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THE STAR, SATURDAY 17 DECEMBER 2022

E&E: 50 YEARS IN MALAYSIA

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Favourable FDIs a boon for Malaysian economy

THE Malaysian economy is on the path of recovery despite the post-pandemic headwinds, with Foreign Direct Investment (FDI) contributing significantly to the country's economic growth, employment and technological development.



Its positive impact on gross domestic product (GDP) and economic growth (in terms of employment generation and contribution to domestic production) has continually increased over time. For Q3 of 2022, the domestic economy registered a sturdy growth of 14.2% (compared to 8.9% in Q2).

Malaysia provides a very favourable business and investment climate with highly competitive tax rates. Our constant economic reforms encourage foreign and local companies to set up businesses here – and we are reaping the rewards.

New and innovative companies are choosing Malaysia as their base as our economy continues to grow and prosper. FDI has surged as more investors want to tap into the opportunities that abound in this dynamic Asian country.

External trade has also continued to register double-digit growth alongside favourable FDI performance. Total trade surged 42% to RM775bil while net FDI registered RM12.3bil in Q3 of 2022 (vs RM17.3bil in Q2).

The manufacturing sector, financial and insurance/takaful, and real estate activities attracted the most FDI, primarily from the US, Japan, the Netherlands, and Singapore.

Investment Performance in E&E

Malaysia is at the heart of The Asia Semiconductor footprint. The country's strategic location and comprehensive infrastructure - including ports, airports, highways, logistics and telecommunications - offer a competitive advantage in business costs.

By establishing operations in Malaysia, investors will gain access to the global market of over four billion people through various FTAs (free-trade agreements) signed with regional and bilateral economic partners.

The country now claims 13% of the world's back-end semiconductor production, which accounts for 40% of its exports. The seamless integration of Malaysian capabilities has also supported the growth of MNCs and LLCs, and this trend will only continue.

Malaysia continues to attract high quality investments in the overall manufacturing

sector, with the total of RM64.9bil for January to September 2022 underscoring the country's appeal.

Among the sub-sectors of the Malaysian manufacturing industry, E&E proves its mettle and robustness by continuously attracting the highest number of investments. In the same period, the sector recorded RM22.6bil in approved investments.

These will contribute to local socio-economic development, bringing entrepreneurial and high-income job opportunities. It is also expected to create over 20,668 new jobs for skilled Malaysians, including engineers, specialised quality controllers and highly trained technicians.

The Malaysian Investment Development Authority (MIDA), the Government's principal investment promotion and development agency, is committed to pursuing a strategic growth agenda that will propel Malaysia as a high-tech regional leader.

"We prioritise high technology, knowledge-intensive, research and development and design (R&D&D), as well as skills-intensive investments that generate multiplier effects such as knowledge acquisition, skills upgrade and creation of high-income jobs for Malaysians.

“ Our initiative includes the Project Acceleration and Coordination Unit (PACU) which provides end-to-end facilitation to assist and monitor project implementation, ”

shared

Datuk Wira Arham Abdul Rahman,
CEO of MIDA.

International Trade Agreements and Partnerships

Building Malaysia's trade policy principles by participating in both the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership (CPTPP) and Regional Comprehensive Economic Partnership Agreement (RCEP) will ensure its competitiveness is sustainable.

Malaysia ratified the CPTPP on Sept 30 this year, and it went into

force on Nov 29. It will boost the country's standing as a global trading economy, with total trade expected to reach USD\$655.9bil (RM3.04tril) in 2030.

By 2033, almost 100% of Malaysian exports to all CPTPP countries will be duty-free. This puts the country in an advantageous position, Arham pointed out.

Explaining further, he said – “This will increase our access to new markets like Canada, Mexico, and Peru, as well as access to larger sourcing channels for a greater variety of high-quality raw materials at low costs, thereby improving the attractiveness of the country as an investment destination.”

The region covered by the RCEP is a critical FDI location due to the highly integrated global value chain (GVC) that binds all members from less developed nations to developed economies.

The RCEP will benefit Malaysian companies from the elimination or reduction of tariffs on goods, while the single consolidated tariff and rules governing it will facilitate export and import of goods among participating countries.

Service providers and SMEs will be able to enjoy greater market access in terms of cross-border supply and establish commercial footprints in RCEP markets.

Arham added - “MIDA is confident that RCEP will further strengthen Malaysia's position as a global supply chain hub in Asia. We can leverage the agreement to attract more global partners and leading companies to set up manufacturing or services hubs in Malaysia to enjoy the market potential and easy access that RCEP offers.”

Government initiatives

On June 5, 2020, the Malaysian Government announced the Special Tax Incentive under the Economic Recovery Plan (PENJANA) for manufacturing companies that wish to

relocate their manufacturing businesses to Malaysia.

Under Budget 2021, the government reiterated its commitment to spur economic recovery through investment in key sectors and make Malaysia a destination for high-value service activities.

Hence, the Special Tax Incentive scope has been expanded to selected services activities, including companies adapting and adopting Industrial Revolution 4.0 and digitalisation technology which have a significant multiplier effect.

Available until Dec 31, 2022, the incentive is targeted to assist companies intending to relocate their operations here following the global economic crisis which led to major disruptions in global supply chains.

Besides that, the government also announced the Special Income Tax Rate at a flat 15% for five consecutive years to non-resident individuals holding key positions (C-Suite) to expedite project implementation of strategic investments made by relocating companies. This is also available until Dec 31, 2022.

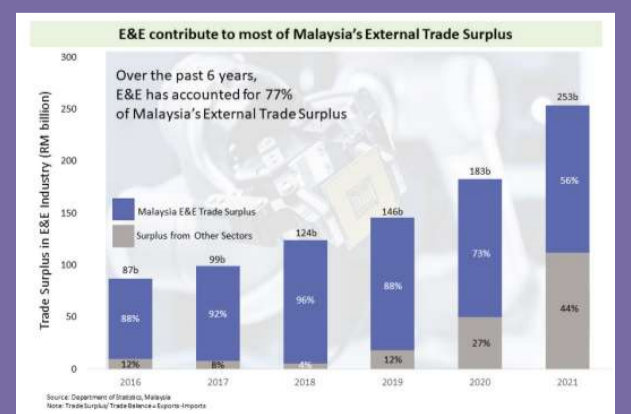
To ensure Malaysia remains steadfast in achieving a developed and high-income nation status, the Twelfth Malaysian Plan (12MP) has identified the E&E industry as a strategic focus area that needs further strengthening, including incentives and grants for R&D, talent up-skilling and re-skilling and digitalisation.

Companies worldwide are identifying Malaysia as a strategic place to set up their operations. The country is also guided by the National Investment Policy (NIP) that was launched recently on Oct 6.

Its goals are to reinvigorate Malaysia's investment landscape to create quality and high-skilled employment opportunities for locals and strengthen the country's competitiveness.

Anchored by The National Investment Aspirations (NIA), the NIP aims to refine efforts in profiling Malaysia as a strategic investment hub in Asia by generating high-value economic impact, accelerating the integration between local industries and supply chains regionally and globally to growing inclusivity to contribute towards socio-economic development measures.

E&E is one of the three targeted sectors under the first wave of investment transformation under the NIP – which has also identified short-term opportunities in leveraging expanding investment potential opportunities in IoT sensors and components, modernise Outsourced Semiconductor Assembly and Test (OSAT) and adoption of solar technologies.



Datuk Wira
Arham Abdul Rahman
MIDA CEO



Representatives of 50 Year Companies posing with (from 8th left) Azmin, Wong and Mustapa during the 50th Anniversary dinner in KL

THE electrical and electronics (E&E) industry is a pillar of the Malaysian economy, contributing 6.85% of the country's GDP in 2021. Since its inception in the early 1970s, it has rapidly grown, resulting in a capital-intensive, knowledge-based and high-tech ecosystem that is at the forefront of innovations today.

Offering a collective voice for all stakeholders, the Malaysia Semiconductor Industry Association (MSIA) was formed in January 2021.

MSIA's objectives revolve around four key areas - R&D and Technology, Eco-system, Advocacy and Global Competitiveness. It sees strategic development of the ecosystem as key to elevating Malaysia's semiconductor companies' global market position and value chain by enhancing their capabilities and capacities.

At the same time, confronting challenges and building relationships with various government and private entities would also lead to the formulation of effective strategies and policies that keep the sector globally competitive.

This would bring immeasurable socio-economic benefit for the country, said MSIA president Datuk Seri Wong Siew Hai. Joining him at the helm are vice-presidents Datuk P'ng Soo Hong and Datuk Lim Yong Jin.

MSIA currently has 204 members covering the entire value-chain - from design to fabrication and manufacturing, assembly, packing and testing - as well as related products including solar technology, automotive components, automation equipment, raw materials (i.e. substrates) and global business services. They account

for over 50% of Malaysia's E&E sector.

To mark the half-century milestone, MSIA held the E&E 50th Anniversary Celebration Dinner at Hilton Hotel KL on May 30 - which was graced by senior minister and minister of International

of member companies.

For Malaysia to be the leading E&E industry engine of the world, it must continue to attract FDI and grow DDI.

We need to double-down on where we are successful and can compete and grow



Guests and dignitaries pictured together at the 50th Anniversary dinner in KL

Trade and Industry Datuk Seri Azmin Ali, as well as minister in the Prime Minister's Department (Economy) Datuk Sri Mustapa Mohamed. This saw the launch of the Silicon Malaysia map plotting the locations

more global champions in automation.

We should encourage more high-valued activity like design and development and attract FDI wafer fabs into Malaysia to enhance the Malaysian E&E ecosystem.

MSIA's important role as a voice for the industry came to the fore during the Covid-19 pandemic when it successfully lobbied the government to recognise the E&E sector as an essential service to avoid catastrophic disruptions to the global supply chain. This ensured the country did not lose out on billions of Ringgit worth of exports.

It also helped implement common SOPs and work-from-home policies for member companies, some of whom also organised vaccination drives for employees.

Recognising the pandemic's impact on the community, its charitable arm MSIA Cares have donated RM3.75mil to various causes including the Klang Valley flash flood victims, Penang General Hospital's Intensive Care Unit (ICU), Penang E-Learning Computer Programme and Tech Dome Penang.

Scan for more information



“ The future is bright for E&E and the Government is putting in place solid plans to elevate E&E towards high value-added and sophisticated products, automation and digitalised operation.

The Government will work hand-in-hand with the industry to strengthen current initiatives and plot a new direction for future programmes.

Let us all embrace the Industry 4.0 revolution to bring about greater agility, accelerated productivity and enhanced global competitiveness for Malaysia. **”**

Datuk Abdul Latif bin Haji Abu Seman
Director general
Malaysia Productivity Corporation (MPC)

“ The E&E industry is a major contributor to our GDP, export earnings, investments and employment with the highest productivity growth amongst the priority sub-sectors as set out in the Malaysia productivity blueprint.

