

Huashan rock painting new cultural and creative product development strategy research

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Abstract: Through literature research, field investigation and case analysis, this study summarizes the development status and development of Huashan rock painting culture and creation. Based on the theory of new cultural and creative construction, this paper discusses the necessity and strategy of new cultural and creative construction of Huashan rock painting. The paper holds that the unique cultural symbols of Huashan rock painting should be transformed into cultural and creative products and cultural experience with market and cultural value by using creative thinking design based on science and technology, so as to achieve a win-win situation of cultural inheritance and economic benefits.

1. Introduction

With the iterative development of information technologies such as the Internet, big data, artificial intelligence and blockchain, and the accelerated application in the field of cultural tourism, the global cultural industry pattern is undergoing a reshaping situation. With IP as the core, multiple digital content such as games, animation, literature, film and television, esports and video are integrated and symbiosis, and are developing rapidly. The cultural industry has been upgraded from the pan-entertainment era to the new cultural and creative era. New cultural creation is a kind of cultural production mode that emphasizes the integration of modern science and technology and creative thinking on the basis of respecting and protecting traditional culture. Science and technology is the first productive force, innovation is the first driving force, the use of new cultural and creative concepts, the development of Huashan rock painting new creative product, can promote the deep integration of culture and tourism development, to achieve cultural confidence and consumption upgrade of the two-way.

2. Cultural and creative status of Huashan rock painting

2.1 Overview of Huashan rock paintings

Huashan rock paintings are located on the cliffs along the Zuo River and its tributary Ming River in Chongzuo City, China, with a total of 38 rock paintings, including 109 rock paintings and about

4050 images.^[1] The painting was made by the Luoyue people, the ancestors of the Zhuang, in ochre red color. It was mainly composed of human figures, supplemented by animals, utensils and graphics. The composition was rigorous and the image was vivid, reflecting the spiritual life and social life of the ancient Luoyue people in the Zuojiang Valley at that time. Zuojiang Huashan rock painting is the largest, most abundant and most densely distributed rock painting group in South China and even southeast Asia. It is one of the representative works of rock painting art in the world, known as Tianshu without characters and Dunhuang on the cliff.^[2]

In 2016, Huashan rock painting and its cliff, river and platform together constitute the mysterious and shocking Zuojiang Huashan Rock painting Cultural landscape, and with its distinctive characteristics, long history and rich cultural connotation, was included in the World Heritage List, becoming the most representative rock painting world cultural Heritage in China. The Huashan rock painting in Ningming County is the core of the Zuojiang Huashan Rock painting cultural landscape, with its own characteristics. In the picture, there is a distinctive giant image, tall and burly, with legs spread, waist with sword and arms raised, showing a majestic posture. This is the largest single painted rock painting in the world. On December 27, 2024, the Huashan Rock Painting Scenic Spot in Chongzuo, Guangxi Zhuang Autonomous Region was officially designated as a national 5A-level tourist attraction.

2.2 Development status and development of Huashan rock painting culture and creation

In recent years, Guangxi's cultural and creative industry has developed rapidly, and some large development institutions have deeply integrated forward-looking creative ideas and innovative wisdom into local national culture, creating both practical and artistic cultural and creative products. The cultural and creative products with the theme of Huashan rock painting have been improved and expanded in this trend. The designers have perfected the combination of classical and modern by deepening the creative design of patterns, starting from lightweight and trendy, focusing on product materials and functions, and deeply cultivating the application field of products to create cultural and creative products that young people see and are willing to buy.^[3]

With the strong support of national policies, funds and science and technology, Guangxi has formed a number of cultural and creative industrial parks and formed a clustering effect, and the development approaches of cultural and creative industries tend to be diversified. At present, the cultural creation of the Huashan rock painting theme series on the market is mainly home products, clothing, stationery and decoration, and a few cross-border co-branded products. Although these cultural creations reflect local cultural characteristics to a certain extent, the homogenization of product creative design is more common, the cultural connotation and implied expression is not deep and comprehensive, the product form is less, the lack of integration with new science and technology, the economic efficiency is not high, and the entire industrial chain is mainly in the low-end business form.

