

The Cultural Value and Practical Pathways of Digital-Intelligent Technologies Empowering the International Dissemination of Chinese Animation Films

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Abstract. Against the backdrop of intertwined globalization and digitalization, the international dissemination of Chinese animation films has encountered new opportunities and challenges. Digital-intelligent technologies empower Chinese animation films by enabling the intelligent upgrading of production processes and the application of high-tech visual technologies, realizing the innovation of production models, and expanding the international audience base through precise content recommendation. At the cultural and industrial levels, digital-intelligent technologies systematically enhance the international competitiveness and cultural communication power of Chinese animation films through pathways such as promoting the modern translation and global expression of traditional cultural symbols, deeply integrating film and game industries, building IP metaversesWorld Inte..., and implementing intelligent marketing. This paper aims to provide theoretical thinking and practical references for Chinese animation films to tell Chinese stories well, spread Chinese voice effectively, and strengthen cultural soft power in the digital-intelligent era.

Keywords: digital-intelligent technologies, animation films, cultural value, international dissemination, practical pathways

1. Introduction

China's *14th Five-Year Plan for the Development of Chinese Films* clearly proposes to vigorously develop high-tech film technologies and promote the deep integration of films and technology. It emphasizes "encouraging the extensive application of new-generation information technologies such as cloud computing, artificial intelligence, and virtual reality in all links of film creation, production, dissemination, and consumption" and specifically mentions "supporting the creation and production of excellent animation films [1]." Digital-intelligent technologies are a technological form that deeply integrates digitalization and intelligence, driving the transformation and upgrading of traditional industries and realizing the intelligent reconstruction of production processes through technologies such as machine learning, artificial intelligence, and digital twins. The *Resolution of the Central Committee of the Communist Party of China on the Major Achievements and Historical Experience of the Party's Centenary Struggle* points out: "Accelerate the building of international

communication capacity, tell China's stories and the stories of the Communist Party of China well to the world, spread China's voice, promote exchanges and mutual learning among human civilizations, and significantly enhance the country's cultural soft power and the influence of Chinese civilization [2]."

Digital-intelligent technologies have revolutionized the creation models of Chinese animation films. Through the modern expression of traditional cultural symbols and the in-depth exploration of cultural values, they have built solid competitiveness for Chinese animation films in international dissemination. With the deep integration and intensified competition of the global digital entertainment industry, some animation films have overly relied on intelligent technologies, leading to phenomena such as "valuing technology over content." Chinese animation films should correctly examine the new changes and requirements brought about by digital-intelligent technologies, and focus on exploring the animation film creation models of human-machine co-creation and innovative measures for international dissemination.

Table 1. Summary of basic information, narrative themes, and genre ratings of representative Chinese and foreign animation film samples

No.	Chinese Film Title	Film Tags	Release Year	Narrative Themes	Film Genres	Rating
1	龙猫	Animation,Adventure,Family	1988	Innocence, nature, family	Fantasy, healing	8.2
2	千与千寻	Animation,Adventure,Comedy	2001	Growth, courage, friendship, anti-greed	Fantasy, adventure	8.6
3	哈尔的移动城堡	Animation,Adventure,Comedy	2004	Anti-war, self-worth, love	Fantasy, romance	8.2
4	飞屋环游记	Animation,Adventure,Comedy	2009	Adventure, sorrow, companionship	Comedy, adventure	8.3
5	冰雪奇缘	Animation,Adventure,Comedy	2013	Self-acceptance, sisterhood, love	Musical, fantasy	7.5
6	疯狂动物城	Animation,Adventure,Comedy	2016	Prejudice, equality, dreams	Comedy, mystery	8.0
7	寻梦环游记	Animation,Adventure,Comedy	2017	Family, memory, dreams, life and death	Fantasy, romance	8.4
8	大鱼海棠	Animation,Fantasy	2016	Life, sacrifice, protection	Fantasy, romance	6.9
9	哪吒之魔童降世	Animation,Action,Fantasy	2019	Defying fate, self-definition, family affection	Fantasy, action	7.6
10	白蛇：缘起	Animation,Action,Fantasy	2019	Love, destiny, protection	Fantasy, romance	7.8
11	姜子牙	Animation,Action,Fantasy	2020	Faith, common people, individual vs. heavenly principles	Fantasy, action	6.5
12	长安三万里	Animation,History,Drama	2023	Tang poetry, homeland, ideals and life	History, animation	8.3

