UNIVERSITI PUTRA MALAYSIA

**AN INVESTIGATION ON THE
RELATIONSHIP BETWEEN STRATEGIC
INFORMATION SYSTEMS AND BUSINESS
STRATEGIES IN MALAYSIAN ORGANIZATIONS**

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By

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Thesis Submitted in Partial Fulfilment of The Requirements For The Degree of Master of Science in the Malaysian Graduate School of Management Universiti Putra Malaysia

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LIST OF ABBREVIATIONS

AIS	Accounting Information System
FIFO	First In First Out
FIS	Financial Information System
GIS	General Information System
IS	Information System
IT	Information technology
LIFO	Last In First Out
MktIS	Marketing Information System
SIS	Strategic Information Systems

ABSTRACT

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in partial fulfilment of the requirements for the degree of Master of Science.

THE RELATIONSHIP BETWEEN STRATEGIC INFORMATION SYSTEMS AND BUSINESS STRATEGIES IN MALAYSIAN ORGANIZATIONS

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January 1999

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This paper investigates the nature of business strategies and strategic information system pursued by Malaysian firms and to examine the relationship between the business strategies and the strategic information system used by the firms. The study were analysed using SPSS Win Rel. 6.0 (Statistical Package for Social Science for MS Windows Release 6.0).

The empirical results arising from survey research conducted in Malaysia showed that most businesses appear to be competing through the cost leadership strategy. It was found that there is a positive relationship between business strategies and the strategic information system in Malaysian firms. For those firms who used the accounting information system and financial information system, they perceived that cost leadership strategy is highly important followed by differentiation strategy and focus strategy. For those who practised the management information system and

general information system in their organizations, they perceived that the cost leadership strategy is highly important as compared to differentiation and focus strategy. However, the finding shows that those firms that used the marketing information system in their organizations would not differentiate the business strategies that they would adopt in their organizations.

Recommendations for further research are also made, which focuses on the potential bias introduced into this type of research where only Klang Valley managers were surveyed. This study has looked at only one model of business strategy and there is a need to extend the analysis at other models of business strategy.

ABSTRAK

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Master Sains.

HUBUNGKAIT DI ANTARA SISTEM MAKLUMAT STRATEGI DAN STRATEGI PERNIAGAAN DI DALAM ORGANISASI DI MALAYSIA

Oleh

SAADIATUL BINTI IBRAHIM

January 1999

Pengerusi   :   Profesor Madya Md Zabid Haji Abdul Rashid, Ph.D.

Fakulti   :   Pusat Pengajian Siswazah Pengurusan Malaysia

Kajian ini mengkaji tentang keadaan semulajadi strategi perniagaan dan system maklumat strategik yang diterimapakai oleh firma-firma perniagaan di Malaysia dan untuk menyelidik hubungkait di antara strategi perniagaan dan system maklumat strategik yang digunakan oleh firma-firma perniagaan di Malaysia. Kajian ini dianalisa menggunakan SPSS Win Rel. 6.0(Statistical Package for Social Science for MS Windows Release 6.0).

Keputusan yang diperolehi dari kajian yang dijalankan ini menunjukkan bahawa kebanyakan perniagaan kelihatannya bersaing menggunakan strategi kepimpinan kos. Hasil kajian yang diperolehi ini mendapati bahawa bahawa adanya hubungan positif di antara strategi perniagaan dan sistem maklumat strategi yang diadaptasikan di dalam organisasi-organisasi di Malaysia.

Firma-firma yang menggunakan strategi sistem maklumat perakaunan dan sistem maklumat kewangan menganggap bahawa strategi kepimpinan kos adalah

sangat penting, diikuti dengan strategi pembezaaan dan strategi fokus. Hasil kajian juga menunjukkan bahawa firma-firma yang mempraktikkan sistem maklumat pengurusan dan sistem maklumat am di dalam organisasi mereka juga menganggap bahawa strategi kepimpinan kos adalah sangat penting berbanding dengan strategi pembezaan dan strategi fokus. Walaubagaimanapun, hasil kajian mendapati bahawa firma-firma yang mempraktikkan sistem maklumat pemasaran di dalam organisasi mereka, tidak membezakan ketiga-tiga strategi tersebut.