PEMUDAH will work together with the industry to facilitate ease of doing business, boost productivity and competitiveness, as well as continue to grow it as one of the significant high-impact industries as envisioned in the Twelfth Malaysia Plan (12MP). **”**

Datuk Dr. Ir. Andy Seo Kian Haw
Co-chair
PEMUDAH (The Special Taskforce to Facilitate Business)

“ As the U.S. Ambassador, I'm proud to work with leading U.S. high-tech companies in Malaysia because they not only make world-class products, but also train and develop Malaysian men and women to become company leaders.

They give back to their communities, such as during the Covid-19 emergency, while being the vanguard of sustainable manufacturing and renewable energy solutions. **”**

Brian D. McFeeters
US ambassador to Malaysia

“ SEMI congratulates Malaysia in celebrating its 50th year of electronics manufacturing excellence.

This milestone underscores Malaysia's strong position in the global semiconductor value chain.

SEMI wishes Malaysia's E&E Industry a prosperous growth and we look forward to the continued collaborations in the next 50 years and beyond! **”**

Ajit Manocha
President and CEO
Semiconductor Equipment and Materials International (SEMI)

Movers and shakers

WHEN the first wave of multinational corporations accepted the Malaysian government's invitation to establish offshore facilities here, it was a sign of confidence that the country's nascent E&E sector would go places. The global networks and vast expertise these well-known global brands brought in, laid the foundations for a thriving ecosystem and enabled its rapid growth over the decades. The landscape continues to be an attractive one today, enticing existing players to double down on their investments and expand operations or draw in new headline players who are establishing significant facilities that continue to drive new revolutions in manufacturing and technology. These are some of the movers and shakers making waves in the country.



Infineon Kulim's expansion underway

INFINEON Technologies AG is a global semiconductor leader in power systems and IoT which drives decarbonization and digitalization through its products and solutions. Its presence in Malaysia covers a large part of the value-added chain in the semiconductor industry, ranging from wafer processing to R&D, assembly and testing, and business support in three plants located in Kulim, Melaka and Penang.

Opened in 2006, Infineon Kulim is not only the company's first and only front-end wafer fabrication plant in Asia, but also its largest for 200mm wafers, focusing on power semiconductor and MEMs technologies for industrial power management, sensing and

automotive applications. The site is now also a competence center for wafer fabrication and technology development addressing energy efficiency requirements.

Over €2 billion has been invested to build Kulim's third module and bring wide bandgap technology like silicon carbide (SiC) and gallium nitride (GaN) here. This would also generate €2

billion in additional revenue and create 900 high-value jobs which lead to upskilling of talent. The Malaysian government acknowledged this contribution to the country by awarding Infineon Kulim with the Malaysian Digital Economy Industry Appreciation Award 2022 recently.

Globally, Infineon excels in resource efficiency and is committed to carbon neutrality by 2030, befitting its reputation of being among the 10% most sustainable companies in the world. Infineon Kulim supports this by efficiently managing resources, supporting environmental activities and running outreach programmes for the local community.



Lam Manufacturing Malaysia's state-of-the-art facility in Penang

WORLD-LEADING wafer fabrication equipment company Lam Research's RM1bil entry into the Malaysian semiconductor scene at Batu Kawan, Penang, was a momentous occasion.

Opened in August 2021 and known as Lam Manufacturing Malaysia or LMM, the new 800,000sq ft facility on a 34-acre site is the eighth in the corporation's global network, but also its biggest and most advanced. It will serve as a hub for operations in Asia.

LMM general manager Soon Kuek said it caters to market demand for faster, smaller,

more powerful and energy-efficient electronics. This drives innovation and development of new fabrication strategies to enable production of advanced devices with fine, closely-packed features and complex 3D structures.

"Advanced microchips are in many of the products we use every day from mobile phones to computers, entertainment systems and increasingly smart cars. Life without them would be unimaginable," Soon said, adding that they work closely with customers to deliver the products and technologies needed to enable their successes.

By offering critical chip-processing capabilities, Lam's products provide a vital link between the visionary designs for the latest electronic devices and the companies that produce them.

Its presence here also brought significant positive impact for the local semiconductor supply chain, creating opportunities in front-end manufacturing and high value jobs whilst facilitating knowledge transfer.

The company has also taken an active role in nation-building, collaborating with local institutions to promote STEM education and sponsoring or running related programmes and workshops. Through its Lam Foundation as well as employee-run initiatives, it also contributed significantly towards charitable causes such as funding cancer patients and flood relief efforts.



**MADE POSSIBLE.
MADE BETTER.**

AS 'the brand behind the brands', Jabil's products play a key role in people's everyday lives without them knowing it.

Everything from tech gadgets to home appliances to medical devices and automotive from 450 of the world's biggest names come from its 100 locations in 30 countries worldwide including Malaysia. Since starting operations in 1995, the company now runs two locations in Kedah and eight in Penang - including its Global Business Centre in Bayan Baru staffed by a 1,000-strong team.

"From manufacturing circuit boards, we have evolved to deliver innovative, integrated and tailored solutions to

equipment manufacturers and product companies across a broad range of industries such as healthcare, computing and storage, networking, optics, telecommunications, automotive, home appliances, capital equipment, defense and aerospace, industrial and energy, semiconductors, mobility, smart homes and more," said Jabil South Asia VP of operations Low Choon Yien.

Indeed, Jabil Penang has been - and still is - manufacturing critical products that directly and indirectly contribute to the fight against Covid-19. The team here was granted several US and Malaysian patents this year, to add to

the over 70 papers it had published in international journals and magazines since 2014, a testament to its culture of innovation.

Having a foundation of great people is key and throughout the company's Malaysian journey, it has trained and upskilled countless many. Its award-winning community outreach programme, Jabil Cares, also partners with local organisations in the core focus areas of education, empowerment and environment - which has been recognised by the Malaysian AMCHAM Cares Excellence Awards under the CSR category for three years running.



Jabil Global Business Centre in Penang



CELESTICA enables the world's best brands through high-reliability design, manufacturing and supply chain solutions that solve complex technology challenges.

With over 40 manufacturing and design centres employing 23,000 globally, its flexible, innovative and industry-leading solutions help customers realise greater value, potential and outcomes.

With a 23-year history in Malaysia, the company now has sites from Kedah to Penang and Johor, catering to prominent brands in the Aerospace and Defense, Semiconductor Capital Equipment, HealthTech, Industrial and Communications sectors.

These solutions touch the lives of millions - as they enable everything from global air travel to faster network connectivity and enhanced patient care.

Celestica's 5,000-strong Malaysian team also delivers automation solutions and

end-to-end global business services. The company also prides itself in being a responsible partner in the communities in which it operates, and sources renewable energy to power approximately 60% of its operations worldwide.

Its facilities in Malaysia recently embarked on a project that will generate close to 100,000 MWh renewable energy via 8,000 solar panels. It is also a strong supporter of STEM education and Academy in Factory (AiF) programmes, whereby it educates, trains and provides students from rural areas and villages with the opportunity to learn new skills that will make a meaningful impact.



Celestica's solutions enhance connectivity and touch the lives of many



HEADQUARTERED in the Netherlands, Nexperia entered the essential semiconductor sector as an independent entity five years ago with an annual revenue of US\$1.1bil. Today, the former Standard Products division of NXP, has exceeded the US\$2.1bil mark and is targeted to surpass US\$10bil by 2030.

Underpinning this high growth trajectory is an organisation that is renowned as a leading expert in the high-volume production of essential semiconductors - products of which are required by every electronic design in the world. These products are recognised as benchmarks in efficiency, process, size, power and performance-with industry-leading small packages that save valuable energy and space.

Nexperia has over 14,000 employees across Asia, Europe & the US. Closer to home, Nexperia Malaysia's principal manufacturing activities in its 215,000sq ft facility at the Tuanku Jaafar Industrial Park in Senawang involves the assembly & test of discrete surface mount semiconductors using reel-to-reel and strip-to-strip technology. Nexperia's recently constructed state-of-the-art 4-storey facility includes a

fully automated warehouse that is manned by automated narrow body vehicles. This is a testament to the company's commitment in adopting all Industry 4.0 pillars in its operations. As an essential semiconductor manufacturer that was recently awarded Platinum Status for the Validated Audit Process from the Responsible Business Alliance, Nexperia Malaysia, through its cutting-edge R&D arm at the USM Innovative Incubator in Penang, ensures that the company is always at the forefront to consistently bring the most advanced products to scale and to the market with a desired goal to positively transform Malaysian SMEs, MSMEs & the lives of the rakyat, whilst simultaneously epitomising ESG goals in all that the organisation does.



Nexperia Malaysia's high-tech facility in Negri Sembilan

Movers and shakers



A KEY player in Penang's industrial and technological growth, Plexus now operates five manufacturing facilities and one design centre. It has invested over RM1.6bil in the state since establishing its very first offshore footprint here 20 years ago.

Today, Plexus Malaysia has a design centre and the company's largest manufacturing site.

The 11,500 employees here are part of a 21,000-strong network that provides design and development, supply chain solutions, new product introduction, manufacturing and sustaining services to companies in the healthcare and life sciences, aerospace and industrial sectors.

Public-listed Plexus Corp is headquartered in Neenah, Wisconsin in the US and caters to customers across the Americas, Europe and the Asia-Pacific. Annual revenues stand at US\$4bil.

Besides creating products that build a better world, Plexus also seeks to build a better world through the way it operates.

Strong ESG practices championing inclusiveness and diversity foster a sense of community and afford talents ample opportunities to grow and unlock their potential.

To reduce its carbon footprint, its Islandview Penang facility has adopted solar energy under a larger implementation plan that will rise to 9.9MWp over the next 12 months.

Each year, the company also contributes to non-profit causes and encourages employee volunteerism through charitable initiatives, STEM education sponsorships and collaborations.

As an "Employer of Choice", the work-life integration of personnel is also paramount, which saw the setting-up of a world-class sports and recreation building called The Event Center.



The Product Realization Company



Plexus Malaysia's facilities.



Plexus takes pride in being an 'Employer of Choice' who prioritises the work-life integration of employees.

ANYONE who's ever taken a selfie, sent an email or watched a video generates data. And that data needs to be stored somewhere. Which is where Western Digital comes in.

The American technology giant established its Malaysia plant in Petaling Jaya, Selangor, in 1973, initially making custom semiconductors before transitioning to manufacturing hard drives in the 1990s.

In 2016, Western Digital acquired SanDisk's facility in Penang, now known as Western Digital Batu Kawan.

A vertically-integrated lights-out and GBI-certified factory, it manufactures flash storage devices such as SSD, USB drives and micro-SD cards.

Western Digital Batu Kawan was designated as the 'First in Asia Sustainability Lighthouse' and 'First in Malaysia Advanced 4IR Lighthouse' by the World

Western Digital.

Economic Forum in April 2022 and October 2021 respectively.

Western Digital has approximately 14,000 active patents globally. To date, it has invested over RM17bil in Malaysia. Annual exports are valued over RM37bil or equivalent to 8.1% of the country's total E&E exports in 2021.

