

Research on the International Communication Model and Strategies of Xi'an Drum Music Culture in the Context of the Belt and Road Initiative

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Abstract: The Belt and Road Initiative has accelerated the global dissemination of outstanding traditional Chinese culture, bringing musical intangible cultural heritage such as Xi'an Drum Music into a critical stage of digital transformation and international communication. Drawing on the “Human–Art–Context” triadic interaction model and adopting methods including literature review, case analysis, interviews, and comparative research, this study conducts a systematic examination of the communication subjects, content structure, and media pathways of Xi'an Drum Music. The research findings indicate that current international dissemination faces several challenges, including insufficient depth in digital translation, limited cross-cultural explanatory power within the communication discourse system, and fragmented application of immersive experience technologies. In response, this paper proposes a “Trinity” international communication model and four-dimensional communication strategies from a systemic reconstruction perspective, aiming to balance cultural authenticity with contemporary dissemination needs and provide a transferable pathway for the global dissemination of musical intangible cultural heritage. The research holds practical value for building a cultural community under the Belt and Road framework and enhancing cultural soft power.

Keywords: Xi'an Drum Music; International Communication; Intangible Cultural Heritage; Digitalization; Belt and Road Initiative

1. Introduction

The Belt and Road Initiative, with people-to-people connectivity as its core objective, has provided institutional support and

communication platforms for the global dissemination of outstanding traditional Chinese culture. The rapid development of digital technologies—particularly short-video platforms, immersive experience technologies, and generative AI—is reshaping the communication model of intangible cultural heritage (ICH), enabling a new stage of multi-platform collaborative living transmission. Research indicates that digital content production and cross-media dissemination have become essential pathways for the sustainable development of ICH, while digital creativity, public participation, and cultural-industry transformation together constitute a new mechanism for heritage communication [1-3]. From a cultural-ecological perspective, the digitalization of ICH must be embedded in local cultural systems to prevent semantic rupture and contextual loss [4]. At the global level, social media has facilitated the cultural “breakthrough” of ICH through participatory culture, enhancing both the visibility and discursive power of cultural symbols [5]. In the Chinese context, short-video platforms represented by Douyin have produced a structure characterized by the coexistence of everyday representation, spectacle, and fragmentation, expanding audience engagement while simultaneously challenging deeper cultural expression [6]. Meanwhile, art think-tanks are emerging as an important force supporting digital ICH strategy [7].

As a major representative of traditional ceremonial music in China, Xi'an Drum Music was inscribed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in 2009, demonstrating its unique status within the Chinese musical lineage. Studies show that Xi'an Drum Music originated within the ritual music tradition of the Sui and Tang dynasties and exhibits high structural complexity in both performance morphology and notation systems [8]. In recent years, digital

exhibitions, short-video dissemination, and online performance have significantly increased public visibility, yet challenges persist regarding the insufficient depth of digital translation, limitations in cross-cultural narrative capacity, and low acceptance among younger audiences [9]. Algorithmic characteristics of short-video platforms fragment musical structure, weakening holistic aesthetics and cultural meaning, and international audiences frequently confuse the genre with Japanese and Korean gagaku, which undermines cultural recognizability [6,9].

From both theoretical and practical perspectives, the international dissemination of musical ICH under the Belt and Road Initiative involves a triadic system of people–art–context: heritage communities and governance actors (people), musical structure and performance morphology (art), and digital platforms and global audiences (context) [2,4]. Compared with general ICH, drum-music heritage relies more heavily on immersive embodied experience and full ritual context, necessitating a balance between cultural authenticity and cross-cultural communication accessibility [1]. Overall, research focus has shifted from heritage preservation to a coordinated pathway of digital empowerment, cross-cultural narrative, and industrial transformation [3,10].

Based on this background, the present study addresses the following research questions:

- (1) How can the limitations of Xi'an Drum Music in communication actor collaboration, content transformation, and technological application be systematically analyzed?
- (2) How can a “Trinity-based” international communication model integrating heritage communities, digital platforms, and global audiences be constructed?
- (3) How can a four-dimensional transformation strategy—focusing on content forms, communication context, audience participation, and cultural-industry translation—be designed to enhance the collaborative value of cultural inheritance, educational dissemination, and cultural tourism economy?

2 Analysis of the Current Situation and Challenges in the International Dissemination of Xi'an Drum Music

2.1 Cultural Essence and Communication Value of Xi'an Drum Music

Xi'an Drum Music is a significant component of traditional Chinese ritual and ceremonial music. Its musical form, cultural structure, and aesthetic characteristics occupy a distinctive position in the history of Chinese music and within the broader East Asian civilizational system. Originating during the Sui and Tang dynasties and continuously refined throughout the Song, Yuan, Ming, and Qing periods, Xi'an Drum Music centers on two performance modes—seated performance and processional performance—forming a functional musical system widely applied in religious worship, ritual ceremonies, folk activities, and social life. The repertoire includes an extensive number of qupai (fixed tune structures) with complex internal organization, and its transmission relies primarily on oral instruction and the gongchepu notation system. Beyond its aesthetic and musical value, Xi'an Drum Music embodies ritual order, religious concepts, and collective memory, functioning as a crucial vehicle for regional cultural identity and social emotional expression.

