

A Review on Critical Success Factors of SISP

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ABSTRACT : *Strategic Information System Planning (SISP) was defined as a day to day operation in an organization that takes information system (IS) development as priorities. Research in strategic Information System planning (SISP) basically emphasized on information systems (IS) strategy formulation. Most of the organization are struggling to understand and execute SISP in terms of translated the SISP document into effective implementations. Most of the organization believed on the importance of effective IS strategy plan implementation as it is basic to the survival, profit margin and future plan of an organization. This paper is intended to conduct a literature analysis about measuring the success of Strategic Information System Planning. No imperial or data collection has been done and the methodology used is limited to review previous papers regarding Strategic Information System Planning. Based on analysis from previous studies, stakeholder and management support, the quality business strategic planning, SISP's strategic objectives, strengths of IT infrastructure, sufficient human resource support and choosing the right key operational operations are the critical success factor of SISP.*

KEYWORDS – *Strategic Information System Planning (SISP), information system, information technology (IT), success factor.*

1. INTRODUCTION

Over the few decades, information technology played an important role to support business operation and daily task of human being. The major contribution of IT that can be seen by many people nowadays are the online system implemented by the government and private hospitals, airlines system, banking sector, international trade networks and many more. Thus, functions of IT in an organization can be summarized into four important opportunities which are; to acquire competitive advantage, to increase productivity and performance, to create new ways of managing and organizing and lastly to enable new opportunities. Practicing IT in an organization basically will change the method of running a business from a conventional or traditional to an easy and simplified way. According to Hovelja [1], SISP composed of IS/IT strategy formulations and well scheduled implementation activities that imposed continuous learning process by various stakeholders. SISP was defined by (Doherty,1999) [2] as a process of identifying a portfolio of computer based applications to be implemented, which are both highly aligned with corporate strategies and has the ability to create an advantage over competitors . The SISP aims to make sure that technologies applied in the organization are strategically aligned with the vision and mission of the organization. It must be able to fulfil the growing needs and strategies of the organization (Pollack,2010) [3]. An overview of the related paper was discussed to support the objective of this paper. The findings described the general definition and stages of strategic information system planning methodology and elements that measure the success of SISP.

2. LITERATURE REVIEW

Many organizations claimed that primary issues in the organization are to align business and Information technology (IT). To ensure every party in an organisation has a common understanding and interpretation about business strategy, key IT person and business people must sit together and have a mutual understanding in strategic information system planning Bleistein (2005) [4]. An objective of the research by Pollack (2010)[3] identify factors that can help the organizations to succeed in implementing SISP. Many organizations claimed to apply SISP failed. This paper explores reasons for failure, critical success factors and provided the best practice model for the SISP. To measure the success of SISP, past studies viewed it from two perspectives. First in terms of goal-centered judgment and the second one is improvement judgment. In the first view, the intention is to figure out the percentage of attainment in relation to target. In second view; the goal is to find out how planning system increase performance while supporting organizational needs (Segars, 1999) [5]. A study by (Bechor, 2010)[6] has found a balance linkage between strategic information system planning and key

success factors (KSFs). The result was gathered from responses of 172 American CIOs. In this study, the researcher determined key success factors of SISP from different elements and standard SISP approaches. They produce a framework which integrate every SISP components and explain different views regarding the way construct are instrumental to create successful SISP.

The theoretical foundation for the operationalization of strategic information system planning (SISP) success was studied by (Pollack, 2010) [3]. They identified 4 approaches in measuring the success of strategic information system effort. The four approaches include;

- i) Goal centered judgment which address the achievement of planning goals and the extent of its levels
- ii) Comparative judgment which addressed whether performance of the system used and referred and makes a comparison with similar organizations
- iii) Normative judgment standard, which evaluate the performance of the system in the organization best practices and put aside the organization's specific goals
- iv) Improvement judgment that determined success from planning system's ability to be absorbed over a period of time to changing conditions and demands

However, recent studies measured the successful implementation of Strategic Information System Planning affected by environmental, managerial and organizational factor. Meanwhile, (Bechor, 2010) [6] conducted an interview with 6 companies from industry, national footprint, financial health and large sized organizations. Two individuals from each organization were interviewed separately to gather information about their perspectives on business and IT. To ensure the validity of interview, the interviewees are chosen from senior management portfolio involved in strategic decision making. Their experience and expertise strengthen the credibility and reliability of the data. The research indicated that in measuring the success SISP, the organization had already established Project management Office (PMO's) with participations of business and IS.