Western Digital also prioritises workforce talent development and has collaborations with local universities to develop 4IR and IIoT technologies.

It is actively engaged in CSR as well, having donated RM2mil worth of PPEs during the pandemic, adopted mangroves, running campaigns against hunger and donating laptops to schools, among others.



Western Digital's award-winning facility in Batu Kawan.

The leader in markets with highly complex products and demanding regulatory environments.



www.plexus.com

INDUSTRIAL

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Movers and shakers

HP Inc. pioneered its manufacturing footprint in Penang in the 1970s and was one of the “eight samurais” who heralded a new dawn in the local E&E start-up arena. That facility in the Bayan Lepas FTZ – then known as HP’s “Medical Products and Instrument Group” – was later spun off to Agilent in 1999.

Fast-forward to 2015 and HP made a triumphant return to the state following a strategic investment to build its Print Consumer inkjet supplies production



facility in Batu Kawan Industrial Park (BKIP) – commonly known as HP Malaysia Manufacturing (HPMM) or just HP Penang.

It is HP’s biggest Microelectronics Mechanical Systems (MEMS) factory and ships to some 175 countries worldwide – thus playing a pivotal role in daily consumer and business

activities.

In the coming year, HP Penang is set to unveil the next generation of Thermal Inkjet (TIJ) manufacturing, built with Industry 4.0 technologies.



DELL Technologies helps organisations and individuals build their digital future and transform how they work, live and play.

The company provides customers with the industry’s broadest and most innovative technology and services portfolio for the data era.

Establishing operations in Malaysia in 1995, it now has three sites – with two in Penang (the SWTC in Bayan Lepas and APCC2 in Bukit Mertajam) and another in Cyberjaya (Dell Global Business Centre).

These play critical roles in supporting the company’s vast operations in 50 countries across the Asia-Pacific and Japan region. Dell is also in the midst of its 2030 Progress Made Real Plan which lays out the company’s ESG strategy impact through 2030 and beyond.

Leveraging on its reach and technology, the plan’s focus is to take on purposeful action to effect real change in the world by advancing sustainability, cultivating inclusion and transforming lives.

In June 2021, Dell commissioned the largest on-site solar panel installation globally for a facility, at the APCC2, to produce nearly 1,000 MWh of renewable energy annually.

A first in South-East Asia, this powers 25% of production lines at the 24-hour facility and is projected to reduce GHG emissions by about 650 metric tonnes. To address the growing concern of e-waste, its Asset Resale and Recycling Services here has helped busi-

DELL Technologies



One of Dell Malaysia’s CSR initiatives includes tree planting at Batu Kawan.

nesses securely and responsibly retire some 105 of IT assets since 2018. Dell also views diversity and inclusion as a business necessity and something critical to build and empower future workforces of a digital Malaysia, while allowing the company to address societal challenges. In 2017, it launched MentorConnect in Malaysia to promote diverse leadership development.

Meanwhile, its collaboration with the Women’s Centre for Change (WCC) drives efforts to create a society free from gender violence and discrimination.

As the company scales up its impact over the decade, such collaborative efforts will drive positive change throughout the country’s entire business ecosystem.

AT&S

ONE of the biggest FDIs that came into Malaysia at the peak of the pandemic in 2021, AT&S is currently constructing a RM8.5bil manufacturing facility in Kedah. When operational in 2024, AT&S Malaysia will produce mainly high-end IC substrates for processors. It is actively recruiting up to 6,000 engineering, production and administrative talents.

AT&S executive vice-president for Business Unit Microelectronics Ingolf Schroeder (*pic*) informs, “With the increasing demand for high-performance processors, high-performance substrates are needed. Servers, networking, AI and gaming are driving the trend towards significantly bigger and more complex substrates with increased size, layer count and speed.”

The facility here will augment AT&S’ other production sites in Leoben-Hinterberg and Fehring in Austria, as well as in Nanjangud (India), Shanghai and Chongqing (China) and Ansan (South Korea). Globally, the company employs about 15,000 people.

Construction of AT&S Malaysia’s two plants

here is on track, with equipment moving in by April 2023 for the first plant, and June for the second. Serial production is targeted at the end of 2024. AT&S has 600 filed patents and the site here is well-supported by the company’s Substrates Triangle.



The AT&S High End Substrates Technology is well supported by AT&S Substrates Triangle where AT&S Leoben-Hinterberg in Austria (the headquarters) serves as the R&D Centre and provides capacity for upscaling for AT&S Chongqing (China) Plant I and III, and AT&S Kulim (Malaysia), thereby allowing for technology and talent transfer to take place in these three locations. While the site of AT&S in Kulim, Malaysia, is now under construction with progress on track, AT&S Malaysia managing director Vittorio Villari has started on CSR initiatives to promote knowledge and skills for 21st century digitalisation.

“Both management and employees are keen to partner with local universities for career talks and workshops to tempt students into careers within the high-tech sector. We also have plans to promote a knowledge-based STEM programme in collaboration with local stakeholders to spark the interest of young students in Kedah,” Villari added.

role in strengthening our global footprint,” NI Malaysia managing director Selvam Chinappan said during its opening.

The state-of-the-art, 60,000sq ft wing is part of a broad-based expansion plan announced in November 2019 which includes RM166mil in capital investment and the creation of 250 new jobs in R&D, manufacturing and sales. The building also adheres to the requirements of LEED (Leadership in Energy and Environmental Design) specifications, a globally recognised standard for green building.

Plans to install solar panels are underway in line with its 2030 Corporate Impact Strategy which outlines 15 ambitious goals for “Changing the Faces of Engineering, Building an Equitable and Thriving Society, and Engineering a Healthy Planet”.



NI

NI brings together people, ideas and technologies so forward-thinkers and creative problem solvers can take on humanity’s biggest challenges. From data automation to research and validation, it provides the tailored, software-connected systems that engineers and enterprises need to “Engineer Ambitiously”.

NI started operations in Bayan Lepas, Penang, in 2009. Just last month (November 2022), it opened its newly completed Global Supply Chain Distribution Hub to further enable NI’s growth for products related to Industry 4.0 Megatrend applications, including Internet of Things (IoT), 5th Generation (5G), Advanced Driver Assistance Systems (ADAS) and Autonomous Driving Technology.

Spanning 23 acres overall, the site is the company’s third largest operational site and houses one of the largest R&D centres outside of its Austin, Texas headquarters.

“This new building will play a critical

VENTURE

VENTURE is a leading global provider of technology services, products and solutions with capabilities spanning design and development, product and process engineering, as well as manufacturing across a diverse range of technology domains.

In Malaysia, Venture boasts over two million square feet of operational space, including two sites at Bayan Lepas, Penang and others at Johor Bahru. The company is expanding into exciting technology domains and is currently developing a 30-acre plot of land in Batu Kawan, Penang, to add another 446,000 sq ft of operational space by 2023. This will not only grow its business in Malaysia, but also create differentiating capabilities and high-value job opportunities in science and technology, design and engineering.

Its Malaysian hub is highly connected with other global clusters of excellence and has been a strategic base for regional and global operations for over 30 years. With over 8,000 workers, it has been instrumental in job creation for PMETs (professionals, managers, engineers and technicians).

With years of collaborations with leading



companies, Venture has built in-depth expertise to support the manufacture of a wide range of equipment, from liquid chromatography and mass spectrometry instruments for food/water quality testing and medical drugs development, to genome sequencing equipment that were crucial in identifying Covid-19 variants, and test and measurement equipment for consumer electronics products, electric vehicles and avionics.

As a strong proponent of the government’s efforts to transform Malaysia into a high-income nation, Venture’s operations here involve knowledge and skills transfer that aids talent development and nation building. Beyond that, Venture believes in making a positive social impact in the country. It has organised various community initiatives such as fund-raising and donation drives, including relief supplies to families affected by the floods in Johor Bahru and oxygen ventilator equipment to the Penang General Hospital during the Covid-19 pandemic.

StarFive™

赛昉科技

STARFIVE Technology is a world-leader in RISC-V hardware and software ecosystems. Its products and solutions cover RISC-V Central Processing Unit (CPU) core and Network-on-Chip (NoC) IPs, System on Chips (SoC) and Single Board Computers (SBC). The company was founded in 2018 and headquartered in Shanghai, China, but set up operations in Penang in May 2021 as part of its global expansion. Here, it focuses on SoC designs, software development and IPs for RISC-V – which is an open-standard Instruction Set Architecture (ISA) that enables a new era of CPU innovations through open collaborations.

These advanced products and solutions have a vast range of industries and device applications including VDI, desktops, notebook computers, gateways, edge computing, smart homes, smart retail and smart energy, among others. Notable ones include VisionFive 2, the world’s highest-performance yet affordable RISC-V Single Board Computer with integrated GPU, powered by the world’s first RISC-V multimedia processor.

StarFive as the leading technology provider of processor IP, is offering the world’s high-



(Left) StarFive Technology Malaysia vice-president and general manager Ong Chin Hu and (right) the VisionFive 2.

est-performing 64bit RISC-V processor core codenamed Dubhe, which is catered to data-intensive applications. Dubhe offers the most complete instruction sets, including RV64GC, B (Bit Manipulation), N (User-Level Interrupts), and instruction sets needed for high-performance computing, including V (Vector) and H (Hypervisor). Dubhe is a superscalar design with deep out of order execution, and is highly optimised for performance.

In 2021, the company won the China IC Unicorn Award and was recognised by ChinaVenture Investment Consulting Ltd as one of the 100 Most Innovative and Growing New Economy companies.

Currently, StarFive Penang site houses its largest R&D centre outside of its Shanghai, China headquarters, and StarFive is in the midst of a five-year, RM250mil expansion in Malaysia.

Malaysia rising stars

WHILE prominent companies often dominate the E&E headlines, smaller start-ups are no less successful and deserve their share of the limelight. With products and offerings that are just as cutting-edge and innovative, many have been able to penetrate the vast global market, generate high revenues and contribute to the overall growth of the industry in Malaysia. These are some of the names you will be hearing a lot more of in the coming years.



SKYECHIP is Malaysia's first and most advanced integrated chip design company, creating its own Silicon IP and IC products for high-performance computing and artificial intelligence.

Starting with 30 core members with extensive experience in IC design in MNCs, in barely two and a half years, it has already attracted 160 industry-leading engineers with cumulative experience of 750 years in advanced IC design, and 15 patents filed in both the US and China.

CEO and founder S.K. Fong said while most others provide design services for other IC companies, SkyeChip is designing its own products abreast with companies in the Silicon Valley. He added, "We're carrying our own brand and flying the Malaysian flag to compete on the global IC Design stage."

Bayan Lepas, Penang-based SkyeChip is developing two cutting edge Silicon IPs that address the needs of AI deep learning and high-performance computing that



Turning MNC-trained talents into Malaysian asset.

requires Terabyte-per-second memory access and super-efficient on-chip data transaction – one being the High Bandwidth Memory Gen 3 (HBM3) Silicon IP. For context, the world's top 3 supercomputer Fugaku uses HBM2.

