# Research on the Design Strategy of Digital Cultural Tourism Products Based on Octalysis

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## Abstract

This paper proposes innovative design research for digital cultural tourism products utilizing the octagonal behavior-driven model of Octalysis. Based on the initial appeal, mid-term immersion, and aftertaste of the travel experience, a gamification-based digital tourism product design strategy is delineated. Motivated by the gamified driving forces, users can spontaneously engage and immerse themselves fully in the experience of digital cultural tourism products, thereby enhancing user retention and brand loyalty for these products.

## Keywords

Octagonal Behavior-Driven Force; Gamification; Digital Cultural Tourism.

## 1. Introduction

With the advancement of digital technology, the tourism industry is undergoing profound transformation. Contemporary tourists' expectations have transcended the simple reservation and sightseeing services offered by traditional cultural tourism products, and are now seeking profound and immersive interactive experiences. This shift in demand has made the design of digital cultural tourism products a key to innovation and development in the tourism industry. Harnessing the driving forces of gamification to effectively stimulate users' enthusiasm for participation and enhance the sense of experience and immersion is a significant challenge in the field of digital cultural tourism.

## 2. Gamification and Digital Cultural Tourism Products

### 2.1. Existing Problems with Digital Cultural Tourism Products

The essence of digital cultural tourism is the integration of culture and tourism both online and offline. It involves delving deep into cultural characteristics and connotations, providing personalized experiences for visitors offline, and collecting user data and behavior online to offer digital display and feedback services [2]. The core concept is to enhance the attractiveness, user participation, and immersive experience of digital cultural tourism through the design of personalized cultural experiences and digital technology, achieving a deep integration of culture and tourism, and meeting users' spiritual aspirations and cultural pursuits [1]. However, the development of existing digital cultural tourism products is limited to single offline sightseeing or online exhibitions, lacking innovative experience design from the perspective of online-offline interaction, leading to low user stickiness and retention rates for digital cultural tourism products. The existing problems from the perspective of online-offline interaction before, during, and after tourism are as follows.

#### 2.1.1. The types of digital cultural tourism products are singular, and the appeal to users before travel is not strong

China has a rich cultural tourism resource heritage, but there are still some issues in the development of digital cultural tourism products. The types of existing digital cultural tourism

products are relatively singular, and there is a lack of innovation in business models. Offline digital cultural tourism products mostly stay at the level of sightseeing, mainly meeting the basic sightseeing needs of visitors, and are not enough for in-depth experience and cultural exploration. The experience does not combine local cultural characteristics to provide a variety of innovative tourism interactions, resulting in weak appeal of digital cultural tourism products to users before travel.

### 2.1.2. Serious homogenization, lack of personalized experience during the middle stage of travel

As the online tourism market gradually expands to the sinking market and young user groups, young user groups pay more attention to the uniqueness of culture and have higher requirements for cultural tourism experience. Many digital cultural tourism products are seriously homogenized, and the tourism products, services, aesthetics, and experiences provided by different regions or scenic spots tend to be the same and blindly copied [3]. Many museums rely too much on sensory, AR, VR, and other technologies for offline experience content, and the interactive forms are the same, lacking freshness. There are many interactive game devices that stay at the surface level, and the content is out of date, gradually becoming a decoration. This indicates that there is insufficient in-depth excavation and exploration of culture, and the development and design of cultural tourism products lack uniqueness, personalization, and innovation, which cannot meet visitors' needs for personalized and in-depth experience in the process of cultural tourism.

### 2.1.3. The dispersion of sharing and social channels after travel leads to low user retention

User stickiness reflects the loyalty and frequency of use of users to digital cultural tourism products or the services they provide. Young users have a higher willingness to record, evaluate, and share after cultural tourism, and this part of the cultural tourism experience sharing belongs to user-generated content (UGC) online. Most offline cultural tourism experiences do not have corresponding and immediate sharing platforms after the experience ends, and young users tend to choose other social platforms to share the beautiful scenery, interesting stories, feelings, and surprises in the process of cultural tourism, leading to insufficient self-promotion of digital cultural tourism products and low user stickiness and retention, thus losing users.

In today's mass cultural tourism era, demand is diversified. How to meet the integrated development of online and offline digital cultural tourism products and open up a sustainable and innovative path for the cultural tourism industry. Gamification can be considered, that is, integrating game design elements, thinking, and mechanisms into non-game environments to enhance user participation, enthusiasm, and loyalty. At present, many cultural tourism application apps on the market have adopted shallow-level game strategies, stimulating users' enthusiasm for participation by integrating points, badges, and leaderboards, that is, the PBL system [4]. However, once users' freshness to these shallow-level game elements fades, users may start to be tired and no longer attracted, thus losing users. How to start from the deep-level gamified driving force, pay attention to the multi-dimensional experience of users in the early, middle, and late stages of cultural tourism, provide more personalized forms of cultural tourism, and promote the deep integration of culture and tourism, there is still a great development space for the innovation of digital cultural tourism products in form to retain users.

