

Digital New Media Empowers the Economic Development of Traditional Historical and Cultural Cities: Case Study on the New Economic Engine of Ancient Capital City

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Abstract

This article examines the development pathways and models of cities with profound historical and cultural heritage from a modernization perspective. This study identifies the critical importance of integrating historical and cultural heritage with urban development, emphasizing the pivotal role of cultural-historical factors during urban transformation periods. These culturally rich urban centers should leverage their historical resource advantages by integrating them with contemporary industries, thereby identifying breakthrough opportunities for urban economic growth through innovative development approaches. The article analyzes several exemplary cases where Chinese historical and cultural cities have successfully integrated economic development with cultural heritage preservation, providing valuable insights for urban development strategies in other regions. To achieve distinctive solutions in urban development, it is essential not merely to pursue unilateral economic growth, but rather to implement contextually appropriate transformations based on historical perspectives and multidimensional approaches. This article primarily examines cases of successful urban transformation and instances where urban development has been integrated with historical and cultural preservation, resulting in improved outcomes. These distinctive examples often serve as catalysts for the advancement of other cities that may currently lack such developmental momentum.

Keywords

City Development; Industry Innovation; Historic Culture; Innovative Integration; Economic Pattern.

1. Introduction

In the wave of modernization characterized by technological transformation, consumption upgrading, and urban transition, digital new media technologies and historical culture function as dual engines propelling cities forward in tandem. Historical culture constitutes the soul of many cities, embodying the memories of time and the legacy of civilization, while new media technologies serve as a dynamic force for urban development, fostering innovation and transformation. The integration of technological power with historic cultural cities is reshaping urban development paradigms through their collision and fusion, creating boundless possibilities. In the field of contemporary urban development, there is a scarcity of dedicated research on case studies of historical and cultural evolution that moves beyond superficial comparisons of differences to address the underlying logical frameworks of historic-cultural cities. Within the international academic discourse, there remains a significant gap in research concerning the urban development of China's historically and culturally distinguished cities, as

well as a lack of systematic examination of the transformative processes these ancient urban centers have undergone in the contemporary era.[1]

Historic cultural cities are repositories of rich cultural heritage, with these invaluable resources serving as unique urban identifiers and foundational elements for development. However, in the past, the limitations of traditional display methods hindered the public's in-depth understanding and appreciation of many cultural assets. Today, rapid technological advancements have introduced new opportunities for the preservation and transmission of cultural heritage through digitalization. Technologies such as 3D scanning, virtual reality (VR), and augmented reality (AR) enable the digital conservation of cultural heritage, allowing people to transcend temporal and spatial constraints to intimately experience the allure of ancient civilizations.

For instance, the Beijing Municipal Cultural Heritage Bureau and the Beijing Central Axis World Heritage Application and Protection Office, in collaboration with Tencent, have employed high-definition photogrammetry, digital engines, and cloud gaming technologies to meticulously reconstruct the core heritage zone of Beijing's Central Axis. This project vividly renders the mountainous and aquatic landscapes of the axis, meticulously depicting its abundant vegetation and architectural structures. Users can immerse themselves as game avatars, engaging in activities such as reconstructing the Zhengyang Gate tower or observing ceremonial rites, thereby gaining insights into the historical evolution of the Central Axis. Such digital presentation methods not only expand the reach of cultural heritage dissemination but also provide more effective preservation tools, enhancing urban visibility, commercial value, and cultural branding. These innovations revitalize ancient cultures with modern vitality, injecting robust momentum into urban economic development and leveraging competitive advantages to broaden growth prospects in a globalized landscape.

2. Significance of the Research

With the continuous innovation and deepening of modernization, urban development in cities worldwide has entered a new phase. The cultural tourism industry, rich in resources, has found new opportunities for integrated development through digital media arts. This study focuses on the pivotal role of digital media arts in fostering the convergence of cultural tourism and urban development, including enhancing cultural depth, improving visitor experiences, and innovating economic models for ancient capitals. It examines existing challenges such as insufficient technological integration, a shortage of specialized talent, and poor industrial coordination, while exploring developmental pathways encompassing strengthened technological application, talent cultivation, and collaborative mechanism construction. These measures aim to facilitate the deep integration and innovative growth of urban cultural tourism through digital media arts, thereby enhancing cities' competitiveness and cultural influence in the tourism market.

