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Postprint: The Functional Relationship Between Archival Departments and Data Management Departments in the Context of the National Big Data Strategy

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Abstract

[Purpose/Significance] As a crucial component of the national information resource management system, clarifying the functional relationship between traditional archival departments and emerging data management departments, and strengthening their coordination and cooperation, constitutes an essential foundation for scientifically advancing the integrated management of national information resources and a fundamental guarantee for effectively implementing the national big data strategy. [Method/Process] Based on literature review and field research, this study systematically examines the current status of provincial archival departments, data management departments, and their functional relationships in China, and further analyzes existing problems to propose policy recommendations for optimizing their relationship. [Results/Conclusion] The study identifies that current problems include: ambiguous legal definitions at the national level regarding the management objects of the two departments, overlapping management objects between the two departments across different regions with varying degrees of overlap, unclear division of responsibilities for government information resource management, and an urgent need to establish consultation and coordination mechanisms for responsibility allocation. To optimize the functional relationship between the two departments, it is necessary to clarify the positioning of archival departments within the national big data strategy, strengthen the rule-of-law construction of government information resource management, coordinate and optimize the national information resource management system, and accelerate the establishment and improvement of responsibility division coordination mechanisms.

Full Text

The Functional Relationship Between Archives Departments and Data Management Departments in the Context of the National Big Data Strategy

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Abstract

[Purpose/Significance] As important components of the national information resource management system, clarifying the functional relationship between traditional archives departments and emerging data management departments, and strengthening their coordination and cooperation, is an important foundation for scientifically promoting the overall management of national information resources and a basic guarantee for better implementing the national big data strategy.

[Method/Process] Based on literature review and field research, this paper systematically reviews the current status of provincial archives departments, data management departments, and their functional relationships in China, analyzes existing problems, and proposes policy recommendations for optimizing their relationship.

[Result/Conclusion] The current problems include: unclear legal definitions of the management objects of the two departments at the national level, overlapping management objects between the two departments in different regions with varying degrees of overlap, ambiguous division of responsibilities for government information resource management, and an urgent need to establish negotiation and coordination mechanisms for division of labor. To optimize the functional relationship between the two departments, it is necessary to clarify the positioning of archives departments in the national big data strategy, strengthen the rule of law in government information resource management, optimize the national information resource management system in a coordinated manner, and accelerate the establishment and improvement of coordination mechanisms for division of responsibilities.

Keywords: big data strategy; archives department; data management department; information resource management

1 Current Status of Functional Relationships Between Archives Departments and Data Management Departments in China

According to the requirements of the “Plan for Deepening the Reform of Party and State Institutions,” all provinces (autonomous regions and municipalities directly under the Central Government) have successively issued local institutional reform plans, among which archives institutional reform plans have also been unveiled. This round of reform is regarded as the “fourth archives institutional reform” following three large-scale reforms in the 1950s, 1980s, and 1990s [12]. Meanwhile, China’s informatization development has experienced a digitalization stage characterized by the popularization of personal computers in the 1980s, a networking stage marked by the large-scale commercial use of the Internet in the mid-1990s, and is currently entering an intelligent stage featuring big data sets, big data technologies, and big data business forms. Against the backdrop of big data “changing markets, organizations, and the relationship between government and citizens” [13], local governments across China have established data management departments.

By April 9, 2019, 17 provinces (autonomous regions and municipalities) had established data management departments. Among them, 12 provinces (autonomous regions and municipalities) including Beijing established administrative organs for data management, while five provinces (autonomous regions and municipalities) including Tianjin, Hebei, Inner Mongolia, Shanghai, and Jiangxi established public institution-type data management agencies.

