

Research on the Business Model of Beijing Intangible Cultural Heritage Product Quality Traceability Platform

—A Case Study of “GongQi” App

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Abstract

At present, the intangible cultural heritage (ICH) product market is generally facing a trust crisis characterized by difficulty in distinguishing authenticity and chaotic pricing, which seriously restricts the release of market value. Taking the Beijing ICH product quality traceability platform “GongQi” app as the research object, this paper systematically discusses the business model construction of ICH product quality traceability platforms by employing literature research, a questionnaire survey (N = 277), and case analysis methods. The project environment is evaluated through PEST and SWOT analysis, the core value proposition of “One Code for Traceability, Visible Ingenuity” is established by applying STP theory, a marketing mix plan is proposed from the four dimensions of product, price, channel, and promotion, and internal and external risks are identified and addressed. The research findings indicate that “GongQi”, with code-scanning traceability as its core entry and integrating product display and cultural content modules, is expected to respond to consumers’ demand for authenticity verification, provide brand promotion tools for ICH inheritors, and promote the transformation of Beijing ICH products from handmade items to branded products.

Keywords

Intangible Cultural Heritage, Quality Traceability, Business Model, Beijing ICH, Digital Platform

1. Introduction

With the in-depth advancement of the strategies of “Cultural Power” and “Digital

China”, the protection of intangible cultural heritage (ICH) has become an important component of the national cultural strategy. In 2021, the General Office of the CPC Central Committee, General Office of the State Council issued the Opinions on Further Strengthening the Protection of Intangible Cultural Heritage, clearly proposing to promote the digital and branded development of ICH resources¹. However, the current ICH product market is facing a severe trust crisis. Most ICH products are handmade and lack a standardized quality certification system, making it difficult for consumers to distinguish authenticity. Beijing possesses more than 100 ICH projects, including cloisonné, carved lacquer, and Beijing embroidery, with over 10,000 practitioners (Beijing Municipal Bureau of Culture and Tourism, 2022); however, the degree of branding remains generally low. The market urgently needs an authoritative and transparent product quality traceability platform.

In academic research, certain achievements have been accumulated in the field of digital protection of ICH. Yang Hong systematically elaborated on the theoretical framework of ICH digitization (Yang, 2014). Song Junhua and Wang Mingyue pointed out that China’s digital protection of ICH still faces problems such as inconsistent standards and insufficient resource sharing (Song & Wang, 2015). Huang Yonglin and Tan Guoxin argued that digital technology can break through the spatial and temporal limitations of traditional protection (Huang & Tan, 2012). Geng Guohua et al. examined the application of technologies such as 3D modeling and virtual reality in cultural heritage protection (Geng et al., 2025). In the field of product quality traceability, Hu Xiangpei et al. noted that blockchain-based supply chain traceability systems can effectively address pain points such as data tampering and information opacity (Hu et al., 2024). Currently, exploratory cases such as the Xuan paper notarization traceability system, the Shuzhitong platform, and the Baiguwang Chain have emerged in the ICH field, verifying the feasibility of digital traceability². In the field of business models, Osterwalder and Pigneur’s business model canvas decomposes a business model into nine elements, including customer segmentation and value proposition (Osterwalder & Pigneur, 2010). Wei Wei et al. further revealed the economic logic of platform-based business models from the perspectives of value creation and incremental benefits (Wei et al., 2017). Dong Xiaoping, from the perspective of folklore evaluation, pointed out that ICH protection must balance cultural value and standardization (Dong, 2005). Fan Zhou emphasized that business model innovation in the cultural industry requires the unity of cultural and commercial value (Fan, 2021). However, there are relatively few studies combining digital traceability with business models. This study attempts

¹General Office of the CPC Central Committee, General Office of the State Council (2021). Opinions on Further Strengthening the Protection of Intangible Cultural Heritage.

http://www.gov.cn/zhengce/2021-08/12/content_5630974.htm.

