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Malaysian's New Digital Initiative to Boost E-Commerce–Where we are?

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Abstract

The internet led the evolution of e-commerce and has now become a key component of many organizations in daily business operations. Evolution of e-commerce started since the 1960s by the introduction of Electronic Data Interchange (EDI), followed by the emergent of the online market in 1980s. The web browser was coming at the year 1990s and by the year 2000 the term e-commerce been to use extensively when more people start the online business. There are several ways to conceptualize the activities of e-commerce system from the view of knowledge management aspects. Knowledge management is an essential part of the system's capabilities. This paper will discuss the e-commerce challenges and Malaysia's achievement on it before the list of suggestions to boost the e-commerce through the Knowledge Management perspective.

Keywords: E-Commerce, Types of E-Commerce, Internet, Knowledge, Cyber Security, Sme, Technology, Industry 4.0, Challenges, System Integration

Introduction

Definition of E-commerce

The number of internet users has grown rapidly over the past decade and consumers dependent on the internet to buy and conduct other activities in their lives are increasingly over the world. A lot of businesses activities responded to the technologies by adopting e-commerce. E-commerce can define as electronic commerce where the sale or purchase of goods or services. E-commerce is a new way and a new landscape of doing business over the society. The definition of e-commerce is a process of selling or buying whether product and service through the internet by customers or companies using computers as an intermediary of business transactions. E-commerce is a business process basically involves few elements like creating an online store with

an automated system for accepting payment, product shipping, and effective marketing strategies.

Four Major of E-commerce

There are four major models of the e-commerce base of the direction of the trade as followed:

1. Business-to-Consumer (B2C): E-commerce transactions that made a business and a consumer through the internet platform. This is one of the most commonly used sales models in e-commerce scope.
2. Business-to-Business (B2B): E-commerce transactions that made between businesses, such as a manufacturer and a wholesaler or retailer. This type of e-commerce is not consumer oriented and happens only between business entities. Most of this model focuses mainly on sales of raw materials or products.
3. Consumer-to-Consumer (C2C): Earliest forms of the e-commerce business model that relates to the sale of products or services between customers. This might include selling relationships between customers like from eBay or Amazon.
4. Consumer-to-Business (C2B): E-commerce transactions, which made between individual and business buyers. In this transaction, individual consumers make their products or services available for business buyers.

Phenomena and the Current Situation in E-commerce

The evolution of business became global and passionate through the internet. E-commerce has been introduced to the world as a unique platform using the internet with a new mechanism of commerce and make business grows faster and easier to manage using an online system. The growth of e-commerce in the global retail trade has open up the new consumer markets across borders and countries.

Within 20 years, the use of internet access has improved from 4% to 40% of the world's population. Based on the current e-commerce statistics, the number of international internet users who's bought their products or goods through the internet using the desktop, mobile, tablet, and the other online device has reached up to 40%. US stated that the Amazon is one of the leading e-commerce platforms in the world and Asian competitors such as Rakuten and Alibaba also constantly increasing their market sale within the B2C e-commerce. In 2015, global B2C e-commerce sales exceeded $1 trillion. The United States of America, The Union, and China were among the huge market in global e-commerce size. More people and things become connected through the e-commerce platform, fast moving of data are generated and new technologies like blockchain technologies and artificial intelligence (AI) are emerging.

Development and E-commerce Achievement in Malaysia

Malaysia has acknowledged the internet technology as the remarkable impact to the new economy. The important of information communication technology, (ICT) as the key transformation of society, economy, and politics was mentioned in Malaysia's Third Outline Perspective Plan (2001-2010). Malaysia has moved towards the high-income economy and ICT had been identified as one of 12 New Key Economic Areas (NKEA) (Economic Planning Unit, 2010). However, the economy success is also touches matters of information and knowledge connection, networking of people within various cultures and traditions across the globe and bringing the new age developments (Shariffadeen, 2000).

Malaysia currently emphasis in the services sector that realizing the knowledge-based economy. Malaysia was increasing the contribution of the services sector from 55% to 60% in 2008 and 2009 respectively. By 2020 Malaysia target to achieve 70% contributions from the service sector when the nation reaches the fully developed status (Ministry of Finance, 2009). Although ASEAN is punching below its weight, which still remains less than 1% of global e-commerce volume the size of ASEAN's internet users and digital buyers are comparable with Japan.

