

# Current Development Status of "Data Element X" Enabling Economy

Jialu Liu<sup>1</sup>, Peng Wang<sup>2</sup>

<sup>1</sup>College of Humanities, Donghua University, Shanghai, 200051, China

<sup>2</sup>Beijing Academy of Social Sciences, Beijing, 100101, China

## ABSTRACT

Entering the new era, China has vigorously promoted the construction of a digital economy. The National Data Bureau jointly issued an action plan with several departments, focusing on applying "data elements x" in various fields. This article starts with the top-level design, combined with the laws and regulations involved in the project and the organizational structure of the implementation, analyzing the experience of "data element X" in the national pilot. Finally, we can summarize and expect the future through the current development environment and ecological construction. At present, the digital economy is developing rapidly, and data has become an essential strategic resource of the country. China has carried out all-round and multi-angle research and exploration on implementing "data element x" from the central to the local, theory to practice, legislation to policy, etc.

## KEYWORDS

Data Element X; Digital Economy; Laws and Regulations.

## 1. PRELIMINARY ESTABLISHMENT OF THE TOP-LEVEL DESIGN OF "DATA ELEMENT X"

In October 2019, the Fourth Plenary Session of the 19th CPC Central Committee listed data as the fifth major production factor for the first time, which opened the institutional exploration of the marketization of data elements. Since then, the central government has issued a series of policies, such as the "Opinions on Building a More Perfect System and Mechanism for Market-Based Allocation of Factors" and the "Overall Plan for the Comprehensive Reform of the Pilot Program of Market-oriented Allocation of Factors" gradually building a unified national market for data elements, promoting the opening and sharing of government data, and strengthening the integration and security protection of data resources. In May 2020, the "Opinions of the CPC Central Committee and the State Council on Accelerating the Improvement of the Socialist Market Economy System in the New Era" once again proposed accelerating the flow of data element resources and further stimulating the creativity and market vitality of the whole society.

In December 2022, the "Opinions on Building a Data Basic System to Better Play the Role of Data Elements" ("Data 20") was issued, which built the "pillars" of data elements around the aspects of data property rights, trading circulation, open sharing, data security and so on. Data as a production factor has many characteristics, the most important of which is the nature of non-exclusive public goods. The "Data 20" emphasizes the right to hold, use, and manage and proposes to establish the "separation of three rights" to create a data property structure with Chinese characteristics; in terms of data trading circulation, it is mainly reflected in two forms of practice: one is the floor trading with

data exchanges as the medium, and the other is the data transactions directly occurring between enterprises. It pays attention to developing and sharing government data and implements data security into the whole governance process.

Since 2023, China's data element policies have been further implemented. "The Reform Plan of Party and State Institutions," issued in March 2023, proposed the establishment of the National Data Bureau, which was established on October 15 and began to build an organizational structure for the market-oriented development of data elements.

In January 2024, the National Bureau of Data and other departments issued the latest notice of "the Three-year Action Plan of 'Data Factor x' (2024-2026)." The document focuses on the enabling role of data in 15 social fields, such as industrial manufacturing, business and trade logistics, financial services, medical, and health. With the high-level application of data as the main line, the vitality and potential of data factors are stimulated, and the multiplier effect of data factors is given play to promote the high-quality development of China's economy through necessary organization and implementation. As an emerging market, the data element market needs to focus on primary and modern industries in practice, open up the whole chain of data interaction, and promote the orderly cross-border flow of data.

In addition, the Ministry of Finance issued the "Interim Provisions on the Accounting Treatment of Enterprise Data Resources," which clarifies the relevant regulations on the inclusion of data assets in the table. This further stimulates enterprises' enthusiasm to participate in the circulation and transaction of data elements, marking that China is about to enter the era of "data assets."

The digital economy policy issued by the central government provides a blueprint for local governments to build data element markets, and local governments compete to start reforming and practicing data element enabling economies according to their own regional characteristics and digital resource advantages. "One city, one policy" promotes the deep integration of big data and digital governance, regional industries, and other fields, accelerates the release of data element potential, and strengthens the digital economy industry. By the beginning of this year, 11 provinces and cities, such as Jiangsu, Shanghai, and Guangdong, have officially set up provincial data bureaus, laying an organizational foundation for better playing the efficiency of data elements.

