

Research on the Integration of Culture, Tourism and Business of Hebei Museum Empowered by Digital Intelligence

Wang Jingyi Hebei Academy of Fine Arts

Yan Shukang Hebei GEO University

ABSTRACT

Under the strategic framework of the construction of digital China, the deep integration of digital intelligence technology and physical museums aims to promote the comprehensive innovation of the production mode, life style and governance mode through digital intelligence empowerment, and then realise the multi-dimensional virtuous cycle of resource integration, which is "culture leads tourism, tourism revitalizes business, and business innovates culture". First of all, the development status of "culture, tourism and business" of Hebei Museum was sorted out in detail, and the concepts of "digital empowerment" and "culture, tourism and business" were interpreted. Through the use of field research and empirical analyses and other methods, the study discusses how Hebei Museum can achieve a breakthrough in the interaction between culture, tourism and business through digital intelligence technology. This study not only provides a concrete practical path for Hebei Museum to promote the interaction of culture, tourism and business in the context of digital intelligence, but also provides valuable experience and reference for other regions in the integration and innovative development of culture, tourism and business.

Keywords: Digital intelligence empowerment; Hebei Museum; Culture, tourism and business; Integration

Digital empowerment of cultural development is an important driving force for the high-quality development of culture, tourism and business integration, and an important way to accelerate the construction of a digital society. General Secretary Xi highlighted the goal of accelerating digital development in the 14th Five-Year Plan and 2035 Vision Outline, which profoundly elaborated the specific guidance for building a digital China. Hebei Museum has rich cultural relics resources and deep cultural heritage, how to achieve effective interaction between culture, tourism and business with the help of digital intelligence technology has become a current topic that requires in-depth study. Through digital technology empowerment, in the process of building a new mode of integration of culture, commerce and

tourism (hereinafter referred to as culture, tourism and business) in Hebei Museum, to enhance the attractiveness of public cultural venues for tourism, to promote the museum to improve the supporting facilities of cultural tourism services, to enhance the level of public services for culture and tourism, to cultivate a new space for a better life that is shared by the host and the guest, and to promote the positive and healthy development of culture, tourism and business.

1. Significance of the integration of culture, tourism and business in Hebei Museum empowered by digital intelligence

In today's era, the rapid development of digital intelligence empowers Hebei Museum to provide

important support for the integration of culture, tourism and business. Through the integration of digital technology in the display of historical relics, the distance between tourists and historical relics is brought closer, so that tourists can feel the historical and cultural connotations behind the relics in an immersive way, providing tourists with a brand new tourist experience, which effectively promotes the innovation of cultural and tourism services and achieves the sustainable development of Hebei Museum.

From the aspect of cultural and tourism industry development, the digital display attracts more tourists to visit and drive the development of the local economy. For example, during the Dragon Boat Festival in 2025, data show that Hebei Museum received 46,000 tourists, of which more than half were from outside the province. Fourteen display halls were opened offline, and 44 digital halls were opened online. At the same time, Hebei Museum carried out a series of activities centred on historical relics and festivals, attracting the participation of many tourists. On the commercial side, digital technology helps the development and promotion of cultural and creative products. Relying on cultural relics resources, more than 2,000 distinctive cultural and creative products have been designed, and creative bazaar activities have been held to meet the consumption needs of tourists, and to stimulate economic development in all aspects and promote the economic construction of Hebei.

The integration of cultural tourism and business in the context of digital intelligence empowerment is of great significance to the cultural heritage and development of Hebei Museum. For example, Hebei Museum has created a digital interactive experience area, which digitally stores and displays a large number of cultural relics resources through virtual reality, artificial intelligence and other technologies, transforming historical relics into dynamic, three-dimensional and interactive experience content, allowing tourists to break through the limitations of time and space, and achieve a zero-distance dialogue between ancient and modern times. This innovative communication method, effectively stimulate the tourist's interest in the history and culture of Hebei, to tell a good

local story, firm national self-confidence, inheritance and carry forward the culture of Yanzhao has played a driving role.

