

8. IMR REPORT

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The information in this Section 7 is based on market research conducted by Protégé Associates commissioned by Coraza Integrated Technology Berhad for the purpose of the IPO.

The Board of Directors
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Date: 30 June 2021

Dear Sirs,

Strategic Analysis of the Engineering Supporting Industry in Malaysia

Protégé Associates Sdn Bhd ("**Protégé Associates**") has prepared this 'Strategic Analysis of the Engineering Supporting Industry in Malaysia' for inclusion in the prospectus of Coraza Integrated Technology Berhad ("**Coraza**") in relation to its listing on the ACE Market of Bursa Malaysia Securities Berhad.

Protégé Associates is an independent market research and business consulting company. Our market research reports provide an in-depth industry and business assessment for companies raising capital and funding in the financial markets; covering their respective market dynamics such as market size, key competitive landscape, demand and supply conditions, government regulations, industry trends and the outlook of the industry.

Mr. Seow Cheow Seng is the Managing Director of Protégé Associates. He has 21 years of experience in market research, having started his career at Frost & Sullivan where he spent 7 years. He has been involved in a multitude of industries covering Automotive, Construction, Electronics, Healthcare, Energy, IT, Oil and Gas, etc. He has also provided his market research expertise to government agencies such as Malaysia Digital Economy Corporation Sdn Bhd, Malaysia Debt Ventures Berhad and Malaysia Technology Development Corporation Sdn Bhd.

We have prepared this report in an independent and objective manner and have taken adequate care to ensure the accuracy and completeness of the report. We believe that this report presents a balanced and fair view of the industry within the boundaries and limitations of secondary statistics, primary research and continued industry movements. Our research has been conducted to present a view of the overall industry and may not necessarily reflect the performance of individual companies in this industry. We are not responsible for the decisions and/ or actions of the readers of this report. This report should also not be considered as a recommendation to buy or not to buy the shares of any company or companies.

Thank you.

Yours sincerely,



SEOW CHEOW SENG
Managing Director

8. IMR REPORT (Cont'd)**1.0 Introduction to the Engineering Supporting Industry**

The engineering supporting industry ("ESI") mainly involves the manufacture of metal products that are later used to produce various end products. In accordance to the Malaysian Investment Development Authority ("MIDA"), the segmentation of the ESI in Malaysia is as follows:

Figure 1 : Segmentation of the ESI

Segment	Description
Moulds and dies	Moulds and dies are generally used in the manufacturing industries. During the casting process, molten metal or other liquid substances are poured into the mould or die. Once the molten metal or substance solidifies, the end product with the same shape of the mould or die is formed. The end product is then removed from the mould or die. Mould or die casting is particularly suitable for series and mass production of components as the metal moulds or dies can be reused for all of the same components.
Machining	Machining generally involves the use of advanced computer numerical control ("CNC") machines to produce high-precision parts or components, of which the fabricated parts have manufacturing tolerances as low as one to five micrometre. Advanced CNC machines are also capable of multi-axis machining, in which machining tools can move in four or more directions to manufacture complex parts and components. This has greatly expanded the range of products that can be produced. Examples of precision parts or components that can be manufactured using CNC machines include shafts, pins, brushes, jigs and parts found in hard disk drives.
Metal casting	This segment includes foundries, die casting, magnesium injection moulding (Thixomoulding©) and investment casting. In foundries, metal is melted into liquid form and is subsequently poured into a mould to produce a specific metal part or component. Die casting involves a process whereby molten metal is injected into a mould or die at high pressure to form a casting of the same shape of the mould used. Sand casting involves pouring molten metal into a mould created by compacting sand around a pattern or model of the final product (the pattern is removed after the sand is compacted to allow molten metal to be poured into the mould). Investment casting involves creating a three dimensional ("3D") wax version of the final product and subsequently dipping the wax product into a ceramic suspension that hardens over the wax structure. The ceramic is heated to remove the wax, thus creating a ceramic mould. Molten metal is poured into the mould, and upon cooling down, the ceramic mould is destroyed to remove the metal casting.
Metal stamping	Metal stamping involves producing stamped metal parts from sheet metal. In particular, stamped metal parts are largely used in the electrical and electronics ("E&E"), machinery and equipment ("M&E") as well as automotive industries.
Surface engineering	Surface engineering refers to a wide range of technologies (generally via a plating process) that are used to modify the surface properties of metallic or non-metallic components for both decorative and/or functional purposes. Examples of surface engineering include improving corrosion resistance to prolong component life or providing special properties such as non-stick surfaces.
Heat treatment	Heat treating involves the heating and cooling of metal to various temperatures to alter its physical and mechanical properties.
Forging	Forging generally involves applying physical force to alter the physical shape of a metal to a desired form. Forging is mainly used in the manufacturing iron and

