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ACCELERATING THE CONSTRUCTION OF A COLLABORATIVE AND EFFICIENT NEW GOVERNMENT DATA GOVERNANCE SYSTEM IN CHINA

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ABSTRACT

With the explosive growth of data volume, China's government data governance is facing increasingly complex challenges, leading to a sharp rise in the difficulty and cost of digital governance. The sources and volume of government data are experiencing an explosive increase, while the processing and analysis of vast amounts of unstructured data have grown increasingly complex. Traditional data governance frameworks struggle to effectively address these challenges. Moreover, various platforms and generative AI collect massive amounts of sensitive data and user behaviour information, posing severe threats to personal privacy and even national security. To ensure data quality, security, and privacy protection while maintaining compliance, it is imperative to establish a collaborative governance mechanism that engages the government, enterprises, industry organisations, and the public in data governance. By leveraging emerging technologies, we must streamline the framework of the new government data governance system to enhance the precision, effectiveness, and accountability of governance.

Keywords*: Collaborative and Efficient; Collaborative Governance Mechanism; Government Data Governance System.*

INTRODUCTION

With the widespread application and deep integration of emerging information technologies such as artificial intelligence (AI) in government data governance, the complexity and cost of data governance have surged dramatically. China's government data governance is now confronting an increasingly intricate landscape.

The rapid evolution of emerging technologies has increased the complexity of data governance. The swift development and broad adoption of cloud computing, AI, blockchain, and other cutting-edge technologies have led to an explosive increase in the sources and volume of government data. For instance, ChatGPT, a large language model, amassed 100 million users within just two months after its launch. By December 2023, its global user base had exceeded 1.7 billion, with applications spanning customer service, healthcare, education, and more.[2] The processing and analysis of vast amounts of unstructured data have grown increasingly complex, rendering traditional data governance systems inadequate. Moreover, various platforms and generative AI collect massive amounts of sensitive data and user behaviour information, posing severe threats to personal privacy and even national security, thereby challenging conventional governance models like never before.

The tension between the data governance demands of emerging technologies and traditional government management models exacerbates governance complexity. From a governmental perspective, emerging technologies encourage–and even necessitate–data interconnectivity

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[2] What Is ChatGPT? A Two-month-old AI Tool with 100 Million Monthly Active Users. Beijing News (2023). https://baijiahao.baidu.com/s?id=1757705586200707936&wfr=spider&for=pc

and sharing. However, despite China's vast data reserves, issues such as "data monopolies," "data silos," and the "digital divide" highlight the urgent need for enhanced governance capabilities. From a societal perspective, insufficient participation from enterprises, industry organisations, and the public in data governance makes it difficult to gather genuine user needs and preferences, hindering the co-construction, co-governance, and sharing of data. And, from an institutional perspective, the protection of citizens' personal information requires timely adjustments and reviews of data governance laws, regulations, and management systems.

How can we ensure data quality, security, and privacy in complex multi-cloud environments while maintaining cross-platform consistency, compliance, and risk mitigation? How can we construct a new government data governance system that ensures legal data application, guarantees secure and confidential data quality, and reduces governance risks and costs? To answer these questions, this paper focuses on building a framework for a new government data governance system, exploring its guiding principles and inherent logic. Additionally, by examining global best practices, it seeks to identify the future trajectory of government data governance.

LITERATURE REVIEW

Data governance has been a focal point of research for scholars both domestically and internationally. Current studies primarily revolve around three key aspects. The first is the conceptual exploration of government data governance. Authoritative definitions have been provided by institutions such as DAMA (Data Management Association International, 2009) and DGI (Data Governance Institute, n.d.). DAMA defines data governance as a collection of activities that exercise authority and control over data assets, including planning, monitoring, and execution. DGI conceptualises it as a system encompassing decision-making and accountability related to information processes.

Chinese scholars have also contributed to defining its connotation. For instance, Chen Lin proposed that government data governance should embody simplification, precision, and intelligence (Chen, 2016). An and Mao (2015) argued that it requires multi-dimensional social collaborative innovation and co-governance across management philosophies, mechanisms, and tools to safeguard data sovereignty, unlock data value, and innovate data applications.

The second is research on government data governance systems. The European Union, building upon policies such as the Resolution on the Digital Opening-up of Public Data, revised and issued a series of regulations including the Open Data Directive, thereby constructing an open government data governance framework.[3] The UK government, guided by governance principles and with good governance as its ultimate goal, established a system underpinned by regulations, organisational structures, and technological governance (Tan and Liu, 2020).

