

Research on the Construction of Think Tank Knowledge Bases for Innovation and Entrepreneurship (Postprint)

Authors: Qiao Lili, Xu Xin, Zhao Xing, Xu Xin

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Abstract

[Purpose/Significance] In response to China's current social atmosphere of "mass entrepreneurship and innovation" (dual innovation), this study analyzes the social demands for innovation and entrepreneurship, and proposes a targeted construction scheme for a think tank knowledge base for knowledge provision. [Method/Process] Through policy text analysis and case study methodologies, this paper categorizes the construction of innovation and entrepreneurship think tank knowledge bases, and conducts analytical discussions using classified cases. It selects the innovation and entrepreneurship think tank knowledge bases of four institutions—Duke University's Innovation and Entrepreneurship Center, Google's internal incubator Area 120, the Entrepreneurship Center, and NOVUSENS—to analyze the construction requirements of different knowledge bases from the dimensions of external versus internal orientation and for-profit versus non-profit nature. Furthermore, it examines the current construction needs of innovation and entrepreneurship think tank knowledge bases from the perspective of four aspects and ten major sub-databases. [Results/Conclusion] Based on China's current reality, this paper offers references for the construction of innovation and entrepreneurship think tanks, including platform integration, online-offline collaboration, and industry-specific databases.

Full Text

Study on Knowledge Base of Think Tank for Innovation and Entrepreneurship

Qiao Lili^{1,2}, Xu Xin^{1,2}, Zhao Xing^{1,2}

¹School of Economics and Management, East China Normal University, Shanghai 200241

²Institute for Academic Evaluation and Development, East China Normal University, Shanghai 200241

Abstract

[Purpose/Significance] In response to China’s current social climate of “mass entrepreneurship and innovation” (shuangchuang), this paper analyzes the societal demands for innovation and entrepreneurship and proposes a targeted construction scheme for a think tank knowledge base to serve its knowledge supply. **[Method/Process]** Through policy text analysis and case study methods, this paper classifies the construction of innovation and entrepreneurship think tank knowledge bases and analyzes their development through categorized cases. It examines four institutions’ innovation and entrepreneurship think tank knowledge bases: Duke University’s Innovation & Entrepreneurship Center, Google’s internal incubator Area 120, the Centre for Entrepreneurs, and NOVUSENS. From different dimensions of internal vs. external orientation and profit vs. non-profit status, it analyzes the construction requirements of various innovation and entrepreneurship think tank knowledge bases. From the perspective of content classification, it analyzes current construction needs from four aspects covering ten sub-databases. **[Result/Conclusion]** Based on China’s current reality, it proposes construction references for innovation and entrepreneurship think tanks, including platform integration, online-offline collaboration, and industry-specific databases.

Keywords: innovation and entrepreneurship; think tank knowledge base; platform construction; case study

1. Introduction

Innovation is the fundamental driving force behind human societal progress and development, while entrepreneurship, as an expression based on innovation, has become an important topic of significant social concern. With the advancement of technology and society, innovation and entrepreneurship have gradually emerged as crucial pathways to address developmental bottlenecks, forming the dominant discourse in contemporary society. Against the backdrop of progressively equalized knowledge and education in the Internet era, “mass entrepreneurship and innovation” (shuangchuang) has become the mainstream context, representing a breakthrough integrating government, enterprise, universities, and the public. As innovation and entrepreneurship become increasingly popularized and their collective audience expands, the resulting information and knowledge demands become more dispersed. According to the triple helix theory of innovation, innovation is a multi-party collaborative process. Regardless of form, the need to satisfy information and knowledge demands and improve communication efficiency has driven the provision of third-party knowledge and information services, with think tanks being one of the primary solutions to this demand.