There is also the Network-on-chip (NoC) IP which optimises enormous on-chip data transactions for chips today and tomorrow.

The HBM3 and NoC IPs are being licensed by the world's leading IC companies. SkyeChip is also on track to start its ASIC business, a sector which is positioned as it's second business revenue propeller.

MALAYSIAN-OWNED Swift Bridge Technologies develops and manufactures Precision High Radio Frequency (RF) Coaxial Test Cable solutions from ranging from 45GHZ to 110GHZ, and also assembles automotive wire harnesses and cables.

Founded in 2012, its HQ and Centre of Excellence (CoE) is in Penang while the manufacturing plant is in Kedah. R&D facilities are based in Oregon in the US.

The company provides complete solutions from conception to production, including customised assembly which supports test and measurements, automotive, green energy and industrial automation across the E&E industry. Currently, 90% of products are exported to the US and Canada.

To ensure long-term sustainability, the company strategically focuses on R&D and the creation of innovative new products. It currently plans to tap into new markets such as South-East Asia, China, South Africa and Europe, recently investing RM10mil in its CoE and a new 125GHz VNA test machine to bolster design, research and development activities.

Swift Bridge has won a slew of awards in recent years, including the Malaysia Top 50



Enterprise Award in 2019, SOBA Award in 2019 and Outstanding SMEs accolade in the Golden Bull Awards 2020.



Swift Bridge Technologies' high-end DuraWave cables.



QES Group of Companies (QES) specialises in the manufacturing, distribution and provision of engineering services for design, inspection, testing, measuring, analytics and automated handling equipment and has since grown into a leading integrated solutions provider with manufacturing capabilities.

Founded in 1991, it was listed on the ACE Market in March 2018 and has applied to migrate to the Main Market of Bursa Malaysia. To date, it has over 3,800 customers and a worldwide installed base of over 13,000 equipment across various industries, primarily semiconductor, E&E, automotive and metals – in countries like Singapore, Philippines, Indonesia, Thailand, Taiwan, China, Morocco, Malta, Germany, Mexico and the US.

QES recently moved into its new HQ and manufacturing plant at Hicom-Glenmarie in

Shah Alam, Selangor. A second, RM20mil site in Penang's Batu Kawan Industrial Park is set to complete by early 2024 and create 100 new jobs in the semiconductor equipment and IR4.0 smart manufacturing sector.

The company also has a joint-venture with Applied Engineering Inc (USA) to produce high-quality and reliable electro-mechanical and robotic modules at a separate site in Batu Kawan, which opened in March 2022.



QES' team serves over 3,800 customers worldwide.



FOUNDED in 2014 to provide design solutions for ASICs, SoCs, CPUs and FPGAs. Oppstar is one of the largest IC design companies in ASEAN, employing over 200 engineers and with plans to grow to 500 employees in the next three years, to aggressively compete on the international stage.

State-of-the-art 3nm design capabilities

With over 30 IC design project completions since inception, Oppstar has experience in designing ICs, ranging from 16nm to the latest 3nm process node used in telecommunication, industrial electronics, automotive and consumer electronics.

Malaysia's AI chip

Oppstar is committed to R&D and has filed multiple design patents internationally related to AI and FPGA. Oppstar's AI chip designed in 2019 was one of the earliest AI ASICs in the world.

End-to-end IC design solutions for international customers

Oppstar offers a full spectrum of IC design and post-silicon validation capabilities. A strategic JV partnership between Oppstar and Sophic also provides post-silicon engineering validation.

Today, Oppstar supports some of the largest fabless and Integrated Device Manufacturers around the world, with international revenue contributing over 80% of the company's total revenue.

Overseas expansion

Oppstar operates from three offices in Penang, Kuala Lumpur and Shanghai and intends to expand to India, Taiwan and Singapore.



Turning Malaysia into a global IC design centre.



ELLIANCE is fast growing into one of the most reliable Industry 4.0 solutions providers for clients across multiple industries, primarily in manufacturing and agriculture.

Established in 2011, it has since 2016, supported numerous companies on their digitalisation journeys and played a pivotal role in advancing market adoption of new technologies.

With a HQ in Penang and branches in central and southern Malaysia, Elliance also works with government agencies and was appointed by the Ministry of International Trade and Industry (MITI) through its agency Malaysia Productivity Corporation (MPC), to set up the Elliance



i4.0 Technology Centre in Batu Kawan.

This underpins Elliance's strengths in IoT, machine learning, device/equipment connectivity, big data analytics, cloud computing and shop floor management systems.

It recently introduced infiniteConnect, a digital platform for smart manufacturing which supports remote operations of factories and machines for convenient access and real-time monitoring.

Additionally, it allows for easy conversion of legacy machines into Industry 4.0-compliant ones and also provides predictive maintenance features to ensure optimal operations and maximum productivity.

FOUNDED in 2007 with the aim of providing innovative and effective industrial automation solutions, Sophic Automation is



now a trusted and proven partner that has delivered effective automated digital solutions for over 50 MNCs and SMEs across South-East Asia. Its expertise in Industrial Internet of Things (IIoT) and system integration, automated equipment design and development, software development, data analytics and product engineering services, it automates, digitises and optimises manufacturing operations for better business efficiency, productivity, quality and a safer environment.

Sophic's strength and prominence in modern digital solutions for lights off production has been instrumental in helping firms optimise business efficiency. Its digital solutions and product engineering services can be customised to various requirements for applications across many different industries. It offers a complete outsourcing mechanism whereby it develops, supplies and manages everything.

The company, which has facilities in Penang, Kuala Lumpur and Vietnam, was recently rec-



ognised with the 'Outstanding Investee Companies Award' by the Malaysian Venture Capital and Private Equity Association (MVCA) in its 2020/21 Awards, and 'Rising Digital Leader Award' by PIKOM/MDEC in the PIKOM Unicorn Tech Awards this year.

Its vision to continuously enable the concept of SMART into customers' existing operations through SMARTer solutions, services and products enable businesses and factories to run smarter and more efficiently in this era of digital transformation. Sophic is also proud to have been able to contribute higher value added services to the local E&E ecosystem and believes the industry has great potential to grow further.



The newly opened Infineon Tower... INFINEON Melaka's rich history goes back 50 years...

Recently opened the 11-storey Infineon Tower... Its Malaysian operation is the largest outside of Europe...

Five decades of excellence MALAYSIA'S strong position in the global semiconductor market... carrot of tax incentives, tariff exemptions and less regulatory protocols proved more enticing in the long-term.



BROADCOM Inc. is a global infrastructure technology leader built on 50 years of innovation, collaboration, and engineering excellence.

exporter in Malaysia. Broadcom Penang presently has one of the largest Global Operations teams and shared services that support Finance operations.

SILICON MALAYSIA CONGRATULATIONS ON YOUR 50th ANNIVERSARY! Map of Malaysia showing semiconductor companies across various states like Kedah, Penang, Perak, Selangor, and Johor.

Logos of various semiconductor companies including Infineon, AMD, Intel, Broadcom, ST, Renesas, Amkor, OSRAM, Keysight, Agilent, IBM, Bosch, NXP, and MEMC.

Broadcom's category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage, and industrial.

ams OSRAM TODAY a global leader in optical solutions, ams OSRAM adds intelligence to light, and passion to innovation... This new 6-inch chip fabrication plant produces chips at a massive scale for high-demand white LEDs used in general lighting, automotive interiors and other applications.



ams OSRAM's facility in Penang and continually expand production in ever more exciting directions.

Amkor Technology AMKOR Technology Malaysia (ATM) is a world-leading outsourced semiconductor assembly and test (OSAT) company. It is based in Selangor's Telok Panglima Garang FTZ, pouring significant investment into a factory originally established by Toshiba Electronics Malaysia in 1973...

KEYSIGHT SPEARHEADING tomorrow's technology today, Keysight Technologies delivers cutting-edge electronic measurement solutions, systems, software and services to accelerate innovations in the communications ecosystem (5G/6G), automotive, energy, semiconductor and general electronics end markets.

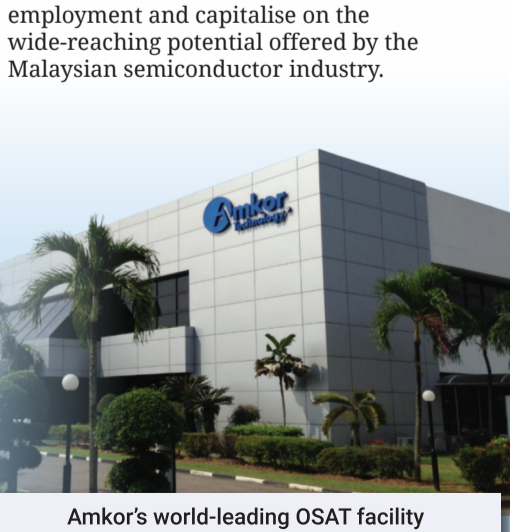
SINCE opening in 1974, STMicroelectronics Muar has grown to be ST's largest back-end plant in terms of production space. Over the past 48 years, it continued significant investment to build capacity and enhance technology.

unwavering in its commitment to enrich the lives of the community where it operates. University collaborations support local STEM, talent development, technical sharing, IR4.0 and data science.



ST Muar is the company's largest backend facility

to communications and industrial. They are also enhanced for power-sensitive and mobile applications, and include innovative packaging, advanced copper clip attachments and modules.



Amkor's world-leading OSAT facility

Five decades of excellence



TF-AMD with its high-technology assembly and test capability has been instrumental in the enormous growth of Malaysia's semiconductor ecosystem, having been one of the pioneers that established Penang's 'Silicon Valley' in Bayan Lepas way back in 1972 and investing RM900mil since.

Recently, it committed a further RM2bil in investment to build a new plant in Batu Kawan which will create 3,000 high value jobs and increase total manufacturing space to 2,500,000sq ft when ready by Q2 of 2023. Managing director and corporate VP Neoh Soon Ee described it as 'a giant leap forward'.

"This marks the beginning of a new chapter in our quest to provide differentiated and market-leading technology packaging solutions. We've grown to become one of the world's best assembly and test service providers for high-end processors. We are driven to deliver world-class products, because we believe that our customers' success is our success," Neoh shared.

TF-AMD's capabilities have grown leaps



TF-AMD's upcoming new plant in Batu Kawan

and bounds since the early years, and it now delivers PlayStation and X-Box microprocessor packaging, including for the latest PS5, and also produces the latest FCBGA state-of-the-art 7nm and 5nm technology node packaging along with other high-performance computing solutions. It is also a Sony Green Partner.

It remains committed to building up the local semiconductor value chain and talent pipeline through collaborations with local vendors and universities, leading to training programmes, joint research projects on automated robotics technology, industrial placements, staff and student exchanges and study visits.

