CHAPTER 2

LITERATURE REVIEW

2.1 E-business

E-business is more than just establishing an Internet presence or conducting e-commerce transactions, it concerns redefining old business models and maximizing business value (Kalakota and Robinson, 1999). E-business is defined as the application of information and communication technologies to facilitate the execution of related functions like marketing management, strategy leverage, information systems, logistic management, customer relationship management, and human resources management (Simpson and Docherty, 2004).

Kalakota and Robinson (2001) defined e-business as the complex fusion of business processes, enterprise applications, and organizational structure necessary to create a high-performance business model. E-business includes e-commerce, as well as both front and back-office applications that form the engine of modern business (Kalakota and Robinson, 1999). E-business is an enterprise with the capability to exchange value (goods, services, money, and knowledge) digitally. It has properly designed business processes for this new way of conducting business. Furthermore, it understands the human performance challenges not only within its organizational boundaries but also for other people in its enterprise network: customers, partners, and suppliers. E-business is a new

way of doing business that involves connectivity, transparency, sharing, and integration. It connects the expanded enterprise through a universal digital medium to partners, suppliers, and customers. It requires the integration and alignment of business processes, technology, and people with a continuously evolving e-business strategy (Hackbarth and Kettinger 2000).

The organizational characteristics have significant impacts on quality and effectiveness of the planning process of information systems. The planning method of information systems must match the organizational characteristics (Premkumar and King, 1994; Walker and Johnson, 2001; Kao and Decou, 2003). The relationship between organizational characteristics and whether IT is adopted has been emphasized in both empirical and prescriptive studies (Yap, 1990; Grover and Goslar, 1993; Yap and Thong, 1995; Premkumar and King, 1994; Phan, 2002). Yap and Thong (1995) found that firm size is the most significant discriminator in determining the use of IT. Limitations for the small companies to adopt IT include poor resources, financial constraints, lack of specialists, and high sensibility to outside pressures. They also demonstrated that competition in the environment and information intensity does not significantly influence the adoption of IT by small businesses. Grover and Goslar (1993) found that organizational structure and centralization influence organizations to adopt telecommunication technology.

2.1.1 Organizational Capabilities

Although e-business systems have technical components, management issues must be addressed regarding changes in organizational processes and interaction both within a firm and among firms (Ash and Burn, 2003). Firm's ability to conceptualize and manage process innovation, and to increase the learning capacity of its knowledge workers, thus has become a source of competitive advantage (Nonaka and Takeuchi, 1995). Moreover, developing organizational learning and knowledge management strategies has been considered an effective and efficient means of successful technological innovation (Martin and Matlay, 2003). This perspective has been strengthened by several recent studies (Gilbert and Cordey-Hayes, 1996; Raymond and Blili, 2000). However, empirical studies have seldom addressed the organizational learning and knowledge management factors influencing the level of e-business systems adoption. Organizational learning is seen as a dynamic process based on knowledge, which implies moving among the different levels of action, going from the individual to the group level, and then to the organizational level and back again (Huber, 1991; Crossan et al., 1999).

Organizational learning within the organization allows the acquisition, distribution, interpretation and storage of new knowledge that permits the organization to understand and censor new information systems (IS) as to their eventual use to the organization (Harrington & Guimaraes, 2005). Huber (1991) describes four processes or constructs that contribute to organizational learning; namely,

knowledge acquisition, information distribution, information interpretation and organizational memory. Knowledge acquisition is defined as the process in which knowledge is acquired or obtained. Information distribution is the process by which information is shared. Information interpretation involves attempting to develop one or more common interpretations of distributed knowledge. Organizational memory is defined as knowledge that is stored for use.

The effective development of organizational learning capability requires four conditions. First, company management must provide decisive backing to organizational learning (Stata, 1989; Garvin, 1993). Management should spearhead the process, making clear its support and involving all the personnel (Williams, 2001). Second, it requires the existence of a collective conscience that allows the firm to be seen as a system in which each element must make its own contribution so as to obtain a satisfactory result (DeGeus, 1988; Senge, 1990). If a shared vision is lacking, the individual actions do not contribute towards organizational learning (Kim, 1993). Third, it needs the development of organizational knowledge, based on the transfer and integration of knowledge acquired individually (Nonaka and Takeuchi, 1995). Creating a corpus of organizational knowledge, steeped in the routines and processes of the work itself, is essential for guaranteeing the organization's continuous learning, irrespective of the individuals that form part of it (Daft and Weick, 1984). Lastly, simply adapting to the changes within the established framework does not suffice for learning capability to be a source of heterogeneity among firms in as much as

adaptation is an inadequate response in the current competitive environment (Hedberg, 1981; McGill and Slocum, 1993).

