Using Information Technology to Implement Strategic Systems Planning as a Knowledge-Based Group Support Process

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“Strategic systems planning” has been proposed as a means of achieving the full potential of strategic decision support systems (SDSS) (King, 1983, 1988). It is a systematic method which can be used by strategic managers to explicitly derive a statement of an organization’s overall strategy as well as of an organization’s SDSS strategy. This paper describes how knowledge-based support for strategic systems planning can be implemented using current information technology and utilized by organizational planning groups. Central to the implementation of this approach is the interaction between strategy set developers (who act as experts in developing strategy statements), a knowledge engineer, and an inference engine. Use of the inference engine to ensure the logical consistency of managers’ thought processes is a primary benefit of this approach. In addition, the approach indirectly supports the creative thinking of managers by requiring that underlying assumptions in reasoning be explicitly identified and tested in the context of the organization’s planning environment.

Knowledge-based Systems and Strategic Planning

In contrast to functional areas of business activity such as accounting and finance, the development of knowledge-based systems in support of the strategic planning activity has progressed slowly, though instances of expert systems development for strategic planners in ill-structured problem contexts have been reported (Goul, 1987; Reitman, 1987). The reason for this slow development is due in part to the nature of strategic planning as a managerial problem domain. Compared to typical expert systems problem domains, managerial problem domains are generally less structured, involve more creativity, and involve evolutionary factors relating to organization-specific contexts (Dhar, 1987). The expertise needed to develop knowledge bases for strategic expert systems must come from the existing management representing diverse interests within the organiza-
tion, each of which may well reflect only a partial view of what the organization is and where it may be headed in the future. Any attempt to develop knowledge-based systems support for strategic planning must successfully deal with this diversity of organizational interests in the context of a planning environment favorable to formal long range strategic planning.

King (1983) proposed the concept of “strategic systems planning” (SSP) as a means of achieving the full potential of strategic decision support systems (SDSS), i.e., computer-based systems directed at supporting strategic decision making. To ensure that the design of SDSS is consistent with the needs of an organization, SSP requires a fundamental two-step process: (1) an “organizational strategy set” is developed by planning managers which is a statement of an organization’s clientele analysis, mission, objectives, business strategies and other strategic attributes; (2) on the basis of the organizational strategy set, a “systems strategy set” is derived which is a statement of an SDSS’s mission, objectives, constraints, strategy and design-development process (Figure 1). This two-step process is an instance of the more general process of deriving an organization’s information resources and information systems strategy from its business strategy (King, 1988).

SSP is a systematic method which, when properly implemented, results in an explicit statement of an organization’s overall strategy as well as of an organization’s SDSS strategy. Since a statement of strategy is so critical to an organization’s direction and smooth functioning in the pursuit of improved performance, it is imperative that nothing be unclear or ambiguous in the statement of strategy such that the statement could lead to confusion, disagreement, or discord in the implementation of a chosen strategy. This is particularly important in the case of SSP since two strategy sets are involved, one of which is used to derive the other.

It should be noted that prior to the planning managers’ group activity of generating a statement of the organizational strategy set, there is no formally stated knowledge base of information concerning future organizational strategy. The “knowledge base” exists only in the minds of the planning managers involved in the group process. Eliciting and organizing this mental storehouse of knowledge to develop the statement of the organizational strategy set is a critical function of managing the group process successfully. The strategy sets represent the pooled expertise of the planning managers, and may be viewed as organization-specific knowledge bases to be used in the development of knowledge-based systems in support of organizational planning (Szewczak, 1988). These knowledge-based systems may be thought of as the basis for expert systems which contain statements of current managerial insight and expertise and which offer logical advice to a group of managers involved in long range planning (Turban & Watkins, 1986).

**Logic and Creativity**

![Figure 1: Strategic Systems Planning](image-url)