3. METHODOLOGY

In this paper, the secondary data used by reviewing published paper ranges from 2009 until 2014 through various journal databases including Association of Computing Machinery (ACM), IEEE Explore Digital Library, Springer Links, and search engine Google Scholar. Keywords such as "Strategic Information System Planning", "success factor of Strategic Information System Planning", "SISP implementation" were used to gain related papers. Acquired papers' contents were read and examined, notes were taken as necessary. The findings were analyzed, outlined, written, re-read and re-written to ensure the outcome is rational and justifiable with the objectives of this paper.

The research methodology environments include the researcher, libraries and Internet. In this study, there are twenty one relevant research materials for this paper. The prime subjects of interest encompass issues, context and identified factors that summarized critical success factors of SISP.

4. FINDINGS

Implementation of SISP may lead into success or failures. Reasons of failure as mentioned by (Cragg et al.,2011)[7] are due to lack of managerial IS and IS technical skills, lack of explicit business strategy, insufficient budget, lack of business context and misunderstood of business process. In this section, the analysis and findings address critical success factors of SISP as found by previous researchers. Besides, stages that involved in integrated SISP are also discussed in this section.

4.1 Stages of Strategic Information System Planning Methodology

Five stages involved in integrated SISP methodology (Brown, 2010) [8]. The stages are (i) Establish planning process, (ii) Identified strategic business planning and information technology chance, (iii) Formulate information system strategy, and (iv) Analyze operational and reengineering the business process.

Methods and styles of SISP had evolved over time. The evolution emphasized on the need to bring IT to align with the strategic direction of an organisation. Traditionally, evolution of information system (IS) is more likely to emphasize on technicality of a system, performance, percentage of reliability, strength, security issues, costing and immediate questions of usability. Rapid growth and enhancement of (IS) has lead to the innovation of (IS) that contributes to organizational change. This culture would then affect other elements such as political, cultural and organizational as they also contribute to shape the evolution activity. Nowadays, most organizations realized that (IS) strategies should be constructing within broad features of the corporate and business strategy formulation and implementation processes (Khani, N., 2010) [9]. Primary issues that need to be addressed by

business key person are business and technology issues. The business manager might feel awkward and reluctant to get involved in technical details of information technology. With the rapid changes of information technology, the IT people may not keep pace with advance technology if they are not keeping updated with it. However, business people must learn to adapt technology because at the end of the day, they are going to make decision concerning technology and business requirements.

4.2 Measuring the Success of Strategic Information System Plan

The success of SISP can be measured based on stakeholder and management support, high quality of strategic business planning, SISP's strategic objectives, strength of IT's infrastructure, sufficient human resource support and choosing the right key operational applications.

4.2.1 Stakeholder and Management Support

Firstly the SISP has to collaborate between business and IS. They need to have strong relationship and mutual understanding on how business is conducted and how IS could help to boost the profit of the organization (J. M. Burn, J. M.,1991) [11]. In order to gain such strong collaboration, they must practice open discussion, sharing resources and have a better understanding about business and information system goals. This will then, make the synchronization and alignment of business and IS become easier. An organization usually comprised of IT directors, finance directors, business-unit head and board of directors. Chief Information Officer (CIO) is appointed to handle and decide any works related to (IT). Meanwhile, managers are responsible to develop and manage the infrastructure within an organization. Managers are responsible to give improvement and think of expanding the business as a reflection of demands from business strategy and organizational improvement. Commitment and continuous support from top management regarding strategic information system planning is important as they are the people who will determine the path and future plans of an organization. They are responsible for establishing vision and mission of the organization. Commitment from the stakeholders are also important because they are the people who invest in the business and ensure the business's profit is maintained. Top management support is needed to ensure that strategic initiatives as documented in SISP's document are being taken into action. It is crucial to get management and stakeholder support as they are the top management people who will determine the mission and vision of an organization. Their decision is needed to ensure every planned of action regarding business and information system can be implemented and integrated together. To maintain a mutual understanding about how IT could benefit the business, the IT leader and team in an organization need to show competitiveness of IT. To strengthen the strategic information system plan implementation, the top management commitment and involvement are continuously needed.

