RESEARCH ON INNOVATION OF BLOCKCHAIN TECHNOLOGY IN TOURISM SERVICE INDUSTRY

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Summary. Tourism service industry has its particularity, that is, it is dominated by one-time consumption, multiple interest subjects and a large number of intermediaries coexist. Therefore, integrity, transparency and regulation are the pain points of the industry. The BlockChain technology has the possibility to solve the pain points of these industries and innovate the whole tourism service industry. Based on the advantages of BlockChain technology, this paper systematically analyzes the potential of BlockChain technology in tourism integrity, management mechanism, intelligent services, information security, tourism sharing economy and tokens to promote cross-border travel.  
Keywords: Block chain; Tourism services; Tourism management

1. Introduction  
Tourism has become a strategic pillar industry of China's national economy, and is a key field to implement the new development concept of "innovation, coordination, green, open and sharing". With the continuous improvement of people's living standards, the rapid progress of information technology, and the transformation of tertiary industry into high-quality development, the industry chain of tourism service industry is continuously extended, and the industry service is continuously deepened and refined. However, while the demand and expectation of consumers for tourism services are constantly increasing, there are many problems in the supply capacity of tourism services, which increasingly hinder the sustainable development of tourism. For example, the existing management mode and thinking of tourism management department are difficult to maintain the effective performance of its functions in the reality of the continuous expansion and upgrading of tourism formats. The integrity of tourism enterprises and tourists is becoming more and more serious. In particular, the tourism enterprises delete and modify at will, falsify comments, deceive consumers, and the tourists carve and litter randomly, as well as the tourism platform leakage of tourists' privacy and other bad behaviors are frequently reported.
Tourism service industry is a potential ideal application area of BlockChain technology. During travel, transactions and data are continuously shared between multiple participants and touch points, each of which needs to collect, store and share traveler and operational information, which can be simplified through BlockChain technology. BlockChain has become the forefront of global technology development and an important support for building a trustworthy social system. In the future, it will develop in innovation and entrepreneurship, sharing economy, credible digitalization and real economy, regulation and standardization, and become an important support for the construction of a digital country. Local governments are also actively positioning BlockChain technology from an industrial height, and the policy system and regulatory framework are gradually developing and improving. In specific applications, China has made many attempts to use BlockChain technology in tourism services, and some BlockChain tourism platforms and projects in the commercial field are under development.

2. Literature review

With the development of tourism services to the whole region, more and more benefits are integrated into the tourism market. This has increased the complexity of the travel market and made it more difficult to maintain market transparency, ensure integrity and improve the travel experience, and BlockChain technology has significant advantages in dealing with these difficulties[1]. BlockChain technology is believed to be able to integrate with multiple travel service scenarios.

First, in the airline and hotel industry, BlockChain technology can be used to reduce baggage loss or automatic compensation, eliminate hotel overbooking, and enable potential buyers to communicate directly with hotel and tour operators. Second, in the standardization and certification of tourism services, BlockChain technology can promote the formation of a modern and highly competitive tourism market[2]. Third, in the development of island tourism economy and the development of tourism in backward areas, cryptocurrency can be used to bring new opportunities to these areas, or block chain technology can be used to enhance the pertinence of island culture construction and tourists’ purpose, so as to improve their own cultural attraction. Fourthly, in the development of featured tourism, such as agricultural tourism, medical tourism and rural tourism, BlockChain technology will become a new driving force for development and bring disruptive influence. Fifth, in the holiday tourism market, the application of BlockChain technology can solve the problem of traffic congestion, reduce travel costs and risks, eliminate rip-offs and temporary price increases[3]. Sixth, in terms of cross-border travel, the use of intelligent contract technology, combined with artificial intelligence and other new technologies to build a service platform, the use of tokens or cryptocurrency for payment, means the revolutionary innovation of payment methods, can eliminate the inconvenience caused by currency exchange during cross-border travel. In general, BlockChain technology can provide a credible tourism evaluation system, generate a new tourism C2C(customer to customer) market, realize the disintermediation of tourism market, and promote the transformation and upgrading of tourism service industry. As a category of BlockChain 3.0 programmable society, "BlockChain + tourism service" is expected to be highly expected in both research and practical application exploration.
3. Research on the application of BlockChain technology in tourism services

BlockChain is considered as another disruptive technology after the mobile Internet. Its key elements are distributed, transparent, open source, autonomous, difficult to change and anonymous, which are highly compatible with the values pursued by the tourism industry, such as integrity, privacy and efficiency, and can fundamentally change the choice and concept of the tourism market. According to the progress of practical development and theoretical research, in the tourism service industry, BlockChain technology will play a role in guaranteeing integrity, innovating management methods, providing intelligent services, ensuring information security and fostering emerging economies, leading the innovative development of the whole tourism service industry.

