University Library Services for University Think Tank Development from the Perspective of Evaluation Metrics: Postprint

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Abstract

[Purpose/Significance] This study explores the main functions and implementation pathways of university libraries in serving the construction of university think tanks, providing reference for the transformation and upgrading of university libraries and the development of new-type think tanks with Chinese characteristics.

[Method/Process] Based on systematic investigation of five domestic and international think tank evaluation projects, this research conducts coding convergence and cluster analysis on their evaluation indicators to extract the core elements of think tank development, establishes the correlation between these elements and the main functions and tasks of university libraries, and proposes specific pathways to improve library services for think tank construction by integrating practical surveys of university library participation in think tank building.

[Results/Conclusion] University libraries can achieve a promoting effect on their institution's think tanks in terms of factor endowments, organizational construction, output achievements, and comprehensive influence through pathways such as improving top-level design, deepening core capability construction, strengthening big data thinking and application capability building, and promoting collaborative sharing with think tanks.

Full Text

Preamble

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Paths for Academic Libraries Serving University Think Tank Construction: A Study Based on Evaluation Indicators

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Abstract

[Purpose/Significance] This paper discusses the main functions and implementation paths for academic libraries serving university think tank construction, providing references for the transformation and upgrading of academic libraries and the construction of new-type think tanks with Chinese characteristics. [Method/Process] Based on systematic investigation of five think tank evaluation projects at home and abroad, the evaluation indicators were coded, converged, and cluster-analyzed to extract core elements of think tank development. The association between these elements and the main functions and tasks of academic libraries was established, and specific paths for improving library services for think tank construction were proposed through practical surveys. [Result/Conclusion] Academic libraries can promote their university think tanks in terms of factor endowment, organizational construction, output, and comprehensive impact by improving top-level design, deepening core capacity building, strengthening big data thinking and application capacity, and promoting collaborative sharing with think tanks.

Keywords: Evaluation Indicators; Academic Library; University Think Tank; Service Path
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Think tanks are organizations that analyze and engage in public policy research, serving as bridges between academia and policymakers as well as between the state and the public, helping decision-makers and the public make informed decisions on public policy [1]. University-affiliated think tanks, established within universities and their affiliated institutions, possess characteristics such as strong research independence and abundant talent and knowledge support compared to non-university think tanks [2], and their construction and development have received high-level attention. Both the National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020) (2010) and the Ministry of Education's "Plan for Promoting the Construction of New-Type University Think Tanks with Chinese Characteristics" (2014) mandated comprehensive promotion of university think tank construction. In 2015, the General Office of the CPC Central Committee and the State Council's "Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics" incorporated university think tanks into the system of new-type think tanks with Chinese characteristics. Subsequently, the Central Committee for Comprehensively Deepening Reform approved the "Pilot Work Plan for National High-End Think Tank Construction," with six university think tanks including Tsinghua University's Institute for Contemporary China Studies selected as the first batch of national high-end think tank pilot units. The 19th Party Congress report

again emphasized strengthening the construction of new-type think tanks with Chinese characteristics. However, the role played by China's university think tanks remains disproportionate to their social status and unique advantages [3]. Exploring new paths for new-type university think tank construction in accordance with new-era development requirements holds important practical significance for enhancing national soft power.

University libraries possess rich, organized collection resources and provide diversified knowledge services, playing important roles in university development and social civilization advancement. "Every part of the university depends on the library," as Yale University continues to emphasize the importance of libraries for university development, teaching, and research [4]. Faced with new changes in information technology development and new-era business requirements, libraries are also undergoing transformation and reform to seize development opportunities and address practical challenges [5]. Active participation in think tank construction has become a new opportunity and growth point for library transformation. However, university libraries still face issues such as vague functional positioning and limited service capacity in participating in think tank construction.

Research has confirmed that evaluation serves the function of maintaining effective organizational output [6]. Think tank evaluation is an effective tool for tracking and monitoring think tank development and overcoming construction difficulties [7]. Evaluation indicators represent a systematic structural decomposition of think tank construction based on specific objectives by evaluating subjects, reflecting concrete, behavioral elements in think tank construction across different institutions. Based on think tank evaluation indicators, while we cannot completely and accurately judge the real impact of think tanks on policy processes or whether policymakers actually adopt think tank products, we can to some extent determine decision-makers' practical needs for think tank functions and values, guiding the construction of high-level think tanks. University library services for think tank construction represent an expansion of their basic functions and main tasks. Clarifying the coupling relationship between think tank evaluation indicators and libraries' basic functions and main tasks can, on the one hand, promote university libraries to strengthen their own capacity building, and on the other hand, provide a reference logic for university libraries to scientifically serve think tank construction. This study systematically examines think tank evaluation indicators, analyzes the role of university libraries in university think tank construction based on their main functions and tasks, and accordingly explores specific paths for libraries to serve think tank construction.

