Selecting an IT Strategic Planning Methodology: A Contingency Approach

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ABSTRACT

The need for careful planning to use information technology (IT) to achieve strategic objectives is well recognized. However, while the literature is full of stories on successful strategic IT applications, not much is known about how to effectively carry out the IT strategic planning process. Based on a review of empirical research, this study developed a contingency approach to help the planner select the appropriate planning methodology.

INTRODUCTION

The need for leveraging information technology (IT) to achieve strategic objectives is well recognized. However, while the literature is full of success stories of strategic IT applications, not much is known about how to effectively plan for such applications. Managers reported that traditional planning methodologies were problematic and results unsatisfactory [7]. The objective of this research is to provide insight on the IT strategic planning process. Specifically, a contingency approach is developed to help the planner select the right planning methodology. A summary of existing planning methodologies is presented next, followed by a full discussion of the contingency approach.

PLANNING METHODOLOGIES

Alignment Methodologies

IT planning can trace its roots to the work of Zani [16] in early 1970's. As discussed by Boynton and Zmud [2], Zani proposed several ideas that had since permeated the field. These ideas included viewing IT planning as a top-down process, focusing on several "key success variables," and linking organizational strategies to IT planning efforts. Subsequently, many other planning methodologies were developed. The more popular methodologies include Critical Success Factors [12], Business Systems Planning [5], Strategic Systems Planning [4], and Information Engineering [8]. These methodologies commonly analyze business functions from top-down. The result of these business analyses is an overall data structure or an information systems architecture which identifies information systems projects [7]. By design, information systems identified and developed through these methodologies conform to or align with organizational strategies.

Despite the structured approach and computerized support from some vendors, these alignment methodologies are plagued with problems. Lederer and Sethi [7] surveyed eighty organizations and found IS planners were not very satisfied with the alignment methodologies they used and were even less satisfied with the execution of the resulting plan. Respondents identified two major problems with alignment methodologies as the difficulty in securing top management commitment for implementing the plan and the need for substantial further analysis in order to carry out the plan. Because of these problems, Lederer and Sethi [7] suggest that planning methodologies aiming at aligning IS objectives with business goals may be of limited use. We believe that alignment methodologies may be useful when IS is viewed as a support function; when performing strategic planning, a different view of the IS function and hence different methodologies are called for.

Impact Methodologies

A major shift in IT planning occurred in the 1980's from aligning IS objectives with business goals to impact organizational strategies directly [2]. One of the early impact methodologies is Porter's value chain [9]. A company's value chain consists of five primary activities and four support

activities [9]. The primary activities are concerned with producing and delivering the product to the consumer and include internal logistics, production, external logistics, marketing and sales, and post-sales service. The support activities, including infrastructure, human resource management, technology development, and procurement, facilitate the performance of the primary activities. As a planning vehicle, the value chain can be used to identify IT applications that have a strategic impact on the primary and/or support activities.

Building on the concept of value chain, Ives and Learnonth [6] suggested that strategic IT applications can be identified by focusing on customers. They described examples of systems which fit into a customer resource life cycle to differentiate a company's products and services from its competitors'. Wiseman [15] developed a theory of strategic thrusts which also targets entities outside of an organization: suppliers, customers, and competitors.

He observed that information systems would have strategic impact if they support the strategic thrusts of an organization. These strategic thrusts include differentiation, cost reduction, innovation, growth and alliance. All of the impact methodologies discussed here aim at identifying IT applications that have an impact on an organization's strategies (e.g., competitive advantage). Among these methodologies, Porter's value chain was found most used in a survey of chief information officers and managers [14].

A CONTINGENCY APPROACH TO IT STRATEGIC PLANNING

A contingency perspective is needed to produce guidelines for performing strategic planning in practice and developing a framework for strategic planning research [13]. Recent research on the IS and organizational environments, as reviewed next, provides basis for the development of such a contingency approach.

The IS Environment

The IS environment may be described by the strategic grid [3], a framework for IS management. The grid (see Figure 1) identifies four different IS environments based on the strategic impact of current and future IT applications of an organization. The management of IS, including strategic planning, should be contingent on the IS environment of a particular organization.

To determine whether strategic planning differed in organizations in different cells of the strategic grid, Raghunathan and Raghunathan [11] surveyed 197 IS managers. They identified six factors measuring the importance and acceptance of IS planning and found all of them perceived differently by the respondents. Thus, according to their survey, organizations perform strategic planning differently depending upon their position in the strategic grid.

