Construction of Regulatory Legal Framework for the Digital Economy Industry in Hebei Province and Improvement of Local Legislation

Sanjun Ma

Hebei University of Engineering and Technology, Shijiazhuang, China
masanjun9861@hebuet@edu.cn

Abstract: With the digital economy becoming an important engine for promoting regional economic transformation and upgrading, while accelerating the construction of digital infrastructure and industrial layout, Hebei Province also faces institutional challenges in platform governance, data security, algorithm supervision, and other aspects. Based on the review of the national level digital legal system and the current development trend of the digital economy in Hebei Province, this article analyzes the practical difficulties such as lagging local legislation, overlapping regulatory responsibilities, and insufficient law enforcement capabilities. The article proposes to establish a legal framework centered on the "Regulations on the Promotion and Governance of the Digital Economy in Hebei Province", improve detailed rules such as data classification and grading management, platform compliance responsibilities, and algorithm filing mechanisms, and enhance governance efficiency through regulatory sandboxes and digital technology tools. By combining local legislation with institutional innovation, Hebei can effectively respond to prominent issues in digital economic governance and promote the deep integration of the digital legal system and industrial development.

Keywords: Hebei Province; Digital Economy; Local Legislation; Data Governance; Platform Supervision; Construction of Legal Framework

1. Introduction

Driven by the rapid evolution of digital technology, the digital economy has become an important driving force for China's economic transformation and high- quality development. With the accelerated integration and application of emerging technologies such as big data, cloud computing, artificial intelligence, and blockchain, traditional industries are accelerating their digital transformation, and new formats such as platform economy, smart cities, and data trading are constantly emerging. In order to meet the needs of the development of the digital economy, the country has successively introduced basic legal documents such as the Cybersecurity Law, the Data Security Law, and the Personal Information Protection Law, and has initially established a legal framework covering data governance, platform supervision, and user rights protection. However, these laws are mostly based on principled provisions, and their institutional response and enforcement guidance to local governments are still insufficient in practical implementation. It is urgent for local legislation to supplement and refine them. [1]

As an important traditional manufacturing base and core area of the coordinated development strategy of Beijing Tianjin Hebei in China, Hebei Province has attached great importance to the development of digital economy in recent years, actively promoting the construction of digital infrastructure and industrial digital transformation. However, in the process of development, there are also many regulatory challenges, such as blurred compliance boundaries in enterprise data processing, lack of transparent mechanisms for platform algorithm behavior, lagging local regulatory capabilities and technology, and unclear enforcement responsibilities of various functional departments. Especially in the fields of cross domain data flow, intelligent recommendation services, and citizen personal information protection, the existing local regulatory system presents a fragmented, lagging, and weak practical guidance situation, which seriously restricts the standardized development and risk prevention and control capabilities of the digital economy in Hebei Province.

Therefore, starting from the current needs of digital economy development in Hebei Province, this article systematically sorts out the content and structure of the national level digital legal system, analyzes the core issues faced by local governments in legal adaptation and institutional implementation, and

proposes a local legislative path suitable for Hebei's characteristics based on the experience of developed regions such as Shenzhen and Hangzhou. The article focuses on the construction of a legal framework for digital economy regulation, refinement of data governance systems, innovation of platform compliance mechanisms, and enhancement of regulatory capabilities, aiming to provide feasible legal system support and policy references for Hebei Province and other regions, and promote the modernization transformation of local digital governance capabilities.

2. The Current Situation and Legal Needs of Digital Economy Development in Hebei Province

In recent years, Hebei Province has made significant progress in promoting the development of the digital economy. According to the 2023 government work report of Hebei Province, the added value of the core digital economy industry in the province increased by 8.7% year-on-year, which is higher than the GDP growth rate of the province and has become an important driving force for economic growth. In terms of industrial structure, Hebei has focused on cultivating digital healthcare and intelligent manufacturing bases with Shijiazhuang and Baoding as the core, cloud computing and big data industry clusters centered on Langfang, and smart city and government data application scenarios with Xiong'an New Area as the experimental field. The development pattern of these regions indicates that the digital economy in Hebei is no longer a "peripheral supplement" industry, but rather a product of information technology.

Gradually forming a system in terms of information infrastructure, data element market, and platform based operation mechanism. However, the digital industry in Hebei is still at a critical juncture of structural transformation and institutional restructuring.

