

# PROBLEMS IN PLANNING AND IMPLEMENTING STRATEGIC INFORMATION SYSTEMS: SOME EVIDENCE FROM MALAYSIAN GOVERNMENT AGENCIES

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**ABSTRACT:** *Strategic information systems planning (SISP) is viewed as an important practice and process for improving organizational performance in both private and public sectors. However, the literature review indicates that limited studies have attempted to investigate the problems faced by organizations when planning and implementing strategic information systems planning, particularly in the public sector. This study attempted to address this issue. The data for the study was gathered from 54 government agencies in Malaysia. Based on the analysis of the data collected from the government agencies, the results of the study indicated that these agencies faced various problems when attempting to plan and implement SISP in their organizations.*

**Keywords:** *Strategic information system planning (SISP), information system (IS), information technology (IT)*

## 1. INTRODUCTION

Organizations in both the private and public sectors across the globe continue to seek ways and means to improve their performance. Their effectiveness, efficiency, productivity, growth and survival depend on how well they conduct and manage their organizations. In managing their operations and business activities, some organizations have been outstanding successes while others have been dismal failures. In the case of successful organizations, they are able to perform well because of good internal management practices and processes. However, for the less successful organizations, they perform poorly and can hardly survive because of inefficiency and misdirect operations as well as practices.

Strategic information systems planning (SISP) has increasingly been recognized and emphasized as an important management practice and process for improving organizational performance in both private and public organizations. Since its introduction in the 1970's, SISP has received much attention among practitioners, consultants and scholars. The theoretical, practical and research emphasis on SISP resulted from the strong belief that this practice and process can help organizations to improve their performance and competitiveness.

Given the importance of SISP, over the years, numerous studies have attempted to investigate how SISP can help organizations to improve their performance as well as sustained their competitive advantage. Among the common research themes that emerged across previous studies include; SISP practices, SISP process, SISP success, SISP methodologies, success factors in SISP, strategic alignment in SISP, SISP approaches and SISP implementation [7, 4, 8, 6, 2, 10, 9, 11, 12, 5].

Notwithstanding the increasing number of studies on SISP in recent years, empirical research in this area remained not only limited, but also neglected in the Malaysian context, particularly the use of SISP in government agencies. In spite of the importance of SISP to government agencies, the literature review indicates that studies in this area among government agencies have not attracted much research attention. As a result, little is known about the adoption of SISP among the government agencies in the local context.

In view of the research gap and the lack of information concerning SISP in government agencies, more focused research attempts need to be conducted. One particular area of research would be to examine the problems faced by government agencies in planning as well as implementing SISP in their organizations. Knowing and understanding the problems faced by the government agencies are useful since these problems may provide us the insight into the reasons why the agencies that adopted SISP are not able to improve their performance. More importantly, if these problems can be captured, then this information may be helpful for developing more effective assistance programs to help and encourage more government agencies in Malaysia to adopt SISP that can help them to improve their performance as well as sustain their competitiveness. This study which is based on a larger study examined the problems faced by government agencies in planning and

implementing SISP. More specifically, the study provides an insight into the problems encountered by 55 government agencies when planning and implementing SISP in their organizations.

## 2. LITERATURE REVIEW

The review of the literature indicates that the term strategic information systems planning (SISP) has been defined in various ways. However, in general, many of the definitions presented in the literature view SISP as a management practice and process of identifying the portfolio of computer-based applications and their uses in developing strategic planning for improving organizational performance.

For instance, [6] defined SISP as the process of identifying a portfolio of computer-based applications that can be put into practice and in which it can positively align with corporate strategy.

[3] referred SISP as the adoption of information systems (IS)/information technology (IT)-based functions in organizations for the purpose of developing business plans and in achieving organizational goals.

[4] indicated that organizations used the SISP process to develop their information systems that aligned with their organizational objectives, policies and strategic planning. In addition, the author emphasized that organizations need to conduct internal and external business environment in preparing for the SISP.

According to the study by [6], the SISP process involves three important activities. Among these include; deciding the correct portfolio of information systems, determining the objectives for the organizational computing and identifying the potential computer applications for implementation.

Based on the resource-based viewed perspective, the study by [8] suggested the need for organizations to emphasize on information systems capabilities (IS capabilities) when developing their SISP. According to the study, IS capabilities such as financial, human resources, technical, and business dimensions (which includes alignment, analysis, cooperation, improvement in capabilities, and contribution) of information systems can influence SISP success.

