

Towards Digital Economy: The Development of ICT and E-Commerce in Malaysia

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Abstract

Information and communication technologies (ICT) are one of the important determinants for the rapid growth of E-Commerce transactions all over the world. The upshot of ICT and the initiative by Malaysian government flourish online businesses in the country. The aim of this paper is to show the potential growth of ICT and the development of E-Commerce in Malaysia. The impact of internet usage, internet disclosure, internet experience and the improvement of ICT have positive implications for the information technology (IT) infrastructure and for the E-Commerce development in the country. Finding shows that the behavior of internet users for purchasing online is changing through the growth of ICT and IT infrastructure. The increasing rate of internet users, online spending and adopting of new technologies are the key drivers for the development of E-Commerce in Malaysia. Government initiatives for the development of IT infrastructure and E-Commerce have shown a positive feedback from the businesses all over the country. This study may enable the decision makers of the developing countries to adopt the initiatives and steps of the Malaysian government as a role model for the development of E-Commerce and knowledge base economy. This paper also provides the background of the ICT dependency, its influence on purchase intentions and the development of E-Commerce in Malaysia.

Keywords: Internet, ICT, IT infrastructure, Malaysia, E-Commerce, Government

1. Introduction

Information and communication technologies (ICT) have tremendous impact on society, particularly on organizations, businesses and purchasers. Many Malaysian organizations are taking more innovative ways to maximize the use of ICT and grab the benefits of internet from their business activities. The rapid use of ICT is boosting E-Commerce in Malaysia.

Malaysian government believes that ICT is a strategic driver to support and contribute directly to the growth of Malaysian economy. For the purpose of deploy resources to develop knowledge base economy and to enter the digital age with more strategic way, Malaysian government announced the plan called 8th Malaysian plan. During

the 8th Malaysian plan some of the initiatives were deployed to build vital ICT infrastructure for public sector as well as private sector. This plan has been focused to increase the usage of computerization and IT infrastructure in many governmental agencies. The main objectives of this plan were the Initiation of national information security, the creation of emergency response centre to administer regulatory, technical aspects and internet security. As a result in 8th national plan 4.7% annual growth rate in ICT investment spending from overall economic sectors has been achieved.

Malaysia would like to promote and facilitate the wider adoption and usage of ICT in everyday life, such as E-Commerce, industry, education and health. The motive of this plan is to shift from a knowledge base economy to a competitive knowledge based economy. Commercial activities on the internet are rapidly increasing all over the world. E-Commerce becomes a strong and easy way of rapid business. For organisations in particular, the New Economy brings infinite and exceedingly demanding competition and opportunities on a global scale. E-Commerce is definitely a corporate weapon, if it has been well utilised than it will lead to long-term success in terms of business profitability and competitive advantage in the marketplace.

According to International Data Corporation (IDC) survey the overall E-Commerce spending in Malaysia has grown to US\$22.3 billion in 2007 (IDC, 2007). And has recorded from Malaysia Department of Statistics that 23.4% of internet subscribers have been noted in 2007 of the whole population. While its increasing year by year. It is a well-known fact that E-Commerce and Internet technologies have an impact on the firm's value. ICT has become an effective tool for the organizations to improve its efficiency (Ali, Khatibi, 2002). However the successful implementation and usage of ICT is a big challenge for the organizations. For instance the government and private agencies are providing the assistance and guidelines for the usage and implementation of these technologies. Malaysian government has a deep concern over the deployment of these technologies to enhance business value around the country. For this purpose the government of Malaysia has taken numerous steps towards the challenges to enter the digital age. This study will highlight the government initiatives for the development of IT infrastructure and the usage of ICT for conducting business. This may encourage the organizations and consumers to adopt these technologies and to improve the process of buying and selling through its usage. This research also presents the opportunities and challenges to this technology as well as its impact on the society and businesses. These findings may help the decision makers and managers to analyze the worth of this technology and build proper strategies to meet with the challenges. Thus this paper seeks to fill this gap and understand the factors that effect on the development of ICT and E-Commerce in Malaysia, and to explore how best the organizations can be overcome.

