

# *The Application and Path Optimization of the Reform of the Integration of Political and Legal Systems: Analysis of Intelligent Technology Based on Judicial Big Data*

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**Abstract:** We are in an era of “the gathering of giants, the involvement of capital, and the continuous improvement of people’s legal awareness”. The goal of the reform in the field of politics and law requires that “the political and legal system should make new breakthroughs in the reform from a higher starting point”, which is also an important guideline for deepening the reform in the field of politics and law. Reform is the fundamental way to solve the problems in the political and legal work and a key to promoting the long-term development of the political and legal cause. At present, the smart and intelligent construction of political and legal institutions has achieved initial results, but they are all developed independently without systematic planning considerations. On the basis of cross department case handling business, we will initially build a smart political and legal system that integrates smart courts, smart prosecutors, smart policing, smart judicial services and promote the deepening of smart political and legal construction, so as to achieve the situation of connecting processes, gathering data, active supervision and smart applications. Based on this, the application of intelligent technology in the reform of the integration of political and legal systems and its path optimization are extremely important.

## **1. Introduction**

Academic circles at home and abroad have also made some representative research achievements around the theme of big data’s supervision of law enforcement and justice. However, there is only a little research on the application of intelligent technology in the reform of the integration of political and legal systems at home and abroad. In order to rely on the two wheel drive of “technological innovation and institutional innovation”, timely grasp the four keys of “network interconnection, data financing, smart application and safety supervision”, scientifically allocate all kinds of resources, implement the national unified cross departmental case handling coordination standard, solve business problems, promote substantive implementation, and constantly innovate the application of intelligent technology, such as the quality and efficiency of law enforcement supervision, case evaluation, intelligent auxiliary application, decision-making analysis application

have been improved, and the quality and effectiveness of intelligent technology in the reform of the judicial restriction and supervision system for law enforcement have been improved. In the comprehensive deepening of reform in the field of politics and law, jointly promoting the intelligent transformation of the political and legal system, leading the political and legal system at a higher starting point to promote the reform to make new breakthrough progress is in line with the goal of the socialist rule by law construction.

## **2. A Practical Investigation on the Integration of Political and Legal Systems**

Beijing, Shanghai, Zhejiang, Jiangsu, Guangdong, Guizhou and other cities have launched different AI legal tools, such as the “Rui Judge” intelligent research and judgment system of Beijing Court, and the “206” intelligent auxiliary case handling system of Shanghai Court. Suzhou Court has formed the “Suzhou mode of intelligent trial”. In the current practice, the electronization and digitalization of information, the intellectualization of case handling auxiliary system, the prediction and supervision of entity judgment, and the establishment of unified and electronic evidence standards have become the main forms of artificial intelligence used by the court system in the construction of “smart courts”. Through the practical investigation of the cross department case handling business of the political and legal organs and units, combined with the positive elements of the technical governance doctrine and the national promotion doctrine, a unique Chinese experience is formed. Based on the cross department case handling business, a smart political and legal system integrating smart courts, smart prosecutors, smart policing, and smart judicial services is built to promote the deepening of the construction of smart political and legal systems, and achieve the situation of connecting processes, gathering data, active supervision and intelligent application. Take the case handling mode of digital file monorail system as an example, the judicial system reform and the construction of informatization and big data are “two wheels of a car and two wings of a bird” that promote the innovation and development of political and legal work, and they promote each other and develop together. The political and legal organs need to rely on big data and informatization to promote the reform of judicial responsibility system, promote the reform of the trial centered criminal procedure system, deepen the openness of justice and other reform tasks. The single track case handling system conforms to the general direction of comprehensively deepening the reform of the judicial system in the new era, the ultimate goal of which is to help the political and legal work achieve its ultimate goal through big data and artificial intelligence, enable the political and legal work with big data, enable fairness and justice, and enable people to serve.

