UNIVERSITI TEKNOLOGI MARA

AN INDUSTRIAL DESIGN PRACTICE USING RAPID PROTOTYPING: A CASE STUDY

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ABSTRACT

An Industrial Design Practice using Rapid Prototyping: A Case study.

The production of a prototype is a critical step in any production and design process. Prototypes are necessary for determining tooling considerations, aesthetic evaluations, and design verification. In the past, prototype parts required weeks, even months, of high-cost machining, hand modeling, and manual drawings and layouts. With the new technology of Rapid prototyping (RP) provide solution in competitiveness. Rapid prototyping, in its generic sense, should be referred to as manufacturing processes that can create prototype parts rapidly. The purpose of this research is to documenting a case study on product development that uses rapid prototyping service. From this study also the researcher need to see the involvement of industrial designer in the development process in producing prototypes which required by the client, Tellinx Sejagat Sdn. Bhd.

There are two main research questions to be answered in the case study. One is to establish how that RP could contribute towards enriching the design process in industrial design activities locally and to find what are the challenges that emerge when local industrial designer applies RP in the industrial design process.
The case study identifies the significance of rapid prototyping in industrial design in Malaysia. If RP is needed in the local industry, the analysis on the involvement of industrial designers in RP will reflect how the local industrial education could contribute.

This area of study was examined using both qualitative and quantitative analyses obtained from primary and secondary data. Specifically, primary data used questionnaires which samples were drawn from fifty-three local industrial design practitioners and academicians. The secondary data was gathered from various statements on design process and prototyping in the literature review. The researcher used qualitative method that applies participant observation. He was given tasks to develop products from design to prototyping. To analyze the involvement of the local industrial designer in RP, the researcher used interviews and questionnaires to support the findings. At the end of the case study it shows that the interview and survey data strongly indicate that rapid prototyping is considered as an important tool and has a positive impact for the design process and ultimately the market. In this research, the researcher successfully fulfilled the tasks given which to develop products from design to prototyping.