2. Analysis of the current situation of the integration of culture, tourism and business in Hebei Museum

Hebei Museum carries the ancient and modern history of Hebei Province and culture of the temple of art, not only for collection, research and protection, but also the province's most important cultural display window. Although it has been actively exploring the integration of culture, tourism and business in recent years, it still faces typical characteristics such as insufficient digital depth and weak international influence. Vigorously promote the digital intelligence empowered Hebei Museum of culture, tourism and business integration, to create a new industry of culture, tourism and business industry integration, for the construction of digital society is of great significance.

Relevant research shows that Hebei Museum has a long history, rich collections, with Zhongshan Ancient State relics, the Golden Witch Hazel, Changxin Palace Lanterns and other first-class cultural relics, which have a very high value at the same time in the development of cultural and creative products also has a unique cultural potential. However, it has adopted advanced technologies such as X-ray fluorescence spectroscopy analysis and 3D printing restoration for protection, and has completed the digital archiving of more than 3,000 pieces of cultural relics, but the digitisation coverage rate is only 12.5%, and some of the precious cultural relics are exhibited less frequently.

The exhibition system of Hebei Museum is based on 10 permanent exhibitions such as "Songs of Generosity and Sadness - Stories of Yan and Zhao" and "Great Han's Greatest Hits - Mancheng Han Tomb" as the core to match with the temporary exhibitions, such as the Hebei Nonheritage Parlour, Hebei Enamel Art Exhibition, Whale Wonderful World, and Digital Linlang, and other high-quality Exhibitions. In the digital cultural relics interactive experience area, combined with the historical connotation of cultural relics and the design of the

digital cultural experience area, through the VR virtual archaeology and other interactive projects to enhance the experience, you can see the "history, knowledge of the shape, arts exploration, heritage" of the display of the vein, but there are exhibitions updated slowly, interactive technology is poor and other basic problems.

Hebei Museum relies on the famous collection of cultural relics for cultural and creative product development, at present, the museum has a cultural and creative space, bazaar, theme post office and other cultural and creative products sales location, the product is diversified and innovative trend of development, but the museum of cultural and creative still exists in the quality of uneven, homogeneity and other serious real problems. In fact, Hebei Museum is located in the centre of Shijiazhuang, near Beiguo Commercial Building, Xiantianxia Plaza and other large flow of shopping malls, with the potential for commercial linkage, and is just not yet inspired. It is believed that through the immersive experience, IP operations matrix and intelligent digital empowerment, high-end cultural and creative product lines can be expanded, through the integration of Yanzhao culture, the Great Wall culture and other characteristics of the resources, to create a digital Yanzhao IP, and to promote the museum to the national first-class museums.

3. Difficulties in the integration of culture, tourism and business of Hebei Museum under the empowerment of digital intelligence

(1) Insufficient linkage of culture, tourism and business

At present, there is still a disconnect between the culture, tourism and business linkage of Hebei Museum. Although it has attracted a large number of tourists, it is not strongly linked with the surrounding tourism resources, and the supporting service system still needs to be improved. In the surrounding catering and accommodation facilities, the local characteristics of Hebei or the design elements of the museum have not been deeply integrated. Take catering as an example, most of the restaurants around are chain restaurants, lacking the local specialties of Yanzhao culture. The decoration

style of the surrounding hotels also fails to incorporate the cultural elements of the museum, unable to provide consumers with an all-round cultural experience. At the same time, the museum is poorly integrated with the surrounding tourism resources and transport hubs, resulting in consumers staying for a short period of time, making it difficult to fully explore the potential of tourism consumption.

On the other hand, the development of some of the cultural and creative products of Hebei Museum is weakly linked to the exhibition activities. For example, during the "Enamel Art Exhibition" held in May 2025, Hebei Museum failed to launch thematic cultural and creative products matching the exhibition, and was unable to realise precise marketing during tourists' visits, thus greatly reducing the effect of culture, tourism and business linkage.

(2) Insufficient depth of IP development empowered by digital intelligence

In the cultural tourism industry, IP has rich cultural heritage and commercial value. Hebei Museum's digital intelligence development of IP is mostly superficial, lacking the excavation of IP historical and cultural context. In the development of digital cultural and creative products, only the appearance of cultural relics are reproduced and restored, and not combined with the IP image of the historical events behind the cultural allusions, so the cultural and creative products have a single form of expression, without enough innovation and emotional resonance of tourists, and it is difficult to understand the value of cultural relics in depth.

