Research on User Interface Design of Mass Customized Travel APP

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***Abstract:** With the advancement of mobile Internet technology, travel-related APPs have become essential tools for modern travelers. However, traditional high-end customized travel services are difficult to popularize due to their high costs, while independent travel faces challenges such as complex information and difficult planning. This study focuses on the user interface design of mass customized travel APPs, aiming to promote the popularization of customized travel services by constructing user interfaces that are popular, user-friendly, personalized, and intelligent. By comparing the user interface designs of mainstream domestic and international travel APPs, this study explores their current status and challenges and proposes a design plan. The findings indicate that an excellent user interface design should be simple, easy to operate, aesthetically pleasing, and integrated with personalized and intelligent services. Through rational interface layout, color and font design, graphic and icon design, as well as personalized service functions, mass customized travel APPs can provide users with efficient and convenient experiences. Future research will integrate artificial intelligence technology to accurately identify user needs, optimize recommendations and itinerary planning, and enhance user interaction and sharing functions through the development of new media, thereby promoting the intelligent and personalized development of the tourism industry.*

***Keywords:** Mass customized travel; User interface design; New media; Personalized services*

1. Introduction

1.1 Research Background and Objectives

The rapid development of mobile Internet technology has made travel-related APPs indispensable tools for modern travelers. However, traditional high-end customized travel services are expensive and labor-intensive, making them difficult to popularize among the general public. Independent travel, while flexible, is often plagued by complex information and challenging planning, causing significant inconvenience to users. Therefore, how to meet travelers' personalized needs while overcoming the drawbacks of traditional customized travel and combining the advantages of independent travel to popularize customized travel services among the general public has become an important issue in the tourism industry. This study aims to explore the user interface design of mass customized travel APPs, constructing user interfaces that are popular, user-friendly, personalized, and intelligent, to provide affordable and convenient customized travel services for the general public and promote the popularization and development of customized travel services[1].

1.2 Research Scope and Methods

This study focuses on the general travel population, analyzing the behavioral characteristics of mass travelers and comparing the user interface designs of mainstream domestic and international travel APPs to explore the current status and challenges of travel APP user interface design. Through a systematic analysis of the functional layout, color matching, font selection, graphic and icon design of existing travel APPs, this study proposes a user interface design plan for mass customized travel APPs, providing theoretical support and practical guidance for the development and optimization of relevant travel APPs.

2. Analysis of User Interface for Mass Customized Travel APPs

The user interface is the medium through which users interact with software systems, and its design quality directly affects user experience and software market competitiveness. For travel APPs, the user interface is not only a platform for displaying travel information but also an important tool for guiding users in travel planning and decision-making. An excellent user interface design should be simple, easy to operate, aesthetically pleasing, and capable of quickly responding to user commands, providing accurate feedback, and meeting user needs in different scenarios.

2.1 Concept of User Interface

The user interface (UI) is the interactive interface between users and software systems, serving as the direct medium through which users perceive system functions and performance. It includes both visual elements (such as color, font, graphics, and icons) and interactive elements (such as buttons, menus, and navigation bars). A well-designed user interface can improve user efficiency and satisfaction, reduce cognitive burden, and enhance user loyalty[2]. In travel APPs, user interface design is particularly important because it needs to display rich travel information within limited screen space while guiding users through complex travel planning and booking operations.

2.2 User Interface Design

The core goal of user interface design is to enhance user experience. During the design process, it is necessary to consider user habits, psychological needs, and behavioral characteristics comprehensively. First, the interface layout should be simple and clear, avoiding excessive information and complex hierarchical structures to enable users to quickly find the information they need. Second, color matching should be harmonious and comfortable, avoiding glaring or overly monotonous color combinations, while using color to convey brand emotions and atmosphere. Font selection should be clear and readable to ensure user comfort when browsing information. Graphics and icon design should be simple and intuitive to help users quickly identify functional modules and operation buttons.[2] Additionally, with the increasing demand for personalized and intelligent experiences, user interface design needs to continuously integrate new design concepts and technological means to achieve more accurate information recommendations and personalized services.