Saranan untuk kajian akan datang juga dibuat di dalam kajian ini, yang menfokuskan tentang ketidakseimbangan di mana kajian ini hanya melibatkan pengurus-pengurus di Lembah Kelang dan pandangan semua pengurus-pengurus di seluruh Malaysia tidak diambil kira.

Kajian ini hanya ,melibatkan satu model daripada strategi-strategi pengurusan dan adalah perlu untuk melanjutkan analisis ini kepada model-model strategi pengurusan yang lain.

CHAPTER 1

INTRODUCTION

This chapter covers the general issues of information technology(IT)/ information system(IS) in relation to the business strategies especially in Malaysian organizations. In addition, the objectives of this study, the hypotheses and the importance of this study are also covered.

Background

In the broadest sense, an information system can be defined as a set of procedures which collects or retrieves, processes, stores and disseminates information to support the decision making and control processes (Gall, 1986). Information may be collected from inside the organization (such as production volume) or from the external environment (such as estimated market size) and may be distributed internally or externally. Most

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organisations have used, in one way or another, their own information systems to serve their organizational demands.

Formal or structured information systems rest on the existence of relatively fixed definitions of data and procedures for collecting, storing, processing, disseminating and using those data. In contrast, informal or unstructured information systems rest on open definitions of goals, opportunistic methods of data collection and virtually unlimited channels of distribution and use. As such, they are not included in this research. The same applies to information systems that may be formal and structural in nature but depend mainly on manual methods for their operation.

The application of information systems in business is relatively a new phenomenon. The scope of application is expanding rapidly in line with the growing power and the declining price-to-capacity ratio that information systems offer (Porter and Miller, 1985).

Information systems have assumed an increasingly strategic role in organisations. There is a greater emphasis in recent years on organisational efficiency and effectiveness and constant clamour for accountability. (Porter and Millar, 1985)

Originally designed to expedite the processing of paper and data in the 1960s, information systems enlarged its functions in the 1970s and early 1980s to general

management support, and subsequently to customise, specific decision support tools. Such information systems, generally referred to as Strategic Information System, are transforming the nature of products or services, the format of production processes, relationships with suppliers and customers, and the basis of business competition.

Strategic Information Systems

The rapid advancement of information system has emerged from the position of a mere tool of back-office support to one that offers significant potential in creating competitive advantages for companies (Earl, 1989).

These competitive advantages cover not only includes drastic improvement in product quality, lowering production costs and defining new relationships with suppliers and customers, but also creating new markets as the timely capturing of information on market changes (Earl, 1989). In describing this type of computer-based information system, a new term had been developed recently: strategic information system(SIS).

The term "strategic information system (SIS)" was first employed by Professor Charles Wiseman, of Columbia University, New York, in his book Strategy and Computers: Information Systems as Competitive Weapons, published in 1985. Strategic Information Systems was subsequently used as the title of the

revised edition published in 1988. According to Wiseman (1988), SIS is the innovative use of information systems geared towards the support of an organization's competitive strategy aimed at achieving or maintaining superiority against business competitors".

Current approaches in the designing of a strategic information system (SIS) are with the aim of obtaining top management awareness, identify and implement applications that can generate competitive advantage. (Wiseman, 1988)

The concept of 'strategic information systems' has been widely accepted with various interpretations. Other terminologies used to convey this concept include strategic information technology, strategic information systems, planning strategic information systems and strategic information systems planning. In addition, others also refer it as strategic planning of information systems, information systems strategy, information technology strategy and information management strategy. However, the subtle variations in its meanings were not entirely clear (Reponen, 1993).

Competitive advantage may be achieved either through low costs or superior service. Although, information technology can support both objectives, its priorities had changed over time (Reponen, 1993). In the 1980s, a period of service orientation the primary was on the strategic use of technology. But the increased demands for

streamlining business operations have brought cost saving into the picture again. This is true in both profit and non profit organisations.

According to Reponen (1993), strategic information system is essentially a planning process in the minds of the decision makers, users and developers of the systems. The SIS is supported with written reports and plans, but they are of secondary importance. The way to increase understanding between different groups in an interactive working model, which brings together different perceptions and ideas in the organizations.

