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The Significance of Technology in Digitalising Malaysia Industries

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Abstract

Digitalisation enables a business to produce, adapt and innovate digital technologies and services to enhance wealth creation, productivity, and quality of life. Various latest technology such as Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT), collaborative robots (cobots) is discussed. During the era of the Industrial Revolution 4.0 (IR 4.0), many corporates in Malaysia started to implement the technologies. BMW Malaysia has implemented automated image recognition. UOB Malaysia has launched Mighty Insights. Ernst & Young using Robotic Process Automation in their business operation. Symprio is using a chatbot design agency to assists in organizations design. Even though many corporates in Malaysia are accepting these new technologies but these new technologies had become the barriers for some small and medium enterprise in Malaysia to move forwards. Challenges to implementing technologies are identified and discussed in this study.

Keywords: Digitalization, Significance of Technology, Malaysia Industrial

Introduction

Technology is created by the human beings that can make life easier and solve a various type of problem. Technology can be classified into two categories, which are software technology and hardware technology (Suleman, 2019). The function of technology is to improve communication, improve efficiency, protection against attacks, and unlimited supply of knowledge and exploration of new markets for growth (Cengiz, 2018).

Digitalisation enables a business to produce, adapt and innovate digital technologies and services to enhance wealth creation, productivity, and quality of life (MDEC, 2019). The significance of technology in digitalising Malaysian industries is to innovate business models, reduce operating costs and improve efficiencies and also increased marketing channels to make the marketing promotion ubiquitous.

One of the famous technologies in 21st century is Artificial Intelligence (AI), it is also known as systems and machines that can imitate human intelligence to perform tasks and

iteratively improve themselves based on the collected information. (Oracle China, 2020) AI is predicted to be able to replace humans in daily taskforce and increase productivity since it is more efficient than a human. With the implementation of AI, most of the industry can be transformed into automation. AI can help the industry to reduce the operating cost while increasing the rate of production.

On the other side, the Internet of Things (IoT) is one of the technologies that could support the business from physical devices. IoT is a system of interconnected computing devices, machinery, and digital machines. It has a universally unique identification code (UID) and the ability to transmit data through the network without the need for people, or the interaction between people and equipment. (Greengard, 2015) It also represents the development trend of connecting various physical objects to the Internet, especially objects that are often unexpected (Kumawat & Umamaheswari, 2019). For example, from ordinary household items such as refrigerators and light bulbs to commercial assets such as transportation tags and medical equipment to unprecedented wearable devices, smart devices, and even smart cities that exist only because of the Internet can connect everything. (Red Hat, 2020) In industry, everything can connect to the internet to ensure accuracy, efficiency, and performance. Base on this, the industry can transfer to mechanization and reduce the need for human resources.

Literature Review

Science and technology had evolved and lead to the fourth Industrial Revolution (IR 4.0). IR 4.0 was introduced from Germany and inspired by the Germany government to promote digitization and technology to the world.

One of the major cores of IR 4.0 is Artificial intelligence (AI). (The Sun Daily, 2018) It had brought the industries toward a better way of production. In this digital transformation age, AI has played an important role in changing the industrial processes from inefficient way become a more efficient way. AI is a machine demonstrated the intelligence with the ability to solve problems by gathering and analysing the data that are usually done by human natural intelligence. There are four main views to be categorized as AI, which are thinking humanly, thinking rationally, acting humanly, and acting rationally. AI is capable of performing task intelligently by fulfilling these four different approaches (Sharma, 2020).

Machine learning is a subset of AI. It provides statistical tools to explore and analyse the data (AIDahoul & Htike, 2019). Machine learning consists of supervised learning and unsupervised learning. The supervised machine learning algorithms give computers the ability to learn from past data (labelled data) to predict future events and make a decision. While unsupervised machine learning algorithms explored the unlabelled data. Those data are cluster, and the output is unknown. The deep learning is the subset of machine learning which inspired by the structure of a human brain. That structure is called neural network architecture (Xu et al., 2020). The neural network architecture allows the machine learning 'deep', mimic human brain to recognise the things correctly. All the machine learning and deep learning technology were built up based on the fundamental of AI (Malhotra, 2018). Whereas AI provided a set of rules, parameter, and feature which the model will bound to it and predict the outcome. (Hargrave, 2019).

With the existing of the AI system, the manufacturing industry can produce better quality product by optimizing the manufacturing equipment, as well as help to boost up the productivity by managing the cost, predicting the failures, and reducing the machine downtime. Adoption

of AI technology allows the manufacturer to produce a larger quantity of products in a shorter time (Cubric, 2020).