²Beijing Municipal Bureau’s website: Beijing Municipal Bureau of Culture and Tourism, 2022-02-14. https://whlyj.beijing.gov.cn/zwgk/xwzx/gzdt/202202/t20220214_2609694.html.

to explore this interdisciplinary area.

2. Methodology

This study adopts a mixed-methods approach, integrating literature research, a questionnaire survey, and case analysis to construct a robust business model.

2.1. Literature Research

A systematic literature review was conducted to establish the theoretical foundation. Peer-reviewed articles and policy documents were sourced from databases such as CNKI and Google Scholar using keywords including “intangible cultural heritage digitization”, “blockchain traceability”, and “platform business model”. This review informed the selection of analytical frameworks. The PEST framework was selected to analyze the macro-environmental viability of the project, SWOT was used to assess the project’s internal and external strategic position, STP was applied to define the target market and unique value proposition, and the 4P framework guided the formulation of the concrete marketing strategy. These four frameworks are widely recognized in strategic management and marketing research for their complementary analytical perspectives, and together they provide the structural inputs for the final business model design. As shown in **Figure 1**, this is the visual logo of the “GongQi” platform.



Figure 1. Logo of the “GongQi” platform.

2.2. Questionnaire Survey

A questionnaire survey was administered to understand consumer behavior and demand for an ICH traceability platform. The survey was conducted using the WeChat “Wenjuanxing” (Questionnaire Star) mini-program from March to April 2026. A convenience sampling method was employed, and a total of 277 valid responses were collected. The questionnaire was designed by the authors based on the

project's objectives and comprised four sections: 1) Basic demographics, including gender, age, occupation, and city of residence; 2) ICH product consumption behavior, including purchase experience, purchase scenarios, purchase channels, and concerns during purchase (with options such as “difficulty in distinguishing authenticity”, “opaque pricing”, and “lack of product information”); 3) Traceability needs and platform expectations, including the impact of traceability information on purchase intention (measured by a single-item question: “If you could scan a code to view the product's origin, inheritor, and craft information, would this increase your purchase intention?” with response options of “significantly increase”, “somewhat increase”, and “no effect”), willingness to use an ICH traceability platform, desired platform features, and usage scenarios; 4) An open-ended question soliciting suggestions and expectations for an ICH product quality traceability platform.

2.3. Case Analysis

A multiple-case study design was employed to draw insights from existing market players. Three benchmark cases were selected for comparison: the Shuzhitong platform, the Zisha-Yi platform, and the Xuan paper notarization traceability system. The selection criteria were threefold: 1) Homogeneity of product/service—the case must involve a digital platform providing authenticity verification for traditional craft products; 2) Market influence—the case must be frequently cited in industry reports or media as an innovative example of ICH digitization; 3) Information accessibility—sufficient secondary data, including news reports and official service descriptions, must be publicly available. The comparison focused on five dimensions: core technology, authenticity assurance mechanism, product category coverage, commercialization pathways, and scalability.

3. Project Environment Analysis and Market Positioning

In the brand name “GongQi”, “Gong” refers to ICH handicraft skills, while “Qi” denotes contract and certificate, conveying the core value of “traceability and trust building”. The founding purposes encompass three aspects: achieving digital traceability and trust reconstruction by drawing on the Xuan paper model of “technical verification plus authoritative endorsement”; empowering ICH practitioners for branded development; and promoting the digital dissemination of ICH culture.

From the perspective of the external environment, at the policy level, the Opinions on Further Strengthening the Protection of Intangible Cultural Heritage and the 14th Five-Year Plan for the Protection of Intangible Cultural Heritage provide strong support for the project³. In 2026, Beijing explicitly proposed launching the construction of the city's digital ICH archive database and implementing key project support plans. At the economic level, the ICH product market has been growing at an annual rate exceeding 15%, with Beijing's annual consumption potential

³Ministry of Culture and Tourism of the People's Republic of China (2021). https://zwgk.mct.gov.cn/zfxgkml/fwzwhyc/202106/t20210609_925092.html (Note: only Chinese official version available, the English title is standardized academic translation).

estimated to surpass 500 million yuan. At the social level, “Guochao” consumption continues to gain momentum, with young consumers pursuing experiences that offer “stories” and “traceability”. However, the branding level of Beijing ICH projects remains low, and the market urgently requires an authoritative traceability platform. At the technical level, mobile internet, QR codes, and H5 technologies are mature; “GongQi” adopts a lightweight solution with a relatively low implementation threshold.

