Preliminary study of a fuzzy integrated model for new product development of TFT-LCD

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Abstract

TFT-LCD industry is currently one of the most brilliant industries in Taiwan. However, as the global TFT-LCD industry enters the mature stage, an extremely competitive and cost-cutting war is foreseeable. While providing the products with a lower cost, better quality at the right time and place is important for Taiwan's TFT-LCD manufacturers, new product development (NPD) is essential to maintain a competitive edge and to make a decent profit in a longer term. Therefore, how to develop products that deliver the quality and functionality that the customers demand while generating the desired profits becomes an important task for the manufacturers. In this paper, a model that incorporates quality function deployment (QFD) and fuzzy analytic network process (FANP) is built to solve the NPD problem in TFT-LCD manufacturing. Since people are not willing and capable to handle comparisons properly when there are too many factors, fuzzy Delphi method (FDM) will be used first to limit the number of factors included in the model. In considering the impreciseness and vagueness in human judgments and information, and the interrelationship among factors, a QFD model incorporated with FANP will be constructed to facilitate the NPD process.

Keyword：new product development (NPD); quality function deployment (QFD); fuzzy analytic network process (FANP); TFT-LCD.