

Design and Research of Tourism Service Platform Based on Edge Network

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Abstract. The traditional cloud-based tourism management platform is limited by the long-distance communication from the mobile terminal to the cloud center, and the centralized analysis and processing of massive data. It is easy to cause the tourists to obtain real-time information lag, and the scenic spot managers should not respond to emergency emergencies. In time, it is difficult to improve the overall image and competitiveness of tourist attractions. With the advantages of edge network location awareness, delay sensitivity, and mobile support, this research builds a smart tourism management platform on the edge of the network closer to tourists. It not only can recommend real-time and efficient travel services to tourists, but also can manage the scenic spots. Personnel provide intelligent assisted decision support to respond to emergencies.

The biggest shortcoming of the existing navigation app is the one-to-one mode, that is, an app that focuses on the introduction of an attraction has great limitations. For multiple attractions, it is necessary to continuously develop an app, which is costly and time consuming to develop. Compared with the traditional cloud-based network architecture, the edge network-based tourism management architecture relies on the advantages of its localization processing to respond to visitors' requests in situ, recommend real-time information for tourists, and respond to emergencies in a timely manner, which not only eases the core. The communication pressure of the network and the quality of service are improved.

1. Research Scene

The research scenarios and network architecture of this paper are as follows: (1) Terminal layer: including mobile users (ie tourists) and monitoring networks composed of various sensor nodes. As the core of smart travel, mobile users are both consumers of services and producers of data. They can not only obtain travel-related services from the upper edge network, but also provide information for mobile users by monitoring their location and identity. Security warning. The sensor network monitors and collects various types of data, including scenic meteorological data, passenger traffic, scenic ecological environment, and scenic network public opinion, and is continuously sent to the edge network for further analysis and processing. (2) Edge network layer: including SBSs and MBS (Macro-cell Base Station). SBS, which combines computing and storage capabilities, is the core of smart travel. It is not only responsible for collecting sensory data from sensor networks, but also real-time monitoring and dynamic recommendation through processing, analysis and mining, and providing real-time mobile users with deployed applications. service. More importantly, SBS caches content that visitors frequently visit locally to quickly respond to subsequent visitor requests. As a centralized management device, MBS schedules and maintains all SBSs, monitors the running status of SBS, stores data, caches content, etc., and is responsible for coordinating the division of labor of SBS, and is responsible for redirecting unresponsive requests on the SBS to the Internet. From a global perspective, MBS aggregates monitoring data and security warnings of all SBSs to facilitate the operation and scheduling of scenic

area managers.(3) Application layer: deployed in the edge network and cloud center respectively. Generally, tourists' frequently visited and localized tourism-related applications are deployed on the edge network, and the cloud center deployment should be more popular. There are many types of applications, including basic application services, value-added application services, and open application services.(4) Communication link: including wireless communication and wired communication.The sensor node and the mobile are used for wireless communication with the SBS, and the SBS and the MBS, the MBS communicate with the core network through the optical fiber.

