



# Operation Strategy of “Cloud Tourism” Platform Based on Big Data Technology

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**Abstract.** The cloud tourism experience platform uses big data and virtual technology to construct a virtual tourism environment. It can change the marketing model of tourism companies and the consumption model of tourists. Based on big data analysis, this article explains the operation strategy of the cloud travel platform from three aspects: the acquisition and analysis of the multi-dimensional data information of the cloud travel platform, the construction of the platform experience quality feedback information data, and the design of the cloud travel platform service function. The platform can improve the effectiveness of the virtual system in terms of interactivity, control, vividness, information quality and display. The cloud tourism platform can create a theme image of tourist attractions, help users achieve the goal of traveling everywhere without leaving home and realize a dynamic two-way cycle between cloud tourism and on-site tourism, thereby further promoting the development of the tourism industry.

**Keywords:** big data · virtual tourism · operation strategy

## 1 Introduction

### 1.1 Research Background

In the era of big data, the massive quantification of data resources and the intelligentization of data analysis technologies have had a profound impact on the tourism industry. Tourism has been upgraded from a way of reaching people by relying on traditional resources to a model that uses algorithms and technology to automatically achieve precise target audience orientation, and realizes the automation and digital promotion of tourism resources. Cloud tourism has become one of the industries with the strongest development momentum and the largest scale in the global economy, and China is already one of the largest tourism markets in the world. Therefore, realize the performance of big data galloping cloud tourism technology is the new trend of current tourism development based on the strategic opportunity period of accelerated development of China's tourism economy and the establishment of the application of big data analysis technology. The current publicity methods of the tourism industry and the information services provided by ordinary tourism websites are a bottleneck for the fast-developing tourism industry [1]. Therefore, the emergence of cloud tourism has undoubtedly brought a brand-new

service model to the tourism industry. As a highly intensive information industry, the Internet, which is highly related to information and tourism, plays a key role in the development of cloud tourism. Therefore, the virtual tourism visual platform under big data technology will have unlimited development potential in the future.

## 1.2 Research Summary and Shortage

At present, there are mainly three types of academic literature in the field of cloud tourism under big data analysis: The first type is macroscopic analysis. Based on the perspective of the tourism market as a whole, this kind of literature comprehensively discusses the advantageous ecological structure, development stages, problems and challenges of regional tourism. The second type of literature uses specific big data to analyze the positioning of tourist crowds and the analysis of tourist geographical characteristics. The third type of literature focuses on the discussion of virtual visual experience technology and the application form of virtual visual experience platform for entertainment projects.

Although the importance of cloud tourism strategy in academic circles at home and abroad has been increasing, it should be noted that due to the lack of perfection of virtual experience platforms under big data analysis, there are few related studies. In fact, big data collection, tourism visual information analysis and mining, intelligent virtual optimization, and tourism visual experience creativity have provided drainage solutions for virtual visual tourism strategies. How to use big data analysis and virtual technology to build a travel virtual experience platform has considerable epochal significance.

## 1.3 Research Problems

This research discusses the advantages and unique experiences of cloud tourism and the visual presentation technology of cloud tourism system. The system explains the three levels of information that affect the travel experience process, including search, visual experience function services and virtual environment innovation. At the same time, it reviews the related research on cloud tourism experience quality and analyzes the evaluation model of virtual tourism experience process. On the basis of reading a lot of previous research results, the gaps and opportunities of research are determined. The analysis shows that the pre-virtual travel experience of tourists has a positive influence on the perception, ease of use and pleasure of the visual experience platform. This article will improve the experience attitude and behavior of tourists to travel websites to a certain extent.

The cloud tourism platform is committed to providing big data collection and mining tourism resources for domestic tourism platforms. At the same time, it can provide a professional platform for tourism visual development experience.

