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The logical framework, practical dilemmas, and solutions for digital technology empowering high-quality development of the cultural industry

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Abstract. The high-quality development of the cultural industry is a crucial lever for achieving Chinese-style modernization and accelerating the construction of a culturally strong nation. As a key driver of the new round of economic growth, digital technology provides fresh opportunities for the cultural industry to leapfrog in its transformation and upgrading. At this pivotal juncture, it is essential to clarify the logical framework, practical dilemmas, and resolution paths regarding the empowerment of the cultural industry by digital technology. Digital technology supports the innovative development of the cultural industry by offering scientific tools, optimizing the industrial structure to construct new paradigms, and extending value creation across the commodity chain. However, while digital technology brings technological support and innovation pathways to the cultural industry's high-quality development, it also faces several practical challenges, such as the insufficient manifestation of cluster development effects, heightened difficulties in ideological governance, and mismatches in the supply and demand of interdisciplinary talent. In practical terms, these challenges can be alleviated by enhancing digital infrastructure, guiding ideological shaping, and cultivating a new type of professional workforce. These measures can assist China in transitioning from a culturally large nation to a culturally strong one.

Keywords: digital technology, cultural industry, high-quality development

1. Introduction

During his inspection tour in Shandong, General Secretary Xi Jinping emphasized: "It is necessary to prosper and develop the cultural industry and vigorously promote cultural digitalization, enabling advanced socialist culture to contribute more energy and effectiveness to economic development and to bring more righteousness and vitality to urban and rural society" [1]. Promoting the digitalization of the cultural industry is of critical importance for continuing to drive cultural prosperity, building a culturally strong nation, and constructing a modern Chinese civilization at a new historical starting point. Since the late 20th century, the cultural industry has become a significant symbol of China’s gradual cultural transformation. It possesses both social and economic value, driving both spiritual and material culture through institutional culture. As such, it plays a vital role in inspiring national spirit, enhancing national identity, promoting socioeconomic development, and advancing the comprehensive development of individuals. Empowering the high-quality development of the cultural industry through digital technology entails a deep transformation and reconstruction of traditional elements within the cultural industry system and its specific business forms via digital means. It involves introducing data as an emerging factor of production, injecting new vitality and driving forces into the cultural industry, thereby stimulating new growth points and propelling the industry toward higher-quality and higher-level transformation and upgrading.

2. The logical framework of digital technology empowering high-quality development of the cultural industry

High-quality development is the foremost task in the comprehensive construction of a modern socialist country. It also represents a new proposition under the current historical conditions—exploring the integration of digital technology and the cultural industry. At present, we are in an era of digital revolution characterized by informatization and intelligentization. Emerging technologies such as 5G, Artificial Intelligence (AI), digital twins, and blockchain are thriving, continuously providing scientific

support for the cultural industry, establishing new paradigms, and extending value chains—ushering in a new phase of innovation and development in the cultural sector. Therefore, clarifying the logical framework through which digital technology empowers the cultural industry holds profound practical significance for promoting high-quality development of the cultural industry as China advances from a culturally large nation to a culturally strong one.

2.1. Technological logic: digital technology provides scientific support for innovation in the cultural industry

Historically, technological transformation has been a fundamental driving force behind human social development. In today's context, digital and network technologies are reshaping the trajectory of cultural industry development. Rapid advancements in intelligent technologies such as mobile internet, big data, cloud computing, Virtual Reality (VR), and Augmented Reality (AR) are playing a revolutionary role in the transformation and upgrading of the cultural industry. The rapid iteration of AI technologies is continuously transforming production methods in the cultural industry, significantly improving productivity and efficiency, while simultaneously fostering diverse cultural creativity. These innovations enrich the expressive forms and communication methods of cultural products and offer consumers novel service experiences.