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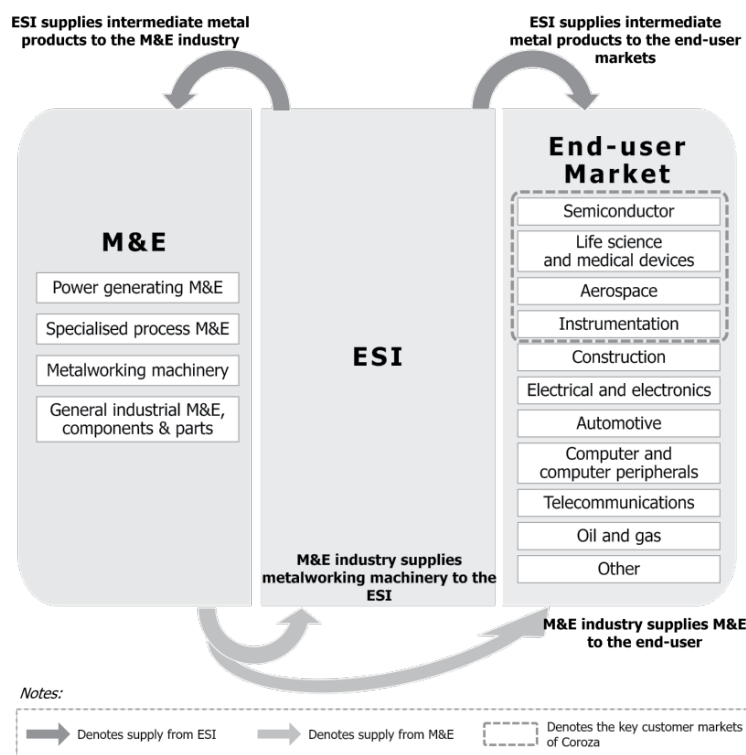


Segment	Description
	steel products.
Metal fabrication	Metal fabrication generally involves the process of creating metal structures from metal materials via cutting, bending, welding, machining, forming and assembly to create the final product. End products can range from small simple household items to large complex metal structures used in the construction industry or on oil drilling platforms.

Sources: MIDA and Protégé Associates

The ESI produces and supplies intermediate metal products to both the M&E industry as well as to other end-user markets. These intermediate metal products are utilised in the production of various finished products by both these end-user markets. The relationship between the ESI and its user industries are depicted in Figure 2.

Figure 2: ESI and User Industries



Source: Protégé Associates

The M&E industry can be segmented into power generating M&E, metalworking machinery, specialised process M&E, and general industrial M&E components and parts. The M&E industry utilises intermediate metal products in the production of various machinery and equipment. These machinery and equipment are in turn, supplied to customers such as the automotive, aerospace, E&E, and oil and gas industries.

Other users of the intermediate metal products produced by the ESI include semiconductor, life science and medical technology, E&E, computer and computer peripherals, oil and gas, automotive, aerospace and telecommunications industries.

