

An evaluation model of buyer-supplier relationships in high-tech industry-  
the case of an electronic components manufacturer in Taiwan

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Abstract

With globalize market, fast changing technology and shortening product life cycle, businesses are becoming extremely competitive, and a cooperative buyer-supplier relationship is essential for a manufacturer, especially in technology-related industry, to survive and to acquire reasonable profit. Even though the research on various types of collaborations between firms is abundant, the research that provides a mathematical model for the selection of the most appropriate relationship form is very limited. The main objective in this study is to base on an electronic components manufacturer in Taiwan to propose an analytical approach to evaluate the forms of buyer-supplier relationship between the manufacturer and its supplier. A model, which applies the analytic network process (ANP) and the benefits, opportunities, costs and risks (BOCR) concept, is constructed to consider various aspects of buyer-supplier relationships. Multiple factors that affect the success of the relationship are analyzed by incorporating experts' opinions on their priority of importance, and a performance ranking of the buyer-supplier forms is obtained. The results shall provide guidance to select the most appropriate form of relationship between the manufacturer and its supplier. The proposed model is systematic, and it is easy to be understood and applied by the management. The model can be tailored and applied by firms in various industries that are making decisions on buyer-supplier relationship.

Keyword : Buyer-supplier relationship, Core technology, Analytic network process, Performance evaluation, BOCR