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Discussion on Future-oriented Smart Tourism City Planning Ideas

Xinying Hui

Hainan University, Haikou, Hainan, China

Abstract: *With the rapid development of information technology, smart tourism, as a new tourism model, is leading the change of tourism. As an important part of smart cities, smart tourism cities improve the level of tourism services of cities, optimize the travel experience of tourists, and promote the sustainable development of cities by integrating advanced information technology, Internet and big data. Facing the future, smart tourism city planning should not only pay attention to technological innovation, but also pay attention to the integration and development of economy, culture and society. This paper aims to explore the planning ideas of future-oriented smart tourism cities, analyze the key problems faced in the current construction of smart tourism cities, propose solutions, and put forward practical development suggestions based on international experience and domestic practice.*

Keywords: S*mart Tourism, Urban Planning, Information Technology, Tourism, Sustainable Urban Development*

1. Introduction

In today's era of globalization and rapid digital development, tourism has become an important force to promote urban economic growth, cultural communication and social development. At the same time, with the rapid development of information technology, the development model of the cities is being transformed in the direction of wisdom. In this context, the concept of smart tourism cities came into being, it represents the new trend and new direction of urban tourism development, and has far-reaching significance for the future planning of cities.

Smart tourism city is a complex system that combines tourism with all aspects of the city. From the integration and optimization of tourism resources such as natural landscape, cultural heritage and folklore, to the efficient operation of tourism management such as intelligent hotel, intelligent transportation, intelligent tour guide, passenger flow monitoring and tourism market monitoring. Smart tourism cities can not only enhance the tourism experience of tourists, but also promote the coordinated development of related industries in the city, create more employment opportunities, and improve the brand image and international competitiveness of the city. For example, some internationally renowned tourist cities have attracted more international tourists by building intelligent tourism platforms, and also promoted the development of emerging industries such as local creative industries and technology services.

2. Research Objectives

This paper aims to explore the ideas and methods of smart tourism city planning, analyze the application scenarios and challenges in the implementation process, and then provide theoretical support and practical guidance for the construction of smart cities[1]. Through systematic research, we can promote the transformation and upgrading of urban tourism, improve the quality of urban tourism, and achieve the sustainable development goals of economy and society. This paper will focus on the analysis of innovative ideas in information technology, tourism management, urban function integration and urban planning, so as to provide theoretical basis and practical examples for future smart tourism city planning.

Specific research objectives:

a) Theoretical analysis: Analyze the definition, significance, characteristics and development trend of smart tourism cities. Through in-depth interpretation of relevant concepts, the characteristics of smart tourism cities in different stages of development are sorted out. And the direction of their future

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development is grasped, laying a solid theoretical foundation for subsequent research.

b) Comparison of domestic and foreign experience: Compare successful examples and development models of smart tourism cities at home and abroad comprehensively, so as to clearly reveal their respective advantages and shortcomings, and provide useful reference for China's smart tourism city planning.

c) Planning strategy: Put forward the planning concept of smart tourism city, with special emphasis on the application of information technology. This paper expounds how to use information technology to deeply understand the diversity and individuation of tourists' needs, so as to realize scientific and reasonable allocation of tourism resources, build an efficient and high-quality smart tourism service system, and enhance the overall competitiveness of urban tourism.

d) Coping with challenges: Explore of various challenges that may be faced in the construction process of smart tourism cities deeply, such as system compatibility issues, data security and privacy protection issues. In response to these challenges, targeted and operable active coping strategies are proposed to ensure that the construction of smart tourism cities can be smoothly promoted.

3. Meaning and Significance of Smart Tourism City

3.1. Meaning

Smart tourism city is the extension and expansion of smart city concept in the field of tourism. It takes the city as the carrier, tourism as the core industry, and makes full use of modern information technology means such as the Internet of Things, cloud computing, big data and artificial intelligence to deeply integrate urban tourism resources, comprehensively improve tourism services, and efficiently optimize tourism management.