1.1 Status of Provincial Archives Departments in China

Before this reform, except for Hong Kong, Macao, and Taiwan, all 31 provincial archives departments in China adopted the “one institution, two titles” model for both archives bureaus and archives, performing both archival custody/utilization and archival administration functions. In terms of staffing, there were three situations: (1) all administrative staffing; (2) archives bureaus with administrative staffing and archives with public institution staffing; and (3) no administrative staffing, all public institution staffing. Regarding affiliation, there were several scenarios: (1) jointly managed by Party committees and governments; (2) managed by Party committees; (3) managed by governments; (4) managed by government general offices; and (5) managed by Party committee general offices [14].

After the reform, 28 provinces (autonomous regions and municipalities) transferred the administrative functions originally undertaken by archives bureaus (archives) to Party committee general offices, with 26 provinces (autonomous regions and municipalities) adding archives bureau plaques to their Party committee general offices. Hainan Province continued to list its archives bureau (archives) as a public institution under the government establishment sequence, Yunnan Province made its archives bureau an organ managed by the Provin-

cial Party Committee General Office, and Shanghai Municipality adjusted its archives bureau to a working organ of the Municipal Party Committee.

1.2 Status of Provincial Data Management Departments in China

In February 2014, Guangdong took the lead in establishing a Provincial Big Data Management Bureau under its Provincial Economic and Information Commission (now renamed the Department of Industry and Information Technology). Following the State Council's issuance of the "Action Outline for Promoting Big Data Development," Guizhou Province established the first department directly under the provincial government (initially a department-level public institution), and Zhejiang Province established a Data Management Center. Subsequently, Inner Mongolia, Chongqing, Jiangxi, Shaanxi, Shanghai, and Tianjin established data management departments. After October 2018, some provinces (autonomous regions and municipalities) established or reorganized data management departments. By April 9, 2019, a total of 17 provinces (autonomous regions and municipalities) had established data management departments.

In terms of affiliation and functional nature, among the 12 administrative organs, four provinces (municipalities) including Beijing, Jilin, Guizhou, and Shaanxi were constituent departments of the government; four provinces (autonomous regions and municipalities) including Anhui, Shandong, Guangxi, and Chongqing were directly affiliated institutions of the government; and four provinces including Zhejiang, Fujian, Henan, and Guangdong were department-managed agencies. See Table 1 .

1.3 Functional Relationships Between Archives Departments and Data Management Departments

(1) In terms of affiliation, archives departments basically belong to the Party committee system, while data management departments basically belong to the government system. The administrative functions of 30 provincial archives departments all fall under the Party committee system. Except for the Tianjin Big Data Management Center, which is a public institution under the Tianjin Municipal Party Committee Cyberspace Affairs Commission, the 12 provincial-level administrative data management departments and the 4 provincial-level public institution-type data management agencies all belong to the government system. Moreover, according to statistics, 79 sub-provincial and prefecture-level city data management institutions belong to the government system [11].

(2) Regarding the basis of responsibilities, archives management departments have clear legal and regulatory foundations, whereas data management departments rely on local regulations or "Three Fixed Principles" (fixed functions, fixed institutions, and fixed staffing). Article 6 of the "Archives Law of the People's Republic of China" stipulates: "The archival administration departments of local people's governments at or above the county level shall be in charge of archival undertakings within their respective administrative regions,

and shall exercise supervision and guidance over the archival work of agencies, organizations, enterprises, institutions, and other organizations within their respective administrative regions.” Article 8 states: “Central and local archives at various levels are cultural institutions that centrally manage archives, responsible for receiving, collecting, sorting, preserving, and providing access to archives within their respective scopes.” The “Implementation Measures of the Archives Law” provides detailed provisions on the specific responsibilities and tasks of archival administration departments and archives. In contrast, provisions concerning data management department responsibilities are found only in informatization-related laws, regulations, and local institutional systems, primarily based on the “Three Fixed Principles.” For example, the responsibilities of Guangdong Provincial Big Data Administration Bureau are stipulated in the “Provisions on the Main Responsibilities, Internal Institutions, and Staffing of Guangdong Provincial Economic and Information Commission” [15], while those of Guizhou Provincial Big Data Development Administration Bureau are based on the “Provisions on the Main Responsibilities, Internal Institutions, and Staffing of Guizhou Provincial Big Data Development Administration Bureau” [16].