3. Necessity of new cultural and creative construction of Huashan rock painting

The concept of new cultural and creative was first proposed by Cheng Wu, vice president of Tencent Group, at the 2018 Tencent New Cultural and Creative Ecological Conference, which refers to a new cultural production mode with IP construction as the core in the new era.^[4] New creative product emphasizes building a new cultural production mode with IP, advocating the integration and innovation of content and technology, culture and technology, and empowering cultural value and commercial value.^[5] New cultural Creation is further upgraded on the basis of pan-entertainment and represents a new format for the development of Chinese cultural industry in the digital era. Compared with the concept of pan-entertainment industry in the past, new cultural

creation no longer simply pursues entertainment enjoyment, but attaches importance to the connotation of products, which should be entertaining and informative, so that the public can establish correct values when consuming. Cheng Wu defined the core IP of New cultural creation as a symbol that has been tested by the market and can carry human emotions, reflecting the special attention of New cultural creation to humanistic care. The new cultural and creative concept is an all-round development idea, and it is also the result of upgrading and adjusting the development direction of Chinese cultural and creative industry. Its approach is to transform cultural heritage resources into more widely influential Chinese cultural symbols, use digital technology to link and integrate different industries, produce products that meet consumers' personalized and emotional consumption needs, and ultimately achieve the purpose of inheriting, activating and prolonging the vitality of excellent cultural resources.

3.1 Promoting cultural inheritance and innovation

Cultural inheritance is the source of national self-confidence, but also the most important driving force in the pursuit of innovation, culture has become an important part of the country's soft power competition. Through digital technology and creative design, new cultural creation integrates traditional cultural symbols into modern consumption scenes, endowing culture with new vitality, appearing in the public eye with a new look, attracting the public's attention and learning, so as to achieve the purpose of display, communication and education. The essence of the new cultural and creative construction of Huashan rock painting is to use different carriers to concentrate Huashan culture in the square inch, not limited by time and space, and become a *walking art* rich in artistic, functional and cultural content. Huashan rock paintings, as a precious world cultural heritage left by the Zhuang ancestors Luoyue people, are well known around the world, with extremely important historical, artistic and scientific values. It is an important part of China's excellent traditional culture and China's rock painting cultural heritage. The use of new cultural and creative ideas to develop Huashan rock painting cultural and creative works can recreate the new communication content, communication process and communication strategy for different target audience groups, deepen its cultural communication and better protect and inherit the cultural heritage of Huashan rock painting.

3.2 Promoting high-quality regional economic development

In 2018, the Ministry of Culture and Tourism issued the Guiding Opinions on Promoting the Deep Integration of Culture and Tourism, pointing out that the deep integration of culture and tourism is an important way to promote economic transformation and upgrading. The Party Central Committee has emphasized promoting the in-depth integration and development of culture and tourism in many important meetings. Pulling consumption by literary travel has gradually become an effective way to expand domestic demand and a new engine for economic growth of our country. Ordinary tourism leads the development of local catering, lodging, transportation and other industries by attracting tourists for sightseeing. The combination of cultural innovation and tourism can promote the upgrading of consumers' needs from basic consumption to service and experience, stimulate the consumption potential of young groups, form new consumption hotspots, and drive the development of local cultural tourism economy. According to the data of the National Bureau of Statistics of China, the added value of the cultural industry and the tourism industry will reach 5,946.4 billion yuan and 5,483.2 billion yuan respectively in 2023, accounting for 4.59% and 4.24% of GDP respectively, and the support for the national economy will steadily increase.

