Thinking on the construction of big data service for public security in megacities -- a case study of Chongqing

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Abstract. According to the national outline of development of Big Data, combined with the current situation of big data development in Chongqing and the action plan of urban development in Chongqing, this paper, from the perspective of Chongqing public security, analyses the social risks, subjective and objective conditions related on big data, puts forward the Big Data construction goal of Chongqing Municipality public security , and gives the construction and development strategies and suggestions for the implementation of the Big Data project.

1. Introduction

Science and technology are rapidly changing human beings and human civilization. There’s no era in history while people can make such great progress at such an unexpected speed as today. With the progress of science and technology in the era represented by information technology, this era is clearly defined as the information society. The main sign of the information society is the explosive growth of information and information dissemination through the network. Massive information is transmitted and calculated in the form of data, forming "big data". When the wheel of history drives into the era of big data, the realization of information service and social public security not only needs the close cooperation of related departments at different levels and in different fields, but also needs to focus on integrating the massive data scattered in different departments and mining high-quality information from them, especially when the information service needs span multiple management authorities, supported by big data Collaborative integration is very important.

The so-called "big data era" refers to the era when all kinds of organizations and individuals apply big data thinking or big data technology to realize or create value.

Big data brings some unique characteristics to the society. First, everything can be quantified. Quantifying everything is the core of data and the cornerstone of the era of big data[1]. In the book "when we become a bunch of numbers", Stephen Baker put forward the idea of "everything can be quantified". He pointed out that every day people click on the web, switch TV channels, swipe cards for shopping, drive through the automatic toll station, answer and call mobile phones and other behaviors - these previously ignored information, are now stored by different ways of data recording. Through GPS positioning system, direction and position can be digitized; access to sensors, air quality can be digitized; analysis of BLOG status, mood can also be digitized. Things that have never been quantified in the world seem to be presented to the world overnight in a variety of data forms. Second, data is wealth. Andreas Weigend, former Chief Scientist of Amazon, once pointed out that "data is new oil"[2]. Moreover, the value of data will not be reduced due to the improvement of its utilization rate. Data can be repeatedly processed and constantly generate new value. According to the search results of Internet users, the Centers for Disease Control and prevention in the United States studied
and judged the spread of global influenza and other diseases. Alibaba uses the more than 100PB data accumulated by users and businesses to make accurate decisions on whether to lend or not and how much to lend. **Third, the future can be predicted.** American Professor Albert Laszlo Barabasi pointed out that human behavior conforms to the law of power law and can be predicted in advance. Prediction is the core usage of big data. On the basis that everything can be quantified, we can predict the basic development tendencies of things in a short time by mining and analyzing the data of the past and the present. In this regard, it has been proved by practice that Obama's big data team and Google's influenza prediction are both powerful manifestations of big data prediction ability.

2. **Risks in the digital age**

With the rapid development of digital technology, human society is undergoing profound changes, showing a new social form. In a congratulatory letter to commemorate the December 10, 2018 Universal Declaration of human rights, President Xi Jinping pointed out in his congratulatory letter to the 70th anniversary World Conference on human rights: "people's happy life is the greatest human right". These words shows that what a a basic attitude in this new era Human Beings should hold.

Information technology represented by Internet, Big Data, Cloud Computing, Artificial Intelligence, etc. has become the symbol of this era. The extensive use of information technology has become an indispensable part of people's life, survival and development. Information society is an intelligent digital society. Information society is a sharing society under the digital economy. Information society is also a risk society under the digital network environment.

Under the promotion of greedy capital, while greatly facilitating their lives, science and technology will gradually deprive people of the opportunities and rights to work and create wealth. More importantly, digital technology is rapidly invading people's private space. It can be predicted that in the near future, citizens' privacy rights and personal dignity will become an optional setting option. And this option will be the consideration that people must give up in order to integrate into the intelligent life. In addition, the Artificial Neural Network closed, hidden and selective nature of artificial intelligence algorithm will create extremely convenient conditions for the systematization and generalization of the discriminatory consequences against fairness and justice, public order and good custom. More attention should be paid to the spread of various risks with the development of digital information and communication technology. Digital technology is a double-edged sword. What digital technology brings is not only the gospel of rights, but also the crisis of rights. When people enjoy the personal liberation, life convenience, economic growth, democratic progress, cultural diversity, social security and other benefits brought by digital technologies such as big data technology and artificial intelligence technology, they are also facing the risks of privacy disclosure, unequal treatment (discrimination), illegal supervision and other risks caused by excessive collection and improper use of personal data.

