

Dual-Use Innovation for Grassroots Emergency Governance: The Shaxian Snack Emergency Food Truck System under the China Common Benefit Project

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Abstract— This study systematically elaborates on the "China Common Benefit Project" — a dual-use grassroots emergency response system that integrates the Shaxian Snack culinary network with multifunctional smart emergency food trucks. Leveraging nearly 100,000 Shaxian Snack storefronts nationwide as its foundation and 100,000 multifunctional smart emergency food trucks as mobile platforms, the project achieves full coverage across all 2,844 county-level administrative divisions in China, establishing a three-in-one grassroots emergency response framework of "peacetime service, emergency response, and wartime support." The research demonstrates that this project precisely aligns with the intersection of three major national strategies—low-altitude economy, cross-strait integration, and emergency governance—leveraging a RMB 1 billion renovation investment to activate an annual catering consumer market exceeding RMB 55 billion. Through the integrated upgrading of three business formats—"fixed storefronts + mobile food trucks + virtual storefronts"—the project constructs a novel paradigm for grassroots security governance with Chinese characteristics. The project innovatively introduces the Interlinked Blockchain Network (Elastic Blockchain) and DOSI digital identity technology systems, utilizing RWA/RDA digital asset certificates to achieve deep integration of physical assets with the digital economy. It further establishes a public service sector commercial macro-model covering 26 constituent departments of the State Council, the World Health Organization, international humanitarian relief organizations, and other diverse stakeholders. The project has achieved nine major innovative breakthroughs: model innovation, technological innovation, cross-strait integration innovation, digital asset innovation, standards innovation, inclusive business innovation, public service ecosystem innovation, cross-sectoral integration innovation, and infrastructure innovation. This paper argues that the "China Common Benefit Project" realizes a historic leap from a national snack brand to national security infrastructure, contributing a Chinese solution to global emergency governance.

Keywords— Dual-use (peacetime-emergency integration); Shaxian Snacks; emergency food trucks; low-altitude economy; cross-strait integration; digital assets; RWA (Real World Assets); emergency governance.

I. INTRODUCTION

1.1 Research Background

The year 2026 marks the inaugural year of the 15th Five-Year Plan. The Chinese government has rolled out

intensive supportive policies in areas such as the low-altitude economy, emergency management, cross-strait integration, and the digital economy, creating an unprecedented policy window for the integrated

development of strategic livelihood projects and emergency infrastructure. At the same time, China's grassroots emergency response system continues to face systemic weaknesses, including inadequate "last-mile" coverage, a severe shortage of emergency medical resources, and a cumbersome mechanism for transitioning between peacetime and emergency operations. Establishing an efficient, synergistic bridge between commercial networks and the emergency response system has thus become a critical issue in the field of public safety governance.

After nearly 30 years of development, Shaxian Snacks has built a vast commercial network that spans the nation and connects urban and rural areas. The brand boasts nearly 100,000 stores nationwide, with an annual turnover exceeding RMB 55 billion, and drives employment for over 300,000 people. Beloved within China, Shaxian Snacks has also spread its appeal overseas, with stores in 79 countries and regions and a total of 238 international outlets[1]. The network value and brand momentum embedded in this "national snack" brand provide a unique industrial foundation for upgrading it into a strategic national infrastructure.

1.2 Research Questions and Significance

This paper aims to answer the following core questions: How can the commercial network of Shaxian Snacks be systematically transformed into a grassroots emergency response infrastructure that integrates peacetime and wartime functions? Is such a transformation feasible across technical, policy, and economic dimensions? What exemplary significance does this model hold for China's emergency governance system and the cross-strait integration process?

The significance of this study is threefold. First, it proposes a paradigm of "commercial network-to-emergency infrastructure" conversion, offering a new pathway to enhance grassroots emergency capabilities. Second, it explores the systematic implementation of the "dual-purpose integration for peacetime and emergency" concept within the catering sector, enriching emergency management theory. Third, it provides a practical, actionable framework for cross-strait industrial integration.

1.3 Research Method and Framework

This study adopts a combined approach of case study and systematic analysis. Using the proposal for the "China Common Good Project" as the core text, it integrates policy document analysis, industrial data analysis, and technical feasibility assessment. The systematic discussion unfolds across four dimensions: strategic positioning, systemic architecture, implementation pathway, and feasibility demonstration.

