying the economy and reducing dependence on oil, the country has been investing heavily in infrastructure and technology, particularly in the industrial sector, to boost productivity and efficiency.

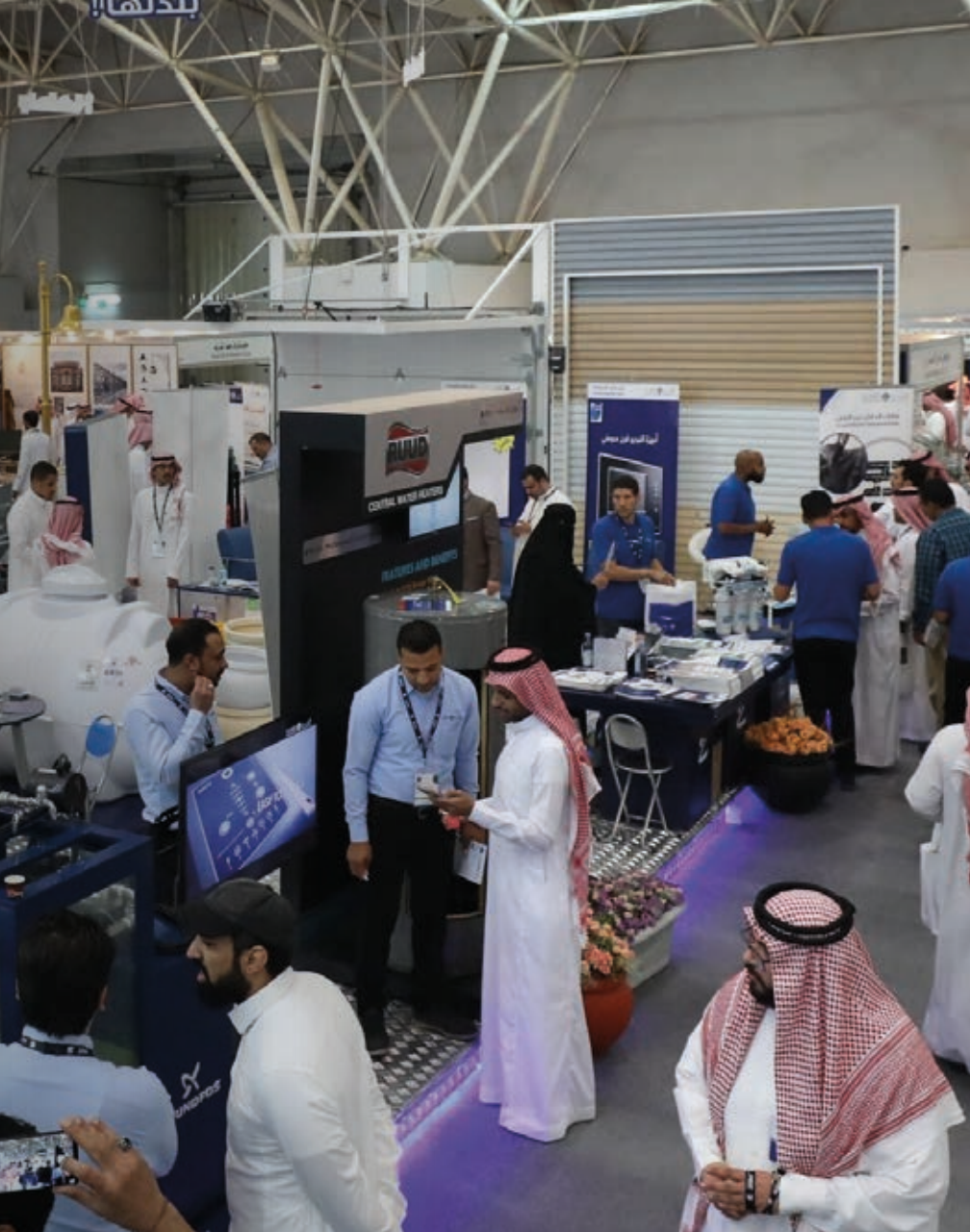
To further promote economic diversification and industrial growth, the Saudi Arabian government has launched initiatives such as the National Industrial Strategy (NIS) and the Future Factories Program. These programs aim to increase the number of factories in the country, triple manufacturing GDP by 2030,

and transition 4,000 factories to smart manufacturing and logistics technologies. This presents unique opportunities for global businesses across industries to establish new partnerships, build brand awareness, and gain valuable insights into the latest trends and technologies shaping the country.

