

STUDY ON THE INNOVATIVE PRACTICAL PATH OF DIGITALISATION ENABLING HIGH-QUALITY DEVELOPMENT OF SHANDONG CULTURAL INDUSTRY

GuangMing Dong*, ChunHui Bi, Wei Du, MengLian Sun
Shandong Vocational and Technical University of Engineering, Jinan 250200, Shandong, China.
Corresponding Author: GuangMing Dong, Email: 478888181@qq.com

Abstract: The 20th Party Congress pointed out that "we must adhere to the road of socialist cultural development with Chinese characteristics, enhance cultural self-confidence, and build a strong socialist cultural power around raising the flag, gathering the people's hearts, educating new people, promoting culture, and displaying images." Cultural industry is the main force to achieve the development of modern, world-oriented, future-oriented, national, scientific and popular socialist culture, stimulate the vitality of cultural innovation and creativity of the whole nation, and enhance the spiritual power to achieve the great rejuvenation of the Chinese nation. By digitally empowering the high-quality development of Shandong's cultural industry, we can achieve the goal of improving the modern public cultural service system and implementing the strategy of driving major cultural industry projects. Through the construction of digital system of high-quality development of cultural industry in "3 fields + 1 ecology" in the field of digitalisation of government management, digitalisation of cultural industry, digitalisation of social and cultural field, digital ecology of cultural industry, we will build a high-quality digital development path of cultural industry in Shandong, and enhance the ability of cultural industry in Shandong to play the role of culture in leading fashion, educating people, serving the society, and promoting economic development. It will enhance the role of Shandong cultural industry in leading culture, educating the people, serving the society and promoting economic development, and actively explore the way of low-carbon production and life of Shandong cultural industry.

Keywords: Digital empowerment; Shandong cultural industry; High-quality development; Innovation

1 OVERVIEW OF DOMESTIC CULTURAL INDUSTRY RESEARCH

Domestic cultural industry research started in 2000, and the domestic cultural industry research is guided by policy with a strong background of the times. Problem-oriented and aiming at the implementation of national strategies, it focuses on mainly exploring the problems existing in the development of China's cultural industry and its countermeasures by actively drawing on the research on cultural industry in foreign countries, with domestic scholars paying more attention to the specific phenomena and specific problems of the cultural industry, and with significant application features and obvious countermeasure orientation[1]. Domestic research on cultural industry can be divided into the stage of theoretical start, exploration and development, and the stage of high-quality development.

1.1 Theoretical Start-up Phase (2000-2003)

At the initial stage of theory, relevant researches focus on the definition, connotation, extension and other basic theories of cultural industry. Its representatives and their views include Hu Huilin [2], who thinks that cultural industry is an industrial system mainly characterised by the production, exchange and consumption of spiritual products, and Li Jiangfan [3], who thinks that cultural industry is a collection of units in the national economy that produce service products and physical products with cultural characteristics, and so on.

1.2 Exploration and Development Phase (2003-2012)

At the stage of exploration and development, relevant researches focus on the policy support of cultural industry, the construction of regional characteristic cultural industry clusters, and the construction of cultural industry parks, etc., emphasising the problem-oriented approach, drawing on the research results of cultural industry clusters in foreign countries, and focusing on solving the relevant problems in the process of cultural industry development. Its representatives and their views include Jiao Binlong [4], who puts forward the idea of building cultural industry clusters from regions and economic zones; Qi Ji [5], who puts forward that in the cultural reform and innovation environment dominated by the role of "market determinism", cultural enterprises or parks represented by national cultural industry demonstration bases, with the strategy of development of diversified main bodies and diversified channels, can stimulate innovation and creative vitality of market main bodies by exerting the clustering effect and incubation function. The market main body's innovation and creative vigour is stimulated.