(3) In terms of responsibility content, archives departments have basically consistent duties, while data management departments show significant variation. According to publicly available institutional reform plan materials, the Zhejiang Big Data Development Administration Bureau is responsible for “promoting government digital transformation and big data resource management”; the Henan Big Data Administration Bureau was established by integrating responsibilities including “e-government planning and construction guidance, administrative approval and convenience service construction, and data mining and utilization from relevant provincial government departments”; the Shandong Provincial Big Data Bureau was formed based on “the management responsibilities for big data and e-government of the Provincial Government General Office”; and the Chongqing Big Data Development and Application Bureau integrates “the artificial intelligence, big data, and informatization promotion responsibilities of the Municipal Economic and Information Commission, and the social public information resource integration and application and smart city construction responsibilities of the Municipal Development and Reform Commission.” Data management departments in Jilin, Guangxi, and other provinces (autonomous regions and municipalities) have multiple titles, with even greater differences in responsibilities. Overall, data management department responsibilities can be divided into seven categories: strategy formulation (including big data strategy, informatization planning, policies, smart cities, etc.), promoting data industry development, standards and assessment systems, government data collection and development/utilization, government data resource sharing and opening, e-government construction, and information security assurance [11].

2 Problems in the Functional Relationship Between Archives Departments and Data Management Departments in China

As China's informatization development enters the new stage of big data, the objects of archival work are rapidly transitioning from paper archives to electronic documents (electronic archives). Meanwhile, emerging data management departments manage various types of data and information as their objects, which overlaps with the electronic documents managed by archives departments. Due to the lack of top-level design and comprehensive consideration, and given the significant differences in local conditions, there are no standardized criteria for establishing data management departments, resulting in rather arbitrary setups that cause functional overlaps between archives departments and data management departments. Simultaneously, the absence of necessary coordination and communication mechanisms between data management departments and archives departments has fragmented the necessary connection between archival undertakings and big data development.

2.1 National Level: Unclear Legal Definition of Management Objects

China currently has no laws or regulations that specifically define "data" or "big data." The local regulation "Guizhou Province Big Data Development and Application Promotion Regulations" directly adopts the definition of "big data" from the "Action Outline for Promoting Big Data Development": "Data sets characterized by large volume, diverse types, fast access speed, and high application value, representing a new generation of information technology and service models that collect, store, and conduct correlation analysis on massive, scattered, and diversely formatted data to discover new knowledge, create new value, and enhance new capabilities." Among existing Chinese laws and regulations, only five concepts are defined: "data message," "electronic data," "electronic document," "government information," and "government information resources," as shown in Table 2.

All five concepts in Table 2 intersect with archives. In other words, if the management objects of data management departments are determined based on any concept in Table 2, there will be overlap with the management objects of archives departments. Considering that after the 2012 revision of the "Criminal Procedure Law of the People's Republic of China," judicial interpretations and departmental normative documents have uniformly adopted the term "electronic data," no longer mixing data messages, electronic evidence, and electronic data [17], and that "government information resources" in the "Interim Measures for Government Information Resource Sharing Management" is a refinement of the definition of "government information" from the "Regulations on Open Government Information of the People's Republic of China," this analysis focuses on the other three concepts.

(1) **Overlap between "archives" and "electronic documents."** The

“Archives Law” defines “archives” as “various forms of historical records, including text, charts, audio-visual materials, etc., directly formed by state institutions, social organizations, and individuals in political, military, economic, scientific, technological, cultural, religious, and other activities that have preservation value for the state and society.” According to the “Interim Measures for Electronic Document Management” jointly issued by the General Office of the CPC Central Committee and the General Office of the State Council (Document No. [2009] 39) and the “Measures for Electronic Archives Transfer and Acceptance” issued by the State Archives Administration (Document No. [2012] 7), electronic archives, as an important component of archives, refer to “electronic documents with preservation value that have been archived.”

