

# ***Research on the Innovative Practices of Tourism Platform in Web3.0***

## ***- Taking Ctrip Trekki NFT Project as an Example***

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**Abstract:** Against the background of the rapid evolution of the current Web3.0 technology paradigm, blockchain technology is gradually penetrating into the core of the tourism industry, heralding a disruptive industry transformation. This paper focuses on the Trekki NFT project launched by Ctrip as a reference to explore in depth the innovative application of Web3.0 technology in tourism service platforms and the deep-rooted value it implies. This paper firstly elaborates the core concept and key technical architecture of Web3.0, as well as the theoretical connotation and practical boundaries of non-homogenized tokens (NFT). Through a panoramic analysis of the Trekki NFT project, the paper reveals how Web 3.0 technology can stimulate the restructuring of business models of travel platforms, optimize the quality of user experience, and explore new opportunities for industry growth. In particular, the study demonstrates the strategic significance of Web 3.0 technologies in promoting the innovative development and industrial upgrading of the tourism industry. The discussion section of the study has refined a set of strategic frameworks and action recommendations for the deep integration of tourism platforms and Web 3.0 technologies, aiming at guiding and accelerating the technology adoption and progress of the tourism industry in the wave of the digital economy in the future.

**Keywords:** web 3.0, blockchain, NFT, Ctrip, digital transformation

## **1. Introduction**

In the context of the current rapid changes in information technology, Web 3.0, a new era of Internet evolution, is gradually attracting widespread attention and penetrating into all levels of society. Web 3.0 is regarded as an important milestone in the development of the Internet, and it is expected to revolutionize many areas such as finance, governance, data security and privacy protection, and digital identity management [1], which is due to its deep integration of blockchain and other cutting-edge technologies to build a decentralized network ecosystem based on a token mechanism and advanced security capabilities. This change is due to its deep integration of blockchain, artificial

intelligence and other cutting-edge technologies, and the construction of a decentralized network ecosystem based on the token mechanism with advanced security capabilities.

The rise of Web 3.0 has not only optimized the online experience for individual users, such as improving personalized browsing services, enhancing intelligent search functions and extending the performance of application programming interfaces. It has also spawned a range of key applications such as non-homogenized tokens (NFT), decentralized finance (Defi), cryptocurrencies and distributed applications (DApp) [2]. In view of this, this study will use the Trekki NFT project launched by Ctrip as a typical example to delve into the specific practices and innovative impacts of Web 3.0 technologies in the travel industry.

This study is dedicated to analyzing the profound transformation of the Trekki NFT project on the business model, user experience and industry development of tourism platforms, so as to enrich and deepen the industry's understanding of the digital transformation of the tourism industry. In terms of research methodology, literature review, case analysis, comparative study and other means will be comprehensively utilized. Combined with practical operational experience and detailed data support, the study will comprehensively examine the extensive and far-reaching impact of Web 3.0 technology on tourism platforms.

The core objective of the study is to identify the core features of Web 3.0 technologies and their potential application scenarios in the tourism sector, and to critically assess the innovative value and practical effectiveness of the Trekki NFT project. In addition, it will systematically investigate how Web 3.0 technologies can reshape the business model of travel platforms, improve user experience, and drive structural progress in the industry. Finally, based on the empirical analysis, the study will propose a series of forward-looking and feasible strategies to promote the effective integration and synergistic development of tourism platforms and Web 3.0 technologies.

## 2. Trekki NFT's Program Overview

Against the backdrop of the Web 3.0 technological revolution, Trip.com, the world's leading online travel service platform, has birthed a pioneering project in its overseas branches - the Trekki NFT program. The project follows the rise of blockchain technology and non-homogeneous tokens (NFT), and captures the vast potential that the Web 3.0 era has given to various industries. Trip.com seizes this technological trend in a timely manner and utilizes advanced NFT and blockchain technology to lead the travel industry to achieve in-depth innovation and provide personalized travel experiences like never before.