First, digital technology enhances the productivity and efficiency of the cultural industry. Traditional sectors such as news, printing, publishing, and film and television, as well as emerging sectors like animation, gaming, livestreaming, and online performance, have experienced significant gains in productivity and efficiency thanks to technologies like digital printing, digital processing, and online transmission. For instance, technologies such as 5G, 3D printing, and blockchain enable the mass production of cultural and creative products, meeting consumer demand. Derivative products of anime and gaming IP—such as figurines, models, and other merchandise—can now be quickly produced through robotic production lines, greatly improving manufacturing efficiency. The new generation of cultural industries has significantly expanded its reach and influence, with unified and diversified products that surpass the capabilities of traditional production facilities. This maximizes production efficiency while boosting the dissemination and impact of cultural content.

Second, digital technology fosters new creativity in the cultural industry. With big data analytics platforms, cultural enterprises can collect vast amounts of user data to understand the preferences of different audiences, thereby informing content creation and producing works that align with market demand. In film production, creators can break free from the constraints of traditional media through the use of digital painting software, 3D modeling, and animation tools, crafting breathtaking fantasy scenes and delivering visually stunning experiences previously unattainable through conventional filming. The domestically developed video game Black Myth: Wukong, which gained widespread popularity after its launch on August 20, 2024, leveraged technologies such as NVIDIA GeForce global ray tracing, Stable Diffusion, DLSS, and the OptiTrack system to vividly reconstruct scenes from traditional Chinese culture. It successfully recreated ancient Chinese cities—such as the ancient city of Pingyang (modern-day Linfen, Shanxi Province)—and captivated players through its rich cultural creativity.

Third, digital technology enriches cultural experiences. VR, AR, and similar technologies create immersive digital twin environments and multimodal interactive interfaces, enabling consumers to transcend physical space limitations and engage in real-time interaction with virtual cultural elements. This facilitates a shift from one-way transmission to two-way dialogue in cultural experiences and provides immersive solutions for revitalizing cultural heritage and innovating artistic engagement. The "Digital Library Cave," co-developed by the Dunhuang Academy and Tencent, is a transcendent participatory museum. Using 3D reconstruction, montage effects, and AI-generated content, it presents the artistic and cultural richness of Dunhuang in 4K film-level quality and interactive formats, offering the public a multisensory, deeply engaging experience.

The ongoing development and integration of digital technology have continuously generated new cultural forms and opened up diverse innovation pathways for the cultural industry. Through novel methods of dissemination, it integrates more deeply into the public's cultural and entertainment life. Ultimately, it promotes a paradigm shift in the cultural industry—from scale-based expansion to connotative enhancement—expanding new strategic development opportunities within the framework of China's new development pattern.

2.2. Business logic: digital technology constructs a new paradigm for optimizing the structure of the cultural industry

General Secretary Xi Jinping has pointed out that "we must keep pace with the trends of digital industrialization and industrial digitalization, accelerate the development of new forms of cultural industries, upgrade and enhance traditional cultural formats, and improve quality, efficiency, and core competitiveness" [2]. Digital technology introduces new content and forms of expression to the cultural industry while simultaneously assisting in the continuous optimization of its subject structure, regional structure, and trade structure. This contributes to the establishment of a new paradigm for restructuring the cultural industry.

First, optimizing the subject structure. With the deepening integration of digital technology into the cultural industry, it increasingly plays a dominant role within the industry's structural framework. Innovation capability, as the core driver of structural upgrading, triggers a knowledge spillover effect through technological innovation, continuously catalyzing the multi-dimensional coupling of intellectual capital, data as a production factor, and financial capital in the cultural market. Intelligent algorithms are actively identifying niche markets within the industry, creating favorable conditions for micro and small cultural

enterprises to generate differentiated added value. Traditional cultural sectors are also achieving substantial gains in production efficiency and market penetration driven by digital technologies.

Second, reshaping the regional structure. The in-depth development of the cultural industry is gradually dissolving geographical constraints. The diffusion effect of digital technology fosters the formation of cross-regional collaborative cultural industry clusters in central, western, and northeastern China. Traditional spatial barriers—such as the east-west disparity and uneven distribution of cultural resources—are being dismantled as transportation and electronic information communication networks are upgraded and digital technologies mature. Early signs of regional agglomeration are now emerging. Furthermore, the transformative innovation brought by the digital technology revolution and the national strategy of cultural digitalization have created a practical field for the spatiotemporal reorganization of cultural resources. This enables the integration of the "Cloud, Data, and Intelligence Empowerment" initiative [3] into the cultural industry's cross-regional applications, aligning new production models and innovation mechanisms more closely with industry demands.