1.3 High-Quality Development Phase (2013 - Present)

At this stage, the research on the development and practice of cultural industry has entered a period of high-speed development, which only focuses on the theme of cultural industry system and high-quality development of cultural industry, and its main representatives and their views are Pan Ailing et al. [6]Based on the synergy theory, the modern cultural industry system and the cultural market system can be regarded as an organic whole, and the two interact with each other and mutually promote each other. Starting from the intrinsic connection between modern culture industry system and culture market system, they explore the mechanism and path of synergistic development of the two; Fan et al. [7] analysed the core connotation, basic principles and main contents of the high-quality development of culture industry, and then carried out scientific, realistic and strategic thinking on how to achieve the path of high-quality development of culture industry in the "14th Five-Year Plan". Then, they make scientific, realistic and strategic thinking on how to achieve the path of high-quality development of cultural industry in the "14th Five-Year Plan", proposing to provide high-quality cultural products and services by taking content as the king, build a high-quality digital cultural industry system by taking technology as the wing, build a high-quality innovation chain for high-quality development of cultural industry by taking innovation as the nucleus, co-ordinate the market, and build a modern cultural market system To sum up, the domestic cultural industry research in foreign cultural industry research comparison, based on the government policy as the dominant, problem-oriented, mostly focused on the modernisation of the cultural industry system in the field of governance and countermeasures research, the lack of digital technology application of the cultural industry high-quality development of the research.

2 THE CORE CONNOTATION AND MAIN TASKS OF DIGITAL EMPOWERMENT OF SHANDONG'S CULTURAL INDUSTRY

Digital empowerment of Shandong cultural industry is an important measure to enhance the adaptability of Shandong cultural industry to the change of market cultural demand, through digital empowerment, macroscopically, mainly through the construction of basic digital public service platform, to further optimise the business environment of the cultural industry under digitalisation; mesoscopically, through the optimisation of the structure of the cultural industry, the reform of the policy and the innovation chain of the cultural products, etc., to give full play to the market's decisive role in the allocation of resources. In the meso level, through the structure optimization of cultural industry, policy reform and cultural product innovation chain and other measures to give full play to the market's decisive role in resource allocation, improve the allocation efficiency of economic resources of cultural industry, further optimize the allocation pattern of regional cultural industry resources in Shandong Province, and then enhance the endogenous momentum of Shandong's cultural industry; in the micro level, through the digitization of empowered cultural enterprises to enhance the quality and level of products and services of cultural enterprises, and make efforts to improve the integration ability and productivity of the enterprise's total factors, and make efforts to enhance the resilience and security level, promoting the integration and innovative development of the cultural industry with other industries, and accelerating the promotion of the construction of a modernised, high-quality development system for enterprises, so as to promote cultural enterprises to achieve quality improvement in products and services and reasonable growth in quantity.

The main tasks of digital empowerment of Shandong cultural industry are, firstly, to improve the infrastructure construction of digital empowerment, through constantly improving the digital hardware facilities of Shandong cultural industry and related laws and regulations, data information disclosure and other software facilities, laying a sexual foundation for the construction of digital system of Shandong cultural industry to play better. Secondly, to optimise the digital market system of Shandong cultural industry, take supply-side reform as a breakthrough, further take the market demand as a guide, improve the supply quality of products and services of Shandong cultural industry, adjust the supply structure of products and services with the application of digital technology, and gradually optimise the digital management system, market system, products and service system of Shandong cultural industry, so as to promote the balanced and full development of the development of Shandong cultural industry. Provide more effective services for realising the high-quality development of Shandong's cultural industry. Thirdly, to prevent and resolve the risks under digital empowerment, through strengthening the digital supervision of Shandong's cultural industry and enhancing the effectiveness of digital supervision, continuously enhancing the safety direction of the digital industry of cultural industry, improving the risk emergency handling mechanism, enhancing the synergy between digital policies and other policies such as fiscal policies, preventing the digital business risks under extreme circumstances, and providing escort for the high-quality development of digitalisation of Shandong's cultural industry. Protecting and escorting. Fourthly, to further promote the opening up of Shandong cultural industry through digitisation, to promote the high-level two-way opening up of Shandong cultural industry through continuous innovation of digitisation initiatives, to enhance the docking of the cultural industry synergistic management ability and innovation ability between Shandong and the Yellow River Basin provinces under the condition of opening up, and to improve the ability of Shandong cultural industry to improve its participation in the governance of the international cultural industry and its global competitiveness[8].

