

E-COMMERCE ADOPTION: A STUDY ON OPPORTUNITIES AND CHALLENGES IN INDONESIA

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Abstract

E-business or e-commerce is generally defined as business activities that undertaken by using information and communication technology. Recent data indicates that e-business has been significantly important in Indonesia's business and economy. For instance, internet users reached 82 million people or approximately 30% of the total population in Indonesia in 2014. However, these figures are considered relatively low compared to developed countries such as the USA, UK and Australia. Considering the penetration of e-business in Indonesia, it can be predicted that e-business will contribute significantly to the economy in the future. Economic integration such as ASEAN Economic Community will also increase e-business activities and technology engagements due to rapid growing trade among ASEAN countries. This article aims to explore issues and challenges of e-business in Indonesia's economy. In particular, this article intends: (i) to explain the concept of e-business, (ii) to study the current position and potential benefits of e-business on the economy in Indonesia; and (ii) to examine the prospects and challenges of e-business in Indonesia. Among topics to be addressed in this article are e-business concepts, e-business platforms that are available in Indonesia, key challenges that are being faced by consumers undertaking e-business, services and opportunities offered by e-business to producers, distributors and customers as well as prospects and challenges of e-business in Indonesia.

Keywords: *e-business, internet, ICT.*

INTRODUCTION

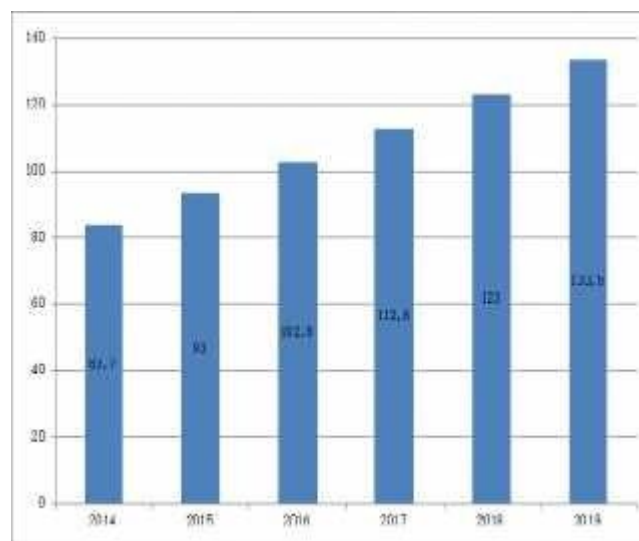
E-business or e-commerce activities have been significantly growing across countries. This is in line with the importance of the internet and World Wide Web (www) to support the process and the activities of online businesses. Wood (2004) suggested that e-business or e-commerce has given positive impacts on the economy because of its flexibility and ability to create new market access. Wood grouped the two benefits of e-business, namely: (1) macro-economic benefits, and (2) the benefits of the micro to the individual and community. In terms of macro economy, the benefits of e-business is to improve efficiency in the distribution of goods and services, increase economy of scale in the production process, promote the growth of tax base, encourage innovation and improve product marketing expertise. Meanwhile, the benefits of individual / community include allowing more access to information, encouraging marketing / entrepreneurship, and creating opportunities to gain revenue and develop family businesses (p.304).

The benefit of ICT in business and economic activities is creating opportunity. Through this opportunity, ICT gives positive contribution to promote the economic growth and development so that it becomes a means to help reduce poverty in a country (UNDP, 2000). The use of ICT in e-business transaction activities is seen as an opportunity particularly for developing countries, including Indonesia, as it gives a stronger base in implementing the multilateral trading system. E-business or e-commerce is different to business in general, because businesspeople don't need to have physical

building, or require storage space or other infrastructure investments as in the retail sector in general. This causes a reduction of business costs and encourages a higher profit margin for e-commerce actors (WTO, 2013).

Today, e-business is growing very rapidly and has contributed significantly to the economy in various countries around the world, including in Indonesia. The growth of e-business is partly due to the increasing internet users, where internet plays an important role as the main facilitator in e-business. From 2000 to 2015, the number of internet users across the world continued to escalate. China is the country with the highest internet users in the world with the estimated 630 million of the total population of 1.37 billion in 2014. Other Asian countries with high internet users are India and Indonesia, as emerging markets, and it is predicted that the number of Internet users in these countries will reach 346 million and 123 million in 2018, respectively (www.statistica.com, 10 / 02/2016).