II. STRATEGIC POSITIONING AND POLICY ALIGNMENT ANALYSIS

2.1 Project Positioning: A "Three-in-One" Grassroots emergency Response Network

Taking root in nearly 100,000 Shaxian Snacks stores nationwide and deploying 100,000 multi-functional intelligent emergency catering vehicles, the "China Common Good Project" will cover all 2,844 county-level administrative regions in China. It aims to construct a "three-in-one" grassroots emergency response network that "serves during peacetime, responds during emergencies, and supports combat operations." This strategic positioning achieves a leap from a single catering function to a multi-functional, peacetime-emergency integrated platform. By integrating daily operations with emergency response, every store and every vehicle becomes not only a commercial unit but also an emergency response node.

The project's core targets clearly outline its strategic ambition: deployment of 100,000 mobile catering vehicles, full coverage of 2,844 county-level administrative regions, a total renovation investment of RMB 1 billion, an estimated annual revenue exceeding RMB 55 billion, employment for over 300,000 people, participation of 144,000 Taiwanese-invested enterprises, and a long-term global vision of 3 billion virtual store owners. These indicators collectively point to a fundamental strategic transformation—upgrading the commercial network of a "national snack" into a component of the national emergency infrastructure.

2.2 Intersection with Three Major National Strategies

This project aligns precisely with three major national strategic directions, creating a policy synergy effect.

First, the Low-altitude Economy Strategy. In 2024, the low-altitude economy was included in the government work report for the first time. In November 2025, the General Office of the State Council issued the "Implementation Opinions on Accelerating Scenario Cultivation and Opening to Promote Large-Scale Application of New Scenarios," explicitly designating the low-altitude economy as a key area for cultivation. According to the Civil Aviation Administration of China, the market size of China's low-altitude economy reached RMB 1.5 trillion in 2025, with projections exceeding RMB 3.5 trillion by 2035[2]. By the first half of 2025, the total number of registered drones nationwide exceeded 2.726 million. In February 2026, the State Administration for Market Regulation, along with ten other departments including the Central Air Traffic Management Committee Office and the National Development and Reform Commission, jointly issued the "Guidelines for the

Construction of a Low-Altitude Economy Standards System (2025 Edition),” which aims to establish the system by 2027 and exceed 300 standards by 2030. This project, using 100,000 emergency catering vehicles, each equipped with high-rise firefighting drones, represents an innovative practice of deep integration between the low-altitude economy and emergency rescue.

Second, the Cross-Strait Integration Strategy. In April 2026, the Taiwan Affairs Office of the CPC Central Committee authorized the release of ten policy measures to promote cross-strait exchanges and cooperation[3]. The 15th Five-Year Plan explicitly calls for “improving policies and measures to promote cross-strait exchanges and cooperation, optimizing the business environment, strengthening industrial cooperation, and expanding the benefits and sense of gain among Taiwanese compatriots and enterprises.”[4] In 2025, 2,612 new Taiwanese-invested enterprises were established in Fujian, a year-on-year increase of 6.8%. The construction of the Cross-Strait Integrated Development Demonstration Zone is advancing with more concrete measures and greater intensity to meet high standards[5,6]. With the participation of 144,000 Taiwanese enterprises as a structural foundation and the Shaxian Snacks brand as a bond, this project serves as an innovative vehicle for cross-strait industrial integration.

Third, the Emergency Governance Strategy. 2026 is the decisive year for completing the Three-Year Action Plan for Fundamental Safety Production Improvement and the inaugural year of the 15th Five-Year Plan. Core directions for emergency management include promoting governance transformation, deepening smart empowerment, strengthening capacity building, and consolidating the grassroots foundation. The 18th Straits Forum—Cross-Strait Emergency and Fire Protection Integrated Development Forum was successfully held in Shaxian District in June 2026, where nearly 450 experts and scholars from across the strait discussed topics such as the integration of the emergency disaster prevention industry and the business model of the Shaxian Snacks multi-functional emergency firefighting action vehicle.

III. INDUSTRIAL FOUNDATION AND PRACTICAL PAIN POINTS

3.1 The Network Value of Shaxian Snacks: From “National Snack” to Strategic Asset

The development history of Shaxian Snacks is itself an industrial evolution from grassroots spontaneity to systematic upgrading. Early Shaxian Snacks outlets were predominantly family-run shops, pioneering a value-for-money positioning of “one yuan to enter, two yuan to eat your fill, and three yuan to eat well,” securing a firm

foothold in the catering market. Subsequently, the brand has undergone a continuous transformation towards “standardization, chain operation, industrialization, internationalization, and digitalization.”

