



## Research Issues in Strategic Information Systems Planning: A Literature Review

Hisyam Harun<sup>1</sup> and Mohd Khairuddin Hashim<sup>2</sup>

### ABSTRACT

*Strategic information systems planning (SISP) has gained acceptance both as a field of study and good business practice. Increasingly, organizations view SISP as an important management tool that can help them improve their effectiveness, efficiency and productivity. Notwithstanding its importance, research on SISP is limited and neglected. More specifically, the literature review reveals that as a field of study, SISP has received minimal theoretical and empirical research emphasis. Based on the review of the literature, this paper highlights some of the major issues and research areas in SISP that need further investigations.*

**Keywords:** Strategic Information System Planning (SISP), Information System (IS), Information Technology (IT).

### 1. INTRODUCTION

Since its introduction in the 1970s, strategic information systems planning (SISP) has gained much approval and experienced remarkable growth as good management practice as well as an important field of study. Practitioners, consultants and scholars have recognized and accepted SISP as a critical management practice for improving organizational performance. More importantly, organizations in both private and public sectors have increasingly come to depend on SISP to help them improve their effectiveness, efficiency, and productivity.

Despite its key role in the management of organizations, research on strategic information systems planning (SISP) appears to be limited and neglected. As a serious field of study, the literature indicates that SISP have received minimal theoretical as well as empirical research. A review of the literature reveals this important issue as well as indicates various gaps in our understanding and knowledge concerning SISP.

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<sup>1</sup> HISYAM HARUN, College of Business, Universiti Utara Malaysia.

<sup>2</sup> MOHD KHAIRUDDIN HASHIM, College of Business, Universiti Utara Malaysia, khairuddin@uum.edu.my.

More specifically, evidence from the review of past research on SISP suggests previous studies are exposed to numerous shortcomings. For instance, previous research in SISP is still very limited in terms of scope and focus. The limited research attention has resulted not only in the lack of information on SISP but also has contributed to the inadequate framework for better understanding of the critical issues in this field of study. Based on the literature review, this paper reviews and discusses some of the research issues and areas essential to SISP.

The present paper is divided into five sections. In the following Sections Two and Three, the basic issues concerning research on SISP are presented and discussed. Next, Section Four highlights the limitations of previous works on SISP. Based on the findings in these sections, a research agenda is proposed in Section Five. Lastly, Section Six presents a brief conclusion of the paper.

## **2. DEFINING SISP**

Various terms have been used to describe strategic information systems planning (SISP) since it was first introduced. Since its inception, different authors have used different terms to mean strategic information systems planning. The review of the literature indicates that terms such as strategic planning for information system (SPIS), information system planning (ISP), information system strategy (ISS), and information system strategic planning (ISSP) have been used interchangeably to mean SISP. Although the terms SPIS, ISSP, ISS, and ISP may appear to be different, a close examination of these terms suggests they all refer to SISP (Henderson & Sifonis, 1988; King, 1988; Earl, 1989; Ward, Griffiths & Whitmore, 1990; O'Connor, 1993; Fitzgerald, 1993; Galliers, 1993; Raghunathan & Raghunathan, 1994; Premkumar and King, 1994; Ribbers, 1996; Lederer & Sethi, 1996; Gottschalk & Lederer, 1997).

Interestingly, the manner in which SISP has been described and explained has also resulted in numerous definitions being offered in the literature. Although there is no one universal acceptable definition of SISP, the literature review reveals that the definitions varied among different authors, practitioners, consultants and scholars. Notwithstanding the numerous definitions, in general, most of the definitions presented in the literature tend to emphasize on SISP as a management practice as well as process. As management practice and process, SISP involves the use of information systems as well as technology to help organizations identify and select suitable computer-based applications for the purpose of developing and implementing their strategic plans as well as for improving organizational performance (Issa-Salwa, Sharif & Ahmed, 2011; Gufroni, 2011; Khani, Md Nor, Samani, & Hakimpoor, 2012).

The absence of a more precise and consistent definition of SISP may have resulted from various factors such as the complexity and scope of SISP, the difficulties in obtaining accurate information on SISP in organizations, the unavailability of information on SISP, limited experience related to SISP, and the lack of knowledge in this field of study.

### **3. RESEARCH ISSUES FROM PREVIOUS STUDIES**

In recent years, although SISP appears to have attracted increasing attention from researchers, research about them are still relatively limited and not integrated in nature. The literature indicates that despite being an important area of management, SISP has received limited research emphasis. The literature also reveals that although the number of research that focused on SISP appeared to increase over the years, a review of past studies suggests several limitations. The limitations identified in prior research include; too much focus on conceptual issues, the emphasis on mainly observing and reporting general research issues such as SISP development, SISP process, SISP process planning, SISP methodologies, SISP implementation and SISP success (Ishak & Alias, 2005; Teubneur, 2007; Md Basir & Norzaidi, 2009; Abu Bakar, Suhaimi & Hussain, 2009; Pollack, 2010; Khani, Md Noor & Bahrami, 2011; Al-Aboud, 2011).

