

Research on the Protection and Inheritance Strategies for Jiajiang Woodblock New Year Paintings from the Perspective of New Media

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Abstract. This article takes the inheritance and protection of Jiajiang woodblock New Year paintings, a national intangible cultural heritage, as the research object, and systematically analyzes its current development difficulties. Research has found that under the impact of the digital wave, this traditional craft is facing practical problems such as shrinking inheritance spectrum, single dissemination channels, and sustained low attention from young people. Specifically, this is manifested in the lack of publicity matrix leading to public cognitive confusion, outdated product design resulting in weak market competitiveness, and slow digital transformation leading to insufficient cultural innovation momentum. This article starts from the perspective of new media, using successful cases of digital technology in the inheritance and protection of cultural heritage as a reference, aiming to explore how Jiajiang New Year's paintings can activate the display scene of New Year's paintings through OLED transparent screen interactive devices, use VR documentary technology to construct immersive narrative spaces for intangible cultural heritage, design digital IPs and derivatives of New Year's paintings with regional characteristics, and other new technologies and methods to promote inheritance, development and innovation, providing an operational paradigm for the digital transformation of intangible cultural heritage.

Keywords: New media, intangible cultural heritage, Jiajiang woodblock New Year paintings, protection and inheritance

1. Introduction

Jiajiang woodblock New Year paintings, a traditional art form from Jiajiang County in Sichuan Province, are recognized as a national-level intangible cultural heritage. In Jiajiang County, these paintings are a unique folk art form, vitally carrying the region's exceptional customs and traditions. However, due to historical factors and shifts in contemporary aesthetic values, Jiajiang woodblock New Year paintings have long faced challenges such as significant loss of archives and woodblocks, declining sales, and a lack of successors to carry on the craft. In the 1980s, efforts were made to rescue and protect the paintings in Jiajiang County. Nevertheless, since the reform and opening-up, changes in lifestyles and aesthetic preferences have limited promotional methods and development models, significantly shrinking the market for these paintings [1].

In recent years, with the rapid development of new media and network technologies, many cultural promotion organizations have provided dynamic and interactive platforms for the expansion of

dissemination in historical and cultural heritages. Through the use of advantages brought about by new media, such as vivid presentation, powerful interactivity, and rapid dissemination, cultural relics have been able to be displayed online [2]. New media has required them to be more innovative in strategies and ways to apply new media technologies in finding new ways, paths, and forms of development for Jiajiang woodblock New Year paintings. This is a very important method for the revival of traditional arts. The protection and inheritance of Jiajiang woodblock New Year paintings can be explored through new media to better preserve this intangible heritage and promote its creative transformation to highlight cultural uniqueness, inspire the younger generation, and enhance cultural soft power, thus boosting tourism.

2. Current status of the inheritance and development of Jiajiang woodblock New Year paintings

2.1. Historical background

Historical records suggest that Jiajiang woodblock New Year paintings originated in the early Ming Dynasty and had developed into a specialized craft by the Qing Dynasty, flourishing alongside the local paper-making industry [3,4]. However, during the 1960s, Jiajiang woodblock New Year paintings suffered significant destruction, with many works from the Ming and Qing Dynasties lost. Following the economic reforms and opening up of China, the rapid development of society and economy brought changes to traditional lifestyles and aesthetic values, leading to a sharp decline in the sales and market presence of these paintings. In the 1980s, Jiajiang County's rescue and preservation efforts revitalized this cultural heritage. In June 2008, the Jiajiang woodblock New Year paintings were officially included in the second batch of national intangible cultural heritage by the State Council of the People's Republic of China, under heritage number VII-65 [5].

The themes, craftsmanship, and artistic expressions of Jiajiang Woodblock New Year paintings exhibit distinct characteristics of the southwestern Sichuan Basin region.

In terms of subject matter, Jiajiang woodblock New Year paintings align to local cultural and geographic customs and aesthetic preferences. Their content involves the depiction of deities, landscapes, birds and flowers, theatrical stories, and scenes of folk life. Regarding Craftsmanship- The paintings use topnotch paper and are uniquely. Associated with Jiajiang bamboo, creating a rare combination of cultural value in both art and paper. Artisans use knives to carve crisp, dynamic lines featuring their unique "carving style"(Figure 1).