The third is the practical study of government data governance systems. Kim and Cho examined big data governance in South Korea's National Pension Service, proposing a framework comprising objectives, strategies, components, and IT infrastructure.[4] Yao Gan and Xia Zhijie conducted a comparative analysis of government data governance practices in

[3] High-value datasets: An overview through visualisation. Official Portal for European Data (2023). https://data.europa.eu/en/publications/datastories/high-value-datasets-overview-through-visualisation

[4] Case of Korea. *2017 IEEE International Congress on Big Data.* Honolulu, Hawaii, 25-30 June. IEEE. Kim, H. Y., and Cho, J.

Shanghai, Beijing, and Shenzhen from the perspectives of organisational structures, regulatory standards, and technical support (Yao and Xia, 2020). They concluded that policies should be tailored according to the needs of urban development. These studies provide a foundation and reference for this paper's exploration of how China can construct a collaborative and efficient new government data governance system. The subsequent analysis will focus on the principles and logical framework that can guide the design of China's data governance system.

FINDINGS

Based on China's government data governance practices, this study proposes that the framework design of a new government data governance system should effectively enhance the precision, effectiveness, and accountability of governance. Under the premise of legal compliance, multi-stakeholder collaboration should be leveraged to achieve integration across resources, actions, and development, and other aspects of government data, thereby maximising the "dividends" of data in socioeconomic development. This framework will provide solid support for government governance in areas such as digital transformation, data development and sharing, and smart city construction.

1. Core Elements of the New Government Data Governance System

The new government data governance system should encompass the following key elements: First, it is necessary to build an open and fair data governance ecosystem. The government, as the supply side, provides data to society, while enterprises, industry organisations, and the public, as demand-side users, access and utilise open government data, thus forming a cyclical, collaborative governance ecosystem. Second, the government, in collaboration with industry organisations, should establish data quality standards and norms, so as to provide a robust legal and institutional system for data development, utilisation, and sharing. Third, government departments should undergo internal integration and reform to respond to data governance demands as a unified entity. Fourth, digital technologies such as big data, AI, and blockchain must be leveraged to enhance the efficiency of government data governance.

2. Principles for the New Government Data Governance System

China's new government data governance system should adhere to the following principles to ensure fairness, precision, effectiveness, and accountability of data governance. First, the principle of collaborative governance. To overcome fragmented governance issues like "data monopolies" and "data silos", a multi-stakeholder governance mechanism must be established, involving inter-departmental coordination as well as collaboration among government, society, and the public. This shifts governance from a government-dominated "single-entity" model to a "multi-entity" co-governance approach, enabling integrated and synergistic use of data resources and enhancing the integration and effectiveness of administrative governance.

Second, the principle of ensuring both transparency and privacy protection. Open sharing of government data aligns with the public's legitimate right to information and oversight. While ensuring legal compliance, the government should maximise data openness, transitioning from a "closed" to an "open" governance system. In the process of data governance, the government should place itself under the supervision by various social entities, thus increasing public trust in government data governance. At the same time, it must balance transparency with the protection of personal privacy and national security.

Last, the principle of putting the rule of law first. Data governance fundamentally involves the allocation and management of data ownership, responsibilities, processes, and risk management, all of which require a sound legal framework. Every stage of data collection, storage, usage, sharing, and openness must strictly comply with national laws and regulations to ensure legitimacy, compliance, and rationality.

3. Internal Logic of the New Government Data Governance Framework

The theory of collaborative governance is applicable to the mutual coordination and cooperative relationships among multiple stakeholders in data governance. Therefore, based on relevant core elements and principles, a new government data governance framework can be shaped by leveraging collaborative governance mechanisms, focusing on areas such as digital transformation, data openness and sharing, e-government services, and smart city development, supported by digital technologies. This framework facilitates the joint participation of governments, enterprises, industry organisations, and the public in collaborative data governance. The new governance model can be achieved by promoting multi-stakeholder participation, establishing sound governance institutions, coordinating governance approaches, and following the principles of joint contribution and shared benefits, ultimately realising collaborative co-governance of data.

First, it is to promote multi-stakeholder participation in data governance and break down collaboration barriers among stakeholders in the new government data governance framework by encouraging diverse participation in data governance. This involves forming a co-governance model where the government collaborates with other societal actors–including the market (enterprises), society (industry organisations), and the public–to ensure orderly and coordinated engagement in data governance. This approach enhances the synergy and orderliness of public data services from demand to supply.