2. Literature Review

How university libraries should participate in new-type think tank construction and what roles they should play have attracted widespread attention and discussion. Zhao Xueyan et al. argue that university libraries should leverage their

advantages in literature resources and disciplinary services to enhance think tank capacity by increasing publicity, strengthening characteristic resource construction, and becoming information storage service institutions for think tanks [8]. Liu Jingyi et al. summarize experiences from foreign university libraries such as Stanford and Harvard in supporting think tank construction, recommending that university libraries deepen research on think tank-centered services, fully utilize disciplinary think tank resources, continue improving network platform construction, and develop embedded librarian services for think tank support [9]. Literature resources and data information are important supports for think tank development. Gao Yongxian's survey found that China's university think tanks face practical problems such as low proportions of database construction and low development and utilization of outputs, arguing that university libraries should participate in think tank database construction by building various thematic characteristic databases and establishing think tank decision-making information platforms [10]. Wan Wenjuan points out that university libraries should lead information resource construction for university think tanks, formulate scientific plans, and emphasize resource sharing [11]. H. Wu also argues that university libraries should promote China's think tank construction through literature development, talent aggregation, using scientometric methods to evaluate think tank outputs, establishing think tank information platforms, and preserving think tank outputs [12]. Against the "Double First-Class" construction background, the "Double First-Class" construction of university libraries has become an important topic. Chu Jiewang et al. propose that university libraries need to reposition their development goals by providing knowledge services for think tank construction [13]. Overall, current research mostly explores strategies for libraries serving think tank construction based on their characteristic advantages and the deficiencies and development needs of university think tanks, while research on the associative relationship between university libraries and university think tank construction remains blank. It is therefore necessary to clarify the functional positioning of university libraries in school think tank construction and their specific paths for serving university think tanks by combining think tank evaluation indicators that reflect key success factors for think tank development with the main functions and tasks of university libraries.

3. Think Tank Evaluation System Indicators and Core Dimensions

3.1 Overview of Think Tank Evaluation Systems

Since the 1980s, the number of think tanks has increased significantly [14], drawing widespread attention to comprehensive evaluation and influence measurement of think tanks. Through web and literature investigation, currently well-developed and influential think tank evaluation systems can be summarized as five major projects . These five evaluation projects collectively form an overall pattern combining qualitative and quantitative assessment and coexisting comprehensive and thematic evaluations. From the perspective of evaluation

objects, all five projects include evaluation and measurement of university think tanks, providing reference guidance for their construction and development.

The University of Pennsylvania's Think Tanks and Civil Societies Program (TTCSP), established in 1989, has been committed to collecting data and conducting research on think tank development trends and their roles in decision-making processes. To date, TTCSP has published 11 annual Global Go-To Think Tank Index Reports from 2008-2018. The 2018 report covers 8,162 think tanks worldwide and includes 54 ranking lists such as "Best University Think Tanks" [15].

The Chinese Think Tank Index (CTTI), developed by Nanjing University's Center for Think Tank Research and Evaluation and Guangming Daily's Think Tank Research and Publishing Center, is China's first vertical search engine and data management platform for think tanks. It designed a source think tank evaluation indicator system and ranking algorithm, developed an online evaluation system, and conducts process-oriented evaluation of source think tanks as a third party. By the end of 2018, CTTI had collected 706 think tank institutions, including 441 university think tanks as the main type. The CTTI team has published three editions of CTTI Source Think Tank Development Reports, which include sub-indicator rankings and comprehensive rankings for think tanks, think tank experts, and university think tank indices, dynamically presenting the scale and state of CTTI source think tanks.