## 3. The Octalysis Behavior-Driven Force of Gamification

The concept of gamification was first introduced by Richard Bartle, which essentially involves transforming activities typically not considered as games, such as work or learning, into forms that possess game-like characteristics. Through this transformation, everyday activities are endowed with objectives, rules, feedback mechanisms, and inspire voluntary participation

from users [5]. In the book "Actionable Gamification," the renowned American gamification expert, behavioral scientist, and game designer Yu Kai Chou proposed the Octalysis Behavior-Driven Force analysis model [6]，see Fig. 1. This model is based on the notion that successful game design is founded on an understanding of human behavior and the application of various driving forces. Yu Kai Chou's model includes eight core drivers, which are the sense of mission, the feeling of achievement, empowerment and feedback, the sense of ownership, social influence, scarcity, the unknown, and loss. The sense of mission is stimulated by an individual's recognition of the significant meaning of an activity, conveyed through stories and values, allowing users to feel the positive impact of their participation on society or individuals. The sense of achievement usually comes from the inner satisfaction of completing tasks or mastering new skills. Gamification elements commonly used in games, such as progress bars, levels, and badges, can enhance this sense of satisfaction. The mechanism of creative empowerment and feedback provides a space for users to express their creativity and offers positive responses, maintaining their enthusiasm for participation. The sense of ownership enhances the user's sense of belonging and control over the product through personalized settings and user-customized content. Social influence strengthens the cohesion of the community by promoting competition, social recognition, partnerships, and sharing among users. Scarcity stimulates user participation and pursuit by providing unique resources or experiences. The unknown and curiosity utilize elements such as hidden functions and random rewards to stimulate user exploration. Loss, as a psychological mechanism, aims to enhance the user's commitment and connection to the activity to prevent user attrition. Integrating these driving forces forms an incentive system that is not only applicable to game design but also provides practical reference and guidance for improving user experience and behavior in internet products, effectively enhancing user retention, experience, and favorability.
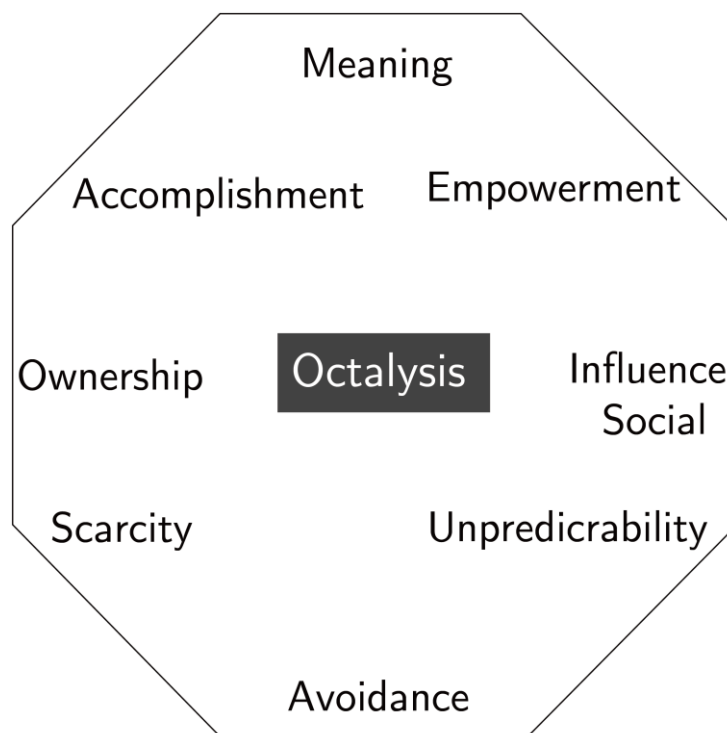


Fig. 1 The Octalysis Behavior-Driven Force Model

The strong appeal of games stems from the interaction of the eight core drivers within them, which can stimulate players to continuously complete levels and tasks, and gain pleasure and satisfaction from these challenging tasks. The dissemination of gamified digital cultural tourism products aims to spread a positive and upward lifestyle and promote the innovation and

development of cultural tourism forms. Gamification can serve as an innovative means to help tourism enterprises or destinations achieve market differentiation and attract more visitors. It can even be used as an educational tool for cultural tourism to help the younger generation better understand, protect, and inherit the distinctive local culture through gamified experience design. Therefore, a good cultural travel experience can not only provide opportunities for online and offline relaxation, leisure, and cultural exploration but also bring continuous attraction before the trip, continuous participation and immersion during the trip, and aftertaste after the trip, similar to an exciting game experience. Gaining a sense of satisfaction, additional rewards, points, and badges, and even achieving an ultimate flow experience during the use of digital cultural tourism products, can increase the stickiness of users to digital cultural tourism products, making users more willing to participate deeply and invest in digital tourism products for the long term.

## 4. Gamification-Based Digital Cultural Tourism Product Design Strategy

Yu Kai Chou proposes that in the player's journey, users experience four stages: Discovery, Onboarding, Shaping, and Finale, corresponding to the early, middle, and late stages of the cultural tourism process. Both online and offline, each stage is influenced by the octalysis behavior-driven forces, ensuring the coherence and attractiveness of the user's cultural tourism experience, as shown see Fig. 2.