In that study , SIS was conceived as a plan for developing, implementing, managing and operating information systems. This is shown in Figure 1. It is a result of an interactive working process in the organization. According to Reponen (1983), the contents of the strategy may be different for each case. He believed that in the strategic information system, the most important decision areas are on strategic use of information technology, application development policy, high level architecture, organization of the information system function and investment planning.

Data processing professionals need guidelines from business management to do their own work. A good strategic information system gives an overall picture of these decision areas in an organization and helps in implementing systems.
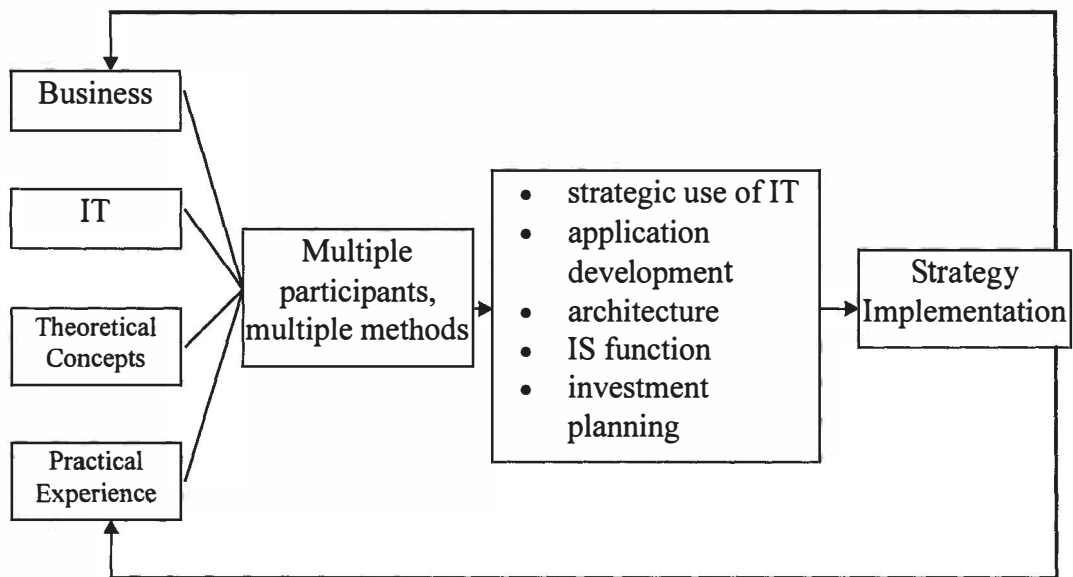
Figure 1 : Strategic Information System Process

Source: Strategic   Information   Systems   -   A   Conceptual   Analysis,
Butterworth- Heinemann Ltd, 1993.

Business Strategies

According to Chandler (1962), strategy is the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals. For Andrews(1987), business strategy determines how a company will compete in a given business, and position itself among its competitors.

Business strategy defines how each individual business will attempt to achieve its mission within its chosen field of endeavour. A business strategy must

also be developed for the single business firm and for each unit in the multiple business firm. It should specify how the unit will compete and what will be its expected competitive advantage. Business strategy is essentially the same for the single business firm and for the individual businesses in a multiple business firm (Andrews, 1987).

Business strategy is supported by a combination of the various functional strategies. For many firms, marketing strategy is the centerpiece of business strategy, with the other functional strategies playing an integral roles. In other firms, production or research and development may dominate the business strategy. Each business strategy must be compatible with the corporate strategy and with the strategies of the other businesses operated by the firm.

Porter (1980) in his contribution to strategic thought had proposed the controversial notion of business generic strategies. According to him, there are three types of business strategies : overall cost leadership, differentiation and focus.

Overall cost leadership, refers to the planned result of policies aimed at managing away expense. It is a defense against each of the five competitive forces respectively by enabling the firm to remain profitable when its rivals had eliminated their margins through price competition. It also provides a defence against the exploiting buyers' capacity to drive prices down only to the level of the next most efficient competitors.