Third, improving the trade structure. Digital technology empowers the cultural industry to give rise to digital product forms that break down the traditional boundaries between cultural trade and service markets, thereby promoting high-quality development. "The digitalization of the cultural industry has a significant effect in promoting trade" [4]. The forms of digital products effectively reduce cultural distance, helping small and micro-sized cultural enterprises—driven by digital innovation—demonstrate their international competitiveness in terms of specialization, precision, distinctiveness, and novelty.

Digital technology nurtures new business forms within the cultural sector and injects powerful momentum into enhancing quality and efficiency. Examples such as VR education, cultural tourism spaces, and digital entertainment have already emerged as key driving forces for the high-quality development of the cultural industry. Moreover, continuous cross-sector integration is creating new scenarios, new business models, and new formats. Emerging fusion fields—such as culture + technology, culture + tourism, and culture + commerce—are increasingly recognized as future growth poles for the cultural economy. These developments demonstrate a dynamic pattern of integration, mutual promotion, and co-prosperity between humanistic values and economic efficiency.

2.3. Consumption logic: digital technology extends the cultural industry's value creation and product chain

Empowered by digital technology, the internal operations of the cultural industry have rapidly undergone an online transformation of its division of labor. Digital technology creatively reconstructs tangible cultural resources to generate richer forms of virtual culture. Supported by cloud computing and big data analytics, all stages of cultural production—from ideation and creation to distribution—can now be managed efficiently in a virtual environment. This model reduces production and marketing costs, enables the personalization and high-frequency updating of cultural products, and responds precisely to increasingly diverse and individualized consumer demands, thereby driving the product chain of the cultural industry to extend in depth.

On the supply side, structural innovation drives the extension of the industrial product chain. According to the Classification of Cultural and Related Industries (2018), the cultural industry comprises nine broad categories, which can be generally grouped into tangible, intangible, and creative cultural products. An analysis of their product chain extensions is as follows: Tangible cultural products, such as books, calligraphy and paintings, handicrafts, traditional clothing, and cultural and creative products, have been enhanced through digital technology by increasing interactivity with consumers and improving display effects. Digital presentation allows consumers to gain a more comprehensive and multi-dimensional understanding of the product, helping cultural goods come alive and become more popular. This not only deepens public engagement with cultural meaning but also strengthens the digital preservation and transmission of these products. Intangible cultural products, such as folk art, intangible cultural heritage, educational systems, and diplomatic philosophies, have gained multiple layers of value through digital empowerment. Digital technology allows these previously intangible resources to be recorded and preserved in digital formats, preventing their loss. In addition, the internet facilitates widespread dissemination, expanding their influence. Creative cultural products, such as immersive spaces, emotional surrogates, and virtual petting (e.g., digital cat-petting experiences), use technologies such as VR and Insta360 panoramic platforms to create vivid and realistic experiential environments. These not only provide emotional catharsis for consumers but also diversify the consumption types within the cultural industry.

On the demand side, participatory restructuring drives a value co-creation ecosystem. First, big data enables precise understanding of user needs. By embedding large databases into the consumption stages of the cultural industry, big data technologies can deeply analyze consumer behavior (e.g., a song's play counts, downloads, etc.) to gain insights into consumer psychology and preferences. This supports the provision of personalized, customized services and extends the cultural industry's product chain toward more accurate alignment with consumer demand. Second, digital technology satisfies people's aspirations and fantasies about the future. Immersive interactive products enabled by technology—such as 4D/5D virtual environments and AI-driven future scenario simulations (e.g., virtual costume changes)—transcend real-world limitations and cater to consumers' curiosity and desire for the future. By fulfilling users' emotional projections and immersive expectations about a "technologically attainable future," these products create consumption value that goes beyond current practical needs. Third, digital technology enhances consumer participation and engagement in the cultural industry. Platforms and tools for user-generated content (UGC), such as Zhihu, Weibo, and TikTok, activate participatory creation. Technologies like blockchain and digital twins enable

consumers to independently generate virtual cultural products (e.g., digital artworks, customized story scripts), thereby breaking traditional supply-demand boundaries. Consumers shift from passive content recipients to active co-creators of value, pushing the cultural industry's product chain further toward a user-driven model.