For example, in October 2023, the National Data Administration (NDA) was established in accordance with the plan on reforming Party and state institutions,[5] to provide strong institutional support for collaborative government data governance. According to its mandate, the NDA is responsible for coordinating the development of data infrastructure systems, integrating and sharing data resources, advancing the Digital China initiative, and promoting the digital economy and the planning and construction of digital society, to organically integrate the previously fragmented responsibilities across different departments.[6] Such institutional reform facilitates equal participation and democratic consultation among stakeholders, dismantles "data silos" and "isolated data islands," and enhances interconnectivity among governance entities.

Second, it is to build a co-creation, co-governance, and sharing philosophy, and set a unified governance goal at the core of the new government data governance framework. A successful government data governance framework must align individual interests with public interests, balancing public data security and personal privacy protection, and corporate data compliance and government data legitimacy. The goal is to find the common ground among individual rights, corporate benefits, and public welfare, integrating diverse stakeholder interests into a unified governance objective.

[5] "Plan on Reforming Party and State Institutions" (2023). Committee of the Communist Party of China and State Council. https://www.gov.cn/gongbao/content/2023/content_5748649.htm

[6] National Data Administration. https://baike.so.com/doc/30473194-32114319.html

China's governance philosophy emphasises "co-creation, co-governance, and sharing", which also applies to data governance. Given the fragmented nature of data and overlapping governance responsibilities, stakeholders must co-build data governance rules to balance interests and co-govern through democratic consultation to achieve sound interactions between government departments, between the government and the market, between the government and social organisations, and between the government and the public. In this process, the roles and responsibilities of each party are clarified, forming a co-governance concept and common objectives. "Sharing" means that all governance stakeholders jointly benefit from the dividends of data governance, while also helping the government achieve its value-driven goals–such as enhancing the sense of fulfilment and happiness among businesses, the public and other stakeholders–through digital transformation, e-government initiatives, smart city development, and online services.

Third, it is to build a sound governance institutional system and develop an institutional support framework for new government data governance. Government data governance requires the development of legal, regulatory, and policy frameworks to protect personal data rights, ensure data security and quality, and prevent data misuse and breaches. To standardise the conduct of data governance entities, it is essential to clarify the roles, responsibilities, powers and duties of the governance stakeholders within the data governance framework. China has already enacted key laws such as the Data Security Law, Personal Information Protection Law, Regulatory Data Security Management Measures – Trial, issued by the China Banking and Insurance Regulatory Commission, the predecessor of the National Financial Regulatory Administration) – and the Network Data Security Management Regulations – Draft, issued by the Cyberspace Administration of China.

Many local governments have also released data governance regulations based on national policies. To strengthen the institutional safeguard of the new governance framework, China should make the most of the opportunity arising from the establishment of the NDA to accelerate the improvement of data governance laws and rules.

Fourth, it is to leverage emerging technologies for governance innovation to build a dynamic governance toolkit for new government data governance. The government must take the lead in adopting emerging technologies and platforms to enhance digital transformation, e-government services, smart city development, and online service efficiency, to bring out the potential of data factors. For instance, China's "Let the public make fewer trips and let the data do the traveling" initiative utilises big data analytics to precisely identify public and corporate needs, enhance government responsiveness, and increase the accuracy of public service delivery.

CONCLUSIONS AND FUTURE DIRECTIONS

This study, employing qualitative research methods, explores the necessity, principles, and logical framework of China's new data governance system construction, and outlines future directions for its improvement, but it lacks in-depth analysis of specific practices and current developments in China's government data governance. Further research is needed to address these gaps.

In the governance of government data, the top-level design at the central government level and the practical implementation at the local government level each play distinct roles in advancing the construction of a new government data governance framework. Together, they establish a solid institutional foundation and conditional safeguards for good governance

practices, while providing policy guidance and macro guidance to foster a fair and equitable governance ecosystem.

At the central government level, further efforts should be made to improve relevant laws and institutional systems to provide institutional guarantee for data governance. It is recommended that the NDA should take a leading role in coordinated management and top-level design, addressing key challenges in the data factor market, such as difficulties in data rights confirmation, inconsistent data quality, barriers to data circulation and transactions, fragmented regulatory oversight, risks of data breaches and security vulnerabilities. By spearheading the development of fundamental data governance systems, the NDA can promote data factor-related institution construction and lawful administration across departments, mitigating the traditional problem of "multiple agencies managing data without coordination".

Currently, dozens of countries and regions around the world have been implementing open government data policies, establishing top-level designs and institutional frameworks for data governance. China can further learn from and draw upon the experiences of major developed countries in formulating data governance-related laws and building institutional systems, to do a good job in the top-level design and strategic planning of data governance and provide institutional safeguards for new forms of data governance (Table 1).

