



# The Exploration and Application Research of The Leading Mode of "Two Creation" in Shandong Province With Strong Culture

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**Abstract.** With the blessing of digital technologies such as blockchain, artificial intelligence and virtual reality, the integration of cultural tourism industry and meta-universe is getting closer, and the era of cultural tourism meta-universe is quietly coming. From the national to the local, the meta-universe has begun to be an important part of the development of the digital economy. Shanghai, Zhejiang, Hainan, Jiangsu, Wuhan, Anhui, Beijing, Zhangjiajie and other provinces and cities have incorporated "meta-universe" into the key development strategy of cultural tourism development. Shandong is a big cultural province. In terms of creative transformation and innovative development of cultural tourism, the layout of "meta-universe" enabling cultural tourism development is not strong enough, and the application prospects of local cultural tourism and meta-universe in Shandong have not been thoroughly studied, and there is a lack of in-depth, systematic and targeted promotion and application products in digital cultural tourism, non-genetic inheritance and rural revitalization. Therefore, starting from the combination of the meta-universe with the cultural tourism industry, this paper systematically summarizes the deficiencies and pattern paths of the meta-universe in the field of cultural tourism in Shandong, and puts forward effective strategies for the meta-universe to further enable the high-quality development of Shandong cultural tourism.

**Keywords:** Tmeta-universe; Cultural tourism; Deficiency; Strategic research.

## 1 Introduction

With the development of digital technologies such as blockchain, artificial intelligence, and virtual reality, the metaverse has become a highly concerned industrial field and research hotspot<sup>[1-3]</sup>. The Party's 20th National Congress report put forward an important discussion of "promoting cultural self-confidence and self-improvement, casting a new brilliant socialist culture", "insisting on shaping tourism with literature, highlighting literature with tourism, and promoting the in-depth integration of culture and tourism." The "Opinions on Promoting the Implementation of the National Cultural Digital Strategy" issued by the General Office of the CPC

Central Committee and The General Office of the State Council also makes arrangements for the implementation of the national cultural digital strategy, requiring the development of digital cultural consumption scenes, and vigorously developing new digital cultural experiences that integrate online and offline, and combine online presence<sup>[4]</sup>. Recently, the Shandong Provincial Committee of the Communist Party of China and the Shandong Provincial People's Government issued Opinions on Promoting the Deep Integration of Cultural Tourism and Promoting the high-quality Development of Tourism, which further clarified that the implementation of the "Cultural tourism Quality and Empowerment Plan" will promote the deep integration of cultural tourism, boost the comprehensive upgrade of cultural tourism consumption, and build a modern tourism system with core competitiveness. Therefore, the meta-universe, which includes the three core technologies of extended reality, digital twin and blockchain, will become an important field for the development of the digital economy, which can better empower the cultural tourism industry and gradually become a new entrance, new tool and new method for cultural tourism projects<sup>[5-7]</sup>.

## **2 The conformity between the meta-universe and the development needs of the cultural tourism industry**

With the pace of global technology giants such as Facebook, Microsoft, Google and Tencent to further accelerate the layout of the meta-universe, the meta-universe has become a hot spot sought after by Internet companies and researchers. The meta-universe aims to break through the two-dimensional plane limitation of the Internet and create a virtual network world that blends with the real world. Especially for the cultural tourism industry, the meta-universe provides a new technology hotspot and growth explosive point for the cultural industry to achieve bottleneck breakthrough, and provides a new path basis for the digital transformation of the cultural tourism industry<sup>[8]</sup>.

First of all, the meta-universe enriches cultural tourism resources, and can reproduce serialized application scenarios through digital twin technology, multi-person collaboration, virtual-real integration and other creative methods to further achieve a breakthrough in cultural tourism product content.

Secondly, the meta-universe breaks through the sensory limitations, expands the boundaries of thinking, creates a virtual world that is better in thinking and ability, helps film and television, games, and live broadcasting break through the two-dimensional limitations, and allows consumers to truly realize the immersive upgrade experience.