2. Literature review

E-Commerce gains a competitive advantage due to access on global market and it is an applicable approach for all types of businesses. The increasing rate of online business transactions around the world and the innovative attitude of the customers are pursuing organizations to adopt E-Commerce to entertain global business. However the adoption of E-commerce needs a proper business models as well as other strategies that can facilitate this technology for businesses (Carla Ruiz Mafe and Silvia Sanz Blas, 2006). As a result the E-Commerce practices act slowly towards the maturity phase, organizations are reluctant to invest in E-Commerce and they prefer to wait and see approach to the adaptation of E-Commerce. Most of the studies have been conducted on the issues of E-commerce in the field of information system, marketing and management science. The authors have identified five factors which can be affective to boost E-Commerce practices in Malaysia. The attractive factors are global production, protecting startup, detain business and consumers, human resource training, government policies and regulations (Enrique Bigne-Alcaniz et al, 2008). In the related study the authors pointed out some barriers like socio economic factors, cultural issues and e-readiness are the obstacles of E-Commerce in Malaysia (Giovani J.C. da Silveira, 2003). Form the last two decades e-commerce technology has become a corporate weapon for businesses. But still E-Commerce is in the decisive stage in developing countries. Enrique Carla and Silva find out some differences in E-commerce practices between developing countries and developed countries. Traditional business model, conventional consumer behaviors and consumer expectation are the differences between developed and developing countries (Intan Salwani et al, 2009). The researchers have identified E-Commerce strategies, which may have a strong impact on E-Commerce profitability and competitive advantage as well as development (LE, T. THOUNG, KOH. C ANTHONY, 2002). E-Commerce needs a proper strategic foundation to utilize its full potential. Due to high transaction costs and other market access barriers most of the organizations are still reluctant to enter in the internet marketing. Organizations can capable to save costs, get better procurement efficiency , get better customer services and provide better way of access to information by using E-Commerce (Micheal Quayle, 2002). In the various research authors found that companies in Malaysia are almost followers rather than pioneers that carry to invest in E-Commerce because of

many barriers and many of them fear to invest in such an indefinite space. Traditional businesses are also hesitant to get on investment in E-Commerce. Businesses are also hindered in adopting the technologies, due to the impediments that arise as a result of the many barriers within the organization that is the Internal Barriers like organizational performance, strategies and management. External Barriers also inhibited by another set of impediments that arise due to infrastructure, technological, Economic, political, legal, social and cultural that exist in the country (Philiph Bough. 2004).

In a study on E-Commerce stimulus and practices among the small and medium enterprises (SMEs) in Malaysia, Ainin and Noorismawati (2003) provide pragmatic support where most of the respondents cited not many success stories of E-Commerce. Some respondents also cited that low Internet access among buyers and lack of knowledge are the main barriers to the E-Commerce. This problem is also rampant among larger organizations in different parts of the world where most of them are still at the formative stage of positioning themselves to take advantage of business opportunities enabled by the Internet. Empowerment, customer satisfaction, leadership by example, and discerning pricing strategies would likely and possibly result in E-Commerce profitability and competitive advantage.

