Maximizing the Role of Government Information Work in Building National Science and Technology Think Tanks Under New Circumstances: Postprint

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Abstract

This study conducts a multi-dimensional analysis using data on information submitted by the Chinese Academy of Sciences (CAS) to the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council from 2002 to 2015, as well as the adoption and approval status of such submissions. It provides an in-depth examination of the current status and characteristics of CAS' s government affairs information upward reporting work. In conjunction with transformations in the global science and technology landscape, the requirements for China' s science and technology think tank construction, and new demands on science and technology decision-making models, the study recommends establishing an interdisciplinary and inter-institutional cross-integration working mechanism embedded within science and technology decision-making, creating an information resources and human resources support platform that can effectively sustain the think tank role of government affairs information work, and developing an evaluation and review system and sharing platform for government affairs information products.

Full Text

How to Fully Leverage the Role of Government Information Work in the Construction of National Science and Technology Think Tanks Under the New Situation

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Abstract

This paper conducts a multi-dimensional study based on data from 2002–2015 regarding information submitted by the Chinese Academy of Sciences (CAS) to the General Office of the CPC Central Committee and the General Office of the State Council (hereinafter referred to as the "Two Offices"), along with adoption and approval feedback. It provides an in-depth analysis of the current status and characteristics of CAS' s government information reporting work. Combining this analysis with transformations in the global science and technology landscape, China' s science and technology think tank construction needs, and new requirements in science and technology decision-making models, the paper recommends establishing an embedded, interdisciplinary, and cross-institutional convergent working mechanism; building information resources and human resource support platforms that can effectively sustain the think tank role of government information work; and creating an evaluation and review system for government information products along with a sharing platform.

Keywords: government information work, science and technology think tank, recommendations

1. Analysis of the Current Status of CAS Government Information Reporting Work

CAS' s government information work comprises two levels: internal exchange and upward reporting. This paper focuses specifically on CAS' s upward reporting to central authorities. Currently, CAS has established a robust organizational and management mechanism for government information work that is well-organized and operates smoothly. In 2014, CAS issued the *Management Measures for Science Communication Work of the Chinese Academy of Sciences (Trial)* and the *Detailed Rules for Statistics on Science Communication Work of the Chinese Academy of Sciences* (Document No. [2014] 9), which provided detailed provisions on organizational systems, work procedures, support conditions, and evaluation mechanisms for government information work. In 2015, CAS promulgated the *Management Measures for the CAS Science Communication Award* (Document No. [2015] 1), further strengthening incentives for government information reporting. Under the coordination of the Bureau of Science Communication, CAS has formed a specialized information reporting team following a "small core, large network" model that combines full-time and part-time staff, and has established smooth internal and external communica-

tion mechanisms, quarterly work reporting mechanisms, and annual training programs.

1.2. Analysis of Characteristics and Trends in Government Information Reporting Work

Analysis of CAS's submitted information items and adoption/approval feedback from 2002–2015 reveals the following trends and characteristics:

1.2.1. Substantially Fulfilling the Role of a Science and Technology Think Tank Since 2002, CAS has submitted 3,135 information reports to the Two Offices, of which 1,692 were adopted and 529 received instructions from Party and state leaders, earning multiple commendations from the Two Offices. First, CAS has played an important role in supporting national science and technology decision-making. Following major natural disasters such as the Wenchuan earthquake, Zhouqu mudslide, and Ya'an earthquake, CAS's series of reports on scientific and technological disaster relief promptly provided decision-making support for national relief efforts. Second, CAS has significantly influenced major science and technology policy formulation. For example, regarding open access to research outcomes, CAS submitted the *Recommendations on Implementing Open Access for Papers Published by National Research Programs*, which received instructions from national leaders and led to the Ministry of Science and Technology taking the lead in formulating relevant national policies. In May 2014, the National Natural Science Foundation of China and CAS took the lead in issuing policy statements on open access for research papers from publicly funded projects, marking substantial progress in open sharing of research outcomes.

