

# **STRATEGIC INFORMATION SYSTEM PLANNING (SISP) IN PRIVATE UNIVERSITIES IN MALAYSIA: AN EXPLORATORY STUDY**

by  
**Nor Asiah Yaakub, Rafeah Mat Saat, Raja Haslinda Raja Mohd Ali**

**Faculty of Accountancy  
Universiti Utara Malaysia  
06010 Sintok, Kedah**  
Tel: 604-9283756  
Fax: 604-9285762  
E-mail: [norasiah@uum.edu.my](mailto:norasiah@uum.edu.my)

## **ABSTRACT**

Strategic Information System Planning (SISP) is a process whereby an organization determines a portfolio of computer-based application to help in achieving business objectives. Thus, SISP plays an important role in assisting the managers to determine the new information system (IS) and information technology (IT) strategies, allocate resources, position suitable applications and gaining competitive advantage. Today, it is undeniable that the businesses of education sectors are also relying heavily on the effectiveness of SISP. Therefore, this study is primarily focused on the business of the education sector. It is conducted to identify the extant of SISP practices in private universities in Malaysia. Data are gathered through survey and analyzed using descriptive analysis. Result has shown that only 16.7 percent of the respondents implemented SISP. Factors such as failing to get top management support, not having a clear-cut corporate plan and unable to obtain sufficiently qualified personnel are reasons for not implementing SISP in their business. Nevertheless all respondents strongly agreed that IS are very important to their organization.

**Keywords:** Strategic Information System Planning, Information system, Information Technology, Private University, Malaysia

## **INTRODUCTION**

Strategic information system planning (SISP) is a process whereby an organization determines a portfolio of computer-based application to help in achieving business objectives (Lederer & Sethi, 1988). In this dynamic business environment, tertiary education sector has also emerged as another profitable business and industry and SISP is used in achieving the intended goals (Titthasiri, 2000). In recent years, the private higher education has been gaining increasing prominence in Malaysia since 1990s (Tan, 2002). This is evident from the establishment of many private colleges, university colleges and universities.

The development of SISP in the business of education can be viewed either in teaching, research and administrative, whereby SISP function as guidance for their future development (Rowley, Lujan & Dolence, 1997). Thus, IS/IT also plays a significant role in the business of the education sector. This study is primarily focused on the business of education in Malaysia. It is conducted to identify the extant of SISP practices in private universities operating in Malaysia.

Indeed, investment in IS/IT requires proper planning and proper management as it demands very high budget. It should be carefully allocated and well positioned to gain its maximum benefits. Hence, findings from this study will shed some lights on the extant SISP practices and factors that may have delayed SISP implementation. It is hoped that these findings will encourage them to adopt SISP to make organizational plan and proper treatment of IS/IT in their education business to ensure competitive advantage among private universities especially when they are growing in numbers compared to public universities.

## **LITERATURE REVIEW**

### **Development of SISP**

The perception on SISP has advanced significantly in the past decades. In the late 1970s, the primary objectives of SISP were improving communication with users, getting top management support and identifying various opportunities for IS improvement (Spremic & Strugar, 2002). Then in 1980s, SISP extends to the development of an organization-wide architecture as well as the identification of strategic application (Pun & Lee, 1998). In recent years the role of SISP stretched out widely to bring together the business aim of a company, an understanding of the information needed to support those aims, and the implementation of the computer systems to provide that information. It is a plan for the development of systems towards some future vision on the role of IS in the organization (Wilson, 1989). It includes formulating IS objective, defining strategies and policies to achieve them and developing a detailed plans to effect the strategies and policies (Theo et al., 1997).

### **Importance of SISP**

Studies have shown that SISP will assist managers in determining the new information system (IS) and information technology (IT) strategies, allocate resources, position suitable applications and gaining competitive advantage (Basu, Hartono, Lederer, &

Sethi, 2002). It is essential for an organization as the measurement of organization's success is based on the return on the money invested in information processing (Remenyi, Money, & Twite, 1991). Thus it plays an important role in management function, whereby it can help organization to use IT more competitively, identify new higher payback IT applications and better forecast on IT resource requirement (Basu et al., 2002).

### **SISP in Business Education Sectors**

Today, in this dynamic business environment, it is found that organizational success rely heavily on the effectiveness of SISP (Spremic & Strugar, 2002), including the business of education sector. Tertiary education has emerged as another profitable business and industry and SISP is used in achieving the intended goals (Titthasiri, 2000). The development of SISP in private universities can be viewed either in teaching, research and administrative, whereby SISP function as guidance for their future development (Rowley, Lujan & Dolence, 1997). However, it should be developed properly, to help reduce the risk and uncertainty in decision making, assist the private universities to set up the budget for IS/IT, more responsive to the rapidity of change in IS/IT, and provide technical support for IS/IT.

### **Measurement of SISP**

It is noticed that many studies have shown the relationship of SISP with variables such as organizational size and structure, planning methodologies, corporate plan, and content of SISP.