Two upcoming events, the International Logistics and Material Handling Exhibition and Summit, and the International Industrial Automation and Retrofitting Exhibition and Summit, provide a platform for forward-thinking business leaders to showcase their innovative solutions and explore opportunities in the growing Saudi Arabia smart manufacturing and logistics markets. Both exhibitions are being

organized by the Riyadh Exhibitions Company LTD in June, alongside the 18th Saudi Printing and Packaging and Plastics and Petrochemical Exhibition, which is the largest industrial sector gathering in the Middle East.

The Saudi Arabia smart manufacturing market is forecast to grow many folds in the coming years, driven by the need to reduce operational costs, increase productivity, and optimize resources. With a focus on Saudi Vision 2030 initiatives, Riyadh has cemented its position as the epicenter of the largest manufacturing sector in the Middle East, fueled by ongoing investments exceeding US\$1.76 trillion. This investment is leading to the development and implementation of smart manufacturing technologies, which



Saudi Arabia. This industry is already a major player in the international market, with a market size of US\$18 billion and a 55 percent share of the GCC market. With the National Transport and Logistics Strategy budgeted at US\$163.5 billion, the sector has tremendous potential for businesses to introduce innovative products and solutions that can revolutionize the industry. Additionally, the country is undergoing a large infrastructure development program, including the construction of new highways, railways, ports, airports, and logistics parks, which creates an opportunity for businesses to provide construction equipment, transportation services, and logistics solutions.

Similarly, the growth of eCommerce in Saudi Arabia is expected to continue to drive demand for logistics and last-mile delivery services. With the Saudi Arabia eCommerce industry expected to reach \$20 billion in 2027, businesses that offer innovative technologies and solutions in areas such as route optimization, tracking and tracing, and warehouse management can explore opportunities during this Summit.

enable real-time monitoring and control of manufacturing processes, as well as predictive maintenance and quality control.

As the sector continues to grow, the International Industrial Automation and Retrofitting Exhibition and Summit present an ideal platform for businessmen, industry professionals, decision-makers, innovators, startups, and sellers to come together and showcase their innovative solutions and forge new alliances. Held under the patronage of the Ministry of Industry and Mineral Resources, the exhibition focuses on industrial revolution technology, factory automation solutions, retrofitting, and capacity building. The Exhibition reiterates the Kingdom's commitment to accelerate the technical

transformation of over 4,000 factories to meet "4th industrial revolution technological standards" and ensure that businesses stay ahead of the curve in adopting the latest technologies and practices.

The Exhibition, along with its collocated industrial trade fairs, international summits, and technical workshops, also offers a unique platform to build brand awareness, establish new partnerships, and gain valuable insights into the latest trends and technologies shaping the industry.

Meanwhile, the International Logistics and Material Handling Exhibition and Summit will facilitate businesses entering the transport and logistics industry in

Concurrent with these Exhibitions, the 18th Saudi Printing and Packaging and Plastics and Petrochemical Exhibition present a perfect opportunity to explore new partnerships and expand reach in the fastest-growing global economy.

Saudi Arabia's commitment to smart manufacturing and logistics is reflected in the growth of these exhibitions and conferences. These events provide a gateway to the country's industrial landscape, showcasing the latest innovations and technologies that are transforming the industry. By attending these exhibitions, companies can gain valuable insights, forge new partnerships, and explore business opportunities in Saudi Arabia's thriving industrial sector.