In Indonesia, the number of individuals and SMEs using social media, especially Facebook and Twitter to sell goods and services, has also increased (UNCTAD, 2015, p.27). The high use of social media is also evident from the increasing trend of internet users in Indonesia. As in Figure 1, internet users increased by about 10 million people per year in 2014, amounted to 83.7 million, rising to 93 million in 2015 and approximately reached 102.8 million in the beginning of 2016. This number is predicted to continue to rise to 123 million and 133.5 million in the year 2018 to 2019. The high Internet use in Indonesia is also indicated by high rate of internet penetration. In the period of 2009-2012, the Internet penetration in urban areas in Indonesia rose from 46% to 57% (www.statisca.com). The development of Internet use has caused the online business activities to emerge as a new business model that contributes positively to the economy of Indonesia.



Source: www.statisca.com, 10/01/2016.

Figure 1. Internet Users in Indonesia

E-business contribution to the Indonesia's economy can also be seen from the growth of e-business market share in Indonesia. The rapid growth of e-commerce market share in Indonesia is no doubt, with the number of Internet users reaching 82 million people, or about 30% of the Indonesia's total population. E-commerce market has become a prospective business sector for some people who can see the potential. The rapid growth is supported by data from the Ministry of Information and Communication (Menkominfo) which stated that the value of e-commerce transactions in 2013 reached Rp130 trillion (Mitra, 2014). From the information previously presented, it can be seen that e-business, in the future, will be a business model that will be run by businesspeople and will give a significant contribution to the Indonesia's economy. The objectives of this paper are as follows: to

explain the concept of e-business and its role in economy; to examine the contribution of e-business to Indonesia's economy, and to study the various challenges and opportunities arises from e-business in Indonesia.

LITERATURE BACKGROUND

The Concept and the Driver of e-business in Economy

E-business is defined as sales process, purchasing, shipping (transferring) or exchanging of goods and services and information using the devices, computer networks and the Internet (Rainer & Cegielski, 2011). Similar definition was also provided by Laudon and Traver (2014), seeing e-business as a process of buying and selling electronic products by consumers and between companies by using computer as an intermediary for business transactions. While Chaffey and Woods (2005) defined e-business as the exchange of digital information to drive business processes through the use of technology within an organization and between organizations.

According to WTO (2013), e-business or e-commerce is the sale of goods and services using computer network with a method that is designed to receive and place orders for goods and services carried out between companies, between individuals and households, government agencies or other public and private organizations. UNCTAD (2015), emphasizing the importance of software and hardware for computer and other electronic devices in defining e-business, defined e-business as purchases and sales made through computer network, using a variety of devices and formats, including web, and the exchange of electronic data, utilizing personal computers (PCs), laptops, tablets, and mobile phones (p.3).

Broadly, e-commerce also refers to the activity of buying and selling goods and services via internet digitally. E-business is defined as the use of electronic communication devices and digital information with the use of internet in conducting transactions of goods and services (Gokmen, 2012). E-business is growing rapidly along with the development of information technology and the use of Internet in everyday life. Various benefits of ICT to support the development of e-business is through the reduction of business costs (lower expenses), access to new markets and new customers (ATTAIN new consumers) (Gokmen, 2012, p.1). In IDS (2001), it is explained that e-business is the activity related to the sale and purchase of goods and services using the computer as its mediator. Sales and purchases on computer is done via computer networks and Internet, but the payment and delivery can be done offline.

Kalakota and Whinston (1997) described four perspectives of e-business, namely: communication, business, services, and online. From the perspective of communication, e-commerce is the delivery of goods, services, information, or payments over computer networks or via other electronic equipment. From the perspective of business processes, e-commerce is the application of technology to the automation of business transactions and workflow. From the service perspective, e-commerce is a tool that meets the needs of companies, consumers, and management to cut service costs (service cost) while improving the quality of goods and speed of service delivery. Lastly, from the perspective of online, e-commerce provides the ability to buy and sell goods and information through Internet and other online means. From the various definitions above, it can be concluded that e-business is the sale or purchase of goods and services conducted via internet.