The company is also transitioning its facilities to solar energy and regularly engages in outreach for underprivileged communities locally.



MOTOROLA SOLUTIONS

MOTOROLA Solutions is a global leader in public safety and enterprise security, whose history of innovation and advanced

solutions give rise to integrated technology ecosystems that help communities and businesses alike stay productive and secure.

In its 94-year history, it built a legacy of 'firsts' - from relaying the first words from the moon through a transponder, to transforming global communications with the world's first commercial portable cellular phone and then law enforcement with the first AI-enabled in-car video system.

In Malaysia, it started semiconductor operations in Kuala Lumpur in 1972 followed by land mobile radio products in Penang in 1974. R&D operations commenced at the latter in 1976 and it has since grown into the company's largest integrated operations worldwide, staffed by a diverse workforce with strong presence of women talent. Over the last 20 years, its engineers have received over 1,350 patents and its products continue to win international awards year after year.

Motorola Solutions Malaysia VP and



Motorola Solutions' Innoplex in Penang.

managing director of Penang operations Solomon Lorthu said, "Our 50-year journey wouldn't be possible without the support of the Federal, State and government-linked agencies. With a strong infrastructure and supportive ecosystem, we're very optimistic that the E&E sector will continue to grow in the future and drive digital transformation and AI-enabled technologies."

The company has strong local supplier partnerships and strong connections with academic and skills institutions. Its philanthropic arm, Motorola Solutions Foundation, has also donated over RM3mil in the last five years to various charitable organisations. As a company that shapes lives, businesses and the world at large, it innovates to mobilise and connect people in the moments that matter.



TEXAS Instruments Malaysia Sdn Bhd (TIM) and Texas Instruments Electronics Malaysia Sdn. Bhd. (TIEM) innovate and engineer solutions to deliver leading semiconductor products and packaging technology that bring value to their customers and create a better world.

Founded in the US in 1930, Texas Instruments (TI) was a pioneer of Malaysia's E&E industry, first setting up assembly and test sites in FTZs in Kuala Lumpur and Melaka 50 years ago. TI has since been instrumental in nation building by providing countless job opportunities for locals and is currently working closely with top universities to facilitate the hiring of interns.

TI runs a full suite of development programmes to provide recent graduates and employees alike with holistic engineering, developmental and operational experiences as they build their careers. It is also actively involved in helping communities in the Klang Valley and Melaka - from promoting STEM education to supporting disadvantaged segments and environmental sustainability. In 2021, TIM and TIEM were selected

for an on-site vaccine dispensing centre under the public-private Covid-19 industry immunisation programme PIKAS, which saw over 2,300 staff receive their jabs. Over RM1mil was also donated to support pandemic relief efforts. TI's strong on-site Environmental, Safety and Health management practices also led to several accolades including the Prime Minister's Hibiscus Award, the Melaka Anugerah Hijau, Melaka Chief Minister Industrial Excellence Award and the National Occupational Safety and Health Award, among others.



Texas Instruments Malaysia's Kuala Lumpur facility



RENESAS is built on a foundation that combines the rich culture of technology and innovation of Hitachi, Mitsubishi and NEC.

When establishing its footprint in Bayan Lepas, Penang in 1972, it produced silicon and germanium transistors. Operations have grown leaps and bounds in the ensuing 50 years and now also comprises additional high-performance sites in Kulim (Kedah), Teluk Panglima Garang and Shah Alam (Selangor).

Renasant's expertise in embedded



Renesas' high-performance facilities across Malaysia

processing, analog, power and connectivity allows it to deliver complete semiconductor solutions that accelerate the time-to-market for automotive, industrial, infrastructure and IoT applications - its four key segments.

This comprehensive portfolio of microcontrollers, analog and power devices also contribute towards a safer, healthier, greener and smarter world. It is what gives billions of devices the intelligence and connectivity to enhance the way people work and live. Its product portfolio has expanded since 2017 through acquisitions of Intersil, IDT, Dialog, Celeno, Reality AI and Steradian.

Besides contributing to the long-term development of the industry, Renesas also devotes significantly towards knowledge and technology transfer, as well as the nurturing of positive values such as quality assurance, training, environmentalism and industrial safety.

The company was included in the Clarivate Top 100 Global Innovators list by Clarivate Analytics for the fifth consecutive time this year and is well-poised to drive Malaysia's efforts to claim a bigger stake in the global semiconductor market.



SANMINA

SANMINA Corp is a leading global provider of integrated manufacturing solutions, logistics and after-market services, serving customers in the industrial, medical, defense and aerospace, automotive, communication networks and cloud solutions sectors.

Its facility in Bayan Lepas, Penang, started as a Motorola offshore operation in 1974. Sanmina took over the site in 2016 and by 2021 was shipping some 9.7 million units of products.

Being ISO9001 and ISO/IEC 80079-34 (ATEX) certified, its products meet global standards for use in hazardous and explosive environments such as petrochemical plants, refineries and mines.

Sanmina's culture of continuous improvement in competence process, tools/technology and people has become its core strength, something recognised by the MPC when it named it as a Frontier Company in productivity improvement. 238 employees were also recognised for their outstanding



Sanmina's facility in Penang

efforts.

The pervasive use of Industry 4.0 elements also saw Sanmina Penang assessed to be the most Industry 4.0-ready in a regional Smart Industry Readiness Index conducted by a consulting company on organisations across Malaysia, Thailand and Singapore.

Employees give back through periodic blood donation campaigns and contributions of medical and food supplies for pandemic relief. The company also shares knowledge through workshops with local universities and internship placements.

Buoyed by the motto of 'What We Make, Makes A Difference', Sanmina will continue to strive to make a difference for customers, employees and the Penang community for the next 50 years and beyond.



Carsem

CARSEM, a subsidiary of Malaysian Pacific Industries under the umbrella of Hong Leong Manufacturing Group, is the only OSAT with 100% Malaysian shareholders.

Beginning its journey in Ipoh, Perak in 1972, the company has grown along with its belief in its role to impact the world - via enabling technologies that create a brighter future.

With semiconductor demand rising globally due to the confluence of modern trends like Industry 4.0, 5G, IoT, AI, machine learning, big data and autonomous vehicles, Carsem's depth and breadth of assembly and testing technologies, manufacturing excellence and scale puts it in a unique position to capitalise on opportunities and advance the next generation of innovations using latest technologies like Silicon Carbide (SiC) & Gallium Nitride (GaN).

Internationally-certified to the highest standards, its strong product portfolio is geared for the future. The company intends to deploy more automation in new and existing facilities here and in China over the next few years.

As the largest private employer in Perak, Carsem is also committed to building a diverse and inclusive team culture. The company has award winning environmental, social & governance (ESG) practices and encourages all voices to be welcomed and heard. This is reflected in the strong representation of women globally across all operations - which stands at 45% in fiscal year 2022, significantly higher than the semiconductor industry average.

It also works diligently to support the communities it operates in, in line with its aim to prosper responsibly and emphatically.



Carsem's facility in Ipoh, Perak

ADVERTORIAL



Surpassing its 50th anniversary milestone in Malaysia, ams OSRAM is looking at a bright future in the buzzing industrial hubs of Penang and Kulim. From sustainability to talent development and cutting-edge technological advancements to site expansions, it is indeed an exciting time for the global leader in optical solutions.

Our employees, our strength

At our core, the strength of ams OSRAM lives in our deep engineering expertise. People development starts from the day employees walk through the doors of ams OSRAM with specialised policies and programmes for different phases of one's career. Today's workforce prefers more flexible learning tools, such as learning on-demand: "anytime, anywhere". We have embedded lifelong learning into our culture through what we call the 'ams OSRAM University' (aOU). aOU offers more than 16,000 courses and partners with top universities and best-in-class providers to ensure a high-quality curriculum and innovative learning experiences, whether they be onsite, online or blended-learning journeys.



ams OSRAM partners heavily with the Penang Skills Development Centre (PSDC) to develop and deliver both generic and tailored soft skills and technical training. For example in 2021 the company's first Supervisory Skills Development Program was launched. The new program aims at giving the supervisors a mind shift in their leadership skills by focusing on how they manage their operators and technicians with respect to get the best from them. "The knowledge of a company lies with those who do the job every day. If we can extract and enhance that knowledge with a structured curriculum combined with experiential and outcome-based learning, then we not only improve the company, but also the involvement, job satisfaction and enjoyment for all our employees," says ams OSRAM Malaysia managing director, Mr. Glen Brownlie.

In fact, the Company is now looking beyond its existing workforce to future employees. "Through our in-school programmes, internships, and unique Graduate Rotation System, we are stepping forward to educate and equip the next generation of employees with on-the-job skills and training. Our focus is to develop talent not just for ams OSRAM, but to support the entire Malaysian E&E industry".

On the cutting edge

What motivates us at ams OSRAM is our drive to explore and design new technology.

Bringing intelligence to light and passion to innovation, we enrich people's lives. With our vision to become the uncontested leader in optical solutions, we continuously advance technologies in sensing, illumination, and visualisation.



"At ams OSRAM, we use our systems expertise and in-depth technical knowledge of sensing and lighting technology to design and integrate the requirements of tomorrow's world into today's products," said Mr Ludwig Hofbauer, ams OSRAM Opto Semiconductors APAC Head of Research and Development (R&D). "Our Malaysian team has contributed to many of the 15,000-plus patents that ams OSRAM owns worldwide which enable award winning products in daily used applications like automotive lighting, industry robots, horticulture and smart watches. The secret to our success and longevity in Malaysia is our ability to team up, plan globally, act fast and efficiently locally, to keep our global R&D technology and manufacturing processes at the leading edge of the industry," he added.

This year of anniversary celebrations reminds us of our proud heritage and at the same time, inspires us to tackle the coming years with what we know best: imagining meaningful optical innovations that enrich peoples' lives.

Sensing is Life

Staying green

Climate protection and the establishment of circularity are vital to our sustainability strategy and long-term success. ams OSRAM is passionate about creating energy-efficient products, establishing resource-friendly management practices and building an environmentally conscious culture.

From small targets to overarching policies, our green projects in Malaysia includes rooftops water harvesting, solar photovoltaic panels, bi-annual recertification as a green building, sourcing green energy and many other initiatives that support our corporate goal to become carbon neutral by 2030 in our own operations globally. When making decisions on strategic selection of products and technologies, ams OSRAM designs to choose sustainability over the short win by evaluating the impact our products have on the earth and society. With our portfolio we address global challenges, such as climate change, the scarcity of resources or urbanization.

We provide added value for our customer as we offer components for a low-carbon footprint and also make a positive contribution to society, through applications to protect people's health.

The company portfolio largely consists of sensors and LED-based products and solutions which reduce energy consumption and the resulting emissions generated by our customers and their products. In addition to reducing energy costs, our products contribute to climate protection. Improving the energy efficiency of our products remains a key criterion in our customers' purchasing decisions and satisfaction.



