

# Integrating QFD and ISM to establish a product family

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## Abstract

The studies related to product design and customer's need have always been one of favorite issues for manufacturing industry and original design manufacture. It is not only because the issues include the product developing and planning, but also involve both concepts of enterprise sustainable development and knowledge management. There are quite a few experts point out that "To find out what the customers want and do what the customers need that only access toward sustainable development." Hence, to meet the need of customer and offer the products which customer's need has been a major priority for product design manufactures. Nevertheless, the product design process to meet the diverse needs of customer always consumes extra working hours, costs and human resources. However, these approach for research and design also cause the complicity during manufacturing process, and eventually lower down the reward from the product. Therefore, this study is applying quality function development (QFD) to understand the correlation between customer's need and product design. In addition with interpretive structure model(ISM), the priority sequence and correlation of these design elements will be figured out. The purpose of this study is to establish a product family which can satisfy various market need and share designing elements. It is to reduce the repeated design and cut off unnecessary cost and time. Hence, designer can sufficiently meet various markets and customer's need. Moreover, company can open up more markets for its bigger profits and advantages. To conclude, this study will take example of "the market need and product redesign of Bike" to deliver clear idea of the approach.

Keyword : Product Family, Customization, Quality Function Development (QFD), Interpretive Structure Modeling (ISM).