2.3 Comparative Analysis of User Interface Design of Travel APPs

A comparative analysis of the user interface designs of mainstream domestic and international travel APPs reveals differences in design style, functional layout, and user experience. For example, the Ctrip Travel APP features a business-oriented design with comprehensive and compact functions, rich colors, and color blocks to distinguish functional modules, meeting various consumer needs during travel. The Mafengwo Travel APP has a simpler interface, focusing on recommendation sections and community sharing functions, using different font sizes, styles, and thickness to guide user browsing. The Qyer Travel Planner has a creative layout with free composition and a unique style, primarily using pictures, sounds, and short videos for user interaction, appealing to young people's aesthetics. TripAdvisor's interface is simple and stable, with a single color scheme, focusing on personal travel planning and reminder functions, and relatively less travel sharing content. These differences in user interface design reflect the different target user groups and market positioning of these APPs, providing valuable references for the design of mass customized travel APP user interfaces. See the table 1 below:

Table 1: Comparative Analysis Table of User Interface Design Elements for Travel APPs

	Qyer Travel Planner	**TripAdvisor**	**Ctrip**	**Mafengwo**
Layout	Creative and free composition	Neat, simple, and flat	Compact and comprehensive	Clear and simple classification
Color	Clean and comfortable, green and white color scheme	Rich colors, mainly green and white with warm colors like orange	Natural and unified, white background with blue as the main color	Fresh and bright, with warm yellow as the brand's main color
Font	Black font throughout the page, distinguished by color and size	Content distinguished by font thickness, overall appears monotonous and rigid	Thin black fonts, alternating black and white to avoid visual fatigue	Enhanced visual focus using background icons, font size, and color
Graphics/ Images	Mainly travel real photos, few graphic elements	Business and luxurious style images; unified and simple icons	"Illustration" style icons, prominent graphic features	More modern and youth-oriented, unique style

2.4 Analysis Results

In the comparative analysis, some travel APPs' user interface designs were found to have certain issues. For example, some APPs have overly complex interfaces with too many functional modules and deep hierarchical structures, making it easy for users to get lost and difficult to quickly find the information they need. Some APPs have disharmonious color matching and unclear fonts, affecting user visual experience. Additionally, some APPs lack sufficient personalized services and cannot provide accurate information recommendations based on users' browsing history and preferences. These issues not only reduce user satisfaction but also limit the market promotion and development of travel APPs. Therefore, how to design a user interface for mass customized travel APPs that meets the needs of the general public by absorbing the strengths of existing travel APP user interface designs while avoiding their shortcomings is the focus of this study.

3. User Interface Design for Mass Customized Travel APPs

The user interface design of mass customized travel APPs should be user-centered, fully considering user habits, psychological needs, and behavioral characteristics. By providing a simple and clear interface layout, a rational and clear navigation structure, aesthetically pleasing visual effects, and personalized service functions, the design aims to offer users an efficient, convenient, and enjoyable experience. During the design process, we first analyzed the behavioral characteristics of mass travelers, clarifying user needs and pain points at different travel stages. Then, combining the user interface design experience of mainstream domestic and international travel APPs, the following design plan was proposed.

3.1 Design Process

3.1.1 Interface Layout Design

In terms of interface layout, a simple and clear composition method is adopted, dividing functional modules into four main sections: Home, Customize, Itinerary, and Mine. Each section is further divided into several sub-modules, forming a clear hierarchical structure. The Home page, as the first impression of the APP, attracts users' attention with carefully selected real photos and popular recommendations, while providing convenient search and navigation menu entries for quick information retrieval. The Customize section, as the core functional area of the mass customized travel APP, provides personalized travel destination and itinerary recommendations based on user input, allowing users to freely adjust and modify according to their needs. The Itinerary section displays users' travel plans and real-time dynamics, where users can view daily itinerary arrangements, scenic spot introductions, transportation information, etc., and make adjustments and updates at any time. The Mine section serves as the user's personal center, where users can manage personal information, view order records, collect favorite content, and set preferences.

3.1.2 Color and Font Design

In terms of color and font design, a fresh and natural color scheme is chosen, with white as the main color, complemented by light blue, light green, and other auxiliary colors to create a comfortable and pleasant visual effect, conveying a sense of relaxation and freedom associated with travel. For fonts, SimHei and Songti are selected as the primary fonts, which are clear and readable and suitable for displaying various types of information on mobile screens[3]. In titles and important information, the font size is appropriately enlarged and bolded to highlight key content and guide the flow of user attention. Through rational color and font design, user visual experience is enhanced.

