

A model for selecting technologies in new product development

李欣怡, 康鶴耀, 張兆晟, 康漢松

Technology Management

Management

amylee@chu.edu.tw

Abstract

Due to fast changing technologies, shortening product lifecycles and increased global competition, companies today often need to develop new products continuously and faster. Successful introduction and acceleration of new product development (NPD) is important to obtain competitive advantage for companies. Since technology selection for NPD involves complex decision-makings that are critical to the profitability and growth of a company, the selection of the most appropriate technology for a new product requires the use of a robust decision-making framework capable of evaluating several technology candidates based on multiple criteria. This paper presents an integrated model that adopts interpretive structural modeling (ISM) and fuzzy analytic network process (FANP) to evaluate various different available technologies for NPD. The ISM is used to understand the interrelationships among the factors, and the FANP is to facilitate the evaluation process of decision makers under an uncertain environment with interrelated factors. A case study of a flat panel manufacturer is performed to examine the practicality of the proposed model. The results show that the model can be applied for group decision making on the available technology evaluation and selection in new product development.

Keyword : new product development (NPD), interpretive structural modeling (ISM), fuzzy analytic network process (FANP).