8. IMR REPORT (Cont'd)**2.0 Overview of the M&E Industry and Selected End-User Markets****2.1 Overview of the M&E Industry in Malaysia**

At present, Malaysia still relies on imports of M&E to fulfil local demand. This can be seen from the increasing value of M&E imports, which rose from RM54.57 billion in 2013 to RM69.64 billion in 2019, representing a compound annual growth rate ("CAGR") of 4.2% over the period. This figure fell to RM59.69 billion in 2020 due to the coronavirus ("COVID-19") pandemic disrupting global economic activities. Malaysia mainly sources imported M&E from countries such as the United States ("US"), Japan, Singapore, China, Thailand and Germany. Malaysia has also been increasing exports of M&E over the years. Malaysian exports of M&E stood at RM27.07 billion in 2013 and grew to RM41.60 billion in 2019, expanding at a CAGR of 7.3%. Similarly, due to the effects of COVID-19, M&E exports fell in 2020 to RM39.37 billion. Main export destinations of Malaysian M&E include Singapore, the US, Germany, the United Kingdom, Indonesia, Thailand, Hong Kong and Australia. Due to its crucial part in driving Malaysia's economic and technological development and advancement, continuous investment has been poured into the local M&E industry. A total of 87 M&E projects worth RM6.7 billion were approved in 2020. While the number of approved projects during 2020 is less than the 99 projects approved in 2019, the value is a significant increase of over the RM3.6 billion in 2019.

Going forward, the M&E industry in Malaysia is expected to continue growing in tandem with the expansion of its end-user markets. While the global manufacturing industry is expected to remain subdued in the immediate term due to the negative impact from COVID-19 and the on-going trade protectionism, growth is expected to pick up in the near term once the pandemic is brought under control. Expansion in the manufacturing sector is likely to lead to investment in production expansion or improvement, which translates into higher demand for M&E in Malaysia.

2.2 Overview of the Global Semiconductor Industry

There has been an increase in demand for semiconductor, supported by increased usage of semiconductor in both traditional and non-traditional industries. While there has been a reduction in demand for semiconductor in 2019 due to several factors including the on-going global trade unrest as well as cyclicalities in product pricing, demand has recovered in 2020. Global sales of semiconductors was valued at USD412.31 billion in 2019 and increased to USD440.39 billion in 2020, representing an increase of 6.8%.

The global semiconductor industry is projected to expand as ever-increasing number of E&E devices are being produced with embedded semiconductor technology. The continued evolution in technologies is expected to lead to introduction of new electronic devices and contribute to a higher demand for semiconductors.

The world is currently facing a shortage in semiconductors, in which the shortage of integrated circuits ("ICs") has led to production disruptions in the global automotive as well consumer electronics industries. The shortage has also led to increased bookings for semiconductor by consumers to secure parts for production of end-products. Going into 2021, the global semiconductor industry is forecast to reach USD488.27 billion.

2.3 Overview of the Global Life Sciences and Medical Technology Industry

Life sciences refer to the scientific study of organisms, including microorganisms, fauna and flora, as well as human beings. Medical technology, on the other hand, refers to the application of knowledge in medical sciences to develop products and services to improve the healthcare sector, in particular in the field of diagnostics and treatment. The development of the life sciences industry often goes hand in hand with the medical technology industry, due to similarities in their fundamental drives, namely an aging population as well as the prevalence of chronic disease. Presently, the medical technology industry is focus mainly on improving existing technologies by incorporating new technologies into consumer-oriented medical devices and healthcare equipment. This too is the main aim of life sciences companies. As such, the innovation in the life science and medical technology industry has manifested in many new products, ranging from the invention of new medical devices such as needle-free diabetes care to surgical robot for precise operations.

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The outlook of the life sciences and medical technology industry is expected to remain bright, supported by an ageing population and healthcare reforms requiring increased need for healthcare and medical products. The United Nation has estimated that there were 727 million persons aged 65 years and over in the world in 2020. This figure is projected to double to 1.5 billion in 2050.

2.4 Overview of the Global Instrumentation Industry

Instrumentation refers to test and measurement equipment that is used to measure, analyse, test and record electrical data. The equipment generates electrical signals and capture responses from the devices being tested in order to test for any faults and to ensure that the device is functioning properly. Common test and measurement equipment include oscilloscopes, frequency counters, and spectrum analysers.