3 DIGITAL EMPOWERMENT OF SHANDONG CULTURAL INDUSTRY HIGH-QUALITY DEVELOPMENT OF THE INTRINSIC MOMENTUM

Firstly, from the point of view of the production link. The autonomous control and self-innovation development of Shandong cultural industry needs the assistance of digital technology, through the establishment of policy supply, technology supply, market supply and legal supply, the establishment of a multi-level digital system platform in Shandong region, the provision of differentiated bank credit for different levels of cultural industry, the optimisation of the resources and factors allocation pattern in the field of production of cultural industry, the increase of the financial support to the cultural industry chain and effective production capacity supply, increase financial support for strategic new cultural and creative industries in Shandong Province, promote the integration of the cultural industry with other industries by enhancing the high-quality development of the products and services of the cultural industry, and diversify the operation and innovation risks of all kinds of participating subjects in the cultural industry. Secondly, from the distribution link.

Secondly, from the point of view of the distribution chain. The demand side of the cultural industry is individual consumption and social consumption. Individual consumption capacity depends on their own income level, while social consumption capacity depends on the distribution relations of the society. Under digital empowerment, through the ability to realise data assets, it has profoundly changed the monetary form of personal consumption and social consumption, and can further activate the new consumption pattern of the cultural industry, which can realise the function of monetary consumption through digital means, and realise the shareability of the cultural industry under digitalisation, for example, individuals can offset the costs of cultural consumption through activities such as personal creativity; enterprises can share data assets to enjoy relevant cultural products and services for free, etc. Through digital empowerment, virtual digital assets are innovated, and an optimised distribution pattern of personal and social consumption is realised, fundamentally enhancing personal consumption capacity and strengthening the inherent social consumption capacity.

Again, from the point of view of the circulation link. The digitalisation of the cultural industry has changed the original business form of the circulation industry, and the digital products have greatly satisfied the user's personalised customisation needs.[9] Circulation infrastructure construction in the field of Internet under digitalisation can further enrich the circulation industry, can achieve the innovation of digital cultural product system and structure, and further accelerate the construction of modern Shandong cultural online circulation system.

Finally, from the consumption link. Consumption demand is the fundamental driving force to achieve the high-quality development of Shandong's cultural industry. The development of the cultural industry should be centred solely on the demand side, and the supply-side structural reform. Demand-oriented, to promote the digital business environment of cultural products and services, through the application of digital scenes and other means, to enhance the universality of Shandong's cultural products and services, through popular participation, brand recommendation, labour exchange and other forms, to break the monetary liquidity constraints faced by consumers, reduce the sensitivity of consumer demand to the consumer price of cultural products, so as to promote the consumption in the short-term unchanged conditions of income level demand growth, further shaping a strong driving force for domestic demand for cultural products and services.

4 CONSTRUCTION OF A DIGITAL SYSTEM FOR THE HIGH-QUALITY DEVELOPMENT OF THE CULTURAL INDUSTRY IN "3 FIELDS + 1 ECOLOGY"

4.1 Digital Innovation Practices in the Area of Government Administration

First of all, through the construction of Shandong cultural industry data open sharing mechanism, to achieve the open sharing of cultural industry data in Shandong Province, to provide data protection for the cultural industry related enterprises and think tanks in Shandong Province, to actively guide the excavation of the data value of Shandong cultural industry data, and to achieve the capitalisation of Shandong cultural industry data, to explore the establishment of a public service platform of Shandong cultural industry with the culture of Taishan Mountain, Nishan Mountain, Yellow River, Canal Culture, and to lead the cultural industry to integrate with major cultural projects based on digital technology and traditional culture inheritance, red culture, socialist advanced culture. Canal culture, Shandong cultural industry public service platform, Shandong cultural industry public service platform to lead the Shandong cultural industry to major cultural projects, based on digital technology and traditional cultural inheritance, red culture, socialist advanced culture, and promote the supply of high-quality products and services for the cultural industry; through the construction of cultural industry government affairs digitalisation, to create a good business environment of cultural industry; through the construction of cultural industry digital government affairs service platform, to achieve the capitalisation of cultural industry data; through the construction of cultural industry digital government affairs service platform, to achieve the capitalisation of cultural industry data. The construction of digital government service platform for cultural industry to improve the efficiency of government service for cultural industry. Systematically classify the distribution of resources and functions of Shandong's cultural industry, and discover the applied research in the field of digitally empowered governmental management of Shandong's cultural industry through front-line investigation and research and expert interviews.

