

COVER STORY

ON THE GROUND in Penang

The Covid-19 pandemic has brought tremendous challenges to the world and its impact is expected to last beyond this year. Businesses are finding ways to cope with the new normal as the operating landscape has changed drastically.

Meanwhile, the intensified US-China trade war and the great decoupling between the two superpowers have made the business environment even more complex. It is like sailing in rough seas on a stormy night.

Last month, *The Edge* took a trip up north in search of bright spots in the current trying times. We met with the captains of the electrical and electronics (E&E) and the medical devices industries.

The picture they presented is not all that gloomy. The Movement Control Order, it seems, is just a hiccup. In fact, these companies are benefiting from trade diversion and are hiring instead of firing, and expanding, not downsizing, like many others have been forced to do.

The mature ecosystem that has been developed since the 1970s has attracted an increasing number of multinational corporations to set up their regional production bases in Penang.

We travelled to Bayan Lepas and the Batu Kawan Industrial Park, where most of these companies are located, during the four-day trip.

In the E&E sector, we spoke to ViTrox Corp Bhd founder and president Chu Jenn Weng, Greatech Technology Bhd executive director and CEO Tan Eng Kee, FoundPac Group Bhd CEO Ong Choon Heng and Opstar Technology Sdn Bhd managing director Ng Meng Thal.

In the medical devices sector, we met Boston Scientific vice-president and general manager of manufacturing and distribution for Malaysia Dave Mitchell, Allen Healthcare Products (M) Sdn Bhd managing director Michael Hng, Straits Orthopaedics Sdn Bhd CEO Su T H, as well as the Association of Malaysian Medical Industries executive director Ching Choon Siong. B Braun's Asia Pacific president Lam Chee Hong contributed via written responses as well.

InvestPenang CEO Datuk Loo Lee Lian, in a candid virtual interview, shared with us Penang's robust first-quarter foreign direct investment numbers and the obstacles that may hinder the state and nation's efforts to stay competitive as a destination for FDI.

In the next few weeks, we will feature a series of articles to discuss the challenges and opportunities these Penang-based companies face.

Malaysian E&E players tread carefully amid tech cold war

BY LIEW JIA TENG

As its name implies, a semiconductor chip is made of a material that conducts current, but not completely. The conductivity of a semiconductor lies somewhere between that of an insulator, which has almost no conductivity, and a conductor, which has almost full conductivity.

In the years to come, Malaysian semiconductor and semiconductor-related companies, also known as electrical and electronics (E&E) or technology firms, will have to re-strategise carefully amid the intensified tech cold war, which is central to the bigger US-China trade war.

Like it or not, semiconductors are now at the core of the technology cold war, and Malaysian E&E players may have to strike a fine balance between the two superpowers — much like the function of, well, semiconductors.

For those who do not already know, the US and China are forging their own semiconductor supply chains. The Chinese intend to move up the value chain by designing and making their own chips at the front end, whereas the Americans intend to move down the value chain by making chips on US soil.

The protectionism and renationalisation wave in the tech sector has created not just tremendous opportunities for the rest of the world, but also some complications and challenges.

Globalisation is likely to be a thing of the past, whereas regionalisation or localisation could be the future.

Players in the semiconductor industry, from upstream to downstream, will have to go through a painful reconfiguration of complicated business relationships with their suppliers, partners and customers from various countries.

ViTrox Corp Bhd founder and president Chu Jenn Weng acknowledges that in the short term, he sees more positives than negatives from the trade war. He says semiconductor demand from Asia, especially China

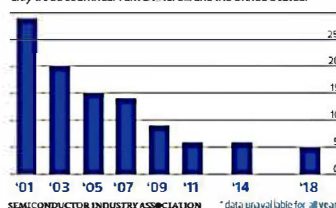
2019 demand by end-use

End-use category	Communication	Computer	Consumer	Automotive	Industrial	Government
Annual growth	-10.5	-18.7	-5.2	-6.9	-13.0	13.0
Total value (US\$ bil)	136.0	117.3	54.7	50.2	48.9	5.2