Significant improvements in technology and industrialisation are key factors in the growth of the instrumentation industry, as test and measurement equipment are widely used to test for performance and for defects during manufacturing of semiconductors and consumer electronics as well as during regular maintenance of aircrafts. The outlook of the instrumentation industry moving forward is anticipated to remain positive in light of its wide range of end-users and technological advancements such as 5G and the Internet of Things ("IoT"). In 2020, the industry was valued at USD24.3 billion. The industry is anticipated to grow by a CAGR of 3.7% from USD26.0 billion in 2021 to reach USD30.1 billion in 2025.

2.5 Overview of the Global Aerospace Industry

The aerospace industry refers to the research and development and manufacturing of aircrafts, including commercial and military aircrafts, and other related aviation machinery and equipment. Aerospace systems are complex and precise and the finished products can be made up of numerous components and piece-parts. It is also a highly-competitive industry as a result of technological progress.

The aerospace industry endured a difficult year in 2020 as the COVID-19 pandemic led to a decline in the commercial aerospace sector due to significantly decreased passenger traffic. As a result, the industry declined from USD342.4 billion in 2019 to USD332.3 billion in 2020. However, on-going global recovery from COVID-19 and continued spending on the military aerospace sector is expected to help the industry rebound moving forward. Nevertheless, the outlook of the aerospace industry is expected to be positive in the future as the industry continues to improve on existing systems to produce more technologically advanced aircrafts. As such, the industry is expected to recover and grow at a CAGR of 5.0% from USD343.3 billion 2021 to reach USD417.3 billion in 2025.

3.0 Overview of the ESI in Malaysia

The Malaysian ESI is reliant on export demand as the industry exports products to a wide range of end-user markets, including semiconductor, life science and medical technology as well as M&E. At the same time, growth in the industry as a whole generally follows cyclical trends in tandem with the fluctuation in global economic growth and volatile foreign currency, in particular the USD which tends to affect export demand.

The cyclical growth trend of the ESI industry can also be partly attributed to the cyclical nature of technology-based end-user markets, notably the semiconductor industry. The constant introduction of new or improved E&E devices (which mainly consist of semiconductors) has resulted in older technology becoming obsolete at a faster pace. This has resulted in the depreciation of prices of older model products to remain competitive in the marketplace. This downward pressure is passed through the entire value chain of the semiconductor industry, including the ESI which supplies various parts and components.

The estimated market size (in terms of sales value of manufactured products in Malaysia) and growth forecast of the ESI in Malaysia is shown in Figure 3.

8. IMR REPORT (Cont'd)**Figure 3: Estimated Market Size (in terms of sales value of manufactured products in Malaysia) and Growth Forecast of the ESI in Malaysia, 2019-2025**

Year	Market Size (RM billion)	Growth Rate (%)
2019	7.93	-
2020	6.23	-21.4%
2021	7.98	28.1%
2022	8.71	9.1%
2023	9.25	6.2%
2024	10.04	8.5%
2025	10.78	7.4%

Notes:

1. CAGR (2021-2025) (base year of 2020): 11.6%;
2. All figures are rounded;
3. Figures from 2020 are estimated. Figures from 2021 to 2025 are projection.
4. The estimated market size and growth forecast exclude sales of products from metal fabrication activities which range from simple household items to large-scale metal fabricated structures for skyscrapers and oil drilling platform.

Source: Protégé Associates

The Malaysian ESI has been affected by the growing trend of protectionism (the governmental actions and policies of protecting its domestic industries from foreign competition through the implementation of tariff, import quotas, products standards or government subsidies) by various countries, notably the trade wars between the US and China and Europe. The trade tension between the countries has caused disruptions in the global supply chain and trading activities, leading to downside risk to the global economy. This has been compounded by the COVID-19 pandemic which had further impacted the global economy. In order to curb the spread of COVID-19, governments around the world, including Malaysia, have imposed multiple travel and movement restrictions. This has affected the global supply chain and led to shortage of supplies, delays from suppliers to customers, and an increase of raw material prices and logistic costs. As the end-user markets of the ESI in Malaysia are part of the global supply chain, they are sensitive to economic cycles and their performance is affected by the current conditions in the global economy. As such, any adverse impact on the global economy, such as trade protectionism policies and pandemics, is likely to have a negative impact on the Malaysian ESI.