(2) Overlap between “archives” and “electronic data.” In legal academia, “electronic data” overlaps with “electronic documents” that emphasize evidentiary value. Canada’s “Uniform Electronic Evidence Act” promulgated in 1998 directly equates “electronic documents” with “electronic data.” As electronic archives, an important component of archives, refer to “electronic documents with preservation value that have been archived,” there is also overlap between “archives” and “electronic data.”

(3) Overlap between “archives” and “government information resources.” The State Council’s “Interim Measures for Government Information Resource Sharing Management” (State Council Document No. [2016] 51) treats both “documents” and “data” as subsets of information resources. “Documents” that have been archived and preserved constitute archives and are important components of government information resources.

2.2 Local Level: Overlapping Management Objects with Variations

2.2.1 Terminological Differences for Management Objects of Provincial Data Management Departments On April 9, 2019, the author searched current institutional documents in databases such as PKULaw using keywords including “government information,” “big data,” and “public information,” obtaining 71 provincial-level local regulations, rules, and normative documents. After sorting, it was found that 11 provinces (autonomous regions and municipalities) including Beijing, Inner Mongolia, Liaoning, Jiangsu, Anhui, Hunan, Guangxi, Chongqing, Sichuan, Yunnan, and Shaanxi used the definition of “government information resources” consistent with that in the “Interim Measures for Government Information Resource Sharing Management,” while four provinces including Shandong, Hebei, Hubei, and Henan adopted similar definitions. Additionally, there were five other terms: government data, government data resources, government information, public data, and public information resources. See Table 3 .

2.2.2 Distinctions in Meaning Definitions of Terms for Management Objects From the perspective of data (or information) sources, some include both “produced and obtained” (such as in the “Beijing Municipal Government

Information Resource Management Measures (Trial)”), while others include only “obtained” (such as in the “Zhejiang Provincial Public Data and E-Government Management Measures”). Regarding the forming entities, some localities limit the scope to agencies with administrative functions, while others extend it to public enterprises and institutions (such as in the “Hainan Provincial Public Information Resource Management Measures”).

2.2.3 Most Provinces Have Not Clarified the Relationship Between Data Management Department Objects and Archives

According to the “Guangdong Provincial Government Data Resource Sharing Management Measures (Trial),” government data resources are “various structured and unstructured data resources including text, numbers, charts, images, audio, video, electronic certificates, electronic archives, etc., produced or obtained by government departments in the performance of their duties and recorded and preserved in certain forms,” which treats “electronic archives” as a subset of “government data resources.” According to the interpretation by You Fuming, member of the Party Group and Deputy Director of Fujian Provincial Archives Bureau, of the “Fujian Provincial Digital Archives Sharing Management Measures,” “government information is the predecessor of archives, and archives are the destination of government information” [18].

2.3 Ambiguous Division of Responsibilities for Government Information Resource Management

2.3.1 Unclear Division of Responsibilities for Government Information Resource Archiving

In practice, large amounts of electronic government information resources formed in some provinces and cities remain in e-government business systems currently used by government departments. This not only affects the efficiency of current government affairs but also exposes historical government information resources to risks of unauthorized modification [19]. Against the backdrop of the big data strategy, clearly defining the responsibilities of data management departments, archives departments, and other government departments in government information resource archiving management is an important contemporary issue. However, among the 31 provinces (autonomous regions and municipalities), only Zhejiang and Guangdong have included “public data, electronic documents” and “government data resources” in the archiving scope and clarified the responsibilities of archives departments and data management departments.