Third, the meta-universe empowering scene design and innovative interaction methods, consumers are no longer in a passive position of acceptance, but to explore and explore the attitude to participate in cultural tourism activities, so that interactive, participatory cultural tourism consumption scene large-scale promotion is possible<sup>[9]</sup>.

Metacom adheres to open source, encourages innovation and creation, and completely overlooks the relationship between creators and consumers of cultural

travel products, and consumers will experience personalized cultural travel services in the true sense and realize the release of individuality.

### **3 Domestic research status of meta-universe enabling cultural tourism industry development**

Bloomberg Industry Research reports that the meta-universe will reach a market size of \$800 billion in 2024; According to Pricewaterhousecoopers, the size of the meta-universe market will reach \$1.5 trillion by 2030<sup>[10]</sup>. This means that the meta universe is a market with a lot of imagination, and the race for the meta Universe track brings a lot of imagination for the development of the urban digital economy<sup>[11]</sup>. To this end, Shanghai has incorporated the "meta-universe" into the 14th Five-Year Plan, and Zhejiang has also accelerated the pace of the promotion of the meta-universe, to advance the layout of future industries such as quantum communication and "meta-universe", and build a high-level "national digital economy first city"; Beijing City Sub-center took the lead in entering the meta-universe, and issued eight Measures on Accelerating the Innovation and Leading Development of Beijing City Sub-Center Meta-Universe. Hainan will build a meta-universe industrial base and an international digital new cultural and creative center integrating Internet technology development, digital content production, digital copyright operation and digital product output. Jiangsu will build a meta-cosmic ecological industry demonstration zone, and by 2025, it will basically form a meta-cosmic industrial ecology with technology guidance, enterprise agglomeration, demonstration application and complete standards, and create a "riverside business card" of the meta-universe<sup>[12]</sup>. Wuhan will write the meta universe into the "Government Work report", build the national new generation of artificial intelligence innovation and development pilot zone, and build five digital economy industrial parks such as Millet Science Park; Hefei forward-looking layout of the meta-space industry, forward-looking layout of future industries, targeting the meta-space, superconducting technology, precision medicine and other frontier fields, to create a number of leading enterprises, cutting-edge technology, high-end products; Zhangjiajie established a meta-universe Research center to empower the tourism industry with digital technology, cultivate new forms of tourism, and lay the foundation for the digital transformation of tourism.

With the breakthrough of excellent products such as ChatGPT, GPT4 and Midjourney, the AIGC industry focused on the development of the meta-universe has entered the stage of exponential growth, and the overall industry of the meta-universe is ushering in unprecedented development opportunities, which can inject infinite vitality into the cultural and tourism industry. Shandong should seize the current window period of rapid development of meta-cosmic industry, give full play to the advantages of rich cultural resources in Shandong, tap the cultural gene of Qilu, further promote the construction of Shandong cultural tourism industry innovation cluster in the era of digital economy, and create an internationally famous cultural tourism destination with world style, Chinese spirit, and Qilu charm, and a new highland for the integrated development of national cultural tourism. To achieve high-

quality development of Shandong digital cultural tourism economy. ChatGPT analysis of the current development status of metaverse tourism in China is shown in Figure 1.

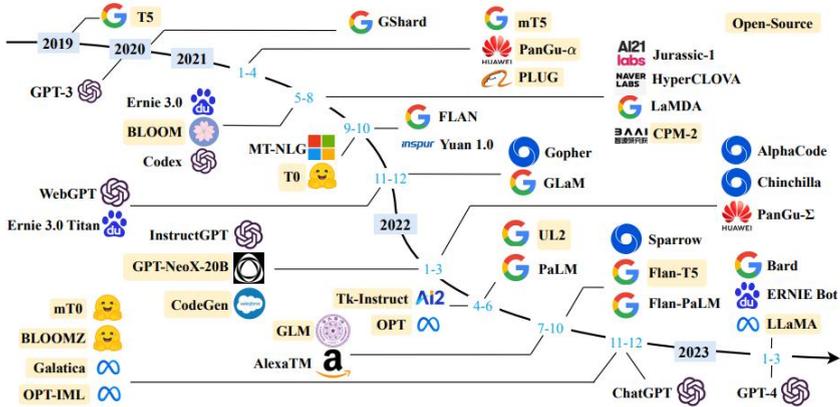


Fig. 1. ChatGPT analyzes the domestic development status of meta-space cultural tourism