1.1 The Organic Relationship Between Innovation/Entrepreneurship and Think Tank Knowledge Base Construction

The role of innovation in national development systems has been continuously emphasized in scholarly research and national policy. Since the 1990s, China has elevated innovation to the level of national strategic planning. Theoretical research, such as the Chinese Academy of Sciences' report "Welcoming the Knowledge Economy: Building a National Innovation System" and Academician Lu Yongxiang's 1998 monograph "Innovation and the Future: A National Innovation System for the Knowledge Economy Era," has emphasized the importance of constructing a national innovation system from various perspectives including system and institutional frameworks. In national practice, China began issuing innovation-related policies from 1999 onward, starting with the "Notice of the General Office of the State Council on Forwarding the Interim Provisions of the Ministry of Science and Technology and the Ministry of Finance on the Innovation Fund for Technology-based Small and Medium-sized Enterprises," which proposed supporting policies for enterprise innovation from various aspects including funding, facilities, and technology transfer. From 2015, innovation and entrepreneurship transitioned from regional pilot programs to a societal atmosphere of "mass entrepreneurship and innovation." Relevant policies such as the "Guiding Opinions of the General Office of the State Council on Developing Maker Spaces to Promote Mass Entrepreneurship and Innovation," "Several Policy Measures of the State Council on Vigorously Promoting Mass Entrepreneurship and Innovation," and others have promoted the development of public wisdom and enhanced the circulation and sharing of social knowledge from point to surface through government support. These documents explicitly propose gathering collective wisdom for innovation, pooling various social innovation resources through innovation and entrepreneurship service platforms to reduce innovation and entrepreneurship costs, enabling all individuals with scientific thinking and innovative capabilities to participate in innovation, and forming a new situation of mass creation and collective wisdom release. Among these, innovation platforms, maker spaces, and other initiatives all propose integration requirements for resources needed for social "shuangchuang."

The decision-making and deployment of innovation and entrepreneurship require forward-looking, targeted, and reserve policy research that proposes professional, constructive, and practical policy recommendations that meet social realities and address decision-making needs. On this basis, China proposed "building new-type think tanks with Chinese characteristics" in 2013, and in January 2015 issued the "Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics," which emphasized the goals, characteristics, and standards for building such think tanks and raised requirements for think tank professionalism. New-type think tanks emphasize research on socio-economic practical issues vital to national welfare and people's livelihood, requiring think tank development to meet the needs of the times. Among these, "building high-level think tanks for scientific and technological innovation and

enterprise think tanks” constitutes an important measure for promoting scientific and technological innovation and economic-social development. Think tank knowledge bases provide knowledge reserves and integration for think tanks, addressing resource resolution and allocation problems against a background of heterogeneous and dispersed knowledge. Research by Xu Xin et al. suggests that compared with traditional institutional repositories, think tank knowledge bases place greater emphasis on consulting and developing organizational members’ products. Therefore, for innovation and entrepreneurship, there is a need for both integrated knowledge and targeted, specialized organizational and service models. As a new type of think tank, innovation and entrepreneurship think tanks possess the basic functions of think tanks as “brain trusts” and “idea banks,” such as government decision-making, talent cultivation, social services, and public education, while also having specific responsibilities targeted at innovation and entrepreneurship subject activities, such as industrial support, transformation of scientific and technological achievements, and innovation and entrepreneurship incubation. Consequently, the construction of their knowledge base meets the urgent needs of “shuangchuang” development and represents an important pathway to addressing major knowledge, capital, and environmental issues in the innovation and entrepreneurship environment.

1.2 The Mechanism of Think Tank Knowledge Bases in Innovation and Entrepreneurship

As a support for think tank construction, think tank knowledge bases are actually inseparable from think tanks. As a specialized think tank knowledge base, innovation and entrepreneurship think tank knowledge bases possess both the information support capability for think tank consulting and decision-making and the ability to satisfy the multi-party support and communication needs of innovation and entrepreneurship. Against the “shuangchuang” backdrop, technology transfer, funding support, and resource sharing are particularly important and serve the crucial function of reducing entrepreneurship costs and improving entrepreneurship efficiency. Here, the role of innovation and entrepreneurship think tank knowledge bases in “shuangchuang” can be divided into three categories: basic functions, resource sharing functions, and platform provision functions. These three functions represent the primary mechanisms of innovation and entrepreneurship think tank knowledge bases.