In the Discovery stage of the player's journey, the use of drivers such as the unknown, scarcity, and a sense of mission is key to attracting users to digital cultural tourism products and initiating online or offline experiences. Digital cultural tourism products can stimulate users' interest in online exploration and attract them to experience cultural tourism online and offline by showcasing novel experiences, unique cultural stories, and different interactive forms. For example, the "flight blind box" of the Tongcheng Travel App attracts users to purchase online through the unknown destination and participate in the novel "blind box journey" offline. Limited-time travel Easter eggs or hidden rewards can also be set up to continuously engage users in digital cultural tourism products under the attraction of the unknown and scarcity drivers.

In the Onboarding stage, users expect a sense of immersion from digital cultural tourism products, so they begin to seek positive feedback and a sense of achievement from the product. Users need to know the distance between themselves and the task goals, such as the design of a "progress bar," which intuitively allows users to see what they have not yet completed and thus strive to achieve the task. Data visualization and progress bars become important feedback incentive tools, helping users clearly see their growth and progress. If there are rewards for completing phased tasks, such as "medals," "trophies," "stars," "little red flowers," etc., they symbolize that users have achieved phased results and also meet users' progress and sense of achievement. By establishing a digital travel archive, users feel that their travel process and experience are recorded by the platform and recognized by friends, enhancing users' social expectations and thus continuously increasing investment and loyalty.

Entering the Shaping stage, the user's initiative and expectations become the main driving force for action. Creative empowerment and feedback make users feel their creativity and participation value. Digital cultural tourism products can combine some challenging tasks and encouragement to stimulate users' online and offline participation in cultural tourism interaction, while also giving users more choice and voice rights. This sense of participation and creativity increases users' brand recognition, loyalty, and interest, helping to enhance users' sense of belonging and achievement.

In the Finale stage, to prevent users from churning after the cultural tourism experience, the drivers of loss and scarcity are used. The driver of loss makes users not want to suffer losses

and stay to continue participating in online cultural tourism activities. The scarcity driver can use "limited-time offers," "countdowns," and other methods to provide scarce resources or unique experiences to stimulate users' sense of urgency, increasing users' stickiness and attractiveness to the product. At the same time, throughout the process, social and ownership drivers are also important driving factors. The social driver in gamification can expand users' influence, enhance users' sense of belonging and recognition in digital tourism products by establishing communities, and promote interaction and communication between people. People want to increase and protect what they own, and the ownership driver makes users invest time and effort in digital cultural tourism products. This drives people to collect stamps, medals, accumulate wealth, and continuously invest time and money to create their own exclusive. Leveraging this psychology, various digital nurturing games have been developed, such as "electronic pets," "Miracle Warm," "Dream Town," etc., from which players gain enjoyment and continuously invest time and money to create their own exclusive. In the Finale stage, users will have endless aftertaste for the investment and harvest after the cultural tourism experience.
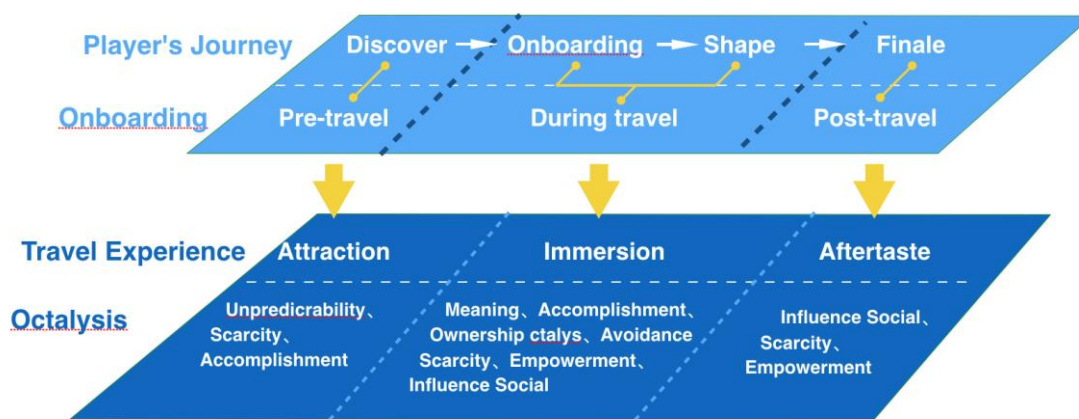


Fig. 2 Digital Cultural Tourism Product Gamification Driving Force Model

## 5. Conclusion

In the face of fierce market competition for digital cultural tourism products, it is essential to adhere to a human-centered design philosophy and make rational use of the aforementioned octalysis behavior-driven forces to promote users' continuous participation online and offline, as well as immersive experiences, achieving innovation and sustainable development of digital cultural tourism products. By leveraging the driving forces of gamification, users can immerse themselves in the new experiences brought by digital cultural tourism. After the experience, sharing their stories on digital cultural tourism platforms and reflecting on the entire journey after the trip creates a virtuous cycle of tourism economy, injecting new vitality and serving as a reference for local tourism economies.

## Acknowledgements

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