Targeted Paths and Policy Supply for the High-Quality Development of the Digital Content Industry in Hangzhou City

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Abstract: Building a national digital content industry center and an international cultural and creative hub is Hangzhou's prime project to solidly advance cultural construction and comprehensively enhance the city's cultural soft power. With the drive from the transformation and upgrading of cultural consumption demands, Hangzhou's digital content industry has experienced a new leap. Film and television, performing arts, animation, publishing, education, deeply integrated with internet, big data, artificial intelligence, and other digital technologies. Thus, from the perspective of the current situation-problem-policy mechanism, this paper focuses on the digital content industry of Hangzhou, and proposes the paths and policies to promote the high-quality development of the digital content industry, including integration of "core business + digital technology", building "original IP + local characteristics cultural industry", exploring media matrix and a rich media platform, promoting Hangzhou story along "The Belt and Road Initiative", and expanding digital channels to build shared data.

Keywords: Digital Content Industry; High-Quality Development; Targeted Paths; Policy Supply

1. Introduction

Promoting the flourishing development of culture and creating a new era of cultural prosperity is an important direction for the culture industry in China. The mission of China's cultural industry is high-quality development to enhance the people's sense of cultural acquisition and happiness [1]. The digitization of culture, reflected in the virtualization, intelligent, and networking of digital content products, recognizes data as a new element of cultural production [2]. By utilizing technologies like big data, cloud computing, and artificial intelligence, there's a push to elevate product and service supply structures, focusing on high-end, premium quality, and emerging industries [3].

Constructing a national digital content industry center and an international cultural and creative hub is Hangzhou's prime project to solidly promote cultural development and comprehensively enhance its cultural soft power. Driven by the transformation and upgrade in cultural consumption, Hangzhou's digital content industry has taken a significant leap, integrating film, television, perform, arts, animation, publishing, education with the depth of digital technologies like the internet, big data, and artificial intelligence. The practical significance of building a high-quality development ecosystem for the digital content industry in Hangzhou can be summarized into three aspects:

High-quality development of the digital content industry meets the increasingly diversified, personalized, and layered spiritual and cultural demands of the publics.

High-quality development of the digital content industry is a crucial cornerstone for Hangzhou's ambition to be recognized as the nation's top digital economy city.

High-quality development of the digital content industry is one of the essential paths to accelerate the construction of a competitive, distinctive, and leading international cultural and creative center.

2. Literature Review on High-Quality Development of the Digital Content Industry

2.1 Foreign Research Dimensions on High-Quality Development of the Digital Content Industry

United States implemented the "Digital Economy Agenda" in 2015, Germany released the "Digital Strategy 2025" in 2016, the UK launched the "Digital Economy Strategy (2015-2018)" in 2015, Japan devised the "I-Japan Strategy" in 2009, and Singapore commenced the "Smart Nation 2025" initiative in 2014. UNESCO, in its "Creative Economy Report," clearly pointed out that the cross-border expansion and transformation upgrade is one of the most noteworthy development trends in the creative economy. Foreign studies cover four dimensions:

2.1.1 Driving Factors

Scholars like Landry, Gertler, and Florida believed that cultural capital, technological capital, and the creative class are key factors driving the development of the digital content industry.

2.1.2 Value Network

Pratt and Nabeshima utilized community theory to analyze how digitalization reconstruct networks of creation, production, distribution, and consumption.

2.1.3 Policy Models

There's the evolutionary wealth-creation model in culture (Australia), market-oriented but also supporting non-profit competition (US), culture-protective intervention (France), government-led free competition with national intervention (UK), and legally restrictive model (South Korea).

2.1.4 Policy Evaluation

The Organization for Economic Co-operation and Development (OECD) has proposed a "Digital Content Industry Policy Evaluation Framework" comprising six indicators like innovation and technology. The Newcastle model in the UK assesses policy outcomes from cultural development and citizen participation. John Hartley summarizes that the development of the creative industry requires a novel governance approach that delineates scope and conditions instead of specific rules, emphasizing a "smart system" over a "control system".

2.2 Domestic Hot Topics on High-Quality Development of the Digital Content Industry

2.2.1 Importance of the Digital Content Industry

Zhang Xiaoming (2017) discussed that the digital content industry has become the emerging industry cluster leading China's transition to the post-industrial era. A "three-element" structure including "culture-technology," "culture-finance," and "finance-technology" will drive the development of a new round of digital creativity [4]. Fan Zhou (2017) suggested that when digital technology fully permeates the cultural industry, it stimulates the integration of "Culture+" and "Internet+," promoting the development of the digital content industry [5].