The following sub-sections highlight the common characteristics and shortcomings of research on SISP as documented in the literature.

#### **3.1 Lack of Empirical Studies on SISP Practices**

A review of the literature suggests that empirical studies on SISP practices are still lacking. For instance, a review of articles on SISP published in journals such as the *Journal of Advances in Management Research*, *Journal of Systems and Information Technology*, *Journal of Public Information System and MIS Quarterly*, indicate limited studies have focused on investigating SISP practices adopted by various organizations (Falconer & Hodgett 1996; Brown, 2004).

#### **3.2 Limited Studies on SISP among Government Agencies**

Despite the relevance and applicability of SISP to both business and public organizations, limited research emphasis have been given to examining SISP in the context of government agencies. Although the literature emphasizes the importance of SISP to government agencies, minimal research has been carried out to investigate the adoption of SISP and SISP practices in government agencies. More specifically, findings of the studies by Alias, Selamat, Abdullah and Ishak (2001), Md Basir and Nordin (2006), and Mohd Ali, Ismail, Mat Saat and Mohd Hasbullah (2007) indicated SISP practices among government

agencies, particularly in the Malaysian context, have not attracted much research attention.

### **3.3 Relationship between SISP and Organizational Performance**

Although the literature emphasizes the relationship between SISP and organizational performance, minimal research effort has been made to investigate this relationship. The literature reveals limited empirical studies have attempted to investigate the relationship between SISP and organizational performance, especially among government agencies in the Malaysian context (Maslinda, Hassan & Mamat, 2001; Chi, Jones, Lederer, Newkirk & Sethi, 2005).

### **3.4 Moderating Effect of SISP Contexts on SISP Practices and Performance Relationships**

Past studies have suggested the moderating effect of SISP contexts on the relationships between SISP practices and organizational performance. In spite of such propositions, limited studies have been carried out to examine whether SISP context moderates the relationships between SISP practices and organizational performance (Lederer & Salmela, 1996; Hussein, Selamat, Abdul Karim & Mamat, 2007; Bechor, Neumann, Zviran & Glezer, 2010; Khani, Md Nor, Hakimpoor, Bahrami & Salavati, 2011).

### **3.5 Moderating Effect of SISP Approaches on SISP Practices and Performance Relationships**

In addition to the SISP contexts, prior studies have also indicated the influence of SISP approaches on the relationships between SISP practices and organizational performance. Yet, surprisingly, the review of past studies reveals the moderating effect of SISP approaches remained empirically unexplored (Segar & Grover, 1999; Wang & Tai, 2003; Warr, 2006; Cohen, 2008).

### **3.6 Methodological Issues**

The review of past empirical studies on SISP shows that there are several shortcomings in the research methods adopted by researchers. Among the shortcomings identified in previous research include the following:

- i. The literature shows that previous studies on SISP lack a theoretical approach. For instance, although there are various theories in strategic management (such as resource-based theory, contingency theory, transaction theory, and agency theory), there has not been much research investigation into the relevance of these theories to SISP practices and adoption in organizations. A review of past research suggests that previous studies on

SISP mainly adopted the case study and descriptive studies methods (Albadri & Abdullah, 2010; Basahel & Irani, 2010).

- ii. The literature review also reveals that as a result of the conceptual nature of the studies being conducted in the area of SISP, limited studies have attempted to investigate the variables among the constructs of SISP (Pita, Cheong & Corbitt, 2008).
- iii. Previous studies on SISP have primarily adopted qualitative analysis to provide insights into SISP practices. However, the development and testing of the hypotheses to determine relationships between the variables important to SISP practices and organizational performance have not been emphasized (Earl, 1993; Jusoh, Hamdan & Deraman, 2007).

The above research issues indicate that past studies on SISP are not only limited in scope but also lack focus. These limitations suggest the need to conduct not only more research in the area of SISP, but also the importance of future studies to address the various methodological issues as identified in previous works.

Given the shortcomings and limitations of the previous studies on SISP as discussed in the previous sections, the following sub-sections present a research agenda for future empirical studies in this field.

### **3.7 Purpose of Study**

The review of previous studies suggests that in the past, much of the research on SISP has either lacked clarity of purpose or the specified purpose was of little consequence. This has resulted in limited advancement in the understanding and knowledge of SISP. The inability to clearly specify the purpose of the research and the lack of common ground for synthesizing research findings have in some ways hindered the advancement in SISP. With regards to this, it is advocated that future research projects should include a clear statement of purpose. Furthermore, researchers should link the specific purpose of their study to the fundamental purpose such as to explain factors that influence the adoption of SISP and its impact on organizational performance, particularly in the Malaysian context.

### **3.8 Theoretical Perspective**

Meaningful and rigorously empirical research needs theoretical perspective. Nevertheless, as previously highlighted, much of the research on SISP to date has ignored the examination of SISP from the perspective of modern management theory. Despite the tremendous increase in knowledge in the areas of management theories, little research has been done to investigate the relevance and applicability of these theories to SISP adoption and practices. For instance, even though the resource based theory can be adopted in an empirical research to

explain the SISP adoption and practice, there has been limited attempt to investigate SISP from this theoretical perspective.