SEMICONDUCTOR INDUSTRY ASSOCIATION

Fewer semiconductor firms manufacturing at leading edge

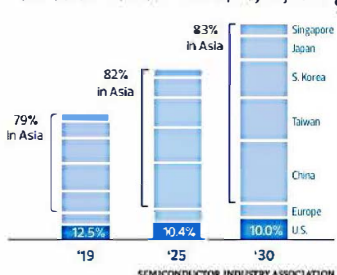
In 2001 nearly 30 semiconductor firms manufactured leading-edge chips. As time has progressed and leading-edge semiconductors have become more difficult and costly to produce, that number has decreased significantly. The remaining chip companies manufacturing at the leading edge are from only three countries: Taiwan, Korea, and the United States.



SEMICONDUCTOR INDUSTRY ASSOCIATION *Data unavailable for all years

Asia projected to capture nearly all manufacturing growth

2019-2030 Installed Global Wafer Capacity Projection



SEMICONDUCTOR INDUSTRY ASSOCIATION

and Taiwan, has increased significantly.

"China has been aggressively betting on the future of the semiconductor industry. The country has invested heavily to manage its short-term challenges as well as prepare its long-term plans. Huawei (Technologies Co Ltd) has been stockpiling for up to two years, and this has triggered a lot of growth and demand for the semiconductor industry," Chu tells *The Edge*.

At the same time, American companies are moving out from China and increasing their capacity elsewhere. Such a mega trend has raised the demand for technology equipment, benefiting Malaysian companies such as ViTrox.

But in the long run, when the US and

China are protective of their own interests at the expense of free trade, the global economy could suffer, he warns. "To me, any war is not good for the world. When the elephants are fighting, it is the grass that suffers most. The world will be divided. There will be some casualties. We only have one planet, so we should try to make it a better place."

For instance, Chu says, if China moves up the value chain and produces its own chips, American chip players may also suffer because most of their orders come from China.

He concedes that another downside of the trade war is that Malaysian companies may have to choose between the US and China. "We need to find ways to retain our business."

CONTINUES ON PAGE 52

COVER STORY

BY LIEW JIA TENG

To understand the role Malaysian semiconductor and electrical and electronics (E&E) firms play in the semiconductor value chain, one has to understand the manufacturing process (see chart).

It all begins with the design of the integrated circuit (IC) — a set of electronic circuits consisting of miniaturised electronic components built into electrical networks. The ICs, also known as chips, are created on a flat piece of wafer made of pure semiconductor material, normally silicon. This process is called wafer fabrication.

Subsequently, the chips go through a packaging process and are moulded into the appropriate design and form. Wafers are cut into individual chips and the functional ones are welded onto a printed circuit board.

To determine whether these packaged semiconductor devices work properly, they are put through testing procedures, including vision inspection, an electrical functional test and a burn-in test.

This is where semiconductor automated test equipment (ATE) comes into the picture. ATE systems are designed to not only reduce the amount of test time needed to verify that a particular semiconductor device works, but also to prevent defective ones from reaching the end-user.

In fact, ATE is needed not just for back-end semiconductor testing, but also for front-end wafer testing.

Lastly, the final consumer products are produced by electronics manufacturing service (EMS) providers, which are mostly contract manufacturers.

For perspective, local semiconductor and semiconductor-related firms, especially the public-listed ones, are mostly involved in the mid- to lower-end of the value chain, serving foreign semiconductor manufacturers, brand owners, IC developers and fabricators.

They can be divided into three groups. The first comprises outsourced semiconductor assembly and test (Osat) companies such as Inari Amertron Bhd, Malaysian Pacific Industries Bhd (MPI), Unisem (M) Bhd, Globetronics Technology Bhd and KESM Industries Bhd.

