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## **An Empirical Study on the Construction of New Regional Science and Technology Think Tanks: A Case Study of Chongqing (Postprint)**

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### **Abstract**

[Purpose/Significance] Most local science and technology think tanks have evolved from intelligence institutions and policy consulting institutions. How to adapt to the requirements of constructing new-type think tanks with Chinese characteristics, establish a system and mechanism distinct from traditional think tanks, and provide high-quality services for local science and technology strategic decision-making merits summarization and reflection. [Method/Process] This paper defines the connotation of new-type local science and technology think tanks and analyzes, against the backdrop of the new era, the experiences, practices, and implications from the Chongqing Institute of Science and Technology Development Strategy' s construction of local science and technology think tanks. [Results/Conclusion] The paper proposes strategies and pathways for constructing local science and technology think tanks from perspectives including establishing research characteristics, innovating policy consultation approaches, aggregating think tank talents, and enhancing influence.

### **Full Text**

## **An Empirical Study on the Construction of New Local Science and Technology Think Tanks: A Case Study of Chongqing**

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## Abstract

**[Purpose/Significance]** Most local science and technology think tanks evolved from intelligence agencies and decision-making consultative institutions. Under the requirements of building new-type think tanks with Chinese characteristics, it is essential to construct a fundamentally different institutional framework from traditional think tanks to provide high-quality services for local science and technology strategic decision-making—a process that merits careful reflection and summary.

**[Method/Process]** This paper defines the connotation of new local science and technology think tanks and analyzes the practical experiences and insights of the Chongqing Academy of Science and Technology for Development in building such a think tank against the backdrop of a new era.

**[Result/Conclusion]** The paper proposes strategies and pathways for constructing local science and technology think tanks from four perspectives: establishing research characteristics, innovating policy consultation methods, gathering think tank talent, and enhancing influence.

**Keywords:** new-type; science and technology think tank; exploration; Chongqing

**Classification Number:** C931

Scientific and technological innovation constitutes the core and foundation of the innovation-driven development strategy. As a “soft” support for scientific and technological innovation, the construction of science and technology think tanks has reached a climax since the 18th National Congress of the Communist Party of China. In particular, numerous information and intelligence research institutions and strategic decision-making consultative agencies across the country have transformed into “science and technology think tanks,” rapidly ushering in a period of explosive growth. How can these think tanks fulfill their mission and better serve local innovation development? The exploration and practice of the Chongqing Academy of Science and Technology for Development (hereinafter referred to as Chongqing Strategy Institute) may offer valuable insights.

### 1.1 Connotation of New Local Science and Technology Think Tanks

To clarify the connotation of new local science and technology think tanks, we must first define three key terms: science and technology think tank, “new-type,” and “local.”

**1.1.1 Connotation of Science and Technology Think Tanks** Science and technology think tanks are strategic research institutions that can effectively grasp global trends in scientific and technological development, keenly identify new directions in technological revolutions, and provide accurate, forward-looking, and timely recommendations for national science and technology decision-making. As an important type of think tank, they examine major

issues of overall significance from the perspective of science and technology impacts, think ahead about global S&T development trends based on scientific principles, provide crucial consultative suggestions and foresight for national S&T strategies, plans, layouts, and policies, and promote the deep integration of S&T innovation with economic and social development.

In light of this, domestic scholars have defined science and technology think tanks as “professional policy research and consulting institutions whose primary function is S&T strategic policy research and whose main role is providing decision-making consultation on S&T strategic policies.” This paper endorses this definition.

**1.1.2 Background and Connotation of “New-Type”** Since science and technology think tanks have long existed in developed countries (such as the Max Planck Society in Germany, the Information Technology and Innovation Foundation in the United States, and the Institute for Future Engineering in Japan), why is it necessary to propose a “new-type” concept in China? What exactly is “new” about these new-type think tanks?

The concept of new-type think tanks exists in contrast to traditional ones. Traditional think tanks primarily adopt a top-down communication mechanism, focusing heavily on government demands. The myriad interest connections between traditional think tanks and the government inevitably affect their independence, which in turn directly impacts the objectivity and credibility of their research findings. In contrast, new-type think tanks strive to bridge the divide between government and the public, paying attention not only to government needs but also to the diverse demands of groups with different interests and values, serving as a public platform for analyzing multiple interests and rational values.