Malaysia's existing laws and national financial institutions have always supported the development of e-commerce in Malaysia. The gap between Malaysia and US in the achievement of e-commerce development is getting smaller with the activities of SMEs companies. Malaysia e-commerce contribution to GDP would grow by about 11% over the next few years if Malaysia strives to enhance the business in this new landscape with GDP contribution about RM 114 billion by 2020.

Business Challenge

Lack of Knowledge & Knowledge Workers in E-Commerce

Lack of knowledge and knowledgeable workers in E-commerce is one of the major problems with the development and implementation of e-commerce. The findings in Germany found that most respondents agreed that the company had no employees with the required qualifications and knowledge. Similar studies have been carried out in the UK which shows that most workers in small organizations have very limited knowledge of large-scale data analysis; but in the large company, employees have a better understanding of large data analysis, which is about 30% to 40% (Geissbauer, Schrauf, Koch, & Kuge, 2014). The issue of lack of knowledge and knowledge workers in e-commerce was also raised by the Ministry of International Trade and Industry (MITI). MITI in Malaysia's National E-commerce Strategic Roadmap reports says that Malaysia has a shortage of knowledgeable, talented, skilled and knowledgeable internet professionals, and a limited understanding of the future expertise needed in line with the 4.0 industry transformation.

Education approaches in Malaysia are identified as contributing to the challenges of a knowledgeable lack of knowledge in this field. Existing educational systems that emphasize emphasis on the rhetoric and orientation of educational exams produce intelligent smart learners from theoretical aspects. The production of these students in the job market is only able to fill certain vacancies and most of the students are not able to become knowledge workers who meet the current market demand. In addition, existing technical and vocational education such as Technical and Vocational Education and Training (TVET) is seen not helping to produce potential knowledge workers to comply with the market demand and real industry.

The form of co-curriculum does not take into account the views and inputs from industries that produce students who do not meet market expectations. In addition, the difficulties faced by technical students to further their study to next higher education have also become a major cause of technical course become not favour by students who will lead the future technology. The problem of coordination and the recognition of technical students by professional bodies are seen as a weakness that is inhibiting the educational function of the technical education itself. These mismatch workers for market demand and have begun to be seen and noted by the Government during the preparation of the Malaysia Eleven Plan, 2016-2020 (Economic Planning Unit, 2015)

Involvement of Small and Medium Enterprises (SMEs)

Survey in Germany also stated that 46% of the respondents received unclear economy benefits and high investments on the implementation of new technology. And most of the companies are not ready for the implementation (Geissbauer et al., 2014). The surveyed was done over 5 different sectors. As for Malaysia, the FMC Adoption Survey 2016 (Tat, 2017) was done over the SMEs (Small and Medium Enterprises). The results from the survey stated that, 20% of SMEs used ICT application actively and 16% of SMEs embarked on e-Commerce activities. Additionally, about 55% of SMEs do not know how to use the internet and 40% said, the internet is not important at all. The results of the survey proved that, the number of SMEs who invest in automation upgrading is very low. SMEs think that the investment incurred more cost. The economies range and lack of awareness among the SMEs contributes to the resistant to invest.

SMEs are an important component of the country's economy. SMEs represent 99.2% of total business developed in the country. The sector offers 56% of employment opportunities and has contributed about 32% of Gross Domestic Product (GDP) in 2012 (The Edge Markets, 2012) . The service sector is a leader with a contribution of 62.1% over manufacturing, agriculture, construction and mining and quarrying sectors in 2013. SMEs contribution is expected to increase by 41% to GDP in 2020 in line with the rapid growth of the economy. The launch of the SME Master plan (2012-2020) targets SMEs to be part of a highly competitive regional economy in strengthening the country's economic contribution and capabilities.

Online shopping activities in Malaysia can be considered new, although it has been a few years since the commercialization of the internet. Study by SME Corporation at 2014 on the use of ICT among Malaysian SMEs also shows that actual consumption is still low. Majority of respondents use computers, laptops and smartphones and Internet services for personal purposes and not for business operations. Only 7.1% involved online business (E-Commerce). In addition to the findings, the STAR newspaper had reported that the Associated Chamber of Commerce and Industry of Malaysia (ACCCIM), had conducted a study in year 2012 over 965 SMEs from across Malaysia (Bernama, 2012). They found that the majority still use conventional methods in doing business. Only a small number (28%) of overall respondents said they were involved in the internet (E-Commerce) business. Of this percentage, the majority of new companies operate less than three years (67%) and the rest (33%) is a company that operates for five years. The hospitality industry is the largest E-Commerce user (50%) in which the internet is used as a medium major in hotel booking room today.