Since 2014, the Center for Think Tank Studies of Shanghai Academy of Social Sciences has evaluated and ranked Chinese think tanks. Using a combination of questionnaires and expert reviews, subjective and objective indicators, and combining user evaluation with field research, it ranks think tanks' comprehensive influence, sub-item influence, systematic influence, professional influence, and major issue influence. The evaluation targets active think tanks established for three or more years (reaching 509 in 2018, including 149 university think tanks accounting for 29.3%), thus deeply reflecting the development trends of think tanks that maintain good interaction with decision-makers, media, and the public and exert certain influence on public policy processes and outcomes, providing guidance for developing high-influence think tanks.

In 2015, the Sichuan Academy of Social Sciences and Chengdu Documentation and Information Center of Chinese Academy of Sciences jointly established the "China Think Tank Research Center" and released the "China Think Tank Influence Report (2015)," first applying big data concepts to think tank influence evaluation. This evaluation system adopts a model combining subjective data and objective big data. The China Think Tank Research Network's think tank data platform collects large amounts of data resources on think tank institutions, experts, outputs, and reports from mainland China, Hong Kong, Macau, and Taiwan, providing big data support for think tank influence evaluation, dynamic monitoring, and hot topic tracking. For selecting candidate think tanks, the China Think Tank Influence Report references CTTI source think tanks. As of November 2018, the annual China Think Tank Influence Report has been

released four consecutive times, covering 480 think tanks in mainland China and Hong Kong, Macau, and Taiwan.

The Chinese Academy of Social Sciences' Evaluation Studies Institute proposed the global think tank comprehensive evaluation AMI indicator system in its 2015 "Global Think Tank Evaluation Report (2015)," measuring the comprehensive influence of 359 global think tanks [16], and launched the "China Think Tank Comprehensive Evaluation AMI Indicator System Research" project in 2016. In November 2017, the research group first released the "China Think Tank Comprehensive Evaluation AMI Research Report (2017)," a research report on Chinese think tank comprehensive quality evaluation, outlining the full picture of Chinese think tank development through a general report and separate reports on comprehensive, professional, social, and enterprise think tanks, and selecting 166 think tanks from 531 participating think tanks for the "China Think Tank Comprehensive Evaluation Core Think Tank List." Among 243 participating university think tanks, 79 were selected for the core list.

3.2 Distribution of Think Tank Evaluation Indicators

The business environment for think tanks constantly changes, and meeting society's evolving new demands constitutes the vitality for think tanks to advance and rise. Think tank evaluation is also an intrinsic need for think tank self-development; thus, think tank evaluation indicator systems should continuously update through examination and improvement [17]. To make research conclusions better align with the practical requirements and development directions of new-type think tank construction and new-era library transformation, the evaluation indicators selected in this study were extracted based on the latest evaluation reports released by each evaluation institution. The TTCSP project's 2018 Global Think Tank Index Report measures think tank levels and contributions from four aspects: resources, utilization, output, and impact. The resources indicator includes eight principles examining the ability to attract and retain elite scholars, funding source levels, relationships with decision-makers and other policy elites, and staff research and analysis capabilities. The utilization indicator includes seven principles examining think tank reputation and attention in media, online platforms, and policy elite circles, testimony provided to legislative bodies, and consultation provided to government departments. The output indicator includes five principles examining the quantity and quality of think tank achievements in policy proposals and staff transfers to government positions. The impact indicator includes eight principles examining the recognition and positive influence of think tank products in academic, policy, online, and social spheres.

The CTTI Source Think Tank Development Report by Nanjing University's Center for Think Tank Research and Evaluation and Guangming Daily's Think Tank Research and Publishing Center adds a first-level indicator of media influence to the previous MRPA evaluation indicators, forming the MRPAI evaluation indicator system. This includes five first-level indicators: governance

structure (M), think tank resources (R), think tank products (P), think tank activities (A), and think tank media influence (I), comprising 24 second-level indicators. M examines whether think tanks have complete internal management structures such as boards, academic committees, and management teams. R examines resource possession through annual budgets, staff numbers, portals, and data collection platforms. P examines the quantity, quality, and influence of think tank outputs through nine items including internal references, instructions, publications, and projects. A examines network expansion and influence through conferences, training, and research activities. I examines the degree and influence of think tank attention in media, combining internet-era knowledge production and dissemination characteristics [18].