It is undeniable that e-business has become a new business model in various countries as the efforts of the private sectors or business actors to increase sales and revenue. The increased revenue through e-business becomes drivers of the development of e-business activities that are grouped into two: (1) competitiveness drivers, and (2) cost drivers (Chaffey, 2009). Competitiveness driver is related to e-business capability in increasing the number of consumers and also the value of transactions that can be achieved in the presence consumers'

demands, quality guarantee as well as diversity of owned products and services and also efforts to maintain existing market share. Cost driver is the minimization of various costs due to the reduction of various expenses such as distribution and storage costs. Cost drivers is done for example through cutting the tracks of ordering and delivery of products, accelerating the path of the information distribution of products and services to suppliers, minimizing the operational costs as well as lowering other expenses related to the cost of buying and selling products and services that are done online.

Forms of E-business

The general form of e-business transactions can be grouped into four: (1) business to business (B2B), (2) business to consumers (B2C), (3) business-to-government (B2G) (WTO, 2013, p.3-4) and consumers to consumers (C2C) (See Figure 2). First is B2B e-business which occurs between businesses such as manufacturers and wholesalers, between wholesalers and retailers. This B2B is about trade of goods and services, or information between businesses. Second is B2C in which the e-business is done by selling the products to public using various shopping software via internet. Meanwhile, B2G is e-commerce activities between private companies with government agencies by using internet for public procurement, procedures for licensing and other government services. The last is C2C often called P2P (person to person) which is the activity of e-commerce between individual to another individual who conduct transaction directly without any business intermediary.

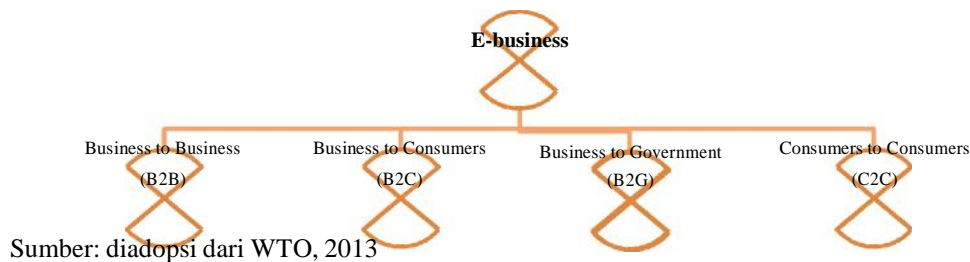


Figure 2. Forms of E-business

In several countries, e-business model that most businesspeople do is B2B. In the United States, for example, total revenue from B2B transactions reached US \$ 5.4 billion in 2012 or about 18% of e-business transaction value; B2B contributed around 64% in Canada, while in Republic of Korea and Russia, B2B accounted for about 91 % and 57% respectively for e-business revenues in 2013 (UNCTAD, 2015, p.13).

The process of e-business transactions.

The main hardware devices that must be present and fulfilled in order to run an e-business are e-shop as server, the user as web browser and internet connection that connects those two factors. In addition to hardware, e-business process also requires a variety of other instruments. Whiteley (2000) proposed the process and instruments of e-commerce that should be built in order to achieve the good performance of e-business involve visibility, ease of use, order processing, online payment, security, delivery and after-sales system. Visibility is the ability of e-business actor to ensure that through the computer and Internet, consumers can easily grasp the types and features of the goods and services offered.

Ease of use refers to the minimal effort the consumer needs to do when visiting a website and finding the products and services that they look for. Order processing is how goods and services are efficiently handled efficiently online. Online payment is related with

payment solution for purchases made online. Security regards with the safety for each online payment transaction where consumer and producer get a sense of security and legal warranty when making online payment. Delivery system is the final process in an online transaction to ensure a short time span between the time of purchase and the time when the consumer gets the products. Last is after-sales which is an attempt to provide good services that can meet the needs of consumer after the consumer gets the goods and services purchased.