E-Commerce business involving the use of computing systems requires expert IT specialist. Conventional business can be described as easy business where buyers can hold, feel and choose the product before proceeding to the counter but not on the internet. All transactions are required through an effective network system. Therefore, website inventory web systematic and has a high security feature to be taken into account by e-commerce entrepreneurs. Average entrepreneurs hire sophisticated IT expertise for platform allocation base page web business. However, internal expertise is also required to make maintenance and updating of information from time to time.

Cyber Security

As technology is going to advance, same goes to the challenge in Cyber Security. We are living in the society that is entwined with the internet for the coming age of big data, the internet of things and automation. Refer to World Economic Forum Industrial Internet Survey, 2014, almost two-third of respondent agreed over security concern. It also reported that the cyber security issue will cause potential economic loss (O'Halloran and Kvochko, 2015). On another surveyed,

internationally done among 82 companies, 50% agreed that data protection and data security are the major concern. SMEs will face big problem compare to the large organisation and more exposure to cyber-attacks. The reason is they are using the lower level protection for the system. When concerning the big data, security over the cloud service is very serious because, it is particularly related to cloud infrastructure (Coleman et al., 2016)

Report from WEF's global risk, 2017, the rank of cyber risk is among top 5 global risk. The investment over cyber security has increased over the next 10 years. A 2016 study by US Ponemon Institute, showed that 55% companies suffered from cyber-attack (Ponemon Institute, 2016). These will increase the budget on security. However, cyber security and technology investment in Singapore is not a business priority because National Business Survey 2016/2017 by the Singapore Federation highlighted that developing new business technology were ranked the bottom rank (Rapaport, Consulting, & Forum, 2018). As digital security becomes critical aspects over most of the country in the world and it cannot be protected using the traditional approach. The system is now facing the new challenge on how to embed security function into sophisticated IoT devices. Furthermore, Malaysia is lacking the local capabilities and capacities in providing Cyber Security protection. (Ministry of International Trade and Industry (MITI) 2018).

Study conducted by Malaysian Communication and Multimedia Communication (MCMC/SKMM) found that, 66.3% of consumers were more likely to buy in stores or supermarkets compared to buying from the Internet or on-line. Consumers are still feeling not confident and less concerned about the security system. It is clear that 59.1% of consumers lack confidence and 58.7% feel less secure in online purchases (Malaysian Communication and Multimedia Communication, 2010). While using the new systems such as e-commerce applications, users emphasized the security factor to prevent leakage of data confidentiality in the use of e-commerce applications. Without the trust the user can decide not to use the internet and return to the traditional way of doing business.

There is a significant relationship between safety and confidentiality factors associated with the user's desire to use the system. From the perspective of trust in e-commerce use it becomes a major barrier in the development of e-commerce applications. The e-commerce security issue involves two issues (Marchany & Tront, 2002), namely the first protection of business network integrity such as credit transfer or credit card because the use of the transaction could allow the intrusion to occur through password intrusion, spam, data theft or information and hacking. The second is the security of conducting transactions between customers and businesses. The secrets are related to the level of security in online transactions.

The Readiness of Malaysia to the IR 4.0

Mobile device penetration in Malaysia is beyond 100% (143.7%) in quarter 1/2014, and 65.8% are the internet user. 59% of Malaysian internet users actively download mobile application and compare to the Southeast Asian average is 67%. Malaysians spend an average of US$2,000 on online purchase. Social networks are actively being used by Malaysians, who lead 45% of social penetration.

Forecasted on the amount spend on the ICT, Malaysian will spend about RM9.5 billion. IoT in Malaysia is expected to growth exponentially and can be reached RM42.5 billion in 2025. Furthermore, the total of more than 14,000 of highly skilled employment will be created. (Malaysian Institute of Microelectronic Systems, 2014). By referring to the above figure, it is hard to say that Malaysia is not ready to face the challenge of Revolution 4.0. Furthermore, report by World Economic Forum (WEF) and AT. Kearney highlighted in the National Industry, Policy

Framework 2018, stated that Malaysia is positions in a "Leader" quadrant. On the other hand, it emphasizes Malaysia on the readiness for Industry 4.0. From 100 countries, Malaysia is at rank 21st to 30th over the priority in technology, human capital and institutional framework. Positioning at rank 7th, Malaysia is already well integrated into the value chain and demonstrate a very good infrastructure (Ministry of International Trade and Industry, 2018). The statements were strongly emphasized Malaysia is ready over new technology.