Previous research has shown that education and training are important factors for technology implementation (Bradford and Florin, 2003). Utilizing e-business necessitates investment in IT infrastructure and employee training. Provision of sufficient training helps companies to obtain the required IT human resources and develop them into superior e-business functionalities to realize the potential e-business value (Zhu and Kraemer, 2005).

2.1.2 Knowledge Management

Knowledge management is the process of capturing, storing, sharing, and using the knowledge (Nonaka and Konno, 1998). Another key source of successful knowledge sharing is an organizational ability to learn or acquire the needed knowledge from other organizations. Bertels (1996) explained that in order to adopt Knowledge Management as a business strategy, a company must redefine its strategies, its organizational structure, and its performance assessments. Cohen and Levinthal (1990) described an absorptive capability as an organization's ability to recognize the value of new, internal information, assimilate it, and apply it to commercial ends for an organization's innovative capability. To evaluate and utilize outside knowledge, an organization should have the ability to exploit external knowledge that is largely a function of the level

of prior related knowledge. However, the vital importance of knowledge in business has always been recognized but, up until now, organizations have not felt able to manage it because they understood neither the problems and the opportunities nor the strategies and solutions (Maureen, 2000). Effective knowledge management through the development of capabilities should contribute to key aspects of organizational performance (Andrew, 2001).

Typically, there are six knowledge assets in an organization (Marr, 2003), namely:

1) Stakeholder relationships: includes licensing agreements; partnering agreements, contracts and distribution agreements.

2) Human resources: skills, competence, commitment, motivation and loyalty of employees.

3) Physical infrastructure: office layout and information and communication technology such as databases, e-mail and intranets.

4) Culture: organizational values, employee networking and management philosophy.

5) Practices and routines: formal or informal process manuals with rules and procedures and tacit rules, often refers to “the way things are done around here”.

6) Intellectual Property: patents, copyrights, trademarks, brands, registered design and trade secrets.

Knowledge management capabilities (i.e., knowledge acquisition, knowledge conversion, and knowledge application) are rooted in the operation of a firm and

are derived from configurations of organizational structure and culture (Grant 1996; Moorman 1995).

2.2 E-business technology use and performance

The impact of IT on the organization as a whole has been studied at length (Davenport, 1993; Brynjolfsson and Hitt, 1996). The research has ranged from studying the alignment of specific IT applications with the organizational competitive priorities and alignment with strategic objectives (Kathuria et al., 1999; Kearns and Lederer, 2003) to comparisons of the effectiveness of specific IT applications (Raghunathan, 1999) and method of IT use (Subramani, 2004). In general, IT is shown to promote higher levels of organizational integration, expected to result in improved organizational performance (Vickery et al., 2003). Research regarding the direct impact of IT on specific performance measures has resulted in inconsistent results, suggesting that a 'productivity paradox' exits (Lim et al., 2004; Sriram and Stump, 2004). Numerous explanations have been offered for this paradox, such as management's failure to leverage the full potential of IT (Dos Santos and Sussman, 2000), ineffective implementation (Stratopoulos and Dehning, 2000), poor measures of performance (Bharadwaj et al., 1999), and the presence of a time lag between IT investment and its actual impact on performance (Deveraj and Kohli, 2000; Rai et al., 1996). Researchers have also tried to explain the apparent paradox by drawing attention to the

differences between the research traditions of the disciplines (e.g. economics, production, and strategy) from which the studies are derived (Sircar et al., 2000; Sriram and Stump, 2004). Another view of IT's impact on performance is that IT improves firm performance indirectly by fostering inter-organizational relationships (Hammer and Mangurian, 1987). The benefits of IT may be ''qualitative, indirect, and diffuse'' and suggest that IT may ultimately impact performance by influencing relational outcomes as mentioned by Wen et al. (1998). For example, extranet IT investments made by Fuji film in Canada allow the firm to provide a wider range of information to dealers and resellers and also enable the company's salespeople to build online relationships with these intermediaries (Gilbert, 2002). These studies suggest that it may be important to simultaneously consider a direct and indirect impact of e-business technology use in order to measure its full impact on organizational performance.

