



Research on the Innovative Model of Modern Cultural and Creative Product Design from the Perspective of Cultural Heritage IP Development

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Abstract. With the development of The Times, the revitalization and utilization of cultural heritage has become an important topic for cultural inheritance and innovation. This paper focuses on the design of modern cultural and creative products from the perspective of cultural heritage IP development, aiming to explore its innovative model. In the waves of globalization and digitalization, cultural heritage faces the dual challenges of protection and inheritance, and activation and utilization have become the key to its sustainable development. The problem focuses on how to achieve innovative design of cultural and creative products through IP development to meet the market's demand for diversity and personalization of cultural products. For further exploration, this paper uses the case analysis method to analyze successful cases at home and abroad; Combined with the design practice method, innovative design schemes for cultural and creative products are proposed. The research results show that IP development can effectively integrate cultural heritage resources and enhance the cultural connotation and market competitiveness of cultural and creative products. It provides a theoretical reference for the cultural and creative industry, helps the creative transformation and innovative development of cultural heritage in modern society, and promotes the prosperity of the cultural industry.

Keywords: Cultural heritage; Cultural and creative products; IP development

1 Introduction

Under the background of globalization and digitalization, the protection and revitalization utilization of cultural heritage have become important issues in cultural inheritance and innovation. In recent years, the state has introduced a series of policies to promote the development of the cultural industry. In 2022, the implementation of the national cultural digitalization strategy provided policy support for the digital protection and innovative utilization of cultural heritage. Meanwhile, the "14th Five-Year Plan for Cultural Development" also clearly states that it is necessary to promote the high-quality development of the cultural industry and encourage the deep integration of culture

and technology. These policies provide a broad space for the development of cultural heritage IPs and the design of modern cultural and creative products.

This study focuses on the design of modern cultural and creative products from the perspective of cultural heritage IP development, aiming to explore its innovative model. By studying the modern transformation paths of cultural heritage IPs, not only can new ideas be provided for the activation and utilization of cultural heritage, but also the dissemination and inheritance of culture can be promoted through design innovation. This article will conduct an in-depth analysis of successful cases at home and abroad through case analysis and design practice methods, summarize experiences and rules, and propose innovative design plans for cultural and creative products, providing theoretical references for the cultural and creative industry and promoting its prosperous development.

2 Theoretical Basis

2.1 Definition of Core Concepts

Cultural heritage IP (Intellectual Property) refers to the system of symbols with intellectual property value formed with cultural heritage as the core. It has the following three attributes: Cultural nature: Cultural heritage IPs are important carriers for the inheritance and dissemination of culture. Symbolic nature: Through symbolic expression forms, cultural heritage IPs transform complex cultural connotations into visual, auditory or tactile symbols that are easy to recognize and disseminate. These symbols can overcome language and cultural barriers, quickly capture the audience's attention and evoke emotional resonance. Commerciality: The commercial value of cultural heritage IPs lies in their ability to generate economic benefits through licensing, development and other means. Successful IP development can transform cultural resources into economic assets and promote the development of the cultural industry.

Modern cultural and creative product design is not only about fulfilling functions, but also about pursuing emotions and experiences. "Everything can be creative, and it can collide, empower and integrate with any industry"^[1]. The design dimensions mainly include: the functional dimension, the emotional dimension, and the experience dimension. Functional dimension: The fundamental function of cultural and creative products is to meet the actual needs of users. Emotional dimension: Cultural and creative products convey emotional value through design, evoking users' emotional resonance. Experience dimension: The design of cultural and creative products focuses on user experience, enhancing users' perception and satisfaction with the products through interaction, participation and other means.

2.2 Related Theories

The Double Diamond Model in design innovation theory is a systematic approach to design thinking. It emphasizes innovation through a cyclical process of "finding the problem - exploring the problem - proposing a solution - implementing the solution".

The Double Diamond model can effectively guide the design innovation of cultural and creative products in the development of cultural heritage IP.