Previous studies used annual sales revenue and total number of employees to measure organisational size. A study by Pavri and Ang (1995) reported significant relationships between companies that perform SISP practice and annual sales revenue as well as total number of employees. Unlike Spremic and Strugar (2002), they found that SISP practice does not depend on company size and number of employees from Croatian business perspective. This may indicate that even small companies or companies with small number of employees do perform SISP. Thus, strategic planning is not an exclusive privilege of large companies.

From organizational structure perspective, Pavri and Ang (1995) revealed that there is no significant relationship between SISP practice and physical structure in either centralized or decentralized business operations. This result supported the study by Spremic and Strugar (2002). However, it is strongly encouraged that corporate plan should guide SISP. SISP may not be useful if the organization does not have a business plan nor has general plan. Thus, IS management needs to rely on firm's vision or mission statement, or on formal and informal communication with user department (Teo & Ang, 1999).

Meanwhile, Heng, Trauth, and Fischer (1999) emphasized three critical success factors for an IT project. The most critical factor is the culture for trust from both the bottom-up and top-down management. Their results show 74 percent of Singaporean firms adopting the combination of these two methods.

In terms of content, a study by Spremic and Strugar (2002) emphasized 14 items that should be included in SISP. They highlighted five (5) most frequently used items, namely: statement of objective, projection of possible future IS environment, hardware plan, projection of possible future user environment and projection of possible future industry environment such as changes in technology, customer needs, suppliers' preferences, and competitors' position.

### **Contributing factors to SISP implementation**

There are several divisions or phases in the development of SISP. Mentzas (1997) has divided SISP into five (5) main phases and several subtasks, which include the planning of SISP process, analyzing the current environment, conceiving strategic alternatives, selecting strategy and planning strategy implementation.

On the other hand, Malaysian Administrative Modernization and Management Planning Unit (MAMPU) (2000), outlined 8 basic phases to develop SISP. They are: project initiation, business context definition, baseline IT assessment, strategies directions, IT opportunity qualification, target IT infrastructure, IT management and migration plan. This guideline is not only applicable to the Malaysian government agencies but also to the other organizations operating in Malaysia.

Despite the Malaysian government aggressive participation in the IT-related projects, Teo and Ang (1999) revealed that there are delays in IT projects. He stated that poor commitment by the top management as the major reason for the delay. A recent study by Ranganathan and Kannabiran (2004) thus underlined that direct participation by the top management would certainly signal the importance of IT to the organizations. This will ensure the full commitment of the management to the IT effort.

Another study by Teo and Ang (2001) have identified 14 problems when launching the IS planning efforts. However, they highlighted seven (7) as the most important, i.e. failing to get management support for the planning effort, not having free communication and commitment to change throughout the organization, being unable to obtain sufficiently qualified personnel to do a proper job, delegating the planning responsibility to an individual without sufficient experience, influence, or time to do a thorough job, not investing sufficient "front-end" time to ensure that all planning tasks and individual responsibilities are well understood, not having steering committee that is highly committed and not having a clear-cut corporate plan to guide the information system planning effort.

## **RESEARCH METHODOLOGY**

This study focused primarily on all private universities registered under the Department of Private Education, Malaysian Higher Education Ministry. Currently, there are 16 private universities in Malaysia as at January 2004. Questionnaires by Pavri and Ang (1995) are adopted and adapted to suit the intention of this study. The questionnaire is divided into three sections: Part 1 contains the general information of the universities including years of operations, number of employees and organizational structure, Part 2

focuses on budget allocation for IT department, whether there is SISP or not and reason for not implementing SISP, and Part 3 covers the SISP practices in the university as an organization that include the planning methodology used, degree of participation in developing SISP and items included in preparing SISP.

An interview approach was employed during the data collection. It was conducted through a face to face interview and telephone interview using the adapted questionnaire. Out of 16 private universities in Malaysia, only 12 agreed to participate in this study. The heads of IT department or the highest level officers in IT department of the participating universities were the proxy respondents for the universities.

Descriptive statistics were used to analyze the data collected. The analyses include frequency distribution and mean score of the variables. Results were tabulated to support the descriptive analysis.

## **RESEARCH FINDINGS**

There are 12 proxies selected from the IT department of 12 participating private universities who are willing to be interviewed. It is found that most of these private universities have at least 5 years of business operations based on the mean score of 5.08. The numbers of employees at each university are between 100 to 150 persons, which is represented by the mean score of 3.58.

### **Organizational Structure**

The organizational structures of these private universities are mostly physically centralized showing 58.3 percent while the rest are physically decentralized. Meanwhile, about 75 percent of the respondents strongly agreed that IS are very important to their organization and 16.7 percent agreed but surprisingly 8.3 percent said that they are hesitant of the importance of IS to their organization.

Unfortunately 50 percent of the respondents refused to disclose the percentage of their budget allocation for the IT department while 33.3 percent claimed that their organization only allowed between 5.1 to 10 percent of the budget to the IT department, 8.3 percent said that they got 10.1 to 15 percent and the rest obtained between 15.1 to 20 percent of the budget allocation. Nevertheless, though they are working with a small and tight budget on all IT projects, about 75 percent strongly agreed that IS is important to their organization.