2.2.2 Pathways to High-Quality Development of the Digital Content Industry

Li Peifeng (2019) proposed constructing systems around institutions, technology, culture, consumption, and reform [6]. Liu Yu and Zhou Jianxin (2019) believed that high-quality development pathways of content industry can be built from aspects of quality, structure, factors, and indicators [7] in the new era. Hao Tinglei (2020) presented the pathway from industrial chain perspective, including product chain, enterprise chain, value chain, technology chain, and space chain [8].

2.2.3 Policy Research on High-Quality Development of the Digital Content Industry

Fan Zhou and Qi Yinmo (2019) emphasized the importance of deep integration and adhering to innovation, which specifically including policies on cultural leadership, format upgrade, cultural supply, talent development, and environmental improvement [9]. Guo Quanzhong (2020) noted that culture-economic policies oriented towards incentives have effectively driven cultural system reforms [10]. He Da and Ren Wenlong (2019) empirically found that in the eastern regions with relatively good cultural industry development, indirect guidance policies are more effective for high-quality development than direct intervention policies [11]. Yi Na summarized that there's a need to shift from a "quick policy" mindset to a "patient policy" mindset [12].

3. Current Status of Digital Content Industry Development in Hangzhou

3.1 Leadership in the National and Provincial Top Tier

The digital economy is the main battlefield for economic competition, technological innovation, and institutional change, acting as the primary engine driving future societal transformation. The digital content industry is one of the distinctive sectors within Hangzhou's cultural and creative industries. According to the "China Digital Content Industry Development Index and Assessment Report (2021)", from 2018 to 2020, China's digital content industry had an annual compound growth rate of 9.33%, exceeding China's GDP over the same period. Among them, Shenzhen (Guangdong), Beijing, Shanghai, and Hangzhou rank at the top tier in China in terms of the digital content industry development index. Moreover, China's digital content industry has formed a structure dominated by "three circles" and the rise of "three regions". The "three circles" refer to the Bohai Bay industrial cluster represented by Beijing, the Yangtze River Delta cluster represented by Shanghai and Hangzhou, and the Pearl River Delta cluster represented by Shenzhen (Guangdong) and Guangzhou. The "three regions" are represented by Chengdu (Sichuan) in the southwest, Changsha (Hunan) and Wuhan (Hubei) in the central area, and Fuzhou and Xiamen (Fujian) in the south. Against the backdrop of the "three circles" dominance and the rise of the "three regions", China's digital content industry demonstrates significant market scale, cluster development, notable employment absorption, and continuous prominence of leading entities. Hangzhou's digital content industry ranks fourth nationally and stands as a representative city of the Yangtze River Delta industrial cluster.

Meanwhile, in 2022, Hangzhou planned to build a trillion-yuan intelligent IoT industry circle, specifically promoting the development of visual intelligence, cloud computing, big data, network communication, and other digital industries and technologies to get big achievement in the digital economy. For instance, in the realm of 5G, Hangzhou was selected in 2021 as one of the first 29 "Gigabit Cities" recognized by the Ministry of Industry and Information Technology, with a 5G network penetration rate of 99.1% in key areas and a gigabit network coverage rate of 112% for households. In blockchain, Hangzhou was included in the national list of blockchain innovative application pilot areas. According to the "2020 China City Blockchain Comprehensive Index Report", Hangzhou ranked fourth nationwide. In terms of artificial intelligence, Hangzhou was successively approved as the national next-generation AI innovation development test area and the national AI innovative application pioneer zone, with its industry competitiveness ranking at the national top tier. As Hangzhou strives to become the "Top One City in the Digital Economy", there's a need to integrate both infrastructure ("hard foundation") and content ("soft content") [13].

3.2 Four Core Areas of Digital Content Industry in Hangzhou

3.2.1 Animation and Gaming Industry

By the end of 2022, the main business income of Hangzhou's animation and gaming industry had exceeded 40.8 billion yuan. The number of companies in this sector had grown to 274, employing over 1.2 million people. Throughout the year, a total of 5,245 episodes of animation were produced, amounting to 31,229 minutes. The 18th China International Cartoon Festival was also held, promoting Hangzhou's reputation as the "City of Animation" abroad. Hangzhou is vigorously promoting the high-quality integrated development of the animation, gaming, and e-sports industries. With a focus on producing quality animation, building a gaming ecosystem, deep integration of e-sports, and paving the way for the metaverse, the city aims to increase the annual total revenue of the animation, gaming, and e-sports industries to over 600 billion yuan. Initial efforts are underway to establish Hangzhou as an international city of animation and a renowned city for e-sports.

