Utilizing from physical computing to support smart product design

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Abstract

The integration and interdependence between design and technology is the cognitive impulse for designer to learn about new technologies and use them in the design and development processes of products. It is also the economic motivation for technology developers to provide technologies that open new horizons for the designer.

In light of this integration, the research seeks to find a general framework to benefit from physical computing in support of design education and practices associated with smart products. Physical computing and its knowledge and applied skills related to technological aspects are fields of knowledge that support design in general, and smart product design is an applied field for design practices. Which requires the support of the knowledge and technical skills of designers, the general structure of these products requires weaving many technological media into the initial concept of the product, not just adding those technologies as a final feature in the final development stages of the product.

The research problem is that there is no general framework for utilizing the knowledge and skills of physical computing as a field of knowledge to support education and practices of design associated with smart products, and therefore the research aims to derive this general framework, and the importance of the research is linked to many aspects, which include: Supporting the knowledge side of students and practitioners of design, supporting industrial enterprises and providing them with designers with higher technological knowledge, supporting competitiveness between products because of their new features that support the functional and usability aspects of them, contributing to facilitating the lives of consumers by providing a new generation of smart products with new functional and technological characteristics, and building Accordingly, the research came as follows:

• Firstly, an analytical study of smart products to find out the most important functional and technological characteristics of those products and the means for the industrial designer's contribution to their innovation.

• Second: studying physical computing to know the general concept of it and how to benefit from it in the field of design education, and to realize the experimental and educational limits of it as a field of knowledge that supports the technical aspects of the designer.

• Third: devise a general framework for utilizing knowledge of the physical computing field to support design education and practices associated with smart products.

Fourth: Extracting the most important findings and recommendations for the research.

key Words

Smart product - physical computing - smart environments – designer- design education and practice

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