AN INTEGRATED INTERPRETIVE STRUCTURAL MODELING-FUZZY ANALYTIC NETWORK PROCESS-BENEFITS, OPPORTUNITIES, COSTS AND RISKS MODEL FOR SELECTING TECHNOLOGIES

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Abstract

Technology evaluation has been increasingly important because of the pressing needs of new product introduction in a competitive global market. To select the most appropriate technology, a firm needs to have a robust technology evaluation framework to evaluate several technology candidates based on multiple criteria and evaluated by multiple experts. Thus, this paper presents an integrated model for evaluating various technologies for NPD. A network that takes into account the benefits, opportunities, costs and risks (BOCR) aspects of different technologies is constructed first, and interpretive structural modeling (ISM) is applied next to determine the interrelationships among the factors. Finally, fuzzy analytic network process (FANP) is used to facilitate the evaluation process of decision makers under an uncertain environment with interrelated factors. The proposed model is applied in a flat panel manufacturer in selecting the most suitable panel technology.

Keyword：Interpretive structural modeling (ISM); fuzzy analytic network process (FANP); benefits, opportunities, costs and risks (BOCR); technology selection; flat panel.