3. **Advantages and disadvantages on the implementation of big data project**

As for the construction of big data, at present, 1 pilot comprehensive Experimental Zone has been built in Guiyang, and 2 cross regional comprehensive Experimental Zone are Beijing Tianjin Hebei and the Pearl River Delta. In 2016, the state established 4 regional demonstration comprehensive Experimental Zone including Chongqing national big data comprehensive Experimental Zone and 1 Experimental Zone for overall infrastructure development. Chongqing big data Experimental Zone was approved in October 2016. It is positioned to lead the development of "four plates" as the East, central, Western and Northeast China, pay attention to the overall planning of data resources, strengthen the agglomeration of big data industry, play the role of radiation driving, promote the coordinated development of regions, and realize the quality and efficiency improvement of economic.

"Big Data, Cloud Computing", when we see these words, the first thing we think about may be Silicon Valley, Zhongguancun Beijing and other places, or Amazon, Google and other enterprises, but it is difficult to connect them with Guizhou, a backward province in the southwest corner. However, at the 4th China Data Center Industry Development Conference and IDC product exhibition and resource
What are the advantages of Guizhou? First, the province and the city work together to advance the layout; second, the unique favorable nature environment; third, to seize the historical opportunity. Compared with the big data development of Chongqing Municipality, it's "Got up early and had a late arrival." In 2017, the national development and Reform Commission officially announced the National Engineering Laboratory of "big data and Internet +", to determine the list of commitment units. In total of 19 national engineering laboratories were selected, including 11 in the big data area and 8 in the "Internet +" field. In additional the first National Engineering Laboratory of big data application technology for improving government governance capacity which located in Guiyang, there are 20 altogether. Through the online research, all of these are not located in Chongqing. The situation is critical for Chongqing. It should be said that the development of Chongqing big data is not late. As early as August 2013, Chongqing municipal government issued “a big data action plan”, proposing to form a big data hub and industrial base with international influence by 2017. As time went into 2018, Chongqing’s big data industry has not splashed much water. As mentioned in the work report of Chongqing municipal government in 2018, Chongqing would focus on building "Eight Action Plans". The first is "Big Data intelligent development strategic action plan", and the keyword "Big Data" has appeared 12 times in the report. It is generally believed that this is the "second propulsion" of Chongqing’s big data industry. In fact, in addition to the strategic position of the national strategic rear and pillar of the third line construction, the latest central government also gives Chongqing more core and important roles. President Xi Jinping clearly defined as the "two points" status (the important strategic fulcrum point of the western development, the connection point of "Belt and Road" and the Yangtze River Economic Belt); the goal of "two places" (inland open Highlands place, green hills and clear waters-picturesque scenery place); and "two high" trends (to promote high-quality development and create high quality of life). Chongqing, as the "fifth economic city" in China, as one of the important central cities in China, is a famous historical and cultural city in China, an economic center in the upper reaches of the Yangtze River, an important modern manufacturing base in China, and also a comprehensive transportation hub in the southwest region. It has met with developing bottlenecks in the economic growth, industrial upgrading, and innovation developing in recent two years. No matter the opportunity and tuyere brought by the development of big data industry, or the grasp of urban development and transformation, Chongqing must seize the opportunity.

The following figure shows the number of big data information of Beijing, Shanghai and Chongqing municipality by searching Baidu in Chongqing on December 5, 2019.

Figure 1 Baidu big data search results of Beijing, Shanghai and Chongqing

From the picture, it can be seen that Chongqing are far from the first-tier cities as Beijing and Shanghai. Guiyang, Chengdu, Xi’an, Chongqing, the four big digital economy west cities taken for statistical reference and research objectives, Chongqing's advantages and disadvantages are obvious.
3.1. First, each mega city has its own unique natural environment.
Chongqing is geographically mountainous and watery with a hot surface climate, which facilitates the construction of air defense data center and underwater data center. In fact, Chongqing itself has a considerable scale of air raid shelters that have not been developed and utilized. Yet it has not developed a large area of underwater data center either. This is mainly due to the fact that Chongqing's power production is not rich enough and the power supply cost required by big data is on the high side. But depending on the advantages of Chongqing's national central city resources gathering and using the advantages of tourism market position and geographical and cultural fields, we can build various kinds of data centers, landscapes, simulation and cultural integrated projects suitable for livable work, tourism and visiting experience, through the earning to appropriately subsidize the cost of electric power.