2.3 E-business and IT strategies

According to Turban et al. (1999), e-business includes transactions carried out in electronic markets, services to consumers, collaboration with business partners and intra-organizational relationships. E-business is part of a wider economic context that is responsible for radical transformations in business and encompasses digital networks and communication infrastructure. Moreover, e-business provides a global platform where individuals and organizations interact,

communicate, collaborate and obtain information. E-business web-based systems increasingly represent a competitive advantage for companies and have undergone great organizational changes (Currie and Parikh, 2006). Consequently, companies must develop a strategic plan for IT to improve the company e-business capabilities. Luftman et al. (1993) suggest that the success in a global market depends on more agile and flexible business structures. The dynamic nature of this market brings about changes regarding competitors, work, suppliers and regulations. Companies reach more customers, at a compensatory cost, with a change in the traditional paradigm: from mass production and mass distribution to mass customization and with faster product development, production, pricing and delivery. As consequence, firms must be highly market oriented and use new Internet based technologies to strengthen this process. Venkatraman (2000) pointed out the impact of the Internet on transactions between companies and consumers (B2C). Concurrently, in transactions between companies (B2B), changes are already taking place in value chains, leading to the restructuring of operations with business partners. In fact, the greatest potential of the Web lies in the creation of new business models that may eventually change the status quo and create new rules for the competitive market, since to compete with these new models, companies must alter their structure. According to Kulatilaka and Venkatraman (2001), many e-businesses fail because they have taken the plunge into the Internet without considering some critical factors for their strategic and operational success. The solution, according to those authors, is to exploit Internet technologies in order to get

benefits for their business, considering them as strategic options in a continuous process of market adaptation. Christiaanse and Venkatraman (2002) also comment on inter-organizational relationships, based on the concept of exploiting expertise in electronic channels.

2.4 E-business implementation success

E-business implementation success refers to impact of e-business application on firm performance in term of downstream markets, internal operations and upstream procurement (Zhu, 2004). Abundant information about downstream markets enables firms to expand sales channels and enhance customer relationships (Lederer et al.,2001). E-business can improve business efficiency and staff productivity within organizations when complementary resources exist (Chircu and Kaufman, 2000). The broad interactivity and connectivity of the internet upstream can decrease transaction costs and facilitate firms' coordination with business partners (Malone et al., 1987)

Studies have found overall IT capability to be positively linked to organizational performance (Bharadwaj, 2000; Kearns and Lederer, 2003) and shown to have the potential of providing a significant competitive advantage to firms (Earl, 1993; Ives and Jarvenpaa, 1991; Kathuria et al., 1999). Similarly, organizational integration has been shown to have a positive impact on performance (Vickery et al., 2003; Stank et al., 2001).

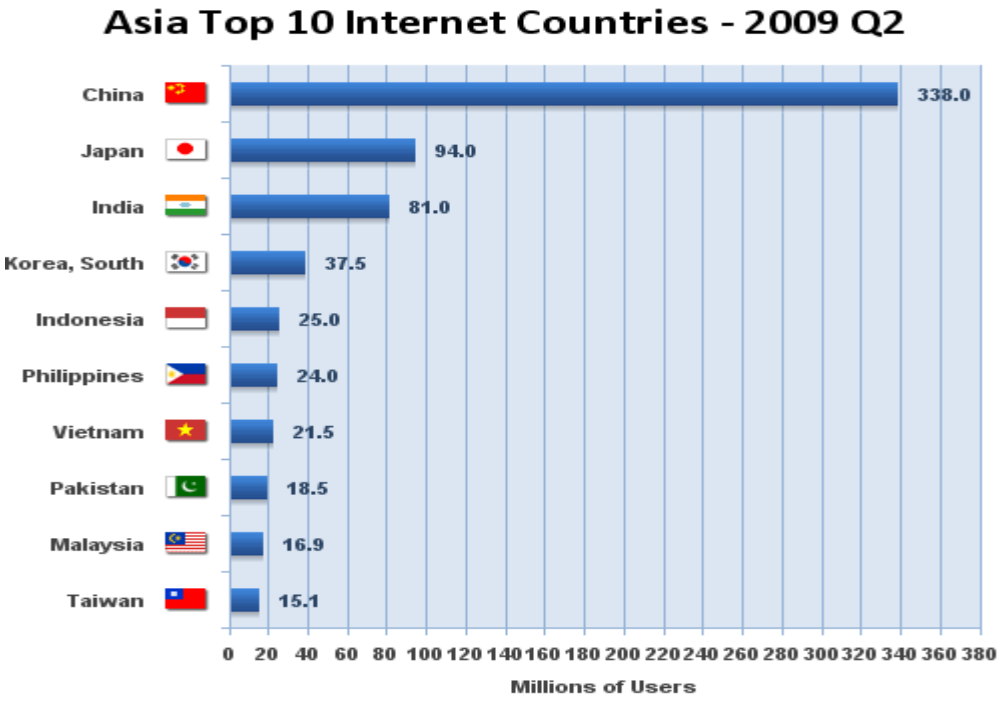
Czuchry and Yasin (2003) point out that market intelligence and internal capability assessment envisaging the aggregation of value to the customers represent the first step towards exploring e-business opportunities without underestimating the risks. Watson and Zinkhan (1997) argue that if the firm makes the right choices, the Web can provide the customer with advanced services, making a one-to-one market feasible, aiding the communication process, and adding value to the brand image. Porter (2001) states that e-business contributes to establish a closer and more interactive relation with their customers.