Basic functions include the most fundamental information integration and services, such as the main policy demands and orientations for innovation and entrepreneurship, as well as the indexing and development of specialized knowledge for innovation and entrepreneurship. Professionalism and independence are the main characteristics of think tank development. Basic information integration includes the collection and concentration of relevant information on policies and industries. The proposal of “shuangchuang” represents a translation of the Internet spirit of openness, equality, collaboration, and sharing. Against an informatization backdrop, society’s information acquisition costs have de-

creased while knowledge acquisition costs have relatively increased. Promoting information aggregation and presentation through knowledge aggregation, semantic association, and other means constitutes the basic service objective for innovation and entrepreneurship think tank knowledge bases.

Resource sharing functions represent a special form of “shuangchuang” think tanks. Innovation and entrepreneurship have high requirements for technology transfer, capital acquisition, channels, and model references. Taking technology transfer as an example, technological innovation in innovation and entrepreneurship needs to be transformed from theoretical and experimental innovation into a practical innovation model. China currently establishes technology transfer centers in government agencies and higher education institutions to promote technology transfer and transformation, but the technology transfer process requires precise matching to generate good benefits. Using the UK as an example, it possesses absolute advantages in technological and theoretical innovation, but Japan relies on technology transfer from the UK to transform it into socio-economic benefits. This transformation process requires support in capital, market, talent, and other aspects. Funding support is another major demand for innovation and entrepreneurship. This funding comes partly from government support and partly from social capital raising. Currently, funding sources for innovation and entrepreneurship are diverse, including support from crowdfunding, angel funds, and other aspects. Innovation and entrepreneurship think tank knowledge bases provide a database space for capital demands and sources, integrating online and offline models to provide an effective circulation space for entrepreneurial capital.

Platform provision includes not only online innovation and entrepreneurship service platforms but also integration with offline spaces including maker spaces, shared spaces, and incubation bases to form a combined online-offline service platform. The online platform of innovation and entrepreneurship think tanks provides an interactive and discussion space for innovators and entrepreneurs. Offline incubation platforms include entrepreneurship incubation sites, technology incubators, small and micro enterprise entrepreneurship bases, maker spaces, maker cafes, innovation factories, and other platforms established by governments at all levels, higher education institutions, scientific research institutes, and other social forces to provide entrepreneurship spaces and supporting services to entrepreneurs.

2. Construction Subjects and Demand Characteristics

2.1 Construction Subjects of Innovation and Entrepreneurship Think Tank Knowledge Bases

Regarding innovation and entrepreneurship subjects, the current main innovation and entrepreneurship subjects in society are research institutions, higher education institutions, and enterprises, with enterprises playing an increasingly important role. “Mass entrepreneurship and innovation” emphasizes the di-

versification of innovation and entrepreneurship subjects, actively developing crowdsourcing, crowd-supporting, and crowdfunding, thus making the service subjects of innovation and entrepreneurship think tank knowledge bases also present diversified characteristics. According to current classifications of think tank knowledge bases, there are mainly enterprise internal think tank knowledge bases established by large enterprises, think tank knowledge bases for social application, knowledge-based databases providing information services such as CNKI and Wanfang, and institutional repositories constructed by universities and research institutions. Think tanks have transformed from specialized public policy research organizations into knowledge product service-oriented entities, with their specialized service content creating demand for knowledge. Consequently, current think tank construction has become closely associated with knowledge bases, which have become an important support for think tanks. According to their service objects, think tanks can serve internal institutions or provide services to third parties. Think tank construction requires knowledge bases as infrastructure, and different think tank types with different service objects present different platform construction types. Some scholars classify think tanks into four types based on institutional nature, establishment method, and funding source: purely official think tanks funded by the state, semi-official think tanks funded by the government, civil society and association/foundation-type think tanks, and university-affiliated think tanks (also called official, semi-official, civil, and university-affiliated think tanks). Innovation and entrepreneurship think tank knowledge bases also present various characteristics based on differences in their establishment nature and service objects.

