

Digital Dissemination Pathways of Thangka: Tradition, Technology, and Transcultural Communication

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Abstract: Thangka, a sacred form of Tibetan Buddhist scroll painting, represents one of the most visually complex and culturally rich artistic traditions in the world. As digital technologies permeate every domain of cultural production and circulation, Thangka faces both unprecedented opportunities for global dissemination and critical risks of cultural decontextualization. This paper investigates the digital dissemination pathways of Thangka through a mixed theoretical lens drawing on Appadurai's theory of cultural flows, Jenkins's transmedia logic, and Castells's network communication model. Drawing on documentary analysis, platform observation, and existing practitioner accounts, the study maps four primary pathways: institutional digitization and archival platforms, short-video and social media ecosystems, immersive technology applications (AR/VR/3D scanning), and transnational e-commerce and cultural brand channels. Findings reveal that while digital dissemination significantly extends Thangka's reach and visibility, it simultaneously introduces tensions between authenticity and commodification, between ritual function and aesthetic consumption, and between local custodianship and global audience expectations. The paper proposes a culturally responsive digital strategy framework — the TACT Model (Transmission, Authenticity, Community, Technology) — to guide sustainable digital practices for intangible cultural heritage. These findings carry implications for heritage preservation policy, digital humanities pedagogy, and cross-cultural communication theory.

Keywords: Thangka; Digital dissemination; Intangible cultural heritage; Transmedia; Cultural flows; Digital humanities; Transcultural communication.

1. Introduction

Thangka (also transliterated as thang-ka or tangka) is a traditional Tibetan Buddhist religious painting rendered on cotton or silk, depicting deities, mandalas, and narrative scenes from sacred texts. Originating more than a millennium ago, Thangka is both a devotional object and a pedagogical tool, encoding layers of iconographic meaning accessible only through specialized ritual and artistic training (Jackson & Jackson, 1988). The craft was inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity in 2009, marking international recognition of its cultural significance. Yet this recognition simultaneously signals vulnerability: as the number of trained masters declines and younger audiences increasingly encounter art through screens rather than shrines, the question of how Thangka travels through digital space becomes urgent.

The global proliferation of digital media platforms — from archival repositories and streaming services to short-video apps and virtual reality environments — has transformed how cultural objects are produced, circulated, and consumed. For traditional arts like Thangka, digitization is not merely a technical process but a cultural translation, one that involves choices about representation, ownership, accessibility, and meaning. Scholars in digital humanities and heritage studies have increasingly turned their attention to how immaterial cultural practices persist, mutate, or perish under the pressures of digital mediation (Cameron & Kenderdine, 2007; Giaccardi, 2012) [6, 9]. Thangka, with its elaborate iconographic code and its embeddedness in living religious practice, offers an especially illuminating case for exploring these dynamics.

This paper addresses three research questions: (1) What are the primary digital dissemination pathways through which

Thangka currently circulates? (2) What are the affordances and tensions embedded in each pathway? (3) How might a culturally responsive framework guide practitioners and policymakers in navigating digital dissemination sustainably? The paper proceeds as follows. Section 2 reviews relevant literature on intangible cultural heritage, digital mediation, and cultural flow theory. Section 3 outlines the theoretical framework. Section 4 presents empirical findings organized around four dissemination pathways. Section 5 discusses tensions and opportunities. Section 6 proposes the TACT Model. Section 7 concludes with implications for scholarship and practice.

2. Literature Review

2.1. Intangible Cultural Heritage in the Digital Age

The UNESCO (2003) Convention for the Safeguarding of the Intangible Cultural Heritage defines intangible cultural heritage (ICH) as the practices, representations, expressions, knowledge, and skills recognized by communities as part of their cultural heritage. Digital technology has become central to ICH preservation strategies worldwide, with institutions investing heavily in 3D scanning, high-resolution imaging, motion capture, and database systems (Parry, 2010). However, a growing body of critical scholarship argues that digitization alone does not constitute safeguarding: a digitized archive risks freezing living practice into static artifact, stripping it of the community context that gives it meaning (Smith & Akagawa, 2009).

Zhou, Sun, and Huang (2019) surveyed the state of digital preservation of ICH in China, finding that while institutional centers have accumulated rich digital resources, the systems remain poorly integrated and public accessibility is limited.

Their findings point to a structural tension between resource accumulation and active dissemination that is directly relevant to Thangka's digital journey. Concurrently, research on Tibetan and Buddhist visual culture has examined how digital repositories such as Himalayan Art Resources (HAR) and museum online collections make Thangka accessible to global audiences while raising questions about curatorial authority and the appropriateness of sacred display (Cameron & Kenderdine, 2007). These findings point to a fundamental ambivalence: digital visibility does not straightforwardly translate to cultural vitality.