Overall, the marketization of data elements in developed cities in the east, such as Beijing, Shanghai, Guangdong, and Zhejiang, has made rapid progress, and the central, western, and northeast regions are in a period of acceleration. A "data element x" development trend with various characteristics and dislocation has initially formed.

## **2. LAWS AND REGULATIONS RELATED TO "DATA ELEMENT X"**

China has formed a four-in-one legal system related to data elements, which is "policy-development plan-national standards-laws and regulations," to ensure the safe use of data elements, accelerate the implementation of public data opening, and make public data better serve the improvement of national competitiveness, optimization of business environment, and promotion of industrial development.

### **2.1. Laws and Regulations at the Central Level**

At the national level, China is gradually formulating special laws and regulations around data, which provides a solid foundation for giving play to the multiplier effect of data elements and promoting data transactions and data interaction. The Civil Code proposes that data can also be the object of protection. The Cybersecurity Law adheres to the development of cybersecurity and information technology, accelerates the configuration and use of network infrastructure equipment, promotes the innovation and practice of network technology innovation, and creates a good platform for data

elements to be active in the economic trading market; The Data Security Law further standardizes data processing activities, ensures data security, and promotes data development and utilization.

## **2.2. Local Laws and Regulations**

Although the central government has not formulated a unified data element management system, with the promotion of the government's digital transformation work, local authorities have successively introduced the relevant provisions of “data elements x,” promoting the reasonable use, development, and sharing of public data through standardized data elements regulations, while improving the government's management ability and information service level, and promoting the development of digital economy and livelihood services.

Beijing, Shanghai, Guangdong, Guizhou, Hainan, and other provinces and cities have issued relevant management documents, aiming to make detailed and specific provisions on the legal responsibilities of various parties related to public data through the division of management responsibilities, the division of security responsibilities and the definition of corresponding legal responsibilities, and solve the problem of public management and service institutions shirking data sharing within the government from the system; from the perspective of data quality, the problem of uneven data quality is solved by regulating the directory management of public data; From the standpoint of data security, data abuse can be avoided by controlling the collection and aggregation of public data according to functions.

The Regulations on Public Data of Zhejiang Province will come into force on March 1, 2022, the first local regulation with public data as the theme in China. The regulations have three major highlights: first, they highlight the reform orientation and strengthen the construction of an integrated intelligent public data platform. Second, they standardize the mechanism and approach to promote the in-depth development and utilization of public data. Third, they strengthen security and improve the three major systems of public data security. The Measures for the Administration of Public Data in Guangdong Province is the first time in China to include the data produced or obtained by “organizations with public service functions” in the process of implementing public services into the scope of public data; establish a data subject authorization mechanism, and clarify that commercial secrets and personal sensitive data can be provided to the authorized party for use after being authorized by the data subject. The Measures for the Authorization and Operation Management of Beijing Public Data Zone (Draft) makes it clear that the data of the public data operation zone shall comply with the overall requirements of “original data does not go out of the domain, and data can not be seen”; clarify the responsible person for data security, establish an operation team with explicit functions, and strictly manage the operation of the public data zone; In terms of revenue distribution, it is proposed to carry out differentiated distribution according to the different nature of application scenarios, encourage public data zones to explore market independent pricing mode, actively seek the combination of paid use and unrestricted use, and share digital dividends.

## **3. ORGANIZATIONAL AND MANAGEMENT STRUCTURE FOR THE IMPLEMENTATION OF “DATA ELEMENT X”**

Since the 18th National Congress of the CPC, the central government has attached great importance to the role and value of data. “The Reform Plan of Party and State Institutions” issued by the CPC Central Committee and the State Council proposes to set up the National Data Bureau, which provides a solid organizational foundation for the market-oriented application of data elements. The organizational and management structure of the National Data Bureau includes five tasks, including comprehensive data elements, digital economy, infrastructure, and public data. The activities carried out symbolize the development direction of the digital economy, guide the construction of the “Data

Element X” system, and provide a basis for the participation of multiple subjects in developing data elements.