3.1.3 Graphic and Icon Design

Regarding graphic and icon design, a flat design style is adopted. Simple and intuitive graphics and icons help users quickly identify functional modules and operation buttons, improving operational efficiency[4]. To add fun and personalization to the interface, some travel elements are integrated into the icon design, such as airplanes, trains, hotels, and food, allowing users to feel the joy of travel during use. Through simple and intuitive graphics and icon design, user operational experience is improved.

3.1.4 Personalized Service Design

In terms of personalized services, rational functional layout and information display are employed to meet the diverse needs of users. For instance, a personalized recommendation section is established

on the Home page, which displays information on travel destinations, scenic spots, hotels, and cuisine that users may be interested in, based on their historical operation records and preference settings. In the Customize section, a variety of itinerary templates are provided for users to choose from, and users are permitted to freely adjust and modify these templates according to their own needs. Through these personalized service functions, user satisfaction is enhanced.
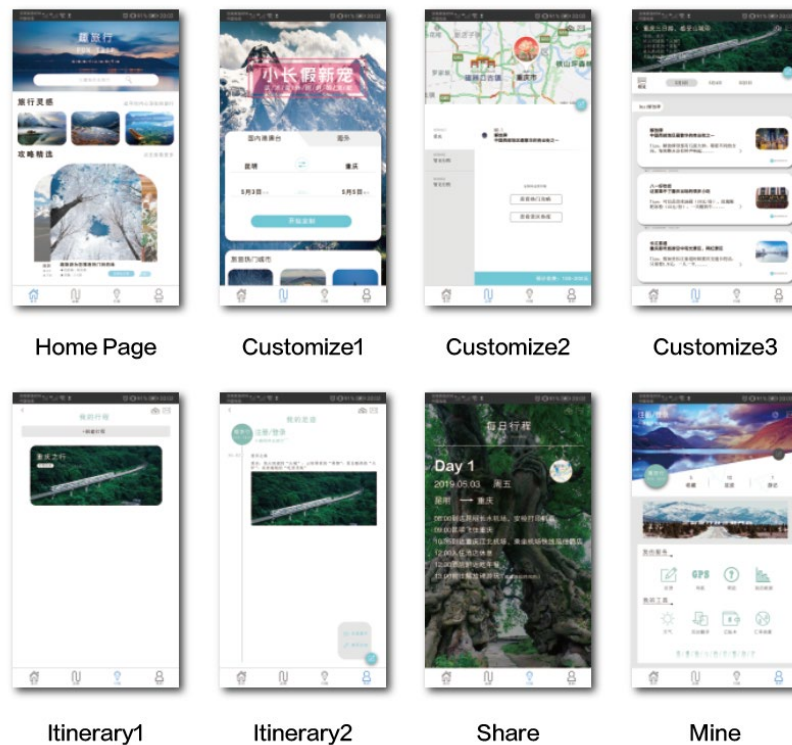

Figure 1:User Interface Design for Mass Customized Travel APP.

4. Conclusion

The present study has successfully developed a user interface design plan for the Mass Customized Travel APP, providing theoretical support and practical guidance for the development and optimization of the APP. The user interface design of the Mass Customized Travel APP has thoroughly considered user needs and experience. By employing a simple and clear interface layout, a rational and clear navigation structure, aesthetically pleasing visual effects, and personalized service functions, the design offers users an entirely new approach to travel planning and experience. This design not only changes the market positioning and pricing model of traditional high-end customized travel services but also reduces the cost for users to access customized travel services, enhancing the popularity and accessibility of such services. Additionally, it provides new ideas and directions for the development of the tourism industry.

Future research will focus on detail optimization and experience enhancement. By integrating artificial intelligence technology to precisely identify user needs, more intelligent recommendations and itinerary planning can be achieved. Meanwhile, leveraging the development of new media and integrating social media with short video platforms will enhance user interaction and sharing functions, further increasing user retention. The application of artificial intelligence and new media will drive continuous optimization of the Mass Customized Travel APP, promoting the intelligent and personalized development of the tourism industry.

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