3. Practical dilemmas in digital technology empowering high-quality development of the cultural industry

Amid the rapid and ever-evolving development of digital technology, the Central Committee of the Communist Party of China, with Comrade Xi at its core, has based its strategic vision on the "two overall situations," deeply understanding the changes in the world, the era, and history, and has drawn a grand blueprint for building a digital China in the new era. Digital technology has greatly improved the cultural industry's adaptability to the times. However, China is still in the exploratory and deepening stage regarding digital technology empowerment of the cultural industry. Significant room for improvement remains in areas such as industrial cluster collaboration, ideological governance, and cultivation of interdisciplinary talent.

3.1. The development effect of cultural industry clusters is not yet prominent

According to a survey conducted by the National Bureau of Statistics on 78,000 large-scale cultural and related enterprises nationwide, in 2024 China's cultural enterprises achieved a total operating revenue of 14.151 trillion yuan and a total profit of 1.2909 trillion yuan. However, due to multiple compounded bottlenecks—such as financing difficulties for micro and small cultural enterprises, limited supply of digital infrastructure equipment research and development, high costs of data protection, and a challenging period of institutional and systemic reforms—the scale and agglomeration effects of cultural industry clusters have not yet been fully realized.

First, some segments of the cultural industry face financing constraints. Emerging technologies such as 5G, 3D visual sensing, and AR offer vast space for cultural content production, presentation methods, and consumption scenarios. However, digital technology innovation often requires substantial funding and R&D investment, and some micro and small cultural enterprises may face constraints during actual financing processes, limiting internal digital innovation within the industry. Furthermore, there is currently insufficient provision of specialized financial credit products targeting digital technology empowerment of the cultural industry. Most commercial banks have yet to launch such products, and those that exist tend to be few and lack diversity, making it difficult to meet the financing demands of the current industry development.

Second, the supply of digital infrastructure equipment research and development is limited. At present, the proportion of independently developed core technologies in emerging cultural industries remains low, with weak underlying technical accumulation. The consideration of adaptability to diverse application scenarios during R&D is inadequate, resulting in market adaptation efficiency and stability of technological achievements falling short of expectations. Meanwhile, a lack of coordination mechanisms among multiple R&D entities—including government bodies, digital content producers, and cultural and creative research institutions—has weakened the effectiveness of result transformation, causing a structural mismatch between technology supply and industrial demand.

Third, cultural data is difficult to protect effectively. As digital technology increasingly empowers the cultural industry, a vast amount of cultural data distributed across digital platforms remains incompletely counted and protected, posing certain security risks. The data system technologies used by grassroots cultural departments and enterprises are relatively outdated, with high maintenance costs post-deployment. Many county- and municipal-level grassroots units have yet to establish comprehensive and multi-layered cybersecurity defense systems, resulting in ongoing severe challenges in protecting privacy information.

Finally, cultural industry cluster development faces a critical period of institutional and systemic reform. The current fragmented cultural management system leads to fragmented resource allocation. Digital technology empowerment of the cultural industry involves multiple fields such as copyright, technology, and finance, each with overlapping authorities, and an effective cross-departmental policy coordination mechanism has not yet been established, making it difficult to form a synergistic development force. Moreover, with deep digital technology involvement, contradictions between traditional cultural management models and industrial innovation demands have intensified. The lack of flexible market access policies needed for cultural enterprises' digital transformation and the inability of current qualification approval systems to timely adapt to new digital technology-enabled business models restrict the synergistic development effects of industry clusters.

3.2. The increasing difficulty of ideological governance in the cultural industry

When discussing the development of the cultural industry in the "14th Five-Year Plan," General Secretary specifically emphasized its ideological attributes [5]. This ideological feature distinctly differentiates the cultural industry from other sectors. In recent years, with the rapid advancement of digital technology and the profound impact of the pandemic, the involvement of digital technology has significantly increased the profitability of the cultural industry. This has attracted massive capital inflows, but the excessive pursuit of economic interests may lead some cultural market entities to deviate from normative values by

producing and disseminating content contrary to the core socialist values, thereby promoting the spread and evolution of non-Marxist ideologies.

