

PAPER • OPEN ACCESS

## Building new think tanks with civil aviation characteristics

To cite this article: Xiong Li and Xiaoqing Chen 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **267** 052019

View the [article online](#) for updates and enhancements.

# Building new think tanks with civil aviation characteristics

Xiong Li<sup>1\*</sup> and Xiaoqing Chen<sup>2</sup>

<sup>1</sup> Planning and Design Institute, China Airport Construction Group Company Limited, Beijing 100101, China

<sup>2</sup> Aviation Industry Development Research Center of China, Beijing 100101, China

\* Corresponding author e-mail: lixiong\_cacc@163.com

**Abstract.** To build new think tanks with civil aviation characteristics is an inevitable requirement for advancing the participation of China's civil aviation in international cooperation and competition, enhancing the scientific, democratic and accurate decision-making capabilities in the professional field, and creating a civil aviation power. Based on the guide and the overall objective of building new think tanks with Chinese characteristics, the related concepts of think tanks and the current composition of think tanks in China's civil aviation were briefly elaborated. The existing problems and successful cases in the development of civil aviation think tanks were analyzed. Finally, relevant suggestions and measures were proposed from the aspects of mechanism innovation, topic selection, staffing and achievement sharing.

## 1. Introduction

The construction of new think tanks with civil aviation characteristics will help to provide decision support and intellectual guarantee for the formulation of civil aviation policies, the deployment of strategies, the compilation of regulations and the application of new technologies. A think tank, also known as a think organization or a think team, has different definitions. A representative definition is proposed by American writer Paul Dickson. He defined a think tank as an object that the government goes to for solving various problems, or a long-term organization that performs interdisciplinary policy research with existing knowledge<sup>[1]</sup>. If the government is the "brain" of national policymaking, then a think tank is described as an "exobrain" of the government. Think tanks are widely involved in major public policy research and consulting services related to the national economy, social development and international strategic competition, and play a crucial role in promoting scientific policymaking, sustainable economic development and social stability.

According to China Think Tank Report 2017, China's think tanks are mainly divided into six categories: think tanks of the government and the military / research institutes, think tanks of public institutions directly under ministries and commissions, think tanks of local governments, think tanks of local academies of social sciences, think tanks of colleges and universities, and social (corporate) think tanks. The top 100 think tanks in comprehensive influence were listed in Table 1 according to their categories<sup>[2]</sup>. Among them, think tanks related to civil aviation were not found in the categories of public institutions, colleges and universities, and social (corporate) types.

Think tanks have both connections and differences with governmental policy research departments, academic institutions and various consulting services companies<sup>[3]</sup>. In terms of the relevance to policy and market, think tanks have the greatest relevance to government policies and target markets. That is



to say, think-tank achievements should be rational, feasible and timely for policies, as shown in Figure 1.

Table 1. Top 100 Chinese think tanks in comprehensive influence (2016-2017).

Think tank category	Quantity		Average position	
	2016	2017	2016	2017
Government and military / research institutes	16	10	29.1	8.6
Public institutions under ministries and commissions	30	26	48.9	40.7
Local governments	7	9	68.3	72.4
Local academies of social sciences	7	14	83.4	78.4
Colleges and universities	19	21	50.3	48.9
Social (corporate)	21	20	52.4	56.7

Note: Think tanks of local governments include those of local party schools (schools of administration) and those of local policy institutes. The smaller the value of average position is, the greater the influence will be.

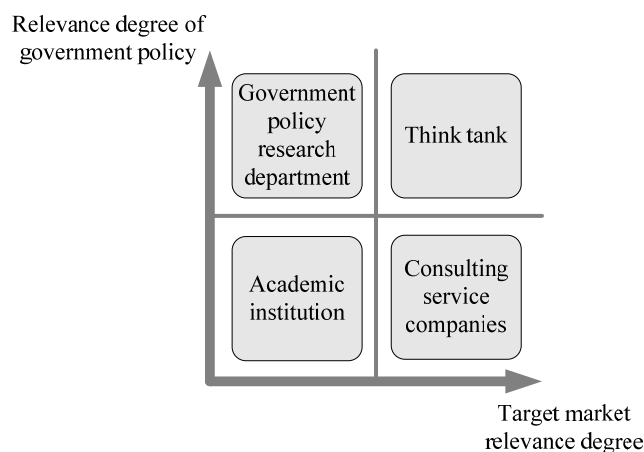


Figure 1. Relevance to policy and market.