The Trekki NFT project has crafted an NFT collection of 10,000 hand-drawn travel-themed dolphin figures, each with a unique personality setting, a diverse background of travel scenarios, and varying rare attributes. The project design cleverly incorporates fun gaming elements, allowing holders to dynamically upgrade and develop their NFT holdings through exclusive platform commands, badge unlocking, or membership level advancement. In addition, Trekki NFT holders can enjoy a range of exclusive travel benefits ranging from discounted airfare and hotel bookings to attraction tickets. To ensure the fairness and transparency of the incentives, the program has integrated the industry-recognized Chainlink VRF technology, which ensures that the random number-based incentive distribution process is tamper-proof and auditable.

Trekki's NFT operating strategy is unique in that it creatively blends traditional memberships with the emerging world of digital assets. On the one hand, Trekki has successfully concluded a bridge between digital assets and physical travel experiences by introducing the concept of NFT, enabling users to manifest their personal travel history, achievement markers, and unique identities in the process of collecting and trading NFTs, and thus realizing the accumulation and appreciation of value in the market circulation. On the other hand, this operation model strongly promotes the digital transformation process of the tourism industry, fully utilizing the decentralized nature of blockchain

technology, information transparency and security advantages, to build a more fair and transparent trading ecosystem with a higher degree of trust. This not only facilitates tourism platforms to digitize all kinds of tourism resources and services, and efficiently realize the digital transaction of tourism resources by issuing tourism-related tokens or NFTs, thus improving the utilization rate of resources, but also brings a refreshing tourism consumption experience to end users. Furthermore, the Trekki NFT operating model opens up new business opportunities in the travel industry. Through the issuance and transaction of NFT, the platform can attract and activate more user groups, and enhance user stickiness and activity; at the same time, the application of NFT also gives rise to a number of industry innovations, such as the development of customized tourism experience products and thematic activities relying on NFT, which further broadens the growth path of the industry, shapes the competitive advantage, and helps the tourism industry to achieve sustained progress and prosperous development in the Web 3.0 era. and prosperity of the tourism industry in the era of Web 3.0.

### **3. Theoretical Framework of the Trekki NFT Project**

#### **3.1. A framework for the Application of Blockchain Technology in the Tourism Industry**

In the tourism industry, the use of blockchain technology can improve transparency, security and efficiency. The Ctrip Trekki NFT project can be seen as an example of this framework by using blockchain technology to ensure the verifiability and uniqueness of the travel experience while providing consumers with a new, digital asset related to the travel experience [3]. This innovative practice not only enhances consumer trust in travel platforms, but also pushes the tourism industry in the direction of being more environmentally friendly and efficient.

#### **3.2. The Role and Impact of NFT in the Tourism Marketplace**

NFTs (non-homogenized tokens), an emerging digital asset class, are changing the way the travel market works [4]. The Ctrip Trekki NFT program offers consumers a new way to collect and invest by creating unique, travel experience-related NFTs. These NFTs not only represent a digital proof of the travel experience, but also have the ability to act as a new type of commodity in the travel market, influencing consumers' purchasing decisions and the value proposition of travel brands.

#### **3.3. Digital Transformation of Tourism Platforms**

With the arrival of Web 3.0, travel platforms are facing the opportunities and challenges of digital transformation [5], and it is in this context that the Ctrip Trekki NFT project has realized the digitization and automation of travel services through the integration of blockchain technology, thus enhancing user experience and operational efficiency. This innovative practice not only helps travel platforms stay ahead of the curve in a competitive market, but also provides a viable path for the digital transformation of the entire tourism industry.

#### **3.4. Consumer Behavior and Marketing Strategy**

Consumer behavior is a key factor influencing tourism marketing strategies, and Ctrip's Trekki NFT program drives innovation in marketing strategies by meeting consumer demand for uniqueness and authenticity [6]. By offering NFTs related to the travel experience, Ctrip not only attracts technologically avant-garde consumers, but also enhances brand image through the scarcity and uniqueness of NFTs, which influences consumers' purchasing decisions.

### 3.5. Technological Innovation and Sustainable Tourism Development

Technological innovation is an important driver of sustainable development in the tourism industry [7]. By adopting blockchain technology, the Ctrip Trekki NFT project not only improves the transparency and security of tourism services, but also promotes the sustainability of tourism products. In this way, Ctrip not only demonstrates its commitment to environmental protection, but also provides an innovative example of sustainability in the travel industry.

