Determinants of Strategic Information Management (Sim): A Case Study in a Malaysia Bank

Norhayati binti Hussin, Ahmad Soufiean Othman, Adnan Jamaludin

Faculty of Information Management, Universiti Teknologi MARA, Shah Alam, Selangor Malaysia

Abstract. Whether the banks in Malaysia really know what they are doing or just merely catching up with the global trends in banking business, the utilization of the information technology to realize their banking strategies is a phenomenon known as Strategic Information Management (SIM) to the researchers in the field of information management. SIM as reported in literatures could only happen within the framework of the existence of its determinants. Realizing it or not, banks that have successfully implement SIM would have placed these determinants surrounding their day to day running of their business. This case study, conducted in one of the most prominent bank in Malaysia that have successfully attained SIM showed that among the determinants that have existed in the bank are the government support, industry pressure, demand from competitive markets, information technology and business strategy, and information infrastructure. Apart from that, determinants such as top management support and IT personnel are the determinants that buttress the main determinants.

Keywords: Strategic information management, Information Technology, Malaysia banking, Case Study

1. Introduction

Strategic information management (SIM) is understood by experts in the field of information management as, the ability of an organization to utilize information resources i.e. information and information systems to assist the organization in its implementation of strategies or rather the information resources itself developed into a strategy of the organization (Detlor, 2010), (Meagher, 2003; Webb, 2008), (Marchand, 2005). With SIM, organizations would generally be able to successfully compete in the competitive environment in which they operate (Caudle, 1996; GAO, 1994; Gregus & Benova, 2006; Hackler & Saxton, 2007). Apart from this general benefit, SIM has proven to have assisted
organizations with some other specific benefits such as offering better and quality products and services, increased productivity, better customer relationships and satisfaction such as understanding the characteristics and needs of customers, response to market trends, monitoring competitors, increased competitiveness, increased collaborative efficiency and effectiveness (Stone and Snowdown, 2007), (Marchand, 2005), (Marchand, 2000), (Wilson, 2003), (Marchand, Kettinger, & Rollins, 2001), (Earl, 1988; Porter, 1980, 1985; Porter & Millar, 1985; Wilson, 2003) SIM normally can be clearly seen through its products and services. For instance, in the banking and financial organizations, the SIM products are like the Automatic Teller Machines, Tele-Banking, Internet Banking, Home Banking and other products and services that are driven by information resources are being developed to assist banking and financial organizations in their competitive strategies. In this context, it would be very interesting to find out the determinants that exist surrounding the banking and financial organizations and how they influence the achievement of SIM and its products and services. This paper reports the preliminary findings from a case study conducted on one of the most prominent banks in Malaysia to explore the determinants that have impacted the development of SIM in an organization.

2. Purpose and Method of the Study
The purpose of the study is to investigate the determinant that have an impact on the development of SIM in organizations. The reason behind this purpose is that, empirical studies on SIM in Malaysian organizations are almost none being explored. Therefore, this study can be considered as an early attempt to explore the phenomenon and as such, a case study method was adopted and carried out in one of the most prominent commercial banks in Malaysia with the objectives of describing the role of the determinants SIM. This particular bank is purposely selected because of its advancement in attaining SIM and this is reflected by the variety of SIM products and services offered by the bank. Series of interviews were conducted with the Senior IT Manager, Information Officer, and Special Project MIS of the bank who is responsible with the development of SIM products and services. He is also a member of the strategic planning team of the bank with the role of advising on the aspect of information resources, a team that is responsible in the development of corporate strategies. Apart from that, documents such as minutes of meetings, memos, annual reports (dated from 1967 to 2011), and some strategic planning documents of the past were analyzed whenever they are permitted to be accessed. Findings from this study are discussed in comparison with the literatures on SIM. It is hoped that this study can shed some lights on SIM in Malaysia, particularly in the banks and financial organizations, before further study can be carried out comprehensively. A conceptual framework generated from the case study is furnished at the end of the discussions of the findings.
3. Findings
This part of the paper discusses the findings from the case study conducted. It starts with the overview of the SIM development in the bank and followed by the determinants that are found in the series interviews and document analysis.