Table 1. (continued)

13	哪吒之魔童闹海	Animation,Action,Fantasy	2025	Destiny, rebirth, protection, resistance	Fantasy, action, story	8.3
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2. Technology empowerment: promoting model innovation in the international dissemination of Chinese animation films

Driven by digital-intelligent technologies, "the restoration and representation of real-life images in traditional film texts have increasingly given way to virtual images generated and processed by computers and artificial intelligence. Various new media films such as database films, surveillance films, video games, media films, interactive films, AR/VR films and others have emerged in an endless stream [3]." Chinese animation films have experienced a "rise of domestic animation" driven by works such as *Ne Zha: Birth of the Demon Child* and *Monkey King: Hero Is Back*, shifting from "quantitative accumulation" to "qualitative leap". The core driving force behind this leap is precisely the intelligent upgrading of production processes and the application of visual technologies brought by digital-intelligent technologies.

2.1. Intelligent upgrading of production processes and application of visual technologies

As the application of digital-intelligent technologies in animation film creation continues to mature, it has transformed the entire process of script writing, scene design, and film promotion and marketing of animation films. With a new paradigm of "human-machine co-creation", it has reconstructed the artistic creation process of animation films and broadened the infinite possibilities of artistic expression for animation films [4]. *The Order of Reunion*, the first domestic full-process AIGC animation film, serves as a model for the industrialized implementation of AI throughout the entire production process. Its production team independently developed an "artificial intelligence full-process animation production platform", shifting the production process from "labor-dominated" to "intelligence-driven". The animation film *Classic of Mountains and Seas: Xuanwu* is entirely AI-led, which not only reaches the standard of traditional CG films but also reduces production costs and cycles by 90%. However, with the extensive application of AI and big data technologies, some works have begun to show tendencies of stylization and routinization, with monotonous themes and styles. The originality and independent thinking ability of animation films have been challenged, making it difficult for them to stand out.

The smart improvement of production processes has built a good base for the wide use of visual technologies in Chinese animated films. It combines latest technologies like AI, virtual production and cloud computing, and has totally changed the audio-visual language and aesthetic field of these films. The movie *Ne Zha: Rises from the Sea* has made several new breakthroughs in the use of visual technologies. This movie uses an advanced particle system to create fine and realistic special effects, including flames, ice crystals and water blades. The world's first "dynamic ink wash rendering engine" is applied in the film. It can complete real-time 3D rendering in Chinese ink painting style, and brings both traditional aesthetic feelings and modern technology sense to all characters and scenes. Depth algorithms are also used to drive the movement of 43 groups of characters' facial muscles. This can express complex feelings accurately and make the characters much more vivid and lively. Optical motion capture systems are used as well to copy the body movements of real actors. This makes the movements of virtual characters look natural and smooth at the same time. These technical attempts have gone beyond the common creation standards of

domestic animated films. They also open a clear path for these films to enter the world stage and present a visual feast that mixes oriental aesthetics and modern technology. With the support of digital and smart technologies, the smart development of animated films has brought new changes to their creation and spread methods. It also lifts the visual expression of these films to a whole new level.

2.2. Precise reach of communication channels and expansion of transmedia narratives

Amid the global changes unseen in a century, international cultural exchanges have embraced new development opportunities. Deepening exchanges and mutual learning among diverse civilizations is an irresistible trend, and promoting the dissemination of Chinese culture has become a hot topic concerned by all sectors of society [5]. However, faced with cultural differences overseas, to improve the efficiency of overseas dissemination through digital-intelligent media, Chinese animation films must achieve breakthroughs in precise user reach and transmedia narratives.