In terms of standardization, eight provincial and municipal local standards, such as the “Operational Specifications for Shaxian Snacks Catering Outlets,” and 25 group standards for core products, like “Shaxian Snacks Steamed Dumplings,” have been issued. For chain operation, a four-in-one service mechanism has been established and refined, comprising the Party Working Committee, the Management Committee, the Trade Association, and the Group Corporation, forming a chain development model of “head office—brand cooperation subsidiary—terminal store,” with 8,818 standardized stores. For industrialization, a 1,600-mu (approx. 107-hectare) Shaxian Snacks Three-Industry Integration Demonstration Park has been built, attracting 26 related enterprises and radiating to drive the development of 106 food enterprises across the district. In terms of digitalization, a brand management system has been established, enabling the online authorization of over 4,000 households and serving more than 40,000 users.

This industrial foundation implies that Shaxian Snacks is not merely a catering brand, but a distributed commercial network covering all 2,844 county-level administrative regions. Each store is a physical node; each operator is a localized service provider. This network characteristic of “distribution, wide coverage, and deep roots” aligns strongly with the core needs of an emergency response system: “rapid response, proximity deployment, and localized service.”

3.2 Five Structural Weaknesses in the Grassroots Emergency System

Despite continuous improvements in national emergency response capabilities, systemic weaknesses persist at the grassroots level.

First, inadequate “last-mile” coverage in emergency response. The coverage rate of emergency supply reserves in remote western regions is below 30%, and many counties nationwide still lack professional fire and rescue force coverage. Second, severe shortage of emergency medical resources. By the end of 2025, the Red Cross Society of China had deployed a cumulative total of over 86,000 AEDs nationwide, equating to only about 15 per 100,000 people, far below the expert-recommended standard of 100–200 per 100,000 people. Third, a cumbersome “peacetime-emergency transition” mechanism. Existing emergency resources are often “purpose-built and dedicated,” leading to low daily utilization rates and high maintenance costs. Fourth, the

lack of a mature cross-strait emergency coordination mechanism. There is significant room for integration in technical standards, equipment mutual recognition, and joint drills between cross-strait emergency rescue forces. Fifth, insufficient emergency support capacity at transportation hubs. The nation's 513 general aviation airports, major coastal ports, and key passenger transport centers generally lack emergency food and beverage supply facilities.

These weaknesses reveal the limitations of a traditional emergency system construction model that relies solely on government investment, facing challenges of high cost, slow coverage, and difficult maintenance. Transforming a mature commercial network into emergency infrastructure offers an innovative path of "sustaining emergency response through commerce and revitalizing commerce through emergency response."

IV. THE ACTION CATERING VEHICLE SYSTEM: ARCHITECTURE, FUNCTIONS, AND DEPLOYMENT

4.1 Design Logic of the "Dual-Use for Peacetime and Emergency" Multi-Functional Platform

The core design philosophy of the action catering vehicle system is "one vehicle, multiple capabilities, integrating peacetime and emergency use." Each vehicle integrates eight functional modules, making it a commercial catering unit during normal times and an emergency response node during crises.

The Medical First Aid Module is equipped with an AED and a first-aid kit. Upon full deployment of 100,000 vehicles, the national AED density will increase from approximately 15 per 100,000 people to about 70, significantly narrowing the gap with international standards. The Firefighting Drone Collaboration Module is equipped with two high-rise firefighting drones, operated in accordance with the "Specification for Operation and Maintenance Management of Fire Rescue UAVs" (T/JSSAE 016-2025). The Emergency Communication Module integrates a base station server and satellite communication, ensuring communication links under extreme conditions of road disruption, power outage, and network failure. The Emergency Power Supply Module is equipped with a lithium battery pack and mobile power source to support temporary resettlement sites. The Data Cloud Platform Module utilizes optical sensors and fire spectrum encryption technology for early fire warning and precise analysis. The Smart Utility Pole Module integrates lighting, surveillance, broadcasting, and information release functions, serving as a temporary command node. The Livelihood Service Module provides regular services

like meal delivery for the elderly and nutritious meals for children, as well as emergency support. The National Defense Mobilization Module assumes responsibilities for war reserve material storage and civil defense liaison.

This design upgrades each vehicle from a simple "mobile kitchen" to a "mobile emergency station," achieving a geometric increase in functional density.