METHOD

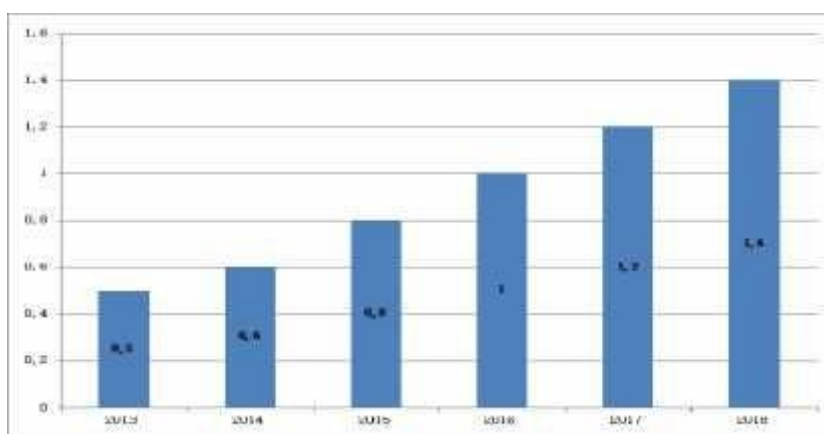
The paper is written mainly based on multiple secondary sources of data or information, thus it is an exploratory research in nature. Data and information is collected from various publication materials such as published statistic data, journals, articles, web sites as well other related sources. The author used a thematic analysis approach (Boyatzis, 1998) for the purpose of data analysis.

RESULTS AND DISCUSSIONS

1. Potential Benefits of E-business to the Economy

According to the literature, the application of ICT in the economy will boost economic growth that is possible to be made through the use of ICT to promote national development, help local industries survive in a knowledge-based competition, and encourage exports (UNCTAD, 2015, P8, 90). Although e-business transactions are still less than 1% of the total transactions of Indonesia's retail trade but looking at the population growth and the development of the middle class and the use of smartphones that occur quite rapidly in Indonesia, it is predicted that the e-business transactions will continue to grow fast in Indonesia. This growth will create an economic multiplier and positively impact to the economic development.

Other driving factors to the growth of e-business in Indonesia, especially in urban areas like Jakarta, are the increasing society's activities and traffic congestion that make people more comfortable do transactions of goods and services online (Barbour-Lacey, 2015). According to MarkPlus Insight, in 2013 approximately 45% of the Indonesian population using internet has done online transactions. Meanwhile, according to a study of SingPost, Singapore's national postal service, the number of online shoppers in Indonesia increased by about 28.2% from 5.9 million to 8.7 million in 2013 and 2016 respectively (oxfordbusinessgroup.com, 02.10.2016). As noted earlier, the proportion of e-business sales compared to conventional retail transactions is still low, but this percentage has shown an increasing trend over the last few years, that are in 2013-2016. In 2013, the percentage of e-business sales was only 0.5% and it has gradually grown up each year and will be predicted to be around 1.4% in 2016.



Source: www.statista.com, 10/02/2016.

Figure 3. E-business Sales (%)

In addition, the market size of e-business in Indonesia also experienced large increase. In 2011, the market size of e-business in Indonesia was only about US\$ 0.9 billion going up to about US\$ 10 billion in 2012 (www.statista.com). The number of online shoppers in Indonesia was also increasing. As shown in Figure 4, a growing number of online shoppers from 2013 to 2016 reached 50%, where in 2013, the number of online shoppers was only about 4.6 million people. Although the growth was not sharp, the number of online shoppers increased in 2014, 2015 and reached 8.70 million in 2016.



Source: emarketer, 06/02/2016.

Figure 4. Number of Online Shoppers in Indonesia (Million)

Figure 5 shows the trend and the forecast sales through B2C e-business in Indonesia over the last few years. Although sales through e-business is not more than US\$ one billion, sales of goods and services through online transactions has been increasing every year, for example, US\$ 0.56 billion in 2011 is predicted to come approximately to US\$ 4.49 billion in 2016. This indicates the potential for transactions of goods and services online in the future.



Source: www.statista.com, 07/02/2016.