3.2. Second, Big one facing big difficulties
Chongqing, as a megacity, has a strong economic overall strength and a large number of transfer payments from the central government. However, Chongqing is also responsible for the provincial population area jurisdiction and the burden of becoming rich. The land soil available is enough, but the funds are not enough. In this regard, we should develop various favorable policies for cooperation and investment.

3.3. Third, Talent predicament
Chongqing has enough attraction and talent pool, but the talent absorption, training and reserve urgently needed for the development of big data have obvious shortcomings. Compared with Chengdu and Xi'an, the universities and other scientific and technological units on which Chongqing's data talents trained are obviously not thick enough. There is not only the lack of leading role of various universities in Chongqing, but also the great lack of national scientific research units (This conclusion comes from the online survey results analyzing on the distribution of the Chinese Academy of Sciences, National Engineering Laboratory and National Key Laboratory). On one hand, at present, the municipal government had made great efforts to introduce the Chinese Academy of Sciences and other units into Chongqing, Chongqing University has built the first Internet Of Things(IOT) big data laboratory in China cooperated with enterprises, Chongqing University of Posts and telecommunications has a Key Laboratory of the Ministry of Education for industrial Internet Of Things(IOT) and networked control. But these achieved results, the introduction efforts are not enough compared with other 3 provinces and/or cities(Compared with Guiyang, 3 national engineering laboratories not under its own name were introduced into the construction, Xi'an was approved 3 national engineering laboratories, and Chengdu made many efforts to introduce the secondary unit layout of engineering laboratories, such as Huawei R & D center, Tsinghua University Energy Internet Innovation Research Institute, etc.). On the other hand, under the situation of fierce competition in talent policies all over the country, we should also be based on self-reliance and talent policies. Think about the big data talent problem as a whole with the idea of a game of chess, whether we can integrate the intensive efforts of talents (such as setting up an experts working committee), whether we can better build a nest to attract talents, and whether we can grow and cultivate our existing talents (related matching of policies and treatment), and so on. There are many problems worthy pondering.

4. The goal and vision of Big Data construction
Based on various subjective and objective conditions, this paper proposes to establish a Comprehensive Analysis and Layered Service Project of Big Data footing on the existing, focusing on the long term, with police-civilian integration oriented. There are some reasons for this:

4.1. The existing limitations
Due to the limitation of funds, geography, nature and other resources, Chongqing has missed the opportunity to take the lead in the construction. It was plagued by the fundamental problem of electric
and capital, so it is not suitable to put forward the concept and goal of absolute leading. Moreover, there are different understandings about the concept and goal of leading.

4.2. Fast shifting era

The modern society shifting rapidly on technology development and the trend of the times. In order to avoid the decision-making being too ahead of time or backward, as well as deviated from the change of technical standards and the direction, it is necessary to consider the keep-up-withing and win-win strategy and avoid the strategy of rat race or championship.

4.3. Integrated progressing thinking

The Big Data project itself needs the coordination of the level of science and technology, the overall development strategy of the whole city and the investment of funds and energy. It should strive for progress in stability and avoid slogans. In order to actively respond to the pursuit of the central government's strategic positioning of Chongqing, it is not appropriate to put forward any bold, breakthrough, cutting-edge and other considerations. After all, the public security has the unique responsibility of collecting, managing and protecting all kinds of public and social information in the country, the goal puts forward another implicit meaning, which is to actively integrate the construction of big data of public security into the construction of big data of the whole city, so as to draw support from resources and save the whole city's expenditure.

4.4. Development vision on results

This project will help the government guarantee the governance environment and public demand in real time, accurately and efficiently, and effectively provide the public with integrated, coordinated and convenient services. Specifically, the development vision lies bellow:

4.4.1. An efficient and cooperative agile government. It realizes the information sharing among government departments, and the department boundary is gradually blurred. At the same time, it guarantee the governance environment and public demand in real time, accurately and efficiently with the help of big data technology, and effectively provides the public with integrated, coordinated and convenient services.

