Information Systems Strategy Formation Embedded into a Continuous Organizational Learning Process

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Mintzberg’s viewpoint that strategy is an emergent learning process rather than a plan has a valuable contribution to make to the Information Systems (IS) field. This argumentation has rendered both the necessity of strategy planning sessions and the strategy plan itself questionable. Here, strategy is seen from an experiential learning perspective, but learning is supported by planning sessions. The purpose of the planning process is to produce a formal plan to direct IS development and utilization. On the other hand strategy is what an organization knows, not what is written. The outcome of an IS strategy process should thus be an increased understanding of IS opportunities and constraints, and a shared view of IS utilization. This study presents an approach to combine the learning and planning approaches to strategy formation. An approach to link the experiential learning cycle and the Information Systems Strategy (ISS) process is presented and tested. The proposed solution is based on four process phases. First, evaluation of the current organizational reality of IS utilization from the management, usage and Information Technology (IT) viewpoints. Secondly, joint learning through an interactive planning process between interest groups to improve managerial abilities, change organizational structures and reach a common view of IS use and management (i.e. IS Strategy). Thirdly, another learning process directed by IS strategy during implementation at middle management and personnel levels. Finally, the outcome of the ISS process has to be constantly observed and evaluated to understand progress and needs for further development. A longitudinal case study has been conducted to test the developed approach. The research process is presented and the outcomes of the approach discussed.

Serious ISS implementation problems have been reported despite insightful planning sessions, and far too often the ISS is just a plan that has not been implemented (Earl, 1993; Lederer & Sethi, 1992). Furthermore, the strategy concept is evolving. The Mintzberg (1994a; 1994b) - Ansoff (1994) debate is an example of two extremes. Ansoff’s (1965) older work emphasizes the formal planning session in strategy formation whereas Mintzberg argues that strategy is an emergent process that cannot be planned. Mintzberg emphasizes learning in strategy formation instead.

Here, strategy is seen from the learning perspective, but learning is supported by planning sessions. It is our opinion that a strategy formation should include two parallel processes - namely planning and learning. Further, both should be viewed from the constant information management perspective. The purpose of the planning process is to produce a formal plan to direct IS development and utilization. On the other hand strategy is what an organization knows, not what is written. The outcome of an IS strategy process should thus be an increased understanding of IS opportunities and constraints and a shared view of IS utilization. In this context our knowledge from several case studies indicates the necessity for a learning perspective in ISS processes (Reponen, 1993; Reponen, 1994; Ruohonen, 1990; Salmela, 1991).

An ISS process is extremely context dependent and we should also consider ISS from the organizational perspective.
(Sullivan, 1985; Vitale et al., 1986); this approach has been found to be most effective in the success of IS strategy (Earl, 1993). The organizational approach demands a balancing of both the constraints and opportunities set not only by the business environment and Information Technology (see McFarlan, 1984; Porter, 1980; Porter, 1985) but also set by the organization (Porter, 1991; Prahalad & Hamel, 1990). The organizational context could set enormous barriers to develop IS management and use practices (Argyris, 1990; Attewell, 1992; Cohen & Levithal, 1990; Galliers, 1991a; Kim, 1993) and these barriers have to be recognized before learning efforts can be directed. Further, “invisible resources” (e.g. skills, knowledge and motivation of organizational actors) are seen to be more important in this context than the “visible resources” (e.g., data, hardware and the software in use) they also create and maintain. This leads us to the evaluation of organizational resources and their coordination to support learning process. The abilities to use and manage IS are not alone sufficient. In relation to such abilities we have to understand how they are integrated, communicated and utilized (Nordhaug & Grönhaug, 1994; Weick, 1993).

The objective of this study can be expressed in the following research question: How can the Information Systems Strategy process be embedded into a continuous experiential learning process? To answer this question, an approach is presented to link the experiential learning cycle and ISS process. The adopted learning perspective emphasizes the internal issues i.e. organizational abilities to use and manage IS.

This paper is organized as follows: the concept of an ISS as a part of the continuous learning process is outlined. Secondly, a case study based on the learning concept is described. Finally, the research findings are discussed.

**IS Strategy From the Experiential Learning Perspective**

In organizational settings, strategy and learning have a dualistic role to play in IS management and use. First of all, strategy formulation is a learning process where management itself is a learning unit. It therefore needs multiple views from different stakeholders (i.e. individual level mental models) and their interaction to achieve common goals (i.e., shared mental models at organizational level) (Kim, 1993). Here it is argued that the strategy process can be used to build shared mental models and to improve managerial abilities. The formation of strategy requires double-loop learning (Argyris & Schön, 1978) at managerial level. In organizational settings, practices exist which raise barriers against learning. Argyris (1990) called these barriers organizational defensive patterns. Overcoming organizational defensive patterns is more the duty of management than personnel because it requires the ability and power to change organizational structures or organizational norms.

Secondly, strategy is seen as being important for the direction of learning in organizational settings (Dodgson, 1993). It is management’s responsibility to direct and support individual and organizational learning; strategy can be communicated to the organization to give this direction. After all, the success of strategy depends on its implementation i.e., strategy communication and execution. In this context strategy implementation is seen as a learning process at middle manager and personnel levels. At the users level, the process of adopting IS requires learning to understand the potential of an innovation in the work situation and taking action to assimilate an innovation. The nature of learning such as this is mainly single-loop, an error-detection-and-correction process which permits the organization to continue with its present policies and achieve its current objectives (Argyris & Schön, 1978). On the other hand, users have to continually seek opportunities to improve their work and should suggest new tools to be implemented. The recognition of possibilities requires organizational and IS knowledge and abilities to combine them. Users should at least make suggestions about whether an innovation should be adopted or not. This process requires a higher level of learning (i.e., double-loop) as the employee has to understand how to alter current practices.

Here, it is seen that a continuous learning process can be supported by the formation of an ISS, based on the idea that a need exists in many circumstances to put together a project for a more thorough analysis of the situation (Reponen, 1994). Such an approach could be based on Kolb’s (1984) scientific inquiry process— (see Figure 1, inner circle). The outer circle presents the phenomenon of IS strategy formation embedded into the continuous learning process. It consists of the following process phases: 1) analyzing; 2) planning; 3) implementing and organizing; and finally 4) constant management of IT. Next, we go on to describe the process phases and their nature. Further, we suggest practical methods developed to support the process.

**Signals for ISS Formation Process**

The need for change (i.e. a signal) and establishment of an ISS formation process may originate from changes in the business environment, Information Technology possibilities or organizational issues. The business environment signal may originate from changes in competitive forces (see Porter, 1985) or state regulations. Radical changes in IT possibilities may offer new potential or threats for the company and thoughtful analysis may be needed to understand their importance to business activities and the role IS should play. The organizational issues may evolve from e.g. insufficient overall internal efficiency, a limited understanding of the potential of information technology within the organization or a low level of ability to integrate IS into work processes. Further, the need for an ISS formation process may evolve from changes in organizational structures. For example, changes in centraliza-
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