Figure 5. Trends of Online Goods and Services Transactions (US\$ Billion)

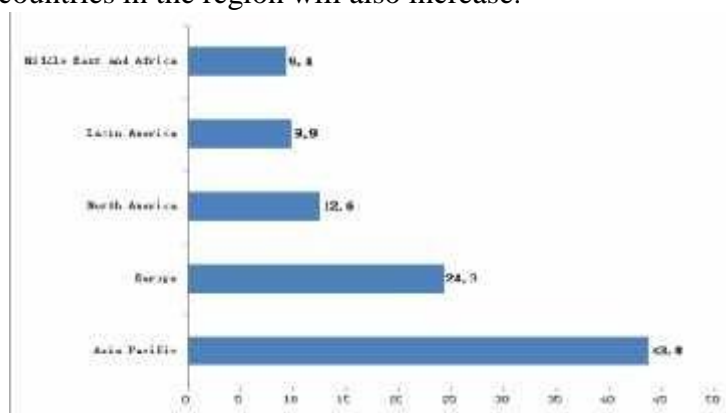
The increasing of e-business, shown by the data and information above, indicates the potential economic growth where e-business has become one of the factors of economic growth. This occurs because the increased activities of buying and selling online will also encourage the aggregate consumption and investment. Through the multiplier effect, it will create jobs and increase income per capita.

2. Potential Benefits of E-business toward the ASEAN Economic Community

ASEAN Economic Community has been implemented since December 31, 2015 for the purpose of economic integration of the member countries of ASEAN and the regions. Through its four pillars, AEC aims to create a single market, the production base and also the commercialization of products and services in ASEAN. The ASEAN regions are intended to be competitive economic regions which emphasize on product competitiveness and export capacity of the ASEAN members. To benefit from AEC, each ASEAN member country is encouraged to participate in ASEAN integration and also the global economy.

One of the potential benefits of e-business and the use of ICT in business in developing countries, including Indonesia, is the use of ICT as an entry into ASEAN and global economic integration. This is because through the application of ICT, participation in the international value chain can be done more efficiently, improve the ability to penetrate and to access markets as well as enhance market efficiency and reduce transaction costs. If this potential is reached, the barriers to participate in international trade, including through the ASEAN Economic Community, may be reduced because ICT acts as the facilitator of international trade (UNCTAD, 2015).

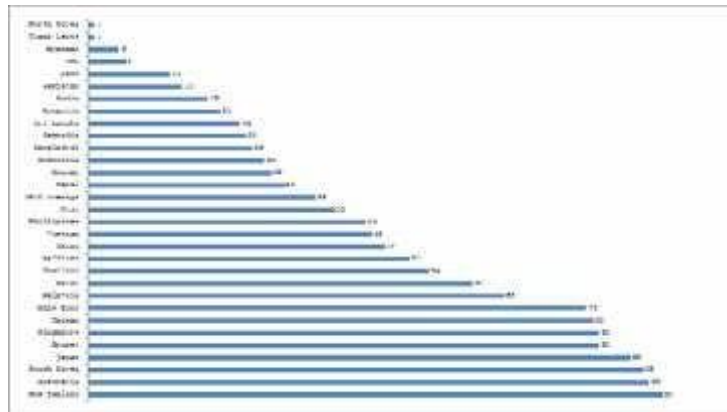
One of the challenges that can also be viewed as an opportunity of implementation of the ASEAN Economic Community is the increasingly integrated and expanded market share. Through e-business, business operators in Indonesia should be able to perform wide range of online promotions to reach markets in Asian region. The huge potential of this is the result of high number of Internet users in the Asia Pacific region, where nearly 43.8% of Internet users in the world are in Asia Pacific region's countries, while the number of internet users in other continents was still below 20% in 2015 (Figure 6). With MEA, the integration of trade and business between countries in the region will also increase.



As of May 2015.
 Source: www.statista.com , 10/02/2016

Figure 6: Distribution of worldwide internet users

The opportunities from the use of e-business in Indonesia are also quite large, among others, can be seen from the high level of internet penetration that occurs in the countries in Asia Pacific region. As shown in Figure 7, in 2015, in addition to Australia, the 10 countries with the highest internet penetration rate are in Asia with Internet penetration above 50%, while Internet penetration in Indonesia in the same year was approximately 28%. Seeing this development, e-business operators in Indonesia should be benefited because the high potential of internet penetration will be high chances of online shopping in the future.