Regarding internal conditions, the project’s strengths lie in its focused functional positioning, in-depth cultural content, lightweight technical solution, and the complementary knowledge structure of the team. Its weaknesses include a weak foundation for resource integration, a lack of operational validation, and an untested commercialization path. Opportunities include the continuous release of policy dividends, government database construction that can reduce content acquisition costs, and lessons drawn from pioneering cases. Threats involve a lengthy trust-building cycle, the possibility that comprehensive e-commerce platforms may rapidly launch similar functions, and the need to cultivate awareness among certain user segments.

In terms of market analysis, the questionnaire survey (N = 277) indicates that the core users are young people aged 19 to 30, with a slightly higher proportion of females, and a significant share of students and freelancers, primarily located in Beijing and surrounding areas. Over 60% of users have purchased ICH products, mainly for tourism souvenirs and gift-giving. The most prominent concerns are difficulty in distinguishing authenticity, opaque pricing, and a lack of product information. More than 70% of users stated that traceability information would increase their purchase intention. Based on STP analysis, the core target market is young people aged 19 to 30, with secondary markets comprising working professionals aged 31 to 40 and ICH enthusiasts. The market positioning is defined as “Beijing ICH Official Cooperative Traceability Platform”, with the core value proposition of “One Code for Traceability, Visible Ingenuity”, concentrating on the vertical domain of “traceability plus culture”, adopting the Xuan paper model to introduce authoritative endorsement, and using “scan to verify” as the core interaction.

In the competitive landscape, Shuzhitong benefits from cultural exchange endorsement but has limited cross-regional expansion capacity; the Xuan paper notarization traceability system is innovative in its notarization endorsement but is restricted to a single category; Zisha-Yi possesses strong technical certification depth but focuses exclusively on purple clay; Baiguwang Chain has extensive experience in large-scale operations; and JD-Lingxi enjoys traffic advantages but is oriented more toward digital assets. Based on this analysis, “GongQi” formulates five competitive strategies: establishing a dual guarantee of “technical verification plus authoritative endorsement”; creating exclusive certification standards tailored to Beijing ICH categories; opening up the entire chain from “traceability as

the entry point to marketization as the exit point”; deeply cultivating Beijing’s local resources with landmarks such as the Temple of Heaven and the Summer Palace as offline contact points; and driving communication through content matrices including short videos. Questionnaire data covering respondent age distribution, ICH consumption obstacles and user platform experience expectation scores are collectively presented in **Figures 2-4**.

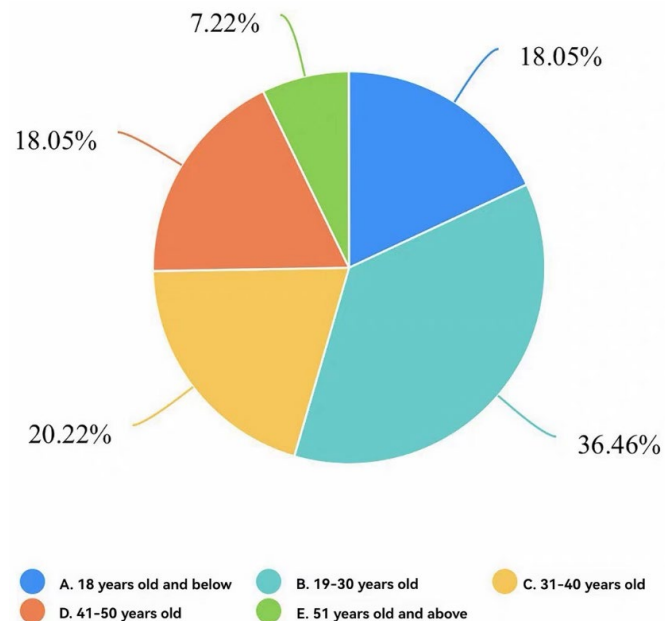


Figure 2. Age distribution of survey respondents.