In terms of communication value, Xi'an Drum Music carries multiple layers of significance. First, its artistic value lies in the integrity of its historical musical system and the uniqueness of its polyphonic ensemble structure, serving as an important exemplar for research on ancient musical institutions, ensemble performance, and classical Chinese aesthetics. Second, it holds strong cultural symbolic significance due to its close association with Confucian ritual thought, demonstrating the cultural concept of cultivating virtue through music and achieving emotional harmony through ritual. Thus, it constitutes a valuable cultural resource for constructing narratives of Chinese-style modern civilization. Additionally, Xi'an Drum Music plays an active role in cultural tourism and city branding, contributing to urban cultural marketing, performing arts development, and heritage-based tourism integration. More importantly, its powerful rhythmic patterns, visual performativity, and collective spatial setting afford strong cross-cultural expressive capacity, generating potential for meaningful dialogue with audiences from diverse cultural backgrounds and providing a musical platform for cultural exchange and mutual learning among Belt and Road partner countries.

2.2 Current Status of International

Dissemination

At the level of communication actors, international dissemination of Xi'an Drum Music currently involves a diverse multi-stakeholder structure composed of government agencies, cultural institutions, professional ensembles, social organizations, and digital content creators; however, systematic coordination mechanisms remain underdeveloped. Government agencies undertake policy guidance and establish frameworks for international cultural exchange, yet shortcomings persist in strategic planning, content design, and the construction of internationally adaptive narrative systems. Professional ensembles and cultural organizations possess advantages in artistic performance and resource mobilization, but dissemination content remains centered on traditional performance logic and lacks narrative innovation based on audience experience perspectives. Social organizations and individual creators demonstrate strong dissemination momentum through short-video platforms; however, content tends to be fragmented and entertainment-oriented, limiting cultural depth and hindering the formation of a unified communicative identity. The absence of collaborative network structures and resource-sharing mechanisms results in dispersed communication resources and repetitive investment.

Regarding dissemination content, current communication focuses primarily on stage performance clips, festival and ceremonial documentation, and tourism-oriented scenic representations, with limited systematic cultural interpretation and cross-cultural translation strategies. Existing content emphasizes visual spectacle and large-scale presentation rather than explaining musical structure, cultural context, historical heritage, or aesthetic connotations, preventing international audiences from forming deeper comprehension. Due to insufficient multilingual support and cross-cultural translation mechanisms, the cultural meaning of Xi'an Drum Music is often reduced to "traditional performance" or "folk attraction," which weakens cultural identification and value resonance.

In terms of communication media structure, traditional media such as television, radio, print media and stage performance continue to serve as authoritative communication channels, while

digital media—particularly short-video platforms such as Douyin, Kuaishou, and YouTube—have become primary pathways for international dissemination. Digital dissemination offers advantages including convenience, high engagement, and strong secondary transmission capability, enabling rapid increases in global visibility. However, digital content frequently displays tendencies toward de-structuring, de-contextualization, and fragmentation, limiting the integrity of musical logic and cultural framework. Meanwhile, VR/AR immersive technologies have been introduced into certain exhibitions and interactive experience projects, enabling reconstructed ritual environments and performance spaces, yet current applications are limited and lack mature technological integration and experience design (Figure 1 Current Media Structure and Digital Immersion Application Status in Xi'an Drum Music). Digital exhibitions and immersive experience projects remain in exploratory and fragmented stages, without establishing a stable dissemination matrix.

At the audience level, international audiences demonstrate clear differentiation: professional groups focus on academic and cultural value, cultural enthusiasts prioritize ritual aesthetics and performativity, while general audiences tend to prefer visually oriented and sensory experience-based content. Due to limited cultural background knowledge, significant variations exist in comprehension depth among different groups, and cultural identification often remains at the level of superficial emotion and experiential engagement. In some regions, Xi'an Drum Music is misidentified as Japanese or Korean gagaku, posing challenges to cultural recognizability and symbolic distinctiveness (Figure 2 Audience Understanding Levels and Cross-Cultural Cognition Differences).

In terms of communication effectiveness, the international visibility of Xi'an Drum Music has continued to increase, as reflected in the growing volume of online dissemination and expanding audience reach. However, cultural understanding and value-based recognition remain relatively limited. The dissemination process lacks a data-driven evaluation system, making it difficult to implement feedback-based optimization or iterative refinement of communication strategies (Figure 3 Effectiveness of Current International

Communication Efforts of Xi'an Drum Music). Based on a comprehensive analysis of communication actors, content, media systems, audience characteristics, and dissemination effectiveness, the current international communication of Xi'an Drum Music faces several major challenges. First, at the level of cultural content, the capacity for cross-cultural translation remains insufficient. The complexity of musical notation systems, ritual contexts, and deeply embedded cultural values lacks effective explanatory mechanisms, making it difficult for international audiences to achieve deep understanding. Balancing cultural authenticity with communicative accessibility has therefore become a central challenge. Second, at the level

of communication actors, collaborative mechanisms among diverse stakeholders are weak; government agencies, institutions, community groups, and individual creators lack resource interconnection and coordinated linkage mechanisms, reducing overall communication efficiency and limiting the integrated development of a coherent communication brand. Third, from the perspective of media and technology, the fragmented presentation characteristic of digital media weakens the depth of cultural expression, while immersive technologies and AI-assisted dissemination tools have not yet achieved scalable application, reflecting insufficient innovation in communication products.