Technology competency, firm size, firm scope, web-technology investment, pressure intensity, and back-end usage have significant influence on e-commerce usage. Among these variables, back-end integration is found to function as a mediator. E-commerce experience has been found to moderate the relationship between e-commerce usage and business performance (Poong Siang yew, 2007). In the related study author suggests that issues of leadership and waste management have a greater importance to SMEs at the stage of the development of E-Commerce capability. Those SMEs who have developed E-Commerce capability more strategically are enjoying the benefits of E-commerce (Yehoshua Liebermann and Shmuel, 2002). Operations-based competitiveness in E-Commerce requires the development of competencies, those competencies are supportive and there is linkage between competencies in E-Commerce operations and strategy (Sharif kamel, 2002). E-commerce represents opportunities to remain swiftness with the developed world and its evolution is forcing many nations to change their policies for the business and socio-economic development (Dimitrios Xanthidis and David Nicholas, 2004). However it is incomprehensible for any government to develop a huge and vigorous information society except only when the consumers and companies find the value of the digital economy. Companies that develop full potential of the internet and exploit E-commerce, they need to develop management strategies and integration between Business and IT plans. It may help to motivate the customers to use E-commerce applications for their needs. Country related elements have also a great impact on the implementation and development of E-commerce. E-commerce influenced by economic development, consumer behaviour and traditional business inside the country (Xiaodong Wong, 2004). The government should be able to have a regulatory framework to promote investment in ICT and E-commerce adoption and to promote the formation of innovative products and services.

3. Research Methodology

■ The data of this paper is based on various statistical reports which have been produced by local and international research firms. The secondary data have been taken by statistical department of Malaysia and, international data corporation (IDC), ministry of multimedia and communication, IDC skypepad survey and government reports.

■ Secondary data of those reports and surveys has been analyzed and modified using linear statistical exponential techniques.

4. Government Initiatives for E-Commerce

The Malaysian government has played the vital and catalyst role in the development of E-commerce infrastructure and to encourage the private sector to be a part of developing E-commerce. The government of Malaysia has carried on and promoted internet and other ICT to build knowledge based economy. Therefore, the government launched its plan in early 2001 called 8th Malaysian development plan and the other 9th Malaysian Plan from 2006-2010. Government has also launched the major plan and created several agencies to encourage the ICT growth in the country. Malaysia Communication and Multimedia Commission (MCMC) has established in 1998 to promote the broadcasting, telecommunications and internet services. The objectives of MCMC are the development of relevant infrastructure and to promote Malaysia as IT hub.

In 2005, the government launched public service portal at <http://www.gov.my> to introduce for the assistance of communication between citizens and government agencies. Many programs introduced to support in order to develop a knowledge based economy such as venture-capital funds, tax incentives for venture capital and technology firms and other high-risk investments, the implementation of technology-oriented Multimedia Super

Corridor Malaysia, and a slate of new laws to protect intellectual property. However to support the local industry to enter in E-commerce the government launched Dagang.Net as service provider. It operates as a national Electronic Data Interchange (EDI) system and provides other electronic trade-facilitation services. It is also developing electronic systems for online documentation of K3 forms (it is used for the transfer of goods between peninsular Malaysia and Sabah and Sarawak states) and shipping manifests. The company plans to implement the United Nations electronic-trade documents (UNeDocs) standard, which lets countries align their local systems with the international purchase and supply chain, this should facilitate exports by small and medium-sized enterprises (Poong Siang yew, 2007). However addressing the issues of the small and medium industry, government established the agency. The Small and Medium Industries Development Corp (SMIDEC) is a government agency provides loans and grants to use ICT to improve competitiveness, efficiency and productivity. The terms and conditions are applied according to SMIDEC. Government also encouraged the banking sector in the country to establish internet banking. Maybank is the first who offer this service in 2000 and foreign banks such as HSBC (UK), Citibank (US), OCBC and UOB offer the services in 2002. Although Internet companies have faced some resistance from commercial banks to set up trade accounts, the banks require deposits of up to USD100, 000 as a security against credit-card fraud and a track record of successful trading operations. Government also plans to grow the electronic communications and to encourage private enterprises. By April 2006 the commission had issued 62 licenses for ASPs, 64 for NSPs and 58 to NFPs. Six companies including government institute Malaysian Institute of Microelectronic Systems (MIMOS) has been establish to provide a strategic foundation for the development of knowledge base economy.