BRIDGING THE MANUFACTURING SKILLS GAP: SEMINAR HIGHLIGHTS

COLLABORATIVE APPROACH TO UPSKILL FUTURE TALENT IN M&E INDUSTRY

25 May 2023, Shah Alam - Malaysia Productivity Corporation (MPC), in partnership with the Machinery & Engineering Industries Federation (MEIF), hosted a groundbreaking seminar titled “Process Improvement & Technology” to address the manufacturing skills gap prevalent in the Machinery & Equipment (M&E) industry. The event, held in conjunction with the Metal Engineering Exhibition (MTE) 2023, brought together distinguished industry experts, educational institutions, and government representatives to explore a collaborative approach to upskilling future talent for industry readiness.



The seminar, organized by the Machinery and Equipment Productivity Nexus (MEPN), received full support from MPC and aimed to enhance productivity, drive growth, and bridge the talent rescue gap in the M&E subsector. The Chairman of Talent Development Work Group MEPN, Mr. Tiong Khe Hock, emphasized the importance of equipping M&E players with a lean and continuous improvement mindset through the Process Improvement Program through Technology (PIP).

Addressing the audience, Datin Lorela Chia, Vice President 1 of MEIF, highlighted the crucial role of building a comprehensive ecosystem in the M&E industry, emphasizing talent, skill, productivity, innovation, and profitability. The integration of multiple stakeholders and the coordination of efforts are vital to boost domestic consumption and strengthen the industry’s position in the global value chain.



Dr. Mohamad Norjayadi Tamam, Director of the Technology Section at MPC, underscored the significance of the seminar in enhancing productivity within the Machinery & Equipment subsector. Through the PIP, MPC aims to equip the upcoming workforce with essential skills required in the rapidly evolving technology landscape. The collaborative effort between educational institutions, industry pioneers, and government support is key to preparing young minds for success.

Dr. Norjayadi stressed the importance of practical experiences and exposure to cutting-edge technologies through internships, apprenticeships, and mentorship programs. Industry mentors were recognized as catalysts in guiding and inspiring students, enhancing their employability, and creating a pipeline of skilled individuals. The government's focus on future talent development, particularly in technical and vocational



education and training (TVET) programs, aligns with the industry's need for work experience opportunities and exposure.

The seminar served as a platform to exchange insights, learn from real-life examples and case studies, and foster collaborative efforts to bridge the

manufacturing skills gap in the M&E subsector. This collaborative approach, driven by industry experts, educational institutions, and government support, creates an ecosystem for young talents to flourish and contribute to Malaysia's sustainable growth.

EMBRACE THE FUTURE OF CUTTING-EDGE MANUFACTURING AT METALTECH & AUTOMEX 2023

The largest machine tools, metalworking automation exhibition in Malaysia begins its highly anticipated four-day run at MITEC

The golden gate of the 27th landmark METALTECH & AUTOMEX exhibitions opens at the Malaysia International Trade and Convention Centre (MITEC), welcoming top global industry players from the machinery and automation industries for a week filled with gilt-laden business and networking opportunities.

This ground-breaking four-day event, the biggest of its kind in Malaysia, will showcase over 1,500 brands and companies from 13 countries, with over

15,000 trade buyers and visitors from 40 countries and regions expected to attend. METALTECH & AUTOMEX 2023 is pleased to announce that this year's edition will feature 5 national pavilions which are from China, Germany, Korea, Singapore, and Taiwan where they will provide a glimpse into the future of manufacturing and automation.