4.4.2. A humanized and self-service government. Through the development of a series of data sharing facilities such as government cloud platform and data sharing and exchange platform, the government's services resources are effectively integrated to provide one-stop, integrated services for social justice. The advent of the era of big data also forces the government to open more data related to environmental protection, medical and health transportation, etc. it also requires more and more individuals and social organizations to participate in the government's public services, carry out data value-added applications, create more service applications, and realize the social value-added government data.

4.4.3. A precise and networked public-participated government. With the powerful collection and analysis abilities of big data technology, data governance is realized and decision-making is more accurate. Because of the development of big data, the data network covers the whole city. In the field of public governance, the public is no longer a demand role, individuals can participate in the government management through the network.

Whether it is to build an agile government, a service-oriented government or a public-participated government, in the final analysis, it is to build a government that the people are satisfied with. It's hopeful that big data can make people's lives better. [8]

To turn the new vision into a better reality, we need to have a keen insight, be good at seizing opportunities and courageous to meet challenges. Big data has become an extremely important wing of national strategy. How to seize and make good use of the strategic opportunity of national big data
development, accelerate data aggregation, fusion and application, and deeply explore the economic and social value of big data has become a new proposition in front of us.

In order to turn the new vision into a better reality, we must build a unified sharing and exchange platform for government data, and deeply promote the combination of regional development and national strategy\[9\]. In this regard, the key is to make efforts to build a platform, on the basis of scientific planning of the spatial layout of big data industry, and focus on building a number of big data industry platforms. Take advantage of Chongqing's positioning as a national center city to become the propositional person of big data major scientific infrastructure. For example, there is no Internet of Things (IOT) big data engineering laboratory among the 20 national engineering laboratories at present. With the help of the "Butterfly Effect" generated by Chongqing industrial foundation status combined with the permanent address status of China International Intelligent Industry Expo, its' available raise funds to establish a national Internet of Things (IOT) big data engineering laboratory. Thus, it can indirectly drive Chongqing to develop big data and artificial intelligence industries, and form a promising prospect with obvious characteristics, complementary advantages.

Correspondingly, Chongqing public security takes advantage of the construction of Internet Of Things (IOT) big data engineering laboratory, builds and implements the public security Internet Of Things (IOT) big data project on the basis of video and Skynet projects in the past few years, which also provides reliable boosting resources for the development of smart cities.

Looking at the whole country, local incentive policies and measures are practical, powerful and high in gold, setting off a new wave of big data construction. Chongqing must seize the opportunity and take advantage of the times.

5. Big data construction and development strategy
The conveniences brought by science and technology are pervasive. Science and technology make society better and life more exciting. With the development of modern information society, the masses of people put forward new expectations and requirements for public security work. What the trends are: From more solving cases to less accidents, the public security work mode is required to change from emergency response to risk management and control;

From good attitude to excellent service, public security work is required to change from window service to online service;

From small safety to wide security, the government is required to provide all-inclusive security needs such as ecological environment, food and drug, personal privacy, etc.

5.1. How to adapt to the current rapid and dynamic change

5.1.1. Change the concept and set the important position of big data engineering. In the era of big data, departments at all levels must attach great importance to information management and raise it to a strategic level that affects survival and development. Making use of modern scientific and technological means to build an intelligent security system and precise police mode with ubiquitous perception, multi-dimensional research and judgment, flat command and efficient disposal\[10\], it will draw the public security work to deepen reform, promote police process reengineering and team management, upgrade and share information resources.

5.1.2. Reform and improve the organizational structure of the information team. In order to ensure the full play of big data technology, a unified data analysis and processing department and data police team must be settled on the shift from the original division of science and technology, technical investigation, network security and their respective duties.

According to the principle of "centralized management, division of labor with responsibility, system integrated, high efficiency and accuracy, data sharing", the construction of unit big data is planned in a unified way to form a complete big data service system and realize data sharing.

Strengthen the construction of decision support system, use system engineering, value engineering,
operational research, statistical analysis and prediction, big data, artificial intelligence technology methods to make decision analysis on major issues, and provide scientific basis for decision-making departments.

5.1.3. **Revise the institution to realize the standardization and scientization of the index system.** On the basis of scientific formulation of index system and improvement of information network, as the report automatically generated by the information center processing system, the report period can be shortened. At present, each unit has developed various information systems, and has realized internal networking. However, there are many problems such as imperfect index system, low level of system intelligence, poor connection of subsystems, and weak real-time data processing ability. In order to adapt to the new requirements of information processing, the original information system must be upgraded and transformed from the center operation oriented to cloud computing and blockchain oriented, using modern network technology to fully realize information sharing.