5. Government initiatives for Cyber Crime

Security and privacy are the main barriers in the implementation of E-Commerce and making transactions online. Organizations and consumers are both facing the difficulties and lack of trust to go online for business purposes. Malaysian government has the key concern to enhance the security for online means. For the purpose of enhancing security and implement cyber laws government has taken several initiatives. Government is in consultation with the private sector and initiated a legal and regulatory framework of cyber laws and intellectual property laws to create a knowable atmosphere for the implementation and encouraging of E-Commerce.

Six Cyber Laws have been implemented for the privacy and security enhancement for the electronic means in Malaysia.

1. Digital Signature Act 1997.
2. Computer Crime Act 1997.
3. Telemedicine Act 1997.
4. Communication and Multimedia Act 1998.
5. Communication and Multimedia Commission Act 1998.
6. The Copyright Act 1997.
7. Electronic Commerce Act 2006.

Government is also introducing some new cyber laws including the Electronic Government Bill and Personal Data Protection Bill.

6. Impact of E-Commerce on the Society and Businesses

According to Economist Intelligent Unit, Malaysia is ranked 35th out of 65 countries and its score dropped from previous years from 5.61 to 5.43 in E-readiness level. However, Malaysia is ahead of Thailand, Indonesia, India and China but behind Singapore, Hong Kong, South Korea and Taiwan in the E-readiness (Poong Siang yew, 2007). However, information and communication technology is affecting on the internet growth and increasing rapidly in the country. According to department of statistics that 52.9% of the Malaysia population is within the same range of age. Figure 1: shows the internet users by age. Figure: 1 also shows the smooth usage of internet by the age of population in the country. It shows that 85% of Malaysian's internet users range from 15 to 50 years of age. According to international data corporation most of the internet users are professionals, students and traders.

Online buyers in Malaysia are also moving upward year by year. The development of information and communication technologies and government interest are boosting the online transactions in the country. According to international data corporation the online buyers in Malaysia has reached to 7.1 millions in 2008.

Figure 3: shows the upward direction of total online buyers year by year in the country. Internet buyers include

all people who purchase a product or service from a seller by clicking the order and made a commitment to transfer a fund.

The growth of internet, information communication technology and political immovability brings E-Commerce in the new phase. Figure 4: shows that E-Commerce spending year by year is increasing.

According to statistical department the total online transactions in the country has reached to USD26bn. The rapid growth of new technologies is increasing the buyer's satisfaction, trust and more purchasing intentions. New technologies also help the online customers to access rapid internet, go for secure transactions and provide easy and fast services.

With the help of government initiatives and global interest new technologies are improving in the country. Government is encouraging the foreign investors and providing assistance to the private sector to invest in the ICTs. According to international data corporation the internet devices including all PCs videogame consoles and mobile devices are increasing with the rapid pace. According to IDC the total internet devices with internet capability can reach to 17.5 millions in 2010. Figure 5: shows the forecast of total internet devices which have the capability of accessing internet.

7. Opportunities and Challenges for E-Commerce in Malaysia

There are many opportunities for E-Commerce to grow in Malaysia. The political willingness is boosting policies towards the selected goals. Development of information and communication technologies is also pushing E-Commerce towards the attractive pace. New technologies are providing easy and fast online transactions which are enhancing consumers to go online and take the advantages of E-Commerce. Geographical position also helps to promote businesses around the globe. It can boost E-Commerce in Malaysia. Foreign investment is the key opportunity for E-Commerce in Malaysia. It helps in promoting business and introduces new technologies which are effecting on the growth of E-Commerce. Malaysia is enjoying fruitful foreign investment in the region. Stability of policies and regulatory reforms are also affecting on E-Commerce growth. Government is willing to develop and introduce E-Commerce with new technologies. This is the main determinants in the strength. Malaysia is enjoying political stability since independence. One party is still ruling over Malaysia from the independence. Due to one party government there is continuity in policies, strategies implementation and strategies formulation which are enhancing the effectiveness of online trading. Government stability and efforts are the key elements to create institutions. Malaysian government has created some institutions that help industries and people to adopt E-Commerce. These institutions have built up legal regulations, technological infrastructure and economic support to develop E-Commerce in the country. These organizations have also announced some plan and strategies to improve E-Commerce in Malaysia. Government bodies have announced and built ministry of multimedia and communication for the improvement of information and communication technologies, information technology infrastructure create knowledge based economy. Government has built an organization for small businesses which called Small and Medium Industries Development Corporation (SMIDEC). SMIDEC is sole organization to enhance the capabilities of small and medium enterprises (SME) and assist them to join the global competition in trading. Government announced 8th and 9th Malaysia plan to develop knowledge based economy. Government also announced multimedia super corridor and some other schemes to develop businesses in Malaysia and get global attraction. Government is encouraging both public and private sector to contribute their efforts towards the growth of E-Commerce. Government also announced digital signature act to secure business transactions and create trust of consumers.

