

The Application of User Experience and Interactive Design in Industrial Design

Tang Lan

Foreign Trade & Business College of Chongqing University, Hechuan, Chongqing, 401520, China

email: tantony_tt@163.com

Keywords: User Experience, Interactive Design, Industrial Design, Application

Abstract: With the improvement of the quality of life, in addition to the practicality, convenience and economy of the product, the user experience has gradually become one of the main selection criteria of the product choice. In this form, the concept of product design needs to keep pace with the development of the times and pay more attention to the quality of the product itself and the user experience. New products in the design process into the concept of interactive design, in industrial production design, not only to enhance the practicality and convenience of the product, but also to effectively enhance the user experience, can be said to kill more. Interactive design is based on the function of product design and its practical application effect in the user's life, the design of user experience is added to meet the real needs of the user in life, so that the industrial product can not only get the favor of the user, but also meet the actual needs of the user in many aspects.

1. The Concept of Interactive Design in Industrial Product Design

A popular product has high evaluation in its product function, product design, user experience and so on, which highlights not only the use of the product itself, but also other designs designed for users in other aspects of user needs, so that the user experience not only meets the original product function, but also has new functions. The interactive design of the product is of great significance in the actual use of the product, and the interactive design can let the designer experience the use of the new product from the perspective of ordinary users, as well as other functions, so as to obtain a better user experience from the perspective of one user. In a nutshell, interactive industrial design features safety, convenience and economy, enabling users to have a very pleasant experience in the process of using a product because of its safety, or possibly because of its convenience, or because of its economic durability [1].

Interactive design in industrial design is a product design scheme aimed at enhancing the user experience, and it is also the expansion and extension of information technology in product design. Its essence is the combination of two design elements and multiple design elements, and the new design idea of collision. At the same time to meet the basic user experience, based on the promotion of user experience, design a better product design. Excellent design products not only have excellent performance in core use function. At the same time, it can also have a better experience of the user's use experience, spiritual first hand and so on. A product with a good user experience is a very competitive product in the market. In the improvement and innovation of the design of industrial products, the design scheme of interactive design enables the product designer to analyze the usage habits and psychology of the product based on the user's needs, so as to improve the convenience and practicability of the product, and make the user experience of industrial products improve [2].

2. The Core Purpose of Interactive Design in Industrial Product Design

2.1 Improving Product Functionality

The function of the product is mainly reflected in the practical value of the product itself, the effectiveness of use, the convenience of use and the safety of use. To be able to meet the needs of the product, to maximize the user experience. The practical value of the product: that is, the

functional embodiment of the product itself is the embodiment of this value. The validity of the product refers to the use effect of the functional value of the product itself, and the embodiment of the functional value of the product itself is the validity and practical value of the product, after all, there are differences between the product and the art. The purpose and function of different products are different, so in the process of product design for production, through the analysis of the characteristics of the use of the product, interactive design thinking to understand the use of the product itself and the need to improve, so as to design a more consistent with the value of the product itself. The convenience of the product is mainly reflected in the convenience of the product and the difficulty of learning to use the product. The safety of the product is one of the basic attributes that any product must possess in entering the market [3].

2.2 Enhance the User's Experience

The use experience of the product in the hands of the user is mainly manifested in the sensory experience, emotional experience, value experience and so on, so it is important to promote the user's experience for the product, and also to promote the design innovation and reform of the industrial product, and the experience of the user. Usually the sensory experience of the product is mainly manifested in the appearance of the product, the sense of use. The appearance design of the product has a great influence on the first image left by the product to the user, so in Changping's appearance design, according to the function value of the product itself, the interactive design is carried out, the design is completed from the tactile and visual aspects, and the excellent place of the product design is expressed, such as the cutting vegetable board used by every household, the shape of the leaves can be selected in the design to convey the natural harmonious design idea, the material selection aspect is based on the pure natural plant material which is harmless to the human body, under the premise of ensuring the safety of the product itself, the practicality and the beauty of the product.[4].



Figure 1 Leaf-shaped cutting plates

3. Implementation of Interactive Design in Industrial Product Design

3.1 Behavioral Interaction in Industrial Product Design

Interactive behavior through human behavior habits and other related products to implement technological innovation and reform of the design of the interactive program, but also to further enhance the user's use of the product functional enhancement and optimization, behavioral action in part can effectively help users to express the language. Most of the outstanding design schemes in this field are in the field of electronic products. In our mobile phone, wechat app shake a shake to add friends, mobile phone reading backlight automatic adjustment, as well as home tv remote control badminton racket and other physical games, the optimized design of these products have enhanced the user experience, optimized user experience for the ultimate design purpose. Among them, the somatosensory game on TV is further innovated and developed in technology, reaching the realization of virtual reality (VR) technology. It enables users to experience the action and scene in virtual reality with VR glasses [5].