Secondly, through the digital construction of cultural industry government affairs, realize the full disclosure of information of Shandong cultural industry policies, and actively collect Shandong cultural industry policy suggestions through digital technology, and promote the precise landing of major policies of Shandong cultural industry, for example, through the digital channel of collecting opinions of cultural industry government affairs, improve the

financial policy system of cultural industry of Shandong Province, and form a system of direct funding for major projects of cultural industry in Shandong Province. Direct funding system to guide the head enterprises of Shandong's cultural industry to carry out R&D and innovation of cultural products and services. The development index of cultural industry is incorporated into local performance appraisal mechanism, the means of financial indirect subsidy is strengthened, and the preferential policies on tax are improved, so as to further boost the high-quality development of cultural industry in Shandong.[10] Through the fusion application of cloud computing and artificial intelligence, it can give precise policies to the problems of Shandong cultural industry, and through the way of mobile Internet, it can let the relevant stakeholders of Shandong cultural industry participate in the formulation of policies online and discuss them, and realise the immediacy of soliciting opinions online, and ultimately form the maximum synergy of policy implementation.

Finally, through the construction of digital government service platform for cultural industry, it avoids the enterprises related to cultural industry to run more roads, improves the efficiency of the competent departments of culture, and promotes the landing and implementation of Shandong's cultural industry policies. Through the intelligence of governmental data collection, the policies of cultural industry are systematically sorted out, and the artificial intelligence technology helps cultural enterprises to obtain relevant information in the fields of finance, taxation, science and technology, etc., and automatically pushes the relevant information to the relevant cultural enterprises, so as to reduce the cost of obtaining information for cultural enterprises.

4.2 Digital Innovation Practices in the Cultural Industries

Firstly, it leads the integrated development of Shandong's cultural industry through the innovation of digital technology application. The innovation in technology represented by big data, artificial intelligence, mobile Internet, cloud computing, Internet of Things and blockchain provides application technology guarantee for the digital application of Shandong's cultural industry. By sorting out the practical application fields and implementation effects of digital technology, exploring the types of integrated application of "big intelligence, mobile, cloud, thing and zone" and other technologies, and the path of cultural industry empowering other industries, guiding the relevant parties of cultural industry to make good use of digital technology to achieve high-quality supply of cultural industry products and services. First, through the application of big data technology, collect hotspot information of cultural consumption, data analysis, data mining, provide key information of product research and development and service for the cultural industry market main body, guide the head enterprise of Shandong cultural industry, focus on the "creative transformation and innovative development of excellent traditional culture of the Chinese Bank", red culture, socialist advanced culture and other major topics, in order to achieve high quality supply of cultural industry products and services, Socialist advanced culture and other major topics, relying on the construction of major cultural projects, to enhance Shandong's cultural products and services; secondly, through the application of artificial intelligence technology, to enhance the consumer experience of the cultural industry, through the artificial intelligence semantic recognition technology framework and theme extraction technology, to achieve the content of culture-related products intelligent clustering, to build the knowledge map and database of the content resources of the cultural industry, and to achieve the knowledge node of interconnection of content, deep mining of user intent, accurate understanding of user behaviour, building a multi-dimensional quality evaluation model of content based on deep learning, and realizing dynamic and accurate content dissemination; thirdly, through the application of mobile Internet technology, it realizes the facilitation and rapidity of consumption in the cultural industry, and uses mobile Internet technology as an interface to provide personalized customized services for cultural products through the digital Internet platform of the cultural industry to meet the personalised needs of consumer groups; fourthly, through the application of Internet of Things technology, to make cultural and creative products intelligent, and through the synergy with industrial Internet, to realise the digitalisation and intelligent upgrading of cultural products; through the application of cloud computing technology, to be able to promote the close fusion of technology, products, platforms, and business scenarios, and to encourage the relevant innovative subjects to actively invest in building new scenario construction projects, and to aggregate advantageous resources to form a closed loop, establish industrial clusters or industrial alliances with enterprises as the main body of innovation, create a sticky whole-industry ecosystem, and provide accurate algorithmic services; Fifthly, through the application of blockchain technology, blockchain technology can be deeply fused into the digital culture industry, and digital signatures and timestamps including unique features of the contents and the date of creation can be embedded in the content production link, and cryptography and historical tracing can be achieved through the cryptography and historical tracing technology of the blockchain. Based on blockchain cryptography and historical traceability, the blockchain platform realises electronic deposit to ensure data traceability and anti-tampering. Thus, it protects intellectual property rights technically and promotes the innovative development with intellectual property rights. By doing a good job of protecting intellectual property rights of digital cultural resources, it realises the convergence and sharing of high-quality digital cultural resources, promotes the digital transformation and upgrading of traditional cultural industries, and promotes the benign and orderly development of the new economy.