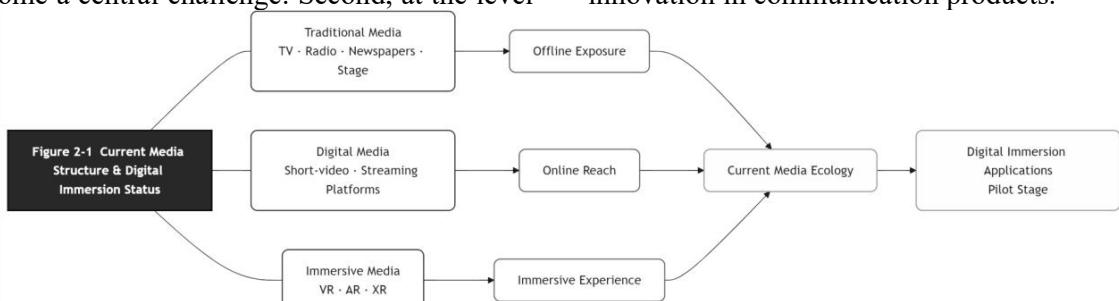


Figure 1. Current Media Structure and Digital Immersion Application Status in Xi'an Drum Music

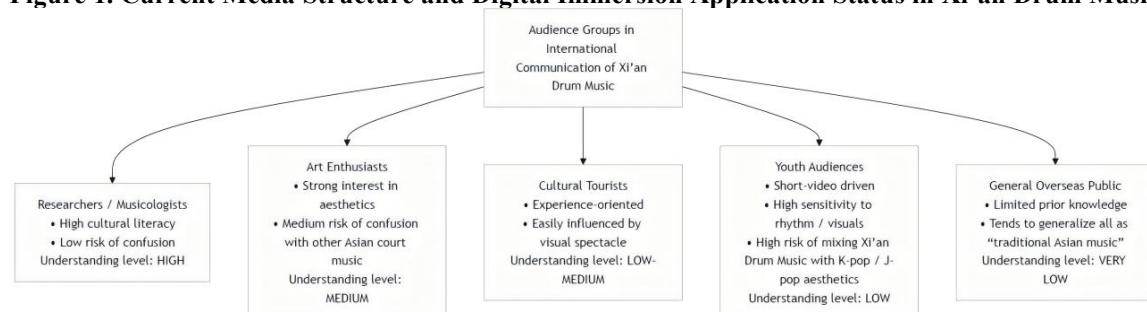


Figure 2. Audience Understanding Levels and Cross-Cultural Cognition Differences

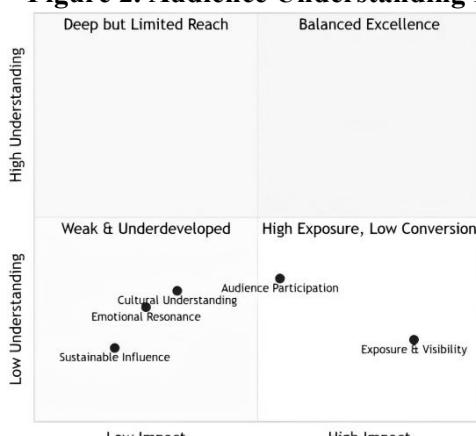


Figure 3. Effectiveness of Current International Communication Efforts of Xi'an Drum Music

Finally, at the audience level, the absence of multi-tier audience insight and cross-cultural

feedback mechanisms, as well as the lack of a data-driven evaluation system, restricts evidence-based optimization and strategic refinement of communication pathways.

3. Construction of an International Communication Model for Xi'an Drum Music

With the Belt and Road Initiative accelerating the global dissemination of Chinese culture, developing a scientifically grounded and systematically structured cross-cultural communication model has become crucial for the sustainable development of Xi'an Drum Music's international communication. The systematic analysis presented above—covering communication actors, content, media channels, audience structure, and dissemination

effectiveness—reveals that the core bottlenecks in current dissemination practice stem from structural disconnection among cultural expression systems, communication organizational frameworks, and media-application strategies. Therefore, it is necessary to construct an integrated communication model capable of connecting multi-stakeholder resources, integrating media-channel advantages, and enabling effective cross-cultural translation of cultural content, thereby enhancing communication efficiency, strengthening cultural identity, and upgrading international influence. This chapter is grounded in the People–Art–Context triadic interaction model and integrates the “5W” communication framework to construct a “Trinity + 5W” integrated international communication model from the perspectives of organizational logic, dissemination structure, and technological pathways.

3.1 Foundations for Model Development: Theoretical Basis and Practical Context

The proposed international communication model for Xi'an Drum Music is primarily supported by communication theory and cross-cultural communication theory. The “5W” framework demonstrates that dissemination effectiveness is determined collectively by the communicator (Who), the message (Says what), the channel (In which channel), the audience (To whom), and the effect (With what effect). For musical intangible heritage, dissemination should emphasize a transition from linear transmission to interactive, feedback-oriented, and systematic communication models. Cross-cultural communication theory highlights that cultural dissemination is not merely information transfer but rather the reconstruction of meaning and reinterpretation of cultural metaphors, requiring close attention to audience context, cultural differences, and symbolic translation mechanisms.