Smart tourism city is a highly informationized and intelligent tourism ecosystem. In this system, various tourism-related elements of the city, such as scenic spots, hotels, transportation, catering and so on are interconnected through information networks, and data is effectively used which also flows freely among various elements. For example, in the smart tourism city, tourists can obtain all kinds of information about the tourist destination through mobile applications, including scenic spot introduction, real-time passenger flow, hotel booking, transportation route planning and so on.

3.2. Significance

With the rapid development of information technology, smart tourism city has gradually become an important model to promote urban economic, social and cultural development. Smart tourism cities use advanced technologies such as the Internet of Things, big data, cloud computing and artificial intelligence to improve tourists' travel experience and optimize the allocation of resources, thus promoting sustainable development and the development of economic[2].

3.2.1. Improve travel experience

Smart tourism city greatly enhance the tourist experience through data analysis, personalized recommendations, real-time navigation and other technologies. Through the smartphone app, tourists can easily access destination recommendations, traffic conditions, hotel information and scenic spot queues, effectively improving travel efficiency and reducing inconvenience in the process of travel.

3.2.2. Promote innovation and upgrade of tourism

Smart tourism city promotes tourism innovation and upgrading in many ways. The Internet of Things makes tourism facilities intelligent, such as smart hotel equipment, in order to enhance the visitor experience. Big data enables businesses and management to adjust their layouts and develop new products based on visitor information. With the rise of new businesses, enterprises can accurately grasp the needs to provide personalized services and enhance the competitiveness of the industry.

3.2.3. Promote sustainable development

With the help of big data analysis technology, smart tourism cities can accurately grasp the demand and supply of tourism resources. For example, by analyzing data such as the flow, direction and stay time of tourists, it can reasonably arrange the layout and scale of tourism service facilities such as hotels and restaurants. These can avoid the idle and waste of resources caused by overconstruction, so

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that limited land, capital and other resources can be used efficiently. For the energy resources in the scenic spot, such as electricity, water resources, etc., it can also be intelligently deployed according to the actual number of tourists and usage.

3.2.4. Promote economic growth and social development

The construction of smart tourism city has a strong role in promoting the development of tourism itself, and in many aspects, it has driven the vigorous development of related industries. In the field of transportation, with the construction of smart tourism cities, the increase in the number of tourists will promote the increase of traffic flow, which will stimulate the further improvement of transportation infrastructure and will also drive the development of emerging transportation services such as car rental and shared transportation. In terms of accommodation, in order to meet the needs of different tourists, hotels, homestays and other accommodation industries will continue to upgrade service facilities and quality.

In addition, the promotion of smart tourism is like a powerful magnet, which has great attraction for domestic and foreign tourists. The arrival of more tourists means more consumption inflows, which not only directly increases the city's tourism income, but also forms a circulation and diffusion effect of funds within the city. These effects help to enhance the city's competitive position in the tourism market and make the city stand out among many tourist destinations. With the increase of tourism income and the coordinated development of related industries, the overall level of urban economy will be significantly improved, and then promote the comprehensive development of urban society in employment, infrastructure construction, public services and other aspects.

3.2.5. Improve the efficiency of urban management

The application of smart city technology has greatly improved the intelligence of urban management. Urban management departments can improve the efficiency of urban operation by means of real-time data monitoring and intelligent traffic management. Traffic management departments monitor traffic flow in real time and intelligently regulate signal lights to reduce traffic congestion. Security management departments enhance security management work, such as monitoring and warning in scenic spots[3]. These measures have created a more convenient, safe and smooth travel environment for tourists.

4. Comparison of Domestic and Foreign Smart Tourism City Experiences

4.1. Foreign smart tourism city development cases

4.1.1. Singapore

Advantage: Singapore integrates travel information, booking services, itinerary planning and more through the one-stop smart travel platform "YourSingapore". Smart technologies have been widely used in the city to enhance visitor experience, such as intelligent tour guide robots and scenic area management systems. At the same time, Singapore has made extensive use of smart technologies, such as the installation of intelligent robots in airports and hotels to provide tour guides and services. The establishment of a one-stop platform to access comprehensive tourism information and services has greatly improved the efficiency of tourism. In addition, the application of intelligent robots enhances the technological sense and strength the experience of visitors in the city, and the intelligent management of landscape facilities contributes to the conservation of energy and resources.

