Technical Talk on Industry, Academic and Government Synergy in Malaysian Medical Device Advancement

By Ir. Shamila Ariaratnam

Honorary Secretary and Treasurer of the Electrical Engineering Technical Division

On 27 July 2023 from 2 to 4 p.m. Associate Professor Ts. Dr. Nashrul Fazli bin Mohd Nasir gave us insights to the growth of the healthcare sector in Malaysia and emphasized the potential for organizations to venture into this industry. The talk was organized by the Electrical Engineering Technical Division.

Malaysia operates an internationally lauded healthcare system, fuelled by investments in world-class facilities and quality human resources. The sector is expected to grow to RM 127 billion (US$30 billion) by 2027. The areas of potential growth are in medical tourism, the manufacturing of medical devices, pharmaceuticals, and clinical research. Malaysia is on track to become the preferred destination for medical tourism in ASEAN. From seeing 640,000 medical tourists in 2011, the country attracted more than one million medical tourists in 2019, earning revenues of more than 1.8 billion ringgit (US$433 million). This was an increase from the 1.5 billion ringgit (US$361 million) gained in 2018.

From the academic point of view, Malaysian's Institute of Higher Learnings (IHLs) are offering Biomedical Engineering/Technology Courses from Diploma level up to PhD level since 1990s. Thus, the IHLs support the Malaysian medical device industries by providing competent and skilled workers. The Ministry of Higher Education (MOHE) and IHLs provides grants to nurture this collaboration with the industry. Examples are Public-Private Research Network (PPRN) Grants, Fundamental Research Grants Scheme (FRGS), Universities' Matching Grants, Grants from Ministry of Science, Technology and Innovation (MOSTI)-Strategic Research Fund (SRF), Technology Development Fund 1 (TeD1), Technology Development Fund 2 (Ted2), Bridging Fund (BGF) and the Applied Innovation Fund (AIF).

From the perspective of the Malaysian Medical Industry, medical device manufacturing in Malaysia can be traced to 1980s. Most of them were based on latex produce. According to Association of Malaysian Medical Industries (AMMI), over 90% of these medical devices are exported which valued at USD$5.6 billion in 2019. About half of these are going to the United States of America, Germany, Japan and China. Other products also include higher value-added and technologically advanced products i.e. cardiac pacemakers, stents, orthopaedic implantable devices, electromedical, therapeutic & monitoring devices.

The medical industry trade is thriving. In the first nine months of 2021, about RM 7.38 billion of investment was in the medical industry where 39.6% of them worth of RM 2.92 billion is from foreign investment. This could be attributed to the demand of rubber-based product due to COVID 19 pandemic. There are currently more than 30 MNCs producing high value-added medical devices, making Malaysia their

offshore location for manufacturing operations. In Malaysia, there are various Industrial Medical Industry Based Association such as: Persatuan Perkilangan Peranti Perubatan (PERANTIM), Association of Malaysian Medical Industries (AMMI), The Malaysia Medical Device Association (MMDA), and Malaysian Rubber Glove Manufacturers Association (MARGMA) which the members contributed to the advancement of the medical device industry.

From the standpoint of the Malaysian Government Agencies, Medical Device Authority (MDA) is the main body which regulate, control, and monitor all matters related to medical devices. Malaysian Investment Development Authority (MIDA) has assisted the medical device investors, encouraging existing companies to expand their products and businesses and organize events for betterment of the ecosystem. Malaysia External Trade Development Corporation (MATRADE) would assist Malaysian exporters with the current knowledge needed by them to penetrate international market, assisting them in term of promotion and give trade and advisory support. Department of Standard Malaysia are instrumental in developing standards to assist the industry. Standard and Industrial Research Institute of Malaysia (SIRIM) involves in improving and developing new processes for the industry. SIRIM also encourage the development of Malaysian own product

When it comes to synergizing Academia, Industry and Government Agency, more engagement between all these entities are needed. One of the efforts is International Medical Device School Malaysia (IMDS MY 2022). From academic point of view, more collaborations between IHLs and industries facilitated by the government agencies as the stakeholder is required. These include but not limited to: Sharing of resources either physical facilities or human capital between both, Grant applications to improve existing systems/processes, innovations and development of new products, Incubation of start-ups in IHL, Commercialization of products, Research collaborations which aims to solve industrial/community problems and developing marketable medical device.

The students from IHL could benefit from: Internship with Medical Device companies and chance to be absorbed straight after graduation, Exposing students to industry via invitation of visiting lecturers among industrial experts, Industry based investigatory assignments, case studies and final year project, Study of medical industry policies, processes, practices and benchmarks, Students attachment by industry for specialization grooming, Academia may train alumni in state of the art research, This will lead easier pathway for students to meet the expectations of the industry.