MSIA Semiconductor Investment & Trade Mission - The Netherlands (17-19 Sept 2024)

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Caveat: This paper is a high level synthesis of findings/conclusions resulting from the trade mission. The paper focuses from a Malaysia perspective. Information provided is accurate to the author's knowledge, but should not be construed as facts to be cited officially. Information here is by no means exhaustive and conclusive. Findings, interpretations and conclusions expressed in this report are of author's personal view and do not necessarily reflect the official views of REFSA or any other organization bodies. The responsibility for the interpretation and use of the material lies with the reader.

Context

Malaysia Semiconductor Industry Association (MSIA) in partnership with the Malaysian Investment Development Authority (MIDA) and supported by the Malaysia External Trade Development Cooperation (MATRADE) conducted its inaugural **MSIA Semiconductor Investment and Trade Mission to the Netherlands**.

The visit seeks to strengthen Malaysia's position in the global supply chain, through understanding the Netherlands semiconductor ecosystem and fostering strategic partnerships amongst Malaysia and Netherlands' business community in the industry.

As Malaysia continues to build its domestic strategy to respond to geopolitical developments and industry needs, **learnings from this mission should contribute to Malaysia's overall policy directions** that complements the New Master Industrial Plan (NIMP) 2030 and the National Semiconductor Strategy (NSS)**.**

Many companies visited are "Tier-1" suppliers to global semiconductor players. These are direct suppliers including contracted manufacturers or production partners for ASML and BESI, to name a few. Some of them are single source manufacturers meaning they are the single supplier to their clients for certain components or services; hence pressure is high to deliver on quality, cost and delivery. All Dutch companies visited in this mission already have presence - some decades while others launching this year - in Malaysia, a key differentiating and unique factor that permeates through discussions for deeper collaboration.

Observations

Many Dutch semiconductor industry players provided similar feedback around common themes, specifically:

a) **Global semiconductor clients such as ASML, BESI play a huge role in shaping the Netherlands companies' supply chain strategy in Asia**. Many suppliers in this region follow their customer's request and input in determining where and what to invest next.

b) Companies visited see **cost as a strategic topic for decades** to come in the sector. In order to keep Moore's law alive, wildly expensive equipment such as the EUV lithography machines needs to be more complex and hence more expensive to produce. With increasing client demand for faster, more powerful chips and machines to produce these chips, global companies are strategizing moves to reduce cost. Expansion to Asia may help.

c) As such, there are increasing businesses in the Europe region moving part of their supply chain to South East Asia (SEA). **Knowledge, economics (cost), geopolitics and importantly, customer and supplier proximity are cited as main drivers for choosing where to set up their base in SEA**. For many of the equipment makers, the main drivers of where to expand in SEA are typically cost, quality and flawless execution in prototype and high value manufacturing.

   Malaysia is a serious contender as it inherently has many of these favorable factors already present. Malaysia is seen as a neutral party to the superpower tussle, it is relatively cheap(er) to operate than in many other South East Asia countries, and it has a robust network of suppliers and service providers that caters to the needs of these companies.

d) A lot of the companies also opined that **stable infrastructure** such as supply of constant energy, quality materials (e.g. for components manufacturing) and **uncompromised quality services** (e.g. surface treatment standards) are crucial factors in choosing where to set up base, apart from government support in terms of **subsidies, incentives and tax breaks**. Also, ease of business including **straightforward regulatory compliance and smooth approvals processes** are all factors.

e) All Dutch companies visited during the trade mission show **great willingness to work with local companies** to build up their capabilities, as it will improve their own competitiveness in their manufacturing capabilities.

f) **Netherlands industry players participate greatly in strengthening the Netherlands local ecosystem.** Companies such as Hittech Group BV, based in The Hague, work closely with local vocational institutions, such as Leidse instrumentmakers School (LiS) to train, teach and support graduates that will eventually enter their workforce. This very localized strategy has created a strong, loyal local workforce that grows with the company.

g) **Talent and workforce remain a main challenge** for the foreseeable future. Many companies highlighted a great interest to see technical schools such as LiS present in Malaysia to provide a constant stream of workforce ready to enter the industry.

h) **Intellectual Property (IP) protection** - Companies stressed the importance of IP ownership in the technology sector. Hence, countries where IP is protected are crucial factors to decide where they will eventually invest in.

Key Takeaways

Malaysia is able to not just offer the Netherlands counterpart unique value in their expansion to Asia, but also position itself to strengthen its own domestic workforce and grow the domestic economy on the back of becoming an indispensable part of the semiconductor global supply chain.

Addressing gaps in our ecosystem

a) The **next level of excellence expected from the industry is now about accuracy, cleanliness, testing and all sorts of capabilities** that may not necessarily already exist in Malaysia, or in South East Asia. There are also some services that are not yet available - arguably in the Asia region - that companies are seeing increasing importance as part of their manufacturing process. Such as “repair and reuse” services expected by their clients. Current capabilities are mainly done in Europe, but increasingly expensive and with ESG in mind, there is more sense for these activities to gradually move closer to the manufacturing locations.

b) **The availability of skilled workforce** cannot be underestimated. Due to a five decade head start, Malaysia do have a pool of talent working in both MNCs and SMEs. Having said that, there is great need to increase the workforce. Further, to be able to perform higher value work such as IC designs or high value manufacturing, we will require a workforce that has the relevant skills and knowledge.

Doubling down on our strength

a) Malaysia's **strong network of supply chains built through the last five decades cannot be replicated easily**, at least not in the next 5 years. We should continue to examine our own strength and double down on making us better in what we are already doing well.

b) **Strengthening the resilience of the supply chain ecosystem we already have is crucial**. This may include enhancing our dominance in OSAT and back-end services, to explore new frontier such as advanced packaging and creating strong IC designed companies. Deeper studies in these areas should be carried out, including the appropriate policy interventions.

Impact of government and industry enablers

a) There is a huge **role for government enablers and industry clusters to play in nurturing fertile grounds for innovation to thrive**. Funding support is necessary but also facilitating industry clusters to build knowledge sharing and training of the workforce within the industry as a whole.

b) Brainport Industries Campus (BIC) and Eindhoven Hi-Tech Campus are few examples of how proximity among tech companies promotes dialogues and cross-pollination of ideas to happen organically. For training and skills development, campuses like BIC support the industry by developing and providing simulation games for SMEs to learn how to adapt to industry 4.0 or use particular machines.

c) Proximity to top notch universities and vocational schools are part of the ecosystem to build a constant pipeline of graduates that feeds into the workforce. Many of the senior management in the Dutch companies graduated from TU/e - the Eindhoven University of Technology - just as many engineers and mechanical labor come from vocational schools such as LiS, which provides vocational courses on fine mechanical engineering.

Conclusion

Malaysia as it is currently, stands to benefit from the rising demand for chips. Having said that, there is probably a window of opportunity between 3-5 years to close the many gaps mentioned above, before the landscape changes due to new dynamics within industry needs and what other regional countries can offer.

To do so, Malaysia should devise targeted policy interventions that fits its own context, on top of learning from experiences in other countries such as Netherlands. To that extent, Malaysia should be cognisant of its strength and where possible, strengthen already available resources, while at the same time seek areas with the biggest value impact to create the dynamic economic growth it seeks.