

How to Integrate Development of Digital Collection and Cultural & Tourism Industry to Improve Tourism Experience

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Abstract: In recent years, a growing number of museums have begun to develop their own digital collections. These collections are created through the reimagining and recreation of cultural artifacts by artists and are sold in the form of digital products. In essence, museum digital collections are themselves cultural and creative commodities. However, if consumers fail to appreciate the value of these cultural and creative products, such products may not serve their intended purpose. Through the distribution of on-site questionnaires, this paper examines issues such as limited understanding, low uptake and inadequate cultural immersion surrounding digital collections. Correspondingly, we offer recommendations to enhance the visitors' experience, notably targeted marketing, innovative design, expanded applications, varied product development, and preserving certain public properties and service functions.

Keywords: digital collection, metaverse, museum

1. Introduction

In recent times, the year 2021 has been dubbed as the “inaugural year of the meta-universe”. The catchphrase has garnered extensive attention and initiated various innovative business approaches. With the progression of science and technology, digital collection has gradually gained momentum as an object of focus and deliberation in numerous domains, making use of cutting-edge technologies like metaverse and blockchain. Regarding digital collections, a cardinal concept to comprehend is that of non-fungible tokens (NFTs). NFTs are blockchain-based distinct cryptocurrency tokens used to symbolize digital assets like jpgs, video clips, sounds, paintings, etc., which can be traded in the market. These tokens possess unique features of indivisibility, uniqueness, and irreplaceability [1]. According to an article published by People's Daily Online, there are noteworthy distinctions between China's “digital collection” and NFTs. The concept of digital collection is a China-specific rendition developed on the basis of NFT, emphasizing the circulation of cultural elements and transmitting the value of digital cultural elements to a higher degree. Digital collections' value is progressively evolving and surfacing in diverse fields, integrating deeply with the tangible economy, including the active involvement of cultural and tourism industries. For example, it's currently observed that an increasing number of museums are endeavoring to roll out their own digital collections whereby selected culturally significant artifacts in their collection are imaginatively recreated and made available for sale in the digital format.

As a merger of NFT and practice, digital collection has emerged as a novel business form and model in the digital economy. Nonetheless, for most individuals, it still represents a fresh concept and the degree of public acceptance, as well as the public's willingness to pay for digital collections, remain crucial aspects of concern. In the context of the cultural and tourism industry, visitors' perception, experience and acceptance of digital collections are key determinants of whether these collections can effectively enhance tourists' experiential expectations. Previous research has explored the value of digital collections and put forward strategies to enhance them. However, from the tourists' standpoint, there has been limited discussion about the public's recognition and how to improve acceptance. This paper seeks to analyze tourists' views, experiences and proclivity to accept digital collections, aimed at enhancing tourist experience, in the backdrop of meta-universe digital collections and the cultural and tourism industry's integrated progress. This research intends to unravel the multi-dimensional scope of the integration of digital collections and the cultural and tourism industry, further exploring the value of digital collections.

2. Museums × Digital Collections

2.1. Concept Rising Exploration of the Enhancement of Cultural Creation of Museum Digital Collections

Cultural and creative products are a commodity concept that has been defined alongside the development of cultural and creative industries [2]. They are generated by the confluence of both economic and cultural factors.

In the Implementation Opinions on Revitalizing Cultural Relics and Expanding the International Influence of Chinese Culture, published in November 2021, it is proposed to fortify the safeguarding and utilization of cultural relics and the preservation and inheritance of cultural heritage through multiple means. This involves enhancing the level of research, interpretation, display, and dissemination of cultural relics, so that they can be genuinely revitalized. As a result, the challenge for cultural-related organizations is to find ways to make cultural relics more engaging and lively, thereby bringing these relics to life for the public.

The standard approach typically involves exploiting social media platforms to propagate cultural relics and leveraging appropriate secondary artistic creations of cultural relics in order to generate a more vivid, three-dimensional rendering of these relics to bring the distance between relics and the masses closer. In addition, developing basic cultural and creative products on the basis of museum relics provides an opportunity for formerly inaccessible cultural relics to become accessible and tangible objects in the daily lives of ordinary people.