Technological infrastructure is the key strength of E-Commerce industry. Information and communication technologies are playing a vital role in improving E-Commerce practices in Malaysia. The strong ICTs and IT infrastructure are enhancing E-Commerce capabilities in Malaysia. Strategic position of the country is also the strength for online and conventional businesses. Malaysia is strategically strong in Asia. Strategic position of the country is effecting foreign investment and technology attraction.

There are some challenges for E-Commerce in Malaysia. Due to the lack of policies implementation its effect on long term objective and competitive advantages which also affect the businesses. The investors and consumers are also hindering due to uncertainty. Security and privacy issues are also the key obstacles for online businesses. Consumers are still hindering to go online and majority of buyers preferring conventional shopping in Malaysia.

E-readiness is also a major weakness of Malaysian E-Commerce practices. The lacks of understanding about new technologies are affecting E-Commerce. The awareness and knowledge about information and communication technologies are still in the formative phases. Some new technologies are still new for buyers. As a result buyers are still reluctant to implement these technologies. Cyber crimes emerge as a threat to E-Commerce in current scenario. The advancement of technological capabilities and its usage for crimes like

hacking information of credit cards and other important information became a major threat for online businesses. The hacker could hack the credit card details and users hindered to give this kind of information.

The consumers still hinder to use these services and new technologies. Legal issues are the threat for E-Commerce in Malaysia. Many legal issues are still need to address like copyright infringement, protection of patent rights, domain name disputes and safeguarding of trade secrets. Overall, E-Commerce in Malaysia has been rapidly developed. There is a correlation between opportunities and challenges for E-Commerce in Malaysia. Security and privacy issues are the key issues for global trading. And users still hesitate to go for online purchase. High costs also the threat to E-Commerce in Malaysia. High cost internet services like bandwidth, broad band services and the usage of new technologies are costly compare in the region.

8. Conclusion and Implications

E-Commerce is providing many opportunities for Malaysia to gain and develop global business attraction and socio economic development. With the rapid growth of information and communication technologies, such opportunities are pushing the business in Malaysia for global competition, introducing business processes and creating new revenue streams. E-Commerce represents an opportunity to keep lick with the developed world and take the developmental plans. However there are number of challenges need to take place into opportunities. Government has to play a catalyst role to initiate and encourage the private sector to take part in the developing of E-Commerce. Statistics and fact findings from the various organizations have shown the positive trend to adopt the E-Commerce in the business. Mostly small and medium enterprises showing the interest to adopt the E-Commerce and take advantage from the government's E-Commerce plan. The impact of information and communication technologies has resulted changes in the society. Maintain well planed strategies among the businesses in Malaysia have provided entrance to new customers while mounting sales and profits. Due to the new technologies, government initiatives and economic reforms, E- Commerce is moving towards an upward direction in Malaysia. Statistics shows that most of Malaysian users are students and professionals. Most of them have well media exposure, well educated and have good experience of internet which is making them to go online and purchase goods through internet. The current position of the internet users, online spending and rapid growth of new technologies shows that the internet user's buying behaviour is changing and users like to go online and make the transactions. Most of businesses in Malaysia are showing the interest to compete globally with the E-Commerce adoption. The future intentions of internet users and the adoption of E-Commerce in Malaysia for purchasing will move up rapidly in coming years. This study provides an extensive review of the initiatives by the Malaysian government that affecting on the economy and society. These findings can contribute in making strategies for the development of E-Commerce and ICT by the authorities of developing countries.