The “trans-cultural communication paradigm” stresses the need to balance cultural authenticity with cross-cultural intelligibility during communication, emphasizing cultural meaning reconstruction rather than direct replication. Musical intangible heritage particularly depends on experiential immersion and ritual context; therefore, its dissemination model must present an integrated experiential structure rather than fragmented representation. Consequently, the

construction of a full-chain communication system must be grounded in cultural ecological logic rather than driven solely by technology or market demands.

In practical terms, existing initiatives such as digital exhibitions, short-video dissemination, and international stage performances provide experiential foundations for model development. Meanwhile, the maturation of digital technologies, the advancement of immersive experience technologies, and the expansion of cultural collaboration platforms among Belt and Road countries provide technological support and global interaction opportunities for cross-cultural communication. The growing international visibility of Xi'an culture also offers a realistic foundation for building a global communication network for Xi'an Drum Music.

Therefore, the new international communication model must integrate cultural, media, and technological resources to promote the evolution of cultural dissemination from fragmentation to systematization, from display to immersive experience, and from one-way diffusion to interactive, co-constructed participation.

3.2 Construction of the “Trinity + 5W” Integrated Communication Model

Based on theoretical foundations and practical needs, this study proposes a “Trinity” international communication model composed of communication subject synergy, cultural content translation, and communication environment integration. Structurally, the model is further integrated with the 5W communication analysis framework, thereby forming a comprehensive communication system with systematic logic and operational pathways. This model connects the internal cultural structure of Xi'an Drum Music with the external requirements of global communication, enabling cross-level linkage between symbolic meaning, communication organization, and technological channels. By aligning the Trinity structure (People–Art–Context) with the 5W elements (Who–Says What–In Which Channel–To Whom–With What Effect), the model supports the transition from fragmented, linear, and display-oriented dissemination to coordinated, experiential, and feedback-driven communication (Figure 4 Audience Segmentation for International Dissemination).

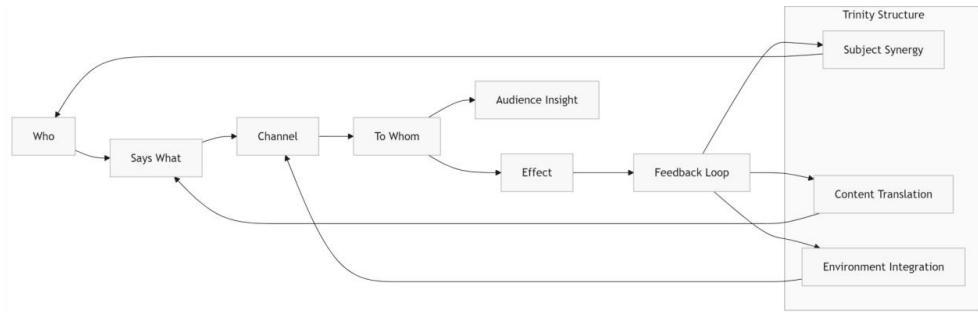


Figure 4. Audience Segmentation for International Dissemination

The first tier of this model is the communication subject synergy structure, composed of a communication community formed jointly by government agencies, cultural institutions, professional ensembles, community organizations, and individual content creators. This structure establishes a collaborative governance framework characterized by multi-actor coordination, aligned objectives, and shared resources. Within the model, the government undertakes responsibilities such as policy guidance, resource integration, and platform construction; cultural institutions and professional ensembles focus on content production and artistic transformation; and individual communicators function as cultural diffusion nodes that promote co-creation and word-of-mouth communication through social media platforms. The core objective of this structure is to build a cross-sector collaborative network and enhance the efficiency and influence of communication resources.

The second tier is the communication content structure, centered on achieving balance between cultural authenticity and cross-cultural intelligibility. It emphasizes the transition from single-form display to multi-text, multi-channel, and multi-symbolic expression. Communication should not be limited to musical performance alone but should also encompass systematic explanation of cultural context, historical background, qupai structural logic, ritual function, and emotional meaning. For international audiences, designing effective content translation mechanisms is essential, including multilingual representation, visualized interpretation, narrative-based presentation, and conceptual simplification strategies, in order to improve cultural comprehensibility and support the transformation from merely “seeing China” to genuinely “understanding China.”

The third tier is the communication environment structure, which highlights media

convergence and experiential reconstruction of communication scenarios. Traditional media and digital media should form an integrated matrix-based dissemination system, enabling content reconstruction and communication extension through a pathway of offline ritual performance → online immersive virtual experience → social media diffusion (Figure 5 Integrated Communication Model for Xi'an Drum Music: “Trinity + 5W” Framework). Immersive technologies such as VR/AR, together with AI-driven intelligent recommendation mechanisms, support the design of cross-cultural experiential environments, allowing audiences to achieve cultural understanding and emotional resonance within virtual spaces. The communication platform shifts from one-way output to interactive community building, establishing long-term engagement through digital exhibition halls, online cultural communities, and collaborative participation activities.