Questions of this study include but are not limited to:

1. Travel selection and experience data acquisition of domestic travel platforms
2. Information flow promotion strategy and visual experience optimization channel based on cloud tourism platform
3. Cloud tourism creative experience method, the actual effect of intelligent programmatic creativity of tourism visual experience

## **2 Challenges Faced by Conventional Tourism Platforms Under the Impact of New Media**

### **2.1 The Publicity and Service of Tourism Platforms are Insufficient Under the Impact of New Media**

Tourism has become one of the industries with the strongest development momentum and the largest scale in the global economy, while China is one of the largest tourism markets in the world. Therefore, based on the current low tide of domestic and foreign tourism economy, China’s tourism industry needs to adjust its model. In the era of traditional media promotion, there are many restrictions on tourism regional publicity, such as a single way of communication, a small range of communication, less information display content, and strong audience limitations. Conventional tourism websites and app convey the tourism landscape information to the audience in a visual way. There is no systematic publicity strategy, and there is no clear tourism route planning. It only relies on simple pictures and text introductions. Therefore, this will not allow people to experience authenticity of the tourist landscape, and will not produce strong interaction. With the vigorous development of diversified media nowadays, creative methods of tourism information promotion also need to be open. In this way, the audience’s interactive experience can be enhanced, the characteristics of travel media can be explored, and the advantages of data and virtual experience can be expanded.

### **2.2 The Public’s Demand for Experiential Tourism Has Increased**

With the development of virtual VR technology, human senses are flooded with all kinds of information, and the audience’s attention is distracted by a lot of complex and diverse information. However, the conventional form of domestic tourism propaganda is still based on flat vision as the main propaganda channel. This conventional form of tourism platform information propaganda has failed to arouse the public’s attention to the tourism landscape. The cloud tourism platform can realize virtual tourism scene experience, and can realize tourist evaluation and online self-checking in during the experience process, and provide a complete set of tourism strategy and other modes. The cloud tourism platform relies on the expressive power and imagination brought by virtual technology innovation to strengthen the transformation and innovation of tourism platform promotion. It will turn the publicity mode of conventional tourism platforms to a people-oriented, interactive and authentic tourism promotion mode.

## **3 Operational Conception Strategy of Cloud Tourism Interactive Experience**

### **3.1 Multi-dimensional Information Acquisition and Analysis of Tourism Landscape**

Tourism bases often do not have the ability to build their own landscape information analysis platform, but the cloud tourism data service platform provides a good opportunity for each tourism base [2]. The cloud tourism data service platform will acquire

**Table 1.** Standardized Analysis of Quality of Experience

Platform Interface	Online Resources	Customer Confidence Degree	Related service	Perceptive Value
1. Accessibility	1. Organization and form of content	1. Reliability	1. Online customer service	1. Price
2. Navigationsystem perfection	2. Information on visual services	2. Privacy	2. Interactivity	2. Convenience
3. Cloud platform visual effects		3. Brand	3. Personalized service	
4. Smooth use of the platform			4. Incentives for passengers	

and calculate data according to different ages, different genders, different occupations, and different needs. On this basis, it will set up multiple types of application experience modes to provide experiencers with a spatiotemporal interface that is both inducible and can independently choose the direction of behavior. Through personalized settings, the quality of experience for tourists will be greatly improved.

**3.2 Construction of Feedback Information on Experience Quality of Cloud Tourism Platform**

The quality of cloud tourism experience refers to the degree to which tourists’ travel needs are satisfied from entering the cloud space and returning to the end of their real life, that is, the satisfaction of virtual tourism experience. Experience quality analysis includes empirical testing of cloud tourism quality evaluation of “information search”, “functional service” and “spiritual experience”. The subjective factors that affect the experience level of tourists mainly include the degree of participation of the tourists, the expectations and needs of the tourists, the previous experience of the tourists, the personal experience ability of the tourists, the interest preferences of the tourists, and the information possessed during the whole travel experience [3]. Through the analysis of the experience effect data of each experiencer, it can sort out the collected data, analyze the personality characteristics of the surveyed objects, and achieve the best experience effect. In addition, it can also improve the experience of the experiencers through innovative ways and methods of visual experience (Table 1).