First, through the problem identification stage, conduct in-depth research on the current situation and market demand of cultural heritage to clarify the goals and directions of cultural and creative product design. Subsequently, in the problem discovery stage, analyze the cultural connotations, symbolic values and commercial potential of cultural heritage, and explore the entry points for design innovation. Then, in the stage of proposing solutions, create innovative and culturally rich creative products that combine modern design concepts with technical means. Finally, in the solution realization stage, bring the cultural and creative products to the market through design practice and marketing to realize the commercial value of the cultural heritage IP.

3 The Development Path of Cultural Heritage IP

The development path of cultural heritage IP consists of two stages. During the excavation stage, by extracting explicit elements and decoding implicit cultures, rich materials and profound cultural connotations can be provided for the design of cultural and creative products. During the transformation stage, through narrative reconstruction and symbol translation, cultural heritage elements can be successfully integrated into the design of modern cultural and creative products, achieving the activation and inheritance of culture.

3.1 IP Mining Stage

The development of cultural heritage IP first requires in-depth exploration of its cultural connotations, extraction of explicit and implicit elements. Explicit elements are the visible parts of cultural heritage, such as patterns, shapes and colors. These elements have a strong visual impact, can quickly capture the audience's attention, and become important materials for the design of cultural and creative products. Implicit cultural elements refer to the philosophical ideas, traditional skills and historical stories behind cultural heritage. Although these elements are not easy to observe directly, they are the core values of cultural heritage and can infuse a soul into cultural and creative products.

3.2 IP Conversion Strategy

After completing the IP mining, it is also necessary to integrate cultural heritage elements into the design of modern cultural and creative products through effective transformation strategies, so as to achieve the activation and inheritance of culture.

Take the "flying apsaras" in Dunhuang as an example. The Dunhuang Academy has restructured the narrative of the flying apsaras through digital animation technology. For instance, in the short film "Dance·Dream", the design team extracted the typical shapes and movement features of flying apsaras and combined them with modern animation technology to create a series of vivid images of flying apsaras. The image of the flying apsaras not only takes on a completely new look visually but also becomes more

attractive in terms of story-telling, successfully capturing the attention of the younger generation. From the perspective of IP transformation methods, it is necessary to have the courage to innovate, combine with the core meaning of IP, and explore new narrative paths^[2].

4 Innovative Design Models for Cultural and Creative Products

Modern cultural and creative product design from the perspective of cultural heritage IP development has revitalized and passed on cultural heritage through a variety of innovative models such as technology-driven, emotional connection, scene expansion and sustainable design. These innovative models not only enhance the cultural connotation and market competitiveness of cultural and creative products, but also provide new ideas and methods for the protection and dissemination of cultural heritage.

4.1 Technology-Driven Innovation

Technology-driven innovation uses cutting-edge technological means to infuse new vitality into cultural and creative products and enhance user experience and product added value.



Fig. 1. 3D model of the Terracotta Army sculpted soldiers.

(1) AR application case: The experience of "Virtual Heritage restoration" at the British Museum

The British Museum has developed a virtual heritage restoration experience project using AR technology. Visitors can immerse themselves in the restoration process through AR devices, not only observing the details of the artifacts up close, but also learning about the restoration techniques and historical background, which is a way of communication that transcends time and space. The application of this technology not only enriches the museum's display forms, but also enhances the audience's awareness of the protection of cultural heritage.

(2) 3D printing technology: Personalizing figurines of Terracotta Army

3D printing technology makes it possible to personalize cultural and creative products. Take the Terracotta Army as an example. Through 3D scanning and modeling technology (as shown in Figures 1), visitors can choose their favorite Terracotta Army figures and customize personalized figurines. This customization service not only

meets consumers' demand for unique products, but also improves production efficiency while reducing production costs.