3.1. Information Technology Development in Malaysian Banking Industry
The use of Automatic Teller Machines (ATMs) in the beginning of 1970 that offered online banking services saw the beginning of information technology (IT) use in the banking industry in Malaysia. Since then, the Malaysian banking industry has developed along with the global banking trends and IT development and later saw the tele-banking and afterwards PC banking was introduced in the 1990’s. In the beginning of the year 2000, Malaysian Central Bank or Bank Negara Malaysia (BNM) has allowed all domestic banks in Malaysia to offer banking and financial products and services over the Internet to their customers. With that development, the banking industry in Malaysian beginning to offer variety of products and services with the utilization of new and advanced information and communication technology that driven by the internet technology. In this context, some banks are very successful and advanced in their effort to benefit from the information technology and the internet infrastructure. This is reflected from their range of products and services that are offered to their customers in which without the utilization of information technology and the internet infrastructure would be impossible to realize. Whether the banks in Malaysia really know what they are doing or just merely catching up with the global trends in banking business, the utilization of the information technology to realize their banking strategies is a phenomenon known as Strategic Information Management (SIM) to the researchers in the field of information management. As reported in the literatures by many researchers, SIM could only happen within the framework of its determinants. Realizing it or not, banks that have successfully implement SIM would have placed these determinants surrounding their day to day running of their business.

3.2. Background of the Bank
For this study, the Bank will be identified as the Bank X. Bank X has been in operation for more than 51 years in Malaysia. Throughout the years until today, the bank X has total assets of USD100 billion, 40,000 staff worldwide and 18 million customers around the world. This bank has embarked on computer-based services in 1978 and was the first bank to use information technology to support banking activities. After several years of using IT in banking, Bank X has a more aggressive move by providing IT-based products and services to clients such as on-line service center, Automatic Teller Machines, Tele-Banking, Internet Banking, and Home Banking and other products and services that are driven by information resources are being developed to assist its bank in their competitive strategies. Compared with other banks in Malaysia, Bank X is a pioneer in providing IT-based product and services to its customers. The Bank
has also received numerous awards, particularly in its involvement using information technology to support banking activities. The bank’s achievements over the years have been recognized through the various awards received both from within Malaysia and abroad. Among them are ‘IT Organization of the Year’, ‘Information Technology Management’, and ‘Best Bank in Malaysia’ for its impressive profitability and innovation.

3.3. The Determinants of SIM
Among the determinants that have been identified from the series of interviews and document analysis are:

a. Government support
b. Industry pressure
c. Demand from competitive markets
d. Information technology and business strategy
e. Information infrastructure
f. Information system investment

Government support
There are many initiatives established by the government through its ministries and agencies in support of information and communication technology utilization in Malaysia. These initiatives have facilitated Malaysian business organizations implement their business strategies through the use of ICT. Among the initiatives are the developments of multimedia super corridor (MSC), Multimedia Development Corporation (MDC) and Malaysian Central Bank (Bank Negara Malaysia).

All these initiatives correlate with the development of SIM in the bank. For instance, the multimedia super corridor (MSC) was established in 1996 to provide a comprehensive world-class ICT-enabled working and living environment to catalyze the development of a knowledge-based economy and realizing the need to drive economy towards higher productivity through IT and high value-added economic activities. Companies with strong value-added activities, which were providers or heavy users of multimedia products and services, were given MSC status and enjoyed certain privilege and incentives offered under the Bill of guarantees. These included the freedom of ownership, unrestricted employment of foreign knowledge workers and freedom of sourcing capital globally. With this privilege, the banking industry has a significant impact in providing more efficient services based on IT. There is sufficient evidence from the literature that both government intervention and private sectors involvement are crucial in alleviating the strategic use of IT (Azari & Pick, 2005; Guillen & Suarez, 2005; Raven, Huang, & Kim, 2008; Robison & Crenshaw, 2002; Wilhelm, 2004). The study also implies that the developed nations similarly benefit by government support, quality legal framework, and societal openness leading to betterment in socioeconomic level and to technology utilization. This implies that economically advanced countries
can also improve their technology utilization through policy prioritization of ICT, improved privacy and intellectual property laws; efficient, open business procedures; and greater societal openness. Government initiatives and support as well as support from non-competitive industry players may also encourage utilization some types of IS (Scupola, 2003), and other characteristics of the marketplace such as legal requirements (Lacovou, Benbasat, & Dexter, 1995). In addition, the Government of Malaysia has allocated huge expenditure to provide IT infrastructure to facilitate the strategic use of IT which can be used by financial organizations to provide efficient banking services and to facilitate its customers (EPU), 1996, 2001, 2006, 2011. Without good support from the Government of Malaysia, Malaysia banks are unlikely to provide services such as internet banking or related services to the needs of user.