2.5 E-business in Malaysia

In Malaysia, E-business is in its initial stage. Organizational or firms still need guidance such as seminar, coaches through web and partnerships to venture in e-business in term of market penetration, technology, return of investment, technical skills and people adoption to e-business. The development of information and communications technology (ICT) plays a crucial role in the government's plans for the economy. The government has attempted to position Malaysia as a regional and global ICT and multimedia hub, by providing tax breaks to attract multinational corporations and increase the companies' competitiveness through the development of the Multimedia Super Corridor (MSC) (www.ebusinessforum.com). Multimedia Super Corridor (MSC) was designed to explore and exploit the potential of ICT to create a knowledge-savvy

society. The Multimedia Development Corporation ensures that policies and strategies specified by the government are carried out through the development of the Multimedia Super Corridor Cluster. More recently, Malaysia announces its plans to develop a Biotech Valley to kick-start its move into biotechnology, thus creating an even greater need for knowledge workers in the country. According to www.internetworldstats.com, Malaysia is ranking number nine out of ten in term of number of users in Asia region. Below chart showed the top ten among the Asian countries in term of internet users.

Figure 2.1 : Asia Top 10 Internet Countries



Source: Internet World Stats - www.internetworldstats.com/stats3.htm
Estimated Asia Internet users 704,213,930 for 2009 Q2

In Malaysia there are not many research conducted particularly in the area of e-business implementation success. Several studies were done before are more

on the adoption of e-business at Small and Medium Enterprise (SME). Raman et al. (2007) studied the issues and challenges of e-business and e-government in Malaysia. The study showed that Malaysia are still lacking in internet infrastructure development and skills to meet the challenges of e-business. They listed-out factors which are crucial to ensure successful e-business and e-government initiatives for developing nations. These factors were:-

- The existence of clear objectives for e-government and e-business initiatives by the government.
- The ability of governments to nurture small and medium size enterprises (SMEs) in utilizing an e-business and e-government applications. Overtime, through this process, assist the SMEs to become regional and eventually world class players.
- The ability of government to streamline the national education policies to ensure that nations are equipped with sufficient knowledge workers required to support and sustains e-business ventures.
- The ability of government to invest in relevant infrastructure such as broadband technology and make this accessible and affordable to the business communities.
- Awareness of both businesses and government about the existence of information and communication technologies that can streamline the business and government service processes.

Suraya, R.M.Y of University Malaysia Sarawak was investigating the adoption of the Internet amongst Malaysian travel agencies as a means of exploring the

likely future potential growth of e-business within the industry. She found out that the effects of the Internet on the Malaysian travel industry have so far been less than expected. The unique Malaysian culture has characteristics which tend to inhibit the adoption of automated modes of doing business, and which encourage the preservation of personal relationships. It is likely that this situation will start to change in the near future. The Malaysian belief in strong hierarchical relationships means for instance that change is most likely when younger entrepreneurs and managers start to replace older people less familiar with the new technologies. The generally favorable attitude to e-commerce techniques should ensure this happens fairly quickly in the travel industry.

Tan and Eze (2008) found that Malaysian SMEs has faced dilemma when it comes to ICT adoption. They realize ICT can create new business opportunities, access information and expedite business communications. However, they dare not venture into it because of ICT security. But actually, Malaysia has enacted cyber laws to protect business transactions in ICT environment. Therefore according to Tan and Eze (2008), SMEs either has no confidence in the ICT rules and regulations or they have no idea of their existence. Moreover, they feel that investment in ICT hardware and software are expensive. It is imperative for government to address the reasons behind SMEs' lack of confidence and ensure that strict and effective enforcement is carried out other than enactment of ICT laws. On the other hand, the costly ICT hardware and software can be reduced by reducing import tax on ICT hardware and software into Malaysia.

Zakaria and Hashim (2004), reveal that the owners and managers of the SMEs paid attention to e-business, viewed e-business as an important task, would provide the resources needed for e-business, sought more advice for online business practices, kept abreast of e-business development and were aware of their competitors' involvement in e-business. Their study was focused in Northern Region particularly in Kedah and Perlis.

Recent study done by Chong et al. (2009), pointed out that inter-organizational relationships such as communication, collaboration and information sharing were found to be significant in affecting Malaysian SMEs' decision to adopt e-business in their supply chain. They found that trust and trading partners' power have no significant influence on the adoption of e-business in the supply chain of Malaysian SMEs.