With the rapid development of big data, Internet of things, cloud computing and other information technologies, the informatization based on big data has penetrated into all levels of political and legal work in the new era, and has also provided new impetus and means for the innovative development of political and legal work. We can build a single track “information superhighway” based on the integrated case handling system to provide a solid data base for the political and legal work, so that all political and legal departments can catch the information express. Especially since the 19th National Congress of the core administrative department of China, taking Zhejiang Province as an example, the core administrative department of Zhejiang Province and the People’s Government of Zhejiang Province have clearly put forward the strategy of accelerating the construction of a strong province of data and Zhejiang on the cloud, and then put forward higher requirements for the construction of political and legal information. The top-level design and exploration practice of big data has been carried out in an all-round way. Facing the new situation, the integrated system of handling cases by political and legal organs is imperative. The integrated case handling system is the No. 1 demonstration project of the coordination project of political and legal digitization [1], which is also a project that has been highly concerned in the field of political

and legal science. It is an important carrier to deepen the reform of the judicial system, achieve “running at most once” between political and legal organs, and release judicial productivity through “breaking data barriers and promoting process reengineering”. In particular, during the COVID-19 epidemic, Zhejiang Province was still taken as an example. *The Notice on Giving Full Play to the Advantages of the Application of the Monorail System of Political and Legal Integration in Collaborative Case Handling during the Epidemic Prevention and Control* jointly issued by various departments of the political and legal system implemented the integrated monorail system. This model can strengthen the mutual collaboration between judicial organs, greatly shorten the time for case handling, and avoid the risk of epidemic prevention and control caused by the transfer of paper files. Thanks to the mode of political and legal integration, it only takes 24 hours for some cases to be transferred from acceptance and investigation to prosecution. From the practice of comprehensively deepening the reform in the field of politics and law, building an integrated case handling model of the political and legal system can be said to be the key to improving the quality and efficiency of case handling.

### **3. Practical Obstacles of Intelligent Technology to the Integrated Application of Political and Legal Systems**

#### **3.1. Lack and Low Quality of Legal Data**

Compared with traditional data analysis, data mining is information mining and knowledge discovery without explicit presupposition. [2] This approach from data to knowledge without theoretical presupposition was called the fourth paradigm of human knowledge discovery by some scholars. [3] Inadequate, untrue and objective legal data has become a specific obstacle to the scarcity and low quality of legal data. For example, some courts have not disclosed their full database of judgment documents to the public. The Legal decision-making organizations in both China and civil law countries, such as the collegial panel, the trial committee and the procuratorial committee, do not open their discussions and decisions on cases to the public. Meanwhile, the judges and juries in Anglo American law countries almost do not open their internal discussion and adjudication processes to the public. This makes us lack of universal and sufficient records and grasp of the most critical factors affecting decision-making, such as the game process, the purpose of judgment, the consideration conditions, and the formation of evidence. In essence, law is an ideology to some extent. [4] In addition, the procedural process information on which China’s judicial decision-making operation depends is also insufficient, such as “the court trial record is not an open legal certification document.” [5] This means that any judicial decision seems to be difficult to achieve absolute objectivity. It is in this sense that Frank points out that, “The so-called actual secularization is actually the result of two reactions, the first is through the reaction of witnesses, and the second is through the reflection of those who must ‘determine’ the facts. The reaction of the trial judge or jurors to the testimony is full of this subjective color.” [6] Therefore, it is not too much to think that the fact that the court of first instance ‘determined’ is subjective. In terms of the stability of the system, the biggest problem is that the system has no automatic verification function, data pre-process and in-process verification or data error prompt function. In terms of the smoothness of the system, sometimes there are still situations such as unable to log in, delay, stuck, and slow transmission speed. For example, there are more than 100 objects in a case, and 1145 documents alone. This case has a large number of electronic files. In the process of integrated transmission, not only the transmission speed is slow, but also the subsequent cases cannot be transmitted through integration. In terms of system settings, the number of unreasonable integrated collaboration is only once. When problems occur in practical operation, only the operation and maintenance personnel can be contacted to handle them in the background, resulting

in inaccurate statistical data.

