

# Digital Technology Enables Traditional Culture IP: The Construction Path of Urban Museums

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**Abstract:** With the rapid development of science and technology, the application field of digital technology has been expanded and extended by leaps and bounds, and has been widely and deeply applied in many fields, providing necessary support for the transformation and upgrading and innovative development of related fields and industries. In the process of the construction and development of urban museums, more and more attention has been paid to the full integration and effective application of digital technology, so as to provide the necessary momentum for the activation and innovative development of traditional cultural IP, empower traditional culture, and then radiate new vitality. In this context, the relevant aspects need to effectively strengthen the construction, optimization and innovation of urban museums, make the urban museums show a new vitality in the process of digital technology empowerment, and fully reflect the construction efficiency of IP and digitalization in the aspects of scene construction and digital integration. Based on this, this paper focuses on exploring the construction path of urban museums under the background of traditional cultural IP with digital technology.

**Keywords:** Digital technology; IP of traditional culture; City museum; Construction path.

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## 1. Foreword

The museum records the course of human civilization, but also records the wonders of the development of history. Under the background of the digital age, city museum in the process of construction and optimization of digital transformation and upgrading, in the process of digital museum building and optimization to further fully tap the traditional culture IP, make full use of digital technology, grasp the advantages of the Internet and digital development opportunity, and further optimize the museum in the process of iterative update concept, improve construction strategy, optimize the implementation way, thus in the process of cross-border thinking and digital thinking makes the museum construction and the development of optimization innovation.

## 2. Definition of Related Concepts

### 2.1. The City Museum

So-called city museum mainly refers to the city modern development history to fully display and effectively present the museum, the architecture of the museum is relatively modern, mainly for the change of the city and effective development history, but also show the city citizens way of life and folk customs and other kinds of state. Typical representatives include the Hong Kong Museum of History and the Shanghai Museum of History.

### 2.2. IP

IP mainly refers to intellectual property rights, which mainly involves four major categories, mainly including design, trademark, patent, copyright and other related content.

### 2.3. Digitization

So-called digital mainly refers to for a variety of types of information effective transformation, make it can measure and save, integrated use of digital to data, etc., then in the use of computer system and the Internet mode, to ensure that the relevant number or data can be fully integrated and optimized

use, formation and the application development of digital model. And it is fully transformed into a binary code, and then the interrelated code is matched to the computer system, and then unified and standardized processing, so as to form a digital operation system, this process is also called digital.

## 3. Digital Technology Enables the Construction Path of Urban Museums Under the Background of Traditional Culture IP

### 3.1. Fully integrate and excavate urban cultural stories to wake up urban memories

In the process of the construction and development of urban museum, to ensure that the digital technology can be fully applied, for the traditional culture IP can effectively assign, in the process of the development of the whole city itself to cultural story, cultural resources are fully integrated and mining, in the development of the actual city culture related IP property rights effectively integrated, and for relevant data and resource development and make full use of, in the process of incubation IP, makes the digital innovation of urban museum has the necessary resources support and material security. The core exploration of relevant IP intellectual property rights should be effectively strengthened, so that the cultural characteristics and cultural resources potential of urban museums can be effectively explored, and the due value identity and emotional connection can be reflected. In this way, the necessary conditions for the full establishment of IP projects and the effective integration of museum development. In the current development process of urban museums, it is necessary to further and fully clarify that the current stage is the era of meaning consumption, but also the era of symbol consumption. With the wide application of digital technology and the deep excavation of traditional culture and the integration of all kinds of projects, need in the process of the construction of city museum, further reflects its

