Lai, Kris (1996) The Design and Implementation of a Project Planning and Control System in a Multiproject Environment, Ph.D Dissertation, UMIST, UK.

Abstract

This Thesis describes the design and implementation of a computer-aided project planning and control system within Wormald Ansul (UK) Limited. The work is an academia/industry collaborative project conducted through the Total Technology programme at UMIST. The study first examines the company's project management system and the performance of past projects. A post project review, and a multicritera decision making technique, is applied to identify existing problems, prioritise alternative solutions, and provide recommendations for the improvement of the company's project management performance.

The study next reviews the theories and methodologies of multiproject management and its information requirements. The results suggest that an effective multiproject resource planning system, simple project management techniques, the use of PC-based software packages, and effective training on project management knowledge and skills, are the key solutions to the problems of managing multiple projects. A survey of existing project management software is therefore conducted, and a methodology for software selection developed. Subsequently, a suitable software package is selected for the company's system implementation.

The study further identifies the opportunities for simplifying software applications, via the integration of the user's planning and control methods, with the software operating procedures. This results in the design of an interactive program, named Hands-On Wizard, that provides powerful functionality for simplifying software applications and enhancing the effectiveness of software training. Hands-On Wizard is a knowledge support system developed to standardise, automate and customise the operations of a computer-based project planning and control system. The advanced decision-support functions provided are capable of analysing multiproject scenarios, performing status tracking and diagnosis, and generating standard reports. Lastly, the methodologies and training programmes for implementing the project planning and control system are developed and undertaken, together with an evaluation of the effects of the actual on-site implementation.