Exchange term. On the one hand, traditional manufacturing and industries such as construction and energy have exposed significant lack of synergy in promoting digital transformation; On the other hand, issues such as platform algorithm bias, user data abuse, and unclear cross-border data control are increasingly common. For example, in 2022, a certain online education platform in Baoding City was widely questioned by public opinion for illegally collecting facial recognition information from underage users. However, due to the lack of targeted legislation at the local level, regulatory authorities could only handle it with the general provisions of the Cybersecurity Law, which not only affected administrative efficiency but also weakened the deterrent power of the rule of law. Similar issues not only reflect the limitations of the enforcement space of higher-level laws, but also expose the problem of insufficient tools for local governments to deal with digital economy governance risks at the legal level.

From the perspective of institutional requirements, Hebei Province is currently highly dependent on local legislation for digital governance in multiple dimensions, especially in areas such as data ownership confirmation, cross domain data circulation, platform compliance behavior standards, and digital trading market access. On the one hand, the status of data as a core production factor is increasingly prominent, and its value is not only reflected in the economic aspect, but also related to public safety and personal rights protection. However, the existing "Regulations on Promoting the Development of Big Data in Hebei Province" mostly focus on encouraging development, lacking a prevention mechanism for platform data monopoly behavior, and failing to clarify the data review authority of local regulatory agencies. On the other hand, phenomena such as "black box algorithms," "big data murder," and "data discrimination" have been reported by the media in local e-commerce platforms or smart transportation systems. However, local laws still have a blank space for identifying, filing, and regulating algorithm risks.

In regulatory enforcement, digital governance in Hebei Province presents a certain degree of multi head management and overlapping responsibilities. For example, data management involves multiple departments such as cyberspace, public security, industry and information technology, and market supervision, but lacks a unified coordination mechanism. Taking the government data platform as an example, a certain city attempted to integrate multiple data systems such as medical insurance, civil affairs, and education for "one-stop service". However, in the initial stage of platform integration, due to unclear permissions and inconsistent data formats among multiple departments, frequent interface interruptions occurred, greatly affecting the efficiency of business promotion. Behind such problems is not only the lack of coordination in the allocation of administrative resources, but also the absence of institutional settings in local regulations, resulting in a lack of legal support for governance operations.

In addition to the insufficient institutional supply, Hebei Province is also constrained by weak technical foundations and uneven personnel quality at the implementation level. Some county-level units have not yet established independent data governance departments, and there is even a situation where

an office simultaneously manages information release and network supervision. Due to the severe shortage of grassroots digital governance talents, many law enforcement personnel are still in a vague understanding stage of concepts such as data sovereignty and algorithm evaluation, and are facing technical defenses from enterprise platforms.

It is difficult to provide an effective response. At the same time, a large number of platform enterprises take advantage of the asymmetric advantage of local supervision by setting up servers in other places and operating their businesses in Hebei, thereby avoiding local scrutiny and forming the phenomenon of "ineffective territorial management" in practice.

3. The basic legal structure and institutional key points of regulation in the digital economy industry

3.1 The logical framework of the legal system for industry regulation

In the process of building a local digital economy governance mechanism in Hebei Province, it is necessary to base on the existing national level legal system. From the current situation, China has formed the Cybersecurity Law. The digital governance legal framework based on the Data Security Law, Personal Information Protection Law, and E-commerce Law provides fundamental guidance for local digital supervision. These laws are not established for a specific industry, but provide governance rules for the entire digital space, with the characteristics of wide coverage and strong principles. They respectively revolve around network operation security, data processing and circulation. The establishment of a system for protecting human privacy and complying with platform transactions is the fundamental principle for local legislation.

However, these national level laws often lack specificity and operability in the local implementation process due to their wide applicability and abstract normative language. As an on first tier province with a strong digital economy, Hebei often finds it difficult to directly translate these macro legal provisions into practical work standards in the face of complex grassroots regulatory realities. The lack of clear legal basis in data classification, platform algorithm governance, and user rights protection at all evels of government has constrained the improvement of local digital governance mechanisms. In order to promote the implementation of local legislation in a more targeted manner, it is necessary to systematically organize the functional positioning of national laws and clarify the legislative entry points and practical space of Hebei Province based on this. Table 1 shows the composition of the main national level digital legal systems and their extension directions for local governance:

Table 1 National level legal system and local extension space that can be referenced in the supervision of digital economy in Hebei Province

Legal name	Implementation time	Core normative areas	Suggestions for Local Extension Space
Cybersecurity Law	In 2017	Network operation security and infrastructure	Protection Establish a local network security incident response mechanism and develop a local responsibility list
Data Security Law	In 2021	Data classification, data export, security assessment	Develop a directory of local 'important data' and improve the data circulation review system
Personal Information Protection Law	In 2021	Personal Information Collection and Use Standards	Promote platform user data filing and establish a unified interface for data authorization
Electronic Commerce Law	In 2019	E-commerce platform behavior and transaction order	Develop a credit scoring system for platform transactions and promote compliance governance of local platforms

This system leaves clear space for local legislation. Hebei Province may formulate institutional rules that are suitable for local conditions without violating the principles of higher-level laws. [2] For example, regarding the "Data Classification and Grading Protection" system proposed by the Data Security Law, local governments can issue data classification guidelines for their respective regions, clarify the management obligations for different categories of data, and set data usage restrictions for key areas (such as healthcare, education, and government affairs) based on local conditions. In addition, the platform transparency responsibility stipulated in the Personal Information Protection Law can be concretized, and the platform can be promoted to establish a "data authorization management port" in the Hebei region to ensure that users have substantive withdrawal rights and the right to know.

3.2 Main institutional points in industry regulation

In terms of specific institutional construction, Hebei Province can refine local rules around four key areas: data governance, platform compliance, algorithm transparency, and consumer protection. Firstly, the data governance system should be centered around "hierarchical management+purpose review" to promote the establishment of a comprehensive data collection and recording mechanism for enterprises.

Secondly, in terms of platform compliance regulations, it is necessary to clarify the protection obligations of large platform enterprises towards merchants and consumers, especially to restrict inappropriate behaviors such as "choosing between two" and "big data killing". At the same time, Hebei Province should consider establishing a platform credit scoring mechanism and incorporate it into the administrative supervision and assessment system.

In terms of algorithm regulation, a trial algorithm filing mechanism can be established to encourage local platforms to submit logical explanations and risk assessment reports to regulatory agencies before launching core algorithms. In terms of consumer rights protection, the focus should be on improving privacy information protection and digital infringement reporting mechanisms, such as promoting the establishment of local "personal information complaint handling platforms" to enhance channels and efficiency for public participation in digital governance.

4. Legal loopholes and local practice difficulties in the supervision of digital economy in Hebei Province

4.1 Abstraction and lag at the legislative level

At present, the local regulatory system in the field of digital economy in Hebei Province generally presents typical problems such as incompleteness, insufficient coverage, and poor operability. Although some regulatory documents such as the "14th Five Year Plan for the Development of Digital Economy in Hebei Province" and the "Regulations on Promoting the Development of Big Data in Hebei Province" have provided certain policy guidance and principal norms for the development of digital economy, most of the content still remains at the level of policy slogans, lacking executable rules that are in line with the actual behavior of enterprises, platforms, and regulatory agencies. For example, there is no clear licensing, filing, or review system for emerging business types such as using data for intelligent analysis, algorithm push, and cross platform services, nor is there a clear definition of punishment standards for illegal situations. This abstraction leads to a lack of clear legal basis for local regulatory agencies in law enforcement, often relying on the spirit of higher-level documents to "flexibly handle", resulting in inconsistent law enforcement standards and limited effectiveness.

A more prominent issue is the lag in regulatory updates. The digital economy is highly technology driven and rapidly iterating, while the local legal system in Hebei Province generally has a slow update cycle and cannot respond quickly to new business models and technological changes. For example, new phenomena such as "metaverse scene deployment", "blockchain data ownership confirmation", and "AI intelligent customer service rights disputes" that have emerged in recent years are neither within the scope of current regulations nor included in the forward-looking agenda of local legislation, making it difficult for grassroots units to carry out standardized guidance even if problems are discovered. This lag gradually accumulates, causing digital economy enterprises to constantly "step on the red line and explore" in the development process, while regulatory authorities lack a rapid response mechanism, forming a significant tension between institutional supply and real demand.