### **3.1. National Data Bureau -- Multiple Subjects Participate in the Governance under the Government’S Leadership**

The National Data Bureau is a multi-subject governance under the leadership of the government. It should give full play to its data resource management ability and establish a macro policy and rule system to promote the development of “Data Element X.” At the national level, the necessity of market subjects, social organizations, citizens, and other subjects to participate in the marketization construction of data elements is recognized, the functions and advantages of each subject are given full play. A fair and reasonable management structure is built. The National Data Bureau and other government departments uphold the value concept of joint construction, governance, and sharing, seek common economic value goals, and gather a solid centripetal force of the multiplier effect of data elements. In the data development stage, the National Data Bureau coordinates the development of public data and social data to realize the deep integration of the functional advantages of the government and the market; in the data integration stage, the National Data Bureau takes the lead in recognizing the exchange and sharing of data resources to overcome the phenomenon of information islands; in the data utilization stage, the National Data Bureau is responsible for building and improving the preparation, in-process and post-supervision and management system to ensure the information security of the use of data elements.

### **3.2. Local Data Exchanges -- Using the CDM Mechanism to Give Full Play to Their Advantages**

Driven by central policy and institutional facilities, various regions have begun to set up data exchanges to accelerate the cultivation of new forms of data interaction and circulation and increase their competitive advantages in a digital economy wave. In April 2015, China's first data exchange approved by the local government was established in Guiyang, and by June 2023, there had been 44 data exchanges nationwide.

At present, the operation mode of data exchange implements the entire life cycle of data elements, which can carry out corresponding business activities around different scenarios. As a new carrier of the CDM mechanism, data exchange aims to break through the linear mode, promote the effective integration of scenarios and data, and provide legal guarantees for data transactions. In the construction process of data exchange, focusing on scenario and data matching, data elements are integrated into the multi-dimensional scenario of “public-industry-enterprise-user,” and the data element market is integrated with the help of the CDM mechanism to solve the development bottleneck of current data transactions, activate the potential of data elements, and explore a more matching organizational and management structure of “data elements x.”

Shenzhen Data Exchange, as a platform for “data elements x,” applies the market-oriented configuration of the CDM mechanism for data elements to continuously meet the complex needs of factual scenarios. From identifying different scenarios, data is analyzed iteratively to find the corresponding matching mechanism. Achieving data reuse requires the cooperation of a variety of ecological subjects. Data exchanges, local governments, law firms, and other provincial and municipal data trading platforms work together to serve the lower ecology, set up laboratories to cultivate digital talents, and solve scenario-driven problems and life cycle value management to improve data ecological capacity. The final results can be judged by scenario performance, such as the financing of small, medium, and micro enterprises, the experience of cultural and travel industry users, etc., to achieve performance feedback scenario data matching.

## 4. THE NATIONAL-WIDE PILOT OF “DATA ELEMENTS X”

In 2015, Guiyang Big Data Exchange was officially launched and operated. It was the first place to circulate and trade data in China. It is positioned to build a national data exchange and create a core hub for the circulation of national data production elements. It focuses on forming an ecological system for data trading and the interconnection industry.

Guiyang Data Exchange divides data products into products and services, algorithm tools, and computing power resources. It has five special topics: meteorological data, electronic data, government data opening, computing power resources, and spatio-temporal data. In general, Guiyang Data Exchange has many product types and comprehensive coverage. From the perspective of certificate publicity, the publicity of registration certificates of data vendors and data elements still needs to be strengthened.

In May 2021, the National Development and Reform Commission, the Cyberspace Administration of China, and other agencies jointly issued the “Implementation Plan of Computing Power Hub of National Integrated Big Data Center Collaborative Innovation System,” which clearly defined Guizhou as one of the national hub nodes of the national integrated computing power network and positioned it as a non-real-time computing power support base for the whole country. In April 2023, Guiyang Big Data Exchange officially launched the “Computing Power Resources Zone.”

In March 2021, the Beijing National Big Data Exchange was established, and the Beijing Data Trading System was officially launched. Beijing Institute of Data Science and Technology is a benchmarking key project to implement the construction of Beijing’s “National Service Industry Opening-up Comprehensive Demonstration Zone” and “China (Beijing) Pilot Free Trade Zone.” China's first data exchange, based on the new trading paradigm of “data usable and invisible, use controllable and calculatable,” is positioned to build a leading domestic data trading infrastructure and an essential national cross-border data trading hub and become a global digital economy benchmarking city.