#### 4 Insufficient analysis of the research on the development of meta-universe enabling cultural tourism in shandong

From the perspective of the practical prospects and risks of the meta-universe enabling cultural tourism industry, it can be found that the upgrading and development of the meta-universe boosting cultural tourism industry mainly focuses on leading and participating, technology enhancement, order regulation, cultural realization and brand effect.

##### 4.1 Grasp the initiative of meta-universe development is not in the forefront

The meta-universe has great market potential and economic value for the development of cultural tourism industry<sup>[13-14]</sup>. Who can seize the highland of the meta-universe as soon as possible and grasp the new opportunities brought by the meta-universe, who is more likely to seize the right to speak and initiative, and shape the new advantages of industrial competition. According to incomplete statistics, as of March 28, 2023, there are currently more than 40 local governments in the country have issued about 114 clear policies to support the meta-universe industry, of which Shanghai, Henan and Zhejiang are the first three provinces to formulate special meta-universe action plans from the provincial level, accelerating the meta-universe layout and seize the development opportunity. As a major cultural province, Shandong has released special policies such as the Action Plan of Jinan City to Promote Innovation and Development of Meta-Space Industry (2022-2025) and the Action Plan of Weifang City to Build a Meta-Space Technology Innovation and Industry Capital

(2023-2026). However, there is still a lack of special action plans at the provincial level for the development layout planning of the meta-universe.

#### **4.2 Lack of policy support for research and development of meta-universe underlying technologies**

In general, the application of the meta-universe in the cultural tourism industry needs a long period of time from concept to implementation. The real implementation of the meta-universe cultural tourism application scenario also needs to strengthen the research and development of a series of underlying technologies related to the cultural tourism meta-universe, such as VR, AR, blockchain, artificial intelligence and algorithm computing power. At present, there are six policies in Shandong Province, including "Shandong Province Three-year Action Plan to Promote the high-quality Development of virtual reality Industry (2022-2024)", "Shandong Province New Generation of information Technology Innovation Capacity Improvement Action Plan (2023-2025)" and "Shandong Province Manufacturing Digital Transformation Action Plan (2022-2025)", which mention "meta-universe". Development layout, but there is still a lack of guidance and policy support for the research and development of bottom-layer technologies in the meta-universe.

#### **4.3 No systematic regulatory norms and systems have been formed**

Although the meta-universe may promote the digital innovation and development of the governance means and mechanism of the cultural tourism market, it will also bring the dilemma of regulatory failure<sup>[15]</sup>. Capital speculation and individual disorder will lead to the double worries of regulatory failure and political order damage. At present, various regions in Shandong Province have different levels of mastery of meta-cosmic technology and corresponding rule-making levels, and have not yet formed standard norms and risk prevention systems for systematic supervision.

#### **4.4 Lack of spiritual and cultural value mining for constructing meta-cosmic cultural travel**

Under the new business mode, tourists put forward new consumption demands for cultural tourism, requiring spiritual and cultural experience activities beyond reality<sup>[16]</sup>. From the perspective of future development, when the technical elements of the meta-universe tend to mature, the competition of the cultural tourism industry will return to the cultural and artistic competition of the cultural tourism content<sup>[17-18]</sup>. At present, Shandong is in the stage of exploring the creation of tourism virtual scenes, and the lack of mining the cultural value behind the tourism scenes makes the cultural realization unable to truly participate in the construction of the cultural tourism meta-universe.

