Strategic Information Systems Alignment: Alignment of IS/IT with Business Strategy

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Abstract—Using information systems effectively requires an understanding of the organisation, management, and the technology shaping the systems. All information systems can be described as organisational and management solutions to challenges posed by the environment.

The advances in information systems have affect on our day-to day lives . As the technology is evolving immensely so are the opportunities in a healthy way to prepare the organisation in the competitive advantage environment In order to manage the IS/IT based systems, it is important to have an appropriate strategy that defines the systems and provide means to manage them. Strategic Information Systems Alignment (SISA) is an effective way of developing and maintaining the IS/IT systems that support the business operations.

Alignment of the IS/IT plans and the business plans is essential for improved business performance, this research looks at the key features of SISA in the changing business circumstances in Saudi Arabia.

Keywords—Information Systems, Information Systems, Business Planning, Planning Strategy, IT/IS Alignment.

1. INTRODUCTION

Today it is widely known that information knowledge is vital for managers. Beside organisations need information systems to survive and prosper, information systems can help them expand their reach, offer new products and better services. An information system is an enable technology and if it is not controlled and lined up with the organisational business strategy, it will disable the organisational ability in the competitive advantage [3].

Strategically placing IT/IS within the organisation involved moving IT/IS professionals into business units, making business-related professional activities mandatory for IT/IS professionals, sending IT/IS professionals to external business events, and hiring candidates with broad educational backgrounds into junior-level IT/IS analyst positions. On the business side, they advocated bringing non-IT professionals into IT/IS roles and requiring business managers to participate in events introducing new IT/IS and to perform rotations in IT/IS project environments [1].

To integrate into a smoothly working business system and improve productivity, managers ought to align their Information Systems with the business strategy. The purpose of Strategic

Information Systems Alignment (SISA) is to help implement information systems to integrate with its business strategy. It assists in transforming information into a usable form for coordinating the workflow within the organisation, and helps in decision making and solving other problems [6]. IS based applications can also create a competitive advantage on the basis of the generic strategies of cost leadership, product differentiation and market focus [2, 3, 6].

Managers cannot ignore information systems because they play such a critical role in contemporary organisations. Systems directly affect how managers decide, plan, and manage their employees shape what products are produced, and where, when, and how [6]. In contemporary systems there is: Growing interdependence between organisational business strategy, rules, and procedures and the organisation's information systems.

2. STRATEGIC INFORMATION SYSTEMS ALIGNMENT

Today it is widely recognised that information systems knowledge is essential for managers because most organisations need information systems to survive and prosper. In the modern times, information systems have become an essential part of all types of business as information systems provide the opportunity for organisations to integrate with their business strategy [5].

A strategic plan is not the same thing as an operational plan. The former should be visionary, conceptual and directional in contrast to an operational plan which is likely to be shorter term, tactical, focused, implementable and measurable. As an example, compare the process of planning a vacation (where, when, duration, budget, who goes, how travel are all strategic issues) with the final preparations (tasks, deadlines, funding, weather, packing, transport and so on are all operational matters).

McBride (2004) suggests a complete overhaul in the planning process is needed and says that the critical analysis of the classical theory suggests that it is insufficient for organisations subjected to continuous change. On the other hand, Kearns and Lederer (2004) citing the research conducted by Sabherwal and King (1992) suggest the formal or rational process "can be appropriate under such conditions" [3, 4].

Teo and King (1997) suggested that Information systems planning is becoming important as the "organizations attempt to leverage IS applications to improve efficiency, reengineer business processes, gain competitive advantage, and compete more effectively". It was interesting to know that there was no particular strategy being used for the development of plans [10]. Teo reported that there is no actual model or theory available for developing the IS plan …, but we have to keep the IT stuff trains up to date and fully aware for the new technologies, along with the business needs and requirements [10].

From a business perspective, an information system is an organisational and management solution, based on information systems, to a challenge posed by the environment. To fully understand information systems, a manager must understand the broader organisation, management, and information systems dimensions of systems and their power to provide solutions to challenges and problems in the business environment [1].

Management needs to know what evaluation methods are already in place for alignment to be feasible. IS strategy can be defined as a strategy to implement information systems that recognises organisational requirements, in other words 'demand' for the information and systems to support the overall business strategy and its plan to gain or maintain the advantage [1]. An IS strategy should include the business needs for the future aligned closely to the
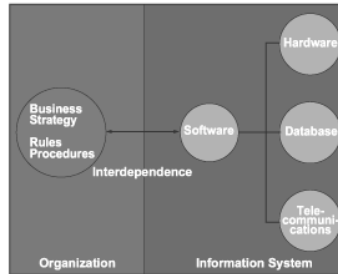
Fig. 1. Laudon and Laudon (2006)

business strategy. It should also define and prioritise the investments needed to achieve the application portfolio.