Using the above classification method as a reference and based on institutional nature, service method, and service scope, think tank knowledge bases can be divided into institutional think tanks and social think tanks. Institutional think tanks refer to think tanks established within organizations, whose service objects and outputs primarily belong to the institutions themselves. This category can be further subdivided into two types: think tanks constructed by universities and research institutions, and institutional knowledge bases established by enterprises. The commonalities between these two types include the aforementioned characteristics, as well as the institutional features of their knowledge base content construction. Compared with the latter, the former has stronger social and public service characteristics, while the latter mainly serves enterprises or industrial development. Third-party think tanks are specialized think tank knowledge base institutions providing think tank services. Their knowledge base content composition comes from diverse sources, and they can be divided into public welfare think tanks and commercial think tanks based on access thresholds. Public welfare think tanks are mainly established by non-profit organizations, with the purpose of promoting social development. Commercial think tank knowledge bases are mainly established by specialized companies, requiring access thresholds, membership systems, and payment mechanisms. Therefore, based on the above summary, think tank knowledge bases can be divided into four types, as shown in Table 1 .

Table 1 Knowledge Classification of Innovation and Entrepreneurship Think Tank

Think Tank Knowledge Base Type
University, research institute, and other public institution think tank knowledge bases
Large enterprise think tank knowledge bases
Social think tanks initiated by non-profit organizations
Commercial think tank institutions

2.2 Subject Demand Characteristics of Innovation and Entrepreneurship Think Tank Knowledge Bases

As the main entities for innovation and entrepreneurship, research institutions, higher education institutions, and large enterprises each have different social positions and divisions of labor, with their information demands presenting different tendencies. Enterprises have higher demands for information during product research and development and market development stages, focusing more on technical reports, patents, standards, and reference tools. Universities and research institutions pay more attention to journals and other research literature. Consequently, innovation and entrepreneurship think tank knowledge bases endogenously generated by different institutions present different characteristics. Additionally, based on their stages in innovation and entrepreneurship, the demands for innovation and entrepreneurship think tank knowledge bases also differ. For example, higher education institutions mainly produce scientific research and experimental results, and their innovation and entrepreneurship think tank knowledge bases have more specific needs for technology transfer and funding matching. Large enterprises emphasize more on innovation based on their own fields and cross-boundary technologies. Finally, “shuangchuang” pays greater attention to the knowledge demands of small and micro enterprises and individual innovators in society. Compared with the three types of institutions mentioned above, these enterprises lack specific construction of their own knowledge bases, making the role of social non-profit think tank knowledge bases particularly prominent.

Facing strong and clear subject demands, China’s current construction of innovation and entrepreneurship think tank knowledge bases is still in its initial stages, with entrepreneurship education being the main measure taken during this phase. Complementing this with the construction of think tank knowledge bases can yield twice the result with half the effort in promoting the development and advancement of an innovation and entrepreneurship-oriented society.

3. Content Organization Models of Foreign Innovation and Entrepreneurship Think Tank Knowledge Bases

Innovation and entrepreneurship is currently a global issue. The United States and the United Kingdom are prominent representative innovative countries that have formed relatively complete social mechanisms for innovation and entrepreneurship and technology incubation, particularly in support mechanisms. Based on the four types mentioned above, this paper selects one specialized innovation and entrepreneurship think tank knowledge base from each category as analysis objects. Among them, Duke University's innovation and entrepreneurship platform and Google Area 120 represent research institutions and enterprise innovation and entrepreneurship services, respectively, with their main goal being the transformation of internal knowledge. Duke University's service is public welfare-oriented, while Google Area 120 is internally oriented. The Centre for Entrepreneurs (CFE) and NOVUSENS are innovation and entrepreneurship think tank knowledge bases that provide services to society, with the former being non-profit and the latter being for-profit.