In addition to IS capabilities, prior studies have also found other factors and requirements critical to the success of the SISP process. For instance, the study by [6] identified several factors and requirements associated with SISP success. Among these include; the alignment between corporate objectives and IS strategy, the underlying motivation for the initialization of the planning process, the maturity level of the organization, the methodology used in establishing the IT investment priorities, the measurement of effectiveness adopted for the IS department, and finally, the preparation of an implementation plan.

Past studies have also provided evidence that suggested it is not appropriate for organizations to adopt a standard SISP process based on only one particular approach and methodology. The studies by [2,10,11] have indicated that there is no one best way of adopting SISP in organizations. According to these studies, since organizations differ from each other in terms of their resources, capabilities and requirements, each organization should attempt to identify the approach and methodology that best match its requirements and purpose of adopting SISP. Furthermore, given the rapid development of new technologies in information systems (IS) and information technology (IT), it would be difficult to develop a standard SISP process that can be used by all types of organizations.

The study by [8] claimed that the number of SISP that failed is rather high. These researchers further indicated that the failure of SISP in organizations resulted from various reasons. Of the various reasons, the study identified the failure to focus on organizational aspects as one of the major cause of failure among SISP process adopted in organizations.

## 3. RESEARCH METHODOLOGY

This study is part of a larger research that attempted to investigate the relationships between strategic information systems planning (SISP) practices and the performance of organizations in the Malaysian public sector. More specifically, this paper reports part of the empirical results of the study that focused on the problems encountered by the government agencies in planning and implementing SISP.

The sample for this study consisted of 55 government agencies in the public sector in Malaysia. The study used the listing of the government agencies obtained from the Modernization and Management Planning Unit (MAMPU) as its sampling frame. The listing consisted of 138 government agencies that have adopted the SISP. Questionnaires were sent to the 138 government agencies. However, of the 138 agencies, only 55 agencies completed and returned the questionnaires.

The data were collected by using a semi-structured questionnaire. The questionnaires were answered by the Director, Department Head and Information Technology Officer of each government agency. In the questionnaire, the respondents were asked to list three most pressing problems faced by their agencies when they planned and implemented the SISP in their organizations.

#### 4. THE RESULTS

##### 4.1 Problems in Planning SISIP

Based on the analysis of the data gathered from the 55 government agencies, the results of the study indicated that these agencies experienced a total of 156 problems when they planned their strategic information systems planning (SISIP). By using descriptive analysis, problems in eight areas were detected from the total of 156 responses. Table 2 summarizes the eight pressing problems faced by the government agencies in planning their SISIP.

As presented in Table 1, of the total of 156 problems reported by the government agencies, 38 problems (24.4%) were determined to be related to lack of knowledge and expertise, 31 problems (19.9%) were concerned with inadequate involvement of other departments, 24 problems (15.4%) indicated that the agencies were unready to adopt SISIP, 23 problems (14.7%) were associated with lack of top management involvement, 20 problems (12.8%) were linked to limited budget, seven problems (4.5%) entailed misalignment of organizational objectives, another seven problems (4.5%) suggested time constraint, and the remaining six problems (3.9%) were connected to lack of awareness among the government agencies.

**Table 1: Problems in Planning Strategic Information Planning System**

Problems	Frequency	Percentage
1. Lack of knowledge and expertise	38	24.4
2. Inadequate involvement of other departments	31	19.9
3. Unready to adopt SISIP in organization	24	15.4
4. Lack of top management involvement	23	14.7
5. Limited budget	20	12.8
6. Misalignment with organizational objectives	7	4.5
7. Time constraint	7	4.5
8. Lack of awareness	6	3.9
<b>Total</b>	<b>156</b>	<b>100</b>

The section below provides the details of the problems in each of the eight areas as identified in the study. Tables 2 through 9 present the lists, frequencies, and percentages of the problems in each of the eight areas based on the analysis of the data collected from the 55 government agencies.

##### 4.1.1 Lack of Knowledge and Expertise

Of the eight major problems reported by the 55 agencies in the study, lack of knowledge and expertise in strategic information system planning (SISIP) represented 24.3% (38 problems) of the total of 156 problems identified. Of the four problems reported to be associated with inadequate knowledge and expertise, 16 (42.1%) were concerned with lack of expertise. Another 12 (31.6%) of the difficulties were concerned with the lack of knowledge. Lack of personnel comprised seven (18.4%) of the problems related to lack of knowledge and expertise. The remaining three (7.9%) problems involved lack of references in planning the SISIP. Table 2 presents the four problems linked to lack of knowledge and expertise.