In the era of rapid development of "artificial intelligence" and "big data", every user has become a segmented market at the smallest unit. Thus, the concept of "customization on demand" has been integrated into the service concepts of various industries. This means that the initiative of the market belongs to consumers. This trend forces the domestic animation industry to break outdated marketing strategies and shift to precision marketing, making "customization on demand" one of the characteristics of current domestic animation marketing [6]. Producers can use big data to accurately analyze and mine the viewing preferences of audiences, realize personalized recommendation of films, so as to achieve precise reach of communication, build a stable audience group, and optimize the whole process before, during and after the screening. First, before the official release of domestic animation films, release film information through various channels to effectively stimulate the viewing interest of target groups and enhance the topic popularity and recognition of the films. Second, collect viewing experiences and reviews through various social media to continuously optimize the marketing effect of the films. Third, after the films finish their theatrical release, they usually shift to online platforms or social media, and some audiences who fail to watch the films in time will choose relevant platforms to view them.

In the digital-intelligent era, the narrative form of animation films is no longer limited to a single form, but has gradually developed into a transmedia narrative form. According to the transmedia narrative theory proposed by Henry Jenkins, this model emphasizes the synergy between different media in the construction of story worlds, allowing story content to extend and interact on multiple platforms. Meanwhile, combined with Marshall McLuhan's theory of "the medium is the message", different media forms themselves shape the way of narration and audience experience, further promoting animation narration from closed to open and from linear to multi-dimensional. AIGC tools can quickly generate derivative contents such as novels, comics and short videos based on the core IP of films. Such a narrative network starting from films and spanning multiple media forms greatly extends the vitality and commercial value of IP. Moreover, through continuous and in-depth interactions, overseas audiences are unconsciously immersed in the context of Chinese culture, achieving deep cultural identity. *A Mortal's Journey to Immortality* starts from a novel and has spawned a series of related animation films while maintaining a unified narrative style. The official uses digital-intelligent technologies to generate a large number of promotional short videos and character setting drawings, assist in the development of game scripts and peripheral products, and improve content production capacity and consistency. The animation itself is a refinement and visual reconstruction of the original work. The popularity of the animation feeds the renewed best-selling

of the original novel, and paves the way for subsequent derivatives such as games, comics and TV dramas, forming a close IP ecosystem.

2.3. Immersive interaction of experience design and construction of multi-dimensional perception

Faced with rapid technological iteration and market competition, the optimization and innovation of experience have become the core competitiveness for the development of Chinese animation films. Compared with traditional animation forms, virtual reality animation has significant advantages and unique experiential value. The most prominent advantage is its sense of immersion: audiences are no longer passive viewers but part of the virtual world, able to experience the plot personally [7]. Contemporary animation films no longer place audiences in the position of passive observers. Instead, they create a comprehensive aesthetic experience through the organic coordination of audio-visual and psychological levels. This not only strengthens the sense of immersion and emotional identity of audiences but also provides a broader path for the effective dissemination and innovative expression of culture.

In the process of realizing the immersive experience of animation films, digital-intelligent technologies have fundamentally reshaped the communication mode of Chinese animation films. It is no longer just a linear narrative of "I shoot and you watch", but upgraded to a dynamic, interactive and user-centered mode. For example, producers can develop AR filters, interactive videos, VR games and other products linked with films. In the VR experience of the film *New Gods: Yang Jian*, viewers can truly step into Penglai Fairy Island. This greatly shortens the emotional distance between viewers and the film IP. The way of communication has also changed from "one-way information input" to "two-way interaction". Besides, through data analysis and various interactive methods, digital and smart technologies combine different sensory channels such as audio-visual experience and emotional feelings. They help viewers build a fuller and more personal viewing experience, and this is also the key to improving the artistic attraction and spread effect of animated films. We can take the film *Big Fish & Begonia* as a good example. In visual design, it uses many traditional Chinese elements such as Fujian tulou buildings and Chinese flowering crabapple flowers. These buildings and natural scenes show a unique oriental aesthetic system through rich colors and picture composition. In sound design, national musical instruments such as bamboo flutes and guqins are mixed with modern arrangements. The music sounds soft and far-reaching. It fits the plot closely, and enriches and strengthens the emotions shown in the pictures. In emotional expression, the mixed feelings among Chun, Kun and Qiu make people think about love, friendship and life responsibility. This makes viewers feel connected with the characters' struggles when they face the choices of fate.