own urban culture skills and the integration of cultural story effect, as the basic characteristics of to a greater extent to meet the basic needs of the audience, meet the development needs of the development of digital at present stage. In the post-industrial era, it is mainly represented by symbol consumption. Through the value mining of objects and the full integration of stories, the symbolic meaning behind the symbols is presented to a greater extent. At the same time, through the effective excavation and awakening of cultural stories and urban memory, consumers can be more fully integrated and the audience is more willing to accept and recognize the corresponding cultural connotation, so as to promote the basis of strengthening the sense of people's cultural belonging and identity. Therefore, in the process of digital technology and traditional culture mining, it is necessary to further integrate relevant cultural stories, excavate cultural resources, and ensure that all kinds of resources can be story and systematic. In terms of intellectual property rights, thus reflect the carrier of the city museum, make the story connotation and historical memory of city culture itself mining and awakening, which can make the city museum itself coruscate gives new vitality, make the city museum itself as an important connection and the spirit of urban development carrier, further reflects the cultural characteristics and cultural image of the city itself. Only in this way can the digital IP value of urban museums be fundamentally strengthened, the necessary guarantee can be provided for the effective establishment of traditional cultural projects and the enhancement of market influence, and at the same time, the own communication universe and discourse system can be formed, thus reflecting the effectiveness of the construction of urban museums in a subtle way.

### **3.2. Build a digital communication matrix and effectively build a communication window**

In the process of the development of urban museums, in order to reflect better construction results, and make the digital technology and traditional culture IP projects fully integrated, it is necessary to effectively construct the digital communication matrix, so as to further form a corresponding communication window from the starting point. Only in this way can the digital transformation and upgrading and optimization and innovation be reflected to a greater extent. In the context of the digital age, urban museums should effectively match the app clients suitable for themselves, and further effectively ensure that tourists can visit and browse the digital communication matrix through 3D modeling technology, remote sensing technology, big data technology and other related technical systems to ensure that tourists can browse in the digital communication matrix. In the process of the development of urban museums, such practices can effectively develop their own apps, and digital museums can be effectively constructed through small programs, web pages and other related modes. The Internet system and operation mechanism of the Internet system can be fully integrated and optimized, so that there can be continuous live broadcast and in-depth experience in the digital communication matrix, and a digital communication window, so as to make the overall digital communication and communication more effective in the process of effective integration and optimization. At the same time, it can also break through the limitations of time and space, so that the city museum itself can effectively break through in the limitations of the venues. At the same time to match the corresponding AR or VR equipment, effectively

build digital application scenarios, this can ensure that visitors or citizens visitors effective application of related equipment, for different periods of the city blocks for immersive, achieve mastery through a comprehensive, this can ensure that the audience of city museum local customs and typical regional characteristics of full feeling and cognition, in the process of experience reflects the transformation and upgrading of digital city museum, online and offline achieve mastery through a comprehensive, let the audience have more rich practice experience and emotional cognition. At the same time, to match the corresponding AR or VR equipment, effectively build digital application scenarios, this can ensure that visitors or citizens visitors effective application related equipment, according to the different periods of city blocks for immersive, achieve mastery through a comprehensive study, this can ensure that the relevant audience for the local conditions and customs of urban museum and typical regional characteristics of full feeling and cognition, in the experience process reflects the transformation and upgrading of digital city museum. The integration of online and offline integration enables the audience to have a richer practical experience and emotional cognition, so as to reflect the guarantee role of various devices in a subtle way, and realize immersive experience and cognition in the digital situation. And effectively create digital application scenarios, this can ensure that visitors or citizens visitors effective application related equipment, according to the different periods of city blocks for immersive, achieve mastery through a comprehensive study, to ensure the relevant audience of city museum local customs and typical regional characteristics of full feeling and cognition, in the process of experience reflects the transformation and upgrading of digital city museum. Through the integration of online and offline, the audience can have a richer practical experience and emotional cognition, so that the city museum under the influence of digital technology will show new vitality in the process of full integration and optimal utilization of App communication window.