According to the “Zhejiang Provincial Public Data and E-Government Management Measures,” “The provincial archives administration department is responsible for formulating specific provisions on the archiving, transfer, preservation, and utilization of public data and electronic documents; archives administration departments at all levels are responsible for constructing unified platforms for public data and electronic document archiving within their respective administrative regions”; and data management institutions “specifically undertake pub-

lic data and e-government management work.” According to the “Guangdong Provincial Government Data Resource Sharing Management Measures (Trial),” “Provincial archives administration departments are responsible for formulating specific provisions on the archiving, transfer, preservation, and utilization of government data resources; archives administration departments at all levels are responsible for guiding and supervising government data resource archiving work within their respective administrative regions,” while “government data management departments are responsible for overall planning, coordination, guidance, and supervision of government data resource management within their respective administrative regions.”

2.3.2 Most Provinces Have Not Clarified the Relationship Between Archival Resources and Government Information Resource Sharing Systems Both existing archival resources transferred to archives and incremental archival resources formed through government service platforms hold important value for government departments at all levels to improve national governance capabilities. However, according to relevant provincial government information resource management systems, except for Guangdong’s “Government Data Resource Sharing Management Measures (Trial)” issued in November 2018, which includes electronic archives in the scope of government data resource sharing, and Fujian’s “Digital Archives Sharing Management Measures” issued in December 2017, which established a digital archives resource center connected to the government data sharing platform, other provinces (autonomous regions and municipalities) have not clarified the relationship between archival resources and government information resource sharing systems.

If archival resource sharing is not uniformly integrated into the government information resource sharing system, two new “information silos” will be created: an “archival resource sharing system” and a “government information resource sharing system.”

2.3.3 Unclear Division of Responsibilities for Data Openness, Government Information Disclosure, and Archives Access At the provincial level, seven provinces (municipalities) including Beijing, Shanghai, Zhejiang, Fujian, Guizhou, Hainan, and Chongqing have established government data resource management systems and mechanisms that include openness. Among them, five provinces (municipalities) including Beijing, Shanghai, Zhejiang, Fujian, and Guizhou have basically assigned management responsibilities for openness work to data management departments. These five provinces (municipalities) are also pilot areas for public information resource openness designated by the Office of the Central Cyberspace Affairs Commission, the National Development and Reform Commission, and the Ministry of Industry and Information Technology. Hainan Province has no specialized data management department, with the Department of Industry and Information Technology serving as the competent authority for openness management; in Chongqing, the Development and Reform Commission is the competent authority for government information

resource openness.

Regarding the relationship between data openness and government information disclosure and how to divide principal responsibilities, only Guizhou and Zhejiang have clarified this through institutional provisions among the aforementioned seven provinces (municipalities). The “Guizhou Provincial Government Data Resource Management Interim Measures” explicitly state that “relevant provisions of the ‘Law on Guarding State Secrets’ and ‘Regulations on Open Government Information’ shall be observed.” The “Zhejiang Provincial Public Data and E-Government Management Measures” specify that “where the ‘Statistics Law’ and ‘Regulations on Open Government Information’ already have provisions on public data openness, those provisions shall prevail.” Regarding the relationship between data openness and archives access, among the seven provinces (autonomous regions and municipalities), only Zhejiang includes “public data” in the archiving scope, but the province has no clear provisions on the entity responsible for opening public data that have been archived and transferred to archives.

2.4 Urgent Need to Establish Negotiation and Coordination Mechanisms

2.4.1 Archives Departments Are Basically Ignored in National and Local Big Data and Government Information Resource Management Leadership Systems and Coordination Mechanisms At the national level, the “Inter-Ministerial Joint Conference System for Promoting Big Data Development” composed of 43 departments and units including the National Development and Reform Commission, Ministry of Industry and Information Technology, and Office of the Central Cyberspace Affairs Commission does not include archives departments. The same is true at the local level, where data management departments mostly serve as leading or competent departments in various big data and government information resource management leadership systems and coordination mechanisms, while archives departments rarely participate. Except for archives departments in Zhejiang, Guangdong, and Shanghai that are involved in public data, government data resources, or electronic document archiving management, archives departments are almost absent from these related works in other localities.