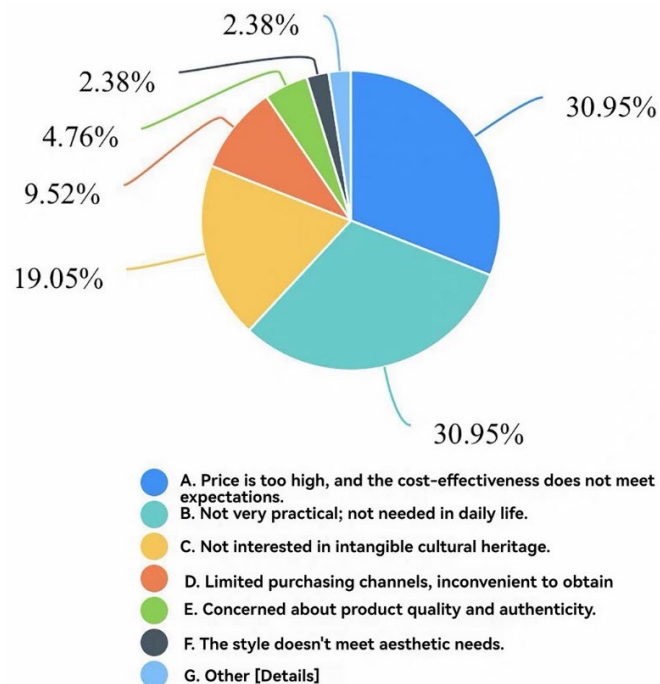


Figure 3. Main restricting factors for ICH product consumption.

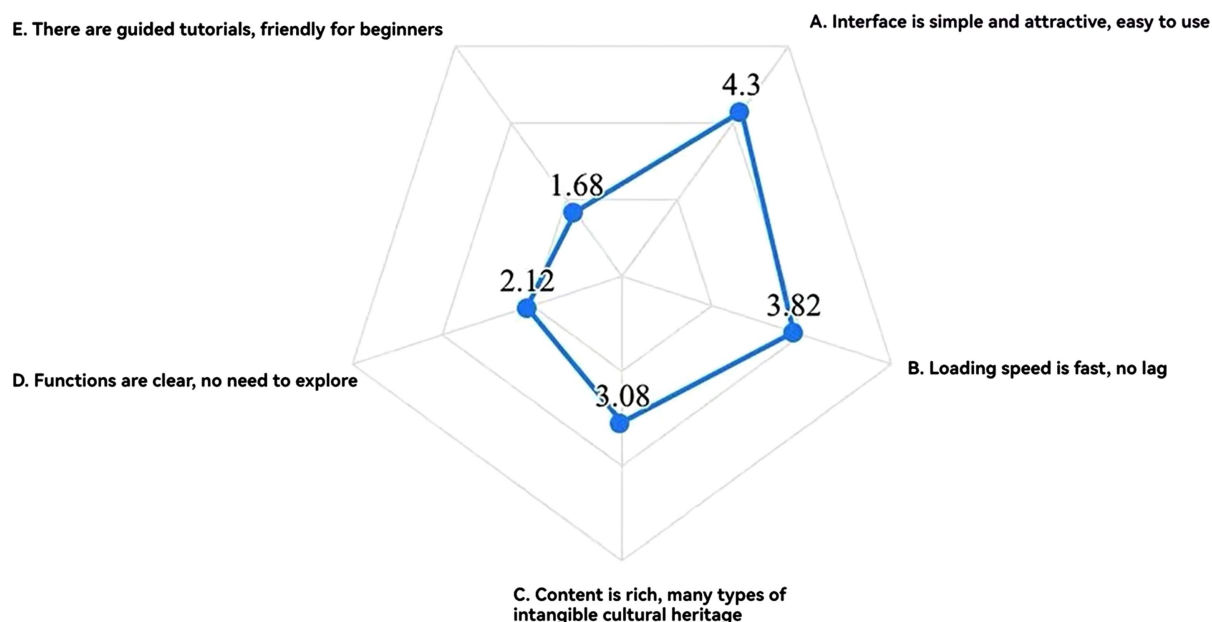


Figure 4. Radar chart of user experience demand scoring.

