

An intergrated model for product design: A case of TFT-LCD

李欣怡, Chun-Yu Lin

Industrial Engineering and System Management

Management

amylee@chu.edu.tw

Abstract

The topic of improving competitive edge to meet rapidly changing technological innovations and dynamic customer needs is important for the survival and success of the companies in the globally competitive markets.

Successful new product development (NPD) may lead to a source of new sales and profits; therefore, the development and manufacturing of new products that deliver the quality and functionality customers demand becomes an important task for generating a decent profit for the manufacturers. In this paper, an integrated model for product design is constructed for facilitating the product design process. Through literature review and interview with domain experts, lists of customer attributes (CAs) and engineering characteristics (ECs) for TFT-LCD are prepared first. Fuzzy Delphi method (FDM) is used to select CAs and ECs, and interpretive structural modeling (ISM) is adopted to determine the interdependences among CAs and among ECs. The results are then used to construct a house of quality (HOC) for quality function deployment (QFD), which is incorporated by fuzzy analytic network process (FANP). A case study of the product design process of thin film transistor liquid crystal display (TFT-LCD) in Taiwan is carried out to verify the practicality of the proposed framework.

Keyword : None