Disadvantages: The construction and maintenance cost of the platform is too high, and it is highly dependent on technology, which may affect the experience of tourists once the technology fails. In the process of in-depth excavation and display of local traditional culture, the intelligent system makes its embodiment in the smart tourism city relatively insufficient.

4.1.2. Seoul

Advantages: Seoul has a successful experience in building smart tourism neighbourhoods, installing smart guided facilities and cultural experience zones that promote the integration of tourism and business. A large number of intelligent interactive facilities have been installed within the community, such as smart tour guide screens and cultural experience kiosks, where visitors can experience traditional Korean culture in depth. The centralized smart tourism block model can attract a large number of tourists and create a tourism agglomeration effect. Through the integration of culture and commerce, the comprehensive benefits of tourism are improved.

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Disadvantages: This model requires greater upfront investment and land resources, and requires greater operational and management capacity in the community. If the content and facilities are not constantly updated, it is easy to lead to a decline in the freshness of tourists. In addition, smart tourism blocks may cause tourists to pay too much attention to specific blocks and neglect tourism resources in other areas of the city, resulting in unbalanced tourism development.

4.2. Domestic smart tourism city development cases

4.2.1. Suzhou

Advantages: Suzhou combines traditional garden scenic spots with smart tourism platforms to launch a smartphone-based garden guide service to enhance tourists' cultural experience. Through these applications, visitors can gain an in-depth understanding of the historical, cultural connotations and architectural features of the garden. Meanwhile, Suzhou has created an intelligent transportation system in the ancient city to facilitate tourists to travel between various historical sites[4]. The application of these measures gives full play to the advantages of Suzhou gardens and other historical and cultural resources, and improves the quality of cultural tourism through smart tourism. The intelligent transportation system of the ancient city has improved the travel experience of tourists and promoted the development of historical and cultural tourism.

Disadvantages: There is a certain contradiction between ancient city protection and tourism development, and the construction of smart tourism faces challenges in balancing the relationship between the technology and culture. For example, too many tourists may bring an impact on the ancient buildings of ancient cities and the lives of residents. The promotion of smart tourism is mainly aimed at domestic tourists, and it is necessary to strengthen targeted services and promotion for international tourists, especially in language services and international tourism marketing.

4.2.2. Chengdu

Advantages: Chengdu combines smart tourism with local features, such as cuisine and panda culture, and has introduced a queuing and parking system based on smart technology to improve the convenience of tourists. Tourism resources such as specialty food blocks and giant panda breeding research bases are promoted through intelligent platforms, while smart technologies are used to strengthen tourism services, such as intelligent parking systems and intelligent queuing systems in scenic spots. With the continuous development of intelligent systems, the combination of characteristic culture and intelligent tourism can attract a large number of tourists and enhance the uniqueness of urban tourism. The development of intelligent parking and queuing systems has effectively improved the travel experience of tourists and increased the operational efficiency of tourism facilities.

Disadvantages: Although smart tourism has been widely promoted in many cities with strong economic development, it still needs to be strengthened in integrating tourism resources around cities, and the promotion and smart construction of some niche tourist attractions are insufficient. The smart tourism system needs to improve the emergency adjustment ability when dealing with emergencies, so as to promote the development of smart tourism city in many aspects.

5. Smart Tourism City Planning Concept

5.1. Infrastructure Planning

5.1.1. Information infrastructure

The city can built a high-speed, stable and full-coverage wireless network environment, including priority coverage of 5G networks in key areas such as tourist attractions, business districts and transportation hubs. All of these will provide visitors with a smooth information interaction experience, such as real-time access to travel information and online booking. The government can establish a city tourism data center to integrate tourism-related information, including scenic spot information, transportation information and hotel information. The data center plays a vital role, so it should have strong data storage, analysis and processing capabilities to provide data support for smart travel services. The widespread installation of iot sensing devices in urban tourism facilities is also significant, such as the installation of sensors on attractions and facilities for monitoring the movement of people and environmental.