Although some researchers have claimed that at present no one single theory is able to explain SISP adoption and practices, it is believed that it is high time for us to start borrowing theories from the other areas (such as management and strategic management theories) to help explain SISP. For example, since SISP involves various resources, we could attempt to borrow the resource based theory to help us explain how organizations adopt SISP process.

On the basis of either inductive or deductive reasoning, we could attempt to construct theories of SISP. Similarly, the various theories of strategic management (such as contingency theory, resource-based view theory, transaction theory, agency theory, socio-cultural theory, and the uncertainty-based theory) could benefit researchers by helping them to better understand, explain and predict SISP success.

### **3.9 Focus of Study and Methodological Problems**

Public and private organizations are heterogeneous in nature. They differ in terms of their visions, missions, objectives, management styles and sophistication, stages of development, and performance. Nevertheless, the focus of research on SISP in Malaysia is very limited and has tended to be confined to areas such as exploratory studies and descriptive studies that examine the development and adoption of SISP.

Of the studies on SISP adoption and development, many suffer from methodological problems such as small sample sizes, non-comparability of samples, and static term of reference. As a result of these shortcomings, any attempt to develop a standard framework would be futile.

### **3.10 Level of Analysis**

As a field of research, SISP can be studied at four different levels of analysis. Researchers may choose among the four levels of analysis: individual, group, organizational, and industry. However, the literature indicates that a problem with research on SISP in Malaysia has been the tendency of researchers to confine their analysis to a single level only.

Empirical studies that investigate the relationships between the phenomena that can be observed at different levels of analysis are important not just for academics, but also for practitioners and public policy makers as well. For instance, from the organizational perspective, the success of the individual organization will be affected by various factors that can only be observed at different levels of analysis. By not considering the different perspectives, the probability of overlooking key

factors will increase and that unanticipated events will take the organization by surprise.

From the public policy makers' perspective, insights generated by multi-level studies have the potential to improve targeting of government efforts to encourage successful formulation and implementation of SISP, particularly among government agencies. In view of this, it is proposed that future researchers need to examine more than one of the individual, group, organization, and industry levels of analysis. Such multi-level studies would provide a better and richer understanding of SISP and should therefore be encouraged in future research projects.

### **3.11 Time Frame**

The literature suggests that wide time frame has not being emphasized among researchers on SISP in Malaysia. Although in general, short time frame studies are simpler to design and easier to execute, they usually lack the richness of insights as compared to results of studies that focused on a longer time period. For SISP research, this is important since organizations take a long time to formulate and implement SISP. In addition, organizations are extremely fragile and experience many changes and challenges in the initial stage of the adoption of SISP. Most often the seeds of future problems are sown in the early stages. Only wide time frame studies will allow us to examine the development problems faced by organizations and to pursue the objective of causal inference. With regards to this, it is suggested here that more future research move towards longer time frame since different strategic issues become important as firm and industry evolve.

### **3.12 Proposed Methodology**

Knowledge and information concerning SISP are still limited. For instance, there has been a slow progress in research that addresses issues of causality in SISP. Previous studies were largely in the forms of exploratory case studies, descriptive studies or cross sectional statistical studies of the sample survey type. However, the survey of the literature on SISP suggests that there is a need to pursue causality and longitudinal studies more aggressively. As a field of study, SISP must move to the stage where exploratory case analyses or cross sectional sample surveys that are not theory-driven and do not test hypotheses, are no longer suitable for investigating SISP since such approaches are very superficial in providing the necessary information to explain the true nature and role of SISP in organizations and its impact on organizational performance. For instance, future research may attempt to identify the possibility of business strategy and environmental factors that may also be relevant and applicable to the adoption of SISP in organizations. Exploring and identifying factors such as competition, uncertainty, and complexity that organizations face in their business environment may also be

useful to determine the extent to which these environmental factors influence the SISP adoption and practices as well as organizational performance.

## CONCLUSION

The present paper highlights important issues as well as attempts to provide a new research agenda for strategic information systems planning (SISP). Based on the review of the literature and previous empirical studies on SISP, this paper identified various issues and proposed several areas for future research that are important for a better understanding as well as improving our knowledge in SISP, especially in terms of the adoption and practice of SISP in Malaysia.

The paper began by identifying and discussing the basic issues which needed to be addressed before proper research on SISP can be conducted. Additionally, the proposed new research agenda is developed and presented based on the various problems and shortcomings identified in previous empirical studies on SISP.

It is suggested that among others, as an important and serious field of study, SISP needs to be defined appropriately; that any meaningful study on SISP should be based on modern management or strategic management theory; that SISP needs to be examined from multi-level analyses and also be viewed from wider time frame.

Lastly, since issues and areas of research concerning SISP have not been addressed and emphasized seriously elsewhere, it is hoped that this paper has provided some insights and contributions towards the development and advancement of more useful and rigorous research on SISP.

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