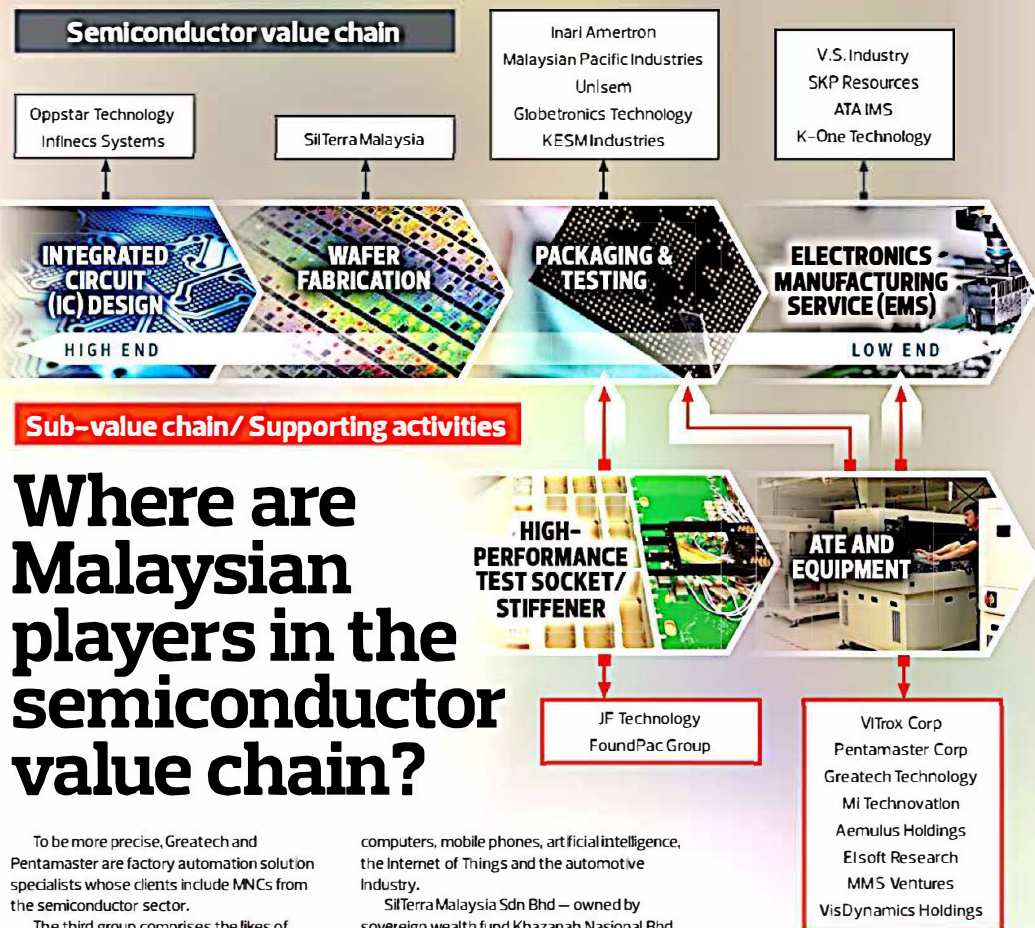
Over the past decades, the Malaysian semiconductor scene has largely been dominated by the labour-intensive Osat businesses, which were established to provide outsourced services such as assembly, packaging and testing, to multinational corporations (MNCs), such as Broadcom, Infineon, Intel, Osram, Advanced Micro Devices (AMD), Agilent Technologies (formerly Hewlett Packard), Renesas and Robert Bosch.

The Osat companies and these MNCs, in turn, created a need for the second group — the ATE manufacturers, which include ViTrox Corp Bhd, Pentamaster Corp Bhd, Greatch Technology Bhd, Mi Technovation Bhd, Aemulus Holdings Bhd, Elsoft Research Bhd, MMS Ventures Bhd and VisDynamics Holdings Bhd.

