

# The Industrial Designer Role in Reducing the Economic & Environmental Damage Resulting from the Rapid Replacement of Products

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## Abstract:

In the past few years, the world has witnessed rapid and unprecedented development in all areas of life, especially the fields of basic and applied sciences, the most prominent of which are production techniques and raw materials, represented by modern production methods and raw materials; Which led to the development of generations of products that are still under their shelf life, because these modern generations bear the digital character and the feature of intelligence; Which led to the end of the life cycle of previous generations, despite being usable, and performing their basic functions efficiently. This is considered a huge waste of resources of all kinds, as well as harming the environment, especially in light of the global trend towards sustainability.

As the industrial designer is one of the stakeholders of the system of adding products to the world markets; He takes upon himself to find appropriate solutions to keep pace with the rapid replacement of products with the least possible economic and environmental damage.

The research aims to determine the role of the industrial designer in reducing the economic and environmental damage resulting from the rapid replacement of products through:

1- Proposing a set of solutions that would increase the useful life of the products, and renew the use of previous products whose life cycle has already ended.

2- Develop new design considerations that serve as a guide for industrial designers to design products with a long and renewable life, and these considerations are added to the recognized basic design requirements and considerations.

The research followed the deductive approach, and its results came with a proposal for a set of solutions that are activated during the entire life cycle of the product leading to the reduction of its rapid replacement, in addition to developing design considerations aimed at designing products with a long useful life, and also characterized by the possibility of reusing them again in a new function.

## Keywords:

Innovation management; innovation management techniques and tools; innovation

## Introduction:

Technological progress in our current era has a great impact on all aspects of life, and man must keep pace with that progress in order to benefit from its advantages, and also to avoid its negative effects, especially in the field of designing and producing life products that meet the daily needs of people and guarantee them help, safety, comfort and well-being. In this field, the role of the industrial designer is evident, who bears the responsibility for innovating and

designing these products, taking into account the optimal utilization of the current technological progress, and avoiding all its damages.

### **Problem of the study:**

Markets and homes have become crowded with products belonging to successive generations and all of them perform similar functions, and are alternative to each other, which makes them a real burden on the environment because it is difficult to get rid of them permanently, and it is also considered a great waste of resources of all kinds of raw materials, operating energy, and consumption of production lines, And the operating time, and the efforts of all work teams that contributed to its design, production and marketing, in addition to the material consideration that the user costs.

There are many reasons for the emergence of this serious problem, **which is considered an actual phenomenon, and the most important of these reasons are:**

- 1- The unprecedented scientific development in all fields of life, especially the fields of basic and applied sciences, the most prominent of which are modern production technologies and raw materials, which helped in the emergence of innovative digital and smart products that carry innovative and effective usability and functional values; Which led to its acquisition and use instead of its previous counterpart.
- 2- The tremendous progress in communication and information transfer technologies, which has transformed the world with its impact into a single society in which innovations are transmitted in all areas of life within a few minutes of their appearance, which made the best use of these basic and applied scientific researches; And the consequent succession of the emergence of innovative products continuously.
- 3- The globalization of markets in the current era. Since buying and selling through the Internet made it possible to easily and conveniently acquire products available in all countries of the world.
- 4- A person's constant aspiration to obtain the highest level of luxury makes him not burdened with the exaggerated material cost in exchange for acquiring products that provide him with this luxury, despite the fact that he already possesses similar ones.
- 5- The change in values and social culture worldwide; It led to a significant change in concepts and considerations, and then human behavior, in terms of cultures of acquisition, dispensing, use, evaluation, and other considerations that affect the decision to replace current products with their newly created counterparts.
- 6- The multiplicity of competing companies in the same field, each of which seeks to outperform its counterparts in the global markets by providing products that are more superior in function performance, ease of use, and attractive appearance, with a competitive price; This leads to the rapid emergence of successive and sophisticated generations of the same products, which end the life cycle of their previous counterparts.

### **Significance of the study:**

- 1- With regard to the community: The importance of research for the community is represented in proposing solutions that help reduce the economic and environmental damage resulting from the rapid replacement of products.

2- With regard to the industrial designer: The importance of research for the industrial designer is due to activating his role in finding suitable solutions to keep up with the rapid replacement of products with the least possible economic and environmental damage, as he is one of the cadres of the system of adding products to global markets.

### **Objective of the study:**

The research aims to clarify the role of the industrial designer in reducing the economic and environmental damage resulting from the rapid replacement of products, through:

- 1- Propose a set of solutions that will increase the useful life of the products, and renew the use of previous products, whose life cycle has already ended.
- 2- Developing new design considerations that serve as a guide for industrial designers to design products with a long and renewable use life, and these considerations are in addition to the generally accepted basic design requirements and considerations.

### **Methodology of the study:**

The research follows the inferential method.

### **Recommendations:**

The research recommends the following:

- 1- The concepts of industrial design must be updated in light of the reuse of products after the end of their life span.
- 2- A design task must be added to the tasks of the industrial designer, which is to find solutions and suggestions for the reuse of all products that he participates in designing after the end of their main life cycle.
- 3- Usage awareness must be spread to preserve products from damage resulting from misuse.
- 4- The user's awareness of the importance of limiting the economic and environmental damage resulting from the rapid replacement of products must be increased.

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