Onwards, together

By imagining the impossible, we create exciting innovations that enable our customers in the consumer, automotive, healthcare and industrial technology sectors to maintain their competitive edge.

This enables us to develop the complete optical high-tech solutions our customers seek, while envisioning new possibilities they haven't yet imagined. Our passion for innovation is complemented by the enduring and trusted partnerships we build with our customers.

By partnering with innovation leaders in our markets, we are inspired to design front-runner solutions to game-changing industry trends, such as microLED technology for displays, automotive technology from dynamic lighting through driver monitoring and technology for autonomous driving, 3D sensing and BOLED in mobile phones, various technologies for robotics, vital sign monitoring for healthy living, industry-leading medical imaging technology and smart building automation.

We believe that by working collaboratively with our employees, customers, communities, and various government agencies in Malaysia, we will grow stronger and be more resilient to the future challenges. Our passion for progress is driven by our sense of humanity. It is this that awakens our imagination and energises us to make bold decisions in disruptive innovation.



Malaysia powerhouses

THE presence of multinational corporations catalysed Malaysia's E&E ecosystem and created opportunities that led to homegrown firms establishing a presence. While most initially filled gaps in the value chain, years of strategic partnerships and astute stewardship have allowed them to become powerhouses in their own right. Today, many lead the way in research, design and development to provide cutting-edge products, services and solutions for customers across the world. These are some of the success stories.

SILTERRA®

SILTERRA Malaysia was formed in 1995 as a project of strategic national interest under then Prime Minister Tun Dr Mahathir Mohamad's aspirations for local semiconductor capability.

Based at Kulim Hi-Tech Park, Kedah, it is one of the few semiconductor wafer pure-play foundries in the country and ranked 17th by IC Insights in 2021. Almost RM8bil of capital was invested to date, with RM750mil for R&D. Notably, almost 100% of its revenue is international, with upwards of RM850mil forecasted for 2022.

SilTerra's chips have vast applications including DNA sequencing and data centres. It has granted and pending patents in the field of PMUT (Piezoelectric micromachined Ultrasound Transducers). These can be used for medical imaging, Haptic sensing and parking assistance for automobiles.

The company is currently investing RM645mil on expansion, which will increase annual capacity from 8.3ML to 10ML by July 2023.



SilTerra is one of the few semiconductor wafer pure-play foundries in the country.

Its entire manufacturing environment is paperless and uses RFID,

CEO Dr Albert Pang Shu Koon said the company has partnerships with USM, UTEm and UniMAP to expand talent pipelines, technological collaborations and smart partnerships while running an in-house Graduate Nurturing Programme to elevate local talents to higher management positions as well as sponsoring STEM-related activities such as ROBOCON 2022.



NATIONGATE Solution (M) Sdn Bhd is an electronics manufacturing services and technical support provider for the networking, communications, instrumentation, consumer products, medical devices and automotive industries.

Founded in 2010 by its managing director, Ooi Eng Leong, it runs a total production size of 800,000sq ft that spans across five plants in Perai, Penang.

Its vision is "to be the preferred EMS of choice" for MNCs and customers.

Specialisations include High Precision SMT (Surface Mount Technology), with equipment able to place chips as small as 01005 (0.4mm x 0.2mm) at an average modular speed of 20,000 CPH (components per hour).

It also does high volume assembly for fibre optic modules, electronic boards and final products, as well as semiconductor processes for customers who require COB (chip on board) services.



This is supported by an advanced laboratory equipped with analytical machines doing reliability tests. Within the next five years, NationGate will also expand core competencies and future-proof facilities in line with new Industry 4.0 technologies.

These will be adopted under nine pillars – autonomous robots, simulation, systems integration, industrial IoT, cybersecurity, additive manufacturing, augmented reality, big data analytics and 3D imaging.

Human talent development efforts like the Junior Managers Programme (JMP) ensure a healthy pipeline of future leaders.

The company, which has plans for listing, also encourages employee volunteerism for the betterment of the community.

FROM humble beginnings in 1998, Alliance Contract Manufacturing (ACM) is now a global hi-tech manufacturing powerhouse with 1,200 employees, 600,000sq ft of manufacturing space across five factories in Malaysia, China, Singapore, Netherlands and Czech Republic, plus a design and marketing office in the United States.



ACM provides manufacturing, contract design and automation solutions for OEMs.

upward trajectory.

Yet it remains focused on one simple ideology – to help customers offer better products and services to improve lives and connect the world.

ACM is actively involved in CSR with flood relief and community aid projects, among others.

It recently turned to clean energy with 1.36MWp of solar panels installed, with a further 1.23MWp coming to aid sustainability.



BUILT by Malaysians and sustaining the nation, ViTrox's products and solutions help customers worldwide catalyse positive change in smart manufacturing for the advancement of society.

It designs and manufactures advanced, automated vision inspection solutions that seamlessly identify defects on semiconductor components and electronics assembled boards, which help reduce electronic waste from non-optimised processes.

The Industry 4.0 Manufacturing Intelligence Solution V-ONE is also adaptable to various industries and reduces human dependencies while lowering carbon footprint.

The company was incorporated in 2000 and recently embarked on a 10-year (2021-2030) expansion plan to build the new ViTrox Campus 3.0 in Batu Kawan, Penang.

Envisioned as an innovation park, it comprises three, multi-storey blocks with over 450,000sq ft, housing an R&D centre for Industry 4.0 technology, smart manufactur-



ViTrox's smart manufacturing solutions catalyse positive change for humanity.

ing floors, warehouses, training centres, startup accelerators and more.

The plan also includes recruiting 3,000 engineers.

Through its ViTrox Academy education arm, it also offers MQA-certified and work-based learning tertiary programmes to build the local STEM talent pool.

ViTrox was named among Malaysia's Best Managed Companies for 2022 which recognises private entities for strategy, innovation, capabilities, commitment and financial performance.

It was also included in Forbes Asia's 200 Best Under A Billion 2022 list, its sixth listing.



TURNING 30 in 2023, Qdos' growth from a small workshop to three fully integrated circuit board manufacturing plants in Penang and Xiamen, plus multiple sales offices in Frankfurt, Bangalore and San Jose, is truly remarkable.

It specialises in flexible printed circuit boards (PCBs), having pioneered its design and production since 1993. Since 2018, it has also designed and manufactured high-tech Semi-Additive-Process (SAP) semiconductor substrates from its Batu Kawan plant whose facade is inspired by electronics circuitry, to support many of their long-term customers in over 20 countries.

As part of its future development plan, Qdos runs a 'Good to GREAT' programme to transform the company from a Good well-established company, to a GREAT visionary technology company.

It has spearheaded IC substrate and electronics circuit board innovations through various R&D projects with universities and



in-house engineering talent development initiatives.

Over the years, it garnered a slew of Enterprise50 and Front & Sullivan Awards.

Group CEO Jeffrey Hwang said their success owes much to constant investment in new process technologies, R&D, system and talent development.

He said local supply chain development should be prioritised amidst the strong investment climate among MNCs.

"The multiplier effect would be amplified if we have a higher density of high-quality, high-growth and large-scale local companies. We should build upon the momentum if we want the ecosystem to prosper for another 50 years," he added.

UNISEM (M) Bhd provides turnkey semiconductor design, assembly and test solutions for many of the world's most successful electronics companies.



Its integrated suite of services include wafer bumping, wafer probing, wafer grinding, leadframe and substrate IC packages, wafer level CSP, as well as RF, analog, digital and mixed signal testing.

Established in 1992 and headquartered in Kuala Lumpur, the company now runs four facilities across Ipoh, Perak, and Chengdu, China, employing over 6,000.

It remains the sole wafer bumping provider in Malaysia and is in the process of doubling floor space with a new building in Chengdu and a new site in Malaysia.

Fabless companies make up 71% of its customer base while integrated device manufacturers account for 29%.

About 53% of the group's sales derive from North America, with Asia and Europe



Unisem's advanced semiconductor test solutions cater to many electronic giants.

contributing 37% and 10% respectively.

It was conferred the "Highly Commended – For the strength of the overall Sustainability programmes" accolade at the Sustainability Business Awards 2020/21 Malaysia by Global Initiatives.

Unisem has been listed on Bursa Malaysia's Main Market since 1998 and its securities are shariah-compliant.

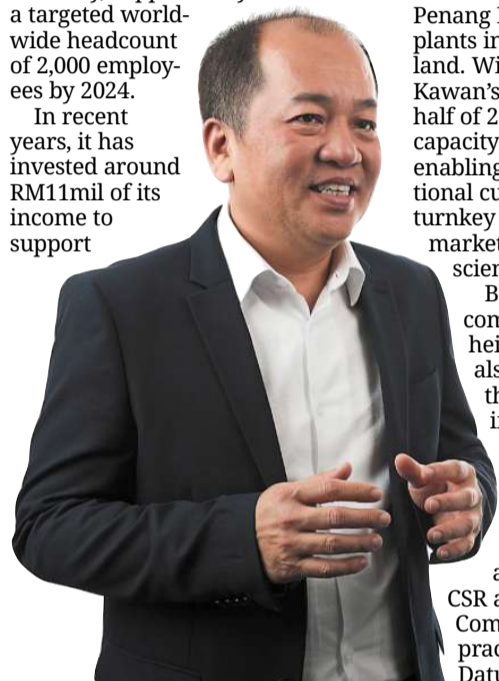
Malaysia powerhouses

GREATECH – a Malaysian powerhouse celebrating its 30th Anniversary in 2023 is confident that the key determinant which transforms and shapes the future of the establishment is globalisation.

Always on the cusp of technological advances and emphasising R&D activities, Greatech has propelled itself into a world-leading industrial automation solutions provider, significantly boosting its business and international market share.

The public-listed company currently has an approximate market capitalisation of RM6.3bil and aspires to increase revenue by 20% annually, supported by a targeted worldwide headcount of 2,000 employees by 2024.

In recent years, it has invested around RM11mil of its income to support



R&D programmes to promote and instill a culture of innovation across the entire E&E industry. It also encourages STEM emphasis among younger generations through synergistic partnerships with universities, as well as engineering and innovation learning centres.

Greatech is headquartered on Penang Island and has three other plants in Batu Kawan on the mainland. With the expansion of Batu Kawan's plant IV by the second half of 2023, its overall building capacity will exceed 1.2mil sqft, enabling it to better serve international customers seeking seamless turnkey solutions in four key markets – solar, e-mobility, life sciences and semiconductors.

Besides enabling the company to achieve new heights, this expansion would also bring positive impact on the supply chain ecosystem in Malaysia, particularly in Penang.

Corporate social responsibilities

Business aside, Greatech is also a strong proponent of CSR and outreach initiatives. Compassion has been a virtue practised by Greatech CEO Datuk E.K. Tan throughout his

journey as entrepreneur.

He believes that as a leader, one must also be able to look beyond pure profits and help the greater community whenever possible. Tan and the company have thus far, contributed an average of RM2mil annually since 2020 towards causes like improving access to education and aiding marginalised communities.