However, the above statements have yet to be proved by Malaysian. Some measurements and action need to be done to confirm the readiness. No doubt that the Revolution 4.0 is within Malaysia's planning (Higher Education 4.0, TVET 4.0, National IoT Strategy Roadmap, Malaysia's National e-Commerce Strategy Roadmap, Digital Free Trade Zone). The SMEs has shown the growth of GDP but they have yet to face the real challenges, which are security and cost of investment in technology. (Faizal and Zaidi, 2017)

Lack of Standards and Regulations by Policy Makers

Legal and regulatory environments can be advocates or barriers to e-commerce. The outdated or the weak regulatory framework can create a direct barrier to E-Commerce and at the same time will slow down the development of the required environment that provides supportive laws and regulations. The coordination efforts within the environment and across the board will prevent restrictions. Promoting consumer trust in the digital market is depending on the regulatory framework. This included:

(i) Electronic documents and email signatures' laws and regulation;
(ii) Electronic payments' rules;
(iii) User protection measures, such as spam blocking, production rights and online dispute resolution;
(iv) Intermediary liability rules, addressing the legal obligations of digital platform rules for goods and services trafficked by their users;
(v) The privacy and data's protection rules to ensure the reasonable protection when using the personal information. This is including concerns to be used by the third party, and "the right to be forgiven".

Doing business on e-commerce platforms, cloud computing systems and online business are depending on the open data. That is the ability for them to share information across the border. By having the regulatory restrictions on data flows are not giving good results on e-trade. The restriction to exchange information may be contributing to the failure of e-trade on certain types of international transactions or slowing down the use of certain digital technologies. When the information is not under the regulatory policies, the governments concerned about the privacy of its citizens are increasing. Balancing between regulatory policies that enable and promote trust in the digital market and at the same time avoiding restrictions for international trade will be challenging.

Discussion

9 Pillars / Components of INDUSTRY 4.0 (IR4.0) that Interrelated

Before we further discuss about the benefits of IR4.0, lets we have basic understanding the 9 pillars of IR4.0. (Lectra Systems SA, 2016)

- **Autonomous robots**. With technology IoT, the complex tasks will be able to settle by robots and a wider range of services can be provided. Robots will learn from human intelligent, and we call it smart learning. This technology allows systems to think, act and react autonomously as well as conduct remote decision making.

- **Simulation**. Product and material development, and production processes using 3D simulation will become well-known. The connection of machines, products, and humans in a virtual model, will be control by real-time data processing. The most favourable way to manufacture a product are possible using simulation manufacturing processes at a different production settings. This will improve machine setup times and quality of products.
- **System integration (Horizontal and vertical).** System integration is cross company data integration based on the data transfer standard. Communication between supplier to the customer and management to a retailer / shop floor are fully automated value-chain. This means that, this system will make communication in an organization take place up to down or known as vertical, while inter-company communication occurs at the same par or level or as known horizontal.
- **The Industrial "Internet of Things"**. The sensor via a wireless system installed to connect devices and machines. Artificial intelligence and Big Data technologies will create more products with incorporate intelligence systems and connected those using standard protocols. Manufacturing is now possible to foresee entirely using autonomous systems. This will eliminate analysis and decision making, allowing real-time responses.
- **Cyber security**. The critical issue in cyber security is to protect information systems and manufacturing lines from cybercrime. Reliable communications can be secured by using sophisticated identity and machine access management systems. It has now become more complex, as it consists of connected devices and environments that cannot be protected by traditional cyber security approaches.
- **Cloud Computing.** It is a technology used to share a large size of physical and virtual data / information over the remote server. The management of huge data volumes in open systems will play a role. More data sharing across sites and companies will be used in Industry 4.0 processing. This will improve the performance of cloud technologies and able to achieve better response times.
- **Additive manufacturing**. 3D printing for prototyping and spare parts is the new technology invented by companies. These technologies will be selected for their high performance in producing special or small batch products. A decentralized system will reduce the cost of transport and inventory management. With additive manufacturing technologies, it will allow for massive customisations and development of products that were not possible until now.
- **Augmented reality technology**. The augmented-reality tools are still in early stage of using, but they are paving the way for new services. Some of the first applications can be found in the delivery of information and training.
- **Big data and analytics process**. There are 2.5 x 10^6 terabyte data created worldwide per day. It is expected to grow double in every 40 months (Geissbauer et al., 2014). Their strategy is to analyse the big data and uncover the hidden pattern which will optimize production quality, saving energy, and improving services. The goal is to make real-time decisions.