As culture-driven urban renewal emerges as a key strategy for city development in the globalization era, Nanjing-renowned as the "Ancient Capital of Six Dynasties"-boasts profound cultural resources alongside a thriving digital cultural industry, providing favorable conditions for its culture-led urban revitalization. As one of China's first designated historical and cultural cities, Nanjing faces the homogenization issue of "indistinct urban identity" in its renewal process. Developing a distinctive urban brand presents an effective solution. [2]

This research begins with the conceptual framework of a digital historical and cultural city brand, conducting an in-depth analysis of Nanjing's brand formation logic and intrinsic composition. It emphasizes the influencing factors and primary strategies for Nanjing's digital historical and cultural city brand development, seeking viable pathways for urban renewal,

digital transformation, and brand enhancement. By addressing gaps in existing urban economic development research, this study holds significant theoretical and practical implications.

3. Definition of the Cultural Economic Development Model

The cultural economic development model is a growth paradigm that utilizes cultural resources to engage in the production and operation of cultural products and services, with cultural enterprises as the backbone, aiming to fulfill the spiritual needs of the people. Within this framework, cultural economy serves as a core concept in the discipline of cultural economics, representing an intermediary system between culture and economic activities. It constitutes a tertiary mechanism that addresses non-material life requirements through economic means, leveraging the development and utilization of cultural resources to provide society with intellectual and cultural products and services, thereby meeting the ever-growing spiritual and cultural demands of the populace. Given its strategic significance and economic revitalization potential, this model has been progressively implemented in community reconstruction and redevelopment initiatives. The emergence of the "new" economic geography has facilitated the transition of cultural and economic relations from fragmentation to integration, rendering the boundaries between economy, society, and culture increasingly blurred. The fusion of culture and economy constitutes a complex process wherein the two elements achieve organic unity. Cultural geography emphasizes the interaction between diverse sociocultural factors and contextual spatial elements, demonstrating practical activities through economic endeavors, thereby generating sociospatial impacts. This process transforms previously meaningless spaces into subjectively significant places, giving rise to a novel spatial configuration known as spatial restructuring. In China, culturally oriented communities are predominantly developed based on cultural resources. However, many communities excessively prioritize economic development during their growth, neglecting cultural essence, which results in the marginalization of indigenous cultures and severe spatial homogenization. By employing spatial restructuring planning methodologies, these spaces can be reconfigured to mitigate replication issues, revitalize local cultures, restore regional distinctiveness, and ultimately form community spaces with intrinsic value.

4. Digital Technology Empowers the Development Pathways of Cultural Industries

Digital technologies are profoundly transforming the production, dissemination, and consumption paradigms of the cultural and creative industries. Leveraging the enabling effects of digital technologies, this study analyzes the core elements in the development of these industries, with a focus on practical pathways for deep integration between digital technologies and cultural and creative sectors. Thereseearch highlights that by advancing the digital transformation of infrastructure, innovating digital preservation and development of cultural resources, enhancing user experience through digital solutions, and fostering the formation of regional industrial clusters alongside the stimulation of new productive forces, digital technologies can comprehensively empower the cultural and creative industries, driving them toward high-quality development. Infrastructure serves as a critical cornerstone for the development of the cultural and creative industries, while digital transformation provides essential technological support and platform guarantees for industrial advancement. Hardware improvements must encompass high-speed networks, data storage equipment, and high-performance computing servers to ensure operational efficiency and stability. Concurrently, software system optimization warrants equal attention, as dedicated tools and platforms tailored for cultural and creative content can significantly bolster content production and dissemination. [3]

Digital new media technologies facilitate the precise acquisition and systematic storage of cultural resources through multimodal approaches, thereby establishing a robust data foundation for the development of renowned historical cities. During the resource survey phase, technologies such as drone remote sensing and SLAM-based laser scanning are deployed to conduct comprehensive data collection of ancient architecture, heritage sites, and historical documents. For instance, Shaoxing has established a centralized cultural resource hub integrating diverse datasets-including 3D reality-based models, conservation inventories, and spatial planning information-forming the fundamental framework of a digital twin for the ancient city. In terms of resource revitalization, digital restoration and database development help overcome barriers to cultural dissemination. Shaoxing University, in collaboration with multiple institutions, has developed specialized literature databases for renowned figures such as Wang Yangming and Lu You. Similarly, the Shaanxi History Museum has incorporated digital modeling of artifacts into its exhibition system. This mechanism not only ensures the perpetual preservation of historical textures but also provides reusable digital assets for subsequent development.