4.2 Emotional Connection Type Innovation

Emotional connection innovation enhances the appeal and dissemination of cultural and creative products by evoking emotional resonance in users. The sound postcard of Beijing's hutongs is a design that evokes memories through sound. These postcards not only document the architecture and history of the hutongs, but also link to sound clips of the hutongs by scanning the QR code on the postcard, such as vendors' cries and hawking. The design allows viewers to experience the atmosphere of old Beijing both visually and aurally, evoking a sense of resonance with traditional culture.

4.3 Scene-Expanding Innovation

Scene-expanding innovation expands the dissemination and influence of cultural heritage by combining it with different application scenarios.

(1) Integration of culture and tourism: Dunhuang 'Digital Donor' Interactive Project

The "Digital Donor" interactive project launched by the Dunhuang Academy (Figure 2) digitally displays the images of donors in Dunhuang murals through digital technology and combines interactive experiences. This innovative model of integrating culture and tourism not only enhances tourists' sense of participation but also promotes the dissemination of cultural heritage.

(2) Educational application: The "mortise and tenon" teaching AIDS from the Forbidden City

The "mortise and tenon" teaching AIDS developed by the Palace Museum combine traditional mortise and tenon structures with modern education. By designing detachable mortise and tenon models(Figure 2), students can learn the structural principles of traditional Chinese architecture in practice and enhance their understanding and interest in traditional culture. This educational application not only enhances the educational value of cultural and creative products, but also provides a new way for the inheritance of cultural heritage.

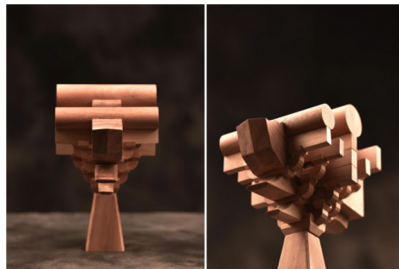


Fig. 2. The Qing-style five-step Dougong mortise and tenon building blocks of the Baohe Hall in the Forbidden City.

4.4 Sustainable Design Innovation

Sustainable design innovation emphasizes the introduction of environmental protection and sustainable development concepts in the design of cultural and creative products, promoting the long-term protection and utilization of cultural heritage. The combination of intangible cultural heritage bamboo weaving techniques and modern lighting design is a typical application case of ecological materials. For example, the bamboo filament lamp: A kind of lamp that reveres nature and has a unique shape. The traditional production of bamboo silk lanterns involves binding the graphic framework with bamboo threads and making the lanterns with cotton paper or light silk. Modern binding has been changed to iron wire, and parchment or xuan paper has been changed to silk. Mr. Mou combined traditional bamboo weaving techniques with modern lighting design, using natural bamboo to make the lamp shells. This not only retains the natural texture of bamboo weaving but also reduces the reliance on non-biodegradable materials such as plastic.

5 Challenges and Countermeasures

The innovative model of cultural heritage IP development and modern cultural and creative product design is confronted with problems such as the shallow cultural connotation and the predicament of intellectual property protection in practice. Measures such as establishing a database of cultural symbols, developing a hierarchical authorization system and building a user participation mechanism can effectively enhance the cultural depth and market competitiveness of cultural and creative products, while providing a strong guarantee for the protection and inheritance of cultural heritage. In the future, with the continuous advancement of technology and the gradual improvement of the market environment, the cultural and creative industry will play a greater role in the revitalization and innovation of cultural heritage.

5.1 Existing Problems

According to relevant surveys, about 38 percent of consumers believe that current cultural and creative products lack depth and fail to fully explore and present the cultural connotations behind cultural heritage. Many cultural and creative products are designed in a similar way, lacking innovation and differentiation, making it difficult for consumers to distinguish and choose. Some cultural and creative products overly pursue commercial benefits and ignore the depth and connotation of the culture, resulting in products lacking soul and story and failing to touch consumers^[3].

Intellectual property protection is an important guarantee for the development of cultural heritage IP, but the current cultural and creative industry is facing a serious challenge of infringement. Not only damaging the rights and interests of creators and developers, but also affecting the sustainable development of cultural heritage IP. The creation, application, protection and management of intellectual property rights require the collaboration of multiple parties^[4].