How IR4.0 will benefits e-Commerce and become tool to handle ecommerce business challenge?

Case Study: Alibaba.com

Alibaba is one of the organisations that have proved their capability in handling e-Commerce and helping SMEs industry to boost their business using a zero-threshold start-up platform. Furthermore, a credit platform is applicable for SMEs' convenience for the purpose of accumulating credit assets through a new open and effective credit assessment system. When dealing with online payment shortage, Alibaba has created a secure and flexible method using

information technology (such as cloud computing and big data) that able to protect the small businesses operation. The technology has utilized better cost of cloud computing and large data services to retain small enterprises (Alibaba Group, 2015)

Big Data on e-Commerce

Alibaba believes that Digital Technology (DT) internet will replace Information Technology. At that era, data will become a core resource and at the same time and computing will become a core competitive strength. The study on how to run data-driven business is becomes necessity to the business enterprises. They need to learn how to change the data into business opportunities. The strategy of big data will become a strong support to the future commercial ecosystem. The big data analysis has gathers all the resources in Alibaba Group and creates business values through resource sharing and data exchanges. It also protected the operation of Alibaba e-commerce ecosystem, and promotes the development of financial services, logistics system, e-commerce and the entire ecosystem of commerce, inclusive providing customers with consistent and suitable services. The strategy of Alibaba is "to build Alibaba into a real data company". They have known that the core of all business shall be based on data, and all data shall become business.

Empower SMEs to Embrace Cloud Computing

Cloud computing, has allowed small business to start their business with the same opportunities and capabilities as big companies using their own respective innovations. The number of customers served by Aliyun had increased to 1.4 million in June 2014 with the help of cloud computing technology. In the same year Alibaba had maintained a GMV daily of RM57.1 billion with computing clouds, where 96% of them were operated by Aliyun cloud computing, without any mistake or loss. With instantaneous orders of 80,000 received via Alibaba's platform, Alipay's top peak payments had exceeded 2.85 million transactions per minute and have recorded a world high record.

Providing Safeguard for Ecosystem Security

Figure 1: Six main roles of Alibaba Safety.

The Alibaba safety covers the security of the product safety chain that diversified and covers six (6) key areas as the Figure 1 above.

The security brain of Alibaba is big data risk control. It used big data analyzes that processes hundreds of petabyte data. Security monitoring is implements on each transaction at each second. Users are also providing with real-time assistance for avoiding any possible risk in shopping. With leading big data risk analysis service and online shopping security, the platform has secured users. The security services are including DDoS safeguard, web security safeguard,

security examination, and host intrusion prevention. The intelligence protection has provided efficient risk monitoring and control capability and multi-dimensional risk prevention strategies. Furthermore, system is capable to verify user ID with “Smile to pay”, fingerprint pay and voice wave pay technique. The platform may activate functions such as online case report and quick tip-offs. The kernel-based active real-time defences’ technology effectively prevents the decryption of operating systems, and leakage or theft of data by measures as such data encryption and mandatory access control.

Vertical and Horizontal System Integration on e-Commerce

Chain supply integration is a large-scale strategy business that brings many possible network connections into work relationships that are closer to each other. The purpose of this supply chain integration is to increase response time, withdrawal time, and reduce cost and waste. Integration can be done regularly through merging with other firms in network supply, or broadly through information sharing or work more exclusively with certain providers and customers. Chain supply is not really "owned" by one company, but various links operate almost, as if one company improves efficiency and benefits everyone through a robust and reliable business. Integration can be done horizontally (within the same company or industry) or vertically (Different Industries).

At Alibaba, the platform integrates existing industry logistics resources and empowers connected partners with data products and services. The smart storage capabilities are offer to 200 network warehouses and collaborates with more than 40 domestic partners (Cainiao Network Overview, 2016). This will increase their inventory turnover rate. The integration helps product packaging to be completed in an average of three minutes and enhanced warehousing and delivery network.

A one-stop cross-border storage and delivery services are provided efficiently over the platform. They work with over 50 global partners over the world, including the United States Postal Service, Royal Mail in the U.K. and Singapore’s SingPost. The logistics network services are extended to covers 224 countries and regions, with 110 cross-border warehouses and a daily processing capacity of four million orders. Furthermore, they provide one-stop cross-border logistics services, enhancing the efficiency and effectiveness of storage, order pickup, customs clearance, delivery and transportation scheduling.