Pressure from industry
Research shows that external pressures most often derive from competitors, clients and trading partners (including suppliers and contractors). It is the influence on the firm from the organizational environment via competitive pressure and imposition by trading partners (Lacovou et al., 1995). The strategic utilization of IS has capable to reduce competitive pressure from the industry and marketplace, thus, external pressure has become a major force propelling the organization to adopt and utilize various type of IS such e-business (Tsikrikitis, et al., 2004; Joo and Kim, 2004), electronic information sharing (Akbulut, 2003), and e-government (Tung and Rieck, 2005).

Demand from competitive market
IT Senior Manager at Bank X in the interviews have indicated that ‘customers today are exposed to so much less sophisticated telecommunications applications, therefore, the customer is very interested if the bank can provide banking facilities or on-line which can facilitate the management of their finances’. This is align with the study by Marjolijn, Knot, Ende, and Vergragt (2001); Naranjo-Gil and Hartmann, (2007) whereby in more competitive market organizations become interested in new tools and techniques to meet customer demand and to gain market share. Organizations try to defend their market power against entrance or technological laggards by means of different types of innovation (Cohen & Levin, 1989; Damanpour & Gopalakrishnan, 2001). Innovations demand strategic utilization of information that can lead towards a variety innovative strategy (Webb, 2008).

IT and Business strategy
Chauke and Buys (2008) in their study suggest the important of IT strategy and the business of the banks in which understanding of IT and business strategy concurrently portray an environment where effective communication between business and IT is in place to support the strategic utilization of IT. For example, Bank X has the objectives and goals to expand its empire at the global level. Thus, IT has facilitated the smooth running of all operations of Bank X. Further, Strategic Information Management (SIM) is very much related to the
strategy of organizations. It has its purpose to assist organizations with their strategies particularly strategies to achieve competitive advantage (Marchand, 2005; Bruening, et.al (2008). Banks should have a very clear business strategy that could navigate them to achieve the strategic position in the industry (Webb, (2008); Dearstyn, (2006); Hicks, et.al (2006); Teubner and Mocker (2009) because business strategy is the outcome of decisions made to guide an organization with respect to the environment, structure and processes that influence its organizational performance.

**Information Infrastructure**

In 2003, as part of its drive to improve efficiency, Bank X has signed a US$342 million IT infrastructure outsourcing agreement with CSC, the biggest outsourcing deal in Malaysia. Bank X wanted to improve its IT services to position it for global growth, and, in the event of a major disaster, to reduce its recovery time from three days to less than eight hours, as well as secure data center and recovery Site. Bank X required highly reliable, high-bandwidth connectivity which was achieved using dense wavelength division multiplexing (DWDM)-based circuits provided by CSC through an agreement with Malaysia Telekom.

This dimension essentially refers to a set of services that support SIM in organization. This variable is important factors to facilitate organization with a better SIM implementation according to Earl (1989, 1996, 2000); Henderson & Venkatraman, (1989, 1993); Dearstyn (2006); Hicks, et.al., (2006); Teubner and Mocker, (2009) and Detlor, (2010) Eikekbrokk and Olsen (2007). We defined Information infrastructure as knowledge of the data (Henderson & Venkatraman, 1989, 1993; Detlor, 2010) network management (Curry & Stancich, 2000; Erkus-Ozturk, 2008; Goles & Hirschheim, 1997), and Appropriate Hardware and Software - Choosing an appropriate hardware and software for business is a significant part of business operations (Detlor, 2010 and Hicks, et.al, 2006).

**Investment on IS**

According to Jun & Kang (2009), investment on information system (IS) is significantly related to the strategic utilization of information systems. Forman (2005) states that a higher level of IS utilization is complex and may require changes in business processes. As the company needs to use IS to integrate to their business operations and transform their business model, it would require significantly more investment in IS (D. M. Lee & Ahn, 2008; Wang & Cheung, 2004). Company need to invest in IS to keep up with and better differentiate from their competitors (Teo, 2007). Several studies also reported that the investment in IT/IS improved the productivity of the sample organizations even through the benefits from increased productivity were harvested by consumers (Brynjolfsson & Hitt, 1996; Dewan & Kraemer, 2000; Kim, Kang, Lawrence, & Sang-Yong, 2008).