**Table 2: Lack of Knowledge and Expertise**

Problems	Frequency	Percentage
1. Lack of expertise	16	42.1
2. Lack of knowledge	12	31.6
3. Lack of personnel	7	18.4
4. Lack of references	3	7.9
<b>Total</b>	<b>38</b>	<b>100</b>

##### 4.1.2 Inadequate Involvement of Other Departments

The study indicated the problems related to inadequate involvement of other departments accounted for 19.9% (31 problems) of the total number of problems faced by the government agencies. Lack of cooperation

from the other departments represented 61.3 % of the 31 problems reported in the study. In addition, lack of commitment accounted for the other 38.7% of the problems concerning the involvement from the other departments. Table 3 shows the breakdown of the two problems in the area of involvement from the other departments.

**Table 3: Inadequate Involvement of Other Departments**

Problems	Frequency	Percentage
1. Lack of cooperation	19	61.3
2. Lack of commitment	12	38.7
<b>Total</b>	<b>31</b>	<b>100</b>

#### 4.1.3 Unready to Adopt SISP in Organization

The respondents reported 24 problems (15.4%) that suggested they were unready to adopt SISP. Among the 24 problems included; the inability to determine priority ICT projects in SISP (25%), there was change in policy (25%), outsourced the SISP (20.8%), the need to plan according to financial allocation (16.7%), and the need to manage change in their organizations (12.5%). Table 4 lists the 24 problems that suggested the government agencies were unready to adopt the SISP.

**Table 4: Unready to Adopt SISP in Organization**

Problems	Frequency	Percentage
1. Inability to determine priority ICT projects in SISP	6	25
2. Policy change	6	25
3. Outsourcing SISP	5	20.8
4. Need to plan according to financial allocation	4	16.7
5. Need to manage change in organization	3	12.5
<b>Total</b>	<b>24</b>	<b>100</b>

#### 4.1.4 Lack of Top Management Involvement

In the study, the respondents reported 23 problems (14.7%) related to lack of top management involvement in planning SISP in their organizations. Among these problems included; lack of top management commitment (60.95%), getting top management to support the planning efforts 26.1%), to get enough time to discuss with top management (8.7%) and initiation of SISP planning process (4.3%). Table 5 presents the 23 problems associated with lack of top management commitment as confronted by the government agencies in the study.

**Table 5: Lack of Top Management Involvement**

Problems	Frequency	Percentage
1. Lack of top management commitment	14	60.9
2. Getting top management support for the planning efforts	6	26.1
3. To get enough time to discuss with top management	2	8.7
4. Initiation of SISP planning process	1	4.3
<b>Total</b>	<b>23</b>	<b>100</b>

#### 4.1.5 Financial Constraints

The respondents in the study reported they faced various financial constraints when planning SISP in their organizations. These financial constraints included; limited financial allocation for the SISP (80%), insufficient financial planning (10%) and problems in identifying costs of ICT projects involved in SISP (10%). Table 6 indicates the problems related to financial constraints as experienced by the government agencies when planning SISP in their organizations.

**Table 6: Financial Constraints**

Problems	Frequency	Percentage
1. Limited financial allocation	16	80
2. Insufficient financial planning	2	10
3. Problems in identifying costs of ICT projects	2	10
<b>Total</b>	<b>20</b>	<b>100</b>

#### 4.1.6 Misalignment with Organizational Objectives

As presented in Table 7, the results of analysis of the data gathered from the 55 government agencies showed seven respondents indicated that misalignment between the SISP and the organizational objectives occurred when they planned the SISP in their organizations.

**Table 7: Misalignment with Organizational Objectives**

Problem	Frequency	Percentage
1. Misalignment with organizational objectives	7	100
<b>Total</b>	<b>7</b>	<b>100</b>

#### 4.1.7 Time Constraint

In the study, the respondents also reported time constraint as another concern when planning for SISP in their organizations. As shown in Table 8, seven respondents indicated that they did not have enough time to plan the adoption of SISP in their agencies.

**Table 8: Time Constraint**

Problems	Frequency	Percentage
1. Time constraint	7	100
<b>Total</b>	<b>7</b>	<b>100</b>

#### 4.1.8 Lack of Awareness

Lack of awareness of the importance of SISP was identified as one of the major problems faced by the government agencies that were involved in the study. As shown in Table 9, six respondents indicated that their agencies faced various problems when planning SISP because they lack awareness of the importance of the SISP to their organizations.

