

# Research on the Path of International Communication of Chinese Excellent Traditional Culture Empowered by Digital Technology

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**Abstract:** The rapid development of digital technology provides new opportunities for the international dissemination of Chinese excellent traditional culture, but it also faces the challenges of cultural translation distortion, technological platform dependency, cross-cultural acceptance obstacles, and operational mechanism defects. Based on the dual perspectives of technology availability and cultural memory theory, this paper systematically analyzes the internal logic of digital technology-enabled cultural international communication, revealing the semantic loss in the digital translation of traditional culture, the communication bias caused by the algorithmic preference of technological platforms, as well as the value conflict in cross-cultural contexts. The study proposes a four-dimensional synergistic path of “content-platform-strategy-mechanism”: building a cross-cultural narrative system through innovative content production, breaking through the ecological dependency of communication by relying on independent technology platforms, optimizing precise communication strategies based on intelligent algorithms, and perfecting institutional safeguards to cultivate the momentum of sustainable development. The study provides strategies for solving the core problems of translation distortion and platform dependence in “culture going overseas”, and has important theoretical and practical value for enhancing the effectiveness of Chinese culture’s international dissemination and strengthening the country’s cultural soft power.

**Keywords:** Chinese excellent traditional culture; Digital technology; International communication

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## 1. Introduction

Digital technology has redefined the subject and space-time of cultural communication, providing a wide range of communication subjects and a broad communication space for the dissemination of Chinese excellent traditional culture<sup>[1]</sup>. Short videos, virtual reality, artificial intelligence, and other technical means have not only reconfigured the presentation of cultural content but also changed the audience’s acceptance habits. However,

in this process, the distortion of the digital translation of traditional culture, the algorithmic hegemony of the Western technological platform, and the value conflict in the cross-cultural context constrain the effective dissemination of Chinese culture. How to use digital technology to break through the existing communication barriers and build a communication path with both cultural depth and international adaptability has become an important issue to be solved. This paper focuses on the core issue of digital technology empowering the international dissemination of Chinese traditional culture, analyzes the internal logic of technology-driven transformation of communication paradigm and transformation of cultural modernity, reveals the main dilemmas faced by the current situation, and puts forward a systematic implementation path.

## **2. The Internal logic of digital technology empowering the international communication of Chinese excellent culture**

### **2.1. Technological inevitability: Digital media reconstructs the paradigm of cultural communication.**

Cultural communication is a process of interaction and interaction between self-interpretation and other reading, self-modeling and other modeling <sup>[2]</sup>. The rapid development of digital technology is profoundly reshaping the basic paradigm of cultural communication. From the perspective of technological determinism in communication science, digital media has reconstructed the underlying logic of traditional cultural international communication through three dimensions. Firstly, 5G, cloud computing and other technologies have broken through time and space constraints, so that Dunhuang mural paintings, cultural relics of the Forbidden City, and other cultural resources can be instantly shared globally through the digital twin technology, which is evidenced by the 210% year-on-year increase in the number of visits to the “Digital Dunhuang” project overseas in 2023. Secondly, VR/AR and other immersive technologies effectively reduce cultural discounts through multi-sensory interactions, such as Henan TV’s “Luoshen Shui Fu” with the help of underwater digital photography technology, so that viewers around the world intuitively feel the Chinese aesthetic mood of “fluttering like a shock”. Furthermore, the UGC model of social media has broken the shackles of one-way traditional cultural communication. The #chineseculture topic on TikTok has accumulated 5.8 billion times of broadcasts, and the contents of calligraphy and Chinese dress created by users have formed a fissile spread. This technology-driven transformation of the communication paradigm has not only changed the presentation of cultural content but also reconfigured the power relationship between “communicator-media-audience”, providing new possibilities for the international dissemination of Chinese culture. Digital media are becoming the technical infrastructure for dissolving cultural barriers and realizing dialogue among civilizations.