In the short term (2021-2022), growth of the ESI is likely to be affected by the global economic outlook for 2021 and 2022. The International Monetary Fund ("IMF") is projecting the global economy to register a growth of 6.0% in 2021 and 4.4% in 2022. The growing availability of COVID-19 vaccines is expected to underpin global economic recovery, which will promote the recovery of the ESI in Malaysia.

In the medium to long term (2023-2025) the ESI in Malaysia is likely to experience cyclical growth due to fluctuations in the global economy and a volatile foreign currency exchange that are expected to continue impacting the export demand for the intermediate metal products from the ESI in Malaysia. Growth of the ESI is likely to be driven by factors such as technological advancements, strong government support towards the M&E industry and end-user markets, the global ageing population. The ESI in Malaysia is expected to grow from RM6.23 billion in 2020 to RM10.78 billion in 2025, at a CAGR of 11.6% for the period.

3.1 Competitive Analysis

The ESI in Malaysia can be characterised by a highly competitive landscape whereby industry players compete fiercely against one another to gain market share. There is an estimated of approximately 2,000 market players (Source: MIDA) comprising of domestic players and foreign companies establishing manufacturing bases in Malaysia.

8. IMR REPORT (Cont'd)

Coraza is an engineering support services provider principally involved in the manufacturing of sheet metal parts and precision machined components. For the purpose of this report, Protégé Associates has used the following criteria when selecting industry players in Malaysia for comparison with Coraza:

- Involved in the production of sheet metal parts and precision machined components;
- Cater to semiconductor/E&E as well as the life science and medical technology end-user markets; and
- Registered an annual turnover of between RM80 million and RM250 million based on the latest publicly available financial information (The threshold is selected based on Protégé Associates' study on the list of companies in the ESI in Malaysia and their financials).

The above criteria are used to narrow down the list of industry players that can be selected for comparison with Coraza. The criteria are used in order to select industry players that are deemed to be more similar to Coraza in terms of upcoming revenue, type of products and principal activities. After taking into consideration the above criteria, Protégé Associates has selected five industry players namely Alpha Precision Turning and Engineering Sdn Bhd ("Alpha"), Frencken Mechatronics (M) Sdn Bhd ("Frencken"), Kobay Technology Berhad ("Kobay Technology"), Synturn (M) Sdn Bhd ("Synturn") and UWC Berhad ("UWC") for comparison purposes. It needs to be highlighted that the list of industry players used for comparison purpose is not exhaustive. These market players cater to a wide range of end-user markets and may not entirely be the same as Coraza.

Alpha Precision Turning and Engineering Sdn Bhd

Alpha is principally involved in the manufacture and sale of engineering and precision metal turned parts. Alpha's end-user markets include the E&E, life science and medical technology, aerospace, automotive, oil and gas as well as the textile machinery industries.

Frencken Mechatronics (M) Sdn Bhd

Frencken is principally involved in the manufacture of machined parts and components for the electrical and electronics industries, semiconductor industrial machinery equipment, aerospace industry, medical equipment industry, environmental equipment, professional machines and other solar energy equipment and machineries.

Kobay Technology Berhad

Kobay is currently listed on the Main Market of Bursa Malaysia Securities Berhad. It is an investment holding company while principal activities of its subsidiaries include manufacture of metal works and structures, modules and parts for oil and gas production and extraction equipment, manufacture of semiconductor assembly and testing equipment, manufacture of precision moulds and parts, precision plating and surface treatment and manufacture of precision metal stamping, sheet metal and die casting parts.

Synturn (M) Sdn Bhd

Synturn is principally involved in the manufacturing of precision machine parts and other related materials. Synturn's end-user markets include the imaging and printing, domestic appliances, consumer electronics, data storage, machinery, automotive systems and telecommunications industries.

UWC Berhad

UWC is currently listed on the Main Market of Bursa Malaysia Securities Berhad. It is an investment holding company while principal activities of its subsidiaries include provision of precision sheet metal fabrication and value-added assembly services and provision of precision machined components. UWC's end-user markets include the semiconductor, life sciences and medical technology, telecommunications and M&E industries.