3.3 Promoting industrial integration and innovation

Cultural and creative industry is an important carrier for the prosperity and development of socialist culture under the conditions of market economy, an important way to meet the diversified, multi-level and multi-faceted spiritual and cultural needs of the people, and an important focus to promote the adjustment of China's economic structure and change the mode of economic development, and has become one of the core contents of reflecting the soft power of national culture.^[6] The prosperity and development of cultural and creative industry does not rely on a single industrial model, but constantly breaks barriers in the process of guiding consumers. The situation where the cultural and creative industries interact, penetrate and integrate with other industries provides the public with new consumption experience content, and gradually enhances the driving force of related industries such as tourism, sports, healthcare, modern agriculture, and traditional manufacturing. In recent years, some famous cultural and creative development institutions, rooted in local culture, take IP construction as the core, integrate science and technology, tourism and other industries, and realize the rapid increase of added value of the industrial chain. For example, the online game *Black Myth: Wukong* has linked Shanxi Cultural and Tourism to launch a series of innovative measures, develop theme tourism routes, and break the virtual and real barriers of digital art. The Shanxi Cultural Tourism Group has established an immersive cultural and creative space experience center called "Follow the Monkey to Tour Shanxi", and has incorporated cultural and creative elements such as handmade paper woodcutting, cultural and creative small Buddha statues, and clay figurines of Black Monkey into the new cultural and creative 2025 calendar. This has attracted a large number of tourists to visit and purchase.

4. Huashan rock painting new cultural and creative construction strategy

4.1 Culture-centered IP construction

New cultural creation is a more systematic development thinking, that is, through a wider range of main body connection, promote the mutual empowerment of cultural value and industrial value, so as to achieve more efficient digital cultural production and IP construction.^[7] IP construction is the key point of new cultural creation, which requires the unity of culture and commercial value in the development process of IP, and the deep integration of culture and science and technology in different forms and methods to realize the creative forwarding and sustainable growth of cultural value. The new cultural and creative construction of Huashan rock paintings needs to transform the unique cultural symbols of Huashan rock paintings into cultural and creative products and cultural experiences with market value, so as to achieve a win-win situation of cultural inheritance and economic benefits.

4.1.1 Selection of high-quality IP: Dig deep cultural connotation and aim at value positioning

IP can reflect the innovation ability and market influence of the content creator, as well as the economic benefits of the copyright owner. Designers equipped with high-quality IP can provide the basis for the public to provide more and higher quality cultural products and services, and even produce huge economic benefits. According to Wikipedia's Global IP Value List in 2025, the world's top quality IP Pokemon and Mickey Mouse and his friends have both created more than \$50 billion in business value. As a tourist attraction, Huashan rock painting IP needs to reflect its own cultural characteristics. Designers should carry out in-depth research and comprehensive understanding of Huashan rock painting, collect and comb out the cultural resources of Huashan

rock painting, deepen the cognition of Huashan rock painting history, rock painting images, cultural interpretation and folk customs, etc. According to the cultural value contained in Huashan rock painting, it is divided into three levels: IP core layer, value-added layer and outer layer. We can extract the most distinctive cultural elements of the Huashan rock paintings from each level. For example, the core layer has the image of frog-shaped man, which is regarded as the ancestors of the Zhuang people, the value-added layer has the image of Luoyue bronze drum and "sheep horn button bell"; and the outer layer has various animals and birds.

In today's highly competitive cultural and tourism market, it is necessary to accurately target IP to increase conversion rates. Usually, the IP brands with high popularity have a significant feature that allows users to understand their appearance image and cultural value in the shortest possible time. The positioning of IP must take culture as the fulcrum, highlight its unique humanistic color, integrate cultural elements with the legend of Huashan rock painting, transmit cultural values through stories, trigger emotional resonance of the target audience, and enhance memory and sense of identity. At the same time, on the basis of IP's cultural value core, attention should be paid to removing "dross" such as feudal superstition and violence, and focus on developing positive energy content that conforms to the mainstream value of society.^[8]