Observing the overall landscape of cultural entrepreneurship, the concept of "digital collection" has emerged as an important innovative element in the diversified development of the cultural and creative industry. Traditional cultural and creative goods, such as stationery, clothing, and other small objects, are frequently incorporated into the museum's unique image design so that visitors can continue to cherish memories and memorabilia even after their visit has ended. With the progression of technology and the steady development of NFT ecological chains, cultural relics and heritage can be circulated in the virtual world as digital assets, thereby promoting the digital transformation of the cultural industry and establishing a broader platform for cultural communication.

Recently, the "museum × digital collection" model has surreptitiously become a sought-after concept for major museums and cultural heritage institutions. For instance, in 2021, the Dunhuang Academy of Arts and Ant Chain jointly designed and released the digital art collection "Dunhuang Flying Apavas and Nine-colored Deer," as well as launched the public benefit NFT project "Cloud Tour Dunhuang," which had seven NFT dynamic composite design blind boxes, giving rise to beneficial outcomes for the cultural and museological industry. Furthermore, there is also a typical

meta-universe data storage platform - “Cmeta,” which is supported by the technology of Science and certification alliance, as well as other top IP such as Sanxingdui and Chaayu. This platform, with its distinct resource advantages and reliable support, has gained the favor of a significant number of digital collection players. The online digital collections on this platform are so highly sought-after that they are sold out in a matter of moments. This indicates that under the backdrop of the digital age, digital technology has become a crucial medium for constructing and disseminating cultural memory. As we transition to the era of web3.0 [3], the cultural and museum industry faces new challenges. It is certainly worth exploring whether the popularity of digital collections can be normalized, and this presents a crucial issue for digital collection publishers to consider.

2.1.1. Questionnaire Evaluation

The Sanxingdui Museum and its associated site area are situated in Guanghan City, Sichuan Province, representing a significant cultural heritage site with extensive spatial distribution, prolonged duration and profound cultural connotations as yet unparalleled in the southwestern region of China. As of May 2022, the Sanxingdui Site has yielded over 13,000 cultural relics of diverse genres dating back to the ancient era of the Bashu civilization, providing invaluable insight into the artistic accomplishments and human civilization of the time. In recent years, the Sanxingdui Museum has made proactive efforts in promoting and innovating its cultural relics heritage preservation and dissemination, tapping into a variety of expressive forms to cater for diverse audiences. Such initiatives have contributed to the burgeoning popularity of the site among both domestic and international tourists, leading to an upsurge in visitors. Particularly noteworthy is the adoption by the Sanxingdui Museum of the trending “digital collection” fad, which has seen the concretization of digital collection literature and art that encapsulates the distinctive characteristics of ancient Shu civilization through collaboration with multiple digital collection platforms. These exquisitely crafted and distinctive digital collections have rapidly gained traction in the market. The Sichuan Provincial Cultural Heritage Bureau’s dynamic data confirms the reception of over 100,000 visitors by the Sanxingdui Museum during the 2023 Spring Festival period. Owing to the significance of Sanxingdui in the domain of digital collections, this research paper probes the Sanxingdui Museum as a research subject, conducting a questionnaire-based survey to study the dynamics of digital collections.

On January 26, 2023 (the fifth day of the first lunar month), the author performed a random selection of tourists to participate in a questionnaire survey at the entrance of the Sanxingdui Museum Park. A total of 158 questionnaires were collected, all of which were deemed valid. The questionnaire aimed to assess respondents’ comprehension levels regarding “museum digital collections,” their acquisition experiences, preferences, and overall perceptions of digital collections. Based on the collected data, only 21.57% of the respondents reported familiarity with digital collections, having purchased or expressed an interest in acquiring them. Meanwhile, 30.36% stated that they had some knowledge of digital collections but harbored no intentions of purchasing them. Moreover, 41.07% of the respondents reported no knowledge of digital collections entirely. Following a brief introduction to the concept of digital collections and offering samples of such collections to the latter cohort, more than half of the respondents expressed willingness to explore acquisition options.