3.1 Duke University Innovation and Entrepreneurship Platform

The Duke University Innovation and Entrepreneurship Center aims to promote university transformation, turning entrepreneurial spirit and innovative thinking from ideas into positive impacts on individuals, organizations, institutions, and society. This think tank seeks to stimulate innovative thinking among university members to support and encourage knowledge transformation in social services. Its main goal is to transform university-level innovations into tangible, perceptible changes through entrepreneurship. Achievement transformation and intellectual property services constitute important components of its work, promoting practical connectivity between the university and society. Based on analysis, Duke University's innovation and entrepreneurship platform can be divided into entrepreneurship education and activities, innovation and entrepreneurship research and resources, and social innovation and entrepreneurship support. In terms of innovation and entrepreneurship education, the center provides professional courses covering design thinking, solution development, venture capital, intellectual property, and business planning. A systematic curriculum system represents one of its main characteristics.

Duke University's innovation and entrepreneurship think tank knowledge base primarily serves resources including annual series research, current innovation trends, and policies and laws concerning entrepreneurship. In resource navigation, the innovation and entrepreneurship center classifies materials according to their types and sources, including links to university databases, entrepreneur feedback, resource collections, work plans, engineering management, venues, and funds. Overall, as a university-based innovation and entrepreneurship think tank knowledge base, it possesses relatively complete knowledge and social resources, but its service group is concentrated among university communities, demonstrating strong inspirational and cultivation characteristics.

3.2 Google Internal Incubator Area 120

Google's internal incubator Area 120 aims to support employees in internal entrepreneurship. Internal incubation seeks to enhance corporate vitality, promote enterprise innovation, and achieve new growth points. Google's Area 120 is a typical representative, primarily originating from Google's traditional system that encourages employees to use 20% of their personal time to attempt innovative projects. In this program, teams initiate projects within a fixed time-frame, and teams that pass the screening process spend the next six months completing projects and achieving feasibility without needing to perform other daily work. The project also has a protection mechanism, allowing employees who attempt and fail to return to their positions. Successful projects can receive investment from Google. Google has already established Google Ventures and Google Capital to provide funding guarantees for entrepreneurship projects.

As an Internet company, Google's existing knowledge bases include Knowledge Vault (a knowledge base based on Internet information), Google Knowledge Graph, Google Scholar, and Jigsaw (a technology incubator formerly known as Google Idea), demonstrating Google's support system in knowledge base organization. Compared with other knowledge bases, enterprise internal innovation and entrepreneurship think tank knowledge bases have dispersed sources across other enterprise departments and rely on internal enterprise knowledge support.

3.3 Centre for Entrepreneurs

The Centre for Entrepreneurs (CFE), supported and established by Maserati, is an independent non-profit think tank organization aimed at promoting the role of entrepreneurs in driving economic growth and social development. Its activities center on four areas: social initiatives, research and event development, entrepreneurship spirit discussion, and resource provision. The center aims to enhance relationships between entrepreneurs and social media and government, improve public perception of entrepreneurs, and promote more individuals to become entrepreneurs. It provides guidance and support to entrepreneurs through white papers, essays, brochures, and other documentation. However, this think tank knowledge base primarily serves the UK, and its research reports on angel investment and other survey reports mainly target the UK.