Figure 1. A heritage artisan creating a New Year painting (source: Baidu Encyclopedia)



Figure 2. Jiajiang woodblock New Year painting: "Huangdan Door Gods" (source: Baidu Encyclopedia)

Jiajiang woodblock New Year paintings are printed using the technique of woodblock multicolor, with bright colors and great contrast. Among them, "Huangdan Door Gods," dominated by the color

of yellow cinnabar, enjoy the greatest popularity. The facial features of the figures bear the characteristics of Sichuan residents, while the figures as a whole are uniquely elegant with a strong Sichuan flavor (Figure 2).

Jiajiang woodblock New Year paintings play an important role in ethical education and in passing on cultural and artistic values. Containing themes of mythology, social life, and other spheres, they express moral and ethical norms while spreading cultural and artistic traditions. Their wonderful craftsmanship, vivid coloration that does not fade, and unique characteristics make them highly appreciated in the realm of artistic appreciation. Furthermore, they reflect some very important insights in researching southwestern folk customs and traditional craftsmanship [6].

2.2. Current state of Jiajiang woodblock New Year paintings' inheritance

As a valuable cultural heritage of the local region, Jiajiang woodblock New Year paintings face significant challenges in their transmission and preservation.

2.2.1. Severe loss of woodblocks and urgent transmission issues

Due to historical factors such as wars, substantial losses of woodblocks and related materials have occurred, creating difficulties for research and preservation efforts.

2.2.2. Lack of professional marketing talent and limited promotion

Jiajiang woodblock New Year paintings suffer from a lack of professional marketing personnel. Promotional efforts are insufficient and ineffective, resulting in low public awareness. Additionally, there is a shortage of new artistic talent to innovate on traditional elements. The absence of creative designs has contributed to poor sales performance.

2.2.3. Shifts in consumer aesthetic preferences

Since the reform and opening-up period, the rapid development of society and economy has led to changes in traditional lifestyles and aesthetic values. Customs such as inviting Door Gods and pasting New Year paintings have gradually faded from public view. Traditional character images and artistic styles no longer align with the preferences of modern, younger consumers, leading to market contraction for these paintings.

2.2.4. Untapped economic potential

Jiajiang woodblock New Year paintings are primarily sold in traditional formats. Efforts to develop cultural and creative products have been relatively late, with limited variety and application scenarios. As a result, consumer interest remains low. Furthermore, promotional and sales strategies have not fully leveraged the influence of nearby well-known tourist attractions or the purchasing power of tourists (Figures 3 and 4).



Figure 3 and 4. Selected cultural and creative products based on Jiajiang woodblock New Year paintings

Given the fact that inheriting the Jiajiang woodblock New Year paintings comes with obstacles, this paper will not only investigate the current promotion situation of intangible cultural heritage but also explore new methods for its effective traditional transmission. How can Jiajiang woodblock New Year paintings be culturally promoted to the public using new technologies and ideas? By leveraging new media technologies to effectively integrate the commercial operation with the cultural promotion of Jiajiang woodblock New Year paintings, this study advocates for the deeper development and utilization of their cultural heritage value.

3. Integration of new media technologies

3.1. Advantages brought by the integration of digital media

Protection and inheritance of intangible cultural heritage have their limits. Digital technologies enhance integrity and authenticity in traditional techniques, expand dissemination, and facilitate creative transformation, redefining the preservation model, reconstructing inheritance scenarios, and innovating industrial forms.

3.1.1. Diversified interactive experiences to expand dissemination and influence

Traditional intangible cultural heritage is usually confined within certain geographical and cultural circles, making it difficult for broader audiences to understand and appreciate. Digital platforms, on the other hand, can break these boundaries through diversified interactive experiences. For example, virtual museums enable heritage exhibitions to transcend spatial and temporal constraints, reaching global audiences via networks and social media. These platforms provide vivid formats that encourage wider appreciation and participation in the transmission of traditional techniques.

3.1.2. Intelligent information storage to ensure completeness and authenticity

The traditional approaches to the inheritance of intangible cultural heritage have limitations in time, space, and individuals, which may cause the loss or distortion of techniques. On the contrary, digital technology stores and presents heritage information in digital formats, realizing high precision in recording and preserving techniques that guarantee the integrity and authenticity of intangible cultural heritage.