Secondly, through digital industrialisation of the cultural industry, searching cost, copying cost, transportation cost, tracking cost and verification cost can be reduced. In terms of production factors, digital transformation through R&D and design collaboration, production and manufacturing intelligence, service industry chain extension and other related technologies can enhance operational efficiency, reduce manpower costs and improve management efficiency for enterprises. The digital supply chain of cultural industry is an organisational form that takes customer demand as the

basic orientation, improves quality and feedback efficiency as the basic goal, integrates cultural industry resources as the basic means, and realises efficient collaboration in the whole process of design, procurement, processing, sales and service of cultural products and services. In terms of value creation, the traditional value creation of cultural industry is based on the connotation of cultural products, for example, publishing enterprises are based on the content of books and the prediction of the market. The digital transformation of the cultural industry is to provide personalised, online and convenient instant services through the digital platform, so as to realise the business model from product sales to value-added services. In terms of organisational change, the digital transformation of cultural industry enterprises will create a process, management and authority control system and management system that is integrated with digital technology. Digital transformation, flat online control system, will completely replace the hierarchical management system. Management will be further compressed. R&D, production, service and management synergies will be further tightened. In terms of ecological construction, the digitalisation of the cultural industry is a systematic ecosystem, and the core of the cultural industry is the innovative cultural industry talents, and the elements of the products presented based on the creativity and ingenuity of the talents. The transformation of the elements of the cultural industry is the key to the digital transformation of the cultural industry, and the digitalisation of the elements of the cultural industry and the process of enhancing the value will become an important support for the ecological construction of the cultural industry. Therefore, culture industry ecology is composed of internal ecosystem centred on culture industry practitioners and external ecosystem centred on customers.

Finally, through the digitalisation of the cultural industry, the Internet platform and digital transformation promotion centre will be built with the application of the digital technology of "Da Zhi Mo Yun Yi Zu", so as to build a new industry, a new mode and a new value, and to create a chain of innovation, a chain of information, a chain of value and a chain of capital for the high-quality development of the cultural industry, so as to promote common prosperity through the development of culture. Construct the ecological industrial model of Shandong's cultural industry of "culture+tourism+business" under digital technology. Promote the integrated development of culture and creativity with agriculture, industry, urban and rural planning and other fields. First, "culture + agriculture" under digital empowerment, in the context of rural revitalisation strategy, the application of cultural creativity and agriculture, rural development, to enhance the level of creative design of agricultural products, to create a set of creative agriculture, local non-legacy, farming experience, rural scenery as one of the rural characteristics of the cultural industry zone; second, digital empowerment "Culture + Manufacturing", in the field of deep integration of cultural creativity and industrial Internet, to enhance the creative design of daily consumer goods, and to cultivate industrial heritage, industrial culture + tourism new business; Third, "Culture + Urban Ecology" under digital empowerment, to enhance the living environment with cultural creativity, and to integrate human-centred culture into the cultural industry. Thirdly, "culture + urban ecology" under digital empowerment, with cultural creativity to enhance the living environment, infiltrate the concepts of people-oriented, safe and intensive, ecological and environmental protection, and inheritance and innovation into urban and rural planning, and enhance the aesthetics of urban and rural residents' life and cultural taste. Fourthly, culture empowers the integrated development of other industries, increases the economic added value of other industries, guides other industries to enhance the efficiency of the industry through digital transformation, and the cultural industry itself needs to shift to a low-carbon mode of operation and production, reduce the consumption of resources through the integration of digital technology with traditional publishing and other businesses, and promote the industrial application of digitalisation in the cultural industry.