First, technological hegemony and cross-border penetration of cultural capital pose serious threats to the ideological security of China's cultural industry. Led by the United States, Western capitalist countries leverage technological monopolies and capital accumulation advantages to promote their ideologies under the guise of cultural dissemination, creating new inequalities in the digital age. The U.S. government uses its network technology dominance to launch cyber public opinion offensives against China, continuously promoting universal values, individual heroism, historical nihilism, and other ideologies incompatible with Marxism and China's outstanding traditional culture. These influences penetrate China's cultural industry via films, social media platforms, and other channels, gravely threatening the security of socialist ideology and the cultural industry itself. On March 26, 2025, the U.S. Department of Commerce issued two documents placing 54 Chinese institutions and enterprises—including Huawei (and HiSilicon), Beijing Zhiyuan Artificial Intelligence Research Institute, Inspur Information, Ningchang Information Industry, and the server brand Suma under Zhongke Control—on the so-called "Entity List." Some Western cultural capital, by embedding itself within industrial chains, guides domestic cultural industry outputs toward digital products with divergent value orientations, impacting ideological security in the cultural industry.

Second, the emergence of the digital divide affects ideological construction within the cultural industry. As of December 2024, China had 1.108 billion internet users, including 795 million urban users, with an internet penetration rate of 85.3%; rural users numbered 313 million, with a penetration rate of 63.8% [6]. This reveals a persistent gap between rural and urban internet accessibility and digital information penetration. Some rural areas remain without internet access, posing significant challenges for ideological communication through the cultural industry; reliance solely on traditional dissemination methods is clearly inadequate. Regarding user demographics, China's internet users are predominantly young and middle-aged. As of June 2024, non-internet users numbered 310 million, with 60.2% aged 60 and above [7]. Compared to younger cohorts, the elderly have a deeper understanding of revolutionary and red culture and possess unique social insights into Chinese culture shaped by their generation. The digital divide between youth and elderly groups creates barriers to leveraging digital technologies for effective ideological guidance in the cultural domain.

Finally, decentralization of production exacerbates the disorder in cultural product values. By lowering the threshold for producing cultural products, digital technology has fostered an "everyone creates" ecosystem. However, capital-driven traffic competition and algorithmic recommendation homogenization intensify quality differentiation and value disorder in cultural products. This production decentralization empowered by technology, combined with lagging content governance, poses potential challenges to ideological security. For example, the TV drama Thunderbolt Warriors places the office scenes of the Eighth Route Army within a luxurious European-style villa, undermining the authenticity of revolutionary historical narratives. Gentlemen of the East Eighth District portrays urban male images in an unflattering, greasy manner and distorts women's gender identities in the narrative. The prevalence of hedonism, individualism, and vulgar culture in film and television markets exerts deconstructive pressure on the mainstream social value system. Additionally, in the field of online literature, some creators deconstruct heroic images through historical nihilism narratives, progressively eroding the contemporary foundation for revolutionary spirit and socialist advanced culture. This detachment of meaning, coupled with the decentralized cultural content production enabled by digital technology, creates governance tensions and highlights the compound challenges posed by value disorder in cultural products to ideological security.

3.3. The supply-demand imbalance of interdisciplinary talent in the cultural industry

China is richly endowed with cultural resources, and the rapid iteration of digital technologies highlights both the core role of innovative human capital in the cultural industry and the structural contradictions between the supply of interdisciplinary cultural-technology talent and the demands of industrial upgrading. The imbalance between supply and demand for such interdisciplinary talent has become an invisible constraint on the high-quality development of the contemporary cultural industry.