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5.1.2. Transportation infrastructure

The city should establish an intelligent traffic signal control system, which adjusts the length of signal lights according to real-time traffic flow to reduce traffic congestion; Promote intelligent parking system, realize real-time monitoring and guidance of parking space through sensors to improve parking efficiency; Develop intelligent public transport, such as intelligent bus systems that provide real-time location of vehicles, estimated arrival times and other information, and encourage tourists to use public transport to travel; Planning convenient transportation routes, closely connecting airports, train stations, bus stations, other transportation hubs and other major tourist attractions; Use private buses, rail transit and other modes of transportation to reduce the transfer time of tourists.

5.2. Space Layout Planning

5.2.1. Tourism function zoning

Smsrt tourism cities should be divided into functional areas according to the distribution and characteristics of tourism resources, such as historical culture, natural ecology, leisure and entertainment tourism areas. The theme of each functional area is clear, and the tourism products have characteristics to prevent homogenization. The staff should rationally layout the tourism facilities in the area, such as the clever integration of museums, historical buildings and characteristic commercial streets in the historical and cultural tourism area to create a complete and effiective tourist experience route.

5.2.2. Smart tourism block planning

The government actively builds smart tourism blocks and integrates smart tourism concepts into the construction and renovation of blocks; Builds smart navigation facilities, free Wi-Fi coverage and smart interactive experience devices in the community. Smart tourism blocks should pay attention to the improvement of spatial quality and the creation of cultural atmosphere of the blocks, display the history and culture of the blocks through intelligent means such as light show and projection mapping, and enhance the attractiveness and vitality of the blocks.

5.3. Tourism resource integration planning

5.3.1. Online Resource integration Platform

The government builds a unified smart tourism resource integration platform for the city to integrate dispersed tourist attractions, hotels, restaurants, shopping and other resources. The platform provides one-stop tourism services, including tourism product booking, tourism strategy inquiry, tourist evaluation and other functions. Through big data analysis technology, the government actively manages and optimizes tourism resources on the platform, and recommends personalized travel packages for tourists based on their browsing history and consumption habits.

5.3.2. Collaborative development of offline resources

The government can strengthen the coordination and cooperation among various tourist attractions, and then build a tourism circle or tourism cluster. The government also can integrate a number of nearby natural attractions and carry out multi-day tour projects to enhance the overall attractiveness of tourism resources. At the same time, the government should actively promote the integration of tourism and other industries. For example, the government promotes the combination of tourism and agriculture to develop rural tourism, promotes the integration of tourism and cultural industries and develop cultural tourism products. Through such industrial integration, the connotation of tourism resources are enriched and the tourism industry chain are also expanded.

5.4. Intelligent Service and Experience Improvement Planning

5.4.1. Intelligent Guide Service

The scenic area develops an intelligent tour guide system to provide location-based navigation, scenic spot introduction, voice translation and other services for tourists. The tour guide system can take many forms, such as mobile phone applications and smart bracelets to strengthen the convenience of tourists. The scenic area actively uses virtual reality and augmented reality technology to provide visitors with an immersive travel experience. For example, in historical and cultural attractions, VR technology allows visitors to experience scenes of ancient life; In natural attractions, AR technology is

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used to identify plant and animal species and provide relevant knowledge.

5.4.2. Personalized travel services

Scenic spots collect tourists' personal information, travel preferences and other data, then provide personalized tourism services for tourists through big data analysis. For example, scenic spots recommend local restaurants for tourists who like food and recommend suitable outdoor activities for tourists who like outdoor sports. They also Establish a feedback mechanism for tourists, collect tourists' opinions and suggestions in time in order to constantly improve tourism services.

5.5. Sustainable development planning

5.5.1. Ecological and environmental protection

In tourism planning, the government should fully consider the carrying capacity of ecological environment and reasonably determine the scale and intensity of tourism development. The government should also make it clear that in nature reserves, tourism development activities must be strictly restricted to protect ecologically sensitive areas. The management departments of scenic spots should actively promote green tourism technologies and facilities. For example, the management departments of scenic spots can promote the use of clean energy vehicles and the construction of ecological toilets in scenic spots to reduce the impact of tourism activities on the environment through these measures.