For McBride (2004) Strategic Information Systems Planning has been defined as "a process of identifying the IS requirements of an organisation at a high level". Lederer and Gardiner (1992) describe strategic information systems planning as "the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals."

Fidler and Rogerson (1996) and Wilson (1989) propose that SISA provides an understanding of the information needed to realise business objectives and implement the systems. Before setting an information systems framework, IT/IS professionals should set an IS planning framework that induces all the essential elements needed to be able to come up with an IS strategy that would surely work and be coherent in the alignment of the corporate strategy [1]. As the initial stage in the setting of an IS strategy, a detailed plan work must be set. According to Bhatnagar (2007) this is a typical framework for IS planning:

- Phase 1: The initial purpose, process and the scope of the IS strategy.
- Phase 2: IS planner should come to terms of these directions through in-depth analysis of the essence of the information needs, business processes and the needful business requirements.
- Phase 3: IS planner can envisage an IS plan that would be appropriate for the company. It is from these phases that the pre-requisites and considerations should carefully be looked into rather than overlooked into so that the IS planner would not miss out on something in the process of synthesising the bits of the ingredients in successfully formulating an effective IS strategy that works.
- Phase 4: IS planning framework allows an IS planner to outline a well-documented IS strategic plan which can examine and explore the features most vital for the organisation. This will lead the planner to devise an IS strategy plan that shows the right direction.

2.1 IS/IT AND BUSINESS ALIGNMENT

Aligning information systems to the organisational strategy goals has appeared to be a concern for managers over the last decade. Alignment is defined as "the capacity to demonstrate a positive relationship between information systems and the accepted financial measures of performance" [9]. One of the most extensively used models of alignment is the Strategic Alignment Model proposed by Henderson and Venkatraman (1999). This multidimensional model (Figure 2) identifies the internal and external dimensions and how these can be integrated functionally with the organisational strategy [2, 9].

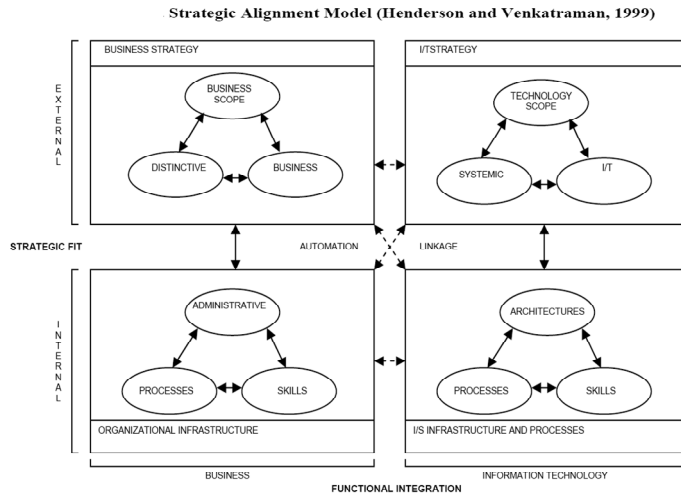Strategic Alignment Model (Henderson and Venkatraman, 1999)

Fig. 2. Multidimensional Model

Basically, the majority of alignment models are based on the organisational structure and their objectives. This model places alignment at the heart of the organisation's needs. Many of these models also reveal the influence of the organisation's objectives on the alignment (Scott Morton, 1991) as this type of model focuses on the connection between strategy and technology. To develop an attainable level of alignment within an organisation, the IT/IS purpose has to be located within the organisational structure.

A direct advantage of strategic alignment is a perception of higher business value of IT/IS (Tallon et al., 2000). Segars and Glover (1998) suggest that alignment produced by strategically positioned IT/IS improves the stature of IT/IS within an organisation [7]. Henderson and Venkatraman (1999) advocate the importance of strategically positioning of IT/IS within organisations. They argued that successful applications of this model result in organisational capability to leverage IT/IS resources on a continuous basis to support competitive advantage in the marketplace. They also indicate the need for a change in IT/IS orientations from an exclusively internal focus to one that fits strategically with the external IT/IS domain environment [1, 7].

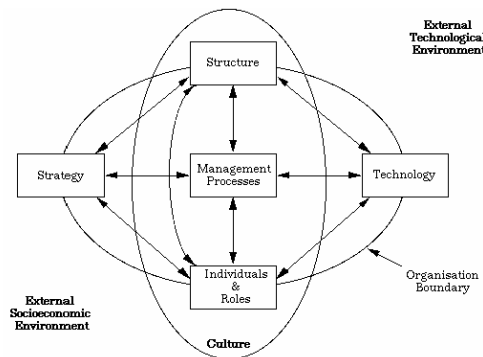Figure 3 shows the interdependence between technology and strategy and how this is

Fig. 3. Five forces influencing the Organisation's objectives

124

influenced by the organisational culture. The model shows also the connection may also be influenced by internal and external technological and socio-economic environments. This means that the organisation may be highly dynamic and alignment may need to be continually re-examined, monitored and adjusted.