(1) ensure the authenticity of comment data and improve market trust

In reality, online shopping platforms all have the behavior of manipulating comments, such as brushing orders and randomly deleting bad comments. In the case of information asymmetry, this will lead to the consequences of bad money driving out good money. In addition, in the current tourism industry, the existing mechanism cannot deal with strategic lies, malicious ACTS and the formation of deception alliance. With the advantages of tamper-proof, anonymous, traceable and the relative equivalence of rights and obligations of each node in BlockChain technology, the problems of information asymmetry such as false advertisements, malicious negative comments and bill checking in the market can be fundamentally solved from the technical level. The authenticity of the tourist comment data can achieve multi-win. For tourists, they can make travel planning based on the comment data, reduce the cost of information collection, and realize independent choice of tourism products and services. For tourism enterprises, advertising costs can be saved, the money invested in improving services; For tourism management department, it will be beneficial to improve the market supervision ability; For the tourism service industry, the authenticity of the review data is conducive to promoting benefit sharing, avoiding fraud and improving transparency.

(2) Innovating management mechanisms and promoting scientific governance

With the continuous development of the tourism market, the supervision and service capacity of tourism management departments is increasingly difficult to meet the demand, especially the lack of supervision in advance and during the process. The application of BlockChain technology will help improve tourism public services, such as improving comprehensive tourism law enforcement and promoting the flattening of government organizational structure. The specific performance is as follows: Carry out electronic management, Promote participatory governance

(3) providing intelligent services and enriching tourism products

Intelligent contract technology has been applied in finance and other fields, and achieved positive results. The core advantage of a smart contract is that it is executed automatically when conditions are met, in accordance with previous agreements between the parties, and is not subject to external factors.

(4) ensuring information security and enhancing information sharing

In terms of information security, BlockChain technology has inherent advantages, especially suitable for scenes involving multiple subjects. Reduce the information transmission link and storage platform, reduce the risk of information leakage, and distributed storage of data. First, BlockChain technology can achieve
disintermediation, and the elimination of third parties means that the system based on BlockChain technology can guarantee a higher level of security of private data. Eliminating third parties has also improved transparency, with Austria already experimenting with using BlockChain technology in the travel industry to promote digital advertising involving only advertisers and publishers. Second, the information in the block chain is transmitted through encryption, and only the private key or public key data can be accessed. The data in the upper chain is just the desensitized data fingerprint formed by the algorithm, and the data must be read in the data storage place after obtaining the permission when using the data, so there is no need to worry about information disclosure. Third, in addition to transaction privacy, the privacy of identity is also protected by BlockChain. That is to say, even if the information is obtained illegally, the data has no real value because it cannot correspond to the real subject.

Tourism service industry is a special industry, which is faced with a series of new problems along with the development of the whole tourism industry. As an emerging technology, it has the potential to change rules and innovate the whole tourism industry. Tourism service industry demand and block chain technology advantages are highly fit, in the assurance review information authenticity, providing intelligence service, innovation tokens to use, to ensure the safety of tourist information, promote economic development of the tourism market share, improve the tourism administrative department of the service ability, promote the industry self-discipline has great application potential.

Of course, as BlockChain technology is still in the early stage of development, it still faces some problems in technology, economy, system and ideological understanding, such as impact on the existing management system, lack of standardization of technology, and conflict with existing laws and regulations. Therefore, it is necessary to take a prudent attitude, actively study, take the tourism market demand as the center, and rationally promote the layout and application of BlockChain technology.

4. Conclusion
Tourism service industry is a special industry, which is faced with a series of new problems along with the development of the whole tourism industry. As an emerging technology, it has the potential to change rules and innovate the whole tourism industry. Tourism service industry demand and BlockChain technology advantages are highly fit, in the assurance review information authenticity, providing intelligence service, innovation tokens to use, to ensure the safety of tourist information, promote economic development of the tourism market share, improve the tourism administrative department of the service ability, promote the industry self-discipline has great application potential.

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