

# Research on the Application of Mobile Guide System Based on User's Demand

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**Keywords:** Mobile guide system; Application; User's demand

**Abstract:** At present, with the increasing demand of users for product experience, it is very important to improve the user experience of mobile guided products. The purpose of this paper is to apply the user experience design ideas and methods to the design and development of mobile guide system through applied research, and to explore the target user's acceptance of the user experience of the system. Based on these research purposes, this paper analyzed the fit point between mobile guide and user needs, the construction process of user experience design of mobile guide system, and the implementation of user experience design process in actual research and development, which provided theoretical basis and practical methods for improving product user experience and user satisfaction.

## 1. Introduction

At present, mobile wireless communication technology is developing rapidly, and mobile guide system is born in this environment. With the birth of the network, the mobile Internet has become the focus of attention of the industry again. Mobile guides are becoming the high-frequency words repeatedly mentioned by various industries, such as tourism and education. Mobile network is the basis of the development of mobile guides. In the past, it was restricted by the network, equipment and other hardware facilities, and its limitations have always existed. For example, at present, most mobile products are based on the existence of cloud and client, or the network bandwidth and stability are not very good, and even affect the user demand. With the advent of the era of 4G and 5G, both hardware and software will make mobile guides more and more popular. Based on the support of advanced mobile communication technology, mobile terminal devices have changed from functional mobile terminal devices to intelligent mobile terminal devices, which provide strong support for the development of mobile guides.

## 2. The concept of mobile guide

### 2.1 Definition of mobile guide

Mobile guides refer to the more mature wireless mobile network, the Internet and multimedia technology, users use mobile devices (such as mobile phones) to achieve more convenient and flexible interactive guides. Mobile tour guide is a kind of tour guide with the characteristics of "any, anywhere, anytime". In short, mobile guided tour is a new guided mode which combines the meta-computing ability of mobile terminal and the transmission ability of wireless network.

### 2.2 Main research and application directions of mobile guide

Mobile guided tour is another new learning method after digital learning, and it is also one of the most advanced research directions in the field of guided tour technology. Mobile guided tour is a kind of guided way that can make full use of portable mobile terminal devices across space-time and geographical constraints. The research contents and directions of mobile guides include feasibility guides, macro-structure studies and specific implementation technology studies. In recent years, the research direction and content of mobile guides are subdivided, including the effectiveness of guides, the integration of mobile devices and systems with existing guides, and the development of mobile guide resources and tools.

### 3. The concept of user demand

#### 3.1 Definition of user demand

User demand is people's cognitive impression and response to the products, systems or services they use or expect to use. Therefore, user demand is subjective, and it pays attention to practical application. The supplementary explanation of the definition has the following explanations: user demand, which is, all the feelings of users before, during and after using a product or system, including emotions, beliefs, preferences, cognitive impressions, physiological and psychological reactions, behaviors and achievements, etc.

#### 3.2 User demand element model

Design user demand can be divided into five levels: strategic level, scope level, structure level, framework level and presentation level. As shown in Figure 1 below, the ranking order of these five levels also represents the basic process of user demand design.

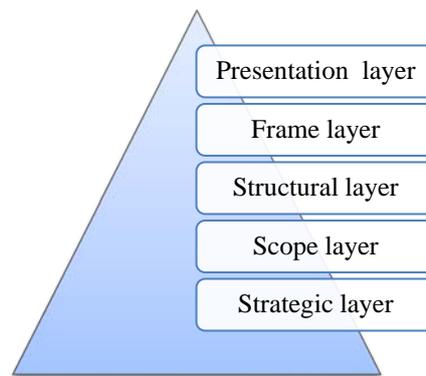


Figure1. User demand element model

#### 3.3 User demand design

User demand design not only includes the whole content of traditional design, but also extends design by focusing on other aspects of products and services, such as user demand. User demand design can cover many disciplines, as shown in Figure 2.

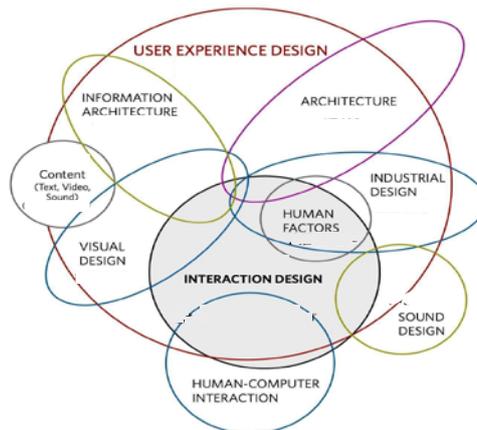


Figure2. User demand design category

#### 3.4 User demand influencing factors

There are many factors that affect user demand. From the perspective of ergonomics, there are mainly "man-machine-environment". In addition to these factors, the user demand of mobile guides is also affected by product availability. The attributes of product availability include learnability, efficiency, memorability, fault tolerance and satisfaction. Detailed influencing factors in the design of mobile guides are shown in Table 1 below.

Table1. The influencing factors of user demand in mobile guide

Factors	Details
Product information architecture	Information design, Operational performance,
Product vision	Visual elements, Operational instructions
Interaction efficiency	Information feedback, Applicability, Emotional demand
Product prospects	Product iteration, Additional products

## 4. Construction of mobile guide system based on user demand

### 4.1 The joint point of user demand and mobile guide

The key of process design based on user requirements lies in timely and effective communication at all stages and rapid iteration of small processes. The main points of convergence of user requirements into the design process of mobile guide system are as follows. One is to enhance the importance of mobile application user needs and mobile guide. The second is to focus on the combination of user needs and mobile guide autonomy. Thirdly, in the field of Internet, the emphasis on user needs is in line with the emphasis on user experience in the field of guide.

### 4.2 Design flow of mobile guide system based on user requirements

Based on the characteristics of mobile guide, mobile devices and the combination of user needs and mobile guide, the design of user needs is integrated into the design process of mobile guide system, and the design process of mobile learning system based on user experience is constructed. The process mainly includes the following steps: first, the definition of requirements, which is reflected in the user, is to meet their use needs, while paying attention to user experience. Secondly, it is global design. After the requirement is established, it will enter the design stage, including global design and detailed design. The former is concerned with the production of product framework, describing the basic organization of the product, operation process, etc. The latter is concerned with the details of the design. Finally, at the present stage of technology, technology realization is the extension of design, the process of giving life to products, and the sublimation of the previous work. In this process, we need to use technical means to achieve all the functions and effects of the pre-design, and the degree of realization will determine the experience effect of the whole product.

## 5. Conclusions

The rapid development of the information age has changed all aspects of people's daily life. Mobile guided tour system can not only cooperate with the management department for effective management, but also improve the quality of information services, which is a manifestation of adapting to the trend and development of the times. At the same time, with the advocacy of intelligent life and the popularization of intelligent products, intelligent products are also more diverse. In this paper, user demand-oriented interactive design process method runs through every step of design, and designs a mobile guide system application program based on user needs. Under the guidance of user-centered design concept, interactive design research provides theoretical basis and practical methods to improve the user experience and user satisfaction of products. In the future, people's life will not only be more intelligent, but also more intelligent.

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