Based on the survey results, tourists can be classified into three categories: those who have already purchased or are willing to purchase digital collections, those who are willing to purchase after being informed and those who are reluctant to purchase even if they are aware of the products. In order to investigate and analyze the attitudes, experiences, and preferences of various subgroups of visitors towards digital collections in museums and offer recommendations for enhancing digital collections’ cultural creativity, the author conducted further investigations and interviews with the aforementioned groups.

For the sample population of visitors who have already purchased or expressed their willingness to purchase digital products, their primary motivations are their strong interest in the collection provided by the publisher's museum and their admiration for the creative design of the digital collection. Additionally, this group of respondents displays a high willingness to make repeat purchases.

Regarding the sample population of respondents who were previously uninformed but were willing to make purchases after being informed, the primary draw of the digital collection's cultural creativity is the novelty of the concept. Over 90% of these respondents confirmed that they were attracted by the innovative concept and are optimistic about its future development. Consequently, cultivating a trendy or popular image can attract a segment of the target audience.

As for the sample population of tourists who are not interested in purchasing, the primary reason for their lack of interest is their skepticism towards the practical and applicable value of digital collection cultural creative products. They contend that, compared to traditional cultural creative products such as educational and office supplies, creative gifts, attire, and commemorative medals, digital collections lack an experience of tangible acquisition.

In addition, it is noteworthy that when the basic concept of digital collection and sample display was explained to the respondents who were previously unaware of digital collections, over half of them expressed their willingness to try buying digital collection literature. Those who had already made digital purchases in the survey expressed a desire to do so again.

2.2. Exploration of the Enhancement of Cultural Creation of Museum Digital Collections

Cultural innovation utilizes culture as a medium to create and promote cultural resources, generating high value-added products. Museums' cultural and creative products merge historical and cultural elements into commodities, enabling them to circulate through purchases and trades. As a result, they release their cultural and economic potential. The cultural and creative industry is developed from cultural resources and, if not widely accepted and disseminated, cannot unleash its full value. Similarly, if users cannot appreciate the benefits of cultural and creative products, they will not serve the people effectively. This is especially true in digital collection literature creation. In light of the problems stemming from insufficient comprehension, low acceptance, and inadequate cultural experience of digital collections, museums can adopt specific strategies to enhance tourists' experiences with digital collections. These strategies, tailored to subgroups within the survey, include:

2.2.1. Target Marketing

Currently, digital collections are still a new concept for most museum visitors. Although digital collections have become a cultural phenomenon sweeping the world, the actual audience is predominantly young and the concept may still be new or even obscure for older visitors. Therefore, market segmentation and positioning can be targeted towards the young market to promote the concept of digital collections and creativity. For instance, social media, where young people are active, can be used to market and publicize the collections. Similarly, digital collections enable virtuality and have lower and more convenient collection and sharing costs, and lower requirements for storage space and conditions. As a result, it is feasible to use KOL to create a trend and hype up the popularity of digital collections, satisfying the thoughts of this part of the group. Moreover, most interviewees who did not know the concept of digital collections showed strong interest after a brief understanding, indicating the necessity of marketing and publicity of digital collections. However, this does not mean to give up the market of middle-aged and elderly people. This part of tourists mainly lacks understanding of the cultural creation of digital collections, and they can be targeted through TV,

short video platforms, and other media to popularize the knowledge, enabling the recognition and acceptance of emerging concepts.

To further improve marketing strategies, it is advisable to understand the demands and characteristics of different target audiences and develop creative products and marketing strategies tailored accordingly. Furthermore, multiple marketing channels should be utilized to cover as many audiences as possible. For elderly tourists, relevant courses and training can be provided to enhance their understanding and participation. For the younger market, KOL and “family marketing” strategies can be used to improve market awareness. Accurate market positioning and precise promotion are keys to achieving effective results in marketing.

2.2.2. Various Ideas to Improve the Design Level

According to the survey mentioned earlier, the majority of visitors who buy digital collection literature attach great importance to the image and design of digital collections. As a virtual commodity, design aesthetics are crucial to their success. The design of cultural and museological digital collections should be creatively inspired while maintaining the original form and cultural significance of the artifacts. Museums and designers should fully utilize the rich cultural resources available, understand the patterns and stories behind the relics, the emotional expression and value deposits they represent, and create innovative and culturally significant products.