On the other hand, the Internet of Things (IoT) is digitally transforming manufacturing. It creates autonomous and enhances production using machine-learning. The IoT is one of the subsets of AI. It refers to interconnected sensors, software and other devices networked with the industrial system to collect data about the productivity, allows industries manage the supply chain and run production efficiency, it also ensures proper material usage and extend the life of the equipment (Gu *et al.*, 2016). The advanced automation technology help reduces human labour and provides the output faster time to market (Shiklo, 2018).

The Impact of Technology in Digitalising Malaysian Industries

Technology has brought a huge impact on the Malaysian industries. By using these technologies in digitalising the industries, it allows them to maintain or strengthen their competitive advantage and increase productivity.

1. Maintain or Strengthen Competition

In the era of modernization, all company in every industry need to embrace digital technology in doing their businesses. Failure to do so will lead the companies in each industry to fall behind from their competitors who embraced the latest technology. Besides that, it would also lead a company in the respective industry to have a drop in sales, profit, and better performance. For example, according to Blackberry in the smartphone industry and Blockbuster in the filming industry in which they have not embraced digital technology. Now they have left far behind their competitor and have difficulty to revive (Jackson, 2018).

In the manufacturing industry, they can increase the competition by speeding up production by embracing digital technology. For instance, the manufacturer can use industrial robots in manufacturing to replace human. Other than that, the manufacturer can also use collaborative robots (cobots) in which it will work with humans (Munoz, 2017). An industrial robot is more expensive compared to cobots. However, cobots are easier to operate and programme. By using these robots, it allows the manufacturing industry to produce more products at a faster rate with better quality. Hence, it allows a company in the manufacturing industry to increase or maintain their competitiveness among other manufacturers. (Shrestha, 2019)

Since 2018, BMW Malaysia has been using various AI applications in its production. One of the focus is on automated image recognition. In these processes, AI measures component images in ongoing production and compares them in milliseconds to hundreds of other images of the same sequence. By doing this, the AI application identifies deviations from the standard in real-time and checks, for instance, whether all required parts have been mounted correctly and whether they are mounted in the right place. According to Harald Kruger, a member of the Management Board of BMW AG, this decision was initiated due to ergonomic consideration, which means designed for efficiency and comfort in the workplace. It was said that automation will assist staff, especially in simple and repetitive work. Aside than that, by implementing automation, the quality of production can be monitored (BMW GROUP, 2014). With this, it will lead to faster production and quality of the vehicles can be ensured.

In the finance industry, an accountant can make a better prediction and forecast solutions by embracing digital technology. By using artificial intelligence, it allows the computer system to produce an accurate accounting report without any sophisticated processes. It also

allows the system to make a prediction base on the accounting reports. Hence, it allows the accountant to effectively forecast solutions to solve the customer's financial matter. Nevertheless, it would also increase or maintain competition among other accounting firms in the finance industry in which they are also embracing digital technology (Bryant, 2019).

United Overseas Bank (Malaysia) Bhd (UOB Malaysia) has launched Mighty Insights, believed to be the country's first AI-based digital banking service, to make it simpler and smarter for customers to manage their finances via the bank's all-in-one mobile banking app, UOB Mighty (Baber, 2020). Ernst & Young (EY) is one of the biggest accounting firms in the world. It provides a wide range of services such as assurance, audit, taxation, consultation and advisory to their clients all over the world. The firm is using one of the technologies from AI which is Robotic Process Automation (RPA) system, in auditing. With this, the software or robot will prepare the auditing report. Hence, it will reduce the time that needs to be consumed in preparing the audit documents. With this, it gives the employee more time in analysing and making judgement towards the auditing report. Aside than that, it also helps the firm to make an accurate audit report for its clients. With this, it reduces human error and increases the quality of work (Keane, 2019). Hence, with the digitalization in auditing, it allows the firm the increase their competition in competing with other firms such as PwC, KPMG and Deloitte.

In shorts, by embracing digital technology, it allows most of the industries in Malaysia to have a bigger change. Most likely, AI would replace human in the future and are able to produce higher quality products and services. However, it will increase or maintain competition among industries.

2. Increase productivity

Today, Malaysia has walked into the Industrial Revolution 4.0 (IR4.0). The technology in digitalising Malaysian Industries can bring a lot of benefit to the industries in Malaysia. Most of the industries are using technology to improve their daily operation and business activities (Juhary, 2020). The industry of the future will be an industry in the era of the digital revolution which capable of producing more smartly, efficiently, quickly, safely, and cleanly (Asmiyanto, 2019).