4.2 Tiered Deployment and Full Coverage Pathway

The project takes 2,844 county-level administrative regions as the basic coverage unit, implementing tiered deployment based on factors such as population density, geographic conditions, and disaster risk levels. The first tier will cover approximately 500 high-disaster-risk districts and counties, deploying 20,000 vehicles. The second tier will cover about 1,000 densely populated districts and counties, deploying 40,000 vehicles. The third tier will cover roughly 1,344 general regions, deploying another 40,000 vehicles.

Building on this foundation, the project extends deployment to key transportation hubs and emergency nodes. Emergency vehicle supply points will be set up at 513 general aviation airports, with 2–4 vehicles per airport, forming a three-dimensional emergency support system of "air delivery + ground food supply." Vehicles will be deployed at major national ports to provide hot meal support for maritime rescue, fishing vessel crews, and stranded passengers. Deployment at key national passenger transport centers will enable a "30-minute emergency food supply response." This integrated "land, sea, air, and space" deployment plan extends the emergency catering support network from the ground to the sky and sea.

4.3 Technical Support: Quantitative AI, DePIN, and Zero-Knowledge Proofs

The technical backbone of the action vehicle system includes three cutting-edge technologies. A Quantitative AI Decision System (AlphaFin) builds a precise quantitative trading and decision-making model, providing sustainable endogenous capital momentum for project development. A Drone DePIN Mobile Computing Node Network enables drone swarms to serve as both physical service carriers and distributed edge computing nodes, facilitating the efficient sharing and value realization of idle computing power. Zero-Knowledge Proof (zk-SNARKs) Blockchain Charitable Smart Contracts use zero-knowledge proofs to ensure privacy, with smart contracts mandating that a portion of the project's net profit is directed into disaster prevention and mitigation public welfare initiatives.

Firefighting drones will be subject to an annual mandatory inspection system[7]. Core inspection items cover the flight control system (referencing the DO-178C aviation software standard, with a logic error detection rate >95%), battery safety (thermal runaway protection meeting the GB 38031-2020 standard)[8], environmental adaptability (extreme environment tests such as salt spray corrosion protection and high/low temperature tolerance)[9], and communication links (electromagnetic compatibility tests). This mechanism draws on the pilot experience in Shenzhen, where a “policy-technology-ecology” linkage achieved a 67% reduction in airport interference incidents and an industrial chain output value exceeding RMB 48 billion.

V. INTEGRATION AND UPGRADING OF THREE STORE TYPES: FROM PHYSICAL NETWORK TO DIGITAL ECOSYSTEM

5.1 The Three-Dimensional Format Architecture of “Fixed + Mobile + Virtual”

The most innovative architectural design of the “China Common Good Project” is the integrated upgrading of three business formats: “fixed stores + action vehicles + virtual stores.” The nearly 100,000 fixed stores serve as brand flagships, emergency material reserve centers, and training bases. The 100,000 action vehicles serve as mobile service, emergency response nodes, and mobile data terminals. The 3 billion virtual stores (digital) act as a carrier for online services, digital assets, and remote emergency dispatching.

These three store types achieve full-scenario coverage from physical to digital space: fixed stores provide in-depth services and material reserves, action vehicles provide mobile services and rapid response, and virtual stores offer borderless services and digital asset operations. Data interoperability, complementary functions, and shared value among the three build a three-dimensional commercial and emergency service network.

5.2 Embedding Emergency Functions in Fixed Stores

The upgrade plan for fixed stores involves three levels. Standardized renovation includes unified VI (Visual Identity), unified menus, and unified operating standards, equipping stores with an emergency supply reserve area (AED, first-aid kit, emergency lighting, communication equipment), and installing digital terminals (smart POS, QR code ordering, data acquisition). Emergency function embedding involves establishing a “Community Emergency Contact Point” at each store, with staff serving concurrently as “community emergency volunteers,” and the store itself functioning as a “micro emergency supply

reserve station.” The training system development involves 100,000 staff members receiving basic national defense and emergency response training (at least 40 class hours annually), covering first aid skills, firefighting skills, air defense and disaster prevention knowledge, and civil defense liaison duties.

This model of “the store as a classroom, the staff as instructors, and activities as drills” embeds emergency capacity building into daily commercial operations, achieving a “low-cost, wide-coverage, and sustainable” improvement in emergency preparedness literacy.

5.3 Virtual Stores: An Inclusive Business Innovation Where the C-End Customer is the “CEO”

The virtual store is the most disruptive innovation of the “China Common Good Project.” Its core logic is that every C-end consumer can become an “owner” and “CEO” of a virtual store. Through the digital platform, consumers do not need to invest in a physical storefront or bear high rent and labor costs. Using only their digital identity, they can claim a virtual store franchise, enjoying brand authorization, revenue sharing, and digital asset rights.