Beijing National Big Data Exchange includes public data, industry data, scientific research data, and social data. The delivery method of products is basically “off-platform delivery,” and the use of products requires the login of a “data trading platform,” which focuses on the rights and interests protection services of “specific merchants” on the supply side. In March 2021, the Beijing International Data Trading Alliance was officially established. In addition, in the unique “BDI Digital Asset Registration Platform,” all digital assets are on the chain.

The Shanghai Data Exchange was officially inaugurated in November 2021. The exchange aims to build a vital hub node for global data element allocation, closely follow the positioning of building a national data exchange, create an efficient, convenient, compliant, and safe data element circulation and trading system, and lead and cultivate the development of new business forms of “digital business.”

The current data application plate of Shanghai Data Exchange focuses on the financial shipping and transportation plate, vigorously develops artificial intelligence innovation and development capacity, and creates a “corpus” area for ample model training. With the goal of “building a multi-level data element market and creating a full-chain digital business ecological system,” it carries out exchanges and cooperation. From the perspective of the data transaction process and digital business rights and interests, compared with other exchanges, Shanghai data exchange is more straightforward, more comprehensive, open, and transparent.

In July 2023, the People's Government of Beijing Municipality issued the “Implementation Plan of Beijing Municipality on Implementing the Opinions on Accelerating the Construction of a Unified Large Market.” Regarding the application of “data element x,” Beijing is at the forefront of the national digital economy. Creating the Beijing Data Basic System Pilot Zone can constantly stimulate

the potential of data elements, explore the structural separation system of data resources, establish the data trading index and price formation mechanism, establish the management system of data trading places, and form a number of the landmarks “Beijing Rules.” Formulate a negative list of data circulation and transactions and explore new regulatory models such as agile regulation, trigger regulation, and penetrating regulation of data circulation. Actively participate in formulating international rules and digital technology standards for cross-border data circulation and explore national cooperation in digital transactions such as data pricing and circulation.

In February 2024, the National Data Bureau issued the “Notice on Conducting a National Survey of Data Resources.” This action aims to clarify the lowest number of data resources and accelerate their development and utilization.

## REFERENCES

- [1] Chen Lanjie, Hou Pengjuan, Wang Yinuo, Sun Yaoming. Research on the Development Status and Development Trend of Data Element Market Construction in China[J]. *Journal of Information Resources Management*, 2022, 12(06): 31-43+57.
- [2] WEN Yingzi, QU Yang, ZHANG Xudong, XU Jun, LI Jianping. Comparative study on laws and regulations related to data transaction[J]. *Big Data Research*, 2022, 8(03): 66-77.
- [3] LIU Yinxi, WANG Ruijuan, CAI Yichen. The Connotation and Construction Path of Data Governance Community-Based on the Case Analysis of the Responsibilities of the National Data Bureau[J]. *Inner Mongolia Social Sciences*, 2024, 45(01).
- [4] YIN Ximing, QIAN Yating, WANG Weiguang. Scenario-driven Construction of Ecological Flywheel of Data Elements--On the New Mechanism of CDM from the Practice of Shenzhen Data Exchange[J]. *Tsinghua Business Review*, 2023(05): 107-117.
- [5] Zhang Huiping, Zhao Qin, Ma Taping, Zhang Yaoyao, Zhang Jingran. Two Modes and Ecological System Construction of Data Element Market Circulation in China[J]. *Journal of Information Resources Management*, 2023, 13(06).
- [6] SUN Jing, WANG Jiandong, PAN Yong, HONG Bora. Research on the Standardization Path of Data Element Market Development[J]. *Price: Theory & Practice*, 2023(10): 21-25+82.
- [7] LIU Jinzhao, WANG Shouyang. Dilemmas and Suggestions on Market-based Data Allocation[J]. *Bulletin of Chinese Academy of Sciences*, 2022, 37(10): 1435-1444.
- [8] Wang Zhigang, Li Chengyi. Realistic Dilemma and Countermeasures of Data Element Marketization[J]. *Fiscal Science*, 2022(08): 22-29.
- [9] JIANG Xiaojuan. Data transaction and data interaction: top-level design and exploration and innovation.