Differentiation consists of offering a product or service that is perceived widely in the industry as being unique. It can take many forms including the design or brand image, technology, product features, customer service, and dealer network. By differentiation, firms can yield higher margins to offset supplier power, and insulates the firm from rivalry by using brand loyalty in relation to customer's price sensitivity.

The focus strategy is directed precisely at serving a particular buyer group, a segment of the product line, or a geographic market more effectively or efficiently than competitors who compete more widely. Consequently, it deploys one or both of the other two generic strategies in its approach to that narrow target. Figure 2 shows how Porter illustrates the differences among the three strategies in terms of strategic advantage and strategic target groups.

Strategic target	Strategic advantage	
	Uniqueness perceived by the customer	*Low cost position*
Industrywide	Differentiation	Overall cost leadership
Particular segment only	Focus	Focus

Figure 2 : The differences among the three strategies

Problem Statement

Today, senior managers question the value of IT/IS strategies, particularly as years of late delivery, budget overruns and unrealised benefits have engendered a very cautious approach to technology investment. Achieving tangible results in terms of added value remains one of the major management challenges. This raised one of the key issues on to what extent is IT/IS being an important strategy to organizations?

Much attention focuses on the relationship between business and IT/IS strategies and the successful translation of business requirements into operational systems. However, many organisations still struggle to understand the true purpose of an IT/IS strategy and the practical steps required to translate strategy into action. A major survey by Kearney (1990) of IT/IS effectiveness indicated that many senior managers are deluding themselves about their organisation's ability to use IT/IS successfully.

IT/IS has impact on the ability of firms to execute a particular strategy. As noted by Porter (1980), a firm's strategy is its general framework for dealing with competition. The achievement of one or more of these strategies gives the firm an advantageous position relative to the industry forces and leads to higher profitability.

IT/

other technologies , IT/

development and engineering to marketing research and recordkeeping.

IS/IT enables organizations to operate in ways that would be difficult if not impossible without it. IS/IT is a tool that can be used to support business activity. But the choice of where to apply it, to which business activity, to what business strategy remains to be made on commercial grounds. IS/

increase efficiency, but will offer no insights on the direction that such efficiency should take. IT/

no light on where this is of value to the organization. IS/

ways of organizing and operating a company (Rockart and Short, 1989), but cannot answer the question of which is best.

Business practices that impede company operations lie unrecognized and relatively insignificant until the application of IS/IT allows such practices to flourish at many times rate. Telephone, fax, e-mail are all devices for improving unstructured informal communications. But where ill-thought-out unnecessary messages are being passed around an organization, improving these facilities may simply lead to an increase of traffic and less productive work. The use to which IS/

those questions that only management can answer.

The importance of IT/IS varies widely from firm to firm. In several firms, IT/IS is a major concern while for other firms, it is basically perceived administrative convenience. For most firms, there is also no commonly accepted guidelines or framework for measuring the importance of IT/IS to a business. Although a lot of people have the feeling of the importance of IT/IS, few could explain how it could be utilised or even articulate the importance of IT/IS in the future.

In order to utilise IT/IS as a competitive weapon, leaders or organisations must understand how IT/IS has an impact on the competitive environment and strategy of the businesses. A good understanding will enable them to direct the IT/IS resources at hand to the firm's most important targets and hence, reap maximum value from its utilisation. Leaders have to understand and foresee the impact of IT/IS at the firm, industry and strategy level (Parsons, 1983).

IT/IS has a very significant role to play in business today. Among the important role of IT/IS are creating new products and markets that were previously not available and increased the entry barriers by increasing the market share and discouraging entry of new competitors . Other than that, it also decrease the bargaining power of buyers and suppliers and changing the structure of the industry .

The issue here is, whether by looking at this relationship, Malaysian organisations will be far ahead from their competitors or Malaysian organisations will have the competitive advantage compared to their competitors.

The essential of this study is to obtain more understanding of the business strategies and strategic information systems and the relationship between those two; and the environment in which it operates, so that opportunities to make significant contributions are identified. In this case, a very close working relationship must be established between the business strategies and strategic information system planners, in which the true nature of the business needs are investigated, and the necessary initiatives defined and described, at least at a high level. The impact of these will have on, the business can then be determined, and business responses formulated. Strategic information systems responses are then determined as an inherent part of the business responses.