Based on big data analysis, we can quickly understand the trend of travel experiential visual effect development, the number of cloud travel experience orders, and the completion of the experience through intuitive numbers or trend charts. This contributes to the accuracy and real-time nature of tourism development decisions. In terms of time range, in addition to supporting the common today, yesterday, the last 7 days, and the last 30 days, it also supports a custom time range, which can support up to 365 days

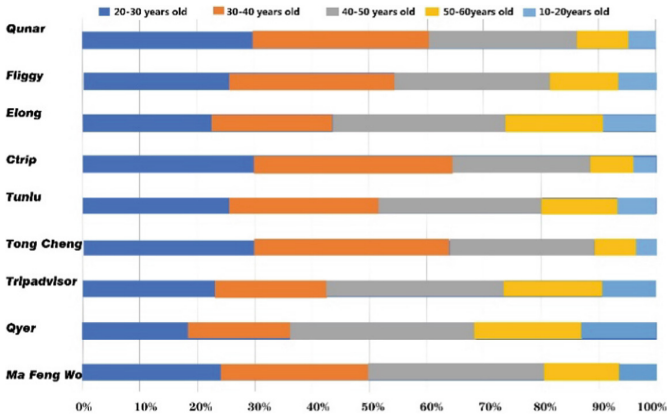


Fig. 1. Access data of online travel platform in 2020 (data source: [oceanengine.com](http://oceanengine.com))

of cloud travel experience data analysis. In terms of data presentation, in addition to numerical values, there are also data change ranges and data change trend graphs. After expanding the data trend graph, you can also add data indicator comparisons to help you locate the cause of data changes more quickly (Fig. 1).

Big data analysis methods are segmentation analysis and attribution analysis.

- Segmentation of demographic characteristics: Divide experience users into different groups based on tourist experience needs, gender, age, behavior, interest, consumption level, or different stages in the user journey, which can be a single level or a combination of multiple Level, and then further analyze the data of different sub-groups. For example, subdivide into male users and female users, and subdivide into new users and old users.
- Media segmentation: Data segmentation is based on the experience delivery channels of the travel platform and the experience effects of different media.
- Creative subdivision: Provide multiple sets of creative visual experience versions for the visual development system of virtual experience to subdivide.
- Regional subdivision: such as subdivision according to the characteristics of different tourist bases and other dimensions.

Through data observation, we can discover the causal relationship between the law or the data and the travel experience, and on this basis infer the effect of the travel experience and the effect of the virtual tourism conception. Creative attribution refers to the contribution rate of each creative and version to conversion during the experience of the travel virtual platform (Table 2).

### 3.3 Service Function Design Plan of Cloud Tourism Development Platform

The cloud travel experience platform is based on 3D technology and uses highly simulated VR scenes to bring users a perfect experience [4]. And it can control the direction and walking to provide users with a game-like travel visual VR effect. At the same time,

**Table 2.** Income distribution of respondents

Personality Traits	Grouped Indicant	Number	Proportion	Personality Traits	Group	number	proportion
Income level	Below 1500 yuan	620	66.7	Work tape	students	700	75.3
	1501–2500 yuan	1200	12.9		clerks	130	14.0
	2501–5000 yuan	1700	18.3		professionals/lawyers/teachers/doctors	60	6.5
	5001–10000 yuan	100	1.1		Self-employed/freelancers	10	1.1
	10001–20000 yuan	100	1.1		Enterprise mangers	20	2.2

users can browse the beautiful scenery thousands of miles away in a three-dimensional virtual environment through personalized VR avatars.

When a user travels to a spot on the spot, he can turn on the location service and mark his travel location on the map provided by the platform. And users can upload photos of scenic spots during their travels, and the background technology adds them to the VR scenic spots, which facilitates the continuous update of some changes in the scenic spots and generates big data support. Offline check-in and online marking function can not only help users record their own routes, but also share their travel stories in the place by sharing check-in locations. The platform interacts in real time to increase users’ interest in travel and to recognize more friends.