First, the number of cultural industry practitioners in China is limited. As the cultural industry is still in a growth phase, the talent reserve base is relatively weak. In cutting-edge fields driven by digital technology, there remains significant lag in building systems for training high-tech and interdisciplinary talent. There is a clear shortage of innovative professionals equipped with an international cultural perspective, modern industrial concepts, and digital literacy. The speed of updating knowledge structures and upgrading skills lags markedly behind the iterative needs of the cultural industry's digital transformation. According to the Fifth National Economic Census Bulletin (No. 6) — Development of Certain Emerging Industries published by the National Bureau of Statistics on December 26, 2024, by the end of 2023, the total number of cultural and related industry employees nationwide reached 22.377 million [8], accounting for 3.05% of total employment [9], which remains low compared to Western developed countries.

Second, the cultural industry exhibits rigid demand for interdisciplinary talent. On one hand, the deep collaborative ecosystem within cultural industry clusters creates a strong need for management personnel with cross-disciplinary communication skills and organizational coordination capabilities, requiring effectiveness in team collaboration and strategic management. On the other hand, under the reality of digital technology empowering the cultural industry, the market demands practitioners who can construct social-cultural situational awareness and possess agile creativity driven by cultural data elements,

adapting to labor market needs for talent with both digital and cultural literacy. Although employment proportions in tertiary sectors including the cultural industry have increased in recent years, they still lag behind market demand changes and the rapid iteration of digital technologies, resulting in a talent gap.

Finally, mechanisms for cultural industry talent mobility and recruitment need improvement. By the end of 2023, the total number of employees in cultural and tourism departments across all levels reached 729,000, with 69% and 78% concentrated in the eastern region [10], far exceeding the central and western regions. At the provincial level, Guangdong, Zhejiang, Shandong, Jiangsu, Beijing, and Shanghai accounted for 56% of cultural industry employees. This reveals uneven geographic distribution of cultural industry practitioners. With the advancement of Chinese-style modernization and growing local government attention, the western region has generally improved in compensation and talent introduction policies, attracting more high-quality talent to contribute to western development. Nevertheless, the talent proportion still lags behind that of developed eastern cities.

4. The pathways to alleviate challenges in digital technology empowering high-quality development of the cultural industry

The deep empowerment of digital technology injects multiple efficacies into the high-quality development of the cultural industry, granting profound strategic value in boundary extension and value creation. Currently, how to break through the practical constraints of the absence of cluster development effects, ideological governance loopholes under digital technology empowerment, and the supply-demand imbalance of interdisciplinary talents has become an urgent contemporary issue. Effective practical pathways should be explored from strengthening digital infrastructure support, constructing cultural security barriers, and building interdisciplinary talent teams, ensuring the sustainability, effectiveness, and scientific basis of digital technology empowering the cultural industry both theoretically and practically.

4.1. Strengthening digital infrastructure support to release cluster aggregation effects

Under the strategic background of deep digital technology empowerment and high-quality cultural industry development, cultural industry clusters serve as important carriers driving regional economic growth and industrial upgrading. Their core value lies in cultivating collaborative innovation awareness among cluster entities and activating industrial development momentum through spatial agglomeration effects. It is essential to fully unleash the key supporting roles of data, capital, innovation capacity, and institutional mechanisms in cluster development, optimize the industrial ecological environment within clusters, continuously enhance the regional competitiveness and innovation resilience of cultural industry clusters, and provide cluster-based practical pathways for digital technology to empower high-quality development of the cultural industry.

First, in response to financing constraints and innovation barriers within the cultural industry, the government can implement special policies for digital infrastructure, strengthen investment in core technology R&D and new infrastructure construction, and provide foundational technological support for SMEs with weak digital foundations, thus solidifying the infrastructure base for digital technology empowerment in the cultural industry. Such policies can both lower the technological application threshold for enterprises and, through policy signals, guide leading digital enterprises to provide exogenous financing support to the cultural industry via strategic investment and supply chain finance.

Second, make full use of high-tech capabilities in big data collection and intelligent analysis to more accurately grasp consumers' intrinsic spiritual and cultural needs and deeply integrate national policy directions. This will build a precise and efficient cultural supply system and improve the matching efficiency between cultural products and markets. Meanwhile, strengthen digital cultural content review mechanisms, improve market access and content regulation standards, and ensure cultural products uphold the core values of Chinese civilization and socialist core values. Simultaneously, promote cultural literacy cultivation at the social level, enhancing the value discernment and data security awareness of cultural consumers in the digital era.