This model upgrades “consumption behavior” to “business participation” and transforms “customers” into “partners,” truly realizing an inclusive business ecosystem where everyone can start a business and everyone is a store owner. The project’s long-term vision is to gather 3 billion virtual store owners globally. Its feasibility rests on the foundation of over 5 billion internet users worldwide, a zero-barrier entrepreneurship model, the national brand power of Shaxian Snacks, and an RWA/RDA digital asset incentive mechanism.

The core rights of virtual store owners include revenue rights, digital asset rights, brand licensing rights, governance participation rights, and emergency contribution rights. Owners can participate in platform governance decisions—including new product R&D directions, public welfare fund allocation, and regional pricing strategies—through their certificate holdings, forming a community ecosystem of “co-builders” rather than mere “users.”

VI. CROSS-STRAIT SYNERGY AND THE NATIONAL CHAIN CATERING EMERGENCY ALLIANCE

6.1 Participation Architecture for 144,000 Taiwanese-Invested Enterprises

Cross-strait synergy is a crucial strategic dimension of the “China Common Good Project.” The project has designed a four-tier participation architecture for Taiwanese enterprises: a strategic investment tier (equity investment

of RMB 10–100 million, gaining board seats and priority supply rights); an industrial collaboration tier (supply chain cooperation of RMB 1–10 million, obtaining long-term procurement contracts and technology dividends); a store operation tier (vehicle adoption and brand licensing of RMB 100,000–1,000,000, earning operational income and brand revenue share); and a youth entrepreneurship tier (co-pilot store manager positions targeting Taiwanese youth and second-generation mainland spouses, offering salary and equity incentives).

The project company's equity structure is designed as follows: Shaxian Snacks Group 30%, a consortium of Taiwanese-invested enterprises 25%, Tong Yuzhou Digital Finance 20%, social capital/industrial funds 15%, and the management team 10%. Specific pathways for Taiwanese enterprise participation include a "one-to-one" adoption, donation, and co-building model; the establishment of a "Cross-Strait Common Good Industrial Fund" (initial scale of RMB 5 billion, with a subscription ratio from Taiwanese enterprises of no less than 40%); and technical cooperation where Taiwanese companies provide core components like wafer-level MEMS sensors and edge computing chips.

A coordinated credit granting system by cross-strait financial institutions covers financing for fixed stores (inclusive micro and small loans from large state-owned banks, RMB 100,000–500,000 per store, with a total scale of RMB 50 billion), special financing for action vehicles (vehicle purchase loans of RMB 50,000–100,000 per unit, with a 2% government interest subsidy), and cross-strait financial cooperation (participation of Taiwanese-funded banks in credit granting and pilot cross-border settlement using digital currency).

6.2 National Chain Catering Emergency Alliance

With a network scale of nearly 100,000 stores, Shaxian Snacks has a unique advantage to lead the national chain catering industry in participating in the emergency system construction. The project proposes establishing a "National Chain Catering Emergency Alliance" to integrate dispersed catering networks into a coordinated emergency response force.

Alliance members encompass several well-known brands: Shaxian Snacks (nearly 100,000 stores) as the core leader; Mixue Bingcheng (approx. 44,000 stores) as emergency water supply and cooling material stations; Lanzhou Beef Noodles (over 50,000 stores) providing hot meals and ethnically characteristic emergency food; McDonald's China (over 7,700 stores) offering international standards and children's emergency meal kits; and Master Kong and Uni-President, providing emergency convenience food and drinking water supplies.

The deep participation of two renowned Taiwanese-invested enterprises, Master Kong and Uni-President, is particularly noteworthy. Master Kong has already established an "Emergency Relief Vehicle" system and has long been committed to emergency rescue public welfare. Cooperation models include emergency food supply collaboration, emergency relief vehicle coordination, co-branded emergency meal kit development, and supply chain resource sharing. Uni-President has also performed outstandingly in emergency disaster relief, donating significant quantities of emergency supplies in multiple disasters. The participation of these two enterprises will further strengthen the project's cross-strait integration demonstration effect and emergency support capacity.

The Alliance has established a tiered response mechanism: Level I (Local)—local stores respond to community-level emergencies, providing first-aid kits and temporary shelter; Level II (Regional)—the regional alliance responds to district/county-level disasters, providing hot meal supply and material assembly; Level III (Cross-Regional)—the national alliance responds to provincial-level or above disasters, enabling cross-provincial dispatching and central kitchen support.