2.2. ALIGNMENT AND THE ORGANISATIONAL STRUCTURE

Managers should foresee to achieve a good alignment between information systems and business for smooth work of the organisation. Many organisations structure IT/IS and information flow in a way to be centralised thus resulting in the control of information which in turn may result significant power structure within the company [1]. While, information systems can provide encouragement how an organisation is structured, it can also "centralise decision-making at a certain level as it increases the capacity to process information" [1, 4].

Changes in strategy, rules, and procedures increasingly require changes in hardware, software, databases, and telecommunications (see Figure 1). The relationship between information systems and organisations results from the growing reach and scope of system projects and applications [6].

Technology is an important aspect in the alignment of information systems with business strategy. This is dependent on the type of information systems infrastructure used as a resource to assist in granting business goals. Slater (1999) argues that in aligning infrastructure with business strategy it is the hardest when changing business strategy and information systems infrastructure. For business and information systems strategies to be aligned it is necessary to clearly define business and IT/IS goals and review the formulation of these goals [8]. It is important for good alignment that IT/IS professionals be involved during business planning and business professionals to be involved during IT/IS planning [1].

At the early stages of any information systems project, the project must reveal its connection to business plans and how this is to line up with corporate purpose [1]. The IT/IS project plan must constantly be reviewed to enable the alignment to adapt with the changing business environment.

At the planning phase of an information systems project it must be ensured to be aligned with business objectives. It is also important to implement performance measures and targets and evaluate performance before and after implementation. The alignment of IT/IS with business strategy may need the organisation to modify various features of the organisational business operations, structures and cultures [1] . The achievement of such success for alignment will mainly depend on the success of the organisations capacity to manage this change. The level of change to improve and align business with IT/IS strategy will depend on the situation of the organisation and the degree to which alignment is already present [1, 2].

According to Premkumar and King (1991), the alignment of IS plan and business plan results in information resources supporting the business objectives and taking advantage of the opportunities arising from the use of IS. Kearns and Lederer (2000) also state that, "the alignment of the IS plan with the business plan, is the direct reference in the IS plan to the business plan's mission, objectives and strategies". Nolan (1979) gave this model. He suggested that the organizations go through the six stages of the IS/IT growth. Each stage has four active processes- application portfolio, user's role and awareness, IT resources and management planning. The growth rate is compared with the expenditure.

3. RESEARCH FINDINGS

Following the model by Bhatnagar (2007), the research employs a triangulation approach to identify key aspects of the study in Saudi Arabia. The data sets included the questionnaire to the IT/IS and business managers of three companies and their views are compared with the literature and the available business documents for consistency and answering the research questions. The questionnaires were sent to the respective IT/ARE and a business manager of three companies and other data was collected from the company websites, and annual reports.

The data collected from the companies is being compared to the research findings. The importance of this study is that the views are totally based on the selected three companies. Clearly, the three companies cannot represent the industry overall, therefore, it would be improper to compare the results between the companies and their industry sector.

On the planning side, one answers that he, "…looks at the project from the aspect of user needs then "study the needs, collect data, analyse and design the system, and lastly choose the tools for implementation and testing." The study finds some of the similar results of Bhatnagar (2007) as the management of the organisations is responsible for the planning and the implementation of the information systems. The IT/IS executive do the planning and implementation of the IS/IT and the senior business operation managers who formed the executive committee provided them with the business directions and the opportunities. One executive replies this way, "My role is to plan for our enterprise customers for the IT infrastructure and applications, as IT advisor for the best practices and best solutions." IT/IS facilitate in leveraging information towards organisational success.

The preparation of a strategic plan is a multi-step process covering vision, mission, objectives, values, strategies, goals and programs [1]. The first step is to develop a realistic vision for the business.

Strategic level systems help management tackle and address strategic issues and long-term trends, both within the organisation and in the external environment. Principal concern is matching organisational capability to changes, and opportunities, occurring in the medium to long term (i.e. 5 - 10 years) in the external environment.

There are certain processes that are common to all businesses, with some being industry specific. When providing a solution, the companies need to identify the key business processes that affect the functioning of the business function. One executive replies this way, "most of the planning depends on the customer needs and based on the customer business and most of the planning based on the business moreover reduces the risk." Here the three companies demonstrated their care for customer satisfaction as the key to the business strategy.