Two additional findings of Raghunathan and Raghunathan's research [11] are of interest here. First, each industry surveyed included firms from several, if not all, of the cells in the strategic grid. This finding indicates that companies in the same industry view the strategic importance of IT differently. It would be interesting to establish the link between an organization's view of IT and its performance. Furthermore, the finding suggests that IT strategic planning should hinge on an organization's position in the strategic cell, not on the industry the organization is in.

Second, the differences in planning aspects were more significant for the future systems dimension than for the current systems dimension. In other words, different planning aspects were found between companies with differing future systems but not with differing existing systems. Raghunathan and Raghunathan [11] suggest that since planning is a future-oriented activity, the different planning aspects should be more significant in future-oriented IS environments than in current-oriented IS environments. The implication is that, for strategic planning, the strategic and turnaround environments are the same, while the factory and support environments are no different. Organizations in the strategic and turnaround environments are planning on developing strategic IT applications, organizations in the factory and support environments are not.

Figure 1. Strategic Grid

		Strategic Impact of Existing Systems	
		High	Low
Strategic Impact of Future Systems	High	Strategic	Turnaround
	Low	Factory	Support

Source: Cash, et al.[3]

The Organizational Environment

Bergeron, Buteau, and Raymond [1] compared the utility of two impact methodologies: Porter's value chain and Wiseman's strategic thrusts. In a field experiment they found that both methodologies were effective in generating a significant number of information systems worthy of implementation. Moreover, the two methodologies were enthusiastically received by participating managers. A major difference between the two methodologies is that the strategic thrusts methodology was found more outward oriented and therefore is more suitable for organizations operating in unstable environments. The reason is that in stable environ-

ments companies seeking to gain a competitive advantage may change many of the internal processes such as technology development and procurement that are the focus of the value chain methodology. On the other hand, the strategic thrusts methodology concentrates more on the external environment and can better help companies operating in unstable environments identify strategic applications.

Bergeron, Buteau, and Raymond's [1] research provides preliminary support to the use of impact planning methodologies. Contrary to the numerous problems with alignment methodologies reported in [7], managers in Bergeron, Buteau, and Raymond's research [1] found impact methodologies effective in strategic planning. More work is needed to determine whether the findings can be generalized to other impact methodologies and business settings. Meanwhile, their research raised an important point that not all impact methodologies are the same. The level of uncertainty in an organization's environment can be a factor in dictating the choice of one methodology over the others.

Selecting the Right Planning Methodology

The empirical results reviewed above suggest that the selection of the planning methodology should depend on both the IS and organizational environments. Taking this approach, an organization would begin the planning process with an assessment of its current position in the strategic grid. Once the current position is identified, the organization can determine the appropriate planning methodology based on the organizational environment. The different cases are summarized in the decision table in Figure 2.

For each case in Figure 2, a set of conditions is tested and the results of these tests determine which planning methodology to use—value chain or strategic thrusts. Organizations in the strategic and turnaround cells are, by definition, planning on developing strategic IT applications. Those IT applications are better identified through Porter's value chain if the firm is operating in a stable environment; if the external environment is unstable, Wiseman's strategic thrusts would be a better methodology.

Organizations in the factory and support cells are not planning on developing strategic IT applications. However, business environments change, so do organizational goals and strategies. These organizations may someday want to change their position in the strategic grid. When they do, they may choose between Porter's value chain and Wiseman's strategic thrusts as just discussed. If, for whatever reason, these organizations do not want to develop strategic IT applications in the near future, IT strategic planning is not an issue for these companies. The type of planning methodology is not critical, either

Figure 2. Decision table for strategic planning

Environment/Method	Case									
Strategic	Y	Y								
Turnaround			Y	Y						
Factory					Y	Y	Y			
Support								Y	Y	Y
Strat. applications					Y	Y	N	Y	Y	N
Stable	Y		Y		Y			Y		
Unstable		Y		Y		Y			Y	
Value chain	X		X		X			X		
Strategic thrusts		X		X		X			X	

CONCLUSION AND FUTURE RESEARCH

This research seeks to facilitate IT strategic planning by helping the planner select the appropriate methodology under varying IS and organizational environments. Future research which will benefit the planning process is discussed next.

First, the decision table was developed based on results from existing empirical research. More empirical work on the IS and organizational variables will increase the applicability of the decision table. Similarly, research on the effect of variables, other than the IS and organizational environments, on different planning methodologies, would enrich the decision rules. Comparative studies on the efficacy of existing and new impact methodologies should also be pursued.

Second, the decision table does not consider the people involved in the planning process. As Pyburn demonstrated [10], organizational variables have an impact on the planning style that is appropriate under different conditions. The relationships among organizational variables, planning style, and planning methodology need to be studied. The linking of the decision table in this paper with that of Pyburn would make a significant contribution to the practice of and research on IT strategic planning.

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