### **3.2. The Algorithm Is Secret and Inefficient**

Although there are different understandings about the concept of algorithm interpretation, the core of algorithm interpretation is to seek the reasons for the decision results of specific algorithms. [7] The key of the algorithm is to correctly understand, refine and summarize the law of legal decision-making, and accordingly summarize the model of human legal decision-making, especially the successful model, and use it to predict the future case handling, providing a reference for the integrated case handling mode of the political and legal system. Machine learning is not to analyze assumptions, but to analyze and train data. Through the use of algorithms, it can determine the “best” assumptions that connect input data and output results. In essence, machine learning is to learn potential prediction relationships from the calculation of training data input into the algorithm (examples possibly extracted from historical records). However, although machine learning is driven by algorithms, without human participation, input and assumptions, machine learning will not occur. [8] The machine needs to fully excavate the legal text, carefully analyze the words with legal significance in the text, label them, and analyze and model them on this basis. However, there are often algorithm black boxes, which conflict with the requirements of open, fair and transparent handling of cases. In addition, the boundaries of right and wrong, true and false in machine learning are very clear. Only in this way, machines can automatically summarize and form models to predict future results by learning a large number of data content with clear labels. The author believes that in the case handling of the integration of the political and legal systems, the complex knowledge fields can still be displayed visually through data mining, information processing, knowledge measurement and graph drawing.

### **3.3. Complex Talents are in Short Supply and the Development and Application of System Intelligent Auxiliary Functions Lag behind**

In the information age, the problem of knowledge is more dominant than ever before. [9] At present, the vast majority of the developers of almost all AI products in the market can not solve the problem of how to express, summarize and interpret laws. Moreover, the problem of poor data quality has not been solved in terms of machine learning objects and fed data. [10] On the one hand, there is a shortage of compound talents who understand both information technology and legal business in the political and legal departments at present. It is common that technical personnel do not understand business, and business personnel do not understand technology. Talents are the foundation for the success of basic information. They have a decisive impact on the subsequent upgrading and optimization of the integrated case handling system as well as the improvement of the intelligent functions such as the expansion of evidence standards, auxiliary case handling, decision-making analysis, etc. based on big data. On the other hand, the talent problem has a great impact on the extensional expansion as well as the monorail case handling mode and the development and application of the follow-up functions of the integrated system, which also leads to the relatively lagging development and application of the system’s intelligent auxiliary functions. At present, the application depth of a large number of criminal case data is not enough after the transfer, and there are still many problems in the application of the intelligent auxiliary system.

## **4. Intelligent Technology Optimize the Path of the Integration of Political and Legal Systems**

### **4.1. Taking the Exploration of Digital File Single Track System as the Breakthrough Point to Improve the Quality and Reduce the Burden of Law Enforcement**

The purpose of the integrated case handling system of the political and legal organs is to eventually replace paper with digital files to implement the single track system of handling cases through cross departmental interconnection and data sharing and exchange, so as to improve the quality and reduce the burden of law enforcement. The digital file is a new concept. In terms of the content, the digital file includes the electronic materials with legal effect such as documents and evidence that are collected or generated simultaneously by the political and legal units in law enforcement and case handling, as well as the electronic documents formed by the paper file materials relying on digital image or character recognition technology. In terms of the technology, digital archives refer to a multimedia collection with a specific structure that integrates video, sound, photos, text and other forms. The digital file is a file that realizes full electronization from the source, representing the development direction of the file electronization. Its application essence is to comprehensively realize the digital case handling of the front end of the public security. Mixed file generation is the electronic file generation mode that has been advocated by the application of the integrated case handling system. It refers to the electronic legal documents and evidence materials produced in the case handling business system of the political and legal units, together with the paper materials produced outside the system, are scanned and electronically mixed to form electronic files. Mixed file generation is a hurdle that must be crossed at present, and digital file is a must answer for integration into the intelligent era. The two paths come to the same end in different ways, and their goal is to achieve a single track system to handle cases.