4.1.2 Shaping of IP: Derive story content and enhance audience stickiness

If the image of an IP is successful, it is bound to be affirmed by the audience. Such as Winnie the Pooh, Disney Princess and Bread Superman, not only left a deep sensory experience for the audience, but also refined human devices that affect the hearts of the audience. Professor Barry Feige of the United States believes that image and emotion are the source of power in the marketing world, understanding the needs of customers and meeting their requirements.^[9] In terms of the creation of intellectual property, creators should adhere to the principle of "content is king". On the basis of respecting originality, they should highlight the spiritual and cultural connotations, and create high-level and dynamic intellectual property to bridge the gap with the audience. According to the creation background of Huashan rock paintings and the historical legend of Luoyue culture, historical stories are created to give IP a deeper cultural connotation. The creator combines the elements in the rock paintings with modern life to create light-hearted and interesting short stories or comic works. For example, Japan's Kumamoto Prefecture mascot Kumamoto Bear is the use of anthropomorphic image setting and story marketing, creating a well-known IP in the global tourism industry. Designers can learn from the success of Kumamoto Bear and extract images of different forms in Huashan rock paintings, such as "Little Red Man", break through the idea of pasting and copying the figure images of Huashan rock paintings in the current market, design them into simple and lovely cartoon images, and give them a highly recognizable appearance, characters with blood and tears, and ups and downs of the story plot. By these means, it becomes easier for people to remember and like it. Animal images such as dogs and birds in rock paintings can also be personified and integrated into the creation with characters to enrich the story plot.

4.1.3 Diversified transformation of IP: close to cultural needs, through the industrial chain

The transformation of IP is to commercialize and develop cultural and creative content through different forms and channels, thus forming an industrial chain. Transformation is the redesign of IP, which transmits the ideas and emotions in the story to the public through design, so that the spirit and feelings in it are more close to life.^[10] This transformation will also enable consumers to transform from single patronage to multiple consumption. From the perspective of product form, new cultural creation includes physical products such as stationery, fashion toys, handicrafts, home accessories, food, as well as digital products such as film and television, animation, games, virtual

reality (VR), augmented reality (AR), and also involves offline immersive scene experiences. For instance, cultural exhibitions, theme parks, intangible heritage workshops, research trips and all kinds of cultural IP operation and authorized derivative development. Chinese classical cultural IP has gradually made breakthrough progress in the global cultural and creative market through various forms of creation such as film and television dramas, games, animation, online short videos, and cultural and creative works. *Ne Zha 2* with a total box office of more than 10 billion once again to refresh the strongest in history Spring Festival file history record. The domestic game Black Myth: Wukong has become a global phenomenon. The game is developed and operated with the IP image of the classic character Wukong in Journey to the West. The whole game shows a unique cultural heritage, innovative gameplay and high-quality production level, and has an important impact on the global game market. In 2024, it topped the Steam global Presale list and won a number of international awards. Inspired by these cases, we can take the IP image of Huashan rock painting as the carrier and transform its IP image content into corresponding products according to the requirements of industrial production. We should consider the type of product applicable groups from multiple perspectives, enrich the product types, enhance the gold content of IP, break the internal barriers of the industry, connect the originally unrelated industries together, show the connectivity of industrial integration, comprehensively link the culture, tourism, education, science and technology, manufacturing and other industries, form a cross-border cooperation, diversified development of the industrial chain, to achieve long-term profit and brand value-added. We could consider developing derivative projects based on the Huashan rock paintings theme, creating film and television works, developing games featuring the dance and music tribes, and establishing related offline entertainment facilities.

4.2 Digital intelligence technology enables new cultural and creative construction

With the acceleration of a new round of scientific and technological revolution and industrial transformation, new technologies such as 5G, cloud computing, VR, 3D visual sensing, and artificial intelligence are emerging one after another to shape the image of cultural heritage in an all-round way, increase the interaction with the public, and integrate the cultural concepts to be conveyed into specific tangible and visible images with modern methods. Digital intelligence technology provides a broad space for cultural content production, expression and consumption scenes, and becomes a common foothold for building a cultural power and digital China. The Third Plenary Session of the 20th CPC Central Committee emphasized exploring effective mechanisms for the integration of culture and science and technology, and accelerating the development of new cultural formats, and the deep integration of culture and science and technology is the general trend and key to the construction of new culture. The new technology drives the innovation of the cultural and creative industry, and the mining and release of the value of cultural resources are promoting the cultural and creative industry to digitalization, intelligence, scene and branding.^[11]