Third, improve the cultural data protection system by constructing a cultural data regulatory system centered on the Chinese Cultural Database and the National Cultural Private Network. Implement dynamic updates and maintenance optimizations for existing data platforms. Strengthen government leadership in advancing grassroots network security defense systems, improving the digitalization, networking, and intelligence levels of cultural industry infrastructure. Analyze grassroots "digital intelligence empowerment" training experiences and normalize projects to enhance digital literacy for cultural department staff. Use technological empowerment to promote intelligent infrastructure upgrades and build a cultural data security defense line at the grassroots governance level to effectively guard against cultural security risks in the digital era.

Finally, use cultural system and mechanism reform and innovation as a breakthrough point, simultaneously advancing reforms of supporting systems such as cultural property rights trading and data ownership confirmation. The Decision of the CPC Central Committee on Further Deepening Reform to Promote Chinese-Style Modernization elevates "deepening reform of cultural systems and mechanisms" to a subtopic [11], marking an important turning point for deepening cultural system reforms. The reform must advance into deeper waters, building a modern cultural governance system suited to the characteristics of the

digital economy while ensuring cultural security, and achieve cross-regional cultural resource connectivity through blockchain technology.

4.2. Leading ideological shaping and constructing cultural security barriers

The ideological dimension of the cultural industry embodies extremely important social values. General Secretary Xi Jinping has emphasized that "the collapse of a regime often begins in the realm of ideology" [12]. Therefore, precisely grasping the ideological risks during the process of digital technology empowering the cultural industry is of vital significance. The process must adhere to guidance by the socialist core values and uphold the people-centered value concept.

First, facing the new arena of Western ideological infiltration formed during digital technology empowerment of the cultural industry, China needs to strengthen its technological self-innovation capabilities and build a core cultural industry competitiveness supported by digital technology. It is essential to create digital cultural products with Chinese characteristics by integrating China's outstanding traditional culture and contemporary Chinese values into technological application scenarios, systematically exporting them to the global market via the digital communication ecosystem. This solidifies the technological and content foundation of national cultural security from the industry's supply side. Additionally, when confronting digital platforms and new cultural industry developments, government departments must clearly recognize the non-neutral nature of digital technology and emphasize the people-oriented guidance of high-quality cultural industry development, ensuring its goals always align with mainstream ideology.

Second, to eliminate the technological segmentation caused by the digital divide in ideological dissemination within the cultural industry, focus must be placed on universal innovations in technology R&D, constructing inclusive digital interaction platforms that cover rural areas and vulnerable groups. By optimizing the adaptability of terminal devices and lowering technical usage thresholds, equal access and participation in the new era's cultural information dissemination can be provided for diverse populations, thus consolidating the ideological dissemination foundation from the dimension of technological empowerment. Meanwhile, it is necessary to strengthen nationwide digital literacy training, enhancing the public's ability to use information technology and discern information value, cultivating cultural consumers and participants who adapt to the digital era. Furthermore, a comprehensive privacy computing and security auditing mechanism covering the full chain of data collection, transmission, and application should be established to prevent infiltration risks caused by technology misuse or malicious attacks against ideological security.

Finally, government agencies, propaganda departments, and mainstream media should enhance the effectiveness of spreading the Party's policies and guidelines by vividly presenting the Party organization's historical achievements through diversified narrative methods. This ensures that the Party's theoretical system and practical achievements fully integrate into the social cognition system, deeply resonate with the public, and penetrate grassroots communities. Leveraging advanced digital technologies, explanations should be made profound, clear, and lively—telling the red stories well, deepening the red history, and elucidating the red spirit. The public should be encouraged to autonomously study red culture, revolutionary culture, and advanced socialist culture, so that Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era takes root in people's minds and hearts. Grassroots and municipal governance entities should focus on fundamental units such as families and communities, regularly conducting thematic learning and propaganda activities on contemporary figures, red culture, and the discourse power of Marxist ideology. A grid-based value dissemination system should be constructed, where party member demonstration and broad public participation combine to transform mainstream ideology into perceivable and participatory grassroots cultural practices, thereby effectively strengthening its social penetration and spiritual cohesion.