This culture of giving is now even ingrained among employees. It led to the establishment of the GreatCare Committee (GCC) in 2020 by its CSR team, whose objective is to promote partnerships with local non-profit and community organisations to advance social sustainability efforts and engagement.

Awards and recognitions

This culture of excellence and compassion has seen Greatech winning a slew of awards throughout its long history. Recently, it was among the seven Malaysian companies listed under Forbes Asia's Best Under A Billion 2022 list.

The company contributed exceedingly well in ESG initiatives in recent years and was recognised by The Edge ESG Awards 2022 and the AMMI ESG Awards 2022.

Greatech also received the IET Malaysia Industry Excellence Platinum Award 2022, the Minority



Greatech focuses on R&D and new technologies to constantly enhance capabilities.

Shareholder Watch Group's MWSG-ASEAN Corporate Governance Award 2021 with a ranking of 35th among the top 100 companies, and the 2021 Asean Corporate Governance Scorecard Award under the category Asean Asset Class PLCs.

CEO's aspiration

As the CEO of Greatech, Tan's aspiration is not limited to driving the business and developing world class talent, but also to address day-to-day concerns of employees.

He took a novel approach in acquiring a 19-acre piece of land in Batu Kawan with the intention of developing it into a residential project to help them secure comfortable living.

Seeing how the skyrocketing cost

of home ownership is becoming a burden for new generations, he hopes this would help Greatech employees fulfil dreams of owning a home.

This personal project, called 'Bring Hope A Home', is set to kick off in 2025 and underscores how much Greatech cares about its employees' welfare besides career development.

"Greatech has gone from strength to strength and grown leaps and bounds over the decades. We thank the pioneers of the E&E industry for their dedicated and trusted partnership in the last 50 years which made Penang a strategic destination for industrialisation, providing myriad opportunities with immense potential," Tan added.



JF Tech's high-performance test contactors manufacturing process.

JF Technology Bhd (JF Tech) is a leading provider of high-performance test contacting solutions for global integrated circuit (IC) makers.

Established in 1999, it moved up the semiconductor value chain to become an Original Design Manufacturing (ODM) provider in 2005 with an in-house design and development team.

With over 100 customers worldwide, it indirectly impacts the world as IC chips power everything from smartphones to vehicles.

Innovation is key and the group continuously invests in R&D for creating intellectual properties (IPs), filing 77 patents to date with 37 granted and others pending.

Its upcoming Test Contacting Centre of Excellence in its Kota Damansara, Selangor HQ will double its footprint to



We Bring Possibilities

96,000sq ft and twin with its China Centre of Excellence to accelerate IP generation, founder and managing director Datuk Foong Wei Kuong said.

"The exponential growth in the 5G market and rapid adoption of EVs will drive semiconductor demand in the coming years. Countries and front-end players are pouring billions into fabrication houses.

"This bodes well for back-end assembly and testing, as our solutions will be supporting millions, if not billions, of devices using 5G. Ground-breaking 6G is already on the horizon and we're very excited about its potential for another paradigm shift," Foong said.



Pentamaster's headquarters in Penang's Bayan Lepas FTZ.

ESTABLISHED in 1991, Pentamaster Corporation Bhd has evolved into a leading global provider of advanced automation manufacturing and technology solutions – specialising in automated test equipment, medical device automation technology, factory automation solutions and warehouse automation.

Customers include multinational manufacturers in the semiconductor, electro-optical, consumer electronics, automotive and medical sectors in the Asia Pacific, China, North America and Europe.

Headquartered in Penang in the Bayan Lepas FTZ, it has a second plant in the Batu Kawan Industrial Park.

A third facility with 600,000 sq ft on 12 acres is currently under construction at the latter.

The group constantly upgrades its 700-strong workforce's capabilities



through regular external and internal training programmes.

This is the cornerstone of its success, leading to it being ranked among the Top 500 High-Growth Companies in Asia-Pacific in 2021 by Financial Times, Nikkei Inc and Statista, and also 7th in Malaysia's Growth Champion in 2021 by *The Star*.

To ensure long-term sustainability, Pentamaster also embeds various ESG measures in its business operations, helping the needy, schools and local NGOs.

The group also has a global presence with production facilities in China, and offices in the United States, Japan and Singapore.



Solarvest commissioned the first large scale floating solar plant in Malaysia in Dengkil, Selangor, with 13MWp.

SOLARVEST Holdings Bhd was the first pure-play solar company to be listed on Bursa Malaysia's ACE Market in 2019 and the Main Market in 2021.

Today, it is transitioning itself into a turnkey clean energy expert.

Founded in 2012 as a solar photovoltaic (PV) solutions provider for various applications, its strong reputation in the engineering, procurement, construction and commissioning (EPCC) space led to its successful entry into the large-scale solar (LSS) segment.

Four solar farms are currently under its portfolio, with a further 400MWp of PV system installed around Malaysia and an orderbook of over 200MW (equivalent to RM700mil).

It is also expanding the clean energy ecosystem and tapping into energy efficiency (EE) solutions, electric vehicle (EV) infrastructure, Renewable Energy Certificate (REC) and energy

storage systems (ESS).

"We're lowering the nation's carbon footprint and creating a cleaner living environment. Our residential arm is also enabling homeowners to affect the climate fight while reducing utility costs.

"This will help Malaysia achieve its net-zero carbon emission target by 2050," said executive director and group CEO Davis Chong Chun Shiong.

The company was named Solar EPC of the Year in SolarQuarter Malaysia's Solar Week Leadership Awards 2022.

The programme was launched last year and its final round of pitching was back in July 2022. It aims to encourage transformational ideas in the renewable energy, fintech and greentech sectors.

It also has a presence in the Philippines, Indonesia, Vietnam and Taiwan.



Nexperia is a global community of talented professionals.

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EFFICIENCY WINS.

Nexperia has a global footprint and is headquartered in Nijmegen (Netherlands). We have numerous sites serving each of the three global regions Asia, Europe and the Americas all in close proximity to our key customers.

As a leading semiconductors company, Nexperia has a solid foundation for a future of tremendous growth and constant innovation. Ours is a continuing journey of discovery, shared by more than 14,000 talented individuals who form the unique TeamNexperia.

Our energetic global teams add value and meaning, collaborating across continents to achieve answers to real-world challenges. With advanced technologies and cutting-edge resources, Nexperia strives to create and be part of something bigger: a better world.



Our market segments

Virtually every electronic design in the world uses Nexperia parts

- Automotive
- 5G, Industrial & Power, IoT
- Mobile & Wearables
- Consumer, IoT
- Computing

Global leadership positions

- #1 in small-signal diodes and transistors
- #1 in ESD protection devices
- #1 in small-signal MOSFETs
- #2 in PowerMOS Automotive
- #2 in Logic devices

Awards & Achievements



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Malaysian global leaders

MANY captains of the E&E industry are Malaysians. They hold regional or global leadership roles, with responsibilities that extend far beyond the country's shores. Here, we celebrate some of the personalities who are contributing towards elevating the industry to ever greater heights:

WITH over 30 years in the industry, KL oversees Western Digital's Global Flash Backend



KL Bock
Western Digital
Senior VP, Global Flash Backend Operations

Operations, comprising of SDSS factory in Shanghai, SDSM factory in Penang, Contract Manufacturing operations, Packaging Technology Development and supply chain. He transformed both conventional facilities into pioneers of "Lights-Out" and vertically integrated manufacturing, gaining 'Lean 6 Sigma Automation' status. Besides being named 'Advanced 4IR Manufacturing Lighthouses', SDSS and SDSM were also named China's and Asia's 1st Sustainability Lighthouses respectively by the World Economic Forum - becoming the first factories to do so as one cohort.

SINCE assuming his present role in July 2016, Ng has turned Infineon's Kulim site into a



Ng Kok Tiong
Infineon Technologies (Kulim) Sdn Bhd
Senior VP and MD

world-class wafer fab facility. Prior to that, he led the company's global backend operations for assembly and testing, overseeing manufacturing sites in Singapore, Indonesia (Batam), Malaysia (Melaka) and China (Wuxi) with over 15,000 employees. He was also responsible for overall cluster quality, test innovation and package development functions.

TAN started his career in National Semiconductor Penang and has served as GM of several large MNCs in the last 30 years.



Tan Chun Sheng
STMicroelectronics Muar
Group VP and GM

He now oversees STMicroelectronics' site in Muar, where he spearheads important manufacturing initiatives like Lean Manufacturing, Total Quality Management, Reliability Centered Maintenance, and Industry 4.0 Smart Manufacturing. An expert of 'Silicon to Systems', he was recently appointed Adjunct Professor for the Faculty of Electrical and Electronics Engineering in UTEM, Melaka.

TAN helms Plexus' operations across three countries in the APAC region, covering nine manufacturing



Victor Tan
Plexus
Asia Pacific (APAC) Regional President

sites and a 13,000-strong workforce. Helping the company grow with customers from over 30 countries, he has been instrumental in the creation of complex and market-leading products that build a better world. His role also focuses on developing organisational capabilities, shaping business strategies and upholding Plexus' strong ESG philosophies.

WITH over 35 years of manufacturing experience, CC now oversees Celestica's operations across three key markets,



Yong Chong Chin
Celestica
VP, Operations
Malaysia, Singapore & Japan

catering to some of the world's most well-known brands. Prior to this, he led the company's global operations in the semiconductor equipment manufacturing segment, being responsible for facilities in Portland (U.S.), Wuxi (China) and Johor Bahru (Malaysia).

AFTER holding many leadership positions within Dell over the last 22 years, Teoh's current role sees her helming daily operations



Teoh Ean Na
Dell Technologies
GM, Medium Business, Malaysia and Singapore
GM, SWTC Penang

with a 5,000-strong team. Her responsibilities include employee engagement, making the site known as a 'Great Place to Work'. She is also dedicated to community outreach and advancing women in the technology sector, sponsoring the award-winning Dell Technologies Women in Action Employee Resource Group (ERG) which advocates an inclusive society without gender discrimination. Since 2017, her MentorConnect programme has also benefited over 700 mentees from 22 companies in Malaysia.

GOOI is responsible for Keysight's Software Test Automation business, Order Fulfillment, Global Procurement & Materials, and Information



Datuk Gooi Soon Chai
Keysight Technologies
President, Order Fulfillment and Digital Software Solutions

Technology functions. With over 30 years of international experience, he led the company to become a benchmark of excellence in the industry, known for a commitment to ethical business practices, sustainability and social responsibility. Gooi is also passionate about nation building, especially in cultivating interest in STEM to build a strong future talent pool.

A key leader in Dell's South Asian business, Pang oversees strategy and operations of three



Pang Yee Beng
Dell Technologies
Senior VP, South Asia
MD, Malaysia

local facilities which support the company's larger global operations. With vast experience across the Asia Pacific and Japan region, he drives sustainability in technology adoption, both within the company and externally with customers and partners. He is also a strong advocate for diversity and inclusion, earning Dell Malaysia the Workplace Gender Equality Recognition Award 2016 by the Ministry of Women, Family and Community (KPWKM).