4.2 Overlapping responsibilities and enforcement vacuum in administrative supervision

The administrative supervision function of Hebei in the field of digital economy has not yet formed a unified and clear departmental division of labor, and there are problems such as overlapping responsibilities and vague authority among multiple institutions. Taking data circulation supervision as an example, the departments involved in data management in the province include the Cyberspace Administration of China, the Public Security Department, the Department of Industry and Information Technology, the Market Supervision Bureau, the Development and Reform Commission, and other institutions, each acting according to the documents of their superior departments, but lacking a unified local standard coordination manual. In practical operation, different departments may adopt different standards and even pass the buck to each other when facing violations on the same platform. For example, in 2022, a video platform in Langfang City was reported for suspected "cross-border use of user data".

The cyberspace administration believed that a data risk assessment was necessary, while the industry and information technology department believed that it was not within its scope of responsibility, resulting in the platform being in a "regulatory blind spot" for a long time. The operation mode of platform based enterprises often exceeds geographical limitations, while local supervision is subject to the principle of territorial jurisdiction, which further exacerbates the phenomenon of law enforcement vacuum. For example, some platforms, although conducting business in Hebei, have their servers located in other provinces and their registered companies in other regions. Even if the local government in Hebei discovers their violations, it cannot conduct effective law enforcement investigations. Especially in nonphysical operational behaviors such as cross-border data flow, cloud storage filing, and algorithm push, traditional territorial law enforcement mechanisms are inadequate, seriously restricting the efficiency and effectiveness of governance.

4.3 Technological lag and execution gap in grassroots practice

From the perspective of implementation, there are still significant shortcomings in the regulatory capacity of grassroots units in Hebei Province. Many city and county-level regulatory agencies have not yet established specialized information supervision departments, and lack in- depth understanding and practical experience in digital economy laws and data processing technologies. Some grassroots staff have a vague understanding of terms such as "data compliance", "algorithm supervision", and "user privacy protection". They lack professional judgment ability in handling digital platform complaints, enterprise filing reviews, network risk warnings, and often rely only on guidance from higher-level documents, lacking proactive governance awareness.

The lack of technical tools is also a major constraint factor. At present, most counties and districts in Hebei Province have not established a unified data law enforcement platform, and law enforcement methods still mainly rely on manual inspection and paper records, which is difficult to meet the high-frequency and high complexity digital economy supervision needs. [3]For example, a district in Shijiazhuang once attempted to conduct user privacy agreement checks on key apps within its jurisdiction, but due to the lack of automated review tools, it could only rely on manual reading and screenshot analysis, resulting in extremely low efficiency and limited effectiveness, ultimately failing to form a systematic report and difficult to exert sustained regulatory pressure on enterprises. The limitations of local governments in terms of financial resources and talent introduction also make it difficult to enhance digital regulatory capabilities. Some counties and districts in the central and western regions are difficult to attract compound talents who understand the law and know technology. Even some young cadres have certain Internet knowledge background, they are also lost to the enterprise department due to the lack of evaluation of technical ability by the promotion system, leading to the "nominal" supervision team. Such problems not only reduce regulatory efficiency, but also cause confusion and distrust among enterprises towards policy implementation standards, thereby further weakening the authority and enforcement of regulations.

5. The institutional construction path of the legal framework for digital economy supervision in Hebei Province

5.1 Coordinate legislative logic and establish a backbone framework for "digital rule of law"

Faced with the rapid development of the digital economy, Hebei Province urgently needs to establish a comprehensive and systematic local legal framework. The current legal system in the province is mostly policy level documents, with low legal hierarchy and insufficient implementation basis. It is suggested to promote the development of a comprehensive local regulation on digital governance on this basis, such as the "Hebei Province Digital Economy Promotion and Governance Regulations", which will coordinate key contents such as data ownership, platform responsibilities, algorithm transparency, and setup modules such as general principles, element norms, industry rules, and legal responsibilities, clarifying government regulatory rights and responsibilities and corporate compliance obligations. At the same time, regulations should strengthen their connection with higher-level laws, prevent conflicts between local legislation and national laws, and enhance the unity and stability of the system.

5.2 Improve data governance rules and refine industry regulations

Data governance is a key content of local legislation, and Hebei Province should clarify the local "data classification and grading" standards, publish a list of key data, and develop data processing standards

and authorization processes. It is recommended to establish a system for filing enterprise data processing, requiring data platform enterprises operating within the province to submit data collection sources, processing methods, usage purposes, and authorization mechanisms, and undergo annual review. In terms of government data, efforts should be made to promote the interconnection and interoperability of government information systems across regions, unify data interface formats, and overcome barriers to cross departmental data circulation. In addition, Xiong'an New Area or Zhengding Digital Town can be selected to establish a data governance pilot zone, explore new data service supervision models under the sandbox mechanism, and form replicable experiences.