FROM PAGE S1

For example, during the trade war, we lost a sizeable order to supply our machines to an American EMS (electronics manufacturing service) company, which refused to work for a China smartphone company. But when this Chinese firm switched to a non-American EMS player, we somehow got back the order at the other end. We lost some, we won some."

Chua adds that as Malaysia is a small country, it would be wise to remain neutral, if possible. "Today, we have over 400 customers, including all the major smartphone players from China and the US. As far as ViTrox is concerned, we don't choose sides. We would love to continue to support all of them."



Where are Malaysian players in the semiconductor value chain?

To be more precise, Greatch and Pentamaster are factory automation solution specialists whose clients include MNCs from the semiconductor sector.

The third group comprises the likes of JF Technology Bhd and FoundPac Group Bhd, which design and manufacture high-performance test sockets as well as other materials such as stiffeners for Osat companies and semiconductor firms.

And then, there are the likes of V.S. Industry Bhd, SKP Resources Bhd, ATA IMS Bhd and K-One Technology Bhd, whose businesses are similar to that of Taiwanese contract manufacturing giant Hon Hai Precision Industry Co Ltd, better known as Foxconn Technology Group. These companies are generally categorised as EMS providers and located lower down the value chain and, hence, not considered semiconductor companies.

Fewer players at the front end

Interestingly, at the front end of the semiconductor manufacturing process, non-listed Oppstar Technology Sdn Bhd is one of the few home-grown semiconductor contract designhouses that focus on IC design.

Employing its state-of-the-art process technologies in the dimension of nanometres, Oppstar designs chips that are used in

computers, mobile phones, artificial intelligence, the Internet of Things and the automotive industry.

SilTerra Malaysia Sdn Bhd — owned by sovereign wealth fund Khazanah Nasional Bhd — is one of the few semiconductor wafer pure-play foundries in the country. It specialises in the production of semiconductor wafers that can be as little as 90 nanometres. The smaller the number of nanometres — a unit of measurement that is one-billionth of a metre — the better it is. Huawei's latest smartphone is using a 5-nanometre chip.

SilTerra was initiated by former prime minister Tun Dr Mahathir Mohamad in 1995 as a national development project and it was supposed to be strategic for the fortunes of the country's E&E sector.

However, industry observers have pointed out that over the years, SilTerra has not been competent enough to fight with the big boys on the global arena.

Today, the world's top three biggest chip giants — Intel, Samsung and Taiwan Semiconductor Manufacturing Co Ltd (TSMC) — are in the midst of developing 3-nanometre technology.

In addition, China's top contract chipmaker Semiconductor Manufacturing International Corp is also attempting to close the technology gap.

The nanometre size refers to the line width

between transistors on a chip. The smaller the number, the more cutting-edge the chips are, and thus more challenging and expensive to develop.

Intel co-founder Gordon Moore predicted in the 1960s that the number of transistors on a chip would double every year — Moore's Law — but that pace of progress has slowed significantly over time, as it has become increasingly challenging to squeeze more transistors onto a chip.

A business that operates a semiconductor fabrication plant is known as a foundry. If a foundry does not produce its own designs, it is known as a pure-play semiconductor foundry. The notable players are TSMC, GlobalFoundries, and United Microelectronics Corp.

If a foundry produces its own designs, it is known as an integrated device manufacturer (IDM). Notable examples are Intel, Samsung and Texas Instruments.

If a company designs semiconductor chips while outsourcing its fabrication to foundries, it is known as a fabless company. Notable players are Qualcomm Technologies, Nvidia and AMD.

Parallel supply chains

Notably, the Trump administration is cutting off the flow of chips to Chinese communications giant Huawei, which has been relying heavily on Taiwan Semiconductor Manufacturing Company Ltd (TSMC). The Taiwanese pure-play foundry manufactures Huawei's chips using American-made equipment.

As a result, Huawei last year spent RMB167.4 billion (RM102.4 billion) stockpiling up to two years' worth of chips, components and materials to shield its operations from Washington's crackdown.