SINCE joining NI in 2010, he held various regional and global positions, including Senior Global Manufacturing Operations Director. He now helms NI's third



Selvam Chinappan
NI Malaysia
MD

largest operational site, overseeing manufacturing strategies and operational excellence in the Asia Pacific. Selvam is passionate about people and builds strong connections to sustain high levels of employee engagement. His track record of leading high-performance teams while nurturing diversity, inclusion, equity and belonging (DIEB) in the workplace sets him apart as a next-level leader.

HELMING the company's operations in Penang and Kuala Lumpur, Solomon leads one of the largest R&D setups for Motorola Solutions globally.



Solomon Lorthu
Motorola Solutions Malaysia
VP & MD, Penang Operations and Interim Country Manager

In various key leadership positions within the company over the last 25 years, he led various teams to deliver innovative products under different portfolios for customers worldwide, many of which have won international design excellence awards. He is also passionate about people development, operational excellence and innovation.


SHIDAH oversees Keysight's worldwide end-to-end Supply Chain, and Manufacturing and Technology Centre operations across the US, Europe and Asia.



Datuk Shidah Ahmad
Keysight Technologies
VP & GM of Global Manufacturing and Supply Chain

Leading a global team of over 3,000, her extensive 30 years of experience saw her transforming Keysight's supply chain organisation into an award-winning operation recognised as best-in-class by the industry today. As GM of the Malaysia site, she also forges collaborations with the government towards making the country a knowledge-driven, high-income economy and promotes STEM through programmes like Girls in Engineering and Technology (GET).

IN this role, he oversees the company's worldwide assembly, test, bump and probe



Yogannaidu Sivanchalam
Texas Instruments (TI)
VP

manufacturing operations, which includes sites in China, Malaysia, Mexico, Philippines, Taiwan and the US. Prior to this, Yogannaidu was TI's Malaysia country manager. He is passionate about new talents and bringing the best out of them, while ensuring that the company is globally competitive.

AFTER holding many key global positions over the past 28 years, Ee now



Ee Huei Sin
Keysight Technologies
President, Electronic Industrial Solutions Group

helms Keysight's automotive, energy, general electronics, manufacturing, education and semiconductor segments. She was previously GM of its General Electronics Measurement Solutions division, driving the company's diverse portfolio of businesses across the broad-based general electronics and education markets. During that time, she also served as VP of Keysight Education, leading company-wide efforts to establish strong relationships with universities.

AN accomplished senior executive with 30 years of industry experience, he oversaw many



Low Choon Yien
Jabil
VP of Operations, South Asia

of Jabil's product launches in Asia in partnership with numerous Fortune 500 brands. In his tenure as Assistant Plant Operations Manager at a greenfield site in China, it won the best LEAN Site award. As VP of Operations for Jabil Green Point (JGP), he led five sites across Asia and North America to double-digit growth. Assuming his present role in February 2022, he now oversees strategic operations solutions across the region with over US\$5bil in revenue and 30,000 employees.

BUOYED by an excellent track record in the semiconductor industry spanning over 20 years, Chan now oversees R&D



Chan Chee Ling
Infineon Technologies (M) Sdn. Bhd.
VP and Chief Technology Officer

initiatives at Infineon's Melaka site. He also manages global Package Development activities for Power, Advanced Logic, RF and Sensor platforms with groups in Malaysia, China, Thailand, the Philippines and US.

Other esteemed global leaders:

Robin Martin
Intel
Corporate VP
GM of Global Assembly Test Manufacturing

Lew Hon Sang
Sensata
VP, Automotive Business Operations
(Northern Ireland, Mexico, Bulgaria, China and Malaysia)

Vejay Kumar Narayanan
Smart Modular Technologies
VP, Specialty Memory Manufacturing
(Malaysia, US, Brazil)

Ooi Kim Huat
Intel
Site GM, Intel Products Vietnam and China Operations

Datuk Dr Balamurugan Sinnasamy
Benchmark
Group VP, Precision Technologies

The Malaysian dream for the E&E industry

World of possibilities and opportunities

WITH technology playing a much greater role in people's lives than ever before, Malaysia's robust E&E industry is well-positioned to thrive. Megatrends like the IoT, AI and 5G generate an insatiable demand for cutting-edge hardware and software – which in turn create valuable opportunities for the companies that produce them.

The global pandemic has accelerated the adoption of digital lifestyles and economies. Businesses and individuals alike now depend on digital platforms to stay competitive and connected.

This skyrocketing demand for such services compels major service providers to invest billions each year to build or upgrade infrastructure like data centres. The arrival of 5G would also drive mass adoption of better devices and other telecommunications equipment. It spells good news for E&E players as the effects will trickle down positively.

With Malaysia well-established on the global supply chain, companies can cater to this demand. Indeed, the MSIA projects semiconductor growth to be

between 8% and 10% for 2022.

Figures from January to October show exports growing by 34% compared to the same period last year (from RM366bil to RM489bil).

The Twelfth Malaysia Plan

The importance of the E&E sector was recognised in the Twelfth Malaysia Plan (12MP) for 2021-2025, which identified 5 key strategies to boost the industry.

1. Boosting E&E industry in moving up the value chain
2. Strengthening the electrical and electronics industry ecosystem for higher value chain
3. Promoting high adoption of technology
4. Uplifting the development of talent and capability
5. Enhancing research and development as well as design and development

Collectively, these efforts should translate into higher productivity and long-term growth. It would also position Malaysia as a highly attractive destination for investment, as it gives investors more opportunities to leverage on.

Estimates say the E&E industry will contribute RM120bil to the country's GDP and generate RM495bil in export earnings by 2025.

Conducive backdrop for business

The government's aim to transition the Malaysian economy from agriculture to one based on diversified industry and services in the 1970s saw the establishment of numerous industrial estates or parks across the country in ensuing years.

Today, there are over 600 such locations. Penang is Malaysia's leading E&E cluster, contributing RM231bil or 60% of Malaysia's E&E exports in 2021.

The other E&E hubs in the country are located in the Klang Valley, Perak, Johor, Kedah, Melaka and Negri Sembilan. These industrial estates give businesses the platform to thrive. That, in turn, has made the country an attractive proposition for high-quality investments.

Access to the supply chain and availability of local resources are two key considerations for

investors. Be it from upstream or downstream, it helps optimise operational costs and gives businesses the flexibility to scale up operations when the time is right. Therefore, the continued availability of well-planned, well-managed and strategically located industrial estates is important.

Infrastructure has to constantly evolve to serve the ever-changing needs of manufacturers so they remain competitive in the vast global market.

Malaysians are talented and hardworking. With their perseverance, work ethics, a Malaysia Boleh "can-do" mindset and burning desire to succeed, they have been instrumental in making the country such a key global player in the E&E industry.

The achievements and experiences gained thus far have provided a good foundation to propel the E&E industry to greater heights.

All factors combined will ensure that businesses throughout the value chain can rebound strongly from the effects of the pandemic and grow with Malaysia as the country looks to the next 50 years and beyond.

“E&E is Malaysia's top export industry, attracts the highest investment into Malaysia and contributes to most of Malaysia's External Trade Surplus. That is why I call the E&E industry, the Golden Goose of Malaysia. We need to continue to nurture it.

The growth and performance of the E&E industry over the last 50 years has been phenomenal. The success has been due to E&E companies believing in Malaysia and its talented people. We, Malaysians, should be very proud, as we have worked hard to deliver the performance to the E&E companies through the years and helping Malaysia to be globally competitive.

My wish is for all stakeholders to propel the E&E industry to new heights of innovation, strengthen the ecosystem, create more Malaysian global champions and take advantage of the huge opportunities ahead as the world marches steadily towards a smarter, more mobile and connected future.”

Datuk Seri Wong Siew Hai
MSIA President



Aspirations for E&E

Moving forward the E&E initiatives outlined in the New Investment Policy focuses on enabling the sector to grow further, with specific target outcomes across each National Investment Aspiration.

INCREASE ECONOMIC COMPLEXITY



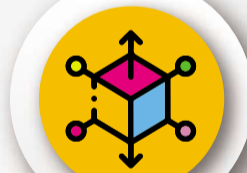
CREATE HIGH-VALUE JOB OPPORTUNITIES



EXTEND DOMESTIC LINKAGES



DEVELOP NEW AND EXISTING ECONOMIC CLUSTERS



IMPROVE INCLUSIVITY



ENHANCE ESG PRACTICES



“As the Silicon Valley of the East, Penang is the economic powerhouse of the country, buoyed by a robust industrial ecosystem that has always been key in attracting investments.

In Penang, we constantly seize opportunities arising from global developments in a timely manner and look for ways to move up the value chain.

Penang commands over 5% of global semiconductor sales and is a key regional hub for equipment and medical technology industries.

Penang's proposition in the global value chain is no longer restricted to back-end semiconductor activities but we are an emerging regional hub for IC design, IoT solutions and R&D activities.

Holding on the 50th anniversary celebration tagline, '50 Years of Excellence and Beyond', I look forward to the beginning of our next journey. This exciting landscape offers enormous prospects for value creation which will help Penang shine in the world map of technology.”



Chow Kon Yeow
Chief Minister of Penang

“Congratulations on 50 years of E&E industry in Malaysia! E&E industry has propelled Malaysia to become one of Asia's major economies, and today Malaysia is a critical global cluster for semiconductor and electronics.

German business can proudly claim to have contributed to this development from the very beginning, with companies like Bosch and Osram standing at the cradle of E&E in the 70s in Penang.

The robust state of Malaysia's economy today, with breathtaking growth rates of both GDP and foreign trade post-Covid owes much to E&E, where German companies like Infineon contributing their share to this development.

For German companies, Malaysia remains as one of the most attractive investment destinations, important especially in a time when many companies are looking for diversification, re-orientating their activities in search of new supply lines, new markets and new hub locations.

I look forward to many more German companies discovering Malaysia as the exciting and thriving business location it has proved to be in the last 50 years, and I wish both German and Malaysian companies in the E&E Industry many more decades of successful growth and accomplishments in the ever challenging world of business.”



Peter Blomeyer
Ambassador of the Federal Republic of Germany to Malaysia

“Malaysia's role in the global semiconductor supply chain is irreplaceable. Besides being one of the US' largest semiconductor trading partners, Malaysia is also among the world leaders in silicon wafer manufacturing, as well as semiconductor assembly, test, and packaging.

This makes Malaysia a major link in the global electronics supply chain, with Malaysia's E&E exports accounting for roughly 40% of total Malaysian exports.

SIA looks forward to continuing our work with our counterparts in Malaysia to ensure all parties can thrive, innovate and realise an even brighter future built on semiconductors.

So, congratulations Malaysia for half a century of being a powerhouse in E&E.”



John Neuffer
President and CEO
Semiconductor Industry Association (SIA)