Essentially, CFE is a highly practical knowledge base. In terms of information collection, it mainly provides research results, blog articles, and media articles. Different information organization types are set under different categories. For example, the research results section mainly provides knowledge retrieval categorized by keywords and hot fields. Content sections such as "How to Emerge from Low Points," "Angel Funds," and "Cost Reduction" provide significant hints and references for entrepreneurs, especially those in the startup phase. The blog section provides institutional and author retrieval, cross-aggregating the authority of blog article sources from both author and institution perspectives. Media information is primarily arranged chronologically, integrating articles, videos,

and other multi-form resources from multiple sources to provide users with a unified media knowledge source. As a non-profit public think tank, this think tank knowledge base's main characteristics lie in its guidance of innovation and entrepreneurship awareness, thinking, and activities, with its knowledge resources typically having strong macro-level features.

3.4 NOVUSENS

NOVUSENS is a for-profit independent think tank organization based in Turkey. It formulates and implements innovation policies, committed to promoting economic growth and technological improvement. It promises to provide professional consulting and training services in the “innovation and entrepreneurship” field in domestic and international markets. From its core values, NOVUSENS aims to provide customers and shareholders with unique, results-oriented, and exemplary solutions. NOVUSENS was founded in 2009 by “IDE Consulting” and later received joint support from “Designnobilis” for think tank development. The think tank's main research direction is “technology and social innovation,” with a global service scope covering fields including ICT, energy, education, health, defense, agriculture, and creative industries. It provides services including training, consulting, design, research, investment management, business guidance, and event management. Its business expansion model primarily uses PPP (Public-Private Partnership) approaches.

In terms of technical support, NOVUSENS employs an industry-classified knowledge base, organizing research reports through user services and data collection. Industries include education, healthcare, computer information technology, energy, emerging industries, weapons manufacturing, and communications. Clear industry classification constitutes the main component of for-profit think tanks. In training, its services range from establishing innovative thinking to R&D roadmaps, intellectual property, product design, marketing, and other aspects, covering innovation models in most fields and forming a full-process wide-angle route. In terms of service objects, it covers small and medium enterprises, governments, multinational corporations, private industries, higher education, and non-governmental organizations, demonstrating broad scope.

3.5 Construction Characteristics of Different Subject Innovation and Entrepreneurship Think Tank Knowledge Bases

Based on the comprehensive analysis of the above innovation and entrepreneurship think tanks, the four main types of think tank knowledge bases currently present distinct characteristics in terms of knowledge sources, service processes and scope, and knowledge base innovation mechanisms.

3.5.1 Knowledge Source Characteristics In institutional internal think tanks such as universities, research institutions, and enterprises, internal research results constitute the majority of knowledge base sources. Their main

function lies in making institutional knowledge explicit and operational, promoting the social transformation of internal knowledge to enhance their own benefits, including economic and social benefits, and playing an irreplaceable role in promoting innovation. External knowledge bases such as for-profit and non-profit innovation and entrepreneurship think tanks mainly collect information related to innovation and entrepreneurship from society, serving as third-party information collection and organization institutions.

3.5.2 Service Process and Scope Characteristics In terms of service provision, for-profit enterprises provide paid services but offer more comprehensive services covering the entire innovation and entrepreneurship process design. Their service scope and objects range from domestic to international, covering various industries. Institutional internal think tanks such as Duke University's Innovation and Entrepreneurship Center primarily serve innovation and entrepreneurship teams within the university, promoting the transformation of internal innovation and entrepreneurship achievements. In terms of service scope, institutional internal think tanks provide limited services, mainly serving internal institutions with insufficient openness. For-profit think tanks provide global, multi-industry services for enterprises. Finally, institutional internal innovation and entrepreneurship knowledge services mainly focus on the preparation stage of innovation and entrepreneurship, while external think tank knowledge bases provide full-process knowledge services.

3.5.3 Knowledge Base Innovation Mechanisms For innovation and entrepreneurship knowledge bases, information exchange and social relationship expansion are particularly important. Different knowledge bases attach great importance to the consolidation mechanisms of innovation and entrepreneurship ideas and behaviors. Secondly, information provision is a crucial activity for innovation and entrepreneurship knowledge service institutions. Innovation and entrepreneurship require favorable policy and social environments, making the collection of policy and social information a key focus for innovation and entrepreneurship knowledge bases.