3.1.3. Digitization of cultural artifacts to enhance market value and economic benefits

Digital artefacts, whose ownership is uniquely identified with blockchain technology, possess social, educational, commercial, and artistic value. Their digital medium matches the aesthetic pleasures of

people today, and their affordability tallies with consumerist habits, especially of young audiences looking for innovation. How intangible heritage's cultural value translates depends on market demand and cultural creativity. Digital technologies help establish a "heritage techniques + digital artefacts" industry chain, enabling heritage products to better translate their uniqueness and artistry into consumer demand and market value. This not only increases heritage practitioners' income and quality of life but also stimulates related industries, giving a boost to cultural industry prosperity.

3.2. Empowering cultural heritage transmission through digital technology

Digital technologies offer diverse ways to empower the transmission of intangible cultural heritage. Among these, diversified interactive experiences, digitization of cultural artifacts, and intelligent information storage have become significant drivers of cultural heritage preservation. These technological tools not only broaden the channels of dissemination but also provide new opportunities for survival and development in the context of globalization [7].

3.2.1. Diversified interactive experiences

Interactive transparent OLED displays, combined with digital technologies and new scientific methods, enable the digital transformation of large heritage sites and museum spaces, creating immersive experiences for visitors.

Transparent OLED screens offer a seamless display, customizable designs, and flexible configurations. They also support touch interactivity and augmented reality (AR), providing users with an exceptional experience [8]. By replacing traditional glass display cases with transparent OLED screens, visitors can not only observe artifacts up close but also engage in intelligent interactions with the screens. This approach brings artifacts and their stories to life, enhancing the audience's understanding and enriching their experience. In recent years, many cultural and museum institutions, including the National Museum of China, the Palace Museum, the Shandong Museum, and the Sichuan Museum, have leveraged the innovative "transparent OLED interactive technology" to enhance interaction between artifacts and visitors, successfully capturing public attention (Figure 5). Additionally, AR and virtual reality (VR) technologies allow users to enjoy the cultural richness of intangible heritage without leaving their homes.

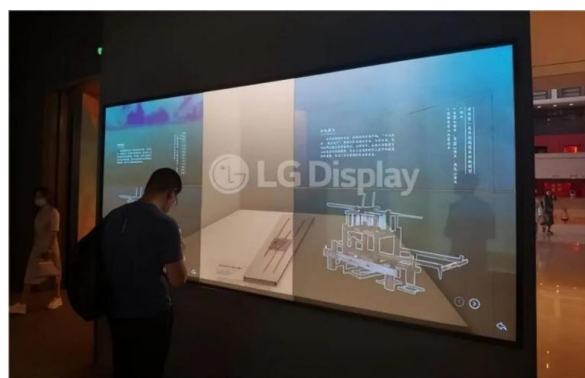


Figure 5. Visitors interacting with exhibits via OLED interactive screens

Source: Guoyuan Exhibition

In 2023, China's first immersive VR interactive documentary, Ancient Text Adventure, was released, recreating the "Four Great Discoveries of Ancient Texts" from the early 20th century. This project uses VR as its core medium, supported by PICO's 6DoF interactive technology and Volcano Engine's 3D reconstruction and video scanning techniques. It allows users to experience the history recorded in ancient texts in a fully immersive way, bringing these texts to life. In addition to the main

narrative, users can explore a "virtual museum" through the PICO VR device's Ancient Text Adventure homepage, where they can examine ancient texts and view representative artifacts up close (Figures 6) [9]. VR's 360-degree panoramic visuals and immersive interactions enable users to assume roles such as intangible cultural heritage inheritors or ancient craftsmen, fostering a deeper and more comprehensive understanding of the unique significance of cultural heritage.



Figure 6. Interactive VR documentary Ancient Text Adventure homepage

Source: Finance World

3.2.2. Intelligent information storage

In the study of historical artifacts, intelligent information storage facilitates artifact preservation and enhances research efficiency. For example, artificial intelligence (AI) played a crucial role in the restoration of two significant bronze artifacts from the Sanxingdui site—Bronze Beast Carrying a Kneeling Figure with a Standing Human Offering Vessel and Bronze Bird-Legged Vessel with Inverted Stand. In June 2023, these artifacts were presented in relatively complete forms thanks to AI-assisted analysis. Using 3D modeling and AI computational analysis, the research team established a solid theoretical foundation for material restoration while minimizing the damage that could have been caused by physical experiments [10].