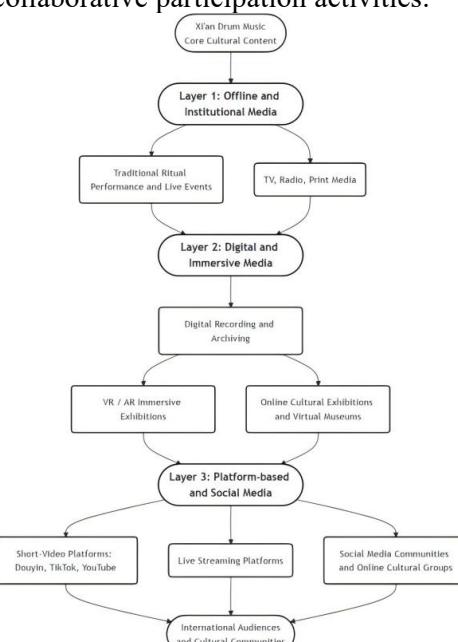


Figure 5. Integrated Communication Model for Xi'an Drum Music: “Trinity + 5W” Framework

Building on this foundation, the “Trinity” structure is integrated with the 5W communication framework, forming a dual-nested structure that connects Subject–Content–Environment with Who–Says What–In Which Channel–To Whom–With What Effect.

In this model, communication subject synergy corresponds to Who; cultural content transformation corresponds to Says What; media platform integration corresponds to In Which Channel; audience segmentation and needs analysis correspond to To Whom; and communication effectiveness evaluation and feedback mechanisms correspond to With What Effect. By constructing a feedback loop linking cultural production, content distribution, and audience response, the model transforms international dissemination from one-way



Figure 6 International Communication Process Model of Xi'an Drum Music

4. Four-Dimensional Transformation Strategies for the International Dissemination of Xi'an Drum Music

Building upon the construction of the “Trinity + 5W” integrated communication model, the effective dissemination of Xi'an Drum Music within the global cultural environment requires systematic strategy development across four key dimensions: cultural content, communication ecology, media carriers, and audience perspective. From the perspective of communication transformation, international dissemination is no longer merely a process of information projection or value export, but rather a process of cultural sharing, co-construction, and reinterpretation. As a form of musical intangible cultural heritage with profound historical accumulation and ritual connotations, Xi'an Drum Music requires adaptive cross-cultural transformation to enable its deep cultural structures, emotional frameworks, and aesthetic expressions to be understood and resonate among global audiences. This chapter proposes practical transformation strategies across four dimensions—content-based, ecological, media-oriented, and audience-centered—to achieve a dynamic balance between cultural authenticity and international intelligibility while enhancing the sustainability of dissemination outcomes.

diffusion into an iterative process of continuous optimization.

This communication model demonstrates three core characteristics. First, systematicity, achieved by integrating cultural production, communication implementation, and effect evaluation into a full-process governance framework. Second, interactivity, realized through multi-actor collaboration mechanisms and participatory user engagement, shifting cultural expression from institution-driven dissemination toward public co-creation. Third, experientiality, which leverages immersive scenario reconstruction and digital narrative structures to support experiential cultural understanding and emotional resonance (Figure 6 International Communication Process Model of Xi'an Drum Music).

4.1 Cultural Content Transformation Strategy

Cross-cultural expression of cultural content constitutes the foundation of international dissemination of Xi'an Drum Music. The core of content transformation lies in the refinement and structuralized expression of cultural essence, enabling effective understanding of musical structure, cultural symbolism, and ritual significance in diverse cultural settings through meaning interpretation and visualized presentation. In current dissemination practice, the complexity of qupai structure, abstraction of musical logic, and deeply embedded cultural context remain major barriers to comprehension for international audiences. Therefore, content strategy should prioritize knowledge structuring, symbol visualization, and narrative contextualization, providing clear cultural thematic pathways that enable cognitive linkage between music and culture.

First, explanation of musical structure and qupai systems requires structured knowledge expression through cultural knowledge mapping, structural diagramming, and instrumental function analysis, unfolding layers of cultural information through multilingual subtitles, AR annotations, or interactive interfaces. Second, at the level of historical and cultural context, strategies such as ritual restoration, cultural landscape reconstruction, and narrative-based interpretation should be adopted to present

Xi'an Drum Music as a dynamic cultural entity embedded in historical events, religious rituals, or folk festivals, rather than as a performance isolated from context. Third, a multi-text presentation mode—integrating text, video, notation, sound, and storytelling—can form a complete cultural narrative system, reducing barriers caused by abstract musical structures in cross-cultural understanding and enabling systematic meaning construction.

In terms of innovative content development, cross-cultural artistic integration strategies may be introduced by combining Xi'an Drum Music with world music elements, international rhythmic structures, or contemporary creative expressions, enhancing aesthetic accessibility without compromising cultural authenticity. For instance, transnational collaborative performances can incorporate multi-layered voice arrangements, polyphonic rhythmic adaptations, and resonant thematic expressions, enhancing both cultural depth and artistic appeal.

4.2 Ecological Adaptation Transformation Strategy

Cultural dissemination requires the construction of an appropriate communication ecosystem, and the development of such an environment necessitates situating Xi'an Drum Music within the cultural interaction network of Belt and Road partner countries through localized and contextualized expression. Ecological adaptation focuses on coordination between cultural expression and communication context, promoting the localized generation of cultural meaning through contextual transformation. From observed communication outcomes, the shaping of localized cultural scenes significantly enhances cultural identification and audience participation, whereas dissemination detached from contextual environments often results in interpretive disconnection. Therefore, it is essential to embed Xi'an Drum Music into sustainable cultural interaction scenarios through strategies of contextual reconstruction.

