# Research on Application of Big Data Technology in Smart Tourism Management

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**Keywords:** Smart Tourism Management; Big Data Technology; Application

**Abstract:** The advent of the era of big data not only brings important development opportunities to the development of the domestic tourism industry, but also makes the tourism industry face many challenges. Based on this, it is necessary to strengthen the efficiency of the integration of smart tourism management and big data technology applications, and to make full use of the advantages of big data technology, and to innovate smart tourism management models. However, in the context of the current big data era, there are still some outstanding problems in the process of domestic smart tourism management, such as insufficient infrastructure for smart tourism management, weak ability of smart tourism management services, and insufficient training of big data technology personnel, etc., which have a large impact the sustainable development of smart tourism management. Therefore, the development of the domestic smart tourism industry should deeply apply big data technology, focus on improving the efficiency of smart tourism management, and ensure the orderly development of the domestic tourism industry.

## 1. Introduction

In the context of the new era, the development of the tourism industry has also begun a new era of Industry 4.0, and its distinctive feature is the "tourism +" of cross-border integration. In the "tourism +" era, through the Internet, Internet of Things, big data, intelligent and other technological development platforms, mass consumption is the driving force for industrial development, and jointly created a new situation of industrial development. Under this situation, smart tourism, as a new concept of China’s tourism construction, the relevant national tourism departments have put forward clear guidance suggestions for the promotion and application of smart tourism management, including comprehensive management of scenic spots, application processing systems, and command and dispatch centers. , Portals, electronic operations, travel services, interactive experience and other fields, with the help of geographic information systems, virtual reality, multimedia and other high-tech tools, actively create a modern scenic area smart management platform to provide customers with multiple aspects and personalization Travel experience service. Therefore, this article takes the application of big data technology as an entry point, analyzes the application status of big data technology in smart tourism management, and analyzes some of its problems, proposes targeted management countermeasures, and improves the service quality of smart tourism management.

## 2. Big Data Technology in Smart Tourism Management

Big data usually refers to a collection of data that cannot be captured, managed, and processed using conventional software tools within a certain time frame. It requires a new processing model to have greater decision-making power, insight, and process optimization capabilities. Growth rate and diversified information assets. Big data technology covers various types of big data platform, index system and other application technologies. Considering the current situation, big data application technology has five key technologies, including cloud computing, data mining, data cleaning, data storage, Platform visualization. Cloud computing technology mainly refers to a process that can transfer data processing to a computer processor, involving infrastructure services LAAS, platform-as-a-service PAAS, and software-as-a-service SAAS; data mining technology refers to

grabbing from a database of massive data Obtain valuable information, which can be presented through concepts, rules, and models; data cleaning technology refers to the review and verification of the captured information, mainly to eliminate duplicate and wrong information, improve data and Information security; data storage technology is to set up different databases and store them in different databases according to different data types; platform visualization technology is mainly to set up the correlation between various charts and data sources to realize the visualization of big data charts and Agile development.

Smart tourism is also called smart tourism, which mainly refers to the use of cloud computing, Internet of Things and other new information technologies, through the Internet, mobile Internet, with the help of portable terminal Internet access equipment, active perception of tourism resources, tourism economy, tourism activities, tourism The timely release of information on people and other aspects allows people to understand the information in a timely manner, arrange and adjust work and travel plans in a timely manner, so as to achieve the effect of intelligent perception and convenient use of various types of travel information. The smart travel management platform is shown in Figure 1. Show.

