The Utilizing of Smartphone Applications in Product Development

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ABSTRACT:

The research focuses on taking advantage of smart phone applications as one of the solutions to develop different products by developing processes to control the characteristics of products through the development of programming for those applications to add the advanced characteristics and features of the products periodically. Smart phones are characterized by their small size, direct contact with the user, and their possession of many technical capabilities, and statistics indicate the presence of nearly 5 billion smart phones, and these smart phones contain many applications in various fields. The problem lies in the need to produce many product control tools that are being damaged several times during the product life cycle, and their ability to keep pace with development becomes weak, which limits their ability to satisfy the renewable desires of users, and continuing to develop means of statement and control of products by traditional methods leads to waste resources and energy used in production, and results in many products that operate with high efficiency and the user refrains from them, due to their inability to communicate and fulfill their desires, which constitutes a burden on the environment. The research dealt with traditional and digital display and control systems, how to benefit from smart phone applications in developing products, managing the relationship between the user, the product and the manufacturer, in addition to showing the impact of this on achieving sustainability and reducing the volume of waste resulting from the transformation of many products into waste as a result of their inability to achieve desires of users. Finally, the importance of benefiting from smartphone applications in developing products, satisfying the user's desires personally, reducing the waste of energy used in traditional development processes, and reducing the volume of technical waste.

Key Words:

Product Development, Display and Control Systems, Smartphone Applications.

1. Introduction

The Products development in the third millennium takes place at an accelerated rate, which constituted a great burden on companies designing and manufacturing products, as it became necessary to keep pace with this development, and according to the previous concept of product development, development is based on developing or modifying parts or components and parts of the product, or the external shape, or developing Production methods, packaging, etc. However, with the development and succession of development processes imposed by the markets, which may reach three months in some products such as smartphones, the traditional method of product development has become useless. Through this, smartphone applications can be viewed as one of the product development solutions. Especially, as display and control

systems of products due to their ability to accept continuous addition and development processes, allowing the addition of new features and characteristics to products, which contributes to extending the shelf life of products, and achieving the largest possible number of products. Customer desires for the largest possible periods, as a result of the user's ability to customize the means of statement and control tools according to his desires and capabilities.

Innovative mobile applications known as mobile software platforms have emerged with the continuous advancement of wireless technology and the widespread use of mobile devices such as cell phones, personal digital assistants (PDAs), and laptop computers. Many innovative smartphone applications also appear daily, and these applications aim to enhance wireless connectivity and provide users with access to information everywhere. Therefore, many companies have published smartphone applications to gain a competitive advantage. These applications have included daily news alert services, mobile classifieds, restaurant and entertainment menus, wireless web portals, and mobile commerce (m-commerce) applications. The Smartphone applications help in increasing the ability of users to communicate and access information everywhere and at any time with accuracy and at a high speed. As an example, many smartphone applications have brought Internet services to mobile devices in the field of business, to show what is known as e-commerce applications, which include mobile banking services, and users can check their bank account balances and conduct commercial transactions through their phones. and as a result of the spread of these applications, many studies have been conducted to determine their potential, and the extent to which they can be used in many areas. In the field of mobile education, studies have been conducted on usability studies when using mobile devices for collaborative learning or access to information. It has also helped users - in the entertainment industry - enjoy watching video or playing interactive games on their mobile devices, and perform a variety of activities.

2. OVERVIEW AND BACKGROUND

The display and control systems are one of the main pillars that the industrial designer must focus on during the design of products in order to comply with the specifications of the product and users, especially with regard to taking into account and achieving the ergonomic aspects for users, the measurements of the human body, and the selection of colours and display carefully, as the user cannot change or control them according to his desires, and the specific dimensions of the locations of the display and control....etc. and by reviewing many products up to the previous millennium, we note the dependence of industrial designers mainly on mechanical controls, and the use of a limited number of fixed or limited options that can only be developed by changing the product to the latest version.

The design and production of new conventional controllers also requires conducting some tests to determine their ergonomic suitability, which includes the texture of the product, its ease of use, and its anatomical compatibility with the structure of the human hand, especially with the different ways users use the controllers.

The reliance on electronic control systems has led to a change in the shape and mechanism of the products work, which added different views for the industrial designer to use in product design to shift products from complexity to simplicity, and from the difficulty of controlling to the speed and ease of control operations, in addition to the ease of communication of products, users and manufacturers to each other.

The use of smartphones - as smart screens - and their applications, to control products remotely, is one of the added values that companies can resort to convert their products from traditional products to smart products that can be controlled remotely and exploit smartphone screens as an alternative to display and control systems that are added to products and increases its cost, and its inability to compete. in addition to, the negative effects of its prodution, and the difficulty of disposal or recycling.

According to the advanced tasks that these applications have been able to achieve, it has begun to be viewed as one of the means of remote communication, and then the ability to control products, which led to a change in the form, design and mechanism of work of many products. Companies competed in providing products that can be controlled remotely, whether from close distances or remote-control using communication systems and the Internet, and based on this development in remote control systems, the industrial designer's view of the display and control systems in products has changed, which required a change in the form and mechanism of products work, and will be contributed in achieving some aspects of sustainability in product design.

3. PROBLEM STATEMENT

The problem lies in the necessity of producing many traditional display and control systems during the life of the product as a result of its exposure to continuous damage, and its inability to keep pace with digital development, which limits the possibility of its development, and the user abandoned the product as a result of his inability to control it or communicate with it, and the accumulation of technical waste.

4. AIMS AND OBJECTIVES

The research aims to demonstrate how to maximize the use of smartphone applications that can be developed continuously as one of the solutions to develop display and control tools of products to overcome the successive change in the behavior and desires of users and markets, and reduce the volume of technical waste.

5. HYPOTHESIS AND METHODOLOGIES

If it is possible to define the various technical benefits and capabilities of smartphone applications as one of the solutions for developing display and control tools, this will increase the ability of industrial designers to design advanced interactive products, in addition to increasing the ability of products to satisfy the desires of users, and reduce the volume of technical waste resulting from the inability of products to satisfy desires of users. The study has adopted the descriptive analytical methodology for studying the problem and achieve research hypotheses.

6. CONCLUSIONS AND RESULTS

The display systems and control tools of product are one of the most important distinguishing features of one product over another, and as a result of the current development and digital transformation in all fields and the need to find new ways to control products more easily and remotely, the desire to link different products together, and increasing the factors of security and privacy. So, the use of Smartphones applications for this purpose are considered one of the

most intelligent solutions, as a result of their continuous presence next to the user in addition to containing many technologies and providing them with security and privacy factors, the ability to link between different devices and systems and the ease of development whenever required, in addition to not causing any of the harmful effects on the environment and not being damaged as a result of frequent use.

The following are some of study results:

-Smartphone applications can be used as controls for devices and equipment to increase user safety during operation, especially in remote-controlled products.

-Graphical interfaces in smartphone applications contribute to increasing non-specialists' understanding of how to read data and control products in a simpler way than controlling products using traditional display and control methods.

-Smartphone applications have introduced many types of display, control and input for products as a result of smartphones owning many embedded technologies.

-Smartphone applications related to products can be used as one of the communication channels between the user and the manufacturer to study his desires and work on achieving it.

-The development in data transfer and ease of communication between devices and products has helped increase the ability to control products remotely and provide safe alternatives for the user to be directly in front of the product to control it.

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