4.2.2 The Quality Strategic Business Planning

The second element to measure the successfulness of SISP is by developing a high quality strategic business planning. Before IT take part in supporting the business process, the organization needs to come out with a proper business planning. Business plan is an ongoing process and not an event. The outcome of business plan is a tangible output to be studied by potential investors. Same as strategic information system plan, the business plan should also be reviewed timely and updated accordingly. In proposing a business plan, the person who is accountable directly or indirectly to the business process should be involved in developing a business plan. Other than that, the process should attempt to analyze external environment such as competitors, suppliers and customers. Not to forget the internal environment such as number of expertise, human resources and capital. (J. M. Burn, J. M.,1991) [11].

4.2.3 SISP's strategic objectives

Most strategic information system plans define strategic objectives to be achieved. Usually, the strategic objectives are being aligned with the core business objective. Generally, strategic objectives focused on market standing, innovation, human resources, financial resources, physical resources, productivity, social responsibility and profit requirements. To measure the success of strategic information system plan is by asking whether such implementation can meet the strategic objective. For example, an organization's core business is selling the natural products and the strategic objective is to gain certain amount of sales. By implementing successful SISP, the organization can achieved its sale.

4.2.4 Strengths of IT Infrastructure

To ensure the implementation of the information system planning is a success, it is therefore much crucial to prepare all the infrastructure needed in implementing the plan. IT infrastructure means the high end servers, number of desktop, wider and high bandwidth network connection and integrated applications throughout organization. Strategic information system plan have to cater the possibilities of technology enhancement such as the implementation of IPV6 addressing scheme, advance programming language and enterprise application (Al-Aboud, F. N.,2011) [12] .Key IT person and business expert are be able to plan for future planning of the organization by referring to ICT's assessment report. The ICT assessment report contains information about inventory of ICT status, governance, common IT platforms, client information management and service delivery and ICT competency among staffs. Besides, the organization should also consider the risk management, disaster recovery plan and security breach. In business, security issues need to be well managed because it influences the reputation of an organization. Business data which categorized as confidential have to be given extra care in term of storage and access level. To address the security issues, a security policy should be established and merged it with the strategic information system plan. In security policy document, it is mandatory to determine organization's security rules and conditions, equipment and business process to be controlled. Other than that, the security policy should include rules and expected action from people in organization and also from outsiders who deals with the organization (Al-Aboud, F. N.,2011) (Abu Bakar et al.,2009) [12] [13].

4.2.5 Sufficient human resource support

The success of an organization depends on many factors and one of them is the human factor. In order to make sure that the organization can increase its competitiveness in the business environment, skilled employees are needed. There are three main categories of skills that are demanded by organizations which are technical skills, human skills and conceptual skills. One of the skills included in the technical area is project planning. As business grows and to realize the strategic information system plan, sufficient number of human resource is very crucial as they contribute to day to day operation of a business apart from ICT infrastructure and applications (Gengatharen, D. E., & Standing, C.,2005) [14]. The tasks for managers are to integrate and coordinate the resources to create organization-specific competencies. Every personnel has a duty to understand the user's need and capabilities and to deliver products and services that best meet those needs, subjected to budget and time management. Instead of human resource, the resources can also come from tangible and intangible things. Tangible resources include land, buildings, computers and networks. Meanwhile, the intangible resources include skills, knowledge, processes, customer relationship, brands, reputation and culture.

4.2.6 Choosing the right key operational applications

The decisions to choose which key operational applications to support business activities are determined by mutual agreement between the primary business person and the IT personnel. In order to choose supporting system in an organization, the best practice is to figure out the benefits before allocating any resources or cost incurred. It is different from key operational applications. Business managers must play their roles to choose applications which give benefits for both long and short period of time. A feasibility study needs to be conducted in order to know information about costs, benefits and risks (Gengatharen, D. E., & Standing, C.,2005) [14].

5. CONCLUSION

This paper has investigated key success factor in strategic information system planning and its implementation in an organization. There are twelve published papers and journal that were extracted to the success factor of SISP .As a conclusion, to measure the success of SISP; various elements include stakeholder and management support, high quality business planning, SISP's strategic objectives, strength of ICT infrastructure, sufficient from human resource support and right key operational applications. Each element plays an important role in measuring the successful implementation of strategic information system planning in the organization.