4. Sub-database Construction and Models

4.1 Sub-database Construction of Innovation and Entrepreneurship Think Tank Knowledge Bases

Comprehensively speaking, innovation and entrepreneurship, especially “mass innovation and mass entrepreneurship,” requires building an entrepreneurship resource docking service platform to provide comprehensive services for social entrepreneurs. China's current innovation and entrepreneurship construction in terms of specialized think tank knowledge base services mainly includes four types and ten sub-databases: information dissemination, platforms, entrepreneurship and projects, and investment and training.

Information dissemination includes two sub-database types: first, an explicit knowledge base composed of books, journals, technical reports, and other materials, which requires comprehensive support from online and offline platforms; second, the aggregation of various media including websites, Weibo, WeChat, and other new media platforms, as well as traditional media platforms such as television, radio, and newspapers that publicize entrepreneurship policies, release entrepreneurship information, and promote entrepreneurship enterprises, entrepreneurs, and projects.

Platforms include two categories: incubation platform databases and entrepreneurship facility databases. Incubation platforms include various levels of government, higher education institutions, scientific research institutes, enterprises, and other social forces that have established incubation bases, technology incubators, small and micro enterprise entrepreneurship bases, maker spaces, maker cafes, innovation factories, and other platforms providing entrepreneurship spaces and supporting services. Entrepreneurship facility categories include creative transformation facilities in the aforementioned institutions, containing entrepreneurship training classrooms, network tools, open laboratories, 3D printing equipment, processing workshops, production lines, testing tools, and other innovation-related facilities.

The entrepreneurship and project category includes entrepreneur databases, incubated enterprise databases, and entrepreneurship project databases, aiming to build databases and project libraries to pool individuals and enterprises with entrepreneurship willingness and capabilities, as well as projects, comprehensively forming the content components of innovation and entrepreneurship think tank knowledge bases to support team searching and project matching among innovators and entrepreneurs.

The investment and training aspect includes investment sub-databases, training mentor databases, and entrepreneurship training institution databases. In investment sub-databases, the demand information of investors and investees is pooled to form the main database construction pairing.

In summary, the difference between innovation and entrepreneurship think tank knowledge bases and traditional think tank knowledge bases lies in that, in addition to explicit knowledge sub-databases such as books, journals, and reports, they also include resource databases composed of physical entities, providing both online knowledge information and physical information, as well as integrating online and offline information communication. For example, innovation and entrepreneurship think tank knowledge bases can provide physical carriers of knowledge such as books and reports through platforms like maker spaces and innovation factories.

4.2 Construction Models of Innovation and Entrepreneurship Think Tank Knowledge Bases

The construction of innovation and entrepreneurship think tank knowledge bases forms their content. Regarding construction models, this involves not only online platform construction for innovation and entrepreneurship think tank knowledge bases but also the tendencies and characteristics of different entities when constructing these knowledge bases. Additionally, while social policy environments lower the access threshold for innovation and entrepreneurship, they also raise the service provision standards for related services. For example, to implement innovation-driven development strategies and provide strong talent support for service platforms and carriers such as maker spaces, China has begun to organize national innovation and entrepreneurship mentor certification programs. This certification model enhances the training team for innovators and entrepreneurs and provides a more scientific methodology for different individuals to conduct targeted innovation and entrepreneurship research.

Based on the nature of innovation and entrepreneurship think tank knowledge bases, the construction of university-based innovation and entrepreneurship think tank knowledge bases emphasizes funding and technology transfer incubation docking, as well as entrepreneurship team formation. Their service platforms tend to provide internal innovation and entrepreneurship education and training, emphasizing the incubation of internal achievements, such as Duke University's innovation and entrepreneurship platform, which presents itself as an external interface for internal innovation and entrepreneurship information.