### **4.2. Focusing on Improving the Working System, Ensuring the High Quality and Efficient Completion of the Task of Improving the Quality and Expanding the Scope**

Intelligent technology optimize the path of the integration of political and legal systems by cloud sharing, online extraction of evidence materials. In the process of handling cases under the monorail system, the online circulation of audio and video evidence is crucial. The procuratorial organ takes the lead in the innovation of the political and legal system to launch a high-capacity file sharing scheme for cloud storage, deploy a set of file sharing synchronization systems in the public security intranet and the mobile government cloud, and connect the two systems through border equipment. First, the public security case handling departments open the intranet file sharing system page through the public security intranet computer terminal browser to upload large capacity files. After the transmission is completed and uploaded, the file sharing system generates a string of unique and hard to crack “file extraction codes”. Secondly, when submitting electronic files through the integrated platform, the public security case handling department attached a “document extraction code” to the evidence part corresponding to the large volume document. Finally, after the prosecutors and investigators obtain the electronic files from the integrated platform, if they need to view large files, they can open the file sharing system page on the government cloud through the government affairs network computer terminal browser, input the corresponding “file extraction code”, download or browse the relevant data online. The above process eliminates the duplication, production and manual transfer of traditional audio and video materials through optical disks and other storage media. It has made a qualitative leap in security and convenience, and can provide a strong guarantee for comprehensive online case handling.

### **4.3. The Goal is to Improve the Sense of Acquisition of Political and Legal Police and Constantly Improve the Level of System Intelligence and the Comfort of Use**

First, “from nothing to something”, the public security created a remote forensics system.

In order to improve case handling efficiency and save law enforcement costs, the public security organ can create a remote evidence collection system to realize the “1+1” new interrogation or inquiry mode. At the same time, the system also has the function of legal affairs agency, that is to say, the case handling department entrusts the agency departments such as detention center, detention center, compulsory isolation drug rehabilitation center to serve on behalf of the suspect the notification legal documents such as extended detention period, identification opinions, custody change, and transfer for prosecution.

Second, “from something to excellent”, the procurator developed the electronic marking screen.

In order to improve the efficiency of electronic marking, improve the convenience of marking and optimize the visual comfort, on the premise of safety and specification, the procuratorial organ can lead the work of electronic marking screen and e-book marking app, connect with relevant technology enterprises for research and development, start to customize A4 size electronic ink screen and put forward the demand for e-book marking app.

Third, “from excellence to wisdom”, the court constantly explores and improves the evidence of court trial.

In order to solve the needs of consulting and proving the electronic files in the single track case handling mode court trial, the court can upgrade the traditional high-definition digital court system, and add sub-systems such as recording backup, witness protection, remote hearing, online live broadcast, voice intelligent recognition and conversion into text on the basis of the whole process of hearing recording and video recording, so as to make the function coverage more comprehensive, the manifestation more abundant, and the court trial process more intelligent.

## **5. The Development Direction of Monorail Cooperative Case Handling Mode under the Judicial System Reform**

### **5.1. Promoting Reform at the Technical Level of Legal AI Development**

At present, we are in a critical period of building a smart political and legal system. We should make clear our goals, focus on the theme of “improving quality and expanding scope, integrating intelligence”, seize the key of digital files, adhere to the simultaneous development of “construction, management and use”, and strive to make the application of the integrated political and legal case handling system cover all cases, all litigation processes, and all case handling units, so that the political and legal police application system becomes the normal, not the exception. At present, it is timely to take the single track system as the breakthrough point, which is in line with the requirements of the central government for comprehensively deepening the reform in the field of politics and law, as well as the reality at the grass-roots level. Therefore, we should continue to vigorously promote the pilot work of the single track system, constantly improve the level of digitalization and standardization of the integration of politics and law, and thoroughly lose the “crutch” of paper files. In addition, it is also important to take targeted improvement measures at the technical level, such as in-depth research on algorithm improvement and focus on talent training and integration.

