

Lecture by

CheeFai TAN

Infrastructure University Kuala Lumpur

The Digital Transformation of ASEAN Manufacturing for the Future

Industry 4.0 is a strategic initiative introduced by the German government during early 2010s to transform industrial manufacturing through digitalisation and exploitation of the potentials of new technologies. It is an effort to increase productivity and efficiency mainly in the manufacturing sector. Industry 4.0 production system aims to be highly flexible and should be able to produce individualised and customised products. In fact, it is an exciting deployment of automation within manufacturing, covering the use of robotics, data management, cloud computing and the internet of things (IoT). It has started to show that artificial intelligence, robotics, smart sensors and integrated systems are an important part of a normal manufacturing process. In interaction with machines, it needs horizontal integration at every step in the production process.

Manufacturing in ASEAN is often perceived as a traditional industry heavily reliant on human, equipment and processes. Beyond the big machineries, conveyer belts and assembly lines, manufacturing is in fact very diverse and has long helped shape the economic growth in this region. The Boston Consulting Group also estimates that ASEAN manufacturing output can impressively grow by an additional US\$400 billion to US\$600 billion a year by 2030 from 2020 levels. However, ASEAN manufacturers may risk falling behind as they face disruption from newer technologies, and more recently, pressure from a pandemic that has changed the world economy. Manufacturing and the supply chains that support it are under intense stress today and companies will have to look to digitalise through modern technology to adapt to newfound changes. In the presentation, an insight of the ASEAN manufacturing digital transformation initiative will be described.



Chee-Fai Tan PhD is the Fellow of the ASEAN Academy of Engineering & Technology (AAET), Honorary Fellow of ASEAN Federation of Engineering Organizations (AFEO) and Fellow of the Institution of Engineers Malaysia (IEM). Currently, he is the Professor and Deputy Vice Chancellor (Research) of the Infrastructure University Kuala Lumpur. In addition, Chee Fai is the President of ASEAN Federation of Smart Industry (AI) and the First National Chairman of the Chinese Mechanical Engineering Society (CMES), Malaysia Chapter. He is the Digital Transformation Advisor/Consultant with ASEAN Engineering Register and

Malaysia Productivity Corporation. He is actively involved in intelligent strategic and advanced technical consultation to assist ASEAN industry towards Digital Transformation and the 4th Industrial Revolution. He has led various Industry, University, and Malaysia Government as well as International funded projects such as EU Seventh Framework Programme (FP7) and Industry4WRD Domestic Investment Strategic Funds (DISF). He is the Technical Expert for ISO/IEC Smart Manufacturing Standards Map Task Force (ISO/IEC SM2TF) since 2019. With the knowledge and experience, Chee-Fai Tan has contributed as Keynote Speaker in various important international engineering events such as Annual Meeting of China Association of Science & Technology (CAST), FEIAP General Assembly, World

The 8th International Conference on
Control, Automation and Robotics (ICCAR 2022)



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Intelligent Manufacturing Summit (WIMS) and Institution of Civil Engineers (ICE) Future Engineers Conference. He is the UNESCO Consultant to assess and study on engineering education at APEC Economy.