When online users use it, they can choose their favorite travel route. The platform will recommend the best tourist spots for users according to the different seasons and the user’s location. And platform tourist attractions will display different landscapes according to the local weather every day, bringing users a more realistic experience, and you can also choose the weather you want to show. Offline users can also adjust their travel plans based on the weather conditions in the next few days, choose the travel route recommended by the device, travel offline, or enter their preferences to find their favorite route in the provided routes, or even upload themselves Unique travel routes are shared on the platform for others to refer to, and there are many ways to choose routes.

The travel platform can cooperate with travel agencies to purchase travel packages through the platform. The cloud platform will also launch virtual experience activities of tourism festivals in various regions and themes, promote local scenic spots and special cuisines, and share interesting travel stories on the platform. At the same time, a shooting contest was held to promote the scenic spots. The cloud tourism platform exposes the beautiful scenery of travel, writes travel guides, etc. The platform can cooperate with offline attractions, and can use scan code check-in and scan code to experience virtual tourism at the attractions, and attract tourists through online visits and offline experience.

### 3.4 New Breakthroughs in the Experience of Cloud Tourism Platformance Check-In Methods

When the individual feels “there” psychologically, the essence is that the individual has the feeling of being in the “reflection” or “mirror” imagination of the “destination scene” in the virtual scene. The experiencer is attracted by the place, some because of the desire to experience the visual experience of remote areas, and some because of the cognitive meaning and emotional value behind the social and cultural interaction with the destination. What are the expectations of the audience for the experience and feeling they will get before accepting the virtual tour? This expectation is not only a driving force for creative construction, but also a benchmark for experience satisfaction. The cloud tourism platform landscape theme, core content, interaction, game items, equipment and facilities, and the image of the scenic spot are all key factors that are valued by the experiencers and affect their virtual experience [5]. Therefore, the cloud tourism platform can construct a virtual environment from the aspects of technology, theme/atmosphere, service/management, and environment. From the aspects of interactivity, control, vividness, information quality and display, and equipment, the effectiveness, efficiency and effectiveness of the virtual system are improved. The platform uses interactive functions to increase experience involvement and urges the experiencers to move and act in the virtual tourism process.

## 4 Conclusions

The cloud tourism virtual experience platform meets the development needs of the times and has huge development potential and social benefits. It uses virtual experience technology and analyzes audience experience needs through big data to create a theme image of tourist attractions. In this way, it can help users achieve the goal of traveling everywhere without leaving home. Cloud tourism has in-depth cooperation with offline attractions. The online production effect can be further improved according to the actual situation and other resources provided by offline. At the same time, online publicity can also be used to attract tourists for on-site travel. Eventually, a dynamic two-way cycle of mutual influence between cloud tourism and on-site tourism is formed, which further promotes the development of the tourism industry.

**Acknowledgment.** This article is part of Youth Found Wuhan Donghu University “Research on the Application of Jingchu Cultural Elements in the Visual Image Design of Hubei Characteristic Towns” (No. 2020dhsk015).

## References

1. Wenwen, Li, Cloud tourism development and its promotion path from the perspective of smart tourism [J], *Journal of East Liaoning University*, 2020 (10): 38-42.
2. Sijia, Wang, Cold thinking and hot opportunities of “cloud tourism” under the new crown epidemic [J], *Journal of China Three Gorges University*, 2020 (9): 50-53.

3. Jinjin, Ren, The Dilemma of Tourism Enterprises and Digital Marketing Innovation Strategies under the Epidemic Crisis [J], Journal of Wuhan University of Commerce, 2020 (4): 23-27.
4. Peng, ZhengYaofeng, Ma, Tianshun Li etc. Research on website realization and mirroring experience based on virtual tourism [J]. East China Economic Management, 2009, (2), 107-111.
5. Zhibo, Diao, Research on Tourism Experience Based on Information Technology [J]. Business Research, 012, (1): 158-162

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