

An Overview of Product Design Evaluation Methods and Techniques

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Abstract:

The study covers a brief outline on extensive product evaluation methods and techniques from discipline literature and best worldwide practices to overcome design problems and to develop the resources needed to maintain production development. Validated design evaluation methods are identified that help product development optimize its designs to monitor compliant design processes and provide timely, cost-effective solutions and meet safety, customer, and legal requirements. The study is structured to view the state-of-the-art on product design processes evaluation, product design evaluation issues, methods and techniques.

Research problem: Design evaluation is tool to minimize the gap between design concepts and the actual realization of these concepts and improve the efficiency of the design process by reducing uncertainty. Evaluating existing products sharpens market strategies. It plays a critical role in determining the time to market and increases the likelihood of success in product development. Design evaluation can be carried out at any stage of the design process, from concept generation through production. Therefore, it plays a major role in providing a convenient and most efficient product to the targeted consumers. The problem of the current study can be summarized in; What and to what extent can product design evaluation methods be employed to enable designers achieve their goals in design.

Research objectives: The aim has been to develop a multifaceted investigation and a deep understanding of current and future product design evaluation methods.

Research Methodology: To achieve the above goal, the research followed a deductive approach to identify some major factors contributing to structure of evaluation methods concepts of research through the literature that dealt with these topics and the role of designers in this area, then the inductive approach was used to study and analyze some international and Egyptian case studies.

Results: The results of this study can be used as a useful tool to help designers, industry professionals and academics working in either product design or product evaluation sectors such as design students and design assessors, project and product managers, and researchers, teaching academics to further improve the completeness, consistency, and creation of an accurate and modifiable product design. The conclusions summarize the main results and open future work avenues.

Keywords:

Product Design Evaluation, Human-Centered Design, User Experience, Qualitative Evaluation, Quantitative Evaluation Evaluation Methods

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