4. Business Model Design and Implementation Guarantee

In terms of product strategy, “GongQi” designs five functional modules around the principles of being “lightweight, content-rich, and trust-enhancing”. The code-scanning traceability module serves as the app’s core entry point. Each product is bound to a unique QR code; upon scanning, users are directed to an H5-based traceability page displaying inheritor information, production processes, material sources, and cultural narratives. The page incorporates an “accredited body” logo to enhance credibility. The product display module features sales rankings, reputation rankings, and new product rankings, enabling filtering by ICH category and price. The cultural content module includes an “Ingenuity Stories” column offering inheritor interviews and craft documentaries, with the potential to introduce AR craft display functions in the future. The online customer service module connects users with inheritors for direct communication, supplemented by a frequently asked questions database and a quality dispute reporting channel. The backend management module is divided into an inheritor portal and an operations portal. Inheritors can independently upload product information and view scanning data, while the operations team is responsible for reviewing merchant applications, managing ranking algorithms, and handling customer service requests. The technical architecture employs a lightweight “mini-program plus H5” solution; the frontend is developed based on WeChat mini-programs, the traceability page is implemented using H5, and the backend utilizes cloud development technology. In the future, it can be seamlessly upgraded to a standalone app and integrated with advanced modules such as blockchain-based evidence storage. The core interface renderings of the “GongQi” mini-program are displayed in **Figures 5-7**.

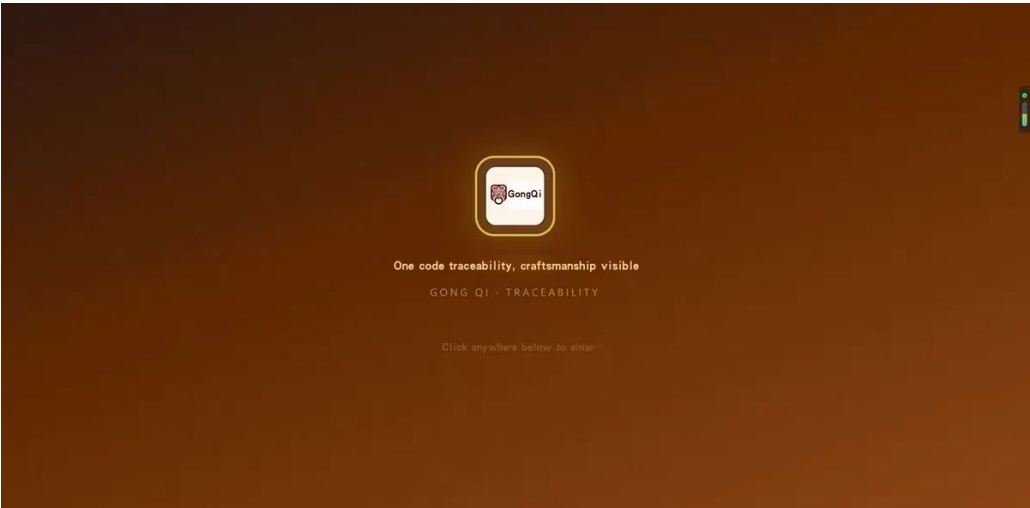


Figure 5. Splash page of the “GongQi” mini-program.