Second, traditional think tanks are limited to influencing decision-makers within a specific geographical area, with insufficient external influence and communication, thus failing to effectively express diverse interests. New-type think tanks are committed to cross-regional and public communication, using professional knowledge to guide the public in thinking independently, objectively, and fairly; strengthening information sharing and interactive exchanges of think tank resources across regions; and promoting healthy interactions between government and think tanks.

Third, traditional think tanks focus on short-term policies and avoiding decision-making risks, whereas new-type think tanks emphasize long-term planning and are dedicated to providing, experimenting with, and competing among multiple solutions. For China, new-type think tanks also signify entirely new operational models, where the relationship between think tanks and the government is no longer subordinate; instead, think tanks exist as industry institutions rather than public institutions.

**1.1.3 Definition of Local Think Tanks** Local think tanks are a concept corresponding to central think tanks, with the primary distinction being their service objects and objectives. Central think tanks mainly address urgent national issues, focusing on forward-looking, targeted, and reserve policy research around major national strategic needs. Local think tanks, by contrast, focus on urgent local issues, conducting strategic and policy research to serve local public decision-making, particularly around central local tasks and major decisions.

Therefore, new local science and technology think tanks refer to high-end professional strategic research institutions that, under new historical conditions and against the backdrop of a new era, follow the basic requirements for building new-type think tanks with Chinese characteristics, influence and serve local government and public decision-making and cognition on science and technology, provide policy consultation and foresight for local S&T development strategies, plans, and policies, and demonstrate local S&T soft power through functions such as policy advising, enlightenment, checks and balances, talent gathering, and national strengthening.

## 1.2 Basic Characteristics of New Local Science and Technology Think Tanks

Unlike traditional think tanks, which are characterized by academic styles, emphasis on research over application, and focus on literature over empirical evidence, new local science and technology think tanks represent a new type of think tank and brain trust that differs from traditional social science research institutions, policy research departments of party committees and governments, and Western partisan political and civil research institutions. In 2015, the Central Committee of the Communist Party of China and the State Council issued the “Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics,” which clearly defined the characteristics of new-type think tanks, mainly reflected in aspects such as service objects, research content, research objectives, and institutional nature (see Table 1 ).

**Table 1 Characteristics of the Local New Science and Technology Think Tank**

Definition	Characteristics
Description of new-type think tanks in the “Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics”	Service object: Central decision-making level; Research content: Strategic issues and public policies; Research objectives: Serve the scientific, democratic, and law-based decision-making of the Party and government; Institutional nature: Non-profit research institutions

Definition	Characteristics
Description of new local science and technology think tanks in this paper	Service object: Local party and government departments; Research content: Science and technology innovation and related policies; Research objectives: Provide consultation and foresight for local S&T development strategies, plans, layouts, and policies; Institutional nature: Non-profit research institutions

### 1.3 Main Existence Forms of Science and Technology Think Tanks

Traditional think tanks mainly include: professional social science research institutions such as academies of social sciences; university institutions engaged in social science research, such as the National School of Development at Peking University; and policy research institutions of party and government departments, such as policy research offices of party committees and governments. As a type of think tank, science and technology think tanks can be categorized into four types based on differences in funding sources, service objects, and personnel composition: independent and autonomous S&T think tanks, government-affiliated S&T think tanks, university-affiliated S&T think tanks, and enterprise or consortium-affiliated S&T think tanks. Currently, the nationally recognized high-end S&T think tanks mainly include the Institutes of Science and Development of the Chinese Academy of Sciences, the Chinese Academy of Science and Technology for Development, the Strategic Consulting Center of the Chinese Academy of Engineering, and the China Association for Science and Technology Innovation Strategy Institute. Local S&T think tanks mainly include literature and information centers, information and intelligence institutions, and S&T strategy research institutions, such as the Wuhan Documentation and Information Center of the Chinese Academy of Sciences, Shanghai Institute for Science of Science, and Jiangxi Institute of Science and Technology Development Strategy.