4.3. Building a new-type talent team to gather vitality for industrial development

The Third Plenary Session of the 20th Central Committee of the Communist Party of China pointed out: "Accelerate adaptation to the rapid development of information technology, cultivate and form a large-scale team of outstanding cultural talents, and stimulate the cultural innovation and creative vitality of the entire nation" [13]. Talent cultivation for high-quality development of the cultural industry empowered by digital technology should emphasize alignment with cultural market demands and the development prospects of digital technology.

First, improve the environment for attracting and retaining cultural industry talents. To address regional talent shortages and slow mobility issues, governments and cultural institutions can introduce frontier industry information by establishing cross-regional collaborative innovation projects and organizing cross-regional exchange activities to attract high-quality cultural talents and facilitate experience sharing. Furthermore, localities should create a positive work environment and optimize salary incentive mechanisms to bridge regional talent gaps and promote geographic mobility of digitally innovative talents. In addition, institutional measures such as housing subsidies and tax incentives can be implemented to enhance retention willingness among emerging cultural talents. Local talent advancement mechanisms should be established to encourage continuous professional development and proactive learning, thereby fostering the accumulation of digital talent capital within the cultural industry.

Second, effectively stimulate the vitality of cultural industry talents. The Third Plenary Session of the 20th Central Committee has deepened the implementation of strategies focusing on revitalizing the country through education, strengthening the nation with talents, and innovation-driven development. It encourages universities, research institutes, and the cultural industry to build collaborative mechanisms to jointly guide interdisciplinary talents who possess digital technology literacy, cultural creativity, and cross-field collaboration abilities to engage in frontier technology research and new cultural product incubation, driving technological iteration and business model innovation in the cultural industry. Moreover, the issue of talent utilization in the cultural industry should be treated with strategic importance. Building a talent echelon in the cultural industry should be prioritized as a key strategic project, optimizing talent resource allocation to form a talent matrix characterized by excellent comprehensive quality, balanced professional distribution, reasonable age structure, and international competitiveness. Relying on high-level cultural leadership and innovative management teams will empower the high-quality development of the cultural industry.

Finally, innovate the talent cultivation mechanism for the cultural industry. The government should improve the talent training system oriented towards current industry development needs. Meanwhile, it should improve competition branches in fields such as “International Internet+” and “Cultural China,” providing funding and promotional support for cultural technology and cultural industry competitions. Universities should take up their responsibilities by building collaborative exchange platforms for cross-disciplinary experts and research teams, strengthening the cultivation of interdisciplinary talents and academic interaction mechanisms. Additionally, an online talent training system should be established, alongside building and dynamically updating a composite talent database to broaden the channels for cultivating comprehensive talents suited to new trends and demands in the cultural industry. Relevant departments must ensure the support for universities and research institutions in cultivating cultural industry talents, focusing on developing interdisciplinary talents, specialized professionals in subdivided fields, and international talents, thus nurturing a group of leading figures who drive innovation in digital technology-empowered cultural industry development.

5. Conclusion

Digital technology is a key driver of the new round of industrial transformation. Its introduction provides new interpretive dimensions for enhancing the quality and efficiency of the cultural industry, as well as offering fresh theoretical perspectives for the high-quality development of the cultural sector. As an important research dimension of Xi Jinping’s cultural thought, the cultural industry not only carries the profound legacy of China’s five-thousand-year civilization and showcases the contemporary value of outstanding traditional culture, but also contains immense economic potential, opening up practical fields for deepening comprehensive reform and advancing Chinese-style modernization. Currently, China’s economy is at a critical juncture transitioning from high-speed growth to high-quality development. Digital technology has emerged as a new growth point for the high-quality development of the cultural industry. It is important to recognize that the challenges encountered in the process of empowering the cultural industry with digital technology are increasingly prominent and have gradually become constraints limiting its advancement to higher levels. In facing these challenges during the high-quality development of the cultural industry, seeking effective solutions is undoubtedly a critical task requiring in-depth research and breakthrough efforts in the next stage of development.

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