1.2.2. Strong Correlation Between Submission Volume and Adoption/Approval Rates Figure 1 [Figure 1: see original paper] shows the number of special reports submitted by CAS to central authorities and their adoption by the Two Offices and receipt of national leader instructions from 2002–2015. The data demonstrate a generally positive correlation between the number of information submissions and both adoption by the Two Offices and leader approvals. Even though the number of adoptions by the Two Offices has slightly decreased since 2013, the number of leader instructions remains positively correlated with submission volume. This indicates that focusing on decision-making information needs and increasing submission volume are essential factors for enhancing the effectiveness of government information reporting work.

1.2.3. High Approval Rate for Commissioned Submissions Figure 2 [Figure 2: see original paper] illustrates the number of submissions by CAS to central authorities, including commissioned submissions by the Two Offices, and the number receiving leader instructions from 2011–2015. The figure shows that more commissioned submissions correlate with more leader instructions,

and commissioned submissions also correlate strongly with total submission volume. This demonstrates the need to attach great importance to commissioned submissions from the Two Offices, seize these opportunities, and enhance the influence of submitted information.

1.2.4. Significant Potential for Joint Submissions by CAS Affiliated Units Figure 3 [Figure 3: see original paper] shows the rate of joint submissions by CAS affiliated units since 2011. The joint submission rate has been below 12% in all years except 2013, indicating substantial potential for growth. Detailed analysis reveals that current joint submissions are primarily between supervisory bureaus (functional bureaus) and relevant institutes, with a small number of collaborations between institutes with similar research themes. Furthermore, the number of collaborating units per information report is gradually increasing from two to three, four, or even more.

1.2.5. High Approval Rate for Information Related to National Welfare and People' s Livelihood Analysis of leader instructions from 2011-2015 shows that approved information focuses primarily on agricultural and rural development, environmental protection, natural disasters, information security, social infrastructure construction, science and technology system reform, and innovation and entrepreneurship. More than 50% of approvals relate to agricultural and rural development and environmental protection, demonstrating high relevance to national welfare and people' s livelihood.

2. New Development Environment and Opportunities for Government Information Reporting Work

At present, a new round of global scientific and technological revolution and industrial transformation is unfolding, the global scientific and technological innovation landscape is undergoing major adjustments, and the interconnection between science, technology, and economic and social development is becoming increasingly close. The complexity of strategic decision-making and policy formulation is growing daily, and government information reporting work, as an important component of the national decision-making consultation system, will inevitably face new situations and developments.

2.1. Profound Changes in the Global Competitive Landscape

In response to changes in the global competitive landscape, competition among nations is gradually shifting from resources and capital to science, technology, and innovation, entering the level of "intellectual economy" competition. This intellectual competition must rely on professional science and technology think tanks. In economically developed countries such as the United States, Japan, the United Kingdom, and Germany, think tank institutions, especially science and technology think tanks, are increasingly becoming the foundation for major decision-making and playing important roles in national construction. More and

more countries regard modern science and technology think tanks as important content of national soft power in the new era and elevate them to the level of national strategy.

In line with development needs and general trends, on January 20, 2015, the Two Offices issued the *Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics* (hereinafter referred to as the *Opinions*), elevating the strengthening of new-type think tank construction and the establishment of a sound decision-making consultation system to the level of national will. The *Opinions* explicitly state that research institutions should focus on building an innovative country and implementing an innovation-driven development strategy, study domestic and international science and technology development trends, propose consulting recommendations, conduct scientific assessments, make predictions and judgments, and promote deep integration of scientific and technological innovation with economic and social development. The *Opinions* require that CAS, the Chinese Academy of Engineering, the China Association for Science and Technology, and others should leverage their advantages in promoting scientific and technological innovation, play supporting roles in national science and technology strategies, planning, layout, and policies, and become high-end science and technology think tanks that are innovation-leading, state-reliant, socially trusted, and internationally renowned. CAS' s government information reporting work not only has actually undertaken tasks of science and technology think tanks such as "studying domestic and international science and technology development trends and proposing consulting recommendations" and "supporting national science and technology strategies, planning, layout, and policies," but has also established standardized management processes and formal reporting channels through years of accumulation, ensuring that decision-making consultation results are rapidly transmitted to national leaders through the Two Offices—a "direct express" between science and technology think tanks and national decision-makers.