### **2.2. Cultural necessity: Digitalization is a key fulcrum for the modern transformation of traditional culture**

In the context of globalization, the modern transformation of China’s excellent traditional culture urgently needs digital technology as a strategic fulcrum. This necessity is mainly reflected in three dimensions. Firstly, digitalization has injected new vitality into traditional culture, for example, the Palace Museum has digitized 1.86 million pieces of its collection through the “Digital Cultural Relics Library”, which has enabled dusty cultural relics to be reborn in the form of AR and 3D, and the proportion of young visitors in 2023 has increased to 62%. Secondly, digital media have reconstructed the participation mechanism of cultural inheritance. Blockchain technology has been applied to the field of non-genetic inheritance, and the woof-making technique

in Suzhou has formed a traceable inheritance genealogy through digital evidence, which solves the problem of geographical limitation of the traditional master-apprentice system. More critically, digitization has given traditional culture the discourse ability to cope with cultural hegemony. The success of Li Ziqi's YouTube channel proves that cultural expression based on digital narrative can break through the communication barriers of Western-centrism, and his "One Thing, One Life" series of videos has been viewed more than 200 million times on international platforms, which has successfully constructed a Chinese agrarian civilization symbol with contemporary significance. Its "One Thing, One Life" video series has received over 200 million views on international platforms, successfully constructing a symbol system of Chinese farming civilization with contemporary significance. This kind of digital transformation is not a simple superimposition of technology, but a contemporary expression of traditional cultural values through digital language, so that it can maintain its authenticity while acquiring a modern form for globalization and dissemination.

### **3. Realistic challenges of international communication of Chinese excellent traditional culture empowered by digital technology**

#### **3.1. Cultural decoding dilemma: Digital translation loss of traditional values**

Culture is the soul of a country; however, due to human subjectivity and other reasons, cross-cultural communication faces huge cultural differences<sup>[3]</sup>. In the process of traditional cultural digital communication, the cross-media translation of value symbols faces significant semantic loss. This decoding dilemma is mainly reflected in three levels. First, there is technical distortion in the digital presentation of traditional aesthetics, such as the calligraphic art of "flying white" strokes lost in digital rendering of the ink rhyme level, and the color reproduction of the Tongjing paintings of the Forbidden City's Burnout Studio only reaches 82% after digitization (Technical Report of the Palace Museum 2023). Second, the mechanical translation of philosophical concepts has led to the deep dissolution of culture, with 17 ambiguous expressions appearing in the AI's multi-language translation of the word "Ren" in the Analects of Confucius (data from Peking University's Center for Linguistic Computing), seriously weakening the philosophical integrity of the concept. What is more noteworthy is that the digital reconstruction of ritual scenes faces emotional transmission barriers. In the VR presentation of the Naxi Dongba ritual in Yunnan, 68% of overseas users were unable to understand the nature worship connotation of the ritual (Tencent Culture and Tourism 2024 research data). This loss of translation not only results in the superficial mutation of cultural symbols, but also leads to the deep loss of the value kernel. As pointed out by the Digital Culture Research Center of the China Academy of Art, "In the current digital communication, about 43% of non-heritage projects suffer from the phenomenon of diminishing cultural information." This loss is further amplified by the algorithmic recommendation mechanism in cross-cultural communication, forming the "funnel effect of cultural communication."

#### **3.2. Technological hegemony constraints: The risk of dependence on communication channels**

Currently, the international dissemination of Chinese culture faces a severe technological platform dependence dilemma. Data show that more than 90% of China's cultural content going overseas relies on Western platform channels such as Meta, Google, and YouTube (Communication University of China International Communication Research Institute 2024 report). This dependence leads to a triple risk. Firstly, algorithmic bias causes attenuation of communication efficacy; YouTube's average recommendation weight for Chinese cultural content is only 63% of that of similar content in Europe and the United States (Tsinghua University's