4.2.1 Optimize the production of cultural content

The role of science and technology in promoting culture is not only reflected in the qualitative leap in experience, the transformation from standard to excellence, but also in the way of creation, which has a profound impact on creators. More and more creators join the Internet world, with the comprehensive use of multiple technical means to improve the efficiency of creation and reduce the cost of creation. The creator collects suggestions from society regarding IP image design, story marketing methods, etc. through media such as WeChat official accounts, mini-programs, and live broadcasts. They also draw inspiration for creation by using storyboards generated by artificial intelligence software and attempt to develop and manage digital IPs. The creator collects

suggestions from society regarding IP image design, story marketing methods, etc. through media such as WeChat official accounts, mini-programs, and live broadcasts. They also draw inspiration for creation by using storyboards generated by artificial intelligence software and attempt to develop and manage digital IPs. DeepSeek's self-motivation mechanism is used to superimpose the application of digital twin technology to quickly generate digital cultural and creative products, which can be used to test the popularity of products. For example, DeepSeek is used to develop a batch of articles, observe their sales after putting them into the market, analyze sales big data to further clarify the market popularity of products, and use DeepSeek to continue to develop new products and new species with good market response and large sales.

4.2.2 Build experience and interactive scenes

New cultural creation should not only have good content, but also use good forms to interpret cultural resources and promote consumers' feelings and understanding of culture. The creator utilize the Internet, cloud computing, artificial intelligence, blockchain, virtual reality (VR), augmented reality (AR) and other cutting-edge digital intelligence technology to create immersive experience and interactive links, enabling tourists to complete cultural cognition and emotional resonance during their scenic tours. The experiences in terms of vision, hearing, taste, smell, and touch all make tourists highly satisfied. For example, by building public cultural venues, theme parks, virtual exhibitions, online interactive games, AR digital scripts, etc., the Huashan rock painting culture, which carries profound historical and cultural deposits, will be displayed with shocking visual effects, showing the life scenes, production scenes, sacrifice scenes of ancient Luoyue people, and comprehensively interpreting Huashan rock paintings. In 2023, The anthropology museum of guangxi launched a postcard containing AR digital interactive naked eye animation effect of Huashan rock painting, which has become an important selling point of AR and Huashan rock painting cultural and creative integration. In addition, AR can also help consumers complete the experience process of cultural and creative products, increasing the sense of consumption experience and desire to buy. The new cultural and creative interpretation of scientific and technological methods infuses the latest creativity into the presentation form of products, and beats the market homogenized products with absolute product value by ingenuity, occupying the consumer head market, so as to maximize the value of products.

4.2.3 Build a 1+N cross-border cooperation ecosystem

Science and technology revolutionize the way of cultural narration and cultural resources deduction and presentation, and provide technical support for the construction of new cultural and creative. Science and technology linkage cultural creative design, supply chain management and non-genetic inheritance and other multiple subjects, optimize the industrial structure to promote economic growth. New cultural creation emphasizes the construction of cultural content and the empowerment of science and technology, and requires new ideas and methods in the development of new cultural creation, an accurate grasp of the psychological needs of consumers, and the use of new technologies, new materials, new processes and brand co-branding to enhance the terminal value of products. Therefore, the development and design of new cultural creation cannot rely on a single industry support. Instead, new approaches to cross-border cooperation are needed.

At present, digital intelligent operation has become a new form of business in the creative design industry, which directly reflects the trend and demand of social economy and technological development. It is of great significance to enable the construction of Huashan rock painting with digital technology to increase the cultural value and industrial value of Huashan rock painting. The new cultural and creative construction of Huashan rock painting should consider the attributes of

Huashan rock painting as a tourist attraction and the characteristics of the surrounding natural and humanistic ecological environment, develop a *1+N* model based on science and technology. We should integrate various industries such as culture, tourism, agriculture and education, and increase the development efforts of cultural and tourism products, digital culture and creative products, educational products, fashion and entertainment products. The creator explores the interactive + immersive mode of learning or entertainment experiences, transforming the silent Huashan rock paintings into products that can be integrated into people's lives, and establishing a new business model for intelligent Huashan rock painting cultural tourism.

5. Conclusions

In conclusion, the new cultural development strategy for the Huashan rock paintings should be based on innovative thinking in technology and transformed into cultural creative products and cultural experiences with market and cultural value. This approach can not only enhance the cultural heritage but also meet the needs of consumers, thereby achieving a win-win situation for cultural inheritance and economic benefits.

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