Autonomous Robots for e-Commerce Fulfilment Warehouse Application

A lot of research and development activities are seen on the deployment of robotic technologies in e-Commerce applications. The smart warehouse that control Alibaba’s logistics operation is operated by 70% robots. 60 robots were used to move the goods easily and the goods will bring by robots to the human workers for packing and posting process. The instructions are sending to robots via Wi-Fi transmission. They are installed with lasers to stop from colliding and it can spinning to 360 degree. The intelligent system will be able to power up the robots when the battery is low. The work of 5 ours can be done within 5 minutes and increase production output (Pickering, 2017).

IoT for E-Commerce

The objective of Alibaba's IoT platform is to reduce the barriers for entrepreneurs that are interested to start using smart hardware businesses. Alibaba has integrated marketing resources, cloud computing, big data analytics, information security solutions and other technologies using IoT platform. The decision and action done has minimized smart-hardware manufacturing costs and enable accelerating IoT industry development. SAIC is one of the companies that used Alibaba IoT interconnected system. The device is embedded into the car system and connected to the internet and can be accessed by the drivers and passengers (Adamu et al., 2017).

Augmented Reality for E-Commerce

Alibaba has collaborated with more than 100 domestic and international brands that created retail-powered pop-up stores in 52 malls across 12 cities in China. The augmented reality (AR) product information display mirror is embedded for customer experience. The consumer will be provided with AI-powered fashion mix-and-match suggestions. The RFID-embedded clothing can be taking to the smart fitting room, where the screen inside the room will automatically recognize the selection of garments and propose items in different styles, which consumers can select and try on. However, the project is for selected offline stores. Introducing a unique payment authentication and security system, VR pay is using biometric recognition technologies to ensure payments are completed quickly and safely. (Alibaba Group, 2017; Asia Distribution and Retail, 2017)

In the case study we used, we are able to find 7 pillars of IR4.0 that benefit e-Commerce. However, we are not able to link simulation and additive manufacturing with the platform. Therefore, we believe both components benefit most for B2B e-Commerce.

Finding: Where We Are

Business either, large and small will have the opportunity to be part of global achievement. By using right initiatives and support from government, Malaysia will be able to double the growth with the e-Commerce market. Government is planning for Digital Free Trade Zone (DFTZ), redesigning Higher Education and developing the policy framework for Malaysian to adapt within Industry 4.0. (Malaysia Digital Economy Corporation, 2016; Ministry of Higher Education, 2018a; Ministry of International Trade and Industry, 2018; Nainy, 2017)

Digital Initiative of IR 4.0 technologies as nation asset to boost ecommerce through DFTZ

As we move towards Industry 4.0, SMEs need to brace and orientate themselves to new ways of doing business through e-commerce solutions, digital marketing platforms, social media engagement -all in the name of moving towards creating and sustaining a unique customer experience (Hashim, 2017). For the reason, government designed and created DFTZ as a platform to support the SMEs business to reinvent by using the latest technologies (Ministry of International Trade and Industry, 2018). It aims to take advantage of the convergence and exponential growth of cross-border e-Commerce activities that are happening within digital economy. DFTZ will facilitate seamless cross-border trading and e-Commerce, which will enable Malaysian SMEs to export their goods internationally. It will be able to support Malaysia's National e-Commerce Strategic Roadmap, that was introduced during year 2016 (Malaysia Digital Economy Corporation, 2016; Siew Yean, 2018). Introducing 2 components of DFTZ:

(i) **eFulfillment Hub**: For SMEs, this eFulfillment hub will be able to help their goods custom clearance lead time for inbound and outbound parcels as its handle by DFTZ. By having

centralized warehousing and logistics operation, SMEs will ease their challenge in getting the goods in time. The control of the operation is positioning at KLIA Aeropolis as a leading e-Commerce trans-shipment hub. The 1st phase was done by POS Malaysia, to upgrade their facilities (ICT, CCTV, security services, operations, etc.) that are to serve Lazada and other e-Commerce business and logistics operator.

(ii) **eServices Platform**: Ordering of goods, making payment, financing support, insurance application, digital marketing (etc.); by using this integrated trade facilitation platform, will helps manage borderless trading.

In order SMEs benefit the implementation of DFTZ, SME Corp Malaysia, together with Malaysia External Trade Development Corporation (MATRADE) and MDEC have planning series of training and workshop to provide the awarenss skills and trainning on the new platform (Nainy, 2017; SME Corporation, 2015).