## 2. Composition of civil aviation think tanks in China

China's current civil aviation think tanks are mainly from four categories of departments or organizations.

(1) Think tanks of public institutions directly under Civil Aviation Administration of China (CAAC)

China Academy of Civil Aviation Science and Technology (hereinafter referred to as CAST) is an industry-leading, first-class think tank platform that CAAC is striving to create currently. *The 13th Five-Year Plan for the Development of Civil Aviation in China* pointed out that "CAST has established an aviation safety experiment base with the goal of building an important base for scientific and technological innovation, an authority for experimental verification, and a leading think tank for civil aviation development." CAST consists of the Institute of Aviation Safety, the Institute of Civil Aviation Development, the Institute of Civil Aviation Operating Technologies, the Institute of Aviation New Technologies, and the Institute of Policies and Regulations, etc., mainly studying the development strategies, policies and guidelines, laws and regulations, as well as rules and standards of the civil aviation industry and providing policymaking support for aviation safety and development.

(2) Think tanks of civil aviation colleges and universities

Relying on teachers and research teams of Civil Aviation University of China, many think tanks with new era characteristics have been successively established in recent years, such as the Center for Airport Economy Studies, the Center / Think Tank for China Civil Aviation Environment and

Sustainable Development Research, and the Center / Think Tank for Beijing-Tianjin-Hebei Civil Aviation Coordinated Development Research set up by CAUC (The last was jointly set up by CAUC and CAAC North China Regional Administration)<sup>[4]</sup>. In addition, a series of scientific research institutions such as the Civil Aviation Soft Power Research Center, the Civil Aviation Policies and Regulations Research Center, and the Civil Aviation General Aviation Research Center have also been established.

The Civil Aviation Management Institute of China, as an adult college directly under CAAC and a training base for senior management personnel in the civil aviation industry, is also committed to building a think tank for civil aviation reform and development. Its research fields include civil aviation development strategies and industry policies, air transport market, human resource management, economy and law, corporate and organizational culture construction, etc. The China Civil Aviation Development Forum organized by this Institute has been held for nine consecutive years, with strong attraction and extensive influence in the industry and having become an important exchange platform for China civil aviation and even world civil aviation.

(3) Think tanks of enterprises and consulting companies related to civil aviation

The planning development or strategic research departments of major airlines, major airport groups and other companies related to civil aviation usually assume the role of corporate think tanks, and provide decision-making support for the development of the company and the industry. In addition, Civil Aviation Engineering Consulting Company of China, as the largest engineering consulting agency in the civil aviation industry, provides professional consulting services in the civil aviation infrastructure construction and airport network layout.

(4) Other think tanks related to civil aviation studies

Such think tanks mainly refer to those without a direct affiliation with CAAC or civil aviation enterprises and public institutions. But their research scopes can involve civil aviation transportation development, engineering construction, commercial aircraft manufacturing, general aviation, airport economy, civil aviation big data analysis, etc., such as China International Engineering Consulting Co., Ltd., China Aviation Industry Development Research Center, China Urban Airport Economic Research Center, China Aviation Society, Civil Aviation Resource Network.

### 3. Current problems in the development

Since the 18th National Congress of the C.P.C, the central government has highly valued the construction of national think tanks and has put forward a series of new ideas, new thoughts and new strategies for it. The central government emphasized that we should, from the strategic perspectives of promoting scientific and democratic policymaking, pushing forward the modernization of governance system and governance capability, and enhancing the soft power of China, take the construction of new think tanks with Chinese characteristics as a major and urgent task to effectively complete, and to form a new think-tank system with clear positioning, distinctive features, proper scale and logical layout; focus on building a number of high-end think tanks with a large and international influence and value the construction of specialized think tanks<sup>[5]</sup>.