2.2. Imminent Transformation of Decision-Making Models for Major Issues

In an era of rapid economic and scientific and technological development where human society has entered an information explosion, national decision-making models for major issues are facing new challenges. First, the scope of decision-making is expanding, extending from traditional internal affairs, diplomacy, and military affairs to new areas such as economy, science and education, culture, ecological environment, and people' s livelihood, placing higher demands on the holistic and comprehensive nature of decisions. Second, decision-making content is becoming increasingly complex, with more diverse stakeholders making it more difficult to balance interests and creating more conflicts of interest, which places higher demands on the relevance of decisions. Third, the social opinion environment is becoming more complex and changeable, with public opinion gradually influencing decision-making, placing higher demands on the

transparency and openness of decisions. Fourth, there are more uncertain factors in decision-making, more risk points, and faster decision-making speed and frequency, placing higher demands on the foresight and timeliness of decisions.

2.3. Urgent Need to Construct a Science and Technology Think Tank System

According to the *2015 Global Go To Think Tank Index Report* published by the University of Pennsylvania, there are 6,846 think tanks worldwide. The United States ranks first with 1,835 think tanks, while China remains the world' s second-largest think tank country with 435 think tanks—an increase of six from 2014—followed by the United Kingdom and India with 288 and 280 think tanks respectively. However, in terms of influence, China still lags behind European and American countries, and its science and technology think tank construction is even less satisfactory. China has elevated think tank construction to a national strategic level, officially launching a pilot program for national high-end think tank construction in December 2015 and identifying the first batch of 25 pilot units, including CAS. Among these, only a handful have distinct science and technology think tank characteristics.

As early as 2013, CAS established the Science and Technology Think Tank Construction Committee to coordinate the construction of research resources, teams, and platforms related to the think tank across the Academy. In 2014, CAS officially included "building a high-level national science and technology think tank" in its new-era mission statement. In the "Pioneer Initiative," CAS explicitly proposed "establishing a research system and management platform for a high-level science and technology think tank by 2020" to "become an internationally renowned science and technology think tank with distinctive features, trusted by society, and relied upon by the state."In June 2015, the CAS Institute of Science and Technology Strategy officially opened, and in January 2016, its establishment was announced, creating a decision-making consultation service system comprising over 30 research centers or domain strategy research groups and research units. At a time when the "general mobilization"of national science and technology think tank construction has begun and specialized science and technology think tanks are still being cultivated, government information work will play an even greater role in science and technology think tank construction due to its advantages of rapid response, strong relevance, and solid foundation.

3. Recommendations for Fully Leveraging Government Information Work in Science and Technology Think Tank Construction Under the New Situation

From a global perspective, the development of science and technology think tanks is undergoing changes, expansions, and extensions under the new situation. From a national perspective, "Chinese characteristics" and "new-type" represent new requirements, positioning, and directions for China' s science

and technology think tanks. Focusing on science and technology think tank construction, CAS has explicitly proposed enhancing the comprehensiveness, systematic nature, and relevance of strategic research and consultation, emphasizing a focus on innovation-driven development through scientific and technological innovation. Based on these new requirements and the analysis above, three recommendations are proposed.

3.1. Recognizing Government Information Reporting Work from a Higher Strategic Position

Building new-type think tanks with Chinese characteristics is already an important national strategy. Although the coexistence and joint development of multiple subjects including official and private think tanks represents the development direction of China' s think tank system, official think tanks will still play the primary consulting and supporting role in decision-making for the current and foreseeable future—a position of importance that other think tanks cannot match. As a unique force within the official think tank system, government information reporting work should also be elevated to a strategic level and given due attention. Facts also show that CAS affiliated units ranking at the forefront in government information work in recent years have already incorporated emphasizing the think tank role into their overall development strategies.

Furthermore, because government information can be directly submitted to central government departments and sometimes includes specially commissioned submissions, it represents, in a sense, a special force within the think tank system that can provide precise decision-making support services. However, with the development of China' s think tank system, demand for decision-making information will be released to the public, inevitably weakening the advantages of government information reporting work. If government information continues to be treated as a routine task of government agencies, it will be extremely uncompetitive in the social competition system. Therefore, it is necessary to re-examine the positioning of government information reporting work from a higher strategic position, leverage its strengths while avoiding weaknesses, adhere to the principle of "doing some things while refraining from doing others," and play a greater role in serving leadership decision-making.