## 4. Trekki NFT Program Implementation Process and Impact Evaluation

The execution process of the Trekki NFT project encompassed a number of key aspects, including planning and design, technology development, system testing and marketing. In the early stages of the project planning, the team set clear strategic goals and ambitious visions, and carefully planned the morphological features and functional architecture of NFT. In the technology development phase, the team utilized Ethernet smart contract technology to build the underlying structure, effectively ensuring the security and transparency of the NFT issuance and transaction process. In the system testing phase, through rigorous internal validation and extensive user trials, the project team comprehensively examined the reliability of the system and the friendliness of the user interface, with a view to optimizing the overall user experience.



Figure 1: Trekki project NFT volume trend chart [8].

Based on the analysis of the economic performance data shown in Figure 1, Trekki NFT raised a total of 685.8432 ETH (approximately \$2.124 million at the prevailing exchange rate) during the post-launch minting phase and exceeded its intended distribution target, achieving a subscription rate of over 110%.

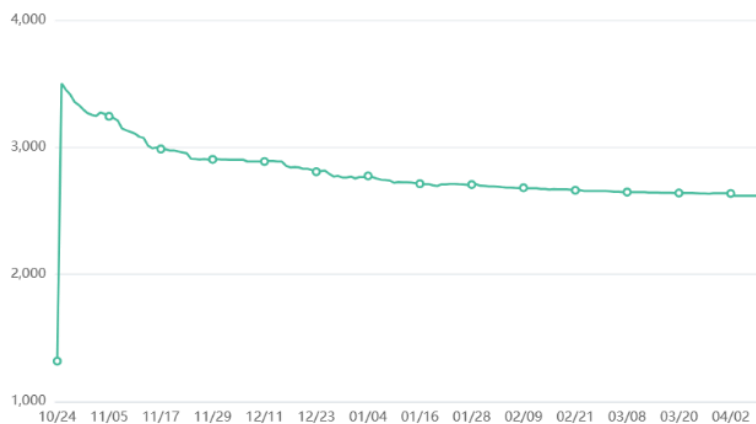


Figure 2: Trends in the number of Trekki program holders [8].

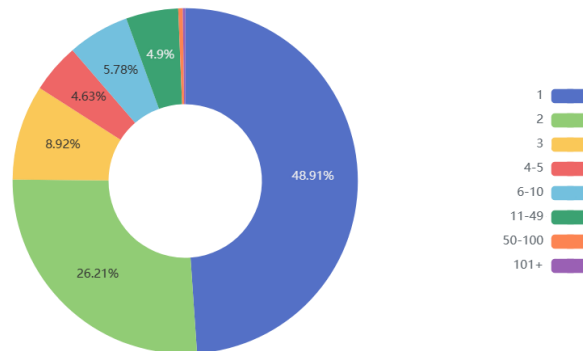


Figure 3: Map of Trekki project holders [8].

Referring to the user growth dynamics revealed in Figure 2, the highest number of holders of Trekki NFT climbed to 3,503 at one point after its debut. In the subsequent time period, although the number of holders experienced a rapid decline to around 2,700 or so between October and December 2023 due to market liquidity transactions, the total number of holders has stabilized since then and has remained above the 2,600 level.

Figure 3 shows that the proportion of users holding a single NFT is 48.91%, while more than half of the holders hold at least two or more NFTs, with those holding three or more NFTs accounting for about 25% of the total. It is worth noting that the minimum market price of Trekki NFT is set at 0.0199 ETH, while the proportion of pending orders is only 1.9%, which is a low rate of pending orders, indirectly confirming the market's high degree of acceptance and strong interest in this NFT product.

In terms of social impact, the Trekki NFT project, with its innovative NFT application scenarios, has driven the digital transformation of the travel industry and created a new form of travel experience for users. In addition to visual economic benefits, such as increased sales and profits, the Trekki NFT program has had a positive impact on soft indicators, such as brand value, user engagement and market influence. Specifically, as of today, Trekki NFT has attracted 42,820 members in the Discord community, with a daily active user ratio of 5%, while on the X social platform, it has accumulated 107.4K followers. These figures strongly prove that the Trekki NFT project has achieved substantial results in enhancing brand image power, expanding market share and strengthening user stickiness, and provides a valuable case of practical experience for digital transformation in the tourism sector.