At the country level, China, the world's biggest chip importer, refuses to be held to ransom by the US. Chinese president Xi Jin

ping has often referred to China's reliance on imported technology as *qia bozi*, or being strangled by the neck.

Last year, Beijing set up a RMB204.2 billion state-backed semiconductor fund to nurture its domestic chip industry and close the technology gap with the US.

Industry observers point out that the tech war has forced China to be more aggressive and independent. But as it is, the country is still way behind in chip manufacturing.

Even with some access to Western components, equipment and software, China's largest chip foundry operator, Semiconductor Manufacturing International Corp (SMIC), is still three or four years behind TSMC. Set up

in 2000, SMIC plays an important role in China's long-term plan to reach semiconductor self-sufficiency.

Meanwhile, it was revealed in May that TSMC will be building a US\$12 billion (RM52.2 billion) chip manufacturing plant in Arizona, the US.

This deal appears to be a big win for the Trump administration, which has been urging American semiconductor firms to reduce their reliance on chips manufactured in Asia, and more importantly, bring jobs back to the country.

Greatch Technology Bhd executive director and CEO Tan Eng Kee is of the view that

CONTINUES ON PAGE S4

COVER STORY

In their own words

BY LIEW JIA TENG • WONG EE-LIN

As the US-China trade war intensifies, electrical and electronics (E&E) firms in Malaysia are carefully navigating the divergence of technology and supply chains in the semiconductor space. While the impact of the trade war is significant, it is not the only factor that will determine the future of the E&E industry. What do industry captains have to say about their companies' prospects?



Chu Jenn Weng
Founder and president, ViTrox Corp Bhd

ViTrox has a 10-year plan: we want to build an ecosystem and retain our local talents. We want to create a supply chain cluster from both the technology and industrial aspects.

Today, there are a lot of uncertainties in the world, but I believe technology will continue to advance. In fact, the pandemic and the trade war will only accelerate the progress. Factories are accelerating the use of artificial intelligence (AI) and robotics. This is a global trend, not just in China, but also the US and Europe.

We believe that technology will go into Industry 4.0, automation and smart factory. These are the mega trends that ViTrox is betting on. We will be investing in software, AI and talent, based on these trends.

Of course, we are seeing tremendous opportunities amid the trade war, but we are also looking beyond that. I think Malaysia has to be very clear about its direction. What are we really good at? Personally, I think technology equipment is one area that we should be focusing on.

If you look at the automated test equipment (ATE) manufacturers and technology equipment companies listed on Bursa Malaysia, their combined market capitalisation about 20 years ago was probably less than RM200 million. Today, they are collectively worth more than RM20 billion. Other than the rubber glove industry's growth recently, I don't know which other industry can grow as fast as ours. The ATE and equipment makers continue to show consistent earnings growth over the years, and we even outperform the chip designers and Osat (outsourced assembly and test) companies.

Why? That's because we have the competitive edge, and we can compete with the global players. Today, if you look at the likes of ViTrox, Greatech Technology, Pentamaster Corp and MI Technovation, most of our equipment is exported to developed countries such as China, the US and Europe.

ViTrox has the world's fastest 3D X-Ray inspection equipment, with more than 40% global market share. Greatech, Pentamaster and MI Technovation are great companies. Then, we have another few non-listed equipment players that are equally good.

Over the years, some big, foreign technology equipment players have relocated to Malaysia because it has a strong talent pool. If Malaysia plays it right, we could become the technology equipment hub of Asia, if not the world. It may not be very high-end technology like aerospace or something like that, but I think semiconductor could well just be our niche.

ViTrox is one of the leading providers of automated vision inspection systems and equipment for the semiconductor and electronic packaging industries.



Tan Eng Kee
CEO, Greatech Technology Bhd

In order to expand Greatech's organic growth and move from being too heavily dependent on just one or two industries, we are broadening our market range from solar to other industries, especially in emerging markets, namely the energy storage industry.