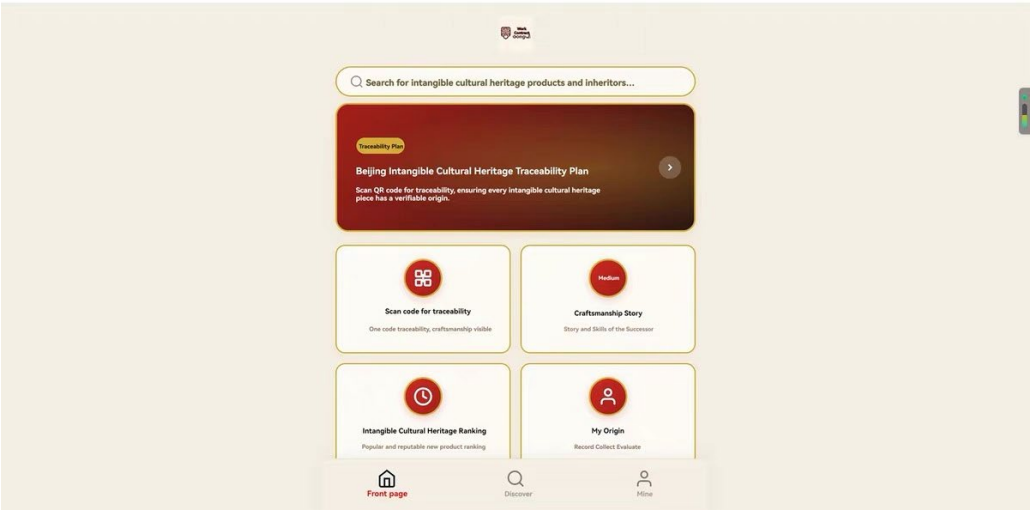


Figure 6. Homepage functional layout of the “GongQi” mini-program.

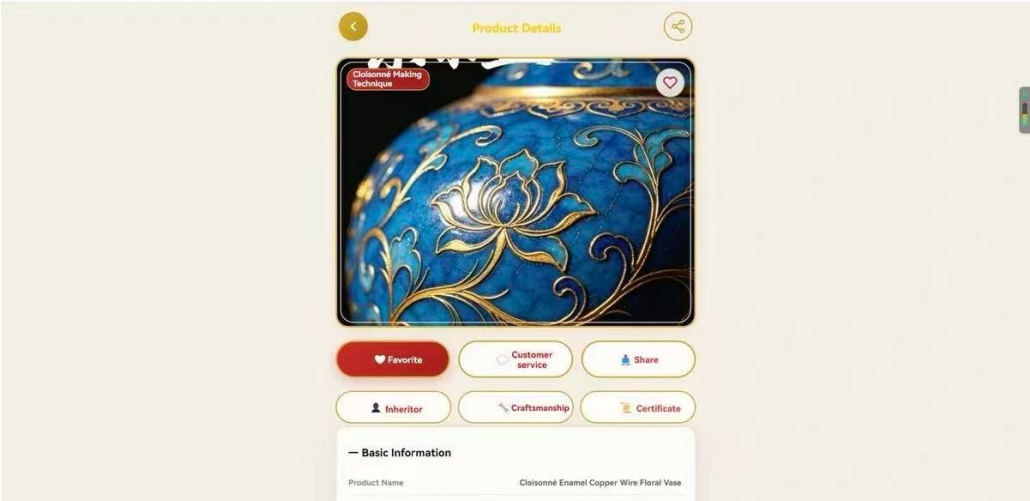


Figure 7. ICH product detail page of the “GongQi” mini-program.

Regarding the phased implementation plan, the project advances in three stages. The first stage (months 1 - 12) constitutes the foundation-building and prototype validation period, primarily encompassing in-depth market research, brand visual design, functional framework construction, traceability page template design, H5 demo version development, and project proposal preparation. The second stage (months 13 - 24) is the product refinement and preliminary validation period, during which the WeChat mini-program version is developed, and one to two inheritors are engaged for small-scale scenario validation using campus and surrounding cultural and creative markets as entry points. The third stage (from month 25 onward) enters the operational promotion and continuous iteration period, gradually expanding partnerships with ICH artisans and product categories, acquiring users through social media operations and offline scenario deployment. The long-term goal is to build an ICH industrial ecosystem encompassing “traceability, promotion, and service”.

