A Decision Support System for Project Portfolio Selection

Abstract

A decision support system (DSS) is developed to help managers select the most appropriate sequences of plans for product research and development (R&D) projects that have strict constraints on budget, time, and resources. The primary objective of the DSS is to provide an optimal combination of R&D projects. The DSS consists of several subsystems, each of which has a specific function. At the core of the DSS are a cost model, which covers time-cost tradeoff analysis, and a strategic selection algorithm, which, based on dynamic programming, provides an optimal development plan for managing R&D projects. A working board supports an interactive environment between managers and the DSS. A data checking system eliminates inconsistent data and plans in advance. This paper identifies key issues in the arrangement of R&D projects and describes various systems that have been interlinked to make the DSS a success. It also reveals that the DSS can be expanded to a decision support system shell to support similar types of problems.

Author Keywords: Decision support system; Research and development; Portfolio selection