### **3.3. Build an urban cultural living room to fully meet the audience's experience needs**

In the process of the construction of the city museum, to reflect the digital can value, make the traditional culture related project connotation fully excavate, the museum itself to its positioning optimization and transformation and upgrading, to clarify its function and value can effectively build culture living room, that is to say, open to the public from free to form the corresponding culture gathering venues. In the process of cultural communication and communication reflects the cultural significance and atmosphere, so as to a greater extent to meet the cultural needs of citizens and cultural experience objective needs, thus make the city museum itself can form aggregation effect, have due cultural significance and exhibition atmosphere, so as to a greater extent to meet the cultural needs of citizens and cultural experience objective needs, thus make the city museum itself can form a more perfect system, have a virtuous cycle of aggregation field. In the course of the overall development, To conduct fully conduct clear and effective research on the public's needs for museum visits, Then, on the basis of forming the function of the cultural living room and integrating into the connotation of historical culture and traditional culture, Form the corresponding scenic spots and punch-in places, In this context, further integrated into the

industrial development and transformation and upgrading process of cultural tourism, Under the matching effect of digital technology, Further through relevant web pages, small programs and app development, On the basis of matching the relevant software and hardware and functional facilities, the cultural living room and the digital living room can be effectively constructed, On the basis of matching relevant software and hardware and continuously optimizing functions and modules, the city museum itself has greater influence and attraction, This integrates visitors and visitors into the cultural living room, In the process of fully realizing cultural exchange and ideological communication, So that city museums can form historical culture and life application scenarios, On the basis of creating a strong cultural atmosphere, So that the audience can be fully integrated in, A deeper understanding of the core connotation of the museum itself, In this way, the due transformation and upgrading effect can be reflected to a greater extent, To ensure that the Museum of Honesty will further strengthen the integration and optimization of cultural resources, food resources and leisure resources on the basis of taking quiet, In the integration of promoting the construction of urban museums to achieve better results, To meet the experiential needs of the audience to a greater extent.

### **3.4. Strengthen the role of synergy and conduct deep cooperation with Internet companies**

In the construction process of urban museums, in order to reflect more significant digital empowerment effects and develop traditional cultural projects and resources more effectively, it is necessary to fully cooperate and integrate with professional Internet companies to ensure that the resource advantages of the museum itself are more fully reflected. In the process of integration and utilization of digital resources, the corresponding professional technology and practical experience should be further matched, so as to effectively optimize the resource reserve and resource maximization effect, so as to reflect the due effect of digital transformation and upgrading. The city museum itself should fully cooperate with relatively mature Internet enterprises and integrate them in all aspects. The Palace Museum, for example, and tencent company effective cooperation, qin shihuang mausoleum terracotta warriors and baidu cooperation, in the digital transformation and cultural can effectively strengthen IP, this can be in the city museum of digital standards and transformation and upgrading of fully optimize and achieve mastery through a comprehensive, so that the protection of cultural heritage and the Internet, in the aspect of cultural promotion and dissemination presents a greater force, thus fully reflect the innovation and development of the city museum. In the process of the digital transformation and upgrading of the City Museum, the Google Art Project is a typical representative. The program is the largest and forward-looking in the museum industry. It is a relatively typical digital technology project. It also works out as keeping the museum online, Through the iterative upgrade and gradual optimization of such digital platform, Further matching of the 3D scanning AI technology, Using AR, VR and other related equipment, In the process of forming online cultural communication through technology integration, platform update and improvement, Realize the digital interaction, In this way, with the support of the digital platform, the digital development and standard establishment, Thus forming a more systematic and perfect digital space,

Create a digital system for museums, Image collection and accurate processing of all kinds of cultural relics or related resources, And make it clear that the digital application mechanism provides the necessary energy support and platform guarantee for the traditional IP, On the basis of collecting industry standards, the development of urban museums has achieved more obvious results.

## **4. Feeling Thinking**

In the development of the urban museum, To fully clarify the development advantages and application value of digital technology, In the process of practice, we should focus on the in-depth mining and integration of traditional cultural resources, Only in this way can the integration and optimization utilization value of digital technology and traditional cultural intellectual property projects be fully reflected, Under the dominant interaction of the two, Health promotion for healthier urban museums, Thus reflect the due value and significance, At the same time, we should also effectively combine our own collection situation and relevant positioning, and constantly optimize and effectively improve, Thus to reflect the due efficiency and value to a greater extent, Under the power of digital technology, the development potential and fundamental purpose of urban museums are fully reflected, In the specific development process of the city museum, the following aspects also needs to be fully considered.

