Computer Supported Complex Strategy Process: A Dynamic and Multicriteria Group Support System

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Abstract

We establish a versatile framework for building a strategic decision support system that integrates advances in a corporate-wide simulation, Group Support System, and hierarchical evaluation procedure. The ideas of the management team about organizational goals, objectives or strategies can be captured by the Group Support System. During the GSS sessions the mental models of the participants are shared among team members. The corporate-wide simulation model encourages the participants to establish long-term views of policy and strategic issues, to integrate the different functions of the company and to look at the company holistically.

Perhaps the most important advantage of the approach is that the system provides the strategic management with new opportunities for learning through conceptualization, discussion, and experimentation. The Group Support System supports the integration of the diverse knowledge, opinions, values, and judgments of the participants. Through the methodological integration the hierarchical evaluation procedure helps to find the effective solution in a simulation context. The contemporary views of organizational goals and objectives are balanced by a hierarchical evaluation procedure.

1. Introduction

Strategic management is regularly faced with new challenges from competitors, suppliers, changes in industry structure, mergers, etc. These challenges are characterized for example with a short response time, high turbulence and uncertainty, controversial goals, and global perspective. As an internal response to the challenges of strategic management, the strategy process has changed to a continuous, full time, participative, management process.

Fortunately, recent advances in information technology offer great opportunities to support strategic planning processes, particularly in the field of Group Support Systems (GSS), interactive simulation systems, and Decision Support Systems (DSS) in generally. A DSS is an information system that combines models and data in an attempt to solve even nonstructured problems with extensive user involvement (see for example [14]). Today it is possible to develop support systems that meet the diversified challenges of strategic management. A Group Support System is especially intended to support decision process in groups. It is possible to replicate the key characteristics and behavior of an object system by simulation. However, the developed systems seem to support only a particular phase of the strategy process, specially the initial information gathering phases. Intelligent agents [5], for example, can be used to support the scanning, filtering, and interpreting of strategic information that is then used in the strategy process. On the other hand, the Analytic Hierarchy Process [10] supports the choice phase of the strategy process. Although there are some attempts to integrate different tools [15] there is still a need for a conceptually sound, integrative framework and, specially, for concrete support systems based on that framework.

In this study, a general framework is presented for building a strategic decision support system that integrates advances in a corporate-wide simulation, group support systems, and hierarchical evaluation procedure. We have constructed and integrated a set of tools that supports the essential needs of the strategic management and supports all the phases of the strategy process. The forest industry is employed to illustrate the application of the approach.

Below we first discuss conceptually what to include in the strategy support system and how to support strategic management, and then we present a real forest industry case.

2. Supporting the Complex Strategy Process

The purpose of this chapter is to incorporate conceptually the strategic planning and analysis and the support systems intended to support those activities. The