VII. THE RWA AND RDA DIGITAL ASSET CERTIFICATE SYSTEM

7.1 A Paradigm Shift from Physical to Digital Assets

RWA (Real World Asset) refers to the digitalization and tokenization of physical assets such as vehicles, stores, and supply chains through blockchain technology, enabling on-chain ownership confirmation, fractional trading, and value circulation. RDA (Real Digital Asset) refers to the securitization of digital assets like operational data, user points, brand IP, and cultural content into tradable and circulable digital rights certificates.

The core value of this digital asset system lies in transforming previously indivisible and illiquid physical assets into divisible, tradable, and circulable digital rights, significantly enhancing asset liquidity and value discovery efficiency. There are existing precedents for RWA in the catering supply chain sector, such as the "AI-driven smart catering supply chain platform" co-developed by Reitar LogTech and Xianmu Technology[10]. The Shanghai Data Exchange has also pioneered the RDA paradigm to unlock the value of data elements.

7.2 Asset Types and Issuance Scale

The project's RWA asset types include: vehicle revenue rights ($100,000 \text{ units} \times \text{RMB } 500,000 = \text{RMB } 50 \text{ billion}$, distributing 5% of vehicle revenue quarterly); store operation rights ($100,000 \text{ stores} \times \text{RMB } 100,000 = \text{RMB } 10 \text{ billion}$).

10 billion, distributing annual dividends); supply chain assets (central kitchens, cold chain logistics, and other infrastructure, RMB 5 billion, generating rent and operational income); and drone assets (200,000 units × RMB 50,000 = RMB 10 billion, generating service fees and emergency subsidies).

RDA asset types include: food-themed digital collectibles (10 million copies, for brand promotion and user engagement); emergency reward points (10 billion points, for consumption incentives and public welfare redemption); carbon credit certificates (5 million tons, for carbon trading and ESG disclosure); and data usage rights certificates (issued on demand, for data service revenue).

The technical architecture adopts a hybrid model of a consortium blockchain (PBFT consensus) and a public blockchain bridge, utilizing DID (Decentralized Identifiers) to bring all devices, personnel, and assets onto the chain. Smart contracts enable automatic profit sharing, auditing, and compliance, while zero-knowledge proofs (zk-SNARKs) ensure the protection of commercial secrets.

VIII. THE PUBLIC SERVICE SECTOR BUSINESS MEGAMODEL

8.1 Strategic Upgrade from Commercial Loop to Ecosystem Loop

The public service sector business megamodel of the “China Common Good Project” is the core innovation distinguishing it from traditional commercial projects. This model uses 100,000 action vehicles as physical touchpoints, nearly 100,000 Shaxian Snacks stores as service nodes, and 3 billion virtual store owners as a digital ecosystem, shaping the emergency catering network into a super-interface connecting governments, international organizations, industry, academia, and social forces.

This model encompasses ten major cooperation directions: research funding applications from the State Council’s 26 constituent departments and 14 directly affiliated institutions; cooperation with the World Health Organization (WHO); economic and industrial cooperation with the National Pet Alliance; vegetarian supply chain cooperation with Buddhist and Taoist temples nationwide; halal food supply chain cooperation; joint construction of UN marine biodiversity emergency rescue ports; collaboration with the national non-profit organization system; international emergency training schools with humanitarian aid organizations; EOD (Emergency Operations and Disposition) emergency catering projects with the National Funeral Association; and computing

power support from graduate students and computer labs at 2,897 universities across the country.

8.2 A Multi-Stakeholder Value Co-Creation Mechanism

On the government front, the project will apply for research funding and policy support from 26 constituent departments and 14 directly affiliated institutions, including the Ministry of Emergency Management, the National Development and Reform Commission, the Ministry of Science and Technology, and the Ministry of Industry and Information Technology. Taking the Ministry of Emergency Management as an example, research will focus on improving grassroots emergency capabilities, constructing dual-use public facilities for peacetime and emergency, and mechanisms for the rapid allocation of emergency supplies. The goal is to secure cumulative central ministry research funds and special appropriations of no less than RMB 150 million within three years.