5.1.4. **Establishing platform to realize the modern mode of information sharing management.** Relying on the blockchain technology, through the establishment of a comprehensive, real-time, efficient and perfect cloud platform and data center, you can master all kinds of relevant data and external information to be pushed at any time.

Meanwhile, because the data center has a wealth of information resources, it can use big data and artificial intelligence technology to conduct comprehensive analysis and thematic research on various problems and development trends of social and government departments, so as to provide implementation opinions and suggestions for scientific decision-making and management of up-class organs.

According to the current situation, its proposed to build the public security information filtering and desensitization processing system at all levels (categories) and external information pushed processing system, and to share the information value safely and conditionally (pushed to society or other departments) to serve the society.

5.2. **Strategies on construction and development under the current situation**

5.2.1. **Security situation on big data and the countermeasures**

Big data technology increases both the risk of information disclosure and the difficulty of network security protection, which puts forward new challenges to the security of infrastructure and the maintenance of national sovereignty. Data leakage, hacker attacks and other phenomena occur from time to time. China has certain achievements in the development and application of big data, with market advantages and development potential. However, there are also some problems, such as the lack of open and sharing of government data, the weak industrial foundation, the lack of top-level design and overall planning, the lag in the construction of laws and regulations, and the lack of innovation and application fields, which need to be solved urgently.\[11\]

For public security, there are five major pain points: inaccurate awareness of public security situation; insufficient matching of results; poor cloud-to-end link; insufficient middleware support services; unbalanced development of regional differences.\[12\].

Therefore, it is necessary to:

- formulate relevant laws and regulations as soon as possible, clarify the responsibilities and rights of all sides;
- strengthen the system construction, strengthen the safety supervision of key data in key fields and industries;
- strengthen the management of big data related products and services, establish an independent and controllable information technology ecosystem;
- accelerate the development of big data related technologies, establish a network security defense system in depth;
• make full use of blockchain technology to promote large data value realization, ensure the information security; 

• adhere to active prevention, and build a big data defense in depth protection architecture based on level protection.

First, we need to mobilize the prevention awareness of all; Second, we need to develop an effective security system; Third, we need to build a security system for the whole life cycle of big data; Fourth, we need to do a good job in the supervision of sensitive data; Fifth, we need to use information security defense means flexibly; The last but the most, we need to establish and improve big data policies and regulations in time.

In August 2015, the State Council issued the action plan for promoting the development of big data, pointed out that China should pay attention to the safety and security issues in the process of using big data while vigorously developing the big data industry.

On March 17, 2016, the 13th five-year plan adopted at the fourth session of the 12th National People's Congress requires the implementation of the national big data strategy and the strengthening of information security.

In the "network security law" implemented on June 1, 2017, it puts forward the responsibilities and obligations of network operators such as "maintaining the integrity, confidentiality and availability of network data", "preventing network data from leaking or being stolen or tampered with", as well as the requirements for exit security assessment and network information security protection of personal information and important data.

On the morning of April 14, 2018, the National Information Security Standardization Technical Committee officially released the big data security standardization white paper (2018 version) and other standardized technical documents. This paper focuses on introducing the domestic and foreign big data security laws and regulations, the status quo of standardization, analyzing the risks and challenges faced by big data security, giving the framework of big data security standardization system, planning the key work of big data security standards, and putting forward suggestions for carrying out the work of big data security standardization.

On June 13, 2018, the National Information Security Standardization Technical Committee issued the notice on Soliciting Opinions on the draft of the National Standard Guide for the assessment of the impact of information security technology on personal information security. The standard specifies the basic concepts, framework, methods and processes of personal information security impact assessment, and proposes specific methods for assessment in specific scenarios.

From the standards and regulations in the field of big data security every year, it can be seen that the information security problem in the big data environment has been promoted to the national strategic level.

Big data security standard is an important support to ensure big data security and promote the development of big data. It is urgent to speed up.

In addition to improving the relevant system institution, hierarchy and standards, strengthening the research on the network security issues and technology in the big data, and implementing, such as information security level protection and risk assessment, are also the key to solve the information security problems.

At present, Chongqing has made great achievements in big data standardization, which is the result of active efforts.