The Shanghai Academy of Social Sciences' Center for Think Tank Studies focuses on Chinese think tank influence. Drawing on social structure theory, its "2018 China Think Tank Report: Influence Ranking and Policy Recommendations" uses decision-making influence, academic influence, social influence, international influence, and think tank growth capacity as first-level indicators. Decision-making influence is measured through four second-level indicators (leadership instructions, policy adoption, planning drafting, consultation activities) with eight third-level indicators. Academic influence is measured through two second-level indicators (papers and works, research projects) with six third-level indicators. Social influence is measured through two second-level indicators (media reports, online dissemination) with six third-level indicators. International influence is measured through two second-level indicators (international cooperation, international dissemination) with six third-level indicators. Think tank growth capacity is measured through two second-level indicators (think tank attributes, resource endowment) with six third-level indicators. The four influence indicators constitute comprehensive influence, while growth capacity forms a support mechanism for realizing comprehensive influence [19].

The China Think Tank Influence Report (2018) released by the Sichuan Academy of Social Sciences and Chengdu Documentation and Information Center of Chinese Academy of Sciences mainly includes five evaluation dimensions: decision-making influence, public opinion influence, social influence, professional influence, and international influence. Decision-making influence comprises three indicators: policy orientation, policy formulation, and policy evaluation. Public opinion influence comprises three indicators: dissemination platform, content, and effect. Social influence comprises three indicators: public impact, development promotion, and innovation support. Professional influence comprises three indicators: thought enlightenment, knowledge encoding, and idea diffusion. International influence comprises two indicators: international impact of outputs and international reputation.

The Chinese Academy of Social Sciences' Evaluation Studies Institute focuses on Chinese think tanks' comprehensive quality. In its "China Think Tank Comprehensive Evaluation AMI Research Report (2017)," it evaluates think tanks from three levels: attractive power, management power, and impact power. Attrac-

tive power demonstrates external reputation and attraction capacity, including three second-level indicators (reputation attraction, talent attraction, funding attraction) with eight third-level and 13 fourth-level indicators. Management power demonstrates the ability to maintain good internal operation and improve effective output, with seven components from McKinsey's 7S model—strategy, organization, systems, staff, style, values, and skills—forming second-level indicators with 15 third-level and 24 fourth-level indicators. Impact power demonstrates policy influence, academic influence, social influence, and international influence, measured through four second-level indicators with 17 third-level and 49 fourth-level indicators.

3.3 Clustering of Think Tank Evaluation Indicators

The survey found that evaluation indicator designs across projects overlap while each has its own focus and measurement rules. Simple statistical analysis cannot comprehensively and accurately reveal core content for think tank evaluation. To extract and summarize elements of universal concern in think tank development and provide references for improving university think tank development levels, this study used NVivo 11 Plus qualitative analysis software to code the latest evaluation indicators from the five selected projects using a bottom-up coding strategy. All original evaluation indicators extracted constituted third-level nodes. Third-level nodes with similar meanings or duplicates were classified, integrated, and organized into second-level nodes. Second-level nodes with conceptual connotations belonging to the same category were classified and merged into first-level nodes. Through step-by-step coding and convergent induction, a three-level node coding system was formed comprising four first-level nodes, 16 second-level nodes, and all specific evaluation indicators as third-level nodes .

As shown in Table 2, current think tank evaluation indicators can be generally summarized into four aspects: factor endowment, organizational construction, output, and comprehensive impact. First, "factor endowment" shows a think tank's resource possession, representing the material foundation for participating in policy research and analysis and influencing decisions. For think tanks, the ability to bridge gaps between academic and decision-making communities and between decision-makers and the public constitutes the core vitality for development. Maintaining good relationships and close connections with key policy participants and establishing effective networks and partnerships with other think tanks, policy participants, and mainstream media constitute an important foundation for think tanks to grasp needs proactively and integrate new voices into decision-making processes. Therefore, this study includes "interpersonal networks" in think tank factor endowment. Second, "organizational construction" shows the perfection degree of think tank management structures and operational mechanisms, supporting the transformation of resource elements and inputs into outputs. This study includes two indicators from the University of Pennsylvania's TTCSP project and the Chinese Academy of Social Sciences' Evaluation Studies Institute—"clear commitment to producing inde-

pendent research and analysis" and "clear values and sense of mission"—into the category of "cultural values" to emphasize think tanks' original mission in forming high-quality, influential outputs that contribute to policy-making. Third, "output" shows the quantity, structure, and level of think tank resource outputs, representing the result of combined organizational construction and factor endowment and the carrier of comprehensive think tank influence. In addition to academic and policy consultation outputs, this study believes that think tank personnel entering party and government organs to accurately grasp decision-making consultation needs constitutes an important approach to narrowing or eliminating the gap between academic research and public policy decision-making. Based on the educational characteristics of university think tanks, talent output to party and government organs also represents an important manifestation of their professional competitiveness. Therefore, this study includes "talent output" in the category of think tank output. Fourth, "comprehensive impact" shows the influence think tanks exert on communities and policymakers, representing the core measure of think tank input effectiveness and output quality and the fundamental value for think tank sustainable development.

