# Preliminary Discussion on the Intelligent Juvenile Criminal Prosecution Framework

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**Abstract:** At present, the information work of procuratorial organs has gradually developed from "Information prosecution 3.0" to "Intelligent prosecution 4.0", and the whole procuratorial work is deeply integrated with the digital, networked, applied and intelligent contents. The juvenile prosecution, as an important part of procuratorial work, needs the support of intelligent procuratorial work more because of connotation, extension, attribute and function. Unlike other procuratorial services, juvenile criminal procuratorial work has relatively independent functions, which also puts forward independent demands for intelligent juvenile criminal procuratorial work. Especially in the context of big data, it is more necessary to conduct a comprehensive analysis and judgment on the framework, needs and direction of intelligent juvenile criminal prosecution, so as to establish an intelligent juvenile criminal prosecution system under the background of big data, this paper analyzes in detail the current situation, needs and development direction of the construction of intelligent juvenile criminal prosecution, in order to provide ideas and reference for the construction of intelligent juvenile criminal prosecution framework under the background of big data.

### 1. Background for construction of intelligent juvenile criminal prosecution framework

The reason why juvenile justice is different from adult justice lies in its different focus of attention. Adult justice focuses more on "cases", while juvenile justice focuses on "people". As a result, there are fundamental differences in the judicial concept and judicial system, and special requirements are bound to be put forward for the construction of "intelligent juvenile criminal prosecution framework".

# 1.1 The value orientation of juvenile justice put forward demands on the construction of "intelligent juvenile criminal prosecution framework"

The best interests of the child principle and individualized treatment in juvenile justice system are unique ideas and principles that are different from adult justice. "The best interests of the child principle" contains two aspects. On the one hand, the handling of minor law cases or legal events should not simply apply the law, but also take into account the particularity of minors and take a comprehensive consideration. On the other hand, when there is a conflict between the interests of adults and minors, priority should be given to the interests of minors. This comprehensive evaluation and consideration, of course, requires a certain amount of experience judgment, but it is more necessary to conduct scientific evaluation based on corresponding data and cases, and at the same time to conduct simulation analysis of the results, so as to assist the decision making [1-3].

The principle of individualization is even more so. Due to the diversity of the reasons for the minors involved in the case, it is necessary to make individual analysis according to the individual

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situation of each minor, and then make targeted adjustment according to the actual operation situation in the process of dealing with the case, so as to realize the purpose of "one person with one policy" or even "one person with many policies". Specialized research and development are needed in the construction of "intelligent prosecution".

# 1.2 The special system of juvenile justice puts forward special requirements for the construction of "intelligent juvenile criminal prosecution framework"

When the Criminal Procedure Law of China was amended in 2013, a series of systems concerning minor criminal cases were incorporated into the field of criminal procedure. The implementation of this system has special requirements for the construction of "intelligent prosecution" in addition to the demands for relevant manpower and material resources. Especially in China, where the area is wide, the flow of people is frequent, the number of floating juvenile crimes is large, the scheduling of social forces and remote feedback in the appropriate adults, social investigation, conditional non-prosecution system as well as the information exchange and information collection of minors in need of help are realized via Internet and information means [4].

#### 1.3 The actual needs of juvenile criminal procuratorial work

In order to protect minors' physical and mental health, moral, intellectual and physical development, and safeguard their legitimate rights and interests, a comprehensive juvenile crime prevention mechanism and a comprehensive social protection system should be established. However, at present, the social linkage mechanism for the protection of minors has not been fully established, and the coordination and cooperation of relevant functional departments are insufficient, and the resultant force cannot be formed, so juvenile crime is still a serious social problem. Supreme People's Procuratorate has issued a number of documents, including the Outline of the Plan for Strong Inspection of Science and Technology during the 13th Five-Year Plan Period, the Action Guide for Big Data of Procuratorial Work (2017-2020), and the Opinions on Deepening the Construction of Intelligent Inspection Work, which give clear instructions for the construction of intelligent procuratorial work. As a branch of intelligent prosecution, the intelligent juvenile criminal prosecution will make the juvenile procuratorial work more connected, faster and more scientific [5].

### 2. Current problems in the construction of "intelligent juvenile criminal prosecution framework"

At present, procuratorial organs around the country has achieved good case handling, prevention and social effects by using "intelligent juvenile criminal prosecution", and has accumulated a lot of research and development experience in the practice and exploration, gradually forming a relatively consistent application demand. Due to design ideas, technical conditions and other reasons, there are still some problems need to be addressed:

# 2.1 The intelligent construction needs to be strengthened and the function is not friendly enough

The current intelligent construction actually increases the workload of the case handling personnel, rather than playing the role of reducing the workload, let alone playing a supporting role. The data of juvenile criminal prosecution should be deeply used to provide intelligent case handling and decision-making support and free the procurators from trivial and transactional input. Therefore, collecting all kinds of data generated by the business system, realizing the functions of data

cleaning, business analysis, information display and accurate help and education are urgent information demands at present. In this way, the information comes from the business work and acts on the business work, so as to optimize the working process, achieving the continuous improvement of work efficiency and quality, and improving the work efficiency to the maximum extent.