5.2 Solution Approach

(1) Establish a database of cultural symbols

Establish a database of cultural symbols for cultural heritage with reference to Japan's "Agency for Cultural Affairs AR Marking" program. Through digital technology, the symbols, patterns, colors and other elements in cultural heritage are systematically organized and classified to form a standardized cultural symbol database.

(2) Develop a hierarchical authorization system

Drawing on the IP authorization management norms of the Palace Museum, a hierarchical authorization system is developed. Based on the significance and application scope of cultural heritage IPs, authorizations are classified into different levels, clearly defining the usage rights, duration and fees for each level of authorization.

(3) Build a user participation mechanism

In the highly competitive market environment of cultural and creative products, the design of cultural and creative products needs to correctly recognize the implicit emotional bond between the product and the consumer, use cultural and creative products to evoke the emotional resonance of consumers, leave a deep impression in their hearts, and then prompt consumers to have the desire to purchase^[5]. Through the mass innovation design platform, a user participation mechanism should be established to enable users to play an active role in the design of cultural and creative products.

6 Conclusions and Prospects

6.1 Research Conclusions

This study systematically explores the innovative model of modern cultural and creative product design from the perspective of cultural heritage IP development, and proposes a pyramid model to summarize and generalize the innovative path of cultural and creative product design. Through this pyramid model, the design of cultural and creative products can gradually transition from basic application to value elevation, achieving in-depth development and innovative utilization of cultural heritage IP.

(1) Basic Application Layer: This layer focuses on the extraction and initial application of explicit elements of cultural heritage IPs. By extracting visual elements from cultural heritage, cultural and creative products can quickly capture consumers' attention, but often lack depth and uniqueness. (2) Technology integration layer: At this level, technology-driven innovation becomes key. Through technologies such as AR/VR and 3D printing, cultural and creative products can achieve richer interactive experiences and personalized customization, enhancing the added value and market competitiveness of the products. (3) Value elevation level: This is the highest level of cultural and creative product design, focusing on emotional connection, scene expansion and sustainable design. By evoking consumers' emotional resonance, expanding application scenarios and introducing environmental protection concepts, emotional resonance design aims to trigger users' emotional responses through innovative applications of color, material and form^[6]. Cultural and creative products can not only inherit cultural heritage, but also achieve the elevation of cultural value.

6.2 Future Trends

To sum up, the design of modern cultural and creative products from the perspective of cultural heritage IP development has achieved remarkable results in practice, but still faces many challenges. The digital cultural and creative industry embodies the integration of cultural innovation and technological innovation, and it is an economic "new business form" that emerges against the backdrop of the vigorous development of new quality productive forces. In the future, with the wide application of emerging technologies such as AI and the metaverse, the design of cultural and creative products will enjoy a broader development space, continuously injecting new vitality into the protection and inheritance of cultural heritage.

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References

1. Fan Shibin. Analysis on the integration and innovation of Chinese traditional auspicious culture IP brand and cultural and creative derivatives design [J]. *Frontiers in Art Research*, 2023.
2. Han Jierui. Research on the Application of Xu Wei's inscriptions and poems in cultural and creative products [J]. *Tian Gong*, 2025, (11):72-75.
3. Zhang Shuo. Strengthening judicial protection of intellectual property rights [N]. *Lanzhou Daily*, 2025, (06).
4. Zhang Chi. Illustration application in the design of cultural and creative products in urban museums [J]. *Footwear Technology and Design*, 2025, (5):73-75.
5. Wang Yingji. Research on visual design of the world cultural heritage site of Liangzhu ancient city in China: centered on cultural commodity design[D]. Graduate School of Muyuan University, 2023.
6. Gai Feng. Unveiling the Judicial power that propels the digital cultural and creative industry to explode [N]. *People's Court Daily*, 2025, (02).

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