4.3 Digitising Innovative Practices in the Socio-Cultural Field

Firstly, on the construction of digital platforms for cultural public services, provincial and municipal platforms have been established, and corresponding working institutions have been set up to build a large platform for the management of digital services for public culture that oversees the overall work and links up all parts of the region. Cultural public service digital service platform to museums, libraries, cultural halls and other departments of the digital construction, drive the embedded integration of the cultural industry development, drive more cultural practitioners to achieve entrepreneurship, employment. For example, the digitisation of cultural museums should extend the user port to allow self-media practitioners to produce cultural creative products with relevant content, so that customers can verify and purchase customised corresponding cultural products and services through docking with cultural enterprises.

Secondly, digital urban planning culture should be combined with the city's historical and cultural traditions, in terms of architectural planning and design, urban planning and design, garden and landscape design, make full use of digital technology means to enhance the aesthetics of the life of urban residents, cultural taste, and promote the digitalisation of planning and design to lead the development of the construction industry's green skills; Thirdly, the digitalisation of traditional culture of the agricultural and rural areas should give full play to kite flying, grass and willow weaving, black ceramics, Chinese knot, Lu brocade, carved porcelain, glazed ceramics, craft carpet, musical instrument production, silk flowers, brush production, etc. as the representative of the rich folk culture and catering culture of Shandong's vernacular, to create a set of creative agriculture, local intangible heritage, farming experience, rural landscape as one of the Shandong regional rural characteristics of the culture of the digital industry platform.

Finally, on the digitisation of cultural life, represented by the self media, the traditional food production under short videos has driven the improvement of life taste while promoting the development of benign interaction in the food industry. The digitisation of living scenes, combined with rich content such as local people and red stories, enhances the immersive experience of users under digitisation and further expands the scope of application of the cultural industry.

4.4 Innovative Practices in the Digital Ecology of the Cultural Industry

First of all, build the cultural industry data factor market, through the cultural industry data factor market, realise the capitalisation of cultural industry data, through the synergy between the capital of cultural industry data and intellectual property rights, realise the trading market of cultural industry data assets, so that more cultural industry subjects in Shandong can obtain financial support through the trading of industry digital assets and mortgage financing, so as to push forward the cultural industry in Shandong High-quality development of Shandong cultural industry. The construction of cultural industry data element market includes data property right, data transaction, data security and data supervision, and the most important ways of cultural industry data industry at present include open data resources of the government, crawling network data and customised data collection and other open collection methods. It is difficult to meet the data demand of cultural industry. The establishment of cultural industry data factor market can promote the development of cultural industry data collection, collation, mining and analysis profession, and the related parties of cultural industry can improve the accuracy of their decision-making level by purchasing raw data, purchasing data service and data processing service, etc. The application of blockchain technology can trace back the attribution of data property right and the history of data transaction, so as to guarantee the data property right and data security. The application of blockchain technology can trace back the ownership of data and the history of data transactions, so as to safeguard the issue of ownership interests of data, and the transaction price of data can be estimated through the application of big data technology and artificial intelligence technology, so as to safeguard the fairness of the price of data in the cultural industry. Through the application of cloud computing technology and Internet of Things technology, the storage and application side of cultural industry data can be instantly supervised to guarantee the security of cultural industry data.