3. Cultural connotation empowerment: cultural exploration and global expression of chinese animation films

Chinese animated films should always stick to the cultural translation principle of "local cultural roots plus global emotional resonance". During the whole creation process, they must take root in traditional Chinese culture. They need to develop narrative themes with cross-cultural acceptance and use new expression methods and advanced technical tools. In this way, traditional Chinese cultural symbols and inner spiritual meanings can be turned into suitable content. Global audiences can understand and accept this kind of content easily. This can achieve effective cultural spread and deep value resonance.

3.1. Cultural barriers in the dissemination of eastern universal values

With the in-depth advancement of China's cultural "Going Global" strategy in recent years, Chinese animation films, as an important carrier of Chinese culture, have continuously entered overseas markets. In the process of cultural export, Chinese animations are committed to conveying Eastern universal values such as the integration of family and nation and the advocacy of virtue and kindness, so as to construct a discourse system with Chinese characteristics. However, cognitive patterns vary among people with different cultural backgrounds. Eastern values are rooted in traditional ideological systems, emphasizing collective interests, ethical order and the cycle of fate, while mainstream Western culture lays more stress on heroism, individual freedom and personal struggle. Such differences in cultural contexts lead to cognitive deviations, resulting in frequent misinterpretations among Western audiences when watching Chinese animations. In addition, Chinese animations adopt a narrative style featuring blank-leaving, subtlety and poeticness, pursuing the beauty of artistic conception, whereas the international mainstream market prefers linear narration, montage, intense conflicts and fast-paced plots. For instance, although *White Snake: Origin* has gained certain recognition in Western markets, many audiences comment that its emotional progression is too implicit and slow with ambiguous motivational logic, which directly hinders the generation of genuine value resonance. Moreover, Chinese animation films incorporate a large number of traditional cultural symbols, such as dragons and phoenixes, yin and yang, and ancient Chinese architecture. These symbols are widely recognized within the Chinese cultural circle, but are difficult for international audiences lacking relevant cultural knowledge to comprehend and resonate with. They are even regarded as exotic curiosities, weakening the in-depth value transmission and trapping Chinese animations in the communication dilemma of "talking to oneself". The distinct color symbolic differences between China and the West further exacerbate cross-cultural conflicts. For example, traditional Chinese red symbolizes joy, auspiciousness and happiness, and imperial yellow represents supreme power and nobility. By contrast, in Western culture, red often signifies danger and warning, while yellow may stand for betrayal, evil and cowardice.

3.2. Technical breakthroughs in the transformation of traditional cultural symbols

Cultural differences lead to reduced audience appeal and value loss in the cross-cultural communication of cultural industries, a phenomenon defined as "cultural discount". To eliminate audience confusion and resistance caused by cultural disparities, Chinese animation films need to optimize the application of cultural symbols and narrative structures. In the digital-intelligent era, computer graphics technology, motion capture technology and other advanced technologies have enriched the presentation forms of traditional cultural symbols [8]. In *Ne Zha: Rises from the Sea*, technological empowerment greatly enriches the visual expression of traditional cultural symbols through vivid character modeling, delicate and realistic magic special effects, and fantastic and magnificent scene design. Nevertheless, the integration of traditional cultural symbols into modern communication systems still faces prominent challenges. First, the digital reconstruction of traditional art forms encounters technical adaptation difficulties. The artistic characteristics of traditional manual crafts, including the artistic conception rendering of ink wash art, the hollow texture of paper-cutting, and the light and shadow layers of shadow puppetry, can hardly be perfectly restored in modern technical carriers such as 3D animation and digital images. Second, it is quite necessary to study how traditional cultural symbols can fit the understanding of viewers from different cultural backgrounds. With big data analysis and other digital and smart technologies,

creators can clearly grasp the preferences of viewers in different cultural environments and adjust the expression of cultural symbols based on this. To be more exact, data can be used to analyze overseas viewers' cultural backgrounds, watching habits and aesthetic tastes. This helps make targeted improvements to narrative structure and symbol design, and improves the cross-cultural acceptance of Chinese animated films.