3.2.3. Digitization of cultural artifacts

In digital artifact displays, 3D visualization uses 3D scanning and modeling to replicate artifacts' shape, texture, and color, generating high-precision 3D models for viewing from any angle [11]. Using touchscreen technologies, visitors can explore these models. Digital interactive screens in heritage exhibition halls solve the problem of artifact handling restrictions, allowing audiences to engage with and study precious artifacts without touching the originals, thereby reducing the risk of damage to the originals and aiding their preservation.

With its enormous potential, technology-driven innovation in historical culture occupies an important place in the digital artifact market. Protection for traditional culture, inspiration for cultural creativity, and enrichment of cultural consumption scenarios will be enabled by it. For example, the Hai Shang Bowu app was independently developed as the Shanghai Museum's first self-owned digital artifact platform. In January 2023, a collection of digital artifacts hit the shelves of the platform, including Spring Ode Scroll of Jiangnan by Wen Zhengming [12]. In recent years, more and more digital artifact platforms have been releasing their continuous products using intangible heritage craftsmanship and historical artifacts.

Digital artifacts bridge the virtual and real worlds through digital technology and cross-domain integration, promoting the transmission and rejuvenation of Chinese culture. It makes historical artifacts and works of art more accessible, with the added possibility of permanent preservation and sharing in society, while offering audiences new ways of cultural experience.

4. New strategies for protecting and inheriting Jiajiang woodblock New Year paintings through new media technologies

4.1. Interactive touchscreen + New Year painting production process

In static displays of tools and materials related to the production of New Year paintings, traditional glass display cases can be replaced with multiple OLED screens.

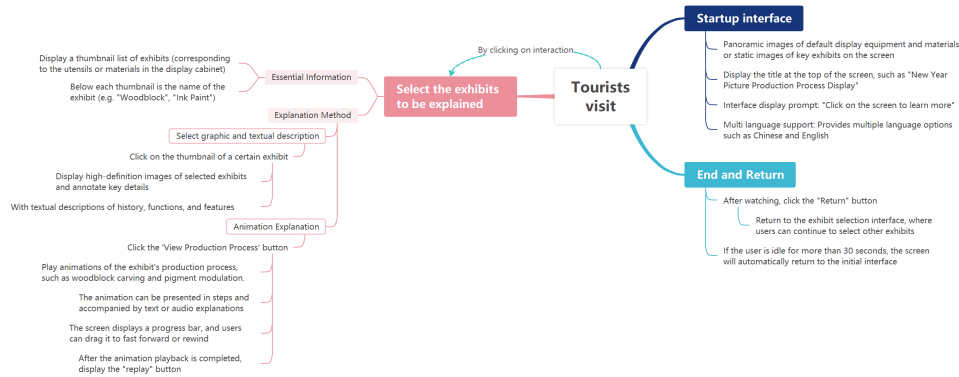


Figure 7. Design of OLED interactive process

Visitors can interactively click on OLED screens to view animations demonstrating the production process of the exhibits. Compared to traditional textual explanations, this method not only makes the display content more vivid and intuitive but also enriches the audience's cognitive experience and enhances the technological appeal and effectiveness of the exhibition (Figure 7).

4.2. Sensory display + woodblock carving and coloring

In the production process of New Year paintings, carving the woodblocks is a challenging step due to the scarcity of raw materials and the high difficulty of carving. As such, visitors often only experience the printing process without hands-on engagement in carving. To address this, electromagnetic resonance (EMR) or electromagnetic induction technologies can simulate the challenging woodblock carving process using a "digital simulation woodblock + carving knife" setup. The digital simulation system consists of two main components: a sensing board and a pen. The sensing board generates an alternating electromagnetic field and detects feedback from the pen. The pen, powered by the electromagnetic field, superimposes pressure signals on changes in the magnetic field (Figures 8 and 9).