### **Existence of SISP**

Results of this study shows that 83.3 percent or ten private universities without SISP and only two (16.7%) of them implemented SISP. This result is surprising because despite of their claims that they strongly agreed IS is important to their organization, they can hardly convinced their organization that SISP must be implemented to fully benefit from this tool of technology.

There are several reasons given by the respondents for not implementing SISP in their organization. Most of the respondents or about 33.3 percent stated that they do not have a clear-cut corporate plan to guide IS. This factor has shown to be the main reason for not implementing SISP in private universities in Malaysia. Some admitted that they failed to get top management support for the planning and unable to obtain sufficient qualified personnel to do a proper job in IS. Others accused that top management are not IT literate, thus they do not see the significant of implementing SISP. Two respondents said that only recently they change the status from private college to private university, therefore SISP is new to them. Another two respondents claimed that SISP is still under development. Last but not least one respondent said that SISP is not implemented in their organization because it is not relevant thus not included in their university's corporate plan and strategy.

### **SISP Practices**

Since there are only two private universities that have implemented SISP, this part will only explain about these organizations. Results show that the time required to develop SISP for both universities are more than 12 months. One of them stated that their SISP updates frequency is more than 9 months compared to the other who claimed that their update frequency is less than 3 months.

Both universities include their CEO, directors, managers, and executive and system engineers or called IT council to be in charged and taken responsible for SISP practices in their organization. They used a combination of bottom-up and top-down planning methodology in their SISP practices.

This study also gathered data on the degree of participation in developing SISP. According to them, the most important participation should come from the top management, MIS manager, computer system programmer, system analysts and computer operations. They also stated that non-MIS managers and users are also important in developing SISP. However, vendors and consultants are less important during SISP development process.

MAMPU has prepared a guideline for organization to prepare their SISP. Thus, this study also examined whether these private universities meet the terms of the said guideline. Results show that both respondents has followed the all the phases that should be included while preparing the SISP.

Also, it has been found out that only one of them included all the items that should be complied in preparing SISP. The other did not include the required items such as projection of possible future MIS, user and industry environment, system development plan and recommended implementation plan, but they do agree that these items should be included in their SISP.

## **DISCUSSION AND CONCLUSION**

Most companies have started to prepare their own SISP as they are aware of the importance of SISP in management function such as assisting the organization to use IT more competitively, identify new, higher payback IT applications and better forecast of IT resource requirement (Basu et.al.,2002).

But surprisingly, out of 12 participating private universities, only 2 (16.7%) universities practice SISP. This results show that even though private higher institutions are claimed to be one of the profitable industries in Malaysia, SISP practices are still rare regardless of their profit-oriented goal. This result differs from a study at Croation organizations by Spremic (2002) where his study showed a moderate number (48.1%) of Croation organizations have implemented an IS strategic plan.

A study by Pavri and Ang (1995) shows that there are no significant relationship between SISP practice and the physical structure and this result is supported by Spremic and Strugar (2002). In terms of relationship between SISP practice and the physical structured i.e. either centralized or decentralized of the organization, it may be too early to measure the relationship because there are only two universities practicing SISP and both with decentralized organization structure.

However Pavri and Ang (1995) agreed that there is a significant relationship between the companies that perform SISP and annual sales revenue as well as the total number of employees. Result of this study is consistent with Pavri and Ang (1995) because the two private universities have a big number of employee i.e. more than 200 staffs.

Likewise Heng et al. (1999), this study also unveiled that the participating universities used the combination of bottom-up and top-down planning methodologies. This combination is good because they identify all the user requirement and information on how to improve inefficiencies as well as get the top management involvement to identify projects that should be developed by examining the existing organization's business plans to potential support requirements.

As depicted in the finding of this study, only one of the two who practice SISP has included all items outlined by Spremic and Strugar (2002) whilst the other skipped a few items even though they admitted that it is important. This may suggest that SISP is prepared by the SISP IT steering committee but the information gathered for this study are provided by the Head of IT Department or the Manager who may not be well-versed with the overall system.

Since MAMPU has prepared a guideline for preparing SISP, it has been found that both respondents have agreed to follow this guideline.

Even though there are only 16.7 percent of the private universities that practice SISP, but most of the participating universities agree that IS/IT are important to their organization. Many reasons can be seen why these private universities do not practice SISP. Most of

them agreed that they do not have a clear-cut corporate plan to guide the information system effort. This has led to failing to get the support from top management in terms of financial and cooperation. This result supported the studies by Teo and Ang (1999) and Ranganathan and Kannabiran (2004).

As a conclusion, SISP can be said as not an important issue among private universities. But whether they realize or not, SISP has been proven for helping the organization in increasing the efficiencies in terms of IT management and IT resources. And to ensure the success of SISP depends on many factors that include the support and commitment by the top management. Without it, SISP would be a failure.

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