2.4.2 Archives Departments Rarely Have Assigned Tasks in National and Provincial Policies and Regulations on Promoting Big Data Development At the national level, only the “Action Outline for Promoting Big Data Development” mentions “electronic health records,” “student records,” and “strengthening the construction of public welfare facilities such as digital libraries, archives, museums, art galleries, and cultural centers, building a comprehensive cultural communication big data service platform to disseminate Chinese culture and provide cultural services to society” in the “Public Service Big Data Project.” At the provincial level, except for similar content in documents

such as the “Hainan Provincial Plan for Promoting Big Data Development,” “Beijing Municipal Big Data and Cloud Computing Development Action Plan (2016-2020),” and Guangxi’s “Action Plan for Promoting Big Data Development,” only two provinces mention the role of archives departments: First, the Zhejiang Provincial Government’s 2016 “Zhejiang Provincial Plan for Promoting Big Data Development” listed archives management and open sharing, with the former Zhejiang Provincial Archives Bureau (Archives) as the leading unit, as one of the big data application demonstration projects. Second, the General Office of Jiangxi Provincial Government’s 2017 “Jiangxi Provincial Big Data Development Action Plan” included archival work as one of 18 key areas in the key task of “accelerating big data applications in a number of key fields.” Additionally, except for mentioning “electronic health records” and “student records” pointed out in the “Public Service Big Data Project” of the “Action Outline for Promoting Big Data Development,” only statements such as “strengthening public welfare facility construction, building a comprehensive cultural communication big data service platform to disseminate Chinese culture and provide cultural services to society” list archives alongside digital libraries, museums, art galleries, and cultural centers.

2.4.3 Negotiation and Coordination Mechanisms for Division of Responsibilities Need to Be Established Between Party Committee-Affiliated Archives Departments and Government System-Affiliated Data Management Departments Against the Backdrop of Local Institutional Reform Currently, archives departments in various provinces (autonomous regions and municipalities) are facing institutional and personnel adjustments, while many provincial data management departments have been established only recently, with numerous provincial data management departments decided upon after the launch of this institutional reform. Under circumstances where the division of responsibilities between archives departments and data management departments is unclear, negotiation and coordination mechanisms for division of labor between the two urgently need to be established.

3 Recommendations for Optimizing the Functional Relationship Between Archives Departments and Data Management Departments

Optimizing the relationship between traditional archives departments and emerging data management departments from strategic, legal, institutional, and mechanistic perspectives is of great significance for strengthening the overall management of national information resources and promoting the modernization of the national governance system and governance capabilities.

3.1 Clarify the Positioning of Archives Departments in the National Big Data Strategy

Archives, as authentic records of the work of the Party and the state and all aspects of the people's conditions, are important components of national information resources and important supports for promoting the modernization of national governance capabilities. Archival work is an indispensable foundational and supporting task in all Party and state work. On May 26, 2003, during his inspection of the Zhejiang Provincial Archives Bureau (Archives), Comrade Xi Jinping, then Secretary of the Zhejiang Provincial Party Committee, pointed out: "Archival work is extremely important. Summarizing experiences, understanding laws, continuing history, and developing various undertakings all depend on archives. In the process of building a moderately prosperous society in all respects, archival work is becoming increasingly important" [20].

To thoroughly implement the national big data strategy, "strengthen top-level design and overall coordination, vigorously promote the interconnection and open sharing of government information systems and public data, accelerate the integration of government information platforms, eliminate information silos, and promote the opening of data resources to society" [21]. We should fully recognize and leverage the important roles of archives, archival work, and archives departments in summarizing experiences, understanding laws, continuing history, and developing various undertakings. Archives departments should be incorporated into the inter-ministerial joint conference for promoting big data development and various local coordination mechanisms for big data and government information resource management, further strengthening the overall management of national data resources, and effectively integrating archival information resources, archival management systems, and archival resource platforms into the overall mechanism for interconnecting and openly sharing government information systems and public data, thoroughly eliminating government information silos and "building a national information resource sharing system" [22].

