

Environmental scenario as approach for achieving sustainability in product design

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Abstract:

Scenario is one of the most effective design tools and methods used to predict areas of success and failure in product design, it gives predictions about the life cycle and trajectory of the product during each stage, as the scenario is a futuristic tool that gives indications of future events during each stage of the product lifecycle, So the importance of using scenario in product design and especially the most environmentally friendly products appeared, So that there is a kind of scenario called Environmental scenario, which deals with environmental impact assessment at each stage of the product life and the expectation of results whether positive or negative; So that it becomes a tool for achieving sustainability in product design, By charting the life of the product, taking into account environmental considerations and requirements to achieve sustainability is one of the tools needed and helps, where the environmental scenario is capable of describing how the product will be treated at every stage of the product life cycle, what the impact of those phases is and how this can be controlled, and the process of analyzing and evaluating the environmental impact of the product can be predicted using the environmental scenario.

The environmental scenario is one of the relatively modern design methods that is important in predicting the future of the product and the stages of its life cycle; Where the environmental analysis is carried out

And thus the expected environmental impact assessment of the product is evaluated during each stage of its life cycle. Subsequently, many negative environmental problems resulting from the design of the product can be avoided at any stage of its life, thus demonstrating the importance of integrating the environmental scenario into the product design process.

In the previous research study, the importance of the environmental scenario was emphasized in achieving sustainability in product design and the importance of integrating the environmental scenario in product design processes to develop a future perspective on the environmental impacts of the product during its life cycle. The results of the research are as follows:

The importance of design using the scenario in general and the environmental scenario especially to deal with environmental problems and finding solutions in designing the product during his life cycle.

The importance of taking into account the environmental scenario as one of the tools of sustainability in product design.

Emphasize the importance of the environmental scenario in the processes of analyzing and evaluating the environmental impact of the product during all phases of its life cycle.

The importance of studying the environmental scenario and its components and types and how to use it and integrate it in the product design processes.

Building a new trend in design is a scenario-based design.

The role of the environmental scenario in the development of sustainable products is clarified by integrating the environmental scenario in achieving environmental suitability during the product life cycle of the different stages, which raises awareness among industrial designers of the importance of using the environmental scenario as one of the modern methods used in product design and development.

Keywords: Environmental scenario, Sustainability, Product design, Product lifecycle, Eco-design.