3.2. Establishing an Embedded Cross-Integration Working Mechanism

The coming period will be a golden age for the rapid development of China' s science and technology think tanks. Experience from many world-renowned think tanks shows that important policy recommendations are no longer completely independently proposed by think tank researchers but are completed through cooperation with policy decision-makers, experts, and stakeholders, with full understanding of decision-making needs. Intervening in the entire process of policy or decision-making formulation—including the front-end procedures, mid-term advice, and later-stage improvement—is precisely the organizational and

management form of new-type science and technology think tanks. The *Opinions* explicitly propose that "policy research institutions affiliated with central and state organs should regularly release decision-making demand information around central tasks and key work." Government information work should seize this opportunity to further strengthen communication with the Two Offices, grasp decision-making needs, identify connection points, improve the relevance of government information submissions, and explore the establishment of some long-term cooperative, embedded cross-integration working mechanisms.

Meanwhile, according to the new situation of modern decision-making models and the new normal of scientific and technological development, renowned think tanks are actively exploring the establishment of matrix-style research mechanisms for multidisciplinary cross-integration, which can ensure standardized and effective management of the entire think tank while meeting research needs requiring collaboration among multidisciplinary experts. In the future, CAS should encourage the development of joint information submissions across administrative institutions and disciplinary fields, strengthen communication and collaboration with CAS organizations that have science and technology think tank functions (such as the CAS Institute of Science and Technology Strategy), and also mobilize the strength of members of the Chinese Academy of Sciences Alliance to establish cross-disciplinary, collaborative, and convergent working mechanisms.

3.3. Establishing Sound and Effective Resource Guarantee Platforms

(1) Information Platform. Most internationally renowned think tank institutions have their own information centers or libraries as powerful information support for their research. For CAS, it can fully rely on its strong literature and information system as a science and technology information support platform, establish a scientist resource database as a decision-making expert information platform, and create a long-term preservation platform for special report information that can be openly shared within the unit to serve as a sharing platform promoting inter-institutional collaborative consultation work, while strengthening exchanges and connections with relevant institutions outside the Academy.

(2) Human Resources Guarantee Platform. CAS should continue to encourage and attract frontline scientific research personnel to participate in government information reporting work, establishing a decision-making consultation team with broad sources and a rational professional structure. It should also continuously strengthen training for part-time government information staff and extend this training to institute leaders and scientific research personnel who specifically write information reports through appropriate opportunities and forms. It is recommended to add content regarding national political and economic situations, science and technology development trends, and CAS' s key research directions and fields to training programs.

3.4. Establishing a Government Information Evaluation and Review System

Research on world-renowned think tanks reveals that strict evaluation and review systems are necessary conditions for ensuring research quality, maintaining good service reputation, and achieving sustainable development. For example, the RAND Corporation has established a multi-level review system, specifically formulated quality review standards for research outcomes, and created mechanisms for reviewing the research value of research departments, in addition to inviting external experts for review. Therefore, it is recommended to develop a set of content quality review standards for government information based on difficult issues encountered in government information reporting work and feedback, evaluating from multiple dimensions such as effectiveness, foresight, and accuracy.

Furthermore, it is recommended to further sort out existing government information products while establishing a post-submission tracking and inspection mechanism to analyze special report information that has actually played a role in national decision-making consultation, track and evaluate the generalizability of its experience, and establish a case library. In organizing information submissions, quality should be advocated, but the volume of information submissions should also be continuously increased.

In summary, CAS has gradually become a highly relied-upon source of science and technology information reporting for the Two Offices and is playing an increasingly important role in supporting national decision-making. Facing new development situations, CAS must accelerate its pace, assess the situation, fully leverage the advantages of government information reporting work in science and technology think tank construction, strongly support national macro-level science and technology decision-making, and advance government information work to a new level.

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Note: Figure translations are in progress. See original paper for figures.