It is important to notice that culture-centered technical adaptation is not just simple translation of symbols. It needs deep understanding of the values and aesthetic preferences of target cultures, to make cultural expression match viewers' acceptance level. Besides combining Eastern and Western elements in script creation, producers can use digital and smart technologies to give animated visuals both Eastern aesthetics and elements easy for global audiences to accept. The film *Chang An San Wan Li* (Chang'an's Poetry Legends) sets a good example. With a mixed visual system of Tang poetry, ink wash art and 3D technology, it deeply combines Eastern poetic artistic conception with mainstream international animation's narrative rhythm and audio-visual language, and achieves cross-cultural aesthetic resonance. But improving cross-cultural communication through digital and smart technologies also brings challenges that cannot be ignored. Algorithm-based content recommendation may limit films to specific viewer groups and hold back market breakthroughs. Too much dependence on existing viewer data may ignore potential markets and cause decision-making biases. Excessive adaptation to algorithms will also cause privacy risks and content homogenization, and harm artistic innovation and diversity.

3.3. Early warnings for complexities in the construction of global narrative discourse

Most Chinese animation films are adapted from myths, historical allusions and classical literature, boasting profound cultural roots. Many symbols derived from traditional folk customs and lifestyles will appear stiff and semantically ambiguous through literal translation for overseas audiences without corresponding cultural background knowledge. For example, there is a Taoist spell "Ji Ji Ru Lü Ling" that Ne Zha recites in the film *Ne Zha: Birth of the Demon Child*. The spell asks gods and spirits to take action right away, and it carries unique traditional Chinese cultural meanings and strong momentum. In the English version of the film, this spell is translated as "Quickly quickly biu biu biu". This translation completely fails to show the poetic beauty and the tragic tone of the original scene. Besides, some producers try too hard to meet overseas aesthetic tastes, and they turn Chinese cultural elements into shallow visual spectacles. They pay more attention to technological presentation and special effect scenes, but ignore storyline building, character development and emotional expression. As a result, these works have delicate and beautiful visuals but empty inner connotations.

Now, most Chinese animated films adopt the Hollywood three-act narrative structure. They mainly focus on hero growth, the fight between good and evil, and emotional development. Though this mode lowers the difficulty of cross-cultural communication, it also leads to similar narrative styles among different works. A large number of works choose the theme of "defying fate and changing one's destiny" with similar ideological meanings, and this causes aesthetic fatigue among both domestic and overseas audiences. What's more important, Eastern philosophical values such as karmic reincarnation and collectivism are hard to be fully understood and accepted under the background of Western individual heroism. The core breakthrough direction for Chinese animated films to spread overseas is how to build a narrative framework with common emotional resonance, while inheriting and carrying forward Eastern aesthetic spirits. For example, *Chang An San Wan Li* describes the life fates of ancient literati with Tang poetry as the core. Its gentle poetic rhythm and

Eastern blank-leaving aesthetics face huge spread challenges in the fast-paced global cultural market.

Besides, the global spread of Chinese animated films still depends on indirect channels such as screenings at film festivals and licensing cooperation with streaming platforms. The industry still does not have its own independent global distribution systems. Compared with the mature global marketing systems of studios like Disney, the Chinese animation industry lacks enough experience in cross-cultural communication. Domestic producers value technology investment more than operational promotion. They focus heavily on technical upgrades, but ignore early cultural research and audience feedback after films are released. This makes it difficult for works to fit into overseas cultural environments, and leads to the isolated spread dilemma of "self-talk". The lack of a unified worldview and smooth narrative logic, as well as the opportunistic trend of prioritizing form over content, are key problems that need to be solved in the future development and overseas spread of Chinese animated films.

4. Industrial shaping: innovative strategies for chinese animation films targeting the international market

As globalization continues to deepen, Chinese animation films, as an important form of cultural communication, have gained increasing attention in the international market. However, looking back at theatrical animation films released in recent years, adaptations of traditional mythological themes and folk legends still account for the majority. These works promote traditional culture and satisfy the audience's sense of national identity through the modernized processing of cultural symbols. Nevertheless, this tendency in theme selection has also raised concerns: the homogenization of themes has become increasingly prominent, creative path dependence has intensified, and to a certain extent, the innovation space of animation films as an art form has been restricted.