In terms of contextual development, cross-cultural co-creation models may be implemented around national cultural festivals, religious ceremonies, public spaces, and educational settings, forming emotional cultural connections through co-performance, co-creation, and co-narration. For example, themed

cross-cultural performances at international arts festivals or youth culture festivals, incorporating joint rehearsals and collaborative composition, enable meaning reconstruction through shared creative processes among culturally diverse groups. In addition, cultural experience-based teaching activities may be carried out in universities, primary and secondary schools, and international Chinese education classrooms, positioning Xi'an Drum Music as a key cultural learning component and embedding intangible heritage dissemination within educational systems to establish long-term channels of humanistic communication. Within the cooperation framework of the Belt and Road Initiative, constructing a regional co-building platform can support the integration of Xi'an Drum Music into city exchange events, public diplomacy activities, and annual cultural programs. Through collaboration among government agencies, cultural institutions, and international partners, stable dissemination settings and display mechanisms can be established, forming a sustainable and long-term communication network.

4.3 Media-Carrier Transformation Strategy

With the deep integration of digital technology into cultural dissemination, communication media are no longer solely intermediary structures between content and audiences, but have become essential components in cultural experience and meaning construction. The media-carrier transformation strategy aims to integrate traditional and digital media to build a three-dimensional, multi-layered dissemination matrix, enabling the transition from watching to experiencing. At the media-structural level, a four-tier communication pathway should be constructed—traditional performance → digital presentation → immersive experience → community co-creation—to support the evolution of Xi'an Drum Music dissemination from single-point diffusion toward a systematic communication network (Figure 7 Digital Communication Pathway System for Xi'an Drum Music).

In terms of digital dissemination structure, short-video platforms may be used for lightweight presentation to enhance visibility and lower the threshold for audience engagement. At the same time, documentaries, expert interviews, and qupai interpretation formats can be adopted to strengthen deep

knowledge expression.

Online digital museums, virtual performance systems, and reconstructed virtual ritual scenes can provide immersive experiences, embedding ritual meaning and cultural emotion into scenario-based interaction. VR/AR technologies can be employed to reconstruct cultural spaces—such as temple fair performance settings, religious ritual environments, or folk celebration venues—allowing audiences to experience cultural emotion structures within virtual environments. The application of AI in human-computer interaction, emotional recognition, and content recommendation enables dynamic intelligent dissemination pathways based on user data, improving

dissemination precision and personalization.

Regarding the upgrading of traditional media, international touring performances, cultural diplomacy concerts, and musical events should be integrated with digital documentation and synchronous online dissemination, constructing a continuous communication chain through the mechanism of “performance — recording — dissemination — interactive feedback.” By facilitating collaboration between Chinese and international media, establishing partnerships for cultural programming, and producing high-quality cultural documentaries, Xi'an Drum Music can enter mainstream narrative channels and expand its global influence.



Figure 7. Digital Communication Pathway System for Xi'an Drum Music

4.4 Audience-Centered Transformation Strategy

The ultimate effectiveness of dissemination depends on audience comprehension depth and participation intensity; therefore, audience-centered transformation strategies must focus on audience segmentation, experience design, and feedback mechanism construction. The audience structure of Xi'an Drum Music is highly diverse, including international professional music researchers, cultural enthusiasts, music education communities, tourism audiences, and the general public. These groups differ significantly in terms of content depth requirements, experiential preferences, and communication needs. Consequently, a stratified dissemination system should be developed, enabling precise transmission of communication content through audience profiling models (Figure 8 Audience Segmentation and Needs Evaluation Model).

Audience segmentation strategies may be developed based on age structure, cultural

background, aesthetic preferences, and media usage habits, enabling the creation of communication content products tailored for multiple target groups. For example, gamified interactive experience products or digital interactive performance systems can be developed for young audiences; digital score databases and research resource platforms may be launched for professional groups; and themed cultural walking routes within the city may be designed for tourism-oriented audiences. In terms of communication interaction and feedback, a data-driven evaluation system can be established through social media communities, online questionnaires, and offline interviews, allowing dissemination decisions to be dynamically adjusted based on real audience experiences. By constructing long-term cultural community mechanisms, audiences may shift from passive spectators to active participants, co-creators, and disseminators, forming a “cultural community” model that promotes cultural identity, enhances audience engagement, and strengthens the conversion of

international communication effectiveness.