The companies also feel the effects of IS/IT implementation as some try to, "find the best solution for the customer to fit his needs and requirements, for the available IT vendors, if not try to develop some products based on the needs, based on our experience." Most of the planning depends on the customer needs and is based on the customer business as most of our customers are looking to the IT as ROI, so our main aim is to use the IT to meet the customer's needs and for business continuity and cost reductions. And most of the planning is based on the high level available solutions and how to secure the business moreover reduces the risk.

Most of the effects are optimistic and assist the companies achieve their business goals. The companies improve their competence and efficiency by the means of implementation. However, some of the effects are not so beneficial. Change management is the process of assisting

individuals and organisations passing from an old way of doing things to a new way of doing things. Information Technology can be both a cause of a major change in doing business and a response to them. A New system is more than just the hardware and the software. It is also the people and organisational considerations. Significant new systems require cultural change. People are often willing to change, but they resist being changed. With effective communication and training, they overcome this effect. Failure can be avoided by effectively managing the changes. Problems that occur when implementing a new information system can be usually be traced to deficiencies in the development process.

4. CONCLUSION

IT-business alignment remains a critical issue in IT/IS management. A continuing stream of research has provided an analysis of the context of this problem, exploring and proposing potential solutions to it. Three recurring themes that have been identified in the research as prescriptive measures to improve the degree of IT-business alignment are the elevation of the IT/IS function to a strategic level in the organisation, full integration of IT/IS strategic planning with the business strategic plan, and direct support for the corporate vision in strategic IT/IS initiatives. A careful consideration of the research to date and the continuing recognition in practitioner journals of alignment problems in organisations clearly indicate that much work, both in research and in practice, remains to be done.

The fact finding and the outcome of research studies carried on three IT/IS business managers of the three Saudi Arabia companies have revealed some interesting features to the process of IS/IT and business planning. According to the answers received, it has been noticed that there are some similarities in the pattern of planning between the companies.

All the three have shown concern about customer satisfaction. Companies review their strategies by emphasising customer satisfaction as a major business objective. This shows how planning is considered as a major input from customer satisfaction. In one statement it is the same as the study in New Zealand, none of the companies are using any particular theory for the development of IS/IT plans, and a study of the business requirements is done before planning. Nevertheless, IT managers check with the business management to determine business process requirements and direction for the planning and implementation of IS/IT plans.

The results of the IT related questionnaire show how IT is still an enabler to the business, rather than a transformer. IS/IT systems still work as support systems instead of being part of the business processes.

The business executives understand the significance of IS/IT systems. The overall benefits that the companies could get are improved business processes, enhanced effectiveness of the business processes and increased customer satisfaction. However, to understand the benefits, the business processes need to undergo certain changes and there have to be ways to adjust to the effects of the implementation process. It can be rightly said that, the IS/IT systems are being used to automate the business processes and companies are using the systems to improve the efficiency and effectiveness of the business activities.

REFERENCES

[1]   Bhatnagar, Ankit (2007): Strategic Information Systems Planning: Alignment of 'IS/IT' Planning and

Business Planning, Unitec New Zealand, [WWW Document] URL http://www.coda.ac.nz/cgi/view-content.cgi?article=1000&context=unitec_scit_di, [26/10/2008].

[2] Henderson, J. C. and Venkatraman, N. (1999): Strategic alignment: Leveraging information systems for transforming organizations. IBM Systems Journal, 38, 472-484.

[3] Kearns, G. S. and Lederer, A. (1997): Alignment of IS plans with business plans: The impact on competitive advantage. Paper presented at the 1997 Americas Conference on Information Systems. Retrieved November 8, 2003, from http://aisel.isworld.org/

[4] King, W. R. and Teo, T. S. H. (2000): Assessing the impact of proactive versus reactive modes of strategic information systems planning. Omega, 28, 667-679.

[5] Lachlan M. MacKinnon, Information: Types of Information System Systems, http://www.macs.hw.ac.uk/~lachlan/dbislectures/lectures/types.ppt,

[6] Laudon, K. and Laudon, J. (2006): Management Information Systems: Managing the Digital Firm, 9th ed. Prentice Hall

[7] Segars, A. H., and Glover, V. (1998): Strategic information systems planning success: an investigation of the construct and its measurement. MIS Quarterly, 22, 139-163.

[8] Slater D, (1999), 'Alignement Check', 15/11/1999, CIO Magazine, http://www.cio.com/archive/111599_ford_content.html

[9] Strassmann P A, 1998, 'What is Alignment?', pp 1-7, http.//www.strassmann.com/pubs/alignment/ , http://ibmpnyi1.somers.hqregion.ibm.com/abi/html/wplever.html

[10] King, W. and Teo, T. S. H. (1997) Integration between business planning and information systems planning: Validating a stage hypothesis. Decision Sciences, 28:2, pp.279-308.

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