As of 1st quarter 2015.
 Source: www.statista.com , 10/02/2016

Figure 7. Internet penetration in Asia Pacific, by country (%)

3. Potential Benefits of E-business to SMEs in Indonesia

Results of previous studies have shown the benefits of e-business on the economy of a country (UNCTAD, 2015). Humphrey (2002) for example argued that e-business, especially in form of B2B contributes to the economy in developing countries as through e-business, transaction costs can be reduced because marketing activities can be more effective and access to global market can be faster. This is accomplished as through e-business, market channels can be more efficiently so that the purchase price of goods and services to the end consumer could also be cheaper.

The studies' results have also revealed that SMEs contribute positively to the economy of many countries. The contribution of SMEs to the economy has increased along with the development of information and communication technologies such as computers, email and internet that are utilized for the benefit of SME businesses (OECD, 2004). In Indonesia, SMEs are one of the businesses that play an important role in the economy through the absorption of the labor force, and as the foreign exchange sector. SMEs are also a relatively strong economic sector which is evident from their ability to survive in the economic crisis in 1998 (Brodjonegoro, 2015).

Chaffey (2009) and OECD (2004) described the benefits of e-business to SMEs. These benefits are tangible and intangible. Tangible benefits are gained among others through the role of e-business tools that can increase sales since the price is competitive as a result of cost reduction, new market potential, and repeated sales process (repeated selling) and cross selling. An important contribution of e-business to SME is the great opportunity to minimize the costs as SMEs can reduce the time to meet directly with customers. Online sales will also reduce distribution and advertising costs. Other cost reductions are also accomplished by cutting the cost of the supply chain and various other administration costs.

Meanwhile, the intangible benefits of e-business to SMEs, among others, are created with the use of device, computer network and internet; brand awareness can be achieved more efficiently, thus ultimately improving the corporate image of the SMEs. E-business applications also increase the marketing communication processes, improve the process of products development, promote the effectiveness of information management market and ease the process of receiving feedback from consumers.

The use of ICT in e-business can improve information and knowledge management of SMEs, which in turn will upgrade the performance of SMEs. The use of ICT in e-business is in

firm level, where the application of ICT can accelerate the process of internal communication in an SME environment and create a more efficient business management, while e-business application in inter-firm level will reduce transaction costs and speed up the transaction process. The use of ICT in e-business will also minimize the inefficiencies that can occur due to a lack of coordination among SMEs in the value chain (OECD, 2004, p.9).

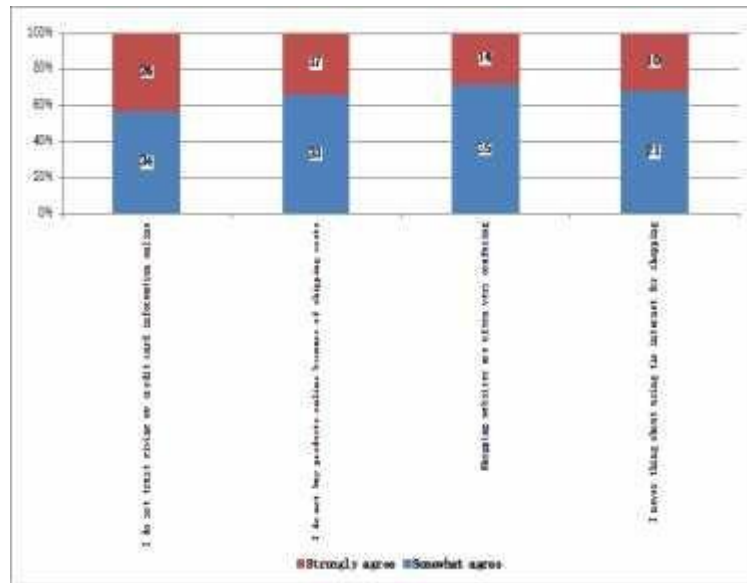
4. Potential Challenges of E-Business in Indonesia

One of the challenges that need to be addressed in order to improve the government's e-business in Indonesia is to clarify the regulatory framework of e-business that provides **security and legal issues**. Security and legal guarantees need to be clarified and more socialized as e-business is done through the global internet connection. Another factor that leads to the low activity of e-business that produces online shopping is the low level of consumers' trust in doing transactions. Trust is an important factor to encourage consumers to make purchases, sales and payments using computer and internet networks. Trust in e-business is related to two aspects: (1) trust in vendor and trust in transaction (see McKnight, Choudhury, & Kacmar, n.d, Pittayachawan, 2008).

