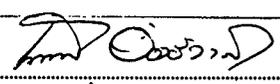


C716717 MAJOR INDUSTRIAL ENGINEERING
KEY WORD: AHP/MULTI-CRITERIA DECISION MAKING/R&D PROJECTS/EVALUATION
NOPPADOL HORTHIWONG : EVALUATION CRITERIA FOR RESEARCH ,
DEVELOPMENT AND ENGINEERING PROJECT PROPOSALS FROM THE
INDUSTRIAL SECTOR. THESIS ADVISOR: ASSO. PRO. CHUVEJ
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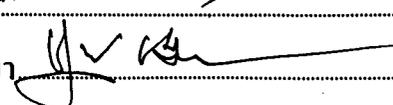
The objective of this thesis is to identify the appropriate criteria for decision-making in a government agency that supports research, development and engineering projects in the industrial sector. The case study was selected from a government agency. The study started with a survey of foreign agencies with similarities to that in the case study, an interview of the project evaluating committee, and observations of the project evaluation meeting. The decision criteria obtained were divided into groups based on theoretical considerations and the decision structure determined according to the Analytic Hierarchy Process (AHP). The criteria were divided into two sets, the first set being to screen the proposals before project evaluation and the second, to evaluate the projects that passed the screening process. The latter set of criteria may be divided into two main criteria. (1) potential of the project which consists of (a) potential of the company that proposed the project and (b) potential of the technology in the project and (2) benefits of the project which consists of (a) technology development benefits (b) financial benefits and (c) social benefits. In order to test the software and the sample projects by this decision structure, the next step was weighing the importance of the evaluation criteria by pairwise comparisons. From the results, the project evaluating committee, on average, found that the importance of the potential of the project was close to importance of benefits of the project. Applying the same procedure to the two subcriteria under the project potential criterion showed that the potential of the company that proposed the project was more important than the potential of the technology in the project. As for the subcriteria under the project benefits criterion, it was found that the technology development benefits subcriterion was most important, while the financial benefits criterion was close in importance to the social benefits. This decision structure was applied to the case examples. When the committee was asked of its opinion concerning this decision-making process, most members responded that AHP and the criteria used to evaluate the project produce results that conform to the results obtained when not using AHP, and it is a very good decision-making process.

Although the result of weighing the importance of the criteria may not be used in general since the sample size is small and the results are statistically insignificant, it may be concluded from this research that AHP is a good method in evaluating the research, development, and engineering project proposals.

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