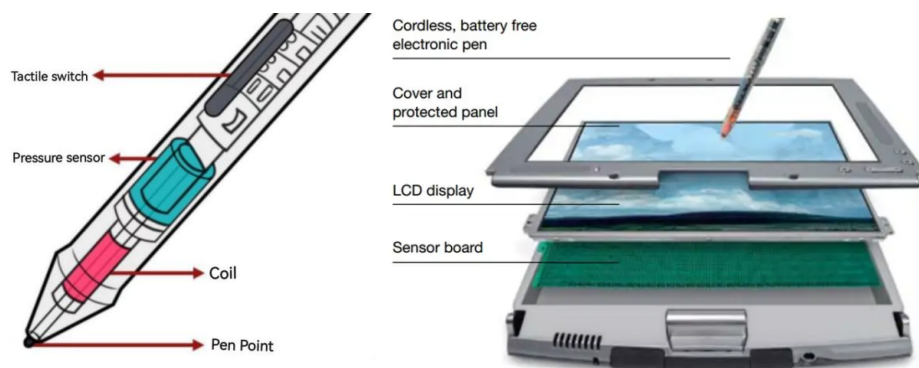


Figure 8 and 9. Diagram of a pressure-sensitive pen (source: Zhihu) and Schematic structure of an EMR sensing board (source: Zhihu)

The pressure-sensitive pen comprises the following key components: a sensing coil-red and a pressure sensor-blue. The pen tip has pressure-sensing, allowing it to simulate line thickness and shades depending on the user's pressure. It replicates real tools for accurate work. As the tip moves on the sensing board or screen, the coil interacts with the magnetic field to produce current reflecting pressure changes, which the device interprets as drawing parameters.

Digital simulations replace traditional experiences, making techniques of intangible cultural heritage more accessible, thus reducing risks and costs. In the case of New Year paintings, a "large-screen + small workstation" model can be adopted. Through a small screen, visitors choose patterns and use a stylus to draw lines and color (Figure 10).

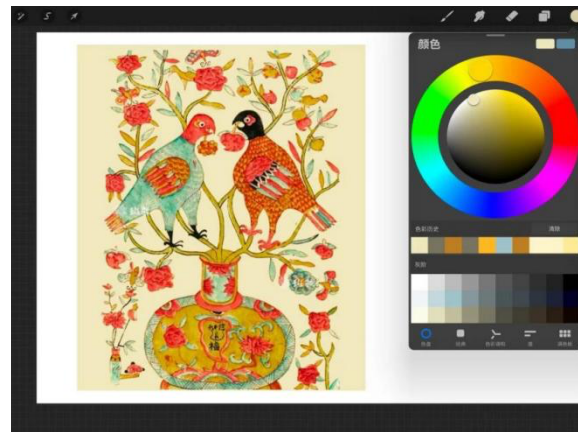


Figure 10. Simulated painting experience page

4.3. Virtual reality + narrative games

Jiajiang woodblock New Year paintings boast a rich history, making them an ideal subject for a VR documentary game designed around their historical development. The VR game would adopt a first-person narrative perspective, placing the player in the role of an "intangible cultural heritage inheritor." Below is the proposed design of the game's flow and mechanics:

4.3.1. Background setting

Upon entering the game, the player assumes the role of an inheritor of the intangible cultural heritage. The system introduces the identity of the player through voice or text prompts in a general overview of the historical background of Jiajiang woodblock New Year paintings. This narration falls into four different chapters: Origins and Birth of Jiajiang New Year Paintings, Development and Innovation, Prosperity and Influence, Inheritance and Future Development.

4.3.2. Gameplay in chapters 1-3

The first three chapters recreate the simple life of bygone times through visual, auditory, and environmental details, showing how folk festivals influenced the emergence of New Year paintings. The player communicates with other artists, learning different techniques through dialogue, collaboration, and interactive tasks. The system contextualizes hints and tutorials for the player to use gestures or controllers for basic drawing and composition. Players can choose themes to base their creations on and learn about the cultural and social role of New Year paintings as an outlet for popular sentiments and a means of connecting with the community.

4.3.3. Gameplay in chapter 4

The modern age awaited the protagonist in the fourth chapter, who then had to struggle to protect Jiajiang woodblock New Year paintings. Players need to find a balance between traditional methods and new ones in the modern era, seeking a way to keep this art alive and develop it further.

The visual presentation of the game is faithful to the artistic style of Jiajiang woodblock New Year paintings: vivid colors, exaggerated figures, and peculiar features. The background music is traditional folk melodies. Scoring by a point system or badges for various performances in painting and accomplishing tasks encourages players to delve into more exploration of the cultural and historical significance of these paintings (Figure 11).