### **4.1. Fully construct the digital standards and operation norms of museums**

In the process of urban museum development practice, in order to achieve more good digital transformation and upgrading effect, makes the traditional culture IP project can be fully integrated and optimized use, need to effectively strengthen the museum digital standard construction, fundamentally fully embodies the specification and standards, so as to present the corresponding traditional culture IP Efficiency, for IP The full embodiment of cost control value lays a solid foundation. At the same time, you can see that in the museum of the process of digital transformation in the process of digital development process to further choose more scientific and reasonable standards and related tools, and then in the process of integrating related technology and achieve mastery through a comprehensive study, to make the relevant collection and digital tools fully combined and effective use, and then in the choice of digital tools and management system on the basis of the pertinence and feasibility. In addition, when choosing which tools to achieve what standards, it needs to be fully defined and constantly optimized and improved. The accuracy and process of digital collection should be optimized and constantly improved, so as to reflect the due precision and breadth of transformation to a greater extent. for instance, The corresponding process and standards can be formed in the construction process of Google, And Google's digital standards have been fully collaborative and effectively integrated with more and more urban museums, In this way, the integration and optimal utilization of functional resource and cultural data can be effectively strengthened, In the collection of data information and data sorting and utilization, To effectively implement online museums in the process of practice, In the process of mutual integration and optimal utilization of online and offline products, So that the city museum itself can fully grasp its own initiative and

discourse power, Then under the background of the influence and radiation of self-brand, Expand the field of radiation, Ensure that their own development scope continues to extend, And then to provide the necessary support for its sound development, It provides necessary conditions for the subsequent optimization and improvement of the digital space system and the full formulation of the museum industry standards. In the overall development process, it is necessary to further optimize the management system, and lay a solid foundation for the empowerment of digital technology and the full embodiment of the fundamental value of traditional city libraries and modern city museums.

In China, Tencent and the Palace in the establishment and improvement of digital collection standard related aspects have taken a big step, especially in 2019, Tencent and the Palace Museum signed a strategic cooperation agreement, make mutual cooperation content further deepen and perfect, and then in the development of the overall strategic requirements and further development, the clear cooperation agreement and realize accurate development and effective perfect process further build the development of different dimensions system. On the whole, in the process of cooperation, the two connect relevant contents from three dimensions, namely "construction of digital cultural relics library", "improving user experience" and "enhancing public emotion" to promote the construction of "digital Palace Museum". In the future development of the process, Tencent will also provide the Palace Museum with necessary digital technology upgrades and digital protection, in substantial support and cooperation, in capital and technical support, talent matching and other related aspects of continuous optimization and improvement, and in the substantive transformation and innovation process further reflects the more good support, makes the Palace Museum of digital cultural relics protection work can achieve more good development, in horizontal and vertical marketing development and extension, to fully reflect the due value and profound significance. In the digital collection, storage and display of cultural relics, the technology and maintenance management and other related aspects of continuous optimization and improvement, and do a good job in the collection of high-definition images and refinement, and then further in the overall development process to promote the digital construction to achieve greater development. In industry standard establishment and standard system construction and related aspects reflect the fundamental value, and the formation of digital standards, effectively complete the transformation and upgrading of digital system and optimization, effectively strengthen in terms of digital and systematic, for the unification of digital space expansion and extension, thus for the development of the traditional culture project and the overall mechanism of provide the necessary premise, provide the necessary premise for the sustainable development of the city museum.

#### **4.2. Demonstrate and improve the data attribution**

In the process of the future development of urban museum, also need to effectively optimization in terms of data ownership, in the development of the city museum, through the comprehensive strength of external institutions combined with their own development needs, realize digital transformation and perfect, in the data ownership and related property rights need to effectively strengthen, so as effective