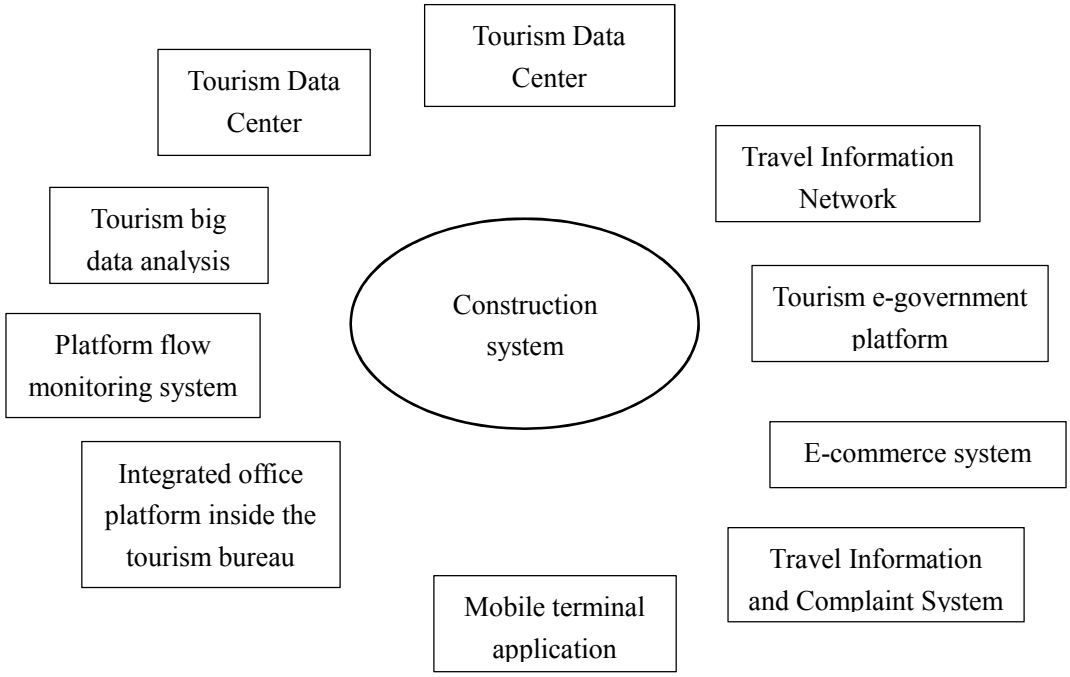


**Figure 1.** Smart tourism management platform

The application of big data technology in smart tourism management has greatly promoted the rapid development of the domestic tourism industry, and solved a lot of data processing problems in traditional tourism management, further improving the management efficiency and service quality of the tourism industry. In this context, many domestic companies have invested funds, applied big data technology, and comprehensively built a smart tourism management system to focus on enhancing the tourism brand image of the scenic area, further highlighting its unique charm, and effectively improving the tourists' travel experience.

## 3. Analysis of Application Problems of Big Data Technology in Smart Tourism Management

### 3.1. Insufficient Infrastructure fFor Smart Tourism Management

On the whole, the development of smart tourism in China is still in its infancy, the application of big data technology is not high, and the matching information infrastructure is not perfect, and there are even some outstanding loopholes that have greatly affected Tourists' experience in the scenic area. In view of the actual construction of the domestic smart tourism management system, although

the scenic spot operators have invested a lot of capital manpower and technology and tried to build a large number of network infrastructure construction work, in terms of actual smart tourism management needs, their equipment and There is a certain gap between the needs. There are obvious communication network blind spots in many locations in many scenic spots in China. As a result, there are blind spots in the information transmission channels of the scenic spots, and the smooth operation of the smart tourism management system cannot be guaranteed. At the same time, the construction of information sharing services for smart tourism management in China is relatively lagging, making the information sharing between scenic spots and operators disconnected, and the asymmetric information between scenic spots and tourists, weakening the experience of smart tourism management. In addition, in the process of domestic smart tourism management construction, the value of big data technology resources has not been fully tapped, basic database construction is insufficient, and data sharing and open construction are lagging, so data and information cannot be collected, analyzed and processed in a timely and effective manner. We can't really use the advantages of big data to serve smart tourism management.

### 3.2. The Ability of Smart Tourism Management Service is Weak

Combined with the current domestic smart tourism management construction situation, it is found that in the construction process of smart tourism systems in some scenic spots, there is a lack of standardized and systematic specific planning for the construction of smart tourism management service systems, making its construction work in many aspects. First, during the construction of the smart tourism management system in some scenic spots, the application of information service means is extremely simple, without combining the current tourism information service needs, lack of standardized specific planning, and the lack of the latest information push on the official website of some scenic spots, unable to tourists The actual information update needs, tourists can not get accurate information from it, and their service management experience is not high. The second is that under the experience of smart tourism management, there is no unified management service guide. With the continuous progress of the construction of smart tourism management in scenic spots, the size of scenic spot service personnel is increasing every year, but its human resource management capabilities have not kept up with the increase in employees. Speed, there is a chaotic situation in the management of the scenic area staff, which causes frequent price hikes and competition for tourists in the scenic area, which seriously affects the overall tourist image of the scenic area. The third is that in the process of smart tourism management, due to limited resources, there is a problem of insufficient investment in the construction of the complaint feedback evaluation system for tourists, and the effect of complaint feedback for tourists is not ideal, which in turn affects the tourists' willingness to travel.