#### 1.4 A Typical Local Science and Technology Think Tank: Operational Characteristics of Chongqing Strategy Institute

Compared with national S&T think tanks, the main differences of new local S&T think tanks lie in their development positioning, service objects, service content, and funding sources. Taking Chongqing as an example, in 2016, the Chongqing Municipal Party Committee and Municipal Government issued the “Opinions on Strengthening the Construction of New-Type Think Tanks in Chongqing,” listing the Chongqing Academy of Science and Technology (hereinafter referred to as Chongqing Academy of Science and Technology) as a key cross-cutting thematic think tank. Similarly, in 2015, the General Office of the CPC Central Committee and the General Office of the State Council issued the “Opinions on

Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics,” listing the Chinese Academy of Sciences as a high-end S&T think tank. The Chongqing Academy of Science and Technology primarily relies on its subsidiary, the Chongqing Strategy Institute, as its construction support. As a new local S&T think tank established only four years ago, the operational characteristics of the Chongqing Strategy Institute are mainly reflected in: first, its development positioning as a key cross-cutting thematic think tank designated by the Chongqing Municipal Party Committee and Municipal Government; second, its service object, which mainly provides policy consultation for party and government departments at all levels in Chongqing; third, its research characteristics, focusing on major and difficult issues such as the implementation of Chongqing’s innovation-driven development strategy and the construction of a western innovation center; and fourth, its funding sources, which mainly utilize market-oriented funds from a shareholding system and government project post-subsidy funds.

## **2 Practice and Exploration in Building New Local Science and Technology Think Tanks: Experiences from Chongqing Strategy Institute**

Established in April 2012, the Chongqing Academy of Science and Technology for Development is a comprehensive decision-making consultative research institution with independent legal person status and the first S&T think tank in Chongqing. Since its establishment, the institute has emphasized “new-type” and “characteristic” features, achieving remarkable results in a short period. Its experiences and practices offer important reference value for the construction of local S&T think tanks.

### **2.1 Integrating Superior Resources to Build a Strong Expert Database**

Think tanks exist first and foremost as reservoirs of ideas, and their influence depends crucially on gathering a large number of high-level, sophisticated think tank talents with ideals, independent thinking, and academic expertise. As a newly established think tank institution, the Chongqing Strategy Institute regards leveraging external forces as an important means of concentrating think tank resources. Affiliated with the Chongqing Academy of Science and Technology, which is the largest scientific research and S&T innovation service institution in Chongqing, the institute draws on its parent organization’s expert resources covering multiple disciplines including automotive, information technology, new materials, new energy, automation instruments, lasers, and biomedicine. By continuously absorbing experts from Chongqing’s universities and research institutes, the institute has built an “external” expert database of over 60 professionals covering various industries.

## 2.2 Focusing on Main Research Directions and Highlighting Professional Characteristics

S&T think tanks must highlight and embody the essence of “science and technology.” Following the requirement that its research fields should not overlap with those of academies of social sciences, party schools, administrative institutes, and universities, the Chongqing Strategy Institute has established its own distinctive research directions by combining its expert resource advantages with Chongqing’s major S&T needs. For instance, it focuses on focal issues in national and local S&T system and mechanism reforms, conducting research on the disposition rights of scientific and technological achievements in Chongqing, the “de-administration” of public welfare research institutions, and the performance evaluation system for professional and technical personnel. It also concentrates on the latest trends in industrial S&T development, conducting research on the industrial development and layout of IoT, cross-border e-commerce, robotics, and big data in Chongqing. The majority of these studies have been transformed into specific policies for Chongqing’s industrial development.

## 2.3 Establishing Self-Initiated Research Projects to Proactively Influence Decision-Making

S&T think tanks must provide suggestions to the government, regularly or irregularly supply intelligence products to relevant decision-making departments, contribute wisdom, and offer theoretical support and practical references for major national and local S&T decisions. Focusing on major regional S&T strategic issues, the Chongqing Strategy Institute proactively plans and organizes research on hot topics, emphasizing the expansion and application of research findings to produce innovative and forward-looking major achievements. Inspired by the Ministry of Science and Technology’s “Annual Report on China’s Regional Innovation Capability,” the institute developed an annual evaluation report on the S&T competitiveness of Chongqing’s 38 districts and counties, which received high recognition from Chongqing’s S&T industry authorities and subsequently secured special funding from the Chongqing Municipal Finance Bureau. Building on this success, the institute innovatively and independently planned the “Chongqing Industry S&T Competitiveness Evaluation Report,” analyzing the national standing of Chongqing’s “6+1” pillar industries and 10 strategic emerging industries in terms of S&T competitiveness, generating significant impact.