#### 2.2 Less service business for juvenile criminal prosecution, more service for social work

Juvenile criminal prosecution has its uniqueness and needs the joint participation of all sectors of society. At present, the information application of intelligent juvenile criminal prosecution focuses more on the construction of data sharing and the help and education platform with the participation of all parties through the information platform. In addition to the juvenile criminal prosecution subsystem of the national unified operation system, there is a lack of intelligent case handling software designed and developed according to the characteristics of juvenile criminal prosecution. As far as the juvenile criminal prosecution subsystem is concerned, although the entry and statistics of the special business of juvenile criminal prosecution can be basically realized at present, the functions such as decision-making assistance and case analysis have not been realized yet, and further research and development are needed.

#### 2.3 Low utilization rate and more repeated construction

The number of juvenile cases handled by the grass-roots procuratorates is relatively small in a year, and the intelligent criminal prosecution software for minors developed by local procuratorates is often limited to local use, with a low utilization rate. However, in the construction process of intelligent juvenile criminal prosecution products, the duplication of functions such as psychological assessment, social support, crime prevention, clue reporting is serious, which inevitably leads to the waste of construction funds. At the same time, the use rate of warning education bases built around the country is low, and their actual functions are largely used for display.

#### 2.4 The decentralized construction results in data island, and data sharing is not realized

Scattered construction inevitably creates islands of data. Although engaged in the same business and work, different research and development units will inevitably result in difference in data structure, external interface and storage mode of intelligent juvenile criminal prosecution framework, which will inevitably mean low data storage capacity and low utilization rate, thus failing to further support the problem of artificial intelligence analysis and judgment. At the same time, the juvenile criminal prosecution subsystem in the existing unified service application system of procuratorial organs lacks the social support function, in fact it only has simple result record information, and is not provided with the external assistance process needed in the handling of unprosecuted cases. The degree of linkage cooperation among the functional departments of the procuratorial organ is low, which cannot achieve the purpose of comprehensive social protection for minors [6].

#### 3. Construction and development direction of "intelligent juvenile criminal prosecution"

We can see that the "intelligent juvenile criminal prosecution" should be oriented by the demand of strengthening and innovating social management, deepening the construction of safety, preventing juvenile crime. We should integrate modern intelligent technologies such as big data and artificial intelligence into juvenile criminal procuratorial work to form an intelligent application service system for juvenile criminal procuratorial work. Based on the construction of "six platforms", network security information operation and joint innovation, we should build the "five vertical and five horizontal" of "intelligent juvenile criminal prosecution" with intelligent auxiliary case handling, intelligent decision support, intelligent social linkage, intelligent rights protection and intelligent crime prevention as the guidance. Moreover, we should establish a service chain for the protection of minors under the joint effort of the whole society, and gradually realize a smart service system that accurately protects the healthy growth of minors and comprehensively prevents them from breaking the law and committing crimes [7].

### (1)Intelligent assisted case handling

The main function of "intelligent assisted case handling" is to apply information technology to realize man-machine interaction, so as to realize the standardization, scientificity, quality and effectiveness of juvenile criminal prosecution cases. Firstly, based on the construction of judicial case handling platform, the characteristics of illegal and criminal minors are analyzed on the basis of social investigation; Through analyzing the family environment and living environment of delinquent minors, the influencing factors of delinquency and crime are explored; Through the analysis of the characteristics of the minor victims, the collection of portraits of the minors involved in the case is established. At the same time, regulations should be made on the handling of portraits of persons who infringe on the rights and interests of minors, especially those who sexually infringe on the rights and interests of minors, so as to better crack down those who commit such crimes repeatedly.

Second, based on the data sharing and business collaboration between procuratorial organs and other political and legal organs, administrative organs, Internet enterprises and other topics, the application of big data in juvenile criminal procuratorial handling is introduced. The growth track and interests of minors are analyzed through big data, and the data mining algorithm such as neural network is used to build a model. By inputting the juvenile delinquency characteristics, crime influencing factors such as charges, gender, age, hobbies, personality and family environment into the model, and the system will automatically generate personalized help suggestions for the juvenile involved, and guide prosecutors and social workers to implement accurate help and education.

Third, explore data sharing and collaboration. Taking "the convergence of the two laws" and "the connection of the three networks" as an opportunity, we shouldt explore the "intelligent supervision" of criminal proceedings, civil proceedings, administrative proceedings and administrative law enforcement, solve the difficulties in finding clues for procuratorial supervision, obtaining evidence, filing cases and other problems, providing intelligent assistance for procuratorial supervision. Fourthly, the 2.0 construction of the unified business application system for procuratorial organs is the starting point to realize program prompt, process monitoring and intelligent case evaluation, and improve the intelligent supervision efficiency of the whole process of case management, including "prevention in advance, control in the process and evaluation after the event". Fifth, make full use of big data technology to analyze and study the historical data of judicial case handling, realize the functions of case push, law link and so on, and realize the same sentence for cases of the same type.