Enterprise innovation and entrepreneurship think tank knowledge bases emphasize more on the externalization of individual tacit knowledge and the accumulation of enterprise technical knowledge. For example, Google Area 120 drives enterprise employees to transform their innovative topics into visible products through internal innovation element drivers, thereby promoting enterprise development, innovation, and transformation upgrading.

Social public welfare innovation and entrepreneurship think tank knowledge bases are usually supported and undertaken by third-party institutions, becoming the main force providing comprehensive “shuangchuang” services against the “mass entrepreneurship and innovation” background. These institutions form close cooperation with various innovation factories and maker spaces to provide more comprehensive information support for innovation and entrepreneurship.

Commercial innovation and entrepreneurship think tank knowledge bases have higher access thresholds and more authoritative guidance for knowledge base construction. Their access emphasizes knowledge acquisition and service differences between members and non-members, with more mature and specialized knowledge base construction that can typically provide full-process services.

5. Clustering and Cooperation in Innovation and Entrepreneurship Think Tank Knowledge Base Construction

Since “shuangchuang” became mainstream discourse, the construction of innovation and entrepreneurship think tank knowledge bases has gradually formed. Different types and levels of think tank knowledge bases exhibit obvious personalized characteristics but also bring about information gaps and communication barriers. The “mass entrepreneurship and innovation” background places greater emphasis on the construction of innovation and entrepreneurship think tank knowledge bases. Compared with other types of knowledge bases, socialized innovation and entrepreneurship think tank knowledge bases have broader audiences and play a prominent role in forming an innovation and entrepreneurship atmosphere at the social level and stimulating innovation and entrepreneurship vitality. Meanwhile, other types of institutional innovation and entrepreneurship have their internal service demands and external benefit drivers, making them equally indispensable.

During the construction process of diversified innovation and entrepreneurship think tank knowledge bases, the situation of information redundancy or insufficiency creates obstacles for information retrieval, meaning that substantial barriers to information acquisition still exist. For example, different levels of administrative units in China have begun constructing corresponding innovation and entrepreneurship think tank knowledge bases. Taking Dalian as an example, since 2015 it has been collecting various supporting facilities, personnel, and enterprise information related to innovation and entrepreneurship to build a regional innovation and entrepreneurship information database. However, its service information can only serve local innovators and entrepreneurs, lacking more comprehensive information capture for investors and investment enterprises nationwide. Therefore, breaking down information barriers between different levels and regions and promoting coordination of innovation and entrepreneurship information between regions is particularly important. Different types of innovation and entrepreneurship think tank knowledge bases have different emphases in content and platform construction but can provide information platform connectivity mechanisms.

Online and offline collaboration is an important characteristic and inevitable requirement for innovation and entrepreneurship think tank knowledge bases. Their knowledge organization can build bridges between theoretical construction and practical operation for entrepreneurs by constructing offline platforms and cooperating with public cultural service units’ knowledge bases, promoting offline circulation of knowledge services.

The construction of specialized innovation and entrepreneurship knowledge bases and innovative think tank knowledge bases has clear distinctions. Innovation and entrepreneurship have both knowledge and social background characteristics and certain professional or industry domain characteristics. Therefore, content classification and information organization models of think

tank knowledge bases for different industries support and inspire cross-domain innovation.

China's innovation and entrepreneurship think tank knowledge base construction started relatively late but still has top-level design opportunities. Based on existing innovation-oriented national think tank knowledge base construction, China can more perfectly build communication bridges between think tank knowledge bases. In the long term, the construction of innovation and entrepreneurship think tank knowledge bases has long-term service effects for later think tank knowledge base accumulation. This paper proposes research on the construction of innovation and entrepreneurship think tank knowledge bases under the modern "shuangchuang" social background based on existing international case studies of different types, providing reference-worthy support pathways for China's "shuangchuang" development.

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Author Contributions

Qiao Lili: Case investigation, initial draft writing;
Xu Xin: Topic planning, paper revision;
Zhao Xing: Paper revision.

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