3.2.2 Digital Reading Industry

According to the "China Digital Reading Report 2021", the overall scale of China's digital reading industry in 2021 reached 415.7 billion yuan. Hangzhou ranked among the top three cities in the domestic digital reading index and was also the city with the fastest growth in this index. The "Zhejiang Province

Residents Reading Status Survey Report 2022" reveals that, with the rapid development of digital reading platforms, e-books have become the primary medium and growth point for reading among residents in Zhejiang Province. The average reading volume per person has significantly exceeded that of traditional paper media. Hangzhou has excelled in the public service of digital reading. The "one-click borrow" public library online service platform aims for "urban-rural integration, full regional coverage, and smarter convenience". It aggregates resources from 14 public libraries in the city's districts, providing citizens with an integrated online and offline public cultural service that ensures "full-service coverage, undifferentiated sharing, and zero-distance borrowing and returning".

3.2.3 Digital Music Industry

Leveraging the leading role of Nets Cloud Music and fully capitalizing on the advantages of mobile internet to showcase the power of "Music + Technology", and guided by artificial intelligence, Hangzhou is transforming into the nation's unique high-tech music park that combines online and offline capabilities with a focus on copyright. On one hand, it is constructing the fifth national music industry base in the country. Hangzhou's High-tech Zone (Binjiang) has promptly tapped into the urgent demands of industries like animation, gaming, film, media, and virtual reality. Leading companies like Nets Cloud Music and Fang Ci Electronic Music have already settled in, creating a rich atmosphere for music technology. On the other hand, a key laboratory is being developed which exclusively focuses on "Digital Music Technology" as its main research domain. Relying on the academic and professional strengths of Zhejiang Conservatory of Music and taking advantage of Zhejiang's status as the first national information economy demonstration zone and a leading area in the national digital economy development, they are spearheading innovative efforts in areas like intelligent music recognition and classification, intelligent music element generation, and other application-based technical developments. This has resulted in its own distinct research application strengths and characteristics, making it one of the advanced bases for research and application of digital music intelligent technology in China.

3.2.4 Digital Film and Television Industry

Currently, Hangzhou has 196 cinemas, with a total of 1,498 screens and 195,734 seats. Analyzing the annual number of screenings, approximately 6,700 movies are shown in Hangzhou's cinemas every day, offering high-quality public cultural services to the audience. The China (Zhejiang) Film and Television Industry International Cooperation Zone, established as one of the initial national cultural export bases. It is the only national-level film and television industry park in China that is oriented towards international cooperation and exchange, with cultural confidence as its vision. By 2022, over 97% of its designated space has been occupied, housing more than 260 enterprises. The zone has been actively exploring new models for cultural exports, launching the C-Drama Right global film and television cloud trading platform. The number of overseas industry users on this platform quickly surpassed 5,000, spanning over 90 countries and regions, paving a new avenue for innovative development in the digital and cultural service trade. As the only national-level film and television industry park in China with an emphasis on cultural exports, it promotes the bi-directional empowerment of professional talent training and practical operations. In partnership with Zhejiang Communication Media Institute, the zone co-founded the first mixed-ownership undergraduate institution in the country, Huace Film Academy, and independently established the nation's first full-time film and television technical school, Zhejiang Huace Film and Television Technical School. These institutions have provided the Chinese film and television cultural industry with a substantial number of skilled "craftsmen". Moreover, they conduct training for over 3,000 film and television professionals annually.

4. Challenges in High-Quality Development of Hangzhou's Digital Content Industry

4.1 Digital Technology Issues

With the continuous emergence of digital platforms, aspects like data collection, data sharing, and data circulation all involve the standardized provision of digital technology,

thereby bridging the barriers between "cloud, terminal, and network". For instance, the integration of AI technology into the film and television industry can transform the entire process and improve industry efficiency. This includes areas such as script creation, AI face and voice swapping, digital human simulation for virtual characters, AI poster creation, etc. The amalgamation of virtual shooting technology with advanced post-production techniques can thus enhance the production quality.