At the international organization level, cooperation with the World Health Organization (WHO) will involve food safety standard alignment, foodborne disease surveillance, and the formulation of emergency nutritional meal standards. (The China National Center for Food Safety Risk Assessment has held the status of a WHO Collaborating Centre since 1981.) Collaboration with the United Nations will involve joint construction of marine biodiversity emergency rescue ports. (China has signed the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction.) Cooperation with international humanitarian aid organizations, such as the International Committee of the Red Cross, will lead to the establishment of international emergency training schools.

At the industry level, the project will collaborate with the National Pet Alliance to develop emergency pet meals and pet-friendly vehicles, serving a community of 126 million pet owners; cooperate with Buddhist and Taoist temple vegetarian supply chains to develop pure vegetarian emergency meals; work with halal food supply chains to cover the five northwestern provinces and Muslim markets along the Belt and Road; and partner with the National Funeral Association on an EOD emergency catering project.

At the academic level, the project will cooperate with 2,897 universities nationwide, opening virtual store entrepreneurship opportunities to graduate students and tapping into university computer lab computing resources to support the AI emergency decision-making system.

8.3 Deep Integration of Public Service and Commercial Sustainability

The core logic of the public service sector business megamodel is to use the emergency catering network as a nexus to systematically integrate decentralized public service demands across various fields, forming a full-chain commercial ecosystem of “policy funding—international standards—industrial synergy—academic support—social services.”

In terms of economic contribution, the cumulative revenue from various cooperation directions is projected to reach RMB 9.4 billion over three years. This includes annual revenue from game IP collaborations exceeding RMB 2 billion, film and television IP collaborations exceeding RMB 1.5 billion, halal operations exceeding RMB 2 billion, and pet-related operations exceeding RMB 1 billion. These revenues not only support the project’s commercial sustainability but are also directed back into disaster prevention and mitigation public welfare initiatives through a smart contract mechanism, forming a positive feedback loop of “commercial profit—public welfare investment—social value.”

IX. FEASIBILITY ANALYSIS AND RISK MITIGATION

9.1 Technical Feasibility: The Technical Foundation of the Internet of Blockchains and DOSI

The technical feasibility of the “China Common Good Project” is built upon the Internet of Blockchains (IBN) and the DOSI digital identity technical framework. The Interlinked Blockchain Network (IBN) is a composite network where multiple blockchains are interconnected through mechanisms such as elastic nodes, digital address resolution, and space-based communication links. The Elastic Blockchain (EB) is a blockchain system supporting multiple node identities, dynamic chain aggregation, and on-demand functional switching, for which a national invention patent has been granted (Patent No. ZL202210074559.3).

DOSI (Digital Open System Interlink Model) is a systematic engineering architecture centered on digital identity, employing a layered and open methodology to achieve decentralized trust. Its ten-layer protocol stack maps people, organizations, devices, and AI from the real world into unified digital identities (DOID/DID). Through cryptography, blockchain, and programmable relationship mechanisms, it enables autonomous identity control, trusted mutual recognition, and cross-chain circulation. The core innovation of DOSI lies in its “Relationship Set Layer (L4),” which encodes complex social

relationships—such as guardianship, contracts, and collaboration—into machine-executable rules through a “public key + relationship mask” mechanism, achieving “programmable trust.”

The specific applications of this technical system in the project include: digital identity management for 100,000 vehicles and 100,000 stores; RWA/RDA digital asset issuance and trading; cross-chain identity recognition and value transfer; a distributed trust mechanism for emergency response; and zero-knowledge proofs to ensure privacy and compliance. A technology readiness assessment indicates that the W3C DID specification has become an international standard, and the DOID technical system is highly compatible with national standards, meeting the conditions for large-scale application.

9.2 Economic Feasibility: Systemic Reduction of Trust Costs

The economic feasibility of the “China Common Good Project” is reflected not only in direct revenue and investment returns but also in the systemic reduction of trust costs. Current global trust costs (KYC/AML, auditing, notarization, compliance) exceed USD 1 trillion annually. Through mechanisms like credential reuse (one-time KYC valid across the entire network, potentially reducing information collection by over 80%), automated verification (smart contracts replacing manual review, reducing time from days to minutes), and zero-knowledge proofs (enabling “minimal disclosure” and lowering privacy compliance costs), DOSI can reduce institutional trust costs by 30–70%.

In terms of investment return, the project is projected to use an RMB 1 billion renovation investment to drive cumulative revenue of over RMB 49 billion and cumulative net profit of over RMB 5 billion within three years. The investment payback period is 6–12 months, with a three-year return on investment (ROI) exceeding 500%.

