Research on applications of human-computer interaction design to the smartphone terminal

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Abstract

With the rapid development of China's economy and technology, smartphones have been an indispensable part of the work, life, recreation and entertainment of Chinese. During the development surge of smartphones, the smartphone terminal interaction design has also achieved sustainable development in China, turning human-oriented interaction design into the mainstream of industrial design. Against the backdrop, this paper studies applications of human-computer interaction design to the smartphone terminal. It is hoped that research findings of this paper can promote development of the smartphone terminal human-computer interaction design.

Keywords

Human-computer interaction; design; smartphone terminal.

1. Introduction

With growing popularity of smartphones in China, the current human-computer terminal interaction has turned from manual operations, language commands and graphic users to the multi-channel smart human-computer interaction period. The human-oriented interaction design has been extremely popular in the industry. The appearance of the interaction design has objectively boosted development of the smartphone terminal human-computer interaction design in China.

2. Concept of the human-computer interaction

Human-computer interaction refers to the interactive relationship between equipment and users based on the user interface of certain equipment. The interaction behavior relies on the support of the human-computer system, which is made up of hardware and software. A full play of the human-computer interaction functions can help people safely and efficiently finish operation tasks. At present, human-computer interaction has found applications in various fields. Along with the development of smartphone in recent years, the huge demand of human-computer interaction in the smartphone market has led human-computer interaction to play a greater role. Therefore, the human-computer interaction level has become one of the most important competition areas to smartphones. ^[1]

3. Practical applications of human-computer interaction design to the smartphone terminal

The competition in the smartphone market has become increasingly fierce. Android of Google and IOS of Apple are two major smartphone human-computer interaction systems in the current world. Based on the author's practical working experiences, the following part illustrates the use experiences of the two major smartphone human-computer interaction systems, hoping to drive development of the smartphone terminal human-computer interaction design in China.

3.1 Android of Google

Worldwide, smartphones equipped with the Android system have become the absolute mainstream in the current market and the No.2 operating system of smartphones. In English, "Android" means "robot in the human shape." The meaning shapes the system image into a small green robot.

Smartphones with the Android system feature the semi-open-source code operation based on the Linux. Thus, the Android system often uses Java for programming. Such a characteristic endows Android smartphones with diversified functions. Numerous researchers have exerted themselves on Android system research so as to bring better user experiences. The Android system itself has strong learning and innovation ability. Through clicking, moving, dragging and sliding, users can achieve human-computer interaction. As an important form of smartphone terminal human-computer interaction, the function been widely applied in many kinds of smartphone systems, meeting users' demands for human-computer interaction. ^[2]

3.2 IOS of Apple

Though the Android system is the No.1 operation system in the global smartphone market, the IOS system also has its market share with its own advantages. It is made up of the core operation layer, the core service layer, the media layer and the touch layer. Sliding, clicking, dragging, shrinking and amplifying—these functions can greatly increase the convenience of the IOS system. The human-computer interaction is also one of the major causes of the success of IOS. ^[3]

4. Applications of human-oriented human-computer interaction design to the smartphone terminal

4.1 Demands of different smartphone users for smartphone interaction

Nowadays, many smartphone manufacturers have turned to design smartphones for a specific consumption groups. Such smartphone design is based on a thorough understanding of a group's demands. In China, the business people, youths, elders and the disabled are the most commonly-seen smartphone consumption groups.

The business people

The business people are often busy with their work. The business they are handling is highly confidential. Accurate, quick and smooth communication is their requirement of smartphones. Therefore, smartphone terminal interaction design for the business people should guarantee communication quality and continuity, mail sending and receiving efficiency and security and business handling at any place and any time. [4]

Youths

Youths are the main consumption force in China's current smartphone market. The consumption group pursues fashion and technology. During smartphone terminal interaction design for youths, it is necessary to focus on the appearance of smartphones, because how a smartphone looks like has also become a fashion. Besides, the interaction design should equip smartphones with powerful functions of social contact and entertainment and provide easy software installation and downloading. These are principles to which smartphone terminal human-computer interaction design for youths must adhere.

The young

Elders

China is backward in the field of smartphone terminal human-computer interaction design for elders. Most smartphone manufacturers can just meet some basic demands of elders. Reasons for this include a low demand for smartphones, a long smartphone exchange period and a weak ability to learn new things among elders. However, the population aging is aggravating in China. There is every reason for China to attach great importance to smartphone demands of elders. During smartphone terminal human-computer interaction design for elders, developers should be sure that the font displayed on the screen and the buttons on the smartphone can be easily recognized by elders. Besides, operations should be simple. Only in this way can smartphone demands of elders be well satisfied and smartphone terminal human-computer interaction design for elders for elders be realized. ^[5]

The disabled

The disabled are the vulnerable group in society. Due to that, many profit-seeking smartphone manufacturers are reluctant to design smartphones for them. To solve the problem, software providers can design some smartphone APPs targeted for the disabled. Through these APPs, the disabled can use smartphones normally.

4.2 Applications of human-computer interaction design to the appearance of smartphones

Apart from distinguishing consumption groups, smartphone manufacturers also need to conduct human-computer interaction design of the appearance of smartphones. The design trend is driven by the public's increasing requirements of more innovational smartphone appearance. During the design process, size and resolution ratio of the screen, the smartphone interface and the smartphone performances should be fully considered. To be specific, the portability and the highest resolution ratio of humans' eyes as well as a larger screen and a higher resolution ratio should all be accounted for. In terms of the material selection for the smartphone appearance design, relevant developers should choose different materials according to different preferences of different consumption groups. This is the most important link in the human-computer interaction. Developers need to consider the font size, the interface color and the icon layout so as to utmost meet users' requirements of smartphone interface. In terms of the performance design, smartphone manufacturers should keep on upgrading their smartphone hardware configuration so as to make smartphones more attractive to users. Through a series of smartphone appearance human-computer interaction design, relevant smartphone manufacturers can seize more market shares. ^[6]

5. Conclusions

To sum up, the current smartphone terminal human-computer interaction design is playing a huge role. In the future, smartphones will be more intelligent and human-oriented, providing more and better operation experiences for users.

References

- [1] XU Shouxiang, HU Wen, YU Chenglong & MA Chao. Journal of Shenzhen Institute of Information Technology, 2015, 03: 22-26.
- [2] WEI Yan. Applications of the human-computer interaction design to the smartphone mobile[J]. China Computer & Communication (Theoretical Version), 2015, 20: 81-83.
- [3] LI Hongming. Human-computer interface interaction design and applications based on mobile games[D]. South China University of Technology, 2012.
- [4] ZUO Yuanyuan. Research on applications of the human-computer interaction design to mobile phone products[D]. Qingdao University of Technology, 2012.
- [5] YUAN Tianlin. Study on the new-generation technique of mobile smart terminal UI special effects[D]. Ningbo University, 2012.
- [6] LIU Chengcheng. Research on design of mobile phone products and services under the mobile internet[D]. Jiangnan University, 2012.