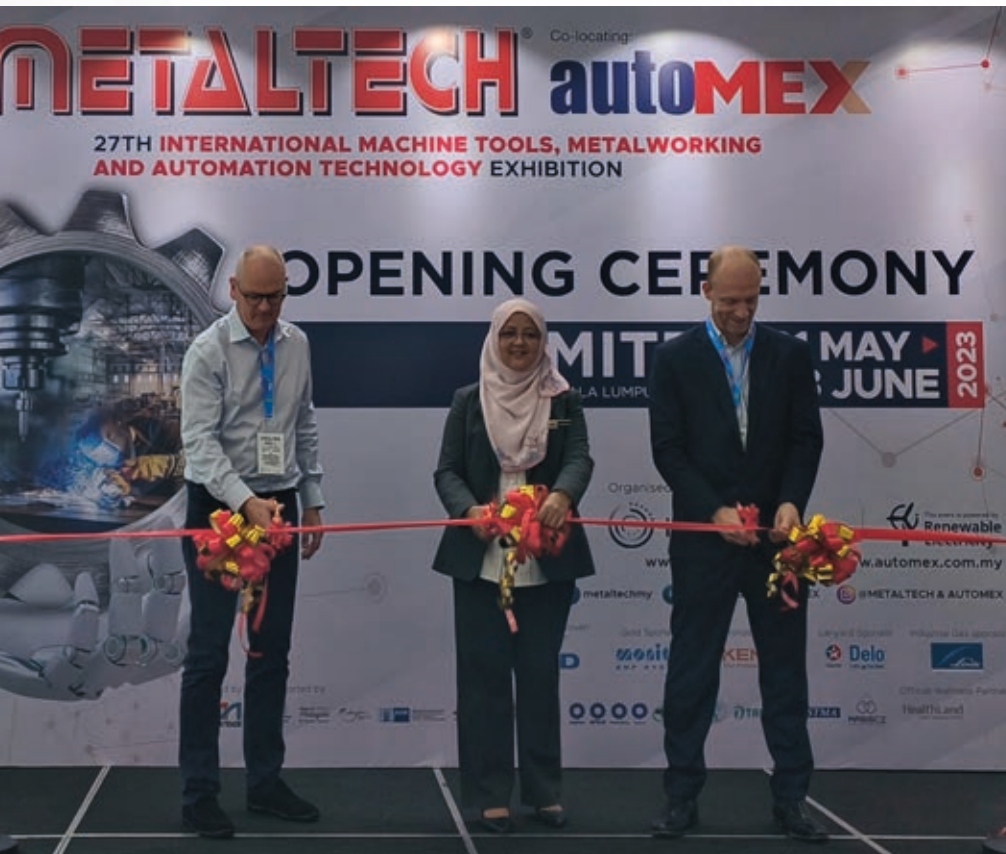
In addition to being a gateway to discover new technologies, METALTECH & AUTOMEX is also a beacon for knowledge sharing. Attendees can expect a jam-packed three-day slate of industry-leading seminars that offer valuable industry insights for professionals in the field.

“To ensure global competitiveness, all modern sustainable manufacturing companies need to harness cutting-end new technology to optimize productivity and elevate operational efficiency to a new height. We remain committed to elevating METALTECH & AUTOMEX as the ultimate platform for professionals to explore latest technology and a hub of knowledge sharing for professionals,” said Mr. Gerard Leeuwenburgh, Country General Manager of Informa Markets in Malaysia.

This edition, we are eager to announce that we will have two concurrent product launches that will be happening during the event. Both Bosch Rexroth and Precision Machinery Research and Development Centre (PMC) product launches will take place on 1 June 2023, at 2pm (Malaysia time).

“With ctrlX AUTOMATION now available in Malaysia, Bosch Rexroth enables businesses to have a modular, scalable, and compatible solution without a huge investment from the get-go,” said Michel Gunawan, President and CEO, Bosch Rexroth ASEAN and Oceania.

Furthermore, attendees will witness exclusive product launches from leading Taiwanese companies brought together by the PMC. Global brands such as HIWIN, Hsin Huan Lung, Joen Lih, Shin-Yain (SYIC), Syntec, and Tongtai will present their latest advanced innovations for high-accuracy metalworking, precise surface grinding, efficient workpiece clamping and automated marking, amongst others.





Informa Markets would like to extend our deepest gratitude to all partners and sponsors of METALTECH & AUTOMEX 2023. We would like to give a special shoutout to our Platinum and Non-Woven Bag Sponsor, LVD Sdn Bhd, a world leader in machine tools and software solutions for sheet metalworking.

