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The Malaysian aerospace industry has transformed from a small and domestically-focused sector to a globally recognized industry which has provided more than 20,000 jobs mostly in the MRO and Manufacturing sub-sectors with the active participation of local small and medium-sized enterprises (SMEs). Globally, the aerospace industry is seen as an apex sector which means that it sets high standards for technology and human capital competencies. The level of innovation in the aerospace sector is significantly higher, owing to the rigorous requirement in the industry for safety, efficiency and innovation throughout the whole product life-cycle. This makes aerospace a high growth sector with high innovation-level requirements thus, companies that have a strategic roadmap into aerospace will be able to venture into other adjacent industries. Therefore, benchmarking these standards provides a means for measuring and benchmarking Industry 4.0 capabilities in the other sectors as well.

When talking about Industry 4.0 technologies, we have made the mistake too often of getting distracted by the bells and whistles of said technologies and missing the impact that it has in transforming the traditional business models of incumbent businesses from all sectors. These new business models drive towards sustainability and are reflective of fundamental changes in consumer behaviour as part of the Sharing Economy where the “As-a-Service” business models is the most prevalent manifestation of this economy. For example, “Mobility-As-a-Service” challenges the notion of transportation ownership against the value of getting from one point of travel to another.

In that respect, the aerospace industry is essentially run on an “As-a-Service” business model whereby passengers pay for a seat on an aircraft and will continually demand cheaper tickets, particularly with the low-cost carriers, which translates into pressure for the original equipment manufacturers (OEMs) such as Airbus and Boeing to create more price competitive products and services, which trickles down to the Malaysian aerospace supply-chain as challenges that have to be met. This shift in consumer behaviour has been causing the supply-chain to transform their processes and collaboration dynamics to one that is highly integrated and agile so as to be able to manage the load demand at the same time remain globally competitive. That said, no such industrial transformation has ever been as pronounced as the one that is being undergone right now during the COVID-19 pandemic.

During lockdown, the aerospace industry was hit quite severely but unlike the aviation industry which lost revenue, the aerospace industry lost mainly cashflow when aircraft deliveries were deferred. This implies that Airbus and Boeing order books stayed mostly intact. The ecosystem led by the Malaysia Aerospace Industry Association (MAIA) devised a recovery plan in an attempt to capitalize on the downturn which was affecting the entire supply-chain asymmetrically. Two (2) major trends were observed. The first being that global cashflow pressures have resulted in liquidation of companies in geographies with higher cost structures e.g. in US and Europe. The second being the US – China trade war which has resulted in companies seeking dual sourcing for products outsourced to China.

MAIA worked with the MITI and MOF to devise strategies for increasing work-packages to Malaysia during the downturn and then to recover with the rate increase but based on a wider number of work-packages. This strategy paid-off as ecosystem anchor companies such as Spirit AeroSystems Malaysia and UMW Aerospace began securing more work. Also, we are seeing the emergence of the Drone Technologies or DroneTech sector, which has seen its application in the public sector during the COVID-19 pandemic for border security and surveillance to its use in agriculture. DroneTech is already one of the most recognizable implementations of Digital Technology in Malaysia and is highly inclusive from a technology standpoint due to the ease of which it is applied. In other words, it is a technology with a low barrier of entry. This may evolve as regulations get stricter which is why it needs to be managed carefully so that Malaysia continues to benefit from its obvious benefits.

With all of the above considered, this has prompted PEMUDAH to undergo our own transformation and be more agile when it comes to addressing strategic concerns when it comes to issues like human capital development and supply-chain readiness for Industry 4.0, as well as the aforementioned regulatory issues when it comes to disruptive technologies like drones. An example would be to obtain a 1-day approval for a drone application which currently takes more than 20 days. The context of this challenge involves regulatory standards which is related to air safety and data security, which involves the participation of two (2) agencies. PEMUDAH has set the 1-day goal for business enablement to give Malaysia the competitive edge with both the authorities and industry closely working together.

Going into 2022 and onwards, the industry is expecting a high growth period but we still need to be cognizant of the new requirements that will be imposed such as the Environment, Social and Governance (ESG) standards which articulates a carbon footprint requirement for the industry which as a consequence, will accelerate the need for a more energy efficient aircraft i.e. the Airbus Zero Emission (ZEROe) electric aircraft with hydrogen which will give rise to a newly-look supply-chain potentially comprising of players from other industries which in the past, would not have been fathomed to be a participant in the industry.