The technology can help the industries to increase productivity as it can help process automation. The technology can also help the manufacturing industries to connect their entire machine productively as well as improve productivity. At the same time, the data can be analysed and the procedure can be optimized. A research report by the World Economic Forum predicts that 10 years of full-scale digitalization of the construction industry will lead to huge annual global cost savings. (Choudhary, Benefits of digitalizing construction industry, 2019)

Other than that, the productivity will increase due to the analysis and monitor. The digitalization will make sure the quantity and the quality of the product can be guarantee. It is because the process of production can be monitor and analyse. When used intelligently, the digitalization of business can lead to a significant increase in productivity and can reduce some costs. (Dominguez, 8 advantages of digitalization of business, 2018) Hence, the productivity will be control and increase.

For example, Symprio Sdn. Bhd. has offices in many countries including Malaysia, Singapore, India, Thailand, Vietnam, Philippines, Indonesia, Australia, San Jose, and California. Symprio is famous for its chatbot design agency which assists organizations design, build and managed AI-enabled chatbots (Maher, 2020). Besides, it also provides AI consulting and development services, assisting companies implement and run robotics automation projects.

Among its project accomplishments are Chatbot Platform Administration, Computer Vision (turning images to structured data) and Robotic Process Automation. The Chatbot platform can help the industry to get feedback from the customers. Hence, most of the industry can improve its product.

All in all, the digitalization industries can help the industry to increase their productivity by monitoring and sharing the data. The information can be obtained faster and it will help in production.

The Challenge of Technology in Digitalising Malaysian Industries

1. Lack of general understanding on Information Technology (IT)

One of the challenges of technology in digitalising Malaysian industries is the mindset of people. In the 21st Century, Information Technology (IT) is one of the most important things that connect the world. However, Malaysian nowadays are still lack of general knowledge about information technology. This was due to people who are having poverty or refuse to use digital technology (Aguilera, 2015).

Besides that, Malaysian education is also lack of information technologies learning. Although teenagers nowadays are good at using the internet as a user, but they have still known nothing about the implication and general knowledge of information technology. Ministry of education Malaysia shall promote information technologies related courses with more widely and apply the IT as one of the mandatory subjects in the primary and secondary school syllabus.

Moreover, Malaysia's enterprises are progressing to enlarge the technology in digitalisation. However, they lack knowledge regarding information technologies such as the internet of things (IoT) and artificial intelligence (AI). In Malaysia, there is only about 33% of small-medium enterprises (SMEs) applying digital technology (Menon & Xiao Tian, 2020). To advance the technology in Malaysia, Malaysians must grab the opportunity to change their mindset toward the usage of technology in Malaysia.

2. Financially expensive to digitalise

The challenges faced is that it is financially expensive to digitalise Malaysia's economy. According to the statistic given by the Human Resources Development Fund, around 98.5% of the business in Malaysia are micro, small, medium enterprises (MSME) (Human Resources Development Fund, 2019). Half of them claimed that funding is the main issue to digitalisation due to high costs (Tong & Gong, 2020). Digitalisation requires a high network connection to perform economic activity. However, the broadbands are low speed yet highly-priced and connectivity issue might still occur (Ernst & Young, 2020). This reduces the likelihood of the owners to spend for the technologies to be digitalised.

Moreover, Malaysian lacks IT skills (Tan, 2020). The knowledge like Science, Technology Engineering and Mathematics are highly required to adapt the evolving technologies (Lee, 2020). Nonetheless, Malaysia is in shortage of these skills. This requires the SMEs to spend more to upskill their staff. 3% to 4% of the employee costs is expected to spend on technical training (Yapp, 2020). It will require the SMEs to uprise their budget and their business cost. The business owners will earn a lesser profit. On another hand, outsources could be one of the solutions to solve the shortage of internal technical manpower, but the costs are typically high. Hence, the business owner might not be willing to digitalise their businesses as it is unnecessary, and they could still make a profit from the traditional way of business.

Conclusion

In conclusion, technology could benefit the country, especially stimulate economic growth. The digitalisation allows the industries in Malaysia to maintain or strengthen the business process. This is because, in the future, artificial intelligence is most likely to replace humans in daily routine taskforce and able to produce higher quality products and services. Besides, digitalisation can increase productivity with automation. On another side, the challenges of digitalisation in Malaysian industries are lacking information technology-related knowledge and the costs for digitalization are financially expensive due to Malaysia's economy.

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