**Table 9: Lack of Awareness**

Problem	Frequency	Percentage
1. Lack of awareness of SISP	6	100
<b>Total</b>	<b>6</b>	<b>100</b>

#### 4.2 Problems in Implementing Strategic Information Planning System

In addition to gathering the information on the problems faced by the government agencies in planning the strategic information system planning (SISP) in their organizations, the respondents were also requested to provide information concerning the most pressing problems that they encountered when implementing the SISP. The analysis of the data collected from the government agencies indicated that these agencies experienced 134 pressing problems related to the implementation of SISP in their organizations.

By further analyzing the 134 problems, 11 problematic areas were identified. As shown in Table 10, of the total of 134 problems recorded from the government agencies, 34 problems (25.4%) were found to be involved with the limited budget allocated to the agencies, 29 problems (21.6%) were concerned with insufficient implementation plan, 26 problems (19.4%) indicated that the agencies lack knowledge and expertise in implementing SISP, 18 problems (13.4%) were associated with lack of commitment from user department, 10 problems (7.5%) suggested no motivation for the initialization of SISP among the agencies, six problems (4.5%) showed lack of senior

management involvement in the implementation of SISP, five problems (3.7%) implied time constraint in implementation, three problems suggested that SISP was not considered as part of corporate planning process, one problem each indicated lack of communication, misalignment of organizational objectives and failure to considered the external business environment in the implementation of SISP.

**Table 10: Problems in Implementing Strategic Information Planning System**

Problems	Frequency	Percentage
1. Limited budget	34	25.4
2. Insufficient implementation plan	29	21.6
3. Inadequate knowledge and expertise	26	19.4
4. Lack of commitment from user department	18	13.4
5. No motivation for the initialization of SISP	10	7.5
6. Lack of senior management involvement	6	4.5
7. Time constraint	5	3.7
8. IS management is not part of corporate planning process	3	2.2
9. Lack of communication	1	0.8
10 Misaligned with organizational objectives	1	0.8
11. Failure to considered the external business environment	1	0.8
<b>Total</b>	<b>134</b>	<b>100</b>

#### 4.2.1 Inadequate Knowledge and Expertise

In the study, 26 problems concerning inadequate knowledge and expertise in the implementation of SISP were recorded from the respondents. Of these 26 problems, 16 (61.5%) were related to inadequate knowledge, another six problems (23.1%) involved lack of personnel, three problems (11.5%) were concerned with increased workload among existing personnel and one problem indicated lack of training given to those staff involved in implementing SISP. Table 11 indicates the 26 problems associated with inadequate knowledge and expertise in implementing SISP as reported by the respondents in the study.

**Table 11: Inadequate Knowledge and Expertise**

Problems	Frequency	Percentage
1. Inadequate knowledge	16	61.5
2. Lack of personnel	6	23.1
3. Increase workload	3	11.5
4. Lack of training	1	3.9
<b>Total</b>	<b>26</b>	<b>100</b>

#### 4.2.2 Commitment from User Departments

The study also indicated that problems related to commitment from user departments amounted to 13.4% (18 problems) of the total number of problems faced by the government agencies in the implementation of SISP. Lack of cooperation from the user departments represented 66.7 % of the 18 problems reported in the study. Additionally, lack of commitment accounted for the other 33.3% of the problems concerning the commitment from user departments. Table 12 shows the breakdown of the two main problems found in this area.

**Table 12: Commitment from User Departments**

Problems	Frequency	Percentage
1. Lack of cooperation	12	66.7
2. Lack of commitment	6	33.3
<b>Total</b>	<b>18</b>	<b>100</b>

## 5. DISCUSSION AND CONCLUSIONS

The study reported in this paper attempted to examine the problems faced by government agencies when planning as well as implementing SISP in their organizations. Based on the findings of a larger study of 55 government agencies in the public sector in Malaysia, the study was able to detect eight problematic areas in planning SISP. In addition, the study was able to identify 11 problematic areas related to the implementation of SISP in government agencies.

The identification and understanding of these problems provide the first step toward positive management of SISP in government agencies. For the heads of the departments of the government agencies, knowing and understanding the problems related to planning and implementing of SISP would not only make them more aware of what needs to be done, but would also assist them in identifying the skills, knowledge, talents and attitudes required to improve the productivity, efficiency and effectiveness of their organizations.

In addition, the government service providers could use this information to formulate and implement more appropriate, focused and effective assistance programs, particularly those relating to the various training programs. Finally, since the study reported in this paper primarily focused on describing and reporting the problematic areas in planning and implementing SISP, future research could attempt to move toward investigating the best practices of SISP and the extent to which they are effective in the public sector.

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