3.2 Strengthen the Rule of Law in Government Information Resource Management

3.2.1 Use the Rule of Law to Build Reform Consensus and Coordinate the Enactment, Amendment, Abolition, and Interpretation of Laws and Regulations on Government Information Resource Management

China currently has relevant laws and regulations including the "Archives Law," "Regulations on Open Government Information," "Interim Measures for Electronic Document Management," and "Interim Measures for Government Information Resource Sharing Management." However, the definition of management objects for government information resources, the relationships among various management activities, and the division of responsibilities among management subjects still need to be clarified.

For example, against the backdrop of vigorously promoting “Internet Plus Government Services,” the volume and variety of historical records with preservation value formed through online government activities are increasing. Whether these government information resources should be archived, which should be included in the archiving scope, and how to fully integrate and correlate current information resources with historical archival resources to support scientific decision-making pose numerous challenges. Amid the rapid rise of data management departments, we should fully understand their relationship with traditional government information resource management departments such as archives departments, build reform consensus on management objects, management activities, and management subjects, and further promote the legalization and scientification of government information resource management.

3.2.2 Advance Reform on the Track of Rule of Law and Coordinate the Legalization of Institutional Staffing for Archives and Data Management Departments

As institutions managing national information resources, archives departments have undergone long-term development and evolution, with their functions and responsibilities adjusted multiple times. Relatively speaking, the legalization of archives department functions and authority has already established a certain foundation. However, data management departments only emerged as informatization development reached a certain stage, particularly proliferating after the implementation of the national big data strategy. Some data management departments have only a name, with related work still being explored; some have experienced repeated institutional adjustments; and the titles and responsibilities of some data management institutions remain to be determined [11]. By comparison, archives department responsibilities have clear legal and regulatory foundations, while data management department responsibilities rely on local regulations or “Three Fixed Principles.” The “Decision of the CPC Central Committee on Deepening the Reform of Party and State Institutions” emphasizes: “The legalization of institutional staffing is an important guarantee for deepening the reform of Party and state institutions. We must manage various types of organizations according to law, and accelerate the legalization of institutions, functions, powers, procedures, and responsibilities.” Coordinating the legalization of institutional staffing for archives departments and data management departments, especially the latter, aligns with the policy requirements for building a law-based state and government.

3.3 Optimize the National Information Resource Management System in a Coordinated Manner

Optimizing the national information resource management system in a coordinated manner requires adhering to the principles of optimization, coordination, and efficiency, comprehensively considering the institutional setup and functional allocation of relevant national information resource management departments including archives departments, data management departments, doc-

ument management departments, government information disclosure authorities, confidentiality administration departments, informatization authorities, libraries, and museums, improving coordination mechanisms such as the inter-ministerial joint conference system for promoting big data development, continuously optimizing inter-departmental relationships, and forming a rational and efficiently operating national information resource management system.

Optimizing the national information resource management system is the fundamental guarantee for strengthening overall national information resource management. At the 2016 State Council's national teleconference on advancing the reform of streamlining administration, delegating powers, and optimizing services, Premier Li Keqiang pointed out that "currently, more than 80% of China's information and data resources are held by government departments at all levels, and 'keeping them hidden away' has become a tremendous waste." He also emphasized that "it must be clear that providing public data is an important part of government public services" [23]. In advancing the implementation of the national big data strategy, optimizing the national information resource management system in a coordinated manner aligns with the principle of "adhering to optimization, coordination, and efficiency" in the "Decision of the CPC Central Committee on Deepening the Reform of Party and State Institutions," and is conducive to accelerating the formation of strategic and foundational national information resource databases, reshaping national competitive advantages, and enhancing national governance capabilities.