8. IMR REPORT (Cont'd)**Figure 4: Comparison between Coraza and Selected Industry Players in the ESI in Malaysia**

Indicator	Coraza	Alpha	Frencken	Kobay	Synturn	UWC
Information from FYE	31 December 2020	31 December 2019	31 December 2019	30 June 2020	30 June 2020	31 July 2020
Revenue (RM'000)	83,686	84,708	136,329	197,524 ³	156,842	219,050
Profit before Tax (RM'000)	10,500	5,005	2,589	33,755	17,283	72,629
Profit after Tax (RM'000)	8,016	3,953	2,605	24,101	13,345	57,764
Profit before Tax Margin ¹ (%)	12.5	5.9	1.9	17.1	11.0	33.2
Profit after Tax Margin ² (%)	9.6	4.7	1.9	12.2	8.5	26.4

Notes:

- The above figures (which are based on the latest available audited financial information) only provide an indication and are not considered directly comparable as not all companies carry out activities which are completely similar to each other or in the same geographical area;
- The list of industry players is not exhaustive;

¹ Profit before Tax Margin = Profit before Tax / Revenue

² Profit after Tax Margin = Profit after Tax / Revenue

³ Includes revenue generated from property development division of RM12.0 million

Sources: Coraza, Companies Commission of Malaysia, Annual Reports of Kobay and UWC, and Protégé Associates

3.2 Coraza's Market Share Analysis

For FYE 31 December 2020, Coraza generated revenue of RM83.7 million, equivalent to 1.3% share of the total size of the ESI in Malaysia of RM6.23 billion in 2020. This is based on Coraza's revenue of RM83.7 million against the market size (in terms of sales value of manufactured products in Malaysia) of the ESI in Malaysia of RM6.23 billion in 2020.

4.0 Demand Conditions**Figure 5: Demand Conditions Affecting the Construction Industry in Malaysia, 2021-2025**

Impact	Demand Conditions	Short-Term	Medium-Term	Long-Term
		2021-2022	2023-2024	2025
+	Technological Advancement	High	High	High
+	Strong Government Support towards the M&E Industry and End-User Markets	High	High	Medium
+	Global Ageing Population and Healthcare Reforms	Low	Low	Low
-	Trade Protectionism by Major Economies	Medium	Medium	Low
-	COVID-19 Disrupting Global Supply Chain	Medium	Low	Low

Source: Protégé Associates

Technological Advancement

The advancement in technology has led to an increasing amount of E&E components being incorporated into both traditional and non-traditional industries. As the ESI is heavily reliant on the performance and growth of its end-user markets, the industry is expected to benefit from the rapid development of technological trends which are expected to drive demand for semiconductor and other E&E products. Some of the key technological trends driving the expansion of the semiconductor industry are detailed below.

8. IMR REPORT (Cont'd)***Invention of new technologies***

Growth in the semiconductor industry is expected to be bolstered by the creation of new and innovative electronic devices. The introduction of augmented reality ("AR"), virtual reality ("VR") and three-dimensional ("3D") printing in the recent years is expected to spur the development of related new electronic devices such as AG glasses, VR headsets and 3D printing machines.

Advancement of telecommunication technologies

The development of more advanced telecommunication technologies has led to an increased usage of ICs used in telecommunication devices and transmission infrastructure. As such, this development has also spurred the innovation of semiconductor products to support growth of the telecommunication industry. One of the latest telecommunication technologies cater to the development of the fifth-generation wireless broadband technology ("5G") that provides faster speed and wider coverage. The 5G technology is expected to have a greater number of multiple input and output streams, and is set to have a higher data transmission rate than the present fourth-generation wireless broadband technology. As such, the development of more advanced semiconductor technologies is required to support the greater data transmission rate as well the expansion in the input and output streams in preparation of the incoming 5G technology.