4.2 Cultural Security Issues

Cultural security prevention and control involve cyber security technologies such as risk reporting, data encryption, and disaster recovery backup. How to achieve dynamic perception, mimetic defense, and integrated judgment and handling of cultural security is both a challenge and an opportunity. For instance, ChatGPT has become the fastest-growing consumer application in history. Many domestic users, especially teenagers, have bypassed internet restrictions to try it out. The cultural security issues that arise from this deserve our attention. The internet is increasingly influencing the cultural identities of teenagers and affecting the cultural security of the nation.

4.3 Network Collaboration Issues

The digital content industry requires large-scale collaboration and real-time interconnection, such as constructing digital cultural industry clusters and big data trading centers, thereby achieving a "digital-driven — open innovation — networked collaboration". For instance, industries like animation and gaming, digital film and television, digital reading, and digital music, ranging from IP development to publishing and distribution, involve a complete set of industrial production processes. On one hand, by utilizing powerful customer-oriented big data analysis tools, systematic service support is provided from early planning, development evaluation to post-broadcast reviews. On the other hand, monitoring throughout the project's entire life cycle is achieved through the establishment and optimization of enterprise-oriented financial management, project management, copyright management, and overseas distribution systems.

5. Policy Recommendations for the Digital Content Industry in Hangzhou

5.1 Integration of "Core Business + Digital Technology"

Focusing on cultural and technological innovation, it could layout the "core business + digital" model, transform "traditional methods" into smart and intelligent operations, create new forms of expression based on artificial intelligence and the metaverse, and promote transformations in industrial quality and efficiency [14]. Furthermore, the fields of live streaming, gaming, and virtual idols could be further explored to meet the needs of the new consumer group.

5.2 Build "Original IP + Local Characteristics Cultural Industry"

Firstly, it could use the "original IP + local characteristics cultural industry" model to focus on the deepening of cultural product development and services, building a "content innovation factory". Secondly, it could initiate multi-strategy layouts such as "VR, multi-screen interaction[15]" to implement the "content + platform" strategy. Lastly, it could form a "large-scale marketing" framework to make full use of online and offline channels to establish the IP ecosystem.

5.3 Explore Media Matrix and a Rich Media Platform

Firstly, it could develop the "three-screen integration" of PC, print media, and mobile, achieving a full-coverage news network and building a "media cube" for intelligent communication service. Secondly, it could promote the national reading industries from five process (content creation, product development, operation promotion, convenient payment, extended development), five publishing (print publishing, electronic publishing, audio publishing, video publishing, derivative publishing), and five synchronizations (content distribution, derivative collaboration, channel promotion, advertisement release, fans operation).

5.4 Promote Hangzhou Story Along "Belt and Road"

It is crucial to practice the "Belt and Road" strategy tell the Hangzhou story to countries along the route by creating internationally

platform, global enterprises, and international content. Taking "going global" as the main duty could promote Hangzhou cultural elements into overseas markets.

5.5 Expand Digital Channels to Build Shared Data

Relying on data empowerment, it is important to build government-enterprise cloud databases to realize shared utilization among all parties on the platform [16]. It reflects the digital competitiveness and responsibility of cultural enterprises. For example, Hangzhou Culture and Tourism Data Online is the first data open platform in China to realize real-time online inquiry and instant download of cultural and tourism data. The platform has four main inquiry portals of Hangzhou real-time tourism data, historical tourism statistics, district and county tourism statistics and holiday tourism data. It is committed to providing rich and multi-source visual data for cultural and tourism practitioners, researchers, and the public, and continue to stimulate the amplification, superposition and multiplication of data production factors on the economy and society.

6. Conclusions

This paper makes exploratory analysis from the micro enterprise technology focus, the medium industrial development platform, and the macro regional policy supply, so as to promote the construction of an ecosystem for the high-quality development of Hangzhou's digital content industry. It studies foreign research from driving factors, value network, policy models, policy evaluation four directions to promote industrial development, then it summarizes the domestic studies from importance, pathway, policy those three perspectives. Secondly, it analyzes the core businesses achievement of Hangzhou digital content industry and evaluates the shortcomings of high-quality development of the industry: digital technology issues, cultural security issues, network collaboration issues. Thirdly, it discusses the policy supply for the high-quality development of Hangzhou digital content industry, including integration of "core business + digital technology", building "original IP + local characteristics cultural industry", exploring media matrix and a rich media platform, promoting Hangzhou story

along "Belt and Road", and expanding digital channels to build shared data. For the further research, it could further analyze how to enhance the culture of Song Yun, how to connect digital content with traditional cultural industry, and how to tell the traditional Hangzhou stories in the new era.

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