

**Overcome the difficulty of usage problems in high-tech products****Assist. Prof. Dr. Osama Ali El Sayed Nada****industrial design dept.- faculty of applied arts- Benha university- Egypt**[dr.osamaalinada@gmail.com](mailto:dr.osamaalinada@gmail.com)**Dr. Mahmoud Elgazzar****Industrial design dpt., faculty of applied arts, Benha university, egypt**[mahmoud\\_elgazzar2005@yahoo.com](mailto:mahmoud_elgazzar2005@yahoo.com)**Summary:**

The technological development and successive technological revolutions have led to the emergence of a wide range of devices and products known as high-tech products. Designers are continually developing to meet the many different user needs with ease and perform the tasks for which they are designed with minimal time and effort.

This technological development had a major impact on changing product features, especially in the use phase. Although the use of these modern technologies in products has been an effective contribution to the process of adding new value to them, it has contributed to making the product that is used by that technology contains a wide range of products that can be dispensed with by having only this one product, The company has also been able to provide a range of services to the customer, and has been able to provide them with a range of services. The growing gap between these products and their users requires rapid awareness and reduction through a proposed strategy that reduces the gap between those high-tech products and users, including different themes that included the inclusion of users in the processes and stages of designing and developing those products, by applying user experience, usability, user centered design, and making standard user configuration, and user-style development.

**Key words:**

High-tech products, difficulty of use, user experience, usability, user centered design.

**Introduction:**

As the product development process progresses, especially with the successive technological revolutions, this has great impact in changing product features, especially at the usage stage, because this phase of the product's life cycle is so important that it is the longest time-frame in the life cycle, using high technology has a clear impact on adding multiple product features that enable it to perform the tasks for which it was designed more efficiently and effectively.

The use of modern technologies adds new value to these products, which has contributed to make the product, which is based on that technology, contain a wide range of products that can be dispensed with by acquiring this product only. The most popular example is a mobile phone, which performs many tasks in addition to its primary function for receiving and sending calls, using it as a means of knowing the time that can led to get rid of using hand clock and using mobile phone instead of of a PC.

The use of high technology and its inclusion in product design has led to the addition of new values for these products, but users have difficulty working with them and understanding their functions easily as a result of the complexity of their system, because of the lack of interest in the user's culture, educational level, activities, customs and traditions. The first time that the first person has been able to do so, the first person to do so is to be able to do so.

**Research's issue:**

The problem of research is that emerging a widening gap between high-tech products and users of those products led to difficulty to operate and handle them, and understood their functions easily. This requires good awareness of this gap and reducing this gap.

**Research's goal:**

Identify the causes, impact and ways of reducing and controlling the gap between high-tech products and users of those products.

**Research's hypothesis:**

If a proposed strategy is developed that reduces the gap between high-tech products and users of those products, it will maximize the benefits of those products, improve their use, increase their life, and achieve effective economic value.

**Research Curriculum:**

Research follows the descriptive analytical approach, by gathering, analyzing, and drawing information to achieve the goal of research.

**Second axis: High-tech products:****1—Product definition:**

The product can be defined from several different perspectives, often by specifying a number of context-based properties or the domain in which they will be used.

**2- Technology definition:**

The word technology derived from Greek word tekhnologia and divided into two parts Techne, meaning art, skill, or craft, and Logia refers to a study of a particular subject.

**3- High-tech products definition:**

Products that involve applying modern scientific and technical knowledge for useful purposes, often requiring high investments in research and development, and depends on the latest digital technologies that enable them to interact with the user through a display that shows a constantly changing range of text or code messages that illustrate different tasks and stages of carrying out the required operations. The user interacts with them on the same screen or through other controls such as handles and buttons.

**4. Main features of high-tech products:**

A number of features of high-tech products have been reviewed, including that they provide proposition value to the user, meet users' needs, and anticipate their future needs.

**5—illustrative examples of high-tech products:**

Examples of a range of high-tech products showing some of the benefits of these products were presented.

**Third axis: The gap between high-tech products and users:****1 – reasons for gap:**

The reasons for the gap and the lack of awareness of it, are due to many reasons, the most important one is that users believe that they are able to use these products, and they can acquiring them.

However, most of the producers of these products did not take this into account in their products. The problem raise when users use these products where, because users have to request assistance to deal with these products, or rely on the trial and error principle that could damage the product or some of its components, and this may led to form negative image of the product may result in a poor product description.

### **The reasons for this can be determined as follows:**

#### **1.1. Design and production are separate from the user.**

Most products, especially high-tech products, are designed and developed without a genuine awareness of the target group that can acquire the product, what are user's characteristics, and what true standards users use to choose between products.

#### **1.2. The difficulty of balancing usage requirements with competitive technological developments.**

This is because designers developing products experience difficults to make products meet user's needs , and Keeping pace with rapid technological development of production standardization, which contributes to faster competitive advantages for investors in these enterprises, is due to the increased value added of the product, which is often accompanied by complications in product use.

#### **1.3. The global single market under international conventions.**

Recent international agreements, the unification and elimination of tariffs among some countries, such as GATT, among others, have indirectly contributed to difficulties for product development research institutions in developing user studies in each market on a market basis. And to identify the nature of users in this market to identify the development features required in those markets and change them from one market to another. Once the product has been out of production lines, it has become difficult to determine the direction of the product globally.

### **Fourth axis: Strategy to reduce the gap between high-tech products and user:**

To reduce the gap between high-tech products and users, a comprehensive and multifaceted strategic plan is needed that will work together to reach the maximum benefit of users in a given period of time.

**First:** Inclusion of the user in the design and development of high-tech products: Due to high-tech products differ significantly from other product categories, in terms of their physical appearance (their combined form, mechanical technology, and controls), and their dependence on precise electronics or information technology for operation, The user must be included in the design and development stages, by considering the aspects of user experience, user experience and design, and the following are described in the following areas:

#### **1- User experience:**

The design of the user experience has recently become the most important process in the design process, with the user experience consisting of both colonial and emotional aspects, such as feelings, attitudes, social value, brand/image.

The user experience is the overall effect that the user feels as a result of their interaction and use of a system or product that includes the impact of colonialism, utility and emotional impact,

taking into account that interaction with the product involves looking, touching, thinking, admiring the product and the product image in the user's mind before trying it.

## 2- Usability :

The usability is a major part of the user's experience, and it is a key part of it .

A good user experience is not achieved without achieving good usability in products.

## 3- User Centered Design:

User Centered Design means methods of design and development of products and systems which based on deep understanding of the user of these systems, which make them more useful and usable.

**Second:** Setting up a standard user profile:

A periodic bulletin, updated at regular intervals with the intellectual, cultural and ideological specifications of users in different communities, should be prepared, along with international product standards in different markets, and should be used in product research and development offices and headquarters when identifying target groups of development processes and their location in the global market. It is being incorporated into the legislation and laws governing world trade.

**Third:** Developing user patterns.

To keep pace with technological development in products by upgrading the cultural and intellectual level of users through the development of courses and focusing on technological and technical aspects of the various stages of education, university, university, technical and technical.

## Results:

- the gap between high-tech and user-intensive products will continue to widen if the causes are not quickly rectify and diminished.
- the user can no longer be denied the right to acquire any product that has its material value, and the designer has to adapt all of its products to suit different users for their differences and diversity.

## Recommendations.

- The user should be included as user centered design and development, especially for high-tech products.
- develop mechanisms and methodologies to enable a strategy to reduce the gap between high-tech and user products.
- develop curricula and regulations at various levels of education to accommodate modern and rapid technological developments in products

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