Internet of Things

The IoT refers to a network of physical objects that are made able to communicate with one another through the use of electronics, software, sensors as well as the network connectivity embedded within them. The growing prominence of the IoT has led to increasing usage of sensors and semiconductors in both consumer and industrial products, ranging from cloud computing, drone cameras, smart home devices, wearable technology, to smart manufacturing where manufacturing equipment are connected to each other through a network system.

Internet of Medical Things ("IoMT")

Along with an ageing global population, new applications in life science and medical technology have been constantly being developed to ensure the health and wellbeing of human beings. In particular, the adoption of IoMT in medical devices to monitor a patient's health condition using embedded connectivity and sensor technology has been one of the new and upcoming trends within the healthcare industry. The use of IoMT devices also provides healthcare providers with the necessary data required to take immediate health actions or detect health issues at an early stage.

Strong Government Support towards the M&E Industry and End-User Markets

The demand for intermediate metal products manufactured by the ESI in Malaysia is mainly driven by the local M&E industry. The Malaysian M&E industry serves as a catalyst for the country's transition into a high-technology nation, due to its linkages to various important economic sectors such as the manufacturing, construction and services industries. As such, strong government support has been provided to the industry, as shown by its inclusion into the Third Industrial Master Plan ("IMP3") to promote growth.

At the same time, government support has been instrumental to the development of the local E&E industry. Any development in the E&E industry can only serve to benefit its supporting semiconductor industry. As the E&E industry has been identified as one of the most important sectors contributing to the Malaysian economy, it has been named as one of the National Key Economic Areas ("NKEAs") under the Economic Transformation Programme. The local E&E industry can look forward to prioritised investment and policy support from the Government for its continuing development.

Malaysia is also committed to improving healthcare delivery standards to provide world-class medical products and technologies. The Government established the Medical Device Investment Advisory Panel ("MDIAP") to assist the industry's growth and development, by providing strategic initiatives to promote the growth of the medical device industry in Malaysia.

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The Government also regards the aerospace industry as one the key industries that can transform the country into a high-technology nation and contribute to the overall Malaysian economy. To ensure growth of the aerospace industry, the Government has launched the Malaysian Aerospace Industry Blueprint 2030 with a vision for Malaysia to be a leading South East Asian nation in aerospace by 2030 through various initiatives and become an integral part of the global aerospace industry.

Global Ageing Population and Healthcare Reforms

With a global ageing population, demand for healthcare and other associated spending has been on the rise. Healthcare reforms are also seen across the globe to provide better healthcare services for the general population. At present, the population's access to healthcare facilities and treatment varies widely around the globe, with poor countries seeking basic infrastructure such as clean water and sanitation, while developed economies have abundant hospitals but struggle with cost containment. With an increasing older demography coupled with more healthcare reforms, demand for healthcare is likely to increase and hence driving more demand for life science and medical technology products. This will in turn drive demand for the ESI in Malaysia.

Trade Protectionism by Major Economies

There has been a recent rising trend in trade protectionism, led by major economies, notably the US, China and the European Union. The trend of trade protectionism has the potential to adversely impact global trading activities, posing a downside risk to global economic growth. According to the IMF, the protectionism measures are estimated to cost the global economy USD430.0 billion lost in GDP or lower global growth as much as 0.5% by 2020. Furthermore, impact of the downside risk may increase if the uncertainties over trade protectionism are prolonged.

In Malaysia, many of the end-user markets of the ESI are sensitive to economic cycles and are subject to the conditions of the global economy. As such, the trade protectionism by major economies is expected to adversely affect the demand for end-user market products, and in turn demand for intermediate metal products from the ESI in Malaysia.

COVID-19 Disrupting Global Supply Chain

With the on-going COVID-19 pandemic still unable to be brought under control, the global economy saw a contraction of 3.3% in 2020. In particular, advanced economies contracted by 4.7% while emerging markets and developing nations fell by 2.2% during the year. According to the IMF, while the index for industrial production had recovered towards the end of 2020, the sharp decline in industrial production during the year had led to an overall weaker performance as compared to the previous year. As a supporting industry to the manufacturing sector, the decline in industrial production across the world is expected to slow the overall demand for ESI in Malaysia. However, the impact of the COVID-19 is expected to diminish over time as the pandemic is brought under control with the arrival of COVID-19 vaccines in 2021.