Secondly, the digital intelligence products of Hebei Museum have not formed a complete industrial chain, and at present they are concentrated on traditional cultural and creative objects, and the expansion in animation, film and television, digital art and other fields is insufficient. Although Hebei Museum's "Wonderful Brush Painting Pattern" writing table realises the digital extraction of cultural relics patterns and creative interaction with consumers, it only provides printing services for cultural and creative products, and fails to further transform the patterns created by tourists into personal digital

collections, making it difficult to increase the value of the IP culture industry.

(3) Insufficient publicity

The publicity channels of Hebei Museum are relatively single, overly depending on traditional communication methods, lacking effective use of digital media, and have not yet built a diversified matrix dissemination. In social media such as Douyin, Wechat, although it releases relevant cultural relics, activities and information regularly, but lacks forms similar to Live, H5 and other forms that can interact with the tourists. Its accounts in Douyin and Xiaohongshu have fewer fans.

In terms of publicity content, Hebei Museum is mostly dominated by the introduction of cultural relics or cultural and creative products, and the homogenisation is serious. Media platforms that introduce the museum's digital intelligence achievements in the content is less, only introducing technical features and cultural relics, which do not show the historical and cultural value behind the cultural relics as well as the user experience. For example, when introducing the "wonderful brush painting pattern" writing table and "digital treasure tour", the museum can increase the tourist's interactive fun video; In the cultural and creative products marketing, the museum can learn from the concept of dynamic cultural and creative products of the Henan Museum, using archaeology + blind box, to attract a large number of consumers to buy online cultural and creative products, visits cultural relics offline, thereby inspiring more consumers to participate in the exhibition.

4. Research on the path of integration of culture, tourism and business of Hebei Museum empowered by digital intelligence

Hebei Museum's digital intelligence empowerment drives the integration of its cultural tourism and business development, and deep excavation of the relationship between its cultural tourism and business is the only way. Through IP deep excavation + crossover co-branding, geographical linkage + immersive experience, digital operation + matrix dissemination and other paths, regional data interconnection is realised to future promote

the integration of culture, tourism and business of Hebei Museum.

(1) Geographical linkage + immersive experience

In terms of the integration of cultural resources, the integration of culture, tourism and business of Hebei Museum still needs to be further explored. In the design of cross-regional tourist routes, the museum can cooperate with travel agencies to expand the scope of tourism linkage, and connect scattered tourist sites such as Hebei Museum, Zhengding Ancient City and Xibaipo Site in Shijiazhuang to create a boutique tourist route in Shijiazhuang, realize commuting between scenic spots and promote resource sharing between regions. In addition, the museum can set up game programmes within each scenic spot, such as the development of cultural relics themed script kill, or taking folklore or historical tales as the background to design the barrier game ("The Emperor And The Assassin" and "Relieve the state of Zhao by besieging the state of Wei." themed escape room). After completing the tasks of each node, tourists can exchange different levels of scenic spots for joint-name cultural and creative products. Each scenic spot's game can be played for 2 to 3 days, which not only enhances young people's in-depth understanding of culture, but also drives the economic benefits of accommodation and catering around the scenic spot.

In terms of creating immersive experiences, the infrastructure of restaurants, hotels and night markets is selected as a pilot, incorporating the traditional cultural elements of Hebei Museum, developing special accommodation, catering and snacks, and creating the conditions to enable tourists to actively participate through various experiences.

(2) IP deep excavation + crossover co-branding

To break the circle, the museum must make the cultural relics "live" up, the successful experience of the Sanxingdui cultural and creative products of Hebei Museum of IP deep excavation provides successful experience. First of all, it is worthwhile to learn from the archaeological discovery of timely transformation. Sanxingdui launched the corresponding cultural and creative products within 72 hours after the new cultural

relics were unearthed, which can keep the popularity in Weibo. Hebei Museum should also learn from its rapid response strategy to the market. For example, when the Mancheng tomb (Han) are newly discovered, the "archaeological site blind box" can be quickly launched. Secondly, subversive creative expression is realized by deconstructing cultural relics symbols and reconstructing modern context. Hebei Museum can build the core IP of Gilt Bronze Human-Shaped Lamp, disassemble Gilt Bronze Human-Shaped Lamp, and use the smoke trajectory to design a mobile phone case that can present different light effects with the change of angle; Using weapon modeling to design mechanical keyboard caps. Subsequently, with the core IP as the centre, the digital collections, animation, film and television, theme games and other related services and cultural and creative products are derived and disseminated through a variety of channels to expand the influence of the brand.