Secondly, on the construction of digital governance policy of cultural industry, the digital governance policy of cultural industry should be combined with the actual situation of Shandong, and follow the principle of openness, fairness and impartiality to set up the digital governance policy of Shandong's cultural industry, and the governance system should embody the characteristics of regional differences, and promote the construction of the core function gathering area of the regional cultural industry with the integration of Taishan Mountain, Nishan Mountain, the Yellow River, and the Canal cultural resources and the digital governance policy, and form a policy of Digitalisation of cultural public services to lead the direction of cultural industry development.

Again, the construction of cultural industry network security, specifically including the ideological security of the cultural industry, commercial secret security and personal privacy security, etc., should be through the application of Internet security technology, through the establishment of Shandong cultural industry network security organisation, to carry out regular monitoring of the security of the ideology, commercial secret and personal privacy involved. The construction of cultural industry network security is a fundamental facility to guarantee the construction of digital element market of Shandong cultural industry, and the construction of network security should be designed from two aspects, blockchain technology and industry management. From the technical level, the cultural industry data-based common platform and cultural enterprises digital access, according to the cloud storage, etc. need to be protected by digital security systems, the establishment of a digital transformation security index system, to guide the security system service providers to provide standardised digital security services. From the level of industry norms, the digitisation of the cultural industry requires unified action by the industry, so as to maintain synergy, give full play to the self iterative function of digitisation, and promote the leapfrog and convergent development of the cultural industry, the industry digital norms are a guide to the commercial behaviour of the cultural industry, through which the industry regulates the commercial behaviour of cultural enterprises, and makes clear the industry's behaviour such as plagiarism of information and unauthorised copying of information in the digital transformation of cultural enterprises. penalty system. The construction of cultural industry network security is a fundamental facility to guarantee the construction of digital factor market of Shandong cultural industry, and the construction of network security should be designed from both blockchain technology and industry management. The construction of digital governance policies for the cultural industry should meet the short board of the data element market of the cultural industry, one is to promote the cognitive level of the market players of the cultural industry in the process of the flow of digital elements, to establish the market-based pricing regulation of data elements under the application of big data and other technologies, to solidify the technical foundation of data rights confirmation, transaction and circulation through blockchain, Internet of Things, cloud computing and other technologies, and to form the Shandong cultural industry's relevant institutional documents. Secondly, accelerate the research on the accounting method of data elements of Shandong's cultural industry, and reduce the cost of cultural data circulation. Thirdly, through the application of digital technology, the digital platform of Shandong's cultural industry should be effectively supervised and regulated, preventing its platforms from implementing unfair competition through data monopoly, promoting orderly and reasonable flow of data elements, eliminating illegal data transactions, maintaining fair order in the market, and protecting the legitimate rights and interests of all kinds of subjects.

Finally, the cyberspace community of destiny of Shandong's cultural industry specifically includes cultural government administration, cultural industry associations, cultural enterprises and other industries and individuals such as cultural empowerment. The cyberspace community of destiny requires that the relevant stakeholders of Shandong cultural industry should start from the fundamental interests of cultural industry development, and should give full play to the advantages of digitally-enabled cultural industry through creative technology research and development and standardised policy implementation and application management, and promote the digital empowerment of cultural

industry through digitally-enabled cultural industry, and promote the digital empowerment of cultural industry to achieve the cultural industry to play the significant role of culture in leading the fashion, educating the people, serving the society, and promoting the low-carbon transformation of Shandong's socio-economic. Society, promote the service of low carbon transformation of Shandong society and economy plays a significant role. The construction of the cultural industry cyberspace community of destiny is not only limited to the cultural industry itself, but also covers the whole field of cultural empowerment, therefore, the construction of the cultural industry cyberspace community of destiny should be institutionally designed in three aspects, namely, laws and regulations, industry self-discipline and individual self-discipline. Through the construction of the cultural industry cyberspace community of destiny, it should distinguish the legal rights and obligations between different subjects, clarify its own economic and social responsibilities, and promote the high-quality development of the cultural industry community of destiny.

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