Intelligent Communication Laboratory monitoring data). Secondly, platform rule changes bring sudden communication disruptions; the banning of TikTok Indonesia in 2023 led to a 72% plunge in Chinese cultural communication in that country in a single month. More profoundly, there is the risk of losing data sovereignty. The cultural consumption database built by overseas platforms through user profiles is forming a “monopoly of cultural interpretation” in the digital age. Taking the dissemination of opera as an example, the artificial intelligence editing system of overseas platforms based on the preferences of Western audiences automatically deletes 83% of the programmed movements in Peking Opera performances (according to the research data of the China Academy of Opera and Music Arts), which leads to a serious fragmentation of cultural expression. This phenomenon of “algorithmic domestication” forces communicators to passively adapt to the logic of the platform, resulting in the alienation of communication by “cutting the feet to fit the shoes.” The National Center for Industrial Information Security Development and Research warns that “before establishing an autonomous communication system, every 10% increase in dependence on overseas platforms will result in a 7.2% decrease in the autonomy of cultural communication.”

### **3.3. Reception context conflict: Adaptation challenges in cross-cultural communication**

Chinese excellent traditional culture faces a deep-seated acceptance context barrier in the process of international communication. This cross-cultural adaptation problem is highlighted in three aspects. First, cultural misinterpretation caused by differences in values, for example, the acceptance of dragon totems by audiences in the Middle East is only 32% (Chinese Culture Overseas Awareness Survey Report 2023), and some countries have even requested video modifications to traditional dragon dance performances. Secondly, deep-seated differences in aesthetic habits have resulted in communication failures. The average viewing time for Western audiences of the Chinese realistic landscape paintings in the British Museum’s digital exhibition was less than 1/3 of that of figurative oil paintings (data from the Center for the Study of Art at the University of London). More complex are the institutional environment constraints. After the implementation of the EU Digital Services Law, Chinese traditional opera videos containing historical war scenes have been taken down by 27% (data monitored by China Foreign Culture Group). This contextual conflict is amplified by algorithms in digital communication, creating “cultural filter bubbles” — overseas social platforms automatically block 87% of non-native cultural content based on user preferences (Oxford University Internet Institute 2024). According to the Center for Intercultural Communication Research at Beijing Foreign Studies University, “Only 41% of Chinese cultural symbols in current digital communication are able to cross the contextual barriers in their entirety to achieve effective communication.” This acceptance barrier not only affects the breadth of communication but also leads to a flattened interpretation of deeper cultural values.

### **3.4. Shortcomings in the operation mechanism: Ecological deficiencies in sustainable communication**

Currently, the international communication system of Chinese culture is facing serious sustainable development challenges. Such ecological defects are mainly manifested in three dimensions. First, the problem of the fault line of composite talents is prominent, and surveys show that there is a 78% shortage of professionals who have cultural literacy, digital technology, and international communication ability at the same time (data from the China Institute for Cultural Industry Development in 2024). Secondly, the vulnerability of the business model is remarkable, and the average investment return cycle of digital cultural products is as long as 3.7



years, far exceeding that of other digital content industries (statistics of the Institute of Cultural Economy of Tsinghua University). Even more critical is the lack of an evaluation system. 83% of the existing indicators for evaluating communication effects still remain in superficial data, such as the number of clicks and retweets (Global Communication Monitoring Report of the Foreign Language Bureau of China), and there is a lack of quantitative tools for deeper impacts, such as cultural identity. Such a flawed mechanism has led to communication programs being characterized by “three highs and three lows”: high government investment and low social participation; high short-term activity and low sustainable operation; high hardware construction and low content development. The National Institute for Strategic Communication at Peking University warns that “if a market-oriented operation mechanism cannot be established within the next three years, the sustainability of the existing communication model will drop by 40%.” This ecological imbalance is constraining the long-term development momentum of digital cultural communication.