### 3.3. Insufficient Training of Big Data Technology Talents

Under the background of big data development, it not only brings important development opportunities to the development of the domestic tourism industry, but also makes the tourism industry face many challenges, especially for the quality and ability of the tourism industry staff. Based on this, the application of big data technology in smart tourism management requires not only personnel to have professional theoretical knowledge and skills in tourism, but also the ability to apply big data technology in the process of smart tourism management. However, considering the actual situation, many current travel industry staff lack the awareness of independent learning, and the industry and operators do not pay much attention to the training of employee capabilities, resulting in the majority of current travel industry practitioners not having high application of big data technology. Ability is not conducive to the improvement of smart tourism management. Based on the openness and sharing of the Internet platform under the big data environment, some confidential information of the travel enterprise is maliciously stolen during the transmission process, and the security of the data information cannot be guaranteed.

## 4. Countermeasures for the Application of Big Data Technology in Smart Tourism Management

### 4.1. Build a Perfect Smart Tourism Management Service Platform

In the context of big data, "smart management" mainly refers to the use of emerging advanced information technology to further expand the daily management breadth and depth of the scenic spot, and accurately grasp the behavior trajectory of the tourist in the scenic spot, so as to achieve the effective integration of all tourist resources in the scenic spot. This innovative smart tourism management model also enhances the intelligent content of scenic area management. First of all, under the big data, the construction of smart tourism management system should strengthen the coordination and cooperation between various project management departments, establish a complete and effective information sharing and collaborative linkage mechanism, deepen the reform of the administrative management mechanism of scenic area intelligent management, and enhance the scenic area's wisdom Tourism management capabilities. Secondly, the construction of a smart tourism management service platform should make full use of big data key technologies to strengthen the construction of scenic vehicle dynamic monitoring systems. With the help of a perfect GIS geographic information system, satellite positioning system, electronic navigation system, etc., real-time and accurate grasp of scenic vehicles and tourists The location and the tour path maintain the safety and stability of the scenic spot. Finally, smart tourism management should establish a dynamic environmental monitoring system, standardize the management of air, water quality, soil, noise, and cultural relics in the scenic area, and fully maintain the resources of the scenic area through complete on-site emergency treatment and follow-up management.

### 4.2. Establish a Perfect Smart Tourism Management Service System

The perfect smart tourism management service system involves five major service systems, including tourism information consulting service system, tourism safety guarantee service system, tourism administrative service system, tourism convenience and benefit service system, and tourism transportation convenient service system, as shown in Figure 2. Construct a perfect smart tourism management service system to provide tourists with convenient, convenient and high-quality tourism services.


**Figure 2.** Five service systems for smart tourism management

Under the big data, the construction of smart tourism management should be based on the needs of tourists, scientifically plan the smart tourism management of scenic spots, and improve the smart services centering on the needs of tourists, so as to meet the personalized and diversified smart service needs of tourists and enhance the tourists' scenic spots. Satisfaction of the smart travel

management experience. At the same time, in the context of big data development, smart tourism management must update information services in a timely manner, so as to provide tourists with detailed and accurate travel service information in a timely manner, provide humanized information services for tourism, and at the same time meet the diverse needs of tourism information services.

### 4.3. Cultivate Professional Talents of Big Data Technology

In view of the current lack of big data technology capabilities and insufficient training of big data technology talents in the construction of smart tourism management, we should focus on cultivating professional big data technology talents and enhance the big data application capabilities of smart tourism management. Therefore, on the one hand, scenic spots should train existing managers and service operators on the application of big data technology, especially focusing on operational training, improving the ability of existing managers to apply big data technologies, and improving the service level of smart tourism management in scenic spots. On the other hand, in the construction of smart tourism management under big data, we should focus on introducing high-level talents for big data technology applications, especially comprehensive talents with professional travel management knowledge and big data technology application skills, in order to support smart tourism management. The application of big data technology improves the level of smart tourism management and services.

## 5. Conclusion

In summary, smart tourism management can perform scientific data analysis according to the different needs of tourists, thereby providing tourists with high-quality personalized services and enhancing the tourist service experience and satisfaction of tourists. Under the new situation, the application of big data technology in smart tourism management should actively adopt corresponding countermeasures, including building a perfect smart tourism management service platform, establishing a perfect smart tourism management service system, and cultivating professional big data technology talents to further enhance Smart tourism management level, thereby promoting the stable and sustainable development and operation of China's tourism industry.

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