4. The Role of Academic Libraries in Think Tank Construction from the Perspective of Evaluation Indicators

Academic libraries provide high-level services for university think tank construction by relying on their value functions, representing the manifestation and expansion of their basic functions in the context of "Double First-Class" construction, library transformation, and new-type think tank construction with Chinese characteristics. Exploring paths for academic libraries to serve university think tank construction based on evaluation indicators requires clarifying the coupling relationship between evaluation indicators and libraries' basic functions as a prerequisite.

4.1 Correlation Mapping Between Think Tank Evaluation Indicators and Library Functions

To meet the development needs of academic library undertakings, the Ministry of Education issued the revised "Regulations for Academic Libraries of Regular Institutions of Higher Education" in 2015. Based on these regulations, the main functions and tasks of academic libraries can be summarized as follows: (1) Main functions: the school's literature and information resource center; a service institution for talent cultivation and scientific research; an important participant in school information construction; an important base for campus culture and social culture construction. (2) Main tasks: literature and information resource construction and services; participation in talent cultivation; participation in culture construction and inheritance innovation; conducting relevant scientific research; providing social services.

Based on the clustering results of think tank evaluation indicators and the meaning and examination content of each indicator category, this study establishes the association between academic libraries' main functions and tasks and the core elements of think tank construction [Figure 1: see original paper], providing an objective basis for analyzing libraries' main functions in university think tank construction.

4.2 Analysis of the Main Functions of Academic Libraries in University Think Tank Construction

Figure 1 shows that academic libraries can rely on their functional roles in literature and information resource construction and services, information construction, talent cultivation, scientific research, and culture construction to extend and expand their educational functions, knowledge service functions, and social functions, providing all-round support and services for university think tank construction in terms of factor endowment, organizational construction, output, and comprehensive impact.

Academic libraries can collaborate to enhance the abundance of think tank factor endowment. The richer the resources an organization possesses and can apply, the higher its possibility of responding to environmental changes [20]. The abundance of university think tank factor endowment can be subdivided into the level and quality of personnel, funding, interpersonal networks, and technical capabilities, all of which can be enhanced through using library resources and services or co-constructing and sharing with libraries. Specifically, academic libraries continuously strengthen literature and information resource construction, provide information services based on organized information resources and complete information retrieval systems, and conduct digital literacy training, which helps think tank institutions and researchers improve their ability and efficiency in obtaining needed data and information. Libraries' scientific research focusing on resource construction, talent cultivation, and knowledge services can provide decision-making references for think tanks while enhancing their own value and advancement, thereby helping to improve think tank personnel levels and technical capabilities. Furthermore, by strengthening collaborative sharing with think tanks and leveraging resource and professional advantages to provide services to social users through knowledge integration, maker spaces, sci-tech novelty searches, online courses, and decision-making references, libraries can, on the one hand, improve public value recognition of university libraries and think tanks to attract more social investment, and on the other hand, establish and strengthen connections between libraries, think tanks, the public, and decision-making circles, reinforcing think tank interpersonal networks.

Academic libraries can assist think tanks in developing scientific "theories of the business." A correct, clear, and focused theory of the business is crucial for organizational behavior, innovation, and success. Management pioneer Peter F. Drucker believed that a theory of the business consists of three parts: assumptions about the organization's environment, defining the market conditions for

products and services; assumptions about the organization's specific mission, defining the organization's valuable actions and results to highlight its competitive advantages and social value; assumptions about the core competencies needed to accomplish the mission, clarifying the advantageous elements and excellent performance required to maintain leadership in specific fields [21]. When concretized in university think tank organizational construction, a scientific theory of the business includes the selection, design, and dynamic adjustment of management systems and development plans. By collecting and providing basic data, industry data, and international comparative data urgently needed for think tank development, libraries can provide strong support for think tanks to proactively grasp and quickly respond to policy demands. Additionally, through talent cultivation activities such as research integrity and ethics education, as well as cultural inheritance and innovation activities like human libraries, reading promotion, and intangible cultural heritage protection, libraries can promote a responsible, culturally advanced scientific research atmosphere and education environment across the university, providing a good campus environment for think tank development and enhancing the influence of advanced culture on think tank organizational culture.