The construction of new think tanks with civil aviation characteristics is an important part of China's efforts to create a specialized industrial think tank, but there are still some problems in the current development, including:

(1) There is a lack of effective information sharing and interactive communication between think tank research institutions and government policymaking departments, and there is a mismatch between governments' concerns and think tanks' studies. If the side that demands policymaking does not give high attention and specific institutional guarantees, the construction and development of think tanks will be merely unilateral thinking.

(2) The existing think-tank institutions, think-tank experts and think-tank resources have the characteristics of decentralization and fragmentation, and it is urgent to build an organizational mechanism to effectively aggregate and coordinate these resources, and to form an administrative

system with well-defined duties, responsibilities and authority. The system should enable efficient and maximizing resource utilization and avoid low-level repetitive studies.

(3) The breadth, depth and specificity of the research content need to be further strengthened. The topic selection should fully consider the foresight, practicality, industrial hotspots, and cutting-edge technologies of the research content.

(4) Think-tank experts and research scholars are poorly defined. There are many research scholars but few think-tank experts. Versatile people who understand policies, master theories and have practices are scarce. The appointment of think-tank experts, limited by industrial systems and administrative mechanisms, lacks mobility and flexibility.

Although there are many problems in the process of building new think tanks with civil aviation characteristics, under the guidance of the concept of building think tanks with new era characteristics, some problems are gradually being solved, and innovative working mechanisms and organizational forms have also been applied and verified. Taking the compilation of Kunming International Aviation Hub Strategic Planning (hereinafter referred to as the Strategic Planning) in 2017 as an example, it fully embodies the advanced concepts of top-level design, resource sharing, multi-party coordination, intellectualization, prudent evaluation and guarantee implementation. For example, the Strategic Plan was prepared by local and industrial top-level decision-making departments, namely, the Yunnan Provincial People's Government and CAAC. The Strategic Plan covers various issues such as the development of local industrial economy, the connection of integrated transportation, the demand for the aviation market, route network analysis, infrastructure construction and airspace planning. The relevant departments of local governments cooperated with each other, and many departments and units in the field of civil aviation deeply participated in, with divisions and coordination of labour. During the preparation of the Strategic Plan, multiple rounds of expert workshops were held on the key issues of the number and configuration of runways in future airports. The ultimate Strategic Plan was fully affirmed and highly evaluated by the leaders of Yunnan Province and CAAC, and was jointly issued to ensure the implementation of the ultimate think tank achievements.

Furthermore, the student selection mechanism of the CAAC Development Policy Senior Workshop also fully embodies the innovative models that combine theory and practice, unit recommendation and fair competition, domestic training and foreign learning together.

#### **4. Suggestions and measures**

Based on in the objective- and problem- oriented principle, and focusing on the construction of new think tanks with civil aviation characteristics, the following suggestions and measures are proposed from the aspects of mechanism innovation, topic selection, staffing and achievement sharing.

##### **(1) Think-tank administrative system and mechanism**

Efficient think-tank administrative system and mechanism are the key to the construction of new think tanks, and the core objective is to plan, lay out, clarify the direction of the think tanks, strengthen the planning of think tanks at all levels and of all types, build think tanks that can support the development in the key areas and nodes of the civil aviation industry, and improve the level of think tanks in decision-making and consulting services.

At present, China has established a national high-end think-tank council system as an agency for the discussion and assessment of the construction of national high-end think tanks<sup>[6]</sup>. Some provinces, municipalities, ministries and commissions have also set up new think-tank councils at the provincial and ministerial levels to plan, administer and coordinate the development of local and industrial think tanks. The top-level construction of new think tanks with civil aviation characteristics can draw on the council's organizational and administrative mechanisms to form a civil aviation think tank council. The main duties of the council can include deliberating the construction objectives and rules and regulations of think tanks at different levels and of different types in the civil aviation industry; strengthening top-level design; selecting key research tasks that are urgently required by decision-making; providing necessary coordination and assistance for decision-making and consulting research

across fields and departments; conducting comprehensive assessments on key think tanks, and giving suggestions to build, adjust or cancel think tanks.