4.1. Deepening the film-game integration model and building a full industrial chain ecosystem

In recent years, the integration of Chinese animation films and the game industry has achieved remarkable progress, yet it remains generally in the preliminary exploration stage. Faced with fierce international competition and cultural discount caused by cultural differences, domestic animation films still have obvious shortcomings in IP construction and industrial collaboration. At present, the development of most domestic animation IPs is limited to the films themselves, lacking in-depth exploration of the full industrial chain, making it difficult to release long-term commercial value. Compared with mature international IPs such as Disney and Marvel, domestic animation still lags far behind in cross-media content expansion and derivative product development.

To address this issue, efforts should be made to further develop film-game integration and formulate innovative strategies from three aspects: co-creation of content, expansion of user groups, and optimization of profit models. In terms of content co-creation, animation films and games should not only realize shallow IP linkage but also achieve in-depth integration in narrative engines and interactive narrative frameworks. Taking existing cases as examples, the film *Inception* transforms the dream structure into a game-like mission-based narrative structure, establishing an interactive mechanism of multi-layered suspense and instant feedback in games [9]. Technically, the film adopts a visual structure of nested multi-level dreams, simulating the "level-dungeon" narrative mechanism in games. Each dream layer not only has independent physical rules and time flow rates but also corresponds to a "core mission" that the protagonist team must complete. This design is highly similar to the way games advance the main storyline. *Black Myth: Wukong* represents the

cinematization of games. It establishes an intertextual connection between game space and real scenes through high-precision digital-intelligent replication technology, presenting the real world as an interactive cinematic text in the virtual dimension. With digital-intelligent technologies to create 3D real scenes, it integrates Eastern aesthetics such as Dunhuang murals and Dazu stone carvings into the game, and translates traditional philosophies such as the 72 transformations and the five-element mutual restraint into playable, visible and tangible game experiences, realizing the digital transformation of traditional culture [10]. The design of transforming audiences into "puzzle-solving players" realizes the game-based translation of film narration through progressive suspense settings and plot twists with instant feedback.

In terms of user expansion, digital-intelligent technologies are relied on to break the barriers for two-way conversion between film and television audiences and game players. *The Prosperous World*, a recent popular ancient-style interactive film and television game, accurately covers ancient-style film and television audiences and female-oriented game users with its 4K live-action shooting, cinematic narration and design of free story choices. It efficiently converts film and television traffic into game users through highly interactive and highly immersive experiences. Meanwhile, AI characters in NetEase's *Justice Online* and interactive dramas on Mango Interactive Platform use AIGC technology to automatically generate game plots and characters, and intelligent NPC technology enables free chatting with users, attracting light users who do not play games or watch dramas regularly. In terms of profit model optimization, diversified derivatives including digital collections, virtual items and physical merchandise should be developed to enhance the commercial value of IPs. At the same time, digital-intelligent technologies are combined to accurately analyze user preferences and formulate personalized marketing strategies, further improving the sales conversion rate of derivatives. For example, *Honkai: Star Rail* uses AIGC to analyze players' character preferences and consumption habits, customizes commemorative art books (with an initial print run of 2.4 million copies), and offers core players "priority purchase + signed edition" privileges. This results in an 89% conversion rate for the art book merchandise, setting a record for the largest single-scale giveaway of game merchandise worldwide.

4.2. Achieving precise international communication with platform algorithms and big data

Under the current competitive situation of the international animation market, countries like the United States and Japan have taken a leading position for a long time. They own mature industrial systems and strong cultural spread abilities. In contrast, Chinese animated films find it hard to reach a large number of international viewers, due to differences in cultural values and limits in spread channels [11]. So the key to getting over these barriers is to adopt careful and exact spread strategies with the support of platform algorithms and big data technologies. Studies show that international viewers usually have a strong interest in fantasy adventure and historical themes. Asian viewers prefer stories with historical or traditional cultural backgrounds, while European and American viewers tend to like works that include modern technology or funny elements. Besides, there are differences in preferences for narrative structures. Western viewers are used to linear narratives centering on individual heroism and growth journeys. Eastern viewers relatively like non-linear narratives better, and they are very sensitive to collectivism and emotional expression. With these research findings, creators can analyze user comments and interaction data on social media. They can find out which plot designs are more likely to make audiences feel emotional connection, then further improve later creations and achieve exact theme positioning. At the same time, traditional Chinese cultural resources should be actively combined with common themes and modern narrative skills, to improve the international attraction and competitive power of the works.