Coordinated optimization of the national information resource management system is a common practice in many developed countries. For example, the United States has formed a government data governance system covering six major areas including data openness, information disclosure (freedom), personal privacy protection, e-government, information security, and information resource management, with core or important institutions such as the Office of Management and Budget, Federal CIO Council, Office of Science and Technology Policy, Department of Justice Information Policy Office, National Archives and Records Administration, and Department of Commerce participating [24]. The United Kingdom has also formed a governance system covering seven major areas including information resource management and reuse, with important governance institutions including the Cabinet Office, Government Digital Service, Information Commissioner's Office, Information Commissioner, Department for Digital, Culture, Media and Sport, National Archives, Government Communications Headquarters, National Cyber Security Centre, Ministry of Justice, Government Legal Department, Data Strategy Board, and Public Data Group [25]. The Canadian federal government has also established a data governance system including the National Library and Archives [26]. Australia has formed a governance system involving the Department of the Prime Minister and Cabinet, Government Information Management Office, National Archives, and cross-departmental big data working groups by developing a government information governance framework centered on government information assets [27].

3.4 Accelerate the Establishment and Improvement of Responsibility Division and Coordination Mechanisms

As an important institutional arrangement for achieving the overall goal of comprehensively deepening reforms, the reform of Party and state institutions, including local institutional reforms, is a crucial measure for advancing the national governance system and governance capabilities. As important components of Party and state institutions, accurately positioning the functions of archives departments and data management departments and scientifically defining their division of responsibilities constitute an important foundation for optimizing institutional setup and functional allocation.

Research shows that even with clearly defined institutions and functions, archives departments and data management departments still have overlapping responsibilities. To promote the systematic, holistic, and coordinated nature of the institutional function system and transform “fighting separately” into “coordinated operations,” it is necessary to incorporate archives departments into big data development coordination mechanisms and establish appropriate communication and consultation mechanisms, thereby strengthening consultation and coordination on division of responsibilities and specific work, considering that archives departments belong to the Party committee system while data management departments belong to the government system.

Specifically, adoptable measures include: formulating and revising the “Three Fixed Principles” for both types of departments; establishing and improving inter-departmental responsibility division consultation mechanisms organized by deliberation and coordination bodies or leading departments, as well as coordination mechanisms organized by staffing departments, in accordance with relevant provisions such as the “Measures for Coordinating Division of Responsibilities Among Central Party and State Organs” and following the principle of combining consultation with coordination; and establishing and improving collaboration mechanisms for specific work between archives departments and data management departments.

In terms of specific functional content, efforts should focus on three aspects to establish and improve responsibility division collaboration mechanisms: (1) In government information resource archiving management, clearly define and refine the division of labor among data management departments, government service departments, and archives departments; (2) In information resource sharing system construction, emphasize top-level design, strengthen communication, conduct in-depth research, and effectively promote the inclusion of archival information resources into the government information resource sharing system to truly eliminate information silos and achieve comprehensive data sharing. Under the leadership of Zhejiang Province’s “Maximum One Run” reform leading group, the Zhejiang Provincial Archives and the Provincial Big Data Development Administration Bureau have properly handled resource sharing issues through regular business exchanges; (3) In information resource openness, estab-

lish communication mechanisms among archives departments, data management departments, and government information disclosure authorities, strengthen coordination and orderly collaboration, and improve the efficiency and effectiveness of archives access, data openness, and government information disclosure. At the local level, the transformation and upgrading of the Shandong Provincial Data Hall based on the government open information inquiry center of the Provincial Archives, jointly undertaken by the Shandong Provincial Government General Office, Provincial Archives, and Provincial Big Data, serves as an excellent exploration for integrating and sharing provincial government information resources [28].

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Author Contributions

Xu Yongjun: Proposed the research topic, designed the paper structure, put forward important viewpoints, and revised and finalized the manuscript

Zhang Zhen: Collected materials and wrote the initial draft

Ren Qionghui: Collected materials and participated in writing the initial draft

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

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