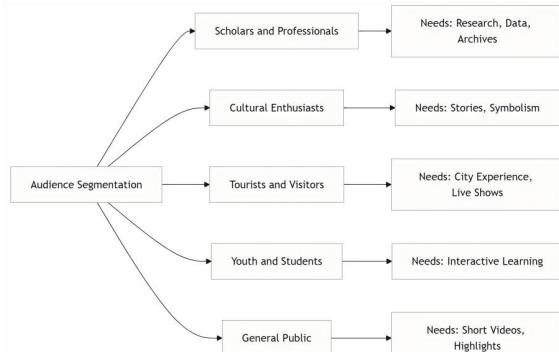


Figure 8. Audience Segmentation and Needs Evaluation Model

5. Challenges and Strategies for Implementing the Communication Model

Although the “Trinity + 5W” integrated communication model and the “Four-Dimensional Transformation Strategies” provide a systematic framework for the international dissemination of Xi'an Drum Music, practical implementation still faces systemic challenges. These challenges stem not only from structural tensions between cultural content and cross-cultural comprehension but also from collaboration costs, insufficient technological and resource investment, the complex international communication environment, and the incompleteness of user-centered feedback mechanisms. Therefore, to ensure the effective implementation of dissemination strategies, it is necessary to analyze key obstacles and propose feasible solutions that support continuous optimization and sustainable development.

At the cultural transformation and content expression level, Xi'an Drum Music relies heavily on historical context and ritual significance, and its symbolic system and artistic structures are highly specialized and complex—resulting in considerably greater cross-cultural translation difficulty compared with general cultural products. In practice, tension often emerges between preserving cultural authenticity and achieving communicative effectiveness. Excessive simplification weakens cultural depth and historical integrity, whereas highly specialized information raises comprehension barriers, thereby limiting dissemination effectiveness. Consequently, balancing expert-level expression and public accessibility remains a major challenge in practical communication.

Furthermore, there is still a lack of mature solutions for the structured representation of traditional score systems, musical forms, and ritual contexts, particularly regarding immersive reproduction of authentic ritual environments through digital technology. The construction of VR/AR-based immersive cultural scenarios faces substantial technological constraints—such as spatial simulation complexity, sensory synchronization requirements, and multimodal integration (Figure 9 Technical Challenges in Digital Translation of Xi'an Drum Music).

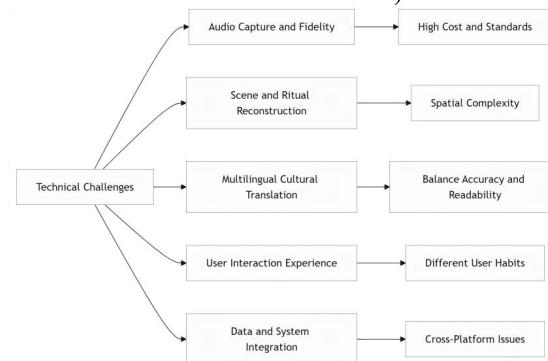


Figure 9. Technical Challenges in Digital Translation of Xi'an Drum Music

In terms of collaborative governance among communication actors, the international dissemination of Xi'an Drum Music involves multiple stakeholders—including government departments, cultural institutions, professional ensembles, community organizations, and individual content creators—who collectively contribute to cultural outreach. However, a stable coordination mechanism and a benefit-sharing framework among these actors have not yet been effectively established. Government agencies typically take responsibility for cultural policy formulation, resource integration, and the construction of international exchange channels. Cultural institutions emphasize artistic presentation and content development, while individual creators play a crucial role in social media-based diffusion.

Nevertheless, in the absence of unified strategic planning, resource-sharing protocols, and cross-sector coordination mechanisms, dissemination activities remain fragmented and repetitive, resulting in suboptimal communication efficiency. Thus, a key challenge is constructing a multi-stakeholder collaborative governance system that aligns policies, content development, and communication networks to support practical implementation of the model.

Regarding international audience engagement and needs assessment, the current dissemination system lacks audience insight tools and a feedback mechanism supported by reliable data. Because audiences from different countries and cultural backgrounds exhibit substantial variation in cognitive frameworks, aesthetic preferences, and media usage behaviors, without precise audience positioning and real-time feedback circulation, dissemination content cannot be effectively targeted. This results in an information gap between cultural output and cultural reception.

Moreover, the communication evaluation system remains underdeveloped, and there is no standardized model for assessing international communication effectiveness, making it difficult to quantify decision-making and define paths for strategy iteration. A systematic evaluation architecture is therefore needed to

support data-driven optimization of communication processes.

In the development of digital dissemination products, the application of immersive experience technologies, digital exhibition halls, multilingual interaction systems, and AI-driven intelligent recommendation mechanisms is still constrained by several factors, including financial investment, technological capabilities, and industrial collaboration. Currently, digital dissemination of Xi'an Drum Music remains at a pilot or experimental level and has not yet formed a scalable, replicable, or commercially viable product system. The technological and operational costs associated with developing digital cultural products are high, while the commercial return cycle for intangible cultural heritage projects is typically long. This weakens sustained motivation for investment in digital innovation and product promotion.