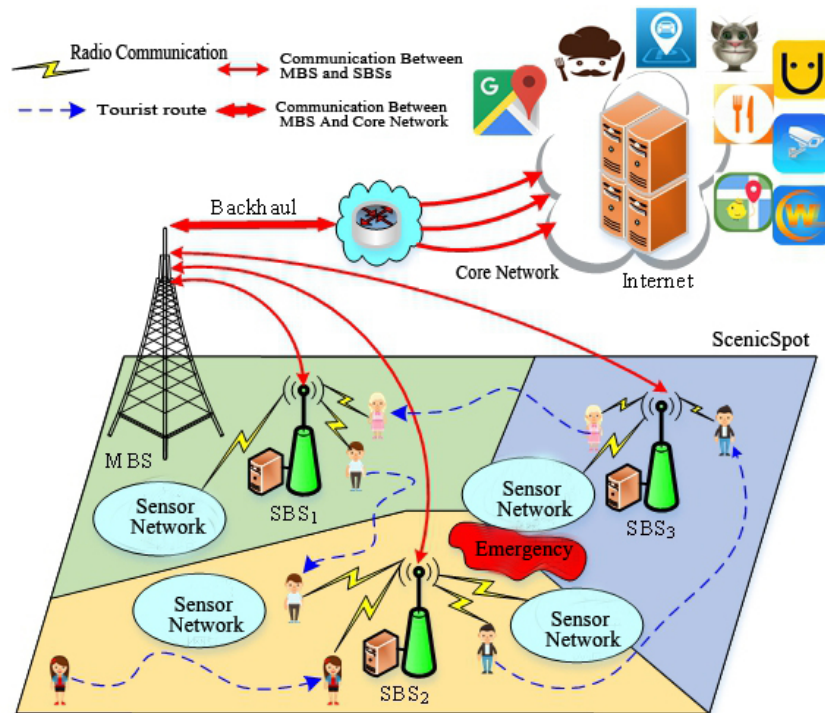


Figure 1. schematic diagram of research scene and main research content

2. Main Research Content

(1) Research on Smart Travel Network Architecture based on Edge Network

Aiming at the problems of high latency and heavy communication burden caused by traditional long-distance communication based on cloud computing architecture, based on the features and advantages of edge devices of 5G network closer to mobile users, constructing regionalized, differentiated and hierarchical smart tourism The service architecture provides visitors with real-time and efficient travel advice and intelligent support for managers.The specific research contents include: hierarchical network architecture and communication mode, sbs computing and storage mechanism, and terminal and edge network fusion mechanism.

(2) Research on Personalized Service Acquisition and Intelligent Recommendation Model

According to the different needs of different attractions, as well as the different preferences of different users, through data analysis and mining, to obtain behavioral characteristics and interest preferences, to be tourist-oriented, deploying the edge network platform in line with the localization needs of the scenic spot, and realizing the service mode to tourists Center, the service model is personalized and intelligent to enhance the visibility of the scenic spot.The specific research contents include: real-time data monitoring and sensing methods, behavior, trend mining prediction methods, and popular content reuse methods.

(3) Research on Adaptive Deployment and Management Model of Third-Party Services

Aiming at the problem of massive sensing data and user information storage management, sbs local storage and processing analysis is the main, sbs distributed storage and computing, mbs aggregation response and other management methods are flexibly adapted to network dynamic changes and data retrieval is efficient and orderly. To prevent malicious third parties from joining, design an adaptive deployment method for the service. Specific research content: local data classification storage, collaborative retrieval method; service deployment node selection method; service and sbs matching rules.

3. Theoretical Significance and Practical Significance of the Research in this Paper

As a green industry, tourism has attracted great attention from various regions. It has successively formulated relevant policies and regulations to promote its development, and has made the development of tourism even more powerful. Its development prospects are very promising. However, at the same time of rapid development of tourism, there are also many problems. For example, the large number of tourists has caused a lot of time to be wasted waiting in line, the design of tourist routes is unreasonable, and the situation of catering and accommodation is unsatisfactory. Solving these problems has become an important task for the tourism industry. Intelligent tourism combines communication and information technology effectively. Based on this, it pays attention to the tourist experience of tourists, and puts customers first, Internet-based, and aims to improve the quality of perceived interaction and service. Objective To integrate information technology into tourism service, management and marketing, optimize and integrate tourism and social resources, and further develop and utilize it, which is one of the key development directions of tourism in the future.

From a theoretical point of view, smart tourism is the future development trend of tourism, and has a profound impact on the sustainable development of tourist attractions and tourism. With the unique advantages of China in the 5G network, this topic studies the smart tourism service platform based on the edge network, which adds to the research in this field and enriches the theoretical knowledge of this field.

From a practical perspective, the progress of global economic integration has promoted the rapid development of tourism, and tourism has become a strong economic growth point. As a result, the tasks of tourist attractions and tourism departments are also increasing, and smart tourism relies on modern technology to realize the release and collection of intelligent and digital tourism information, which can further improve the efficiency of tourism industry and improve the quality of tourism services. The important development direction of the industry.

4. Conclusion

Based on the school wireless network environment, this paper designs a campus-level smart tourism platform. Firstly, students are used as mobile users to perceive their own and surrounding environmental information in real time through various mobile devices. Based on this, a virtual smart travel service architecture oriented to the scenic spot was built, which realized the interaction between the mobile user and the virtual service architecture, uploaded various kinds of sensory data, and based on this, pushed the service to the mobile user through the service architecture, and built the edge based on the edge. The network's smart travel service model realizes the sharing, service platform for eating, living, traveling, traveling and purchasing resources with the goal of smart management. Promote the development of tourism services and provide theoretical support and technical guidance for tourism services.

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