**4.5 The brand effect of space cultural travel products is not obvious**

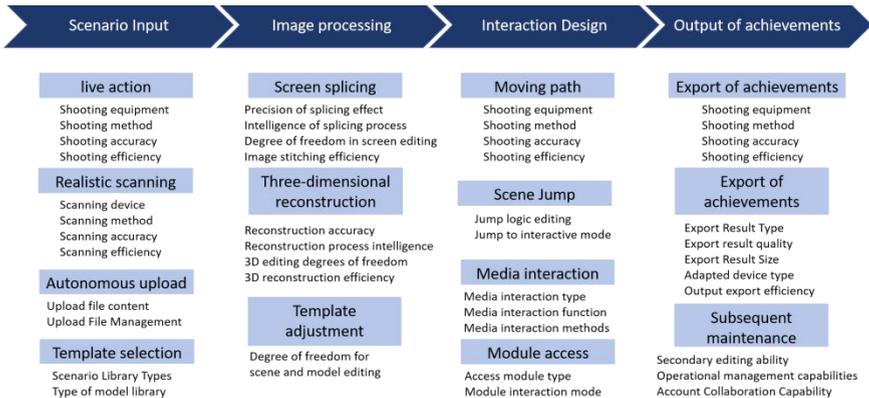
Shandong has rich tourism resources and excellent traditional culture, but in the "meta universe" digital cultural tourism products, the brand effect is not obvious. Lack of a truly sensational effect and enhance the market radiation of the meta-universe enabled cultural tourism products, in promoting the true integration of cultural tourism development, is still inevitably affected by "people, field, things" and other core factors.

**5 Study on the strategy of promoting high-quality development of cultural tourism in shandong by the meta universe**

In view of the above problems, it is necessary for Shandong to start from these core points to think about the development strategy of the meta-universe to promote the upgrading of the cultural tourism industry.

**5.1 Strengthen the top-level design to seize the new heights of the cultural tourism universe**

Shandong needs to grasp the dividend period of national meta-universe development from the government level, strengthen the top-level design of the meta-universe, strive to occupy an active position in the establishment of rules, standard formulation, industry leadership and new division of labor system of the meta-universe, enter the leading echelon, and better promote the industrialization, commercialization and ecology of Shandong's "meta-universe". The design concept of the top-level framework of the metaverse is shown in Figure 2.



**Fig. 2.** Metauniverse top frame design ideas

## 5.2 Strengthen the meta-cosmic technology research and development of the enabling cultural tourism industry

Shandong should focus on exploring and cultivating technical talents in VR, AR, games and social networking, explore the establishment of meta-universe alliance, and introduce relevant policy support, strengthen the construction of meta-universe infrastructure, and strengthen the layout of hardware system, underlying architecture, back-end infrastructure, software and content system, etc. Organize forces to carry out comprehensive research and research on a series of key core virtual reality technologies and "jam neck" technologies such as motion-sensing interaction, computing algorithms, artificial intelligence, and authentication methods, and concentrate on improving the technical system of Shandong Yuanchu. A summary of breakthrough technologies in the metaverse is shown in Figure 3.