UNCTAD (2015) reported that one of the challenges of e-business in Indonesia is related to the payment in which consumers feel reluctant to do it online because they have fear of fraud and cybercrime which are still high in Indonesia. A survey conducted in 2013 showed that one third of Internet users in Indonesia claimed not do online shopping for fear of fraud. The high level of fraud was shown in the 2012 data where there were approximately 39 million cyber-attacks in Indonesia, nearly a quarter of PCs in Indonesia experienced malware attacks and it became the highest figures in the world that year. Indonesia was ranked 14th in terms of crime related to e-business (UNCTAD, 2015, p.28).

Based on the existing data, it is understandable that consumers in Indonesia still do not feel safe to make purchases of goods and services online, from about 93 million Internet users in the first quarter of 2014, approximately 26% of online shoppers who made purchases online are sure to not provide their credit card information because of doubt about the online payment method in Indonesia. Another factor to be considered by the online shoppers in shopping online is the high cost of freight, and they also see websites for online shopping very confusing (Figure 8).

The low level of consumers' trust in making online purchases has caused the percentage of sales of products online is still relatively low compared to retail sales in general, which was only about 0.5% in 2013 but is predicted to rise to around 1.4% in 2018. The sales value is also very low compared to the value of online transactions di several other countries.



As of 1st quarter 2014.

Source: www.statista.com , 10/02/2016

Figure 8. Online shopping concerns of digital consumers in Indonesia, 2014 (%)

Another challenge to encourage and increase e-business transactions in developing countries is still relatively low penetration of information and communication technology (ICT) which is caused by the relatively limited infrastructure for e-business that results in high cost of e-business application (Molla and Licker, 2005). As noted earlier, the Internet penetration in Indonesia is only about 28% and it is still very low compared to other emerging countries in Asia. The low internet penetration rate is partly due to the cost of internet penetration which is still relatively expensive and low capacity and problems of Internet transmission speed because most Internet connections in Indonesia are still using copper wires, only big cities that have widely used fiber optic connection with the speed of internet transmission approximately 19,200 kpbs, but in other regions in Indonesia it is only around 9,800 kpbs (Kurnia, nd). In addition, unreliable logistics and high shipping cost are also factors that slow down the development of e-business in Indonesia (UNCTAD, 2015, p.27). Therefore, to encourage the adoption of e-business and increase its contribution to the economy, it is necessary to improve and increase the availability of supporting infrastructure so that the cost of internet penetration in Indonesia can be cheaper. UNCTAD (2015, p.82) recommended how it is important for government to develop strategies for e-commerce or e-business as an integral part of the policy of creating an information society (information society) so an economic environment that is conducive to the implementation of e-business will be created. National e-business strategy can refer to the best practices in various countries but still point to the condition of the domestic economy.

In designing e-business strategy, the government needs to pay attention to five main points. First is giving special attention to SMEs, since SMEs are generally left behind in e-business applications, however, SMEs are the sectors that earn most benefit from their e-businesses. Second is paying attention to a particular industry or region. Third is designing e-business strategies for different size of domestic and cross-border e-business activities. Fourth is giving more attention to the impacts of the ICT use such as car devices, social media and other payment alternatives. Fifth is developing e-business platform, delivery system and payment solutions in e-commerce which are more fixed in accordance with the conditions in the country by involving the private and public sectors.

CONCLUDING REMARKS

E-business is the process of selling and buying goods with the use of computer and other electronic devices that are connected to the internet network. E-business contribution to the Indonesia's economy is discussed in this paper, among others, is viewed from the potential of internet penetration, market size of e-business, the benefits in the framework of the implementation of AEC and services that can be obtained by SMEs through e-business. Possible challenges faced in the development of e-business, among others, are the regulatory aspects and the security factors in making online purchases and payments as well as inadequate infrastructure and the need to design e-business strategy in national level.

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