5.0 Supply Conditions**Figure 6: Supply Conditions Affecting the Construction Industry in Malaysia, 2021-2025**

Impact	Supply Conditions	Short-Term	Medium-Term	Long-Term
		2021-2022	2023-2024	2025
+	Expansion within the ESI	High	High	High
+	Growing Sophistication of manufacturing Technology	High	High	High
+	Support from the Government	High	High	High
-	Downward Pricing Pressure from Customers	Medium	Medium	Medium

Source: Protégé Associates

8. IMR REPORT (Cont'd)**Expansion within the ESI**

In order to remain competitive in the global marketplace, it is crucial for market players to continuously upgrade production facilities as well as invest in the latest manufacturing technologies to be able to meet the expectations of end-users. On top of that, market players may also further strengthen their competitive advantage by offering total manufacturing solutions and integrated services or even provide niche segment products that require additional design and development capabilities to meet the demands of clients.

Growing Sophistication of Manufacturing Technology

Within the manufacturing sector, the advancement in technostructure facilities and resources is a strong growth factor. Technostructure facilities and resources here include the various state-of-the-art machine and tools, the use of computer system along with advanced computer-aided design and other related design and engineering software, R&D facilities, quality control facilities, etc. The advancement of the technostructure allows the manufacturing sector to produce end-products with higher precision and minimise human errors. This trend also applies to the ESI in Malaysia.

Support from the Government

Being a vital part of the larger M&E industry for metal fabrication services and parts and components supply, the ESI is also included in the IMP3 in order to catalyse future growth of the M&E industry. Measures introduced by the government include special support programmes in the form of business advisory services and other assistance, which are expected to drive the growth of the ESI in Malaysia.

Downward Pricing Pressure from Customers

The ESI faces constant challenges from downward pricing pressure from technology-based end-user markets, notably the semiconductor industry. The cyclical nature of the semiconductor industry characterised with frequent introduction of more advanced or improved products have resulted in older technology becoming obsolete at a faster pace. This has resulted in the price depreciation of existing products in order to remain competitive in the marketplace. The downward pricing pressure is passed through to the entire value chain of the semiconductor industry, including the ESI which supplies various parts and components. As such, ESI players are forced to lower their margins or seek alternative ways to reduce production cost in order to fulfil orders from customers while maintaining financially sound.

6.0 Prospect and Outlook of the ESI in Malaysia

The market size (measured by sales value of manufactured products in Malaysia) of the ESI in Malaysia was valued at RM6.23 billion in 2020 is forecast to reach RM7.98 billion in 2021. Going forward, the Malaysian ESI is expected to undergo mid-to-high single digit annual growth, supported technological advancement as well as expansion in end-user markets. In particular, the global semiconductor market is set to benefit from more E&E components being incorporated into both emerging and traditional industries. The global semiconductor industry is expected to expand from USD440.39 billion in 2020 to USD488.27 billion in 2021. Other drivers of the global semiconductor industry involve the advancement in telecommunication technology such as the rollout of 5G technology and the increasing adoption of IoT and IoMT, in which both will boost demand for semiconductors. The ESI has also been increasingly used in the life sciences and medical technology, instrumentation and aerospace industries. These industries continue to require precise components and structures for usage in the production of medical devices and equipment, test equipment and aerospace devices and equipment. The on-going global recovery from COVID-19 and continued spending is expected to help these industries rebound moving forward.

Closer to home, the local M&E industry is an important end-user of the Malaysian ESI. The local M&E industry is a crucial enabling industry for the local manufacturing industry. While the local manufacturing industry is expected to be subdued in the immediate-term due to the COVID-19 pandemic and on-going trade protectionism, growth is expected to resume in the near term. This will rejuvenate the local M&E industry and translate to higher demand for engineering supporting services. Protégé Associates has projected the ESI in Malaysia to expand by a CAGR of 11.6% from RM6.23 billion in 2020 to RM10.78 billion in 2025.