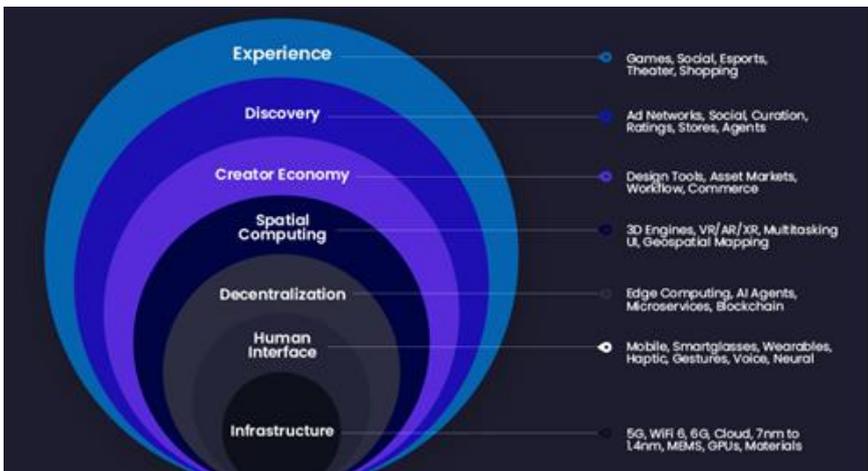


Fig. 3. Meta-universe breakthrough technology review

## 5.3 Shaping the construction pattern of meta-cosmic cultural tourism in which multiple forces cooperate to participate

In order to solve the possible regulatory problems such as capital monopoly and disorderly competition, the Shandong government should speed up the formulation of industrial planning for the cultural industry, shape the construction pattern of the cultural industry with the leadership of the Party and the government and the participation of multiple forces, strengthen the forward-looking study of relevant laws, regulations, standards and policies to prevent risks, and establish standards, norms and systems for the cultural industry. It also defines its boundaries, red lines and forbidden areas, and comprehensively guarantees the rapid and healthy development of Shandong's "meta-universe" cultural tourism industry.

#### 5.4 Keep the ideology and cultural soul of the meta-cosmic cultural travel

Shandong should adhere to the general policy of "launching, sinking, reshaping, innovating, highlighting and forming the soul", dig deep into the industrial value of World heritage sites such as Mount Tai and "Three Holes" and cultural symbols such as "Gift to the East" and "Jixia Academy", integrate into the excellent traditional Chinese culture and the red cultural resources of the centennial struggle of the Communist Party of China. Use the new perspective and new point of view of the meta-universe to promote the functional upgrading and structural reform of cultural tourism products, strengthen cultural self-confidence, and tell the Shandong story well.

#### 5.5 Build the meta-universe cultural tourism demonstration project and characteristic brand cluster

Shandong should integrate representative tourist attractions and cultural inheritance, implement the pioneering strategy of multi-subject building cultural tourism industry demonstration projects and brand clusters, and carry out an important exploration of grafting "meta-universe +" scientific and technological means onto Shandong's huge cultural resource pool, so as to realize the reconstruction of the relationship between "people, field and things". Cultivate and develop "Qilu Culture" excellent traditional culture immersive experience demonstration site, "Red Culture" inheritance immersive research demonstration site, "Ocean Culture" cloud tourism demonstration area and "Meet the Sea along the Yellow River" and other meta-universe demonstration projects, establish a "Shandong cultural tourism" characteristic brand, and form a first-class domestic, world-renowned and unique cultural tourism brand cluster. Form a superimposed brand effect, play a leading and demonstration role in the development of other cultural and tourism industries, fully realize the "two creative" leadership of Shandong's strong culture, and make the golden sign of "Hospitable Shandong. Good Shandong" enjoy global fame. The Shandong "Metaverse+" Metaverse Series Demonstration Project is shown in Figure 4.



Fig. 4. Shandong "meta-universe +" meta-universe series demonstration project

## 6 Conclusion

As a new form of interaction and integration between the virtual world and the real world, the meta-universe has a promising development space, which contains huge opportunities for changes in office, social, industrial and other scenes, and has the possibility of paying for the existing digital industry. Shandong is a cultural province, with 14 5A scenic spots, more than 200 4A scenic spots and other rich cultural tourism resources; At the same time, Shandong has 8 projects recognized by UNESCO as "Masterpieces of Human intangible Heritage", and 186 national lists, ranking second in the country. Therefore, under the development opportunities of accelerated technology iteration, continuous market expansion, and continuous application demand, seize the key elements of the development of the meta-universe, and establish a new benchmark of cultural tourism products with major applications and pilot projects in view of the insufficient development and strategic research on meta-universe empowered cultural tourism in Shandong analyzed in this paper. It will effectively promote the leading construction of Shandong's "two innovations" as a culturally strong province.

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