In the practice of international spread, platform algorithms can also be used to divide international viewers into different groups and achieve exact content delivery. Mainstream international video platforms and social platforms provide personalized content according to users' viewing history, interaction behavior, search records and other related data. Take Netflix for example. Its recommendation algorithm uses collaborative filtering and deep learning technologies, and it can correctly predict user preferences and push animated films that fit their interests to target viewers [12]. This algorithm-based content spread mode not only gives more exposure chances for animated films, but also widens their spread channels. But we should notice that algorithms themselves are updating and improving all the time. So content creators must follow the latest trends of the times and adjust their spread strategies in time. For example, YouTube has paid more attention to recommending short-form content in recent years. Animated film producers can attract more users by cutting wonderful clips from films or making short spin-off works.

4.3. Building a digitally intelligent international collaborative production and global distribution network

The rapid development of digital-intelligent technologies has opened up new prospects for the production and international communication of animation films. In recent years, emerging technologies such as artificial intelligence, big data and cloud computing have penetrated into all links of animation films, including early-stage creation, mid-stage production and post-release distribution, which has not only improved production efficiency but also elevated the overall quality of works. Chinese animation films should seize this development opportunity to build a digitally intelligent international collaborative production and global distribution network, so as to break through barriers such as technological gaps, market competition and cultural differences. In terms of international collaborative production, the application of cloud computing, big data analysis and real-time communication tools has greatly weakened geographical restrictions, enabling creators from different countries and regions to efficiently participate in projects together [13]. AI translation and natural language processing technologies have further improved the efficiency of cross-cultural communication and reduced information deviations caused by language barriers. Meanwhile, emerging digitally intelligent distribution channels are creating new possibilities for the global communication of animation films. Streaming platforms such as Netflix and Disney+ feature high communication efficiency, wide coverage and strong user stickiness, and have become important positions for the global distribution of animation films. Relying on personalized recommendation algorithms and globalized content layout, they have successfully attracted a large number of overseas audiences and opened up a new path for Chinese animation films to enter the international market.

Furthermore, a digitally intelligent collaborative network is expected to build a long-term and stable cooperation platform for the animation industry between China and foreign countries, promoting the two-way flow of high-quality creative resources, technical resources and talent resources at home and abroad. Chinese animation teams can learn advanced overseas production technologies and industrialized production experience by participating in international digital-intelligent cooperation projects, making up for their shortcomings in refined production and commercial operation. At the same time, through these collaborative creation carriers, distinctive cultural contents such as Chinese myths, traditional folk customs and contemporary Chinese-style aesthetics can be delivered overseas, realizing two-way empowerment of technical cooperation and cultural export.

5. Conclusion

The international communication of animation films is not merely a content delivery, but also a process of constructing cross-cultural social significance, which directly shapes overseas audiences' cognition and interpretation of Chinese culture and Eastern aesthetics. Digital-intelligent technologies have reshaped the international communication pattern of Chinese animation films and helped domestic animations construct an independent and personalized cross-cultural communication system [14]. Empowered by digital-intelligent technologies, Chinese animation films have continuously broken geographical, linguistic and aesthetic barriers, completed the modern transformation of traditional culture, enabled Chinese-style aesthetics and national spirit to be expressed externally in a form more acceptable to the world, enriched the international image of Chinese culture, and enhanced cultural soft power and discourse influence. At the practical level, new models such as intelligent creation, precise distribution and global collaboration have reversed the limitations of traditional one-way communication, promoting communication from content output to cultural empathy. Based on the general trend of digital-intelligent empowerment, Chinese animation films will continue to balance local characteristics with global vision, forge an international communication path with unique Eastern temperament, and lay a solid digital foundation for Chinese culture to go global.

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