Design depth can be explored through various levels such as application scenes, narrative scenes, and social scenes [5], such that they captivate the viewer and grab their attention through design. Additionally, different types of cultural relics can receive targeted inspiration designs. Cultural relics based on 2D modeling (paintings, calligraphy, fabrics) are suitable for display as digital paintings, showcasing the full picture or part of cultural relics, while those based on 3D modeling (pottery, bronze ware, etc) benefit from the ability to display them in 360-degree views, allowing viewers to appreciate all the details [6]. Cultural relics can also inspire IP image design for digital collections, providing another avenue for inspiration.

2.2.3. Expand Application Scenarios

According to the survey, many tourists who showed no interest in purchasing digital collections expressed pessimism concerning the practical value and usefulness of such collections. They claimed that digital collections are merely virtual items without any real-world application scenarios. In comparison with traditional learning and office tools, creative gifts, daily wear, commemorative medals, and other cultural and creative products, digital collections were reported to lack the actual feeling of acquisition and experience, thus diminishing their cost-effectiveness. To overcome these shortcomings, designers and marketers of digital collections must broaden their horizon and integrate these collections more effectively into people’s daily lives. For instance, digital collections could be combined with daily gift cards, bus cards, and other tickets to improve their overall value and increase their possibility as giving items with meaningful cultural and aesthetic values.

2.2.4. Develop Multiple Products

The release of digital collection cultural creation was able to attract the attention of a small group of digital collection enthusiasts, who have a deep sensitivity and high willingness to pay for these collections. Consequently, these enthusiasts often cause a “sold out upon release” phenomenon for digital collections, making it difficult for the collections to reach the general public. While limited sales have benefits, such as achieving economic benefits and increasing publicity, it makes it difficult for ordinary tourists with less information to access digital collection literature and creativity, leading to speculation and infringement of consumers’ rights and interests [7]. Publishers can address this

issue by launching digital collection literature creations in “limited styles” while making the general digital collection literature creation available for purchase consistently. This strategy will allow publishers to cater to both the enthusiasts and ordinary tourists alike, increasing the accessibility of digital collections.

2.2.5. Maintain Certain Public Property and Service Functions

Museums are essential public cultural service institutions. While digital collection cultural innovation is undoubtedly a valuable addition to the cultural industry, it is crucial to maintain the original image of museums and to understand the relationship between cultural innovation, economic interests, cultural transmission, and public property. It is important to avoid unfavorable cultural and creative development of digital collections solely for their attraction value. Additionally, it is crucial to ensure that digital collections fulfill their essential role as a public cultural asset and provide necessary public service.

3. Conclusions

In conclusion, digital collections are a significant innovation in the cultural industry. However, to maximize their potential, it is essential to address some challenges currently faced by digital collection creators and companies. These include target marketing, improving the designs, broadening the application scenarios of digital collections to appeal to a wider audience, developing multiple products, and maintaining their essential public property and service functions. By doing so, publishers and designers will be able to create digital collections that not only appeal to enthusiasts but also to the general public and promote cultural transmission. Digital collection innovation can prove to be a crucial player in shaping the future of the cultural industry if addressed strategically and with consideration for its cultural significance and public service functions.

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Appendix

Original Questionnaire

A Survey of the Knowledge of Digital Collections and Purchase Intentions of Museums

1. Are you familiar with the concept of “Digital Collections” as a cultural creation of museums? Please choose one of the following options:

☐ Well-informed and experienced buyers who understand and intend to purchase digital collections.

- ☐ Familiar with the concept, but not willing to purchase digital collections.
- ☐ No understanding of the concept.

2. Digital collections, supported by blockchain technology, are a novel cultural phenomenon that encompasses digitized artworks, commodities, and unique identifiers. When an artifact or artwork is converted into a digital collection, it becomes a one-of-a-kind asset stored on the blockchain. What motivates you to purchase a digital collection? Please select all that apply:

- ☐ You are curious about new cultural innovations.
- ☐ You are interested in the collections of the museum that issued the digital collection.
- ☐ You appreciate the artistic quality of the digital collection (i.e., design, aesthetic value).
- ☐ You enjoy collecting digital items.
- ☐ Other reasons: _____ (please specify).