## **4. Implementation path of international communication of Chinese excellent traditional culture empowered by digital technology**

### **4.1. Innovate content production and build a cross-cultural digital narrative system**

The construction of an internationally adaptable digital narrative system requires a breakthrough in the traditional content production mode. Firstly, establish an intelligent grading mechanism for cultural symbols. Through the big data analysis of more than 2,300 traditional cultural elements, they can be divided into three categories: core symbols (such as calligraphy, festivals and other elements with cultural genetic significance, which need to be kept original), adaptive symbols (such as food, clothing and other elements that can be localized), and discreet symbols (such as religious totems and other elements that need to be interpreted in a special context). The practice of the China Academy of Art shows that projects using this grading system can reduce the rate of cultural misinterpretation by 58%. Secondly, develop intelligent contextual translation systems. Tsinghua University’s “Wenxin” cross-cultural communication platform is able to automatically optimize the presentation of content through deep learning of cultural contextual features from 75 countries. For example, the digital dissemination of *The Analects of Confucius* focuses on the philosophical discourse of “The Benevolent One Loves Others” for European and American audiences, while the ethical practice of “What You Do Not Want for Yourself” is emphasized for Southeast Asian audiences. The system has already supported the intelligent adaptation of 17 languages. Finally, in terms of narrative mode innovation, a three-dimensional presentation of cultural communication is realized through “three-dimensional integration.” In the spatial and temporal dimension, historical scenes are restored with the help of AR technology; in the sensory dimension, multimodal technology is integrated to enhance the experience; in the cultural dimension, the modern translation of traditional elements is promoted. This integrated narrative effectively breaks through the limitations of a single form of communication, forming a synergistic effect of time and space travel, sensory immersion, and cultural resonance. At present, there is an urgent need to cultivate three types of new subjects: cultural digital creative workshops, transnational content co-creation platforms, and intelligent narrative laboratories, in order to systematically improve content production capacity.

### **4.2. Building technical platforms and creating an autonomous and controllable communication ecology**

The construction of an autonomous and controllable international communication technology platform

system is a strategic initiative to break through the current plight of channel dependency. The construction of this platform ecology needs to be synergistically promoted at three levels: at the infrastructure level, the construction of a “cloud platform for culture going to the sea” should be accelerated. The “Chinese Culture International Dissemination Cloud” led by the Foreign Languages Bureau of China has preliminarily realized four core functions: multimodal content library (integrating 4K/8K, VR/AR and other formats), intelligent distribution system (supporting 83 languages for automatic adaptation), cross-border copyright management (based on blockchain’s certificate of authentication), and data monitoring center. At the technical tool level, the focus is on developing lightweight creation suites. The “Cultural Digital Toolbox” launched by Tencent Research Institute contains three modules: low-code non-legacy digitization tools (enabling local cultural institutions to complete 60% of digitization work on their own), AI-assisted creation system (providing a library of more than 2,000 traditional cultural IP elements), and cross-platform distribution assistant (one-click synchronization to 15 international mainstream platforms). The AI-assisted creation system (providing a library of more than 2,000 traditional cultural IP elements) and cross-platform publishing assistant (one-click synchronization to 15 international mainstream platforms). After the Dunhuang Research Institute applied the tool, the efficiency of digital content output was increased by three times. At the standard system level, there is an urgent need to establish technical standards for cultural digitization. The Chinese Culture Digitization Technical Standards System, directed by the Ministry of Industry and Information Technology, has formulated 47 industry standards, covering key areas such as data collection (e.g., precision requirements for 3D scanning of cultural relics), content annotation (specification of metadata for cultural elements), and platform interfaces. The core technologies that need to be broken through urgently include: intelligent generation algorithms for cultural content, cross-cultural context understanding engines, distributed digital asset management systems, and other key areas.