We also appreciate the support of our Gold Sponsor, Monitor ERP Sdn Bhd, Bronze Sponsor, Tigatan Resources (M) Sdn Bhd, Lanyard Sponsor, Chevron Malaysia Limited, and Industrial Gas Sponsor, Linde Malaysia. We are thrilled to welcome Healthland, a pioneering Malaysian chain of one-stop wellness centers, as our official wellness partner for the event.

For the past decade, METALTECH & AUTOMEX has pioneered the growth of metalworking, machinery, robotics, and automation industry in Malaysia being the first dedicated business event to represents



various sectors of the manufacturing industry including electrical & electronics, automotive, aviation, food & beverages, plastics & rubbers, pharmaceuticals, and medical technology. The annual

event hosts more than 22,000 gross sqm, over 1,500 exhibitors and attracts more than 15,000 trade visitors from various countries & regions.

Bosch Rexroth Malaysia Launches ctrlX AUTOMATION to Meet Industry 4.0 Demands

Nowadays, software development accounts for a significant part of the engineering work in mechanical engineering. Software tools from the world of IT are playing an ever-greater role too. For machine manufacturers, software is valuable intellectual property. After all, it is a product of their know-how which helps to maximize the productivity of machines and systems. Through software, they stand out from the competition and can offer individual customer variants in a cost-effective manner. For machine users, being able to connect machines to their IT systems easily is becoming increasingly important. The communication capabilities of machine software are thus a key purchasing criterion.

The consumer and office worlds – a model

Previous automation solutions reflect this shifting only to a certain extent. In many cases, they tie software developers to proprietary systems or provide island solutions which are difficult to integrate. Worse still, they restrict software developers to a few programming languages from the world of automation and do not allow access to core functions. The consumer and office worlds show the route that needs to be followed: complex programs for individual platforms like PCs have long since been replaced by apps which run on all device classes. Software solutions can be connected wirelessly and



operation is easier than ever before. New devices in networks, whether they are in offices or at home, connect automatically and are recognized by other devices.

Hardware for all applications

A modern, future-viable automation solution should take all of this into account. It should provide a high-performance hardware platform for all automation tasks. Software programmed once should work on embedded controls, in IPCs or in drives themselves. As a result, machine manufacturers can scale their solutions with no additional outlay and keep better control over their range of different variants.

App technology is revolutionizing engineering

The standardized PLC and CNC languages are still important, but they are not enough. Machine manufacturers need to be able to implement their know-how in the widespread high-level and Internet languages too. In the future,





they will combine machine, process and communication apps like apps on a smartphone in order to meet individual customer requirements and provide further apps over the course of the life cycle. This will change the entire engineering process. Machine manufacturers will be able to use development platforms like GitHub, where millions of users program and provide functions in C languages, Python, Blockly and many other languages. A key requirement here is a central nervous system for control purposes which ensures that real-time and non-real-time data can be exchanged for all apps.

Openness means future viability

A third requirement is absolute openness both within automation systems as a result of open standards and towards the Internet of Things and higher-level IT. This is the only way to ensure that

software developers and engineers can combine the best components regardless of the manufacturers. The openness for the connection to IT systems, whether on premise or in the cloud, is a mandatory prerequisite for all types of machines and systems. End users need this openness in order to implement Industry 4.0 or the Factory of the Future. At the moment, around 30 different standards and protocols for exchanging data with IT systems are available.

The new ctrlX AUTOMATION platform meets the requirements as regards future-viable automation: it is based on an end-to-end, high-performance hardware platform for all applications. With its app technology, it gives machine manufacturers an unprecedented degree of freedom to create functions in virtually any programming languages while protecting company know-how. It also allows these functions to be combined on an individual basis. ctrlX AUTOMATION is the most

open automation platform available on the market. It supports numerous open standards within the world of automation and allows access to key control system functions. Most importantly, it offers more than 30 communication options for IT systems and the IoT and thus ensures that machines can easily be connected in the Factory of the Future.



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