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Appendix

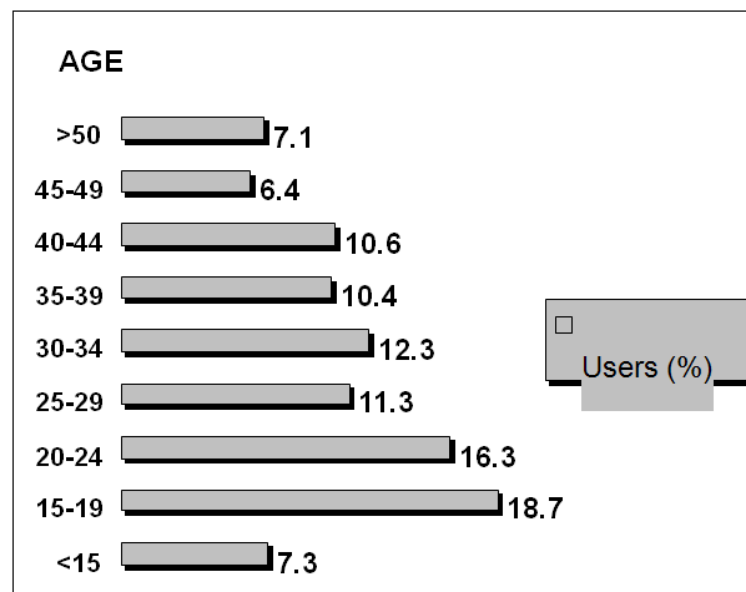


Figure 1. internet users profile by age (Source: Department of statistics)

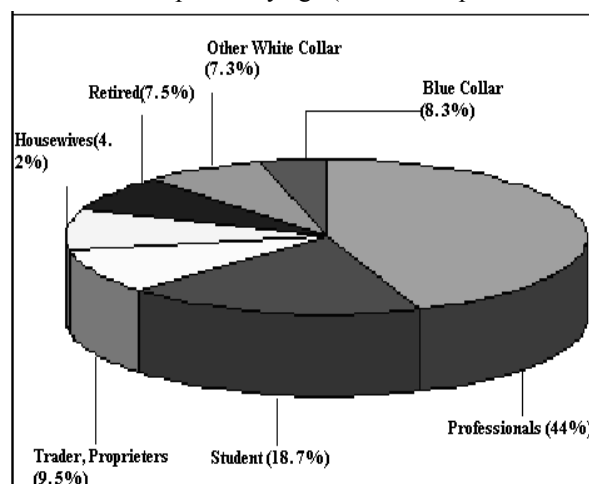


Figure 2. Internet users profile by occupation (Source: international data corporation)