guarantee for related data and art copyright clearly provide the necessary premise. At the same time through the interpretation of Google art and culture can see, Google art pictures and related copyright are belong to the city museum, but the museum of the panoramic image copyright is Google, if the museum is willing to share 50 pictures in Google art culture platform, under this background can free use Google Art Camera camera. Although Google art and culture project repeatedly stressed that he is a non-profit organization, but when the collection of data content to enough, data can gradually become its production data, with data with corresponding technology such as machine learning, produce new data and new cultural content, related cultural content of capital value is identified and belonging under the background of produced digital ownership and where to go, this is the need to consider the key issues. So in the future of the specific development and promote the need to further optimization and improvement in the overall level, in the use of data integration and optimization of effectively strengthen, thus in a better development, under the background of digital digital fully mining and integrated use, thus present the fundamental value for the development of the city museum, in the overall development link further fully embodies the efficiency and fundamental value, so as to achieve sustainable development and digital transformation and upgrading to lay a solid foundation. In the development of urban museums, we need to fully clarify the attribution of various data, Grasp the matters needing attention, Then optimize and improve in the overall development process, Clarify the corresponding ownership and development characteristics, Only in this way can we effectively reflect the application advantages of digital technology at the root, To effectively explore and make full use of traditional cultural projects, So that the data of the city museum itself are effectively optimized, In the process of clarifying relevant property rights and realizing digital transformation and upgrading, Need to be effectively strengthened in the integration and optimization of digital technology and traditional culture, In optimization of value mining and resource expansion, In this way can it be fully integrated in all aspects, The process of realizing the relevant system connection reflects the pertinence and feasibility of the needle. Can the value of traditional cultural content be identified, and where will the created data go? Whether the capital value of relevant cultural content is identified and belongs under such background, and how the attribution of numbers and the direction of digital development is the focus issue that needs to be paid attention to in the development process of urban museums. At the same time, we should grasp the mining process and development trend of various data. In the process of the development of overall optimization and perfect, which more reflect the traditional culture IP application value and far-reaching significance, but also further develop the corresponding app system and offline scene experience system, in the relevant aspects of the use of integration and optimization, fully reflect the development of the city museum itself. In the process of the development of urban museum need to further fully clear the ownership of all kinds of data, grasp the considerations, and then in the overall development process of optimization and improvement, clear the corresponding ownership and development characteristics, so that fundamentally effectively reflect the application of digital technology advantages, for traditional culture project effective mining and make full use of, so that the city museum itself data effectively optimization, in the clear property rights

and realize cultural content capital value is identified and ownership is clear. In the process of the development of the whole optimization and perfect, clear the corresponding ownership and development characteristics, thus can fundamentally effectively reflect the application of digital technology, for traditional culture project effective mining and make full use of it, so that the city museum itself data effectively optimization, in the relevant property rights and upgrade the process of digital technology fully reflected, in terms of traditional culture can assign practical optimization, thus reflect the application value.

While museums are expanding their virtual museum Spaces, Google emphasizes that the copyright of the panoramic images belongs to Google, and the online space of the museum and the rebuilt virtual museum do not belong to the original museum itself. In recent years, many regulations have been introduced in the field of digital economy, but no clear consensus has been reached in the global perspective. In the context of the cooperation between Google and multinational and regional museums, the attribution of data is more difficult to define. Whether the original data or the data regenerated on the original data, their attribution needs to be standardized and reasonably defined.

### 4.3. Learn from the combination of Shaanxi History Museum and City Museum

In the development process of the urban museum in Xi'an, it pays great attention to the excavation and full use of its own cultural heritage and cultural potential, and regards the cultural heritage as an important characteristic industry for the development of modern industrialization. Xi'an history museum and city museum in the process of transformation and upgrading and integration development to further strengthen their transformation and upgrading, and fully strengthen in terms of resource sharing and digital blend, thus the value of traditional culture integration and city museum resource utilization to effectively strengthen, thus fundamentally fully embodies the transformation and upgrading effect in the actual development link, the development of the city museum itself fully reflected. In addition in the traditional culture of copyright projects and advantages are effective optimization and continuous improvement and perfect, in the process of practice transformation and upgrading and optimization, and in digital fu to improve and effectively, so can in a greater extent to optimize their own development results in the overall development process of targeted and feasibility. In addition to further excavate the development of different urban characteristics and historical background, the cultural elements, traditional cultural elements and digital technology for integration and organic combination, on the basis of the comprehensive mining resources application value to fully embody and effective implementation, to a greater extent to strengthen the transformation and upgrading of digital technology fundamental value for the solid foundation in the process of development, city museum into the city museum development link, and become a vital part, to effectively strengthen and optimization. In the process of specific development to ensure that the digital technology effectively integrated, in digital fu can need to strengthen, to deeper mining and integrated utilization, which reflects the development potential of the city museum, and in the process of the development of the city museum and traditional museum integration and organic combination, in the process