5.5.2. Protection of cultural heritage

When developing smart tourism, the government should pay attention to the protection of historical and cultural heritage of cities. The government uses information technology to protect cultural heritage and display it digitally, with efforts such as building digital museums and three-dimensional modeling of ancient buildings all led by the government. The tourism department could integrate the publicity and education of cultural heritage protection into the tourism activities, and the tourism department raises the awareness of tourists to protect cultural heritage by setting up publicity points in scenic spots and adding relevant content in the tour explanation.

6. Challenges and countermeasures of smart tourism city construction

6.1. Challenges

6.1.1. Technical Challenges

In the context of the rapid development of information technology, the builders of smart tourism cities need to constantly follow up the development of new technologies. In terms of the application of VR and AR technology, relevant enterprises are faced with high equipment costs and complex content production problems to be solved. At the same time, developers of different technical systems find compatibility and integration difficulties between systems when they perform system docking. These situations make it difficult to achieve smooth data interaction between various systems, and each system is like an island, which is easy to form an information island phenomenon. This is extremely unfavorable to the construction of smart tourism cities.

6.1.2. Data Security Challenges

Smart tourism involves a large amount of personal information of tourists, trade secrets of tourism companies and city tourism management data. The collection, storage, transmission and use of data have security risks such as data leakage and data tampering, which may damage the rights and interests of tourists, corporate interests and urban tourism image.

6.1.3. Talent Challenges

The construction of smart tourism city needs compound talents who are proficient in tourism and information technology. At present, however, such talent is relatively scarce. The IT level of tourism personnel is generally low, and the IT personnel lack tourism business knowledge, which causes talent bottleneck for the construction and operation of smart tourism city.

6.1.4. Financial Challenges

Building a smart tourism city requires a lot of investment, including IT infrastructure construction, software system development and talent training. For some small and medium-sized cities or

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economically underdeveloped areas, the shortage of funds may become an important constraint for the construction of smart tourism cities.

6.2. Countermeasures

6.2.1. Technical Countermeasures

The government establishs a technology research and innovation mechanism to encourage tourism enterprises, universities and scientific research institutions to cooperate in smart tourism technology research. Technology of the smart tourism system is evaluated and upgraded regularly, using standardized technical interfaces to improve the compatibility between systems. At the same time, the government strengthens the pilot application of emerging technologies, and gradually promotes mature technical solutions.

6.2.2. Data Security Measures

The government formulates strict data security management system, adopts advanced data encryption technology, accesses control technology and data backup and recovery technology. They will strengthen data security supervision and conduct regular data security audits. At the same time, They improve the data security awareness of tourists and tourism enterprises, and inform them how to protect personal information and business secrets through publicity and education.

6.2.3. Talent response measures

The government should set up related cross-courses in tourism and information technology majors in colleges to strengthen the cultivation of composite talents in tourism and information technology and cultivate students' comprehensive ability[5]. The government should also provide information technology training to existing tourism employees to improve their technical application level, and cultivate the information technology talents in the field of tourism business knowledge to promote the integration. In addition, the government can attract the inflow of external interdisciplinary talents through preferential policies.

6.2.4. Financial countermeasures

The government shall establish diversified capital investment mechanisms, increase financial support for the construction of smart tourism cities, and set up special funds; It encourages the participation of social capital and attracts enterprises to invest in smart tourism projects through a public-private partnership model. In addition, tourism enterprises should arrange funds reasonably, improve the efficiency of the use of funds, and pay attention to the return on investment of the project.

7. Conclusion

The construction of smart tourism city is a complex systematic project, which requires the concerted efforts of the government, tourism enterprises, scientific research institutions and the public. The government should play a leading role in formulating relevant policies and conducting macro-control. Tourism enterprises should actively participate in market operation and provide high-quality tourism products and services. Scientific research institutions should devote themselves to technological research and development and innovation. Also the public should actively cooperate and participate. Only by comprehensively considering various factors in planning and actively responding to various challenges can we build a competitive and sustainable smart tourism city. Such a city can provide tourists with better, smarter and more personalized tourism experience, promote the prosperity of urban tourism economy, and realize the effective protection of tourism resources and sustainable development of the city.

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