Table 1: Top-Level Data Governance Designs in Major Developed Economies

Country/Region	**Key Policies/Strategies**
US	Federal Data Strategy 2020 Action Plan, Data Protection Law: An Overview
EU	European Data Strategy, Data Governance Act, Data Act (Draft), Digital Single Market Strategy
Germany	Digital Strategy 2025, Data Strategy of the German Federal Government
UK	UK Digital Strategy
Australia	Digital Economy Strategy 2022 Update
Japan	Comprehensive Data Strategy
Republic of Korea	Framework Act on Promotion of Data Industry and Data Utilisation, Personal Information Protection Act (Amendment)

Sources: US Government, n.d.; Song and Huang, 2023; Australian Government, 2022;[7] Japan Digital Agency, n.d.;[8] Republic of Korea Ministry of Government Legislation, n.d.[9]

Additionally, the central government should introduce incentive measures to enhance awareness for inter-departmental data sharing, and to encourage the development and sharing of data resources among governance entities. Within the government, efforts should be made to further strengthen the recruitment and utilisation of talent specialised in emerging

[7] Digital Economy Strategy – 2022 Update. https://digitaleconomy.pmc.gov.au/2022-update

[8] Data Strategy. https://digital.go.jp/en/policies/data_strategy

[9] Notice of Legislative Preliminary Proposal for Partial Amendment to the Enforcement Decree of the Framework Act on Promotion of Data Industry and Utilisation.
https://www.moleg.go.kr/lawinfo/makingInfo.mo?currentPage=69&lawCd=0&lawSeq=76146&lawType=TYPE5&mid=a10104010000&use_xbridge3=true&loader_name=forest&need_sec_link=1&sec_link_scene=im&theme=light [Accessed 20 July 2025].

technologies. Through these multi-pronged measures, robust support should be provided to foster a favourable development environment and ecosystem for data governance nationwide.

At the local level, regional governments are encouraged to leverage their respective strengths and characteristics to actively explore digital transformation, e-government, smart city development, online services, and digitally enabled public involvement, with increased emphasis put on innovation and application. Several regions have achieved notable progress in addressing traditional data governance bottlenecks. For example, Zhejiang Province utilised its integrated intelligent public data platform to focus on meeting enterprise and public needs. Through its "multi-stakeholder collaboration for comprehensive integration" approach, it reorganised over 800 regulatory items and 103 service items–previously scattered across departments–onto a unified platform. This enabled businesses to access full life-cycle management services without visiting multiple agencies (Web Ref. 1).

Shanghai has empowered its megacity development through data governance in smart city construction. Beijing employs new technologies such as blockchain, big data, and AI to enhance cross-regional data sharing, establishing a coordinated service mechanism that streamlines administrative processes (Web Ref. 1). Guiyang developed a municipal governance "brain" using its "One Center, One Network and 10 Linkages" model. By vertically integrating systems and horizontally connecting stakeholders via Internet + primary level governance, it strengthened data-driven decision-making, improving precision and efficiency in government operations (Web Ref. 1). The best practices of these regions provide valuable insights for other localities to develop tailored government data governance frameworks.

At the enterprise level, companies should leverage their dual roles as primary participants in the data factor market and data developers to continuously explore and adopt new technologies, expand the scope of data resource utilisation, and enrich data assets. Enterprises can provide technical support for government data governance through technological innovation and application. Notably, most cutting-edge technologies around the world are pioneered and implemented by enterprises, which are thus well-positioned to offer training programs to help governments rapidly acquire and deploy emerging technologies for data governance. Furthermore, as key market players, enterprises can collaborate with industry associations to develop data standards, establish industry self-governance platforms for data management, and provide policy recommendations and consultative inputs to the government through structured engagement and dialogue mechanisms.

At the public level, individuals should actively participate in government data governance, engage in positive interactions with the government and enterprises, and take on corresponding responsibilities. They should proactively study national policies and laws related to data governance and skilfully leverage laws and regulations to protect personal privacy and safeguard their own rights and interests. Additionally, the public should actively engage in collaborative governance of government data, learn to accurately express their demands for government services using "data", so as to ensure the precise matching between demand and supply of public services and enhance the efficiency of government data governance.

From the continuous improvement of the central institutional system and the innovation in local practices, the future direction of new-type government data governance can be anticipated. Following the principles of co-construction, sharing, and co-governance, the bottlenecks and challenges of traditional government data governance will be continuously

addressed and overcome through the broad participation of multiple governance entities. This will fulfill the mission of "leveraging big data to modernise state governance," driving science-based government decision-making, targeted social governance, and efficient public services through new-type government data governance.

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