As we have always mentioned, to witness a new horizon for Greatech, one would need to give us at least two years to flourish from where we are now. To be in line with our direction, Greatech is working aggressively to diversify our customer base and not solely focus on solar and semiconductor.

We are putting a lot of attention now on two products that we are developing. At this stage, we can only disclose that we are satisfied with the outcome of research and development and we believe this is in line with our direction — of not just increasing the market share of our existing core business, but with the additional products, we want to diversify our strategy [and go] into emerging markets.

We are hoping to secure more customers in the medical device and energy storage sectors in the coming years, while adding more accounts in the two core products.

In line with our objective to increase our exposure and presence in the electric vehicle (EV) sector, our organisation will be investing about US\$5 million to set up a new facility of about 10,000 sq ft in Detroit in the US for final test activities.

Besides, we have just hired a business development director in Arizona to penetrate the semiconductor and energy storage markets. As for the medical device sector, we are also looking to hire the right talent to break through in the medical industry in Chicago.

The focus on global expansion, particularly in Europe, will take place in 3Q2021, with the energy storage and medical sectors in mind.

What is important is that we do not allow the Covid-19 crisis to deter our business plan. We review our plans, assess which method or solution works best for the organisation in uncertain times ... and implement policies and strategies that are agile and resilient enough to respond to the crisis. We are moving in the right direction and we are glad that we have been able to secure orders from a new client.

Greatech is a factory automation solutions provider that designs, develops and produces the system, machinery and equipment for its customers' manufacturing processes.



Ong Choon Heng
CEO, FoundPac Group Bhd

FoundPac experienced a profit decline in the financial year ended June 30, 2017 (FY2017), and FY2018, mainly due to the impact of the Broadcom-Avago merger. Recall that Broadcom Ltd was our single largest customer. But following the merger with Avago Technologies Ltd (in 2016), Broadcom slowed down its purchasing activities. This affected our sales.

Since then, we have been diversifying and expanding our customer base. In FY2019 and FY2020, our financial performance improved. Our precision engineering businesses — high performance test sockets and stiffeners — have not been affected by the pandemic.

We supply a lot of these products to our customers for their research and development activities. These R&D activities do not stop, not even during the lockdown period. Surprisingly, our customers have been chasing us for the supply of goods.

Of course, during the Movement Control Order (MCO) period, we faced some challenges in delivery of our goods. We needed to communicate with our customers and manage their expectations so that we did not lose their orders. Fortunately, they understood the situation and they have been very supportive.

Meanwhile, our laser stencil business has been doing well, although it was affected by the pandemic. Back in January and February, there was a supply chain disruption because of the lockdown in some cities in China. And hence, the demand for our stencils was also reduced. In March and April, Malaysia was put under the MCO. So, in total, we were caught for about four months. The lead time for stencils is very short. Once the customers place the orders, they expect us to deliver within one to two days. They usually need it urgently, so this has been a big challenge for us.

Compared with our competitors, I would say FoundPac has a more diversified business and customer base. We position ourselves as a precision engineering solution provider. If you look at our products, we co-design them with our customers. We modify them and change the materials to suit the customer's needs.

Going forward, we are planning to penetrate further into the automotive sector. With more sensors in cars, our test socket business will definitely benefit. But don't forget, we are essentially a precision engineering firm that happens to be focusing on semiconductor clients. That doesn't stop us from going into the automotive segment. We see a lot of business opportunities in supplying precision parts to the automotive industry. We want to leverage our strength in precision engineering.

Foundpac produces stiffeners and high-performance test sockets, which are mainly used by multinational semiconductor corporations.

CONTINUES ON PAGE 54

COVER STORY

FROM PAGE S3



Ng Meng Thai
Managing director, Oppstar Technology Sdn Bhd

Oppstar aims to build its reputation in the integrated circuit (IC) design sector by providing a conducive, secure and high-quality service, even throughout the pandemic. Despite the numerous challenges faced as a result of the outbreak, remote working models have allowed overseas projects to be brought back to, and executed, in Malaysia. This could possibly signal a new era in the local contract design industry.