Academic libraries can help think tanks increase effective output. Effective output forms the foundation for enhancing think tank influence. For think tanks, output effectiveness is determined by the quality of academic research, policy consultation outputs, and talent output. Effective outputs should be demand-oriented, professional, practical, distinctive, original, and forward-looking. For university think tanks, they must, on the one hand, strengthen problem- and demand-orientation, focusing on major social issues and conducting in-depth practical investigation and research, and on the other hand, establish close connections and regular communication with the public and policymakers. Academic libraries' social services, through cooperation, exchange, and co-construction with other types of libraries and enterprises, can promote the establishment of local or professional characteristic databases and long-term interaction with industry fields, thereby providing good data support and social communication channels for think tank research. Moreover, high-level talent teams are key to nurturing innovative academic and policy consultation outputs and constitute important components of think tank effective output. The combined forces of libraries' literature and information resource services, education and training, culture construction and inheritance innovation, and scientific research activities jointly promote university talent cultivation, enhancing the possibility of think tank personnel producing high-quality outputs.

Academic libraries can promote efficient dissemination, transformation, and application of think tank outputs. For think tanks to truly fulfill their value in policy consultation, public enlightenment, strategic planning, and talent cultivation, they must disseminate and transform their outputs. Under the practical need to enhance China's cultural soft power, think tank output transformation and dissemination require not only policy transformation and social dissemina-

tion [22] but also active integration into international discourse system construction. In fulfilling their functions, academic libraries have established network platforms, knowledge repositories, and new media dissemination platforms such as WeChat with upload, publication, and dissemination functions, which can provide publishing and delivery platforms for think tank outputs or offer experience for think tanks to build their own network platforms. Furthermore, think tanks can collaborate with libraries to integrate and concentrate high-quality content resources, establish integrated and internationalized output dissemination operation mechanisms and diversified policy transformation channels in response to constantly changing business environments such as big data, cloud computing, and all-media; establish alliance cooperation with authoritative media and other think tank institutions to improve collaborative efficiency; and establish an evaluation system oriented toward output quality and comprehensive influence to form a feedback and correction mechanism in the process of common development between think tanks and libraries.

5. Paths for Academic Libraries to Serve University Think Tank Construction

Based on the main functions of academic libraries in university think tank construction and the current development status of China's university think tanks, matching literature data needed for public policy research and professionally qualified librarians are core requirements for libraries to play their role. "Librarians are active intermediaries between library users and collections" [23]. Libraries providing needed resources and services to think tanks will ultimately be realized through librarians. Currently, academic libraries have achieved important results in subject librarian systems and reference consultation services. Peking University Library's participation in the establishment of the Institute of Ocean Research and the implementation of embedded reference consultation services, where existing subject librarians, reference librarians, or newly established think tank librarians provide full-process, participatory guidance and services to think tanks, hold feasible value. To effectively help think tanks produce influential outputs, corresponding librarians need to enhance their ability to select and organize resources in the new information environment, track and explore user needs, and combine disciplinary advantages and characteristic collections to provide suggestions and feasible solutions for libraries to establish think tank service databases and information platforms.

Providing services for think tank construction is both a scientific choice for libraries to transform and adapt to new-era business development and an important driving force for constructing new-type think tank systems with Chinese characteristics. On the basis of strengthening their own comprehensive capacity building and ensuring normal work order and on-campus user needs, libraries should expand and extend their main functions to provide full-factor support for think tank construction according to the associative mapping between think tank development elements and libraries' main tasks.