## **5.2. Improve the Integration of Political and Legal Intelligent Functions by Means of Platform Sharing and Collaboration**

In a word, the purpose of the monorail system of the integrated system is to improve the quality and reduce the burden of law enforcement cases by replacing paper with digital files through cross departmental interconnection and data sharing and exchange. As the key path of the “integrated case handling system of political and legal organs”, the monorail system is the core to determine whether all departments can fully cooperate and integrate. Synergies include arrest, prosecution, trial, legal aid, correction implementation and sentence parole. On this basis, gradually coordinate the management of property involved in the case, case filing supervision, change of custody, service of penalty execution, delivery of penalty execution, investigation and evaluation of prison correction. This kind of political and legal intelligence case handling platform effectively promotes the interconnection and sharing of political and legal business information. On the one hand, it enables criminal cases to achieve the comprehensive connection and application of public security, procuratorial work, courts and judicature, and realizes the online handling of criminal cases throughout the process. On the other hand, data collaboration can break the status quo of independent and closed information of various political and legal departments, and effectively promote the quality improvement of the integration of political and legal intelligence. Therefore, we must firmly establish the concept of big informatization, adhere to the idea of “a chess game”, plan long-term goals, strengthen information sharing among departments, and coordinate vertical and horizontal links.

## **5.3 Take the Integrated Case Handling System as the Starting Point to Build a New Type of Division, Cooperation and Restriction Relationship between Judicial Organs**

The construction of a case handling system based on the integration of politics and law can effectively build a new relationship in which political and legal organs independently exercise their functions and powers according to law, and improve the division of responsibilities, mutual cooperation and mutual restriction. First, division of labor and responsibility, mutual cooperation and mutual restriction from “offline” to “online”. The integrated case handling system has comprehensively promoted and applied a wealth of political and legal big data, built a “data base” of smart political and legal, applied big data to the division of labor, coordination and restriction between political and legal institutions, built a diversified ecology of political and legal big data applications, and improved the construction of the entire political and legal information. Second, information sharing has gone from “islanding” to “a chess game”. Strengthen the information sharing between departments, coordinate the vertical and horizontal links, use the data platform of the integrated case handling system to support data sharing, expand the scope of data sharing and the scope of use, and involve the mutual cooperation of the public security, procuratorial, court and judicial affairs department, so that the matters and data that are mutually restricted can be included. Third, intelligent assistance has gone from “simplification” to “synthesis”. With the promotion of information technology, it can be predicted that big data will have a profound impact on our political and legal work in the near future. The integrated case handling system has precipitated the whole case data covering the four stages of arrest, prosecution, trial and execution. This data asset can bring huge development space for the division of labor, cooperation and restriction of the case handling departments of the political and legal system, and help the reform of the judicial system develop in depth.

## 6. Conclusion

The wide application of AI in human life may be an irresistible trend in this era, and its application in the field of politics and law is also a matter of course. Under the judicial big data, the rapid development of intelligent technology has driven the comprehensive deepening of reform in the field of politics and law, and has formed legal artificial intelligence forms such as electronic data of information, intelligence of case handling auxiliary system, prediction and supervision system of entity judgment, and unified and electronic evidence standards. Building an integrated case handling model of the political and legal system not only conforms to the current trend of comprehensively deepening reform in the field of political and legal science, but also can effectively promote the quality and efficiency of the political and legal system in handling cases, so that the people can feel fairness and justice in every judicial case. Dutch scholars Oskamp, Tragter and Groendijk once divided the research on AI and law into four groups based on the complexity of tasks and the applicability of systems: basic research, practical research, theoretical research and refined research. Therefore, in the future, law scholars, logic scholars and computer scholars need to work together to deepen the reform in the field of politics and law to achieve the integration of political and legal systems.

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