Budgeting for IS software and hardware purchases, training and staffing are particularly important to the strategic use of IS (Kim et al., 2008). The software
investment in general is important and contributes to improve and maximize the utilization of hardware investment. The research conducted by Y.J. Kim et.al (2008) shows that software as an important resource has potential to create competitive advantage. Moreover, in the case of high-income countries, there is a need to manage the equipped hardware more effectively by securing more expertise in terms of internal spending. The greater the IS investment, the better organization provide the infrastructure Huang et.al ((2006), IS personnel, software and hardware to support the strategic utilization of information in organization or development of SIM.

From a comprehensive list of supporting factors from related studies (Grover, 1993; King and Sabherwal, 1992; Lee and Kim, 2007; Premkumar and Ramamurthy, 1995; and Tallon, et.al., 2000), this study identified three moderating factors that influence and support some of the factors above to induce the strategic utilization of information and IS. The moderating factors are top management support and IT personnel. Without these factors, will not be successfully implemented to provide SIM development in organization. According to Dearstynnye, (2004 & 2005); GAO, (1994); Detlor,(2010); Hicks, et.al, (2006); Earl, (1989, 1996 and 2000); and Teubner and Mocker,(2009), the important factor that contribute to the successful of providing the infrastructure for IS utilization is through the support of top management. Top management is conceptualize as the involvement of the executive or top-level management of the organization in IT/IS activities. The important role of top management support is their direct involvement to bring the successful implementation of IS infrastructure, IS structure, business strategy or IS plans developed by organization (Ragu-Nathan, Apigian, Ragu-Nathan, & Tu, 2004; and Leidner, et.al, 2010).

Research has also revealed that a lack of top management support leads to resources being allocated to other projects that are important for top management (Kappelman, McKeeman, & Zhang, 2006) and consequently to unsuccessful IS activities (Teo & Ang, 2001) and a resistance to IS implementation (Newman & Zhoa, 2008). IT alone is, namely, not an adequate factor for a successful IS strategy since organizational processes involving all managers are also needed (Hackney & Little, 1999). Similarly, it has been shown (Dhillon, 2008) that only accepting the strategic role of IS/IT and its integration with business processes can lead to a sustainable competitive advantage, while mere technological strengths are not an adequate driving factor for successful IS implementation.

**IT personnel**

Success of information systems implementations does not only depend on the quality of hardware and software. It also depends on ability of people to use the information systems for information sharing, ability to conduct the sophisticated algorithm, knowledge on hardware and software to get it all work together (Winter, et.al, 2001). Managers need to make judgments and decisions when
selecting software and hardware. They need to ensure that hardware and software is selected based on the range of functionality and applications required by organization (Association, 2010). For that, they must have knowledge and expertise to select appropriate software and hardware. Xiangfeng et.al (2008) defined IS/IT human resources (human and organizational knowledge, skills, standards, and experience) who are translate IT technological components into a reliable set of understandable, shared IT services that business people can understand. In organization employee must understand and know their responsibility in managing their information systems (Earl, 1989, 1996, 2000; Henderson & Venkatraman, 1989, 1993; Dearstyne, 2005, 2006; Detlor, 2010; Teubner & Mocker, 2009). They must necessarily acquire new competences and qualifications throughout their professional lives so as to successfully meet the needs of their job (Siskos, et.al, 2007). Siskos, et.al (2007) highlight, the important skills that should carried out by the IT professional are general skills (project or task management and problem solving) and specialized skills or technical skills (analysis, design, development, testing-maintenance, implement-install and documentation). Meanwhile, they should also have appropriate qualification (formal education) and other with the demands of a profession (formal and informal training). Some interesting research has been carried out about the knowledge expected from system analysts. Research into the knowledge and skills expected from system analysts when hired by Fortune 500 companies has revealed that various skills are expected (S. Lee & Kim, 2007).

4. Conclusion
In conclusion, we have prepared a proposed framework as show below that will be used to investigate SIM and development factors in a bank in Malaysia. This framework will be tested on all eight commercial banks in Malaysia to further research.
References


Norhayati binti Hussin, Ahmad Soufiean Othman, Adnan Jamaludin


Norhayati binti Hussin, Ahmad Soufian Othman, Adnan Jamaludin


Meagher, R. (2003). Putting 'Strategic' into information management: if information is not strategically managed as an asset, information management will be under-resourced, under-valued, under-appreciated, and under-respected. Information management journal, 37(Jan-Feb). Retrieved from http://findarticles.com/p/articles/mi_qa3937/is_200301/ai_n9231023/