Business opportunities are improving as we turn ourselves into a global player. In our first three years of operations, we have largely been dependent on local business opportunities, which is limited as the demand in Malaysia is limited to several common players. As we move overseas, we are able to offer our services to Singapore, China, Japan, South Korea, Turkey, Egypt, Germany, the US and other countries that are highly keen to develop ICs. Given that the semiconductor sector is growing at an above-average pace compared to global economic growth, the endeavour to move overseas presents many opportunities that we had not experienced previously.

Further to that, the US-China trade war presents a different opportunity as it now seems that some countries are preparing themselves for deglobalisation. One of the key defensive moves for any country would be making itself less dependent on other countries for semiconductor technologies. Hence, we have now got enquiries on chip design from many countries besides the US and those in Europe.

Another opportunity would be rising demand for semiconductor design from Asian countries such as China, South Korea and Japan. These are countries that are closer to Malaysia in terms of culture, giving us an advantage over competing companies from the US, India and Europe.

We will still tread carefully despite the opportunities presented. On market share, we are still very small. For perspective, the IC design market demand in China itself is US\$50 billion per year. Hence, to us, it is more of getting the right job opportunities while building our brand name through our deliveries.

At the moment, we do not have specific plans to list. We may revisit the plan in the next one to two years. We have been profitable since our incorporation in 2014, except for the first year of operation. We are, however, open to private investments, especially the strategic ones.

Oppstar is one of the very few home-grown premier IC design houses in Malaysia. The non-listed firm provides complete IC designs and system solutions to its clients.



Matin Ng Chin Liang
Deputy group CEO, UWC Bhd

At UWC, we always believe in transformation and diversification of business. From time to time, we need to transform to another level, because customers will always be expecting cheaper prices, and that would mean our margin will also be squeezed. As we are now in the business of manufacturing front-end semiconductors, the margin has been higher.

Our belief in diversification is also because we don't want to put all our eggs in one basket. While we are involved in the semiconductor industry, we are also involved in the life sciences segment.

We are very excited for FY2021 and we are optimistic and confident in seeing growth in our top and bottom lines this year, based on the order books secured, which are mainly from the semiconductor and SG segment.

We are optimistic as order enquiries are getting better and are even stronger than last year's. Before the MCO, our order book was RM60 million. Currently, it is RM70 million, which would last us for three months. There were no cancellations of orders during the MCO.

For now, we will stay focused on the manufacturing of front-end semiconductor equipment — especially wafer fabrication equipment and SG equipment. I believe this is the future, at least for the next three years.

Although industry growth is only 13%, UWC's growth is more than that. We are optimistic about prospects in the industry as we can see the spillover effect of the US-China trade war and order diversion from China to Malaysia or to the US.

The Covid-19 outbreak is a wake-up call for global MNCs — they shouldn't be dependent on China manufacturing in their supply chain.

The pandemic or the trade war can only slow down technology, they cannot stop it from evolving.

We are also looking at autonomous vehicles. For instance, during those days, the electrical and electronic parts in the car were probably just the radio. Now, in luxury cars, all are sensors, and there are so many chips needed to make the car smarter.

UWC is running at 85% production capacity. Thus, moving forward, in order to secure more orders, the company's strategy is partnering strategic allies, which are our suppliers.

We are going to offload less-critical items to our suppliers and we are going to take in more high-value critical items to run them in our factories. With that, we are expecting to free up our capacity by 20% to 30%.

We will be getting some of our key suppliers to invest in the equipment. We have given a commitment that we will place certain orders from them within the specific period.

UWC is an integrated engineering support services provider principally involved in the manufacture of automated test equipment for players in the semiconductor, life science, medical technology and heavy equipment industries.

US-China trade war presents opportunities for Malaysia

FROM PAGE S2

the trade war will add growth momentum to the Malaysian economy, as the US is now open to other options in relocation. In the past, it was narrowed down to only China.