3.2 Sensory Interaction in Industrial Product Design

Sensory interaction in industrial product design can accomplish interaction design and

technological innovation in terms of touch, vision, and language. First of all, tactile, where the mobile phone has just been created, the product is large in size, not in use, with the development and progress of the design concept, in the current mobile phone, most of the keys have been eliminated, a small number of keys have retained the keys of power, volume and other keys on the phone screen, completed, and based on the sensory touch, the phone screen materials have been updated many times to meet the phone user's tactile experience, only in the electronic screen with finger operation, can complete the phone, send messages, listen to songs, video and other functions, While preserving the practicality of mobile phones, the interest and entertainment of mobile phones are developed, which makes people rely more and more on mobile products. At the same time, based on the basic elements of interactive design, in the continuous research and innovation of mobile phone products, the replacement of mobile phone products has eliminated more products with similar functions, and the real realization of technical updates has made the demand for mobile phone products higher and higher. At the same time, many interactive designs are loaded, such as fingerprint unlocking technology, voice unlocking technology, facial recognition technology which can not be unlocked by entering password [6].



Figure 2 Sensory interaction design of mobile phone

3.3 Man-machine Interaction in Industrial Product Design

Human-computer interaction design is one of the important technical points in intelligent electronic products, which realizes the interactive communication between human and artificial intelligence. The emphasis of human-computer interaction technology is on the visual and auditory aspects of artificial intelligence, which is based on the realization of the basic function of the product itself. This design improperly improves the practicality of electronic products upstream, and in the process of use, it also makes users have new spiritual communication, in the process of product use, communication with artificial intelligence is also one of the expression of user emotion. Now most of the new electronics are loaded with voice assistants. If on smart home tv, the user sends the instruction to the voice assistant which film and television work wants to see, the voice assistant can automatically look for the film and television work in the network, the film library. Similarly, on the mobile phone, the voice assistant can also complete the query information, call, send information, play music and other functions, effectively enhance the user's experience [7].

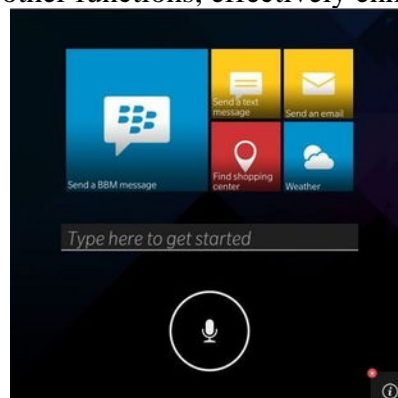


Figure 3 Mobile Voice Assistant

4. Conclusion

Interactive design is a field of design, refers to the two elements, multiple elements of mutual communication, mutual cooperation, so as to effectively achieve the same purpose. In the interactive design of industrial products, the ultimate purpose is to enhance the user experience, design is a work from abstract to figurative, the design of industrial products is to enhance the convenience of the use of the product, reduce the excessive, useless structure, unified exquisite, convenient, safe as the main product design purpose, in the design of industrial products, the use of interactive design allows designers to use the experience of ordinary users to complete the design of the product, so that the final design results of the product can meet the needs of the user in the main use of the function, but also in the design of other functions of the object to give users unexpected experience, In order to complete the industrial product design, but also to give users a novel user experience.

References

- [1] Zhong Yilin. On the Application of Interactive Design in Industrial Design. Southern Agricultural Machinery, vol. 49, no. 17, pp. 35+47, 2018.
- [2] Zhang Haichao. Research on the application of human-computer interaction design in industrial design. Industrial Design, no. 11, pp. 41-42, 2018.
- [3] Wang Kaixi. Application analysis of human-computer interaction design in industrial design. Popular Arts, no. 04, pp. 128-129, 2019.
- [4] Yang Dongxu. An Analysis of the Application of Interactive Design in Industrial Design. Industrial Design, no. 02, pp. 60-61, 2016.
- [5] Yang Bo. Application of "Interactive Design" in Modern Industrial Design. Shandong Industrial Technology, no. 21, pp. 22-22, 2016.
- [6] Wu Xiufu. application of user experience and interaction design in industrial design. SME Management and Technology (Chinese Journal), no. 04, pp. 179-180, 2017.
- [7] Xu Chengfei. application of user experience and interaction design in industrial design. Packaging Engineering, vol. 40, no. 12, pp. 294-297, 2019.