of mutual distinction and mutual unity achieve good development and digital technology application and development value, for the traditional culture comprehensive achievements to lay a solid foundation.

## 5. Conclusion

To sum up, in the process of the development of the city museum also should fully clear the current development trend, effectively grasp the application of digital technology, and through the traditional culture and the development and utilization of project, optimized in marketing promotion and transformation and upgrading, mix, to promote the city museum realize innovation development, make its new vitality and vitality. In the process of future development, the relevant city museum need to further optimize its development system and development mechanism, in the clear positioning and realize the transformation and upgrading, fully integrated into digital technology, matching the corresponding big data technology and Internet technology, etc., in all kinds of technology of mastery and organic combination process give full play to their own advantages and fundamental value. More so can reflect the traditional culture integration effect, for its resources fully mining and influence lay a solid foundation, but also in a broader scope of promotion and extension, and fully reflected in the true sense its own brand effect and influence, in the process of digital development itself into the era development trend, in the process of transformation and upgrading of optimization innovation reflects the fundamental value.

## References

- [1] HOWKINS J. The creative economy: how people make money from Ideas [J]. Arab Scientific Publishers, 2010(2): 17.
- [2] Wang Zhao. The innovative development of digital immersive cultural tourism from the perspective of experience economy [J]. Jiangxi Social Science, 2022, 42 (08): 190-197.
- [3] Xu Tonglei, Xu Long. Development and protection of intangible cultural heritage resources from the perspective of IP [J]. Research on Heritage and Conservation, 2019, 4 (02): 41-43.
- [4] Song Xiangqi, Hao Xiaoyu. "IP + digitization": a study on the development path of urban museums [J]. Southeast Transmission, 2023 (04): 112-115.
- [5] Li Xin. Google Arts and Culture: More possibilities to interpret a museum with data [J]. International Brand Watch, 2023 (18): 39-45.
- [6] Huang Qiuye. The development trend of modern urban museums in the 21st century [J]. Decoration, 2004 (12): 18.
- [7] Ma Luyao. — Take the Shanghai Museum of Contemporary Art as an example [J]. Research on Art Communication, 2021 (01): 58-59.
- [8] Yang Simiao. Research on digital construction in museum display design [J]. Beauty and The Times (top), 2023 (08): 23-25.
- [9] Daniel Aaron Ser, by Terry Nichols Clarke. Qi Shuyu, Wu Jun, translated. Scene: How spatial quality shapes social life [M]. Beijing: Social Sciences Academic Press, 2019: 37-39.
- [10] Zhang Yun, Zhang Mengxin. Reconstruction of museum narrative logic in the digital age: a perspective based on scene theory [J]. Modern Communication (Journal of Communication University of China), 2020 (9): 99-103.

- [11] Wang Siyi. Why "embodied" —— On the body and the senses in the museum [J]. Southeast Culture, 2018 (5): 115-120.
- [12] An Lai Shun. The super-connected museum of the digital age [J]. Chinese Museum, 2018 (3): 3-5.
- [13] Li Fengliang, Gu Zhenjing. Industrial characteristics and development trends of new business forms of museum culture in China [J]. Journal of Shandong University (Philosophy and Social Sciences Edition), 2022 (1): 96-106.
- [14] Shan Jixiang. Cultural responsibility of the museum [M]. Tianjin: Tianjin University Press, 2017:24.
- [15] Wang Bin, Xu Guoliang. The policy of "two innovation" is the fundamental path to carry forward the excellent traditional Chinese culture [J]. Red Flag manuscript, 2018 (5): 27,28.