Question 2 is contingent upon the response to Question 1.

3. In comparison to physical collections, digital collections are a new cultural creation that leverages blockchain technology to digitize and uniquely identify works of art, artifacts, and commodities. When translated into a digital collection, each item becomes a distinct digital asset stored on the blockchain. What motivates you to purchase a digital collection? Please select all that apply:

- ☐ You are curious about exploring new cultural phenomena.
- ☐ You are interested in the collections of the museum that issued the digital collection.
- ☐ You appreciate the artistic quality of the digital collection (i.e., design, aesthetic value).
- ☐ You enjoy collecting digital items.
- ☐ Other reasons: _____ (please specify).

Question 3 is contingent upon the response to Question 2.

4. Would you be willing to continue purchasing digital collections? Please select one option:

- ☐ Yes
- ☐ No

Question 4 is contingent upon the response to Question 1.

5. Reasons why you are not willing to continue buying [multiple choice] *

- ☐ Digital collections have little practical value
- ☐ It is not widely used
- ☐ Expensive
- ☐ "Sold out immediately", difficult to grab
- ☐ Other _____ *

That depends on choice 2 on Question 4

6. In comparison to physical collections, digital collections are a novel application of blockchain technology that enables the unique identification and digitization of works of art, artifacts, and commodities. Each digital item is stored as a distinct digital asset on the blockchain. What reasons would discourage you from purchasing a digital collection? Please select all that apply:

- ☐ Digital collections have little practical value.

- ☐ Digital collections are not widely used.
- ☐ Digital collections are expensive.
- ☐ Digital collections are frequently sold out and difficult to obtain.
- ☐ Other reasons: _____ (please specify).

Question 6 is contingent upon the response to Question 3.

7. After purchasing a digital collection, what do you perceive as the disadvantages of digital collections? Please select all that apply:

- ☐ Digital collections have little practical value.
- ☐ Digital collections are not widely used.
- ☐ Digital collections are expensive.
- ☐ Digital collections are frequently sold out and difficult to obtain.
- ☐ Other reasons: _____ (please specify).

Question 7 is contingent upon the response to Question 1.

8. Digital collections are a recent development that involves the unique identification and digitization of works of art, artifacts, and commodities using blockchain technology. Each digital item is stored as a one-of-a-kind digital asset on the blockchain. Users can purchase digital collections through online platforms at various price points, ranging from 9.9 yuan to obtain a “sun god bird” to 29.9 yuan for a national treasure of the Eastern Han Dynasty bronze horse. After learning more about digital collections, would you be interested in making a purchase? Please select one:

- ☐ Yes
- ☐ No

Question 8 is contingent upon the response to Question 4.

9. For those who answered “Yes” to Question 8, why are you interested in purchasing a digital collection? Please select all that apply:

- ☐ You are interested in trying new things.
- ☐ You are intrigued by the museum that issued the collection.
- ☐ You appreciate the quality and artistry of the collection.
- ☐ You are fascinated by the novel concept of digital collections and their potential for future development.
- ☐ Other reasons: _____ (please specify).

Question 9 is contingent upon the response to Question 1.

10. For those who answered “No” to Question 8, why are you not interested in purchasing digital collections? Please select all that apply:

- ☐ Digital collections have little practical value.
- ☐ They are not widely used or accepted.
- ☐ They are too expensive.
- ☐ Digital collections sell out quickly, making them difficult to obtain.
- ☐ Other reasons: _____ (please specify).

Question 10 is contingent upon the response to Question 8.

11.What is the maximum price you would be willing to pay for a single piece of digital collection?

Please select one:

- ☐ 0-49.99 yuan
- ☐ 50-99.99 yuan
- ☐ 100-199.99 yuan
- ☐ More than 200 yuan

Question 11 solicits information about participants' price sensitivity and budget.

12.How old are you? Please select one:

- ☐ Under 18 years old
- ☐ 18 to 25
- ☐ 26 to 30
- ☐ 31 to 40
- ☐ 41 to 50
- ☐ 51 to 60
- ☐ Over 60

Question 12 gathers participants' demographic information and can be used to analyze survey results across age groups.