Similarly, after the China Association for Science and Technology Innovation Strategy Institute and Beijing’s 36Kr co-working space released indices on national innovation and entrepreneurship activity that attracted strong responses from government and society, the institute independently planned and developed the “Chongqing District and County Innovation and Entrepreneurship Index Quarterly Report” to better reflect the objective situation of Chongqing’s “mass entrepreneurship and innovation” work. This report was covered by mainstream media such as *Chongqing Daily* and was adopted by the Chongqing

Municipal Development and Reform Commission as an important reference for evaluating district and county “mass entrepreneurship and innovation” work, while Chongqing’s S&T industry authorities provided project support for this report in major decision-making initiatives.

#### **2.4 Innovating Research Methods to Enhance Research Capabilities**

The greatest challenge in decision-making consultative research is insufficient data support. In current think tank research, scholars often spend considerable time and effort searching for basic data. Government statistical data is generally not publicly available, while other statistical data lacks authority. Moreover, many existing statistics are compiled through bottom-up reporting and aggregation, which in some fields fails to objectively and truthfully reflect reality. Additionally, compared with foreign countries, China’s various databases are not only fewer in number but also primarily focused on natural sciences, with relatively few databases in economics, business, and social sciences, making them unable to meet think tank research needs. In response, the Chongqing Strategy Institute invested in establishing the Chongqing Big Data Research Institute, employing big data and technology foresight methods to conduct research. This approach has transformed the traditional research strategy dominated by basic data, integrating information obtained through big data into research from indicator design to data collection, achieving excellent results.

Taking the “mass entrepreneurship and innovation” index research as an example, when studying regional “mass entrepreneurship and innovation” activity, the institute designed indicators such as the number of newly registered enterprises, search volume for innovation-related terms, and number of new job postings, with all data obtained through big data mining and analysis methods. For instance, data on newly registered enterprises was primarily obtained by mining and analyzing business registration information for newly established companies from industrial and commercial information websites. For innovation-related term search volume, the institute first identified over 30 innovation-related terms such as materials, environmental protection, industry-university-research collaboration, basic research, technological innovation, automotive, common technologies, and technical standards, then used big data to count search volumes for these seed words and their derivatives. For new job postings, the institute primarily used big data to search publicly available recruitment information on the top 10 national recruitment websites, district and county talent networks in Chongqing, human resources websites, well-known WeChat public accounts, and corporate official websites, then employed algorithms to statistically obtain the data.

#### **2.5 Implementing Flexible Salary Systems to Stimulate Personnel Vitality**

The fundamental characteristic of “new-type think tanks” lies in their entirely new operational models. Think tanks are not subsidiaries of decision-making

bodies but rather market entities in the information industry. They build their brands and expand their influence by providing viewpoints, ideas, and intelligence to governments, enterprises, and social institutions, thereby securing funding support and forming a virtuous cycle. The greatest feature of the Chongqing Strategy Institute is that it is neither a public institution nor a traditional state-owned enterprise. It does not operate according to the operational rules of public institutions, nor does it completely adopt the profit-driven approach of private institutions. Although it can obtain certain financial support, such funds are acquired based on the quality of research results and their application or through competitive project applications, unlike other government-affiliated think tanks that have budgetary support. Because it is not a public institution, its personnel salaries are not restricted by the public institution salary system, and because it is not a private institution, its researchers do not need to chase market opportunities or solicit business. All researchers implement a negotiated salary system, with basic salaries determined according to education, professional titles, and performance. Project performance adopts a project leader responsibility system, with fair distribution based on the principle of “more pay for more work,” maximizing the stimulation of researchers’ vitality and facilitating the building of high-level talent teams.

## 2.6 Building Think Tank Alliances to Enhance Brand Image

As the saying goes, “It is difficult for a single hand to clap, but easy for many to walk together.” Think tank research requires substantial information resources. New-type think tank institutions cannot, like traditional ones (such as academies of social sciences and party schools), build large fixed research teams. High-quality think tank products require integrating resources from all parties and establishing a research system dominated by think tank alliances. Only by fully integrating superior resources, strengthening collaborative innovation, and promoting the cross-departmental, cross-disciplinary, and cross-regional aggregation of think tank elements can we create aggregation advantages and clustering effects, transforming individual think tanks from “isolated islands” into “archipelagos.” To this end, in 2016, the Chongqing Strategy Institute took the lead in establishing the National Local Science and Technology Think Tank Alliance, which has carried out project cooperation and information sharing activities among its members and hosted the first National Local Science and Technology Think Tank Forum, gradually forming a research consortium for local S&T think tanks.