5.1 Improve Top-Level Design for Library Transformation

Fully realizing the various functions of academic libraries in think tank construction involves complex factors such as personnel, funding, technology, systems, and mechanisms. Only by improving top-level library design can their comprehensive effects be fundamentally enhanced. A survey of 151 university libraries hosting 396 university think tanks currently collected in CTTI found that only a few university libraries such as Northwestern Polytechnical University Library explicitly include serving think tanks in their business plans for information consultation and strategic intelligence research. Academic libraries should, based on clear understanding of their university's advantageous disciplines and characteristic resources, incorporate support services such as providing literature data, personnel training, and competitive intelligence for their university's think tanks into overall library planning, clarifying libraries' positions and roles in their university's think tank construction and designing need-specific, priority-highlighted service systems. First, they should institutionalize and normalize library services for think tanks, building information release and resource retrieval network platforms and interlinked, open, and interoperable database systems for library-think tank co-construction and sharing. They should also establish dedicated librarian positions serving think tanks based on subject librarian allocation and think tank professional needs to provide decision support for improving collection structure, service models, and service content for think tank construction, enhancing service efficiency. Second, they should avoid "one-size-fits-all" service approaches, adopting segmented service models based on different think tanks' resource needs to avoid overburdening library services or causing "information redundancy" for think tank researchers.

5.2 Deepen Core Capacity Building of Libraries

To both maintain their unique position in the knowledge system and provide high-level services for think tank construction, academic libraries must continuously strengthen core capacity building and improve their flexibility and adaptability. Surveying the current status of university think tank construction reveals that think tanks urgently need literature and information resources, data analysis, and information platforms. Academic libraries should strengthen literature resource construction, particularly developing specialized databases and information platforms for think tanks. They should enhance information organization and retrieval capabilities, improving the efficiency and accuracy of think tank information acquisition. They should strengthen talent team building, cultivating librarians with information analysis, data mining, and policy research capabilities. They should advance scientific research and innovation, improving their professional standards and service capabilities through research projects and academic exchanges.

5.3 Strengthen Big Data Thinking and Application Capacity Building

Big data has become an important production factor in social development. New thinking modes and technical means also present libraries with new opportunities in expanding resource categories, enhancing resource integration breadth and processing depth, improving resource retrieval technology and levels, enriching service products, and expanding service methods and dissemination forms [24]. Think tank research requires forward-looking understanding of global environmental changes, national strategic objectives, and macro policy demands. For university think tank construction oriented toward the big data era, libraries must both embrace consciousness of boldly adopting new technologies and strengthen their comprehensive capabilities to apply new technologies and address new problems brought by technologies, developing librarians' new technical skills and competencies. Drawing on Wuhan University Library's experience in establishing disciplinary service platforms such as law to provide specialized information management and knowledge sharing platforms for specific disciplines, and Shanghai Maritime University Library's practice in building characteristic databases such as the International Maritime Information Network and Water Transport Data Information Database to provide frontier international maritime information for think tank research, libraries should, first, achieve data resource aggregation by leading or participating in data linkage and sharing platform construction, breaking data silos across disciplines to provide scientific and authentic big data resources for think tank research. Second, they should use mastered big data resources and technologies to promote think tank research shifting from "emergency orientation" to "forward-looking orientation" through talent cultivation, reference consultation, and embedded services, improving the docking degree between think tank intellectual outputs and both the public and decision-making departments, assisting think tanks in using big data to enhance policy consultation levels [25].

5.4 Promote Collaborative Linkage and Integrated Sharing Between Libraries and Think Tanks

Both university libraries and think tanks exist and develop based on university functions such as discipline construction, talent cultivation, scientific research, and social services. They share consistency in resource reliance and commonality in value functions. Promoting collaborative linkage between library and think tank construction and integrated sharing of knowledge resources can both achieve mutual supplementation of valuable resources such as data, talent, and equipment and promote the dissemination, promotion, transformation, and application of think tank research outputs. Academic libraries should collaborate with think tanks to build network platforms and output databases, developing linked search and output display functions to transform think tank knowledge outputs into libraries' explicit resources and opening library gray literature and special collection resources' usage permissions to think tank users. Leveraging library consortia and institutional repository construction oppor-

tunities, they should strive to become information masters of social frontiers, disciplinary characteristics, and regional development, promoting cross-system resource openness and knowledge integration. They can attempt to open think tank knowledge base columns in institutional repositories, providing functions such as full-text access, demand publishing, output feedback, and transformation application, establishing normalized analysis and evaluation mechanisms to promote think tank output dissemination, exchange, and long-term preservation through evaluation-driven construction, enhancing think tank comprehensive influence.

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