## 5. Innovative Points of the Trekki NFT Program

In the Ctrip Trekki NFT program, its innovative practices are reflected in several dimensions. Firstly, at the artistic design level, the program follows the principle of "digital scarcity" to create each unique piece of artistic NFT work, which substantially grants holders real ownership rights and intrinsic scarcity economic value. Secondly, Trekki innovatively introduces the "eco-mining" mechanism, which subtly reduces the impact of carbon emissions and gives back to users through sustainable incentives, successfully optimizing both environmental protection and economic benefits.

From the perspective of technology integration, Trekki effectively integrates AR technology with NFT, providing users with an unprecedented immersive and interactive experience, which makes NFT go beyond the attribute of a mere digital asset and become a link between the real world and virtual space. In addition, the project adopts a "decentralized autonomous organization" (DAO) management model, which ensures the long-term sustainable operation and development of the project through a collective decision-making mechanism.

It is worth noting that Trekki NFT has demonstrated excellent innovative practices in cross-chain interoperability. By adopting the "cross-chain bridge" technology, the project breaks through and realizes the seamless migration and circulation of NFTs between different blockchain networks, which greatly improves asset liquidity. Cross-chain bridge is a middleware that connects different blockchains, allowing assets to be efficiently transferred and exchanged across different chains. Based on this, Trekki NFT can be freely traded and used in diverse blockchain environments, effectively solving the problem of data isolation and greatly improving the level of interoperability of assets. Cross-chain interoperability allows users to freely choose and easily operate across different blockchain platforms for NFT transactions. This not only empowers users with increased flexibility, but also significantly boosts the project's scalability and compatibility with other systems. As a result, it attracts broader participation from diverse user groups and developers, collectively driving the expansion and development of the project's ecosystem.

## 6. Discussion and Reflection

In the context of the Web 3.0 era, travel platforms must adhere to the dual-wheel-drive strategy of technology adoption and regulatory compliance in the process of exploring and adopting emerging technologies [9]. This not only requires tourism enterprises to fully consider and comply with existing laws and regulations while promoting Web 3.0 technological innovations to ensure that all technological practices are carried out within a legally compliant framework, but also emphasizes the responsibility of the platform in enhancing the engagement, satisfaction, and trust of members of the virtual community [10]. In order to achieve this goal, travel platforms should take the initiative to establish a dialogue and cooperation mechanism with regulators, actively participate in the policy discussion and formulation process, and provide policy guidelines and legal advice for the healthy development of the travel industry, as well as ensure that challenges brought about by the convergence of technologies, such as data security and privacy protection, are adequately considered and appropriately dealt with in the strategic planning. By providing high-quality content and interactive experiences, tourism platforms can build and maintain users' trust, while developing effective risk mitigation measures to address challenges such as compliance with laws and regulations that may arise from the convergence of technologies, to ensure that the tourism business can be developed in a safe, compliant and sustainable manner in the Web3.0 era. Meanwhile, in the face of the complexity and sensitivity of blockchain technology, tourism platforms need to increase their investment in the research and development of blockchain security technology to ensure that the security and privacy of users are effectively safeguarded when they conduct transactions in the Web3.0 environment. This includes, but is not limited to, the construction of a solid security protection system and the establishment of a sound data protection mechanism, so as to continuously enhance users' trust and reliance on the platform.

In view of the fact that NFT and Web3.0 technologies are still in the initial stage of recognition among the majority of user groups, tourism platforms have the important responsibility of market enlightenment and user guidance. Platforms should systematically popularize the knowledge of Web 3.0 and NFT through diversified communication channels, and guide users to rationally perceive and appropriately use these cutting-edge technologies, so as to lay a solid user base for the wide application of the new technologies [11]. In addition, tourism platforms need to be enterprising in content innovation and service diversification, closely integrating the unique attributes of NFT, and actively exploring and developing innovative tourism products and experience modes. For example, NFT can be used to create unique tourism souvenirs, or through cross-border linkages with other fields such as culture and art, to enrich the connotation of tourism products and enhance their cultural added value [12].



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