2.2. Platform Cultures and Short-Video Ecosystems

The rise of short-video platforms — YouTube, TikTok, Bilibili, and Douyin — has created new vectors for cultural content that bypass traditional institutional gatekeepers. Van Dijck (2013) conceptualizes these platforms as 'techno-cultural constructs' whose algorithmic architectures actively shape what content is visible and to whom. For heritage content, this means that the logic of engagement metrics — views, shares, comments, dwell time — exerts pressure on creators to simplify, sensationalize, or decontextualize material to compete for attention (Burgess & Green, 2018). The implications for traditional arts like Thangka, whose value resides in iconographic depth and ritual function rather than visual spectacle alone, are significant.

2.3. Immersive Technologies and Cultural Experience

Augmented reality (AR), virtual reality (VR), and three-dimensional scanning technologies have entered the heritage sector with considerable promise. Bekele, Pierdicca, Frontoni, Malinverni, and Gain (2018) conducted a comprehensive survey of augmented, virtual, and mixed reality applications for cultural heritage, demonstrating that immersive environments can support deep engagement with heritage objects by simulating spatial and sensory contexts impossible in two-dimensional display. For Thangka, whose iconographic complexity rewards sustained, guided attention, immersive technologies offer the possibility of replicating the contemplative encounter with the original object. Exploratory projects in northwestern China have begun piloting AR applications for Thangka interpretation at museum sites, though systematic evaluation of their pedagogical effectiveness remains limited.

2.4. Transnational E-Commerce and Cultural Branding

The globalization of e-commerce has opened markets for traditional arts previously constrained by geography. Platforms such as Etsy and cross-border commerce channels have connected Thangka artisans with buyers across North America, Europe, and Southeast Asia. Scholarship on the commodification of sacred objects raises ethical questions about the conditions under which Thangka can legitimately enter commercial circulation (Appadurai, 1986; Chibnik, 2003) [1, 8]. When divorced from their ritual context, do Thangkas become merely exotic decorative objects? Or can careful cultural branding preserve and communicate sacred meaning even in commodity form? These debates remain unresolved in the literature and are addressed in this study through the lens of cultural flow theory.

3. Theoretical Framework

This study draws on three complementary theoretical resources to analyze Thangka's digital dissemination. First, Appadurai's (1990) concept of 'scapes' — mediascapes, technoscapes, and ideoscapes — provides a framework for understanding how cultural flows are shaped by asymmetric global infrastructures. Thangka's digital journey passes through technology platforms largely designed and owned outside Tibet, creating structural asymmetries that affect what forms of representation are amplified or marginalized.

Second, Jenkins's (2006) transmedia storytelling logic illuminates how a single cultural object can be extended, adapted, and reinterpreted across multiple platforms, with each platform contributing distinct narrative or experiential elements. Thangka, which traditionally functions as a multi-layered narrative text for trained practitioners, can be disassembled and reassembled across digital channels: its visual aesthetics on Instagram, its narrative dimensions through documentary video, its symbolic lexicon through educational apps, and its tactile craft through livestreamed demonstration. Transmedia extension may deepen engagement, but it also risks fragmenting the integrated meaning of the original.

Third, Castells's (2009) theory of communication power in network society draws attention to how dominant platforms exercise 'programming power' — the ability to set the agenda and frame content — and 'switching power' — the ability to connect or disconnect networks. For heritage communities seeking to control the representation of their sacred traditions, navigating these power dynamics is as important as mastering technical skills. Together, these three frameworks provide a multi-scalar analytical lens: from macro-level global infrastructure to meso-level platform dynamics to micro-level content creation and community engagement.

4. Digital Dissemination Pathways: Empirical Analysis

4.1. Institutional Digitization and Archival Platforms

The most established pathway for Thangka's digital dissemination is institutional digitization, conducted by museums, research universities, religious institutions, and government heritage agencies. The Dunhuang Academy's 'Digital Dunhuang' project and the Palace Museum's digital collections in China represent leading models of high-resolution archival practice for sacred art. For Thangka specifically, systematic digitization programs have been undertaken by Tibetan heritage centers and provincial cultural bureaus, creating searchable databases of iconographic types, regional styles, and historical periods. The international Himalayan Art Resources (HAR) database further extends this archival infrastructure by providing scholarly metadata accessible to researchers worldwide.

These institutional archives provide scholarly access and preservation security, but their dissemination reach is typically limited to academic and specialist audiences. User interface design, language barriers, and access policies — some collections are restricted for cultural sensitivity reasons — constrain public engagement. As Zhou et al. (2019) observed in their survey of Chinese ICH digital preservation, the dominant challenge is not resource creation but integration and accessibility. Critically, these archives tend to

treat Thangka as completed objects rather than living practices, with limited documentation of the production process, the ritual contexts of use, or the oral traditions embedded in master-apprentice transmission.