REFERENCES

- [1] Hovelja, T., Rožanec, A., & Rupnik, R. (2010). Measuring the success of the strategic information systems planning in enterprises in Slovenia. *Management: Journal of Contemporary Management Issues*, 15(2), 25-46.
- [2] Doherty, N. F., Marples, C. G., & Suhaimi, A. (1999). The relative success of alternative approaches to strategic information systems planning: an empirical analysis. *The Journal of Strategic Information Systems*, 8(3), 263-283.
- [3] Pollack, T. A. (2010). Strategic information systems planning. *ASCUE Proceedings*, 47-58.
- [4] Bleistein, S. J., Cox, K., & Verner, J. (2005, March). Strategic alignment in requirements analysis for organizational IT: an integrated approach. In *Proceedings of the 2005 ACM symposium on Applied computing* (pp. 1300-1307). ACM.
- [5] Segars, A. H., Grover, V., (1999), "Profiles of Strategic Information Systems Planning", *Journal Information Systems research*, Volume 10, Issue 3.
- [6] Bechor, T., Neumann, S., Zviran, M., & Glezer, C. (2010). A contingency model for estimating success of strategic information systems planning. *Information & Management*, 47(1), 17-29.
- [7] Cragg, P., Caldeira, M., & Ward, J. (2011). Organizational information systems competences in small and medium-sized enterprises. *Information & Management*, 48(8), 353-363.
- [8] Brown, N., & Brown, I. (2011, October). Contextual factors influencing strategic information systems plan implementation. In *Proceedings of the South African Institute of Computer Scientists and Information Technologists Conference on Knowledge, Innovation and Leadership in a Diverse, Multidisciplinary Environment* (pp. 21-30). ACM.
- [9] Khani, N. (2010). Factors Moderating the Relationship between IS Capabilities and Strategic Information System Planning (SISP) Success. Available at SSRN 1712243
- [10] Motjopolane, I., & Brown, I. (2004, October). Strategic business-IT alignment, and factors of influence: a case study in a public tertiary education institution. In *Proceedings of the 2004 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing countries* (pp. 147-156). South African Institute for Computer Scientists and Information Technologists.
- [11] Burn, J. M. (1991, January). Stages of growth in strategic information systems planning (SISP). In *System Sciences, 1991. Proceedings of the Twenty-Fourth Annual Hawaii International Conference on* (Vol. 4, pp. 543-550). IEEE.
- [12] Al-Aboud, F. N. (2011). Strategic information systems planning: A brief review. *International Journal of Computer Science and Network Security*, 11(5), 179-183.
- [13] Abu Bakar, F., Suhaimi, M. A., & Hussin, H. (2009). Conceptualization of Strategic Information Systems Planning (SISP) success model in public sector: an absorptive capacity approach.
- [14] Gengatharen, D. E., & Standing, C. (2005). A framework to assess the factors affecting success or failure of the implementation of government-supported regional e-marketplaces for SMEs. *European Journal of Information Systems*, 14(4), 417-433.
- [15] Groznik, A., & Kovacic, A. (2000). Comparative study of SISP practices in Slovenia and Singapore. In *Management of Innovation and Technology, 2000. ICMIT 2000. Proceedings of the 2000 IEEE International Conference on* (Vol. 2, pp. 604-609). IEEE.
- [16] Lee, G. G., & Bai, R. J. (2003). Organizational mechanisms for successful IS/IT strategic planning in the digital era. *Management decision*, 41(1), 32-42.
- [17] Segars, A. H., & Grover, V. (1998). Strategic information systems planning success: an investigation of the construct and its measurement. *MIS quarterly*, 139-163.
- [18] Ward, J., Peppard, J. 2002. *Strategic planning for information systems*, West Sussex, England: John Wiley & Sons
- [19] Khani, N., Nor, K. M., & Bahrami, M. (2011). IS/IT capability and strategic information system planning (SISP) success. *International management review*, 7(2), 75.
- [20] Pollack, T. A. (2010). Strategic information systems planning. *ASCUE Proceedings*, 47-58.

[21] Brown, N., & Brown, I. (2011, October). Contextual factors influencing strategic information systems plan implementation. In Proceedings of the South African Institute of Computer Scientists and Information Technologists Conference on Knowledge, Innovation and Leadership in a Diverse, Multidisciplinary Environment (pp. 21-30). ACM.