#### (2)Intelligent decision support

The main role of "intelligent decision support" is to analyze the situation, characteristics and areas of crimes committed by minors and crimes against minors through historical data, so as to provide support for procuratorial decision-making. The first is to provide key data indicators and dynamic analysis of juvenile criminal prosecution business, and synchronize data with big data center platform in real time. The second is to realize analysis of case handling units and the time

trend of each link of juvenile criminal prosecution procedure. Thirdly, data analysis and visualization technologies are used to present data, and data analysis reports are derived based on the data and information (such as the status of legal education) of minors involved in cases within the jurisdiction, and procuratorial suggestions and working contact letters are sent to relevant departments, streets and schools, thus giving full play of the supervisory role of the procuratorial organ in the prevention of juvenile delinquency and forming a joint force. The fourth is to analyze the behavior patterns and characteristics of the local sexual assault juvenile suspects, identify the common characteristics, and improve the pertinence of self-protection education for minors.

#### (3)Intelligent social linkage

The main function of "intelligent society linkage" is to realize the effective link between procuratorial organs and social resources through online platform, and realize real-time feedback to provide online support for the construction of social support system. First, provide an online platform for social investigation and psychological counseling between procuratorial organs and social professional organizations, realizing effective connection of resources. Second, through the construction of the relationship network among the roles of prosecutors, social workers and supervisors, psychological counselors and juveniles involved in crimes in the work of helping and education, targeted help and education investigation plans with timely feedback and adjustment can be formulated. Third, build the role relationship network of prosecutors, psychological counselors and victims, develop psychological counseling and comfort plans, and realize real-time follow-up of victims' psychological trauma repair status. Fourth, for the lack of responsibility or inadequate guardianship management, the relationship network of prosecutors, psychological counselors and children & parents should be built to jointly develop and implement compulsory parental education plans, and remote long-distance parental education should be realized by using video platforms to lay a foundation for minors to return to their families and society. Fifth, collaborate with work-study schools and community correction departments to track and visit relevant situations of minors who have not reached the age of criminal responsibility and who have not reached community correction.

#### (4)Intelligent protection of rights and interests

The main function of "intelligent protection of rights and interests" is to protect the rights and interests of individual and minor groups through information means, thus reflecting the identity of "child guardian". First, through the construction of unchecked intelligent case handling area and through "one-stop" evidence collection equipment for sexual assault victims, one-stop evidence collection can be realized under the remote intervention of psychological counselors, and audio-visual image materials can be formed to avoid secondary infringement; The psychological status of minors is evaluated through psychological evaluation software and psychological testing instruments. Second, it is necessary to connect the data of juveniles related to comprehensive governance grid, public security, education and civil affairs to realize the information interconnection of juveniles violating the law and juveniles who are in trouble, so as to provide a basis for the grading of punishments. Third, build a 7×24 hours virtual youth care station "Zhixiaowei" to provide legal consultation and reply function for the people, provide self-help intelligent psychological assessment for minors, offer self-help learning approach of juvenile protection knowledge, and provide guidance on adolescent education methods to guardians(as shown below). Fourth, establish a database of criminal records of sexual assault against minors, realize data interconnection with public security organs and education departments, open data query function to the society, and provide automatic early warning and provision of teacher information imported by education departments to better prevent crimes of sexual assault against minors. Fifth, through timely capture of network related information items and keywords, and automatic push of early warning, a timely grasp of minor cases and event clues, timely attention, timely disposal can be realized.

### (5)Intelligent crime prevention

The main role of "intelligent crime prevention" is to achieve the accuracy, effectiveness and universality in general prevention of minors through information means, and to realize the effective evaluation of crime prevention effect. First, make use of big data analysis to analyze the situation of minors in the jurisdiction and violation of minors' rights and interests, and carry out targeted crime prevention methods and contents. Secondly, open the online booking channels for schools and communities to accept the law education held by procuratorial organs, so the schools and communities can make an appointment for class time and place, and be informed of the age, gender and number of the audience; At the same time, after receiving the application, procuratorial organs can make reasonable arrangements according to the situation and give timely replies, and record the activities and results on the platform, so as to realize "menu-type" crime prevention.

Third, establish online and offline legal education bases. The online rule of law education base provides an entrance for foreign rule of law publicity. The procuratorial organs can upload videos, photos and documents to publish information on the rule of law and upload videos on the course of rule of law education through the platform. The public can log on to the platform to read interested information, animations and videos about rule of law to learn legal knowledge. Offline, use "VR" and other technologies with a sense of experience and participation to make the minors personally experience the harm of crime, so that they can better understand and abide by the law, and can better protect themselves. Fourth, using remote information means to achieve joint construction and sharing, realizing the universal applicability of legal education. Fifth, provide an analysis of crime prevention activities, including unit, time, personnel, activity theme, education object and other dimensions, including the analysis of the gender and age of the students participating in the rule of law course, the analysis of the types and times of crime prevention activities, and the analysis of the gender and grade of the students participating in the crime prevention activities. On this basis, the effect of crime prevention is evaluated based on the trend of number of juvenile delinquency cases in the place of crime as well as the number of criminal cases infringing on the rights and interests of minors.

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