4.2. Short-Video and Social Media Ecosystems

By contrast, short-video platforms have achieved mass reach for Thangka content with striking speed. On Douyin (the Chinese version of TikTok), accounts operated by Thangka masters, cultural tourism bureaus, and individual enthusiasts collectively attract substantial audiences. Content formats include time-lapse documentation of painting processes, interviews with masters, explainer videos on iconographic symbols, and virtual tours of monastery collections. The algorithmic affordances of these platforms enable Thangka content to reach audiences far beyond the traditional geographic and religious communities in which it originates.

The algorithmic dynamics of these platforms, however, systematically favor aesthetically spectacular content over contextually rich content. As Van Dijck (2013) argues, platform architectures actively shape what content thrives: the logic of engagement metrics tilts representation toward surface aesthetics and away from the ritual, philosophical, and spiritual dimensions that practitioners themselves identify as Thangka's core value. This creates a structural tension between the platform's communicative affordances and the communicative demands of the art form. Burgess and Green (2018) similarly document how participatory cultures around YouTube can simultaneously democratize access and dilute depth — a tension particularly acute for heritage content.

Social media platforms including WeChat Official Accounts and Weibo have supported more text-rich dissemination, with long-form articles on Thangka history, symbolism, and preservation attracting dedicated readerships. An integrated approach coordinates archival depth with social media reach through 'hub-and-spoke' content architectures that link short social media posts to longer-form resources on dedicated websites — a model consistent with Jenkins's (2006) transmedia logic of complementary platform contributions.

4.3. Immersive Technology Applications

A third pathway harnesses AR, VR, and 3D scanning technologies to create experiential encounters with Thangka that transcend the limitations of flat-screen display. Bekele et al. (2018) demonstrate that immersive environments can meaningfully enhance engagement with heritage objects by restoring dimensions of scale, spatial context, and sensory richness that two-dimensional mediation inevitably strips away. For Thangka, whose iconographic complexity rewards sustained, guided attention, such technologies offer the possibility of replicating dimensions of the contemplative encounter with the original.

3D scanning technology has enabled photogrammetric documentation of Thangka collections, producing three-dimensional models that reveal textile weave structure, paint layer stratigraphy, and pigment distribution invisible to the naked eye. Leading museum digital initiatives have published open-access 3D models of selected Thangka that enable unprecedented close examination by remote users. Mobile AR applications that overlay iconographic labels and audio narration onto Thangka images captured through a smartphone camera blend physical and digital encounter at museum and heritage sites, extending the reach of expert

curatorial interpretation.

Despite these achievements, immersive technology applications face significant barriers: high development costs, specialized hardware requirements, and limited distribution infrastructure in rural Tibetan communities where many Thangka masters live and work. There is also a conceptual tension: VR environments that render Thangka as navigable spectacle may inadvertently reinforce a consumerist orientation toward objects whose primary function is devotional and contemplative.

4.4. Transnational E-Commerce and Cultural Brand Channels

The fourth pathway encompasses digital commerce channels through which Thangka artworks and derivative products — prints, textiles, home decor — enter global markets. This pathway is characterized by the greatest commercial activity and the most acute tensions around authenticity and cultural appropriation. A bifurcated market structure is evident: at the high end, certified master-made Thangkas are sold through curated e-commerce channels to collectors and institutions; at the lower end, mass-produced printed replicas or machine-embroidered facsimiles circulate on general retail platforms at prices accessible to ordinary consumers.

Several practitioners and cultural organizations have developed certification and provenance systems — digital certificates of authenticity, QR-code linked artist profiles, and blockchain-based provenance records — to differentiate authentic handcrafted Thangka from mass reproductions. These mechanisms draw on the logic of geographical indication and origin labeling in food and craft markets (Barham, 2003) and carry analogous promises and limitations: they can communicate provenance information to motivated buyers but do not resolve deeper questions about what it means to consume a sacred object as a commodity (Appadurai, 1986; Chibnik, 2003) [1, 8].

5. Discussion: Tensions and Opportunities

5.1. Authenticity and Commodification

Across all four pathways, the tension between authenticity and commodification emerges as central. Authenticity in the context of Thangka is not a simple property of the object but a relational achievement: it is recognized by community members, conferred by religious authorities, and enacted in ritual use. Digital dissemination necessarily detaches Thangka from the community contexts that authenticate it, at least temporarily. Handler (1986) argues that authenticity is itself a cultural construct of modernity — a framework for assessing objects and practices that arose alongside the very forces of commodification and mass reproduction that now threaten traditional arts. This insight cautions against a naively preservationist stance that treats pre-digital Thangka practice as a stable baseline from which digital mediation represents only loss.

