An Application of Analytic Network Process and Quality Function Deployment in Improving the Quality of Digital Video Discs

王文良,陳運達,陳彥銘
Information Management
Computer Science and Informatics
abewang@mi.chu.edu.tw

Abstract

Taiwan is one of the most important DVD manufacturing countries in the world in which there is about 64 percent of the DVD being made in Taiwan in 2008. However, under the increased demand of DVD, the quality of blank DVD is not as good as expected. For the consumers, not only bad quality of DVD would cause inconvenience in data storage, but also in data retrieving; as for the manufacturers, bad quality means bad reputation and along with less profit. Therefore, quality is an important issue for both of the DVD manufacturers and their customers. In this paper, we first applied Fuzzy Delphi Method (FDM) to build up the constructs and criteria for measuring the quality of DVD, to obtain the most important factors reflecting the quality issues. And then we deployed Analytic Network Process (ANP) to prioritize the important degree for each criterion and analyze it with the Quality Function Deployment (QFD). The results of this paper revealed that, from the point of view of customers, the top three factors (1) the price of DVD, (2) when being burned in the writer, it will not be interrupted for any reason, and (3) it is highly compatible with CD/DVD player, are the most important criteria for DVD; as for the manufacturers, (1) dye coating, (2) the process of making stamper, and (3) the process of injection-compression molding, are the top three related technical requirements corresponding to those of customers' requirements.

Keyword：Quality of DVD, Fuzzy Delphi Method, Analytic Network Process, Quality Function Deployment