Preparation for Knowledge Worker

Preparation for the knowledge worker is necessary to let Malaysia lead to the same path as other country to face Revolution 4.0. The former Minitsry of Higher Education has redesign our curricular and introducing **Higher Education 4.0** and **TVET 4.0**. Getting international recognition is become one of the agenda that will help our Malaysia education.

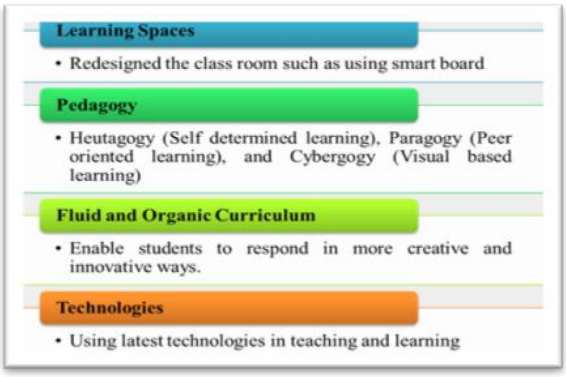
(Ministry of Higher Education, 2018a, 2018b; Rasul et al., 2015)

Higher Education 4.0

A mandate's theme called "Higher Education 4.0: Knowledge, Industry and Humanity" was introduced. This is to ensure higher education to remain significant and competitive with the Industry 4.0. The impact of Industry 4.0 will result in: rapid change; unpredictability, uncertainty, complexity and ambiguity; and evolving jobs where the manual ones are being taken over by robots. However, robots will still not able to over take the flexibility, creativity and brain elasticity in human. Under Higher Education 4.0, there are six (6) components that will able to help in meeting all the challenges: Teaching and Learning 4.0, Learning without lectures, Evaluation without examination, Future Jobs, Industry and Academia are one, and Humanity.

Teaching and Learning 4.0 has been incorporated with four (4) aspects: Learning spaces, Pedagogy, Fluid and Organic Curriculum, and using the latest technologies.

Figure 2: Teaching and Learning 4.0



With the Revolution 4.0 spreading faster over the world, Malaysia has no other option, but to adapt with various challenges. Ali Baba Vice President, Mr. Brian Wong said, the most stressful for our graduate is to look for a good job. Instead, in the new era of e-commerce, we should

train them in creating the job (Chin, 2017). While the merging of industry and academia is to provide the humanity skills and knowledge that a robotic cannot fulfil that will benefits both industry and students. Introducing few of the education frameworks:

CEO@Faculty Programme: This programme brings together the top player from local and international industry into the university and, to share their knowledge and experiences with students. Each of them will need to contribute 30 hours a year of their time to provide mentorship to students and lecturers. At the same time, they will be able to provide, the relevant guidelines in developing the curriculum.

Malaysia English Assessment (MEA): Similar goes to MEA, it will become the communication component in ICGPA. The purpose of this programme is to let our student master in English. This will increase the standard among our students.

2u2i : 2u2i comes from "2 years in university and 2 years in industry". Meaning that, the student will study on campus for 2 years before they undergo industrial training for another 2 years. The aim is to create enough exposure to under graduates about the real working environment and experience with industry. This will be able to ensure the synchronisation of the course syllabus with the learning method offered by both University and industries are relevant.

Integrated Cumulative Grade Point Average (iCGPA)*:* The iCGPA is "an integrated mechanism for assessing and reporting of students' development and performance as well as learning gains of their ethics, knowledge and abilities".

Refer to Figure 3, the concepts have been implemented over 20 universities, 18 polytechnics, and 15 community colleges. The former Ministry of Education targeted for at least 40% of faculty and department at IPTA to implement the ICGPA over the curriculum in year 2018. (Ministry of Higher Education, 2018a)

Figure 3: iCGPA Mechanism

E-Portfolio: What is e-portfolio? E-Portfolio or Electronic Portfolios is "a collection of artifacts in the form of digital, interactive, systematic way to monitor students' knowledge and easier to use in publishing information on-line" (Bekri et al., 2015). It had been used since earlier 2000, but it is still not connected to the actual learning process. However, with HE 4.0, the Ministry of Education is determined to integrate the concept with ICGPA and consistent with the objective of TVET implementation, which is to provide highly skill workforce.

APEL C : Accreditation of Prior Experiential Learning (APEL) is "a systematic process that involves the identification, documentation and assessment of prior experiential learning to determine

the extent to which an individual has achieved the desired learning outcomes, for access to a programme of study and/or award of credits". This will benefit the student with potential and who have good working experience, but lack of formal academic education.