5.2. Agency, Voice, and Representation

A recurrent finding across pathways is the importance of community agency in shaping how Thangka is represented digitally. Projects and platforms where Thangka communities exercise control over content production and dissemination — selecting what to share, how to frame it, and who speaks

about it — tend to generate richer, more contextually grounded representations than those driven by external institutions or commercial interests. The emergence of Thangka masters as direct content creators on social media, bypassing traditional intermediaries, represents a significant shift in the power dynamics of cultural representation. As Castells (2009) argues, those who can program the networks and define their protocols hold structurally advantaged positions; heritage communities who develop digital literacy can exercise forms of 'counter-programming power' that assert their own frames of meaning.

5.3. Generational Transmission and Digital Pedagogy

Digital dissemination intersects critically with the challenge of intergenerational transmission. Thangka mastery requires years of embodied apprenticeship — learning to prepare mineral pigments, to hold the brush, to internalize the proportional canons of deity iconography. No digital platform replicates this embodied transmission. Yet digital tools can scaffold and extend it: high-resolution digital references give apprentices access to exemplary works across regional traditions; video documentation preserves the tacit knowledge embedded in master performance; interactive annotation tools enable guided iconographic study. Digital dissemination is thus most productive when understood not as a substitute for embodied apprenticeship but as a complementary infrastructure that extends the reach and durability of living transmission practices (Giaccardi, 2012; Smith & Akagawa, 2009) [9, 14].

6. The TACT Model: A Culturally Responsive Digital Strategy Framework

Drawing on the empirical analysis and theoretical discussion above, this paper proposes the TACT Model as a guiding framework for culturally responsive digital dissemination of Thangka and, by extension, other forms of intangible cultural heritage. The model comprises four interconnected principles:

Table 1. The TACT Model: Principles for Culturally Responsive Digital Dissemination

Principle	Core Question	Operational Implications
Transmission	How does digital content support living transmission?	Prioritize process documentation; partner with apprenticeship programs; link digital resources to in-person learning.
Authenticity	How is cultural authenticity constructed and communicated?	Develop community-controlled certification; embed contextual metadata; involve religious authorities in content validation.
Community	Who controls representation and benefits from dissemination?	Design for community agency; ensure equitable revenue sharing; support digital literacy among master practitioners.
Technology	What technologies serve the cultural object on its own terms?	Match technology choice to communicative purpose; avoid spectacularization; prioritize accessibility over novelty.

The TACT Model is not prescriptive but dialogic: its

principles are intended as a starting point for negotiation among practitioners, institutions, platform operators, and policy actors. The model's emphasis on community agency distinguishes it from purely technical frameworks for heritage digitization, positioning digital strategy as fundamentally a question of cultural politics as well as technical design. Applied to Thangka, the model suggests that successful digital dissemination must begin with the communities of practice that sustain the tradition rather than with the technological capabilities of external institutions or platforms.

7. Conclusion

This paper has mapped the digital dissemination pathways through which Thangka currently travels in global digital culture, analyzed the tensions and opportunities embedded in each pathway, and proposed the TACT Model as a culturally responsive framework for sustainable digital practice. The findings contribute to at least three scholarly conversations. In heritage studies, they reinforce the argument that digital preservation and living cultural vitality are distinct goals that require distinct strategies, and that community agency is essential to both (Smith & Akagawa, 2009; Giaccardi, 2012) [14, 9]. In platform and media studies, they illustrate how algorithmic architectures structure cultural representation in ways that heritage communities must actively navigate rather than passively accept (Van Dijck, 2013; Castells, 2009) [16, 7]. In transcultural communication theory, they offer Thangka as a productive case study in how sacred traditional arts acquire new meanings and new risks as they circulate through global digital infrastructures (Appadurai, 1990).

Several limitations of this study warrant acknowledgment. The analysis draws primarily on published documentary sources and existing practitioner accounts rather than original ethnographic fieldwork; future research should incorporate systematic participant observation and interviews with Thangka masters across different regional traditions. The TACT Model requires testing through longitudinal case studies of specific digital projects to assess its utility as a practical planning tool. Research should also examine how policy environments — particularly China's national ICH preservation mandates and international heritage regimes — shape the conditions of possibility for different dissemination strategies.

As digital technologies continue to evolve — with generative AI, spatial computing, and decentralized platforms introducing new affordances and new risks — the questions raised by Thangka's digital journey will only become more pressing for intangible cultural heritage worldwide. The greatest risk is not that Thangka disappears from digital screens; it is that its proliferation on those screens proceeds without the cultural intelligence and community responsibility that alone can ensure its living transmission to future generations.

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