5.3 Introducing digital regulatory tools to enhance law enforcement collaboration

Traditional administrative law enforcement methods are difficult to cope with the high-frequency updates and covert data operations of digital platforms. Hebei Province can enhance its regulatory capabilities through technological means. A provincial-level digital supervision platform should be established to achieve dynamic analysis and risk warning of data flow, algorithm push behavior, and other key platforms. At the same time, we will promote the construction of a data traceability system to record the entire process of data collection, processing, and transmission, and enhance the ability to provide evidence of illegal activities. In terms of organizational mechanism, a cross departmental "Digital Governance Joint Meeting" mechanism should be established to clarify the responsibilities of multiple parties such as cyberspace, industry and information technology, and market supervision, and to provide unified response and rapid disposal. At the grassroots level, AI review tools should be introduced to assist law enforcement personnel in assessing the compliance level of enterprises, and special training should be provided to improve the digital literacy of grassroots regulatory personnel.

6. Suggestions for Improving Local Legislation Strategies and Institutional Design

Against the backdrop of rapid development of the digital economy and increasing governance pressure, Hebei Province urgently needs to start from local characteristics, promote the refinement and optimization of regulatory systems, and form a governance model that adapts to new technologies and formats. Firstly, it is recommended to develop a digital economy special project with local adaptability Regulations, such as the "Hebei Province Digital Economy Promotion and Supervision Regulations," clarify the responsibilities and rules of local governments in platform compliance supervision, data transaction supervision, algorithm filing, and user rights protection. The regulation should not only emphasize the promotion of industrial development, but also strengthen the governance loop of "pre guidance, in-process supervision, and post accountability", especially in establishing clear local law enforcement basis for platform monopoly behavior, big data killing, algorithm bias, and other aspects. [4]

We should learn from the experience of advanced regions and construct a new governance mechanism guided by "risk warning+flexible supervision". Hebei can pilot the establishment of a "regulatory sandbox" to allow enterprises to test new technologies and business models in a controlled environment, providing certain innovation space while ensuring safety and compliance. For example, an intelligent algorithm service testing system can be implemented in Xiong'an New Area to evaluate and record algorithms for newly launched recommendation engines, automatic trading systems, etc., and promote pre application compliance review of technology applications.

Digital governance not only relies on institutional design, but also requires the support of legal professionals and grassroots regulatory teams. It is suggested that Hebei Province introduce the "Three Year Action Plan for the Development of Digital Governance Talents", establish a joint training mechanism between political and legal organs, technical universities, and local enterprises, and introduce legal and technical composite talents to participate in local legislation and law enforcement practices. At the same time, special digital legal instructors should be provided for grassroots counties and districts to carry out regular regulatory inspections and training for township level government platforms and rural e-commerce platforms, in order to make up for the shortage of frontline regulatory forces.

7. Conclusions and Prospects

Against the backdrop of rapid development of the digital economy, Hebei Province, as an important region for the coordinated development strategy of Beijing Tianjin Hebei, not only faces significant opportunities for digital industry transformation, but also exposes multiple challenges such as insufficient legal system supply, inadequate regulatory mechanisms, and weak law enforcement capabilities. This

article analyzes the practical foundation of the development of digital economy in Hebei Province, sorts out the national legal system, points out the main problems such as lagging local legislation, ineffective regulatory coordination, and lack of technical support, and proposes a system construction path based on the construction of a unified regulatory system, with data governance rules as the core and technical regulatory tools as the support.

In the future, Hebei Province should accelerate the formulation and revision of local regulations on digital governance, coordinate the relationship between development and regulation, innovation and security, technology and law, and promote the formation of a scientific, complete, and effective digital economy governance system. At the same time, efforts should be made to strengthen the construction of talent teams and innovate pilot mechanisms, continuously enhancing the local government's ability to respond to new formats and technologies. Through continuous legal protection and institutional innovation, Hebei is expected to achieve higher quality and more sustainable development in the new round of digital economy competition, and build a modern digital governance model that matches national strategies.

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