Technical and Vocational Education and Training (TVET 4.0)

TVET is a sector that provides young people with high skills human capital that includes formal, non-formal and informal learning. In the 1st Malaysia Plan, vocational schools were introduced to supply skilled technicians, craftsmen and artisans that urgently needed by the agricultural, industrial and commercial sectors in economy (Rasul et al., 2015). Currently, TVET programme were established and accredited by 2 main bodies. The first one is Malaysian Qualifications Agency (MQA) that accredited the qualifications for higher education and vocational education sectors offered to universities, polytechnics, vocational institutions, and other community colleges. Whereas, Department for Skills Development (DSD) under Ministry of Human Resources will accredited programme under institution that provide skills training.

In the Eleven Malaysia Plan divided the new strategies by strengthening the governance of TVET for better management, enhancing the TVET curriculum and delivery and eliminate duplicate programmes and enhancing TVET branding (Economic Planning Unit, 2015). More highly skilled workforce will be transformed to face the new challenges posed by the advent of 'The Fourth Industrial Revolution' (IR4.0) and the emergence of Digital Economy (Ministry of International Trade and Industry, 2018). This will involve: Trained the teachers in TVET; Strategic collaborations between public and private organisation which helps to strengthened skilled workforce; Provide continuous training; Creating technopreneurs and create job opportunities.

Policy Framework

Government and industry have work together to develop plans and actions to strengthen Malaysia's industry. The plans are more focus on manufacturing industry to create strong platform for Malaysia's economy However, when the programs were developed independently, the possibility of redundancy will exists. The amendments and greater alignments need to be done to synchronize the overlapping and the different. Government, research, and academic must work together to set the priority industry, specific goals, enabling actions and the funding. For the result, Malaysia designing the National Industry 4.0 Policy Framework (Ministry of International Trade and Industry, 2018). The frameworks cover people, process and technology used for industry that concerning funding, infrastructure, regulations, skills and talent, and technology.

Investment on Industry 4.0 technologies may require huge amounts of capital by manufacturing company. The issues on incentives and funding options will be raised and must make available by both Government and private agencies, especially for SMEs. Furthermore, fast and secure data connections are require for real-time data processing. The current High Speed Broadband and 4G technologies in Malaysia are still not able to fulfil the future technologies.

Government need to understand the priority issues when developing programs and regulatory support. Creating awareness of the need and benefits of new technologies is necessary especially for SMEs. Some of the issues that need to consider are data integrity, security and analysis. With the coming planning of Industry 4.0, up skilling existing and producing a highly skills worker will become the main agenda. Most knowledge and skill workers will be selected from science, technology, engineering and mathematics field. And the core to unlocking the Industry 4.0 is the ability to access smart technologies and standards. The standards compliance is important for the interoperability of systems.

Conclusion

Reliable and affordable access to digital networks and services are important to E-Commerce platform that will be used by all individuals, businesses and governments. The effective telecommunications policies based on good competitiveness are requires for the need of wider distribution of E-Commerce networks. This effort is more focus and targeted to the disadvantaged parties like SMEs. Policy makers should make changes on the existing policies and not to proactively developing new procedure. Adapting to the digital future is more encouraging.

The E-Commerce is already playing a major role on international trade and having a profound impact on the trading. This includes the changing method of countries trade, altering how products are made and delivered, and also what they trade (such as greater number of goods and services). Since DFTZ is still in its implementation stage, further research has to be carried out to examine and prove the ability implementation of DFTZ to boost the ecommerce within SME companies.

The government also encouraging the companies to invest in other knowledge-based capital like data, organisational change and process innovation. They will help the companies to realise the full potential of the digital transformation. However, the effectiveness of digital technologies will depend on the level and scope for organisational to change and process innovation within firms and organisations, as well as level of management and leadership. Afford from the governments will continue to play the important role that support the E-Commerce. Particularly, government will support in undertaking, financing research on the underlying technologies and on key challenges affecting the E-Commerce and investment in R&D need for proper emphasis performance.

In conclusion, based on our finding, the future of e-Commerce in Malaysia is promising, even though Malaysia is slightly lagging behind and yet to reach the capacity point. However, e-Commerce's future can remain as good platform to generate profit growth, with sufficient consumer trust and confidence in the underlying systems. Therefore, the Government and businesses are requiring working together on an international platform to ensure specific standards are achieve up to the e-Commerce international standard field.

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