The final step is to expand the circle of cooperation. The museum can co-brand the derived innovative design with famous enterprises or traffic stars, which is not only a simple labelling, but also a common narrative story with the cultural relics, and jointly planning a thematic exhibition with the partners. It can not only enhance the cultural premium of commercial brands, but also enhance the perception of the times of cultural relics, and ultimately achieve in-depth linkage.

(3) Digital operation + matrix dissemination

Although Hebei Museum enjoys the geographical advantages and rich cultural relics resources in the core business district of Shijiazhuang, its cultural influence and commercial value have not been fully released due to the traditional propaganda mode. To break this dilemma and build a digital operation programme of matrix dissemination, it is necessary to use Weibo, WeChat, Douyin, Xiaohongshu and other media platforms to channel traffic into commercial bodies, so that cultural attraction and commercial cash can complement each other. At the same time, it is also necessary to strengthen the ability of data analysis, by analysing the habits and hobbies of the tourist of different media platforms, to establish consumer profiles and develop differentiated

communication strategies, so as to attract different types of consumers. For example, in Douyin and Kuaishou platforms, fast-paced, strong visual impact of the video works can be released, WeChat public number can be chosen to publish articles with deeply themed cultural relics, and in Xiaohongshu or Weibo platforms, it can publish "generate interest" or "cross off" creative content to lead the fans to discuss the topic, thus forming the secondary dissemination of the topic and expanding the influence of the content.

In the operation of online media platforms, Hebei Museum should also strengthen the platform construction, such as improvement of visual effect of Taobao, Douyin, Xiaohongshu shops, so that the shopping interface is more simple, easy to operate, to provide consumers with a safer, more reliable shopping environment and comfortable experience. Through live streaming with goods, short video marketing, cultural relics experts or online celebrity flow gurus can be invited to live broadcast, increasing the publicity of the museum's digital intelligence achievements of various media platforms, introducing the design concept and cultural value of cultural and creative products, and carrying out interesting interactions with tourists, so as to improve user stickiness and effectively stimulate the desire of consumers to buy.

5. Prospect and Outlook

The application of digital intelligence technology has brought more innovation and development to Hebei Museum. On the one hand, through the innovative "culture +" mode, it creates AI cultural relics restoration, restores historical scenes, enables the public to experience the historical relics era, shows the stories behind the relics, and vigorously promotes the traditional history and culture. On the other hand, through virtual reality, augmented reality and other digital intelligence technology, it extends the interactive experience project of cultural relics theme as well as the characteristic cultural and creative products to provide consumers with more diversified cultural tourism experience, which can drive the surrounding tourism economy and promote the sustainable development of regional economy in Hebei.

As a representative cultural landmark in Hebei, Hebei Museum's "Digital Intelligence + Culture Tourism + Business" model provides experience for other cultural tourism organisations to learn from, and enriches the consumer experience with cultural and technological empowerment. At present, Hebei Museum still has some problems in the integration of culture, tourism and business, the depth of IP development empowered by digital intelligence and publicity efforts. By strengthening the regional linkage, IP depth excavation and digital matrix dissemination and other strategies, the museum will get innovative development in the integration of culture, tourism and business. In the integration of culture, tourism and business, Hebei Museum can further expand, crossover cooperation with other industries to achieve resource sharing. For example, the museum cooperates with the education industry to develop Industry-University-Research services with the theme of cultural relics; Cooperates with scientific and technological enterprises to jointly develop the theme cultural tourism products of digital intelligence technology. Through crossover, the popularity of Hebei Museum has been greatly enhanced, and the ecosystem of culture, tourism and business has been improved, achieving mutual benefit and win-win results.

In the future, with the continuous development of digital intelligence technology, Hebei Museum will let more people understand the historical and cultural heritage of Hebei with the help of digital intelligence display. At the same time, under the impetus of the integration of culture, tourism and business, it should also adhere to the original cultural heart, pay attention to the excavation of cultural heritage connotations, and develop innovative products and services with both attractive and cultural connotations, so as to meet the growing cultural needs of the public, enhance the self-confidence of the nation, and provide support for cultural heritage and development.

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