#### (2) Topic selection of think tank

The topic selection of new think tanks with civil aviation characteristics should focus on foresight and practicality. Foresight refers to the forward-looking, global and advanced nature of the selected topic. The topic selection should be global and keep up with the needs of the time and the development trend of the industry. As the world's second-largest air transport system, China should get a matched say in the international civil aviation. At present, some difficulties in the development of China's civil aviation cannot be solved by directly finding answers from foreign regulations or experience. Therefore, we must strengthen our own R&D, analysis and decision-making capabilities in solving problems such as the operation of airports at plateaus or with complex topography, the air traffic control mechanism under complex operating modes of multiple parallel runways, as well as air traffic flow management and collaborative decision-making.

Practicality means that the selected topic should be urgent and practical. The selected topic should be based on solving practical problems and should be operational. It should effectively raise the operating safety and efficiency of civil aviation, increase the economic benefits of airports and airlines, and improve passengers' travel experience, such as the operating mode of bay-style station site, the feasibility of pushing out an aircraft at idle, and the rules for the use of non-parallel runways (Beijing Daxing International Airport, Chengdu Tianfu International Airport).

#### (3) Expert selection and personnel training for think tanks

A think-tank research team composed of experts is undoubtedly the key to decide the quality of the consulting services provided by the think tank. The expert selection for civil aviation think tanks should break the traditional limitations of units, organizations and professions, to broaden sources of experts and select professionals with high theoretical levels, rich practical experience, and pioneering and innovative ideas in the fields related civil aviation. We should, in a planned and focused manner, identify great people with high theoretical and academic levels or professional and practical experience in this industry, to reserve a number of young versatile people who have great potential and promise<sup>[7]</sup>.

The expert appointment mechanisms of think tanks should have appropriate flexibility and mobility. Long-term, short-term or project-based appointment mechanisms can be adopted to fully mobilize the activeness of think-tank participants. For part-time think-tank experts, certain policy incentives and guarantees should be given.

#### (4) The exchange and sharing of think-tank achievements

The exchange of think-tank achievements mainly involves three levels: the first is the exchange between research achievements and decision makers; the second is the vertical exchange between think tanks from the top to the bottom or from the bottom to the top; and the third is the horizontal exchange between think tanks with overlapping research fields (including the exchange between domestic and international think tanks).

We should make full use of modern information technology such as the Internet and big data to build a hierarchical (or specially authorized, etc.) mechanism for the sharing and searching of think-tank achievements.

## 5. Conclusions

This paper briefly introduced the concept and development of think tanks. On the basis of in-depth analysis of China's aviation industry, we combed the composition of China's civil aviation think tank, and put forward the existing problems in the current development process. Finally, some suggestions and measures were put forward from the aspects of mechanism innovation, topic selection, employment and achievement sharing. The establishment of new think tanks with civil aviation characteristics was a huge system engineering, which needed to learn more from the advanced experience of other industries and developed countries.

### Acknowledgments

This work was supported by China civil aviation security ability building funds (15J511)--Research on application of simulation technology in civil airport planning and design.

### References

- [1] Dickson P 1971 *Think Tanks* (New York: Atheneum) p 1-28
- [2] Center for Think Tank Studies 2018 China think tank report 2017 (Shanghai: Shanghai Academy of Social Sciences) p 36-78
- [3] Li Y 2015 How academic and think tank functions co-exist, *Chinese Journal of Social Sciences* vol. 8 no. 13 p 2-3
- [4] Li Y H 2017 Civil aviation think tank assistant civil aviation development, *China Civil Aviation Daily* vol. 7 no. 6 p 6-7
- [5] Li G P and Xu Y F 2017 Learning Xi Jinping's "think tank vision", promoting the healthy development of China's, *Think Tank: Theory & Practice* vol. 2 no.2 p 1-10
- [6] Xie D D 2017 Research on promoting the construction of civil aviation characteristic new human resource management think tank, *Management Observer* no. 14 p 75-76
- [7] Yang S L, Feng Y and Hang L 2016 Comparative analysis on China and the US's top think tanks and its enlightenment, *Think Tank: Theory & Practice* vol. 2 no.2 p 15-24