### **4.3. Optimizing communication strategies to reach target audiences with intelligence and precision**

To realize the precise delivery of Chinese culture international communication, it is necessary to build a data-driven intelligent communication system. At the audience insight level, a globalized cultural consumption database should be established. The “Overseas Audience Portrait System” jointly constructed by the Palace Museum and Tsinghua University has accumulated 120 million pieces of cultural consumption behavior data, and subdivided the audience into 32 cultural preference clusters through machine learning. According to the data, Southeast Asian youth groups accept 78% of digital cultural and creative products, while the European and American intellectual class favors in-depth cultural documentaries. Based on this, the “intelligent navigation system for cultural communication” has been developed, increasing the accuracy of content matching by 65%. At the channel operation level, it is necessary to implement platform differentiation strategies. For YouTube’s long video platform, it adopts the mode of “cultural IP + storytelling narrative” (e.g. the average retention rate of the international version of “If National Treasures Could Talk” reached 81%); for short video platforms such as TikTok, it develops the interactive format of “Challenge + AR effects” (the #ChineseCulture Challenge received more than 100 million views); and for professional community platforms such as Reddit, it focuses on the construction of cultural knowledge maps. At the level of effect optimization, it is necessary to break through the traditional communication evaluation paradigm. The “Cultural Communication Index” developed by Peking University’s Institute of New Media Research (INMR) is an evaluation system based on four dimensions:

awareness (25%), emotion (35%), participation (20%), and transformation (20%). The application of the index found that the “cultural dialog” mode combined with local KOLs scored 2.3 times higher than traditional communication in terms of emotionality, and that VR experiential content brought 180% higher participation than print content.

#### **4.4. Improving the safeguard mechanism and cultivating the kinetic energy for long-term cultural development**

Building a sustainable development system for the international dissemination of Chinese culture requires systematic institutional innovation. In terms of talent cultivation, it is necessary to establish a composite talent echelon of “culture + science and technology + international communication.” The newly established cross-discipline of “digital cultural communication” at Beijing Foreign Studies University has already sent 327 professionals to the industry through the training mode of “three-tutor system” (cultural scholars, technologists, and instructors of international communication practice). Data show that the cultural communication effectiveness of projects led by such composite talents is 2.8 times higher than that of traditional projects. At the level of financial guarantee, it is necessary to innovate the market-oriented operation mechanism. China Culture Industry Investment Fund set up a “cultural overseas special”, using the “government guidance + market operation” mode, and has incubated 47 digital culture projects with international competitiveness, with an average return on investment of 1:5.3. Shanghai Cultural Property Rights Exchange launched the “digital cultural assets.” The Shanghai Cultural Property Rights Exchange (SCPRX) has launched the “Digital Cultural Asset Trading Platform”, which has increased the efficiency of cultural IP financing by 70%. The key is to establish a profit model for the whole industry chain of “creation, dissemination, and derivative development”, and to reduce the excessive dependence on government funds. In terms of the evaluation system, it is necessary to break through the limitations of quantitative assessment. Tsinghua University and the Ministry of Culture and Tourism jointly built the “cultural communication big data laboratory”, developed a deep communication effect assessment model containing 12 dimensions, including cultural awareness, emotional recognition, and behavioral transformation. In the future, people should focus on building three major support platforms: an international cultural digital copyright service center, a cross-border cultural big data trading platform, and a digital cultural communication innovation base, so as to provide sustained momentum for the high-quality export of Chinese culture to the sea.

### **5. Conclusion**

Currently, the technologically empowered Chinese excellent traditional culture has become recognizable in the global daily visibility, both in breadth and depth<sup>[4]</sup>. Cultural communication in the digital era is essentially a dual dialogue involving technological logic and cultural values, and only by making good use of technological empowerment under the premise of maintaining cultural authenticity can effective cross-cultural communication be realized. Overseas dissemination of Chinese excellent traditional culture needs to adhere to the basic stance of rooting in Chinese culture, adapt to the mainstream ideology and culture of the society, combine with the current situation of China’s specific practical development, adhere to the people-oriented communication concept, and adhere to the logical direction of building a community of human destiny<sup>[5]</sup>. The ecological construction of autonomous and controllable platforms and intelligent communication strategies

proposed in the article have shown remarkable results in practice, such as the “Digital Dunhuang” project, which has increased the participation of overseas users by 210%, and the TikTok Cultural Challenge, which has created 5.8 billion plays and other successful cases. In the future, it is necessary to pay more attention to the construction of cultural identity under the emerging technological scenarios, such as the meta-universe and the competition for cultural discourse power in the globalized digital governance system.

## Disclosure statement

The author declares no conflict of interest.

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