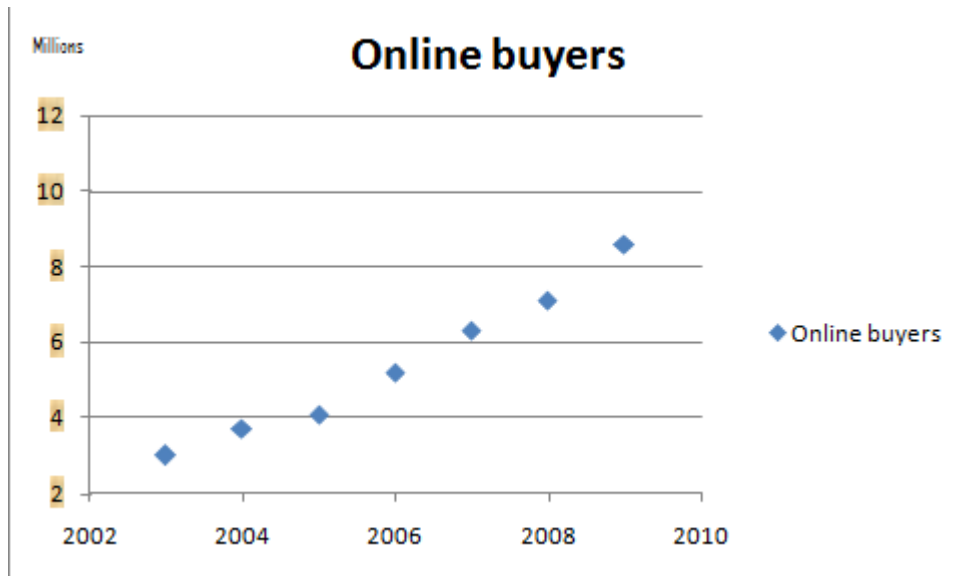


Figure 3. Total online buyers year by year (Source: Modified from Department of statistics Malaysia)

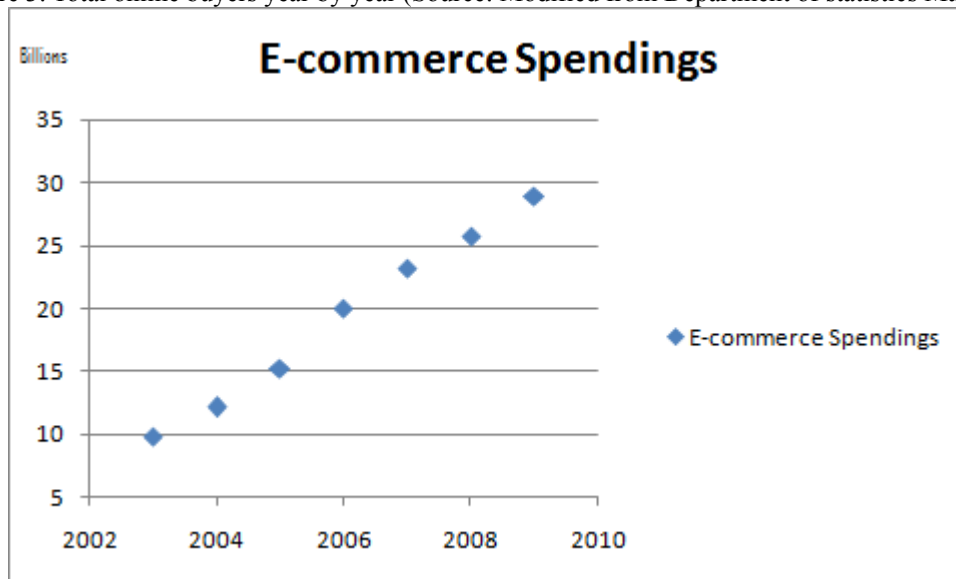


Figure 4. E-Commerce spending year by year in Malaysia (Source: Modified from Department of statistics Malaysia)

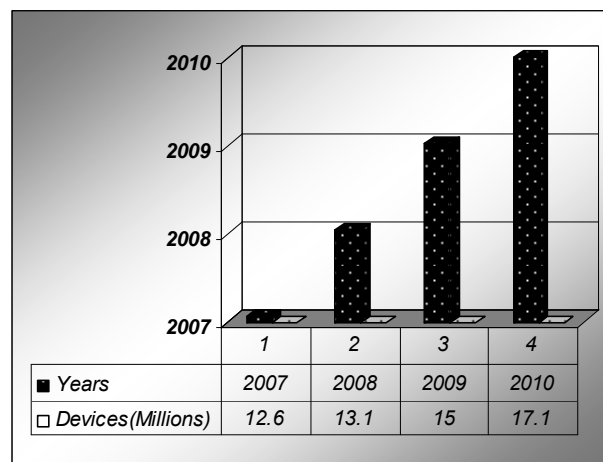


Figure 5. Internet Devices Forecast (Source: Modified from international data corporation)