An integrated evaluation model for new product development

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Abstract

Successful introduction and acceleration of new product development (NPD) is an important source of competitive advantage, survival and renewal for firms in today's globalize competitive market. How to develop products that deliver the quality and functionality customers demand while generating the desired profits becomes increasingly important. In this paper, quality function deployment (QFD) is incorporated with the supermatrix approach of analytic network process (ANP) and the fuzzy set theory to calculate the priorities of engineering characteristics (ECs). Fuzzy goal programming is applied next to consider multiple goals in NPD to select the most suitable ECs. A case study of the product design process of a thin film transistor liquid crystal display (TFT-LCD) manufacturer is carried out to verify the practicality of the proposed model.

Keyword：New product development (NPD), quality function deployment (QFD), fuzzy analytic network process (FANP), fuzzy goal programming