科技企業新設備技術移轉評選決策模型建構之初探

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摘要

With the rapid transition of industrial structure, the product life cycle is shortening continuously. In order to compete against competitors in the fierce market, a firm has to keep developing new technology and product to differentiate itself from others. The installation and operation of new equipment is an outcome of new technology development, and the manufacturing capacity and competitive edge can be increased as a result. For the capital investment in production, the acquisition of new core-technology equipment is the most important. In addition, the technology know-how of the equipment must be transferred completely from the equipment supplier to the engineers and operators of the firm, so that machinery breakdown rate can be reduced effectively and the company profit can increase substantially. Therefore, a proper evaluation and selection of new equipment and its critical technology transfer is essential for the firm to gain its competitive edge. The objective of this paper is to explore the technology transfer of equipment and to establish a comprehensive evaluation model by considering critical influence factors. Influence factors for technology transfer of new equipment are first collected by literature review and interview with related experts in the industries. Delphi method is applied next to select the most critical factors. Then, based on analytic network process (ANP), the feedback and interdependency among the critical factors are analyzed by the experts through group decision making, and an evaluation model is constructed. Because human decision making process involves ambiguity and uncertainty, fuzzy theory is incorporated into the model. The results of this study should provide a base for firms to evaluate the purchase of new equipment and a reference to equipment suppliers to strengthen their technology transfer process to their buyers.

關鍵字：Technology transfer, Evaluation decision model, Fuzzy analytic network process