9.3 Risk Analysis and Mitigation

The main risks facing the project and corresponding mitigation strategies are as follows:

Regarding policy compliance risks, mobile food vending operations must comply with various local regulations. The mitigation strategy is to secure “fixed-point, fixed-time operation permits” and centrally coordinate cross-provincial compliance at the district level. Regarding food safety risks, there is a spoilage hazard from the central kitchen to the cold chain terminal. The strategy is to establish a “full cold and hot chain temperature control + real-time disposal” mechanism, implementing food sample retention and traceable QR

code management. Regarding brand consistency risks, the decentralized operation of 100,000 vehicles could lead to a decline in quality control. The strategy is to establish a three-tier control system of “headquarters supervision + regional management + online quality control,” with a star-rating and elimination mechanism. Regarding cross-strait synergy risks, institutional barriers exist in mutual equipment recognition and data interoperability. The strategy is to promote mutual standard recognition and establish joint drill mechanisms, supported by the Straits Forum. Regarding technical risks, integrating drone swarms and the blockchain platform is highly complex. The strategy is to proceed with phased verification and co-develop solutions with universities and research institutions.

X. CONCLUSION AND OUTLOOK

10.1 Research Conclusions

This paper has systematically demonstrated the strategic value, systemic architecture, and implementation pathway of the “China Common Good Project,” leading to the following conclusions:

First, the project enables a historic leap from a national snack brand to a national security infrastructure. Evolving from its grassroots origin of “one yuan to enter” to the industrial scale of nearly 100,000 stores, Shaxian Snacks is now transforming from a “vehicle for sustenance” to an “instrument of national importance”—upgrading from a catering network that ensures people’s daily meals to an emergency infrastructure that safeguards the safety of countless households.

Second, the project constructs a new “three-in-one” paradigm for grassroots security governance: “service in peacetime, response in emergencies, and support in wartime.” Through the integrated upgrading of the three business formats (“fixed store + action vehicle + virtual store”), it achieves a leap from a single catering function to a multi-functional platform integrating peacetime and emergency operations.

Third, the project is fully feasible across technical, policy, and economic dimensions. The Interlinked Blockchain Network (Elastic Blockchain) and DOSI digital identity framework provide a solid technical foundation; the convergence of three national strategies creates a policy window; and a diversified profit model combined with a systemic reduction in trust costs ensures economic sustainability.

Fourth, the project pioneers a virtual store model where “the C-end customer is the CEO,” envisioning 3 billion virtual store owners and creating a new paradigm of

inclusive commerce where everyone can be an entrepreneur.

Fifth, the project has built a public service sector business megamodel that encompasses governments, international organizations, industry, academia, and social forces, achieving a strategic upgrade from a “commercial loop” to an “ecosystem loop.”

10.2 Theoretical Contributions and Practical Implications

On a theoretical level, this study proposes a paradigm of “commercial network-to-emergency infrastructure” conversion, enriching the application scenarios of the dual-purpose integration for peacetime and wartime theory in civilian domains. It also puts forward a governance architecture of “distributed commercial network + digital identity + digital assets,” offering new ideas for the provision of public goods in the digital age.

On a practical level, the “China Common Good Project” offers a Chinese solution for global emergency governance. The project promotes China’s emergency catering standards as international standards and provides a replicable emergency governance model for countries along the Belt and Road. Using the Shaxian Snacks brand as a bond, the project creates 100,000 jobs for cross-strait youth and explores a new path of “promoting integration through livelihoods and connecting both sides of the strait through industry.”

10.3 Outlook

Looking ahead, the “China Common Good Project” will advance steadily through three phases: near-term, mid-term, and long-term. In the near term (2026–2028), the project will complete the deployment of the first 1,000 demonstration vehicles, deploy 10,000 vehicles in the Fujian Pilot Zone, and establish the National Chain Catering Emergency Alliance. In the mid-term (2028–2030), the project aims to achieve a nationwide deployment of 100,000 vehicles covering 2,844 counties, issue RWA/RDA assets exceeding RMB 10 billion, and reach 100 million global virtual store owners. In the long term (2030–2035), the goal is to promote Chinese standards as ISO international standards, cover over 30 Belt and Road countries, and gather 3 billion virtual store owners worldwide.

The flavors of Shaxian Snacks are traveling ever farther, while the power of the “China Common Good Project” safeguards every home. This is not merely a business model innovation; it is a pivotal step in upgrading a “national snack” network into a national strategic infrastructure and transforming private commercial power into a public security governance resource.

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