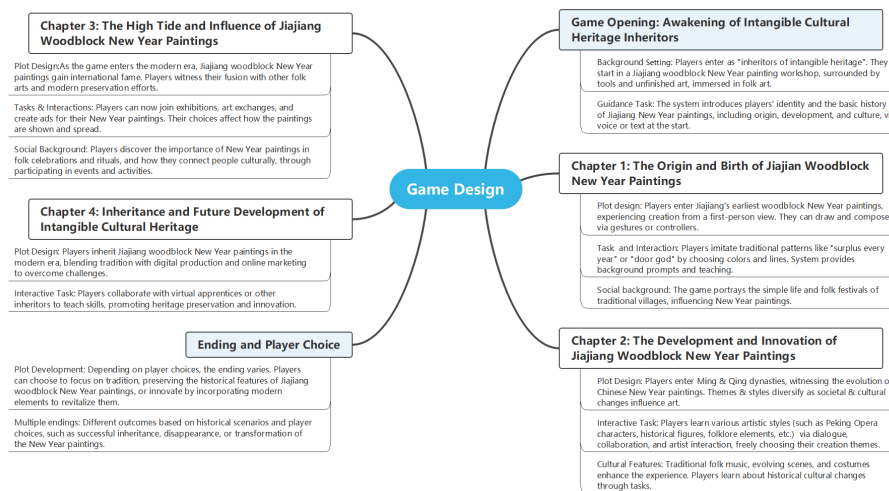


Figure 11. Narrative design of the Jiajiang New Year painting VR game

By integrating "Virtual Reality + Narrative Games" with a time-sequential storytelling design and interactive tasks, players can not only enjoy the creativity during such a process but also deeply understand the cultural and historical value encompassed in this folk art. The game integrates entertainment, education, and cultural promotion, guiding players through appreciation of the development of Jiajiang New Year paintings and encouraging them to develop a sense of responsibility and mission for the protection of intangible cultural heritage.

4.4. Collaborative games

The most powerful strategy to blend this traditional culture with modern technology is to effectively increase awareness of this intangible cultural heritage by combining popular games with Jiajiang woodblock New Year paintings. For example, Jiajiang woodblock New Year paintings and their representative inheritors could link up with the game Deep Space Love. Special activities could be launched during traditional festivals. Character design and game settings would integrate classic elements of Jiajiang woodblock New Year paintings. Traditional motifs would add artistic uniqueness to the game with limited-edition skins. Players could appreciate the exquisite patterns in New Year paintings, feel the charm of traditional art, and experience the fun of games within the game. As a part of its promotional campaign, some short documentaries about the representations narrating and demonstrating this type of art can be prepared to introduce the story behind this heritage. This "game + cultural inheritor" collaboration not only promotes the cultural heritage but creates revenue opportunities for the inheritors. In addition, according to typical gaming companies licensing policies, the relevant products would not be licensed to any individual or organization, which would incite

players to learn the craft themselves and make merchandise to share on social media. Such a collaboration will promote the protection and development of vulnerable Jiajiang woodblock New Year paintings as intangible cultural heritage both domestically and internationally. The "game+cultural heritage" model would introduce the players to cultural and geographical characteristics of Jiajiang, raise interest in local customs and traditions, and will stimulate the development of Jiajiang's tourism industry by using the local cultural and tourism resources to the fullest degree.

5. Conclusion

In an era of rapidly evolving new media technologies, exploring strategies for protecting and inheriting Jiajiang woodblock New Year paintings, a valuable intangible cultural heritage, is of critical importance.

Firstly, foster awareness of intangible cultural heritage (ICH) woodblock New Year paintings, integrating them into modern life through education and dissemination to promote Jiajiang's cultural prosperity and enhance soft power. Leverage copyright protection and development to make ICH woodblock New Year paintings a new economic driver, achieving cultural and economic wins. Secondly, enhance ICH promotion through diverse new media technologies, tailoring methods to platforms and audiences to expand market coverage and enhance the visibility of this cultural product. Collaborate with brands and influencers to increase exposure and trust. Diversify promotion, such as hosting art exhibits, concerts, and film festivals at nearby attractions like the Leshan Giant Buddha to attract tourists and investors, driving related ICH industries.

In the current context, the inheritance of intangible cultural heritage urgently requires the support of new technologies and innovative approaches. Utilizing digital tech and new media, and blending innovation with tradition, is vital for ensuring Jiajiang woodblock New Year paintings' ongoing health.

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