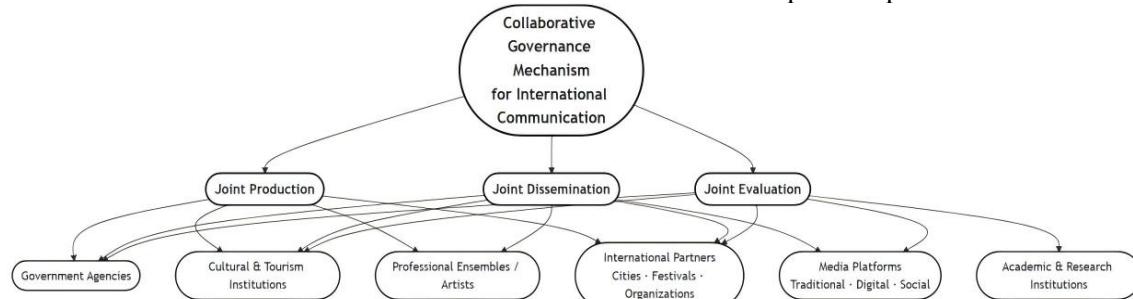


Figure 10. Multi-Actor Collaborative Governance Mechanism for the International Communication of Xi'an Drum Music

Furthermore, cross-border digital dissemination must address additional challenges such as copyright management, database interoperability, cultural sensitivity considerations, and compatibility of technical standards, all of which introduce additional layers of resistance in the process of international deployment.

To address the above challenges, a comprehensive response framework should be established through institutional planning, platform construction, and strategic technological investment. First, collaborative governance and co-creation mechanisms should be built by assembling a multi-actor team comprising intangible heritage experts, cross-cultural communication scholars, digital technology developers, and professional communication agencies. This collaboration system would support coordinated decision-making and optimized allocation of communication resources. Supported by the Belt and Road cultural cooperation network and

international cultural exchange mechanisms, such a framework could implement a model of “joint production — joint dissemination — joint evaluation”, enabling the shared construction of cultural narratives through international institutional partnerships (Figure 10 Multi-Actor Collaborative Governance Mechanism for the International Communication of Xi'an Drum Music).

Secondly, a cross-cultural audience evaluation system and communication effectiveness assessment model should be established based on big-data analytics and user-research methodologies, enabling data-driven optimization of communication strategies and shifting the communication system from experience-based to evidence-based decision-making. A dynamic feedback mechanism grounded in real audience responses will contribute to improved communication precision and iterative upgrading of communication paths, thereby forming a sustainable circulation structure.

Thirdly, policy support and cultural-industry cooperation mechanisms are needed to address the challenges of digital product development costs and commercialization pathways. Through government funding programs, enterprise partnerships, and cultural-technology innovation funds, stable financial support can be secured. Meanwhile, a cultural-technology industry alliance could attract technology companies to participate in the development of immersive experience systems, virtual exhibition halls, and intelligent communication technologies, promoting the transition of Xi'an Drum Music's digital-communication ecosystem from isolated pilot projects to systemic, scalable construction.

In summary, overcoming implementation barriers requires not only cultural-strategy adjustments but also an overall upgrading of communication governance structures, technological capacity, and the collaborative communication ecosystem. Through establishing cross-domain collaboration mechanisms, strengthening data-driven decision-making, and developing a complete digital cultural-product industry chain, the international dissemination of Xi'an Drum Music will gain stronger execution capability and sustainable development potential.

6. Conclusion and Prospects

Under the Belt and Road Initiative, which continues to advance global civilizational dialogue and cultural co-creation, Xi'an Drum Music—an internationally recognized musical intangible cultural heritage—has entered a critical historical stage of transformation from a regionally embedded traditional performance to a globally articulated cultural expression and cross-cultural communication practice. The findings of this study reveal that the international dissemination of Xi'an Drum Music is undergoing systemic reconstruction, shifting from a linear transmission paradigm to a more integrated, interactive, and ecological communication structure. While visibility and exposure have significantly increased, challenges remain regarding cultural-depth expression, cross-cultural comprehension barriers, and the insufficient integration of digital-media technology.

The “Trinity + 5W” integrated communication model proposed in this research provides a systematic and practical pathway for enhancing

global communication capacity. By reconstructing the collaboration structure of communication actors, the transformation pathway of cultural content, and the convergence structure of media environments, the model strengthens the overall cohesion of the communication system. Its embedding within the 5W framework enables a shift from one-directional transmission to multi-actor engagement and feedback-driven circular communication, enhancing both execution and structural resilience. Furthermore, the four-dimensional transformation strategy provides comprehensive implementation paths across content expression, ecological adaptation, media innovation, and audience engagement, supporting long-term cultural sustainability and international cultural influence.

The primary theoretical contributions of this study include:

- (1) combining cross-cultural communication theory with intangible musical heritage to propose a systemic model for communication design;
- (2) advancing heritage-communication studies from conceptual discussion to an executable strategy framework;
- (3) highlighting the decisive role of data-driven evaluation and feedback cycles in international cultural dissemination, promoting the shift from experience-based to evidence-based governance.

In practical terms, this research provides a structured reference model for cultural authorities, communication organizations, educational systems, and cultural-industry collaborations, offering strategic support for building Belt and Road cultural cooperation networks.

Looking forward, the international dissemination of Xi'an Drum Music will continue to depend on deeper integration of digital technologies and innovation in cross-cultural narrative construction. The development of immersive experience systems, artificial intelligence, multilingual intelligent translation, and virtual-real hybrid cultural spaces will transform intangible heritage communication from cultural presentation to cultural co-creation. Future research may focus on establishing quantitative evaluation systems, data-based cross-cultural reception studies, and youth-based creative communication strategies. In a global context of intensifying cultural exchange, the international dissemination of

Xi'an Drum Music is not only cultural heritage protection, but also a key force in shaping China's global cultural narrative and promoting civilizational mutual understanding.

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