Leveraging digital technologies to create immersive experiential scenarios facilitates the transformation of cultural resources into public services and industrial value. In the realm of public services, user-friendly service systems have been established through "online portals + mobile applications." For instance, the Shaoxing Ancient City App offers virtual tours, resource retrieval, and route navigation, while Lijiang Ancient City enables streamlined access such as facial recognition for entry and smart accommodation services. In cultural dissemination, VR/AR technologies are employed to reconstruct historical settings; the Shaanxi History Museum's project *Beyond the Murals: The Tang Dynasty* allows audiences to "step into" scenes of Tang tomb murals, and Shaoxing's VR display system achieves seamless indoor and outdoor real-world roaming and interaction. Regarding industrial integration, cultural IPs are distilled and leveraged through digital means to empower cultural tourism. Shaoxing focuses on celebrity culture to develop digital cultural tourism products, whereas the Zhejiang Art Museum's "Cloud Collection" promotes grassroots cultural consumption via resource sharing. Upgrading infrastructure extends beyond mere technical construction; it necessitates alignment with the practical demands of the cultural and creative sectors. By optimizing resource allocation, lowering industry entry barriers, and fostering diversified development, digital transformation enhances the adaptability of existing infrastructure to emerging technologies, thereby strengthening the core competitiveness of the industry.

Digital technology has not only revolutionized the production methods of cultural and creative content but also transcended the spatial and temporal constraints of traditional industries, enabling more efficient creation and broader dissemination of cultural products. Technological integration facilitates end-to-end optimization-from conceptualization to output-while amplifying the interactive and personalized characteristics of the cultural and creative industries, allowing users to engage more deeply in creation and immersive experiences.

Furthermore, digital support unlocks the full value of cultural resources. Through precise data-driven market insights, cultural elements are seamlessly integrated with modern technology, giving rise to distinctive creative expressions. The incorporation of digital technologies also drives the refinement of industrial ecosystems, promoting resource consolidation, cross-domain collaboration, and synergistic development across the entire value chain. This infusion of innovation revitalizes the cultural and creative industries, opening new avenues for growth and possibility.[4]

5. Substantive Case Study Analysis

In 2021, the Deji Art Museum in Nanjing launched the "Digital Art Exhibition of the Jinling Scroll" based on the painting "Imitation of Yang Dazhang's Painting <Song Dynasty Imperial Academy's Jinling Scroll>" by Feng Ning of the Qing Dynasty. Through research on the "Imitation of Yang Dazhang's Painting <Song Dynasty Imperial Academy's Jinling Scroll>", the museum integrated cultural relic research, collection study, art display, new - media interactive design, and the panoramic sound system to create a truly interactive digital art exhibition. This paper focuses on the sound design of this exhibition, analyzes and explores the application of virtual reality technology, panoramic sound digital technology, etc. in exhibition forms from multiple perspectives, and explores the future development trends of exhibitions in museums, art galleries, and art institutions through practical case analysis. As the ancient capital of six dynasties and the capital of ten dynasties, Nanjing, whether in terms of its magnificent natural scenery or its rich cultural allusions, has left an indelible mark in the long river of Chinese history. Since ancient times, there have been numerous poems and paintings themed on Nanjing. Among the painting works depicting the urban scenery of Nanjing alone, there are the album "Eight Views of Jinling" by Huang Kehui of the Ming Dynasty (currently housed in the Jiangsu Provincial Art Museum), the "Eight Views of Jinling" painted by Guo Cunren of the Ming Dynasty on the same theme (currently housed in the Nanjing Museum); the "Eighteen Views of Jinling" by Wen Boren in the sixth year of the Longqing reign of the Ming Dynasty (currently housed in the Shanghai Museum), which was the first to expand the depiction of the natural scenery and ancient and modern scenic spots in Nanjing; the album "Forty - eight Views of Jinling" painted by Chen Zuoyi of the Qing Dynasty (currently housed in the Nanjing Museum Complex), which encompasses most of the scenery of Nanjing City. These albums not only depict the natural scenery of Nanjing but also present the rich cultural atmosphere left by the city's 2,500 - year history of urban construction to the world through narrative hand - scroll paintings. Among them, the "Prosperous Scene of Nandu" painted by a Ming - dynasty artist (currently housed in the National Museum of China) depicts the prosperous social scene of Nanjing at that time and is also hailed as the "Along the River During the Qingming Festival" of Nanjing. What is significant is that Nanjing Deji Mall, by integrating its proactive innovation attitude with the historical culture of Nanjing City, has created a digital art museum that mutually empowers the business. As a result, the sales volume of Nanjing Deji Mall reached an astonishing RMB 24.5 billion in 2024, making it the top - grossing commercial complex in China.