"Malaysia could seize this opportunity because we have the right pool of talent, especially our engineering capabilities. And in terms of cost, our manpower cost is still one of the lowest compared with our neighbours," he tells *The Edge*.

On the corporate front, Tan says Greatch is seizing opportunities in the US and Europe, as the adoption of automation is growing extensively there. "These advanced countries are more willing to adopt new technology advancement because the demand for such needs is higher and they are less stringent with cost. With our presence in these regions, it will benefit us because we are migrating the technology from the advanced countries to our home ground," he comments.

FoundPac Group Bhd CEO Ong Choon Heng concurs that Malaysian E&E players are beneficiaries of the trade war, although it still depends on the company's nature of business individually.

"The US is trying to block chip supplies to Huawei. China will now have to build up its own ecosystem for the semiconductor sector, especially in terms of the chip manufacturing industry. Today, China is capable of doing almost everything, except the chips. They still need to rely on the likes of Broadcom Inc or Qualcomm," he tells *The Edge*.

Going forward, says Ong, Malaysian players, including FoundPac, should rethink strategies to penetrate China's tech ecosystem.

"I believe, in years to come, the world is going to have two major ecosystems, one in the Western world, which will be led by the US, and another one in the Eastern world, which will be led by China. Huawei needs to survive. They cannot be forever relying on TSMC. China's government will be giving Huawei strong support in developing its own chips," he explains.

Ong goes on to say that when China is capable of making its own chips, FoundPac will be ready to support the Chinese firms.

"It's not an election or foreign affairs, whereby I can only choose between the US or China. I can support both ecosystems. For us, there is no patent issue. Of course, for some companies, if they sign exclusive rights with the US companies, then they cannot supply to China," he says.

Ong highlights that American corporations, being patriots, need to move out from China.

Malaysia seems to have many advantages over its neighbours — Vietnam's cost of doing business is not cheap anymore, Thailand has a language-barrier problem and Indonesia has a sometimes hostile business environment.

"By attracting them (American corporations) to come to Malaysia,

it will create job opportunities. But more importantly, they need local supplies and support, which means more business opportunities for us," he says.

Shifting strategies

Oppstar Technology Sdn Bhd managing director Ng Meng Thai admits that the international technology market is being greatly influenced by the escalation of the US-China trade war, which has been steadily providing new business opportunities to companies, particularly those involved in semiconductor design and development.

"After all, this sector has been the heart of the technological war between the two superpowers. The effects of the trade war, as observed from Huawei's situation, have also caused some current technology-dependent superpowers to change their strategy by moving for broader independence rather than interdependence," he tells *The Edge*.

Ng envisions that this trend will create more opportunities for semiconductor companies that are taking a non-partisan stand, as Malaysia's neutrality has allowed local companies to ride on the coattails of the tech war.

"We think the trade war will give us opportunities as long as Malaysia is deemed as a neutral country. Our people's ability to serve English and Mandarin-speaking customers is a key advantage. Further to that, there are not many countries that are good in chip design as it is a highly specialised field with high investment as a key deterrent," he explains.

Ng reiterates that the trade war presents opportunities for Malaysia to attract companies from both the US and China.

"For the US and even Europe, they do not want to be too dependent on China as a manufacturing base. Hence, they would be engaging Malaysian EMS companies and packaging houses. Besides, automation companies would be serving both sides, as long as IP (intellectual property) issues are not a concern," he says.

At a time of deglobalisation, says Ng, both the US and China would try to retain key technologies. However, Malaysia will not be a threat to both superpowers. Therefore, he says, the country would do well in adopting a well-balanced strategy.

While Malaysia is an optional base for some semiconductor companies, Ng points out that the key challenge for it is its dependence on foreign companies. It has not moved towards building local champions.

"I think Malaysia has regressed in our competitiveness, even on the front end of the semiconductor industry. Several companies, including Oppstar, are trying to compete but given the challenge coming from Vietnam, India and China, Malaysia will be just another player," he concludes.