In terms of pricing strategy, the C-side is entirely free for all consumers to minimize the barrier to entry. The B-side adopts a progressive strategy of “free first, paid later”, with merchant registration being free for inheritors during the initial phase, and gradually introducing entry service fees and promotion service fees once operations mature. Revenue from cultural and creative co-branding is shared based on sales volume. During the early stage, the project actively applies for government subsidies and university student entrepreneurship support funds. Regarding channel strategy, online efforts focus on operating Douyin, Xiaohongshu, and WeChat Official Accounts, reaching target audiences through short videos on ICH crafts and inheritor live streams, while establishing user communities to accumulate private domain traffic. Offline efforts involve cooperation with ICH experience centers, cultural and creative stores, and scenic spots, deploying “GongQi” traceability QR codes by referencing Shuzhitong’s “ICH plus cultural tourism” model. In terms of promotion strategy, the annual “Beijing ICH Traceability Plan” campaign is launched in collaboration with inheritors for live streaming and short video challenges; new user registration gift packages and “share-for-reward” referral mechanisms are implemented; and university student status is leveraged to carry out “ICH on Campus” activities.

During the project implementation process, various risks must be systematically addressed. Among internal risks, product development and content construction risks are rated as high, requiring the establishment of a dual mechanism of “user testing plus expert review”; all traceability information must be confirmed and signed off by ICH experts or inheritors. Financial and cost control risks are also rated as high, necessitating active applications for policy funding support—such as innovation and entrepreneurship project grants and ICH protection special funds—and the design of a progressive charging strategy. Operational and team capability risks are rated as medium, requiring the use of campus resources and mentor guidance to reduce operational costs, with technical development prioritizing low-code platforms or outsourced services. Among external risks, mar-

ket acceptance and user acquisition risks are rated as high, requiring the adoption of lightweight mini-program entry points to lower user barriers and the implementation of “first-scan gift” campaigns. Competition risks are rated as medium, requiring the project to highlight the credibility advantage of “Beijing ICH official cooperation” and the storytelling advantage of a university student entrepreneurship initiative. Information authenticity and cultural misreading risks are rated as high in impact but low in probability, requiring the formation of an ICH expert advisory panel to review all content, mark information sources, and establish a rapid response mechanism. Through phased investment and progressive commercialization strategies, the overall project risk is expected to be controllable.

5. Conclusion

Taking the “GongQi” project as the research object, this paper systematically explores the business model construction of Beijing’s ICH product quality traceability platform and draws four main conclusions. First, the “GongQi” project enjoys a favorable policy environment and market opportunities. The state and Beijing Municipality continue to increase support for ICH digitization, and pioneering cases such as the Xuan paper notarization traceability system and Shuzhitong’s Qingtian stone carving initiative verify the market feasibility of ICH traceability. Second, the target market is clearly defined, and the value proposition is distinct, establishing a market positioning with young people aged 19 to 30 as the core target market and “One Code for Traceability, Visible Ingenuity” as the core value proposition. Third, the business model demonstrates feasible and differentiated advantages in its design, constructing a complete scheme across the four dimensions of product, price, channel, and promotion, adopting a bilateral market pricing strategy with a free C-side and progressive B-side charging, and advancing implementation in three stages. Fourth, the identified risks are matched with clear mitigation measures, and through a phased investment and progressive commercialization strategy, the overall risk to the project is expected to be controllable.

This study also has certain limitations. The questionnaire employed a convenience sampling method with a sample size of 277, and the user profile may not be fully representative of the broader population. The details of the technical scheme need to be deepened in conjunction with specific development practices. Future work may proceed in the following directions: completing the H5 demo version development and user testing according to the first-phase plan, and verifying core hypotheses through empirical data; exploring the in-depth application pathways of cutting-edge technologies such as blockchain and artificial intelligence in the field of ICH traceability; and conducting empirical research on user trust mechanisms and consumption decision-making behaviors on ICH traceability platforms. The project discussed in this paper is about to enter the first phase of practical implementation, and the team will continue to explore the cultural industry field with the knowledge accumulated through this research.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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