6. Result

Historical and cultural heritage serves as the "root" and "soul" of a city's innovative development. To transform this invaluable resource into tangible driving forces for development, the key lies in effectively "activating" and "integrating" it, complemented by a well - established mechanism.

Activating and Utilizing Cultural Heritage to Keep It Relevant in the Present

Activating and utilizing cultural heritage acts as a bridge between history and modernity. Firstly, the principle of prioritizing protection must be adhered to. Development should be carried out on the premise of safeguarding historical features and cultural essence, so as to avoid the encroachment of commercialization that leads to the homogenization of cities. Secondly, public participation should be encouraged. Through minor renovations and community building, residents can become guardians and beneficiaries of historical blocks, infusing the ancient spaces with new vitality. Finally, digital technologies should be actively embraced. By leveraging AR/VR and other means, the display and dissemination of cultural heritage can be innovated, enabling dormant cultural relics and ancient buildings to be reborn in the digital world and attracting the attention and affection of the younger generation. Promoting

Integration to Make Culture an Engine of Innovation. The in - depth integration of culture and modern industries is the core path to spawn new business forms and driving forces. Platforms for the integration of culture and technology should be established to provide support such as incubation and financing for cultural and technological enterprises, encouraging them to develop innovative products like digital cultural relics exhibitions and immersive experiences. Meanwhile, the cultivation of cross - disciplinary talents should be emphasized. By breaking down disciplinary barriers, cooperation between artists, designers, scientists, and engineers can be promoted, allowing cultural creativity to collide with cutting - edge technologies. In addition, historical and cultural elements should be incorporated into urban public spaces, brand designs, and the daily lives of citizens, making culture a tangible warmth and texture of the city. Improving the Mechanism to Ensure Cultural Innovation.

A favorable institutional environment is essential for the sustainable development of cultural innovation. The government should formulate special support policies, offering preferential treatment in terms of funds, land, and taxation to guide social capital to participate in historical and cultural innovation projects. A governance model involving multiple stakeholders should be established to balance the interests of the government, enterprises, social organizations, and residents, ensuring that the development achievements benefit all parties. At the same time, intellectual property protection must be strengthened to stimulate the innovation enthusiasm of creators and enterprises, creating a fair and orderly market environment for cultural innovation.

In conclusion, only by integrating the protection, activation, and innovation of historical and cultural heritage into the fabric of urban development can a city preserve its unique cultural identity amidst rapid changes and truly achieve sustainable, innovative development that is warm, profound, and vibrant.

7. Conclusion

Globally, there is vast potential for research on the historical processes of cities and exploration of the paths for modern urban development. We need more research cases, as well as greater investment in funds and human resources, to better promote the development of this cause and drive the transformation of modern cities. Taking Nanjing as an example, many other cities can see the determination of Nanjing's development and how the historical and cultural accumulations of other historical and cultural cities can be transformed into modern development achievements, thereby achieving better economic development. Whether in China or other regions, there are still numerous cities rich in history. Some of them have performed quite well and their experiences are worthy of reference for other cities' transformation. It is hoped that within the scope of today's globalization, cities and countries will be more closely connected and communicate more deeply to achieve better development.

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