## 3 Development Strategy Options for New Local Science and Technology Think Tanks

The practice of the Chongqing Strategy Institute reveals that the development of new local S&T think tanks must leverage their functions in producing ideas, providing consulting services, gathering resources, and influencing public opinion, exploring development strategies that can fulfill their missions and values.

### **3.1 Clarifying Research Directions and Advantages Based on Local Development Realities**

Only by specializing, refining, and distinguishing themselves can S&T think tanks form sustained influence. China has a vast territory with significant regional development differences and varying advantages and characteristics. Local S&T think tanks should determine their key research fields primarily around solving major local S&T innovation issues and the central tasks of party committees and governments. They must focus on main research directions, highlight professional characteristics, plan forward-looking research topics, and form brand influence through long-term tracking and analysis. For example, Guizhou could focus on developing research characteristics in big data and smart tourism; Beijing and Shanghai could specialize in regional S&T innovation center planning and layout; Dalian and Qingdao could develop expertise in implementing the maritime power strategy. By establishing research directions that align with local development realities and building research characteristics within their industries, think tanks can gradually gain recognition from decision-making departments for their S&T development strategies and become policy research institutions for ideological innovation.

### **3.2 Adopting Diversified Policy Consultation Methods to Provide Forward-Looking Consultation Reports**

Currently, the main consultation methods of S&T think tanks include participating in decision-making, publishing internal references, submitting research reports, and organizing seminars. Local S&T think tanks should improve the relevance and foresight of their policy consultation services through forward-looking topic research, providing important foundations for government decision-making. For instance, the Chinese Academy of Sciences' 2015 major study "Innovation 2050: Science, Technology, and China's Future" clearly analyzed China's S&T development roadmap for important fields over the next 30 years, providing a basis for the state to plan its S&T development strategy. At the same time, attention should be paid to emergency consultation research on major local events. For example, after Chongqing proposed building a western innovation center, the Chongqing Strategy Institute immediately began sorting out the development trajectories of major global S&T innovation centers, analyzing the feasibility of Chongqing's construction of a regional innovation center, and providing timely reports for government decision-making. Additionally, think tanks should conduct collaborative research with S&T decision-making departments and S&T research institutions, and promote exchanges and sharing among experts and scholars in the same region, industry, and field by hosting high-level forums and consultation seminars, providing windows for S&T think tanks to understand public needs and offering more channels for their participation in public policy formulation.

### **3.3 Establishing Flexible Personnel Mechanisms to Gather Superior Research Teams**

S&T think tanks represent an important manifestation of a nation's economic soft power, and talent constitutes their core competitiveness. The construction of specialized think tanks cannot succeed without specialized think tank personnel. Think tank research requires interdisciplinary researchers, with even greater demands for versatility than policy research and academic research. Therefore, local S&T think tank construction must first absorb talents from various fields, including local government consultative research, academic theoretical research, and economic and social practice, to build a multi-level, multi-dimensional, multi-disciplinary, and high-quality decision-making consultation "expert database" covering S&T, economics, society, humanities, and other disciplines. Second, flexible and diverse salary systems should be established, with fixed personnel receiving basic salaries and project performance-based pay, their value evaluated by the influence of their research reports, while non-fixed personnel such as external experts receive project performance-based pay, with project leaders flexibly distributing compensation according to contribution. Third, researchers should be regularly recommended for temporary positions in government to provide consultation for decision-making, while policy researchers from government departments should be invited to work in think tanks, establishing a "revolving door" mechanism for think tank researchers.

### **3.4 Expanding Research Output Dissemination Channels to Enhance Discourse Power in Government Decision-Making**

The vitality of S&T think tanks stems from their influence; think tanks must use their ideas and viewpoints to influence society. Well-known S&T think tanks such as the Institutes of Science and Development of the Chinese Academy of Sciences and the Chinese Academy of Science and Technology for Development have proposed S&T policy suggestions that not only influence national S&T strategic decision-making but are also well-known to the public. Local S&T think tanks should actively expand channels for submitting research results, ensuring that high-quality reports are delivered not only to top leaders but also to relevant government departments. Moreover, since think tank research focuses on influencing decision-making and emphasizes immediate impact, research results should also be actively disseminated through seminars, press conferences, academic journals, newspapers, and websites. By leveraging communication networks to promote and enhance the discourse power of local S&T think tanks in local government decision-making and actively guiding public participation in policy discussions and opinion expression, the exchange and dissemination speed of think tank results can be accelerated, shaping the visibility of local S&T think tanks among government and the public, thereby more effectively influencing government decision-making.

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