5.2.2. Current strategy for government big data construction and development

5.2.2.1. Using system engineering. Big data engineering is a strategic system engineering project, which needs intensive use of the city's resources. It should use the methods of system engineering to analyze, plan and build from the whole.

In view of the huge resource consumption and strategic role of big data project, the construction must contain a certain degree of resource intensive and technology frontier characteristics, and that
means it should be footed on existing resources and focus on long-term development.

The strategic project requires that the construction of big data project of public security can not be restrained in the scope of public security. It also requires to provide support not only for the public security work, but also to provide data support and services for the comprehensive management and development of the city.

The so-called comprehensive analysis and layered services of big data for police-civilian integration orientated emphasizes the integration of police and people.

It is not only to strengthen interactive sharing and solve the chimneys problem under the system of belt-block division within the public security, but also to comprehensively consider and solve the chimneys problem of various information systems of public security and society.

The so-called comprehensive analysis and hierarchical services is to not only solve the needs of different levels and different divisions of public security within the public security, but also provide services for the external social needs of wide security and other data.

In addition, it should also be ensured the data interface consistency and the desensitization processing and transmission standardized and legitimacy.

5.2.2.2. From data sharing to data product construction. Although the government is advocating and calling for big data sharing and development, from the perspective of the masses or users, it has not deeply felt the value of data openness. Why? Because there is no visible and touchable data product.

The data products solidify the data, data model and analysis decision logic into a software system as much as possible, and play the decision value of data in a more automatic, accurate and intelligent way.

The value of data products is more extensive than deep, and the wider the customer base, the better reflection of the work effect.

This requires a high degree of sensitivity to the business of the target customer group in product design, to meet the urgent needs first, and to abstract the diversified data requirements into a Point, Line and Plane layered demand model.

For example, the application of Alipay, the demonstration effect of one point "paying", drives the online payment chain and even the development of Internet finance.

5.2.2.3. From big data to intelligence. Intelligence is the next stage of big data development. Not only Chongqing, but also Tianjin, Guangzhou, Hefei and Beijing, etc., have issued the development of intelligence strategy. The policies of talent, tax, land others are very attractive, which are good incentives for entrepreneurs.

The development of intelligence is far more complicated than that of data. The development competition of intelligence is a competition of basic science and technology ecology. Xi'an, Beijing, Shanghai, and Wuhan have great advantages on these. Chongqing needs to pay more attention to the development of education and make farsighted layouts before it can occupy a place.

Shanghai public security, with the attitude of actively integrating into "Shanghai Urban brain", broke through the shackles, carried out institutional mechanism innovation, and firstly took the form of "one center, one platform, and the Internet" to try to integrate the public security business into the construction of smart city in China. It also made great achievements in the 1st China International Import Expo and was fully affirmed by the state leaders.

5.2.2.4. From internal interconnection to all things' interconnection. At present, the opening of data is more based on the opening of organizations, governments and industries. Through the network penetration in R & D, production, transaction, circulation and financing and other links, we can improve efficiency and optimize resource allocation. It is to get through the upstream and downstream to help the organization rebuild its core competitiveness. And then, the next is the interconnection of all things.

Therefore, the circulation value sharing between data industries becomes an important content in
the next stage. Thus, it becomes "infrastructure construction" of "information society", full of "data" mineral resources and "flow" resources.

5.2.2.5. From data benefiting people to data managing. Data resources is first and foremost open to serve the public. It's easy to benefit people with data, but it's hard for data "managing" the city.

Now let data directly manage the business, which needs to reshape the business process. The transformation of government governance mode in the era of big data is the transformation of government functions. The State Administration of Taxation of Shaanxi Province has a good exploration of data "tariffing"[16], which is worth learning. If Chongqing can explore some cases to provide data governance solutions, it will be a great contribution.

5.2.2.6. From business innovation oriented to technology innovation oriented. It is necessary to use various algorithm models to drive business transformation and lay a foundation for future competition. The change of thinking and opinion is very challenging. It is also the top priority of big data development in the next stage, so that the value of data technology can be truly released into the business.

5.2.2.7. Giving full play to their own advantages. It should vigorously promote the application of emerging technologies and the implementation of projects in the advantageous industries of the region. The development of economy has its own law. The development of each region have its own connotation. On the one hand, we need endogenous growth. On the other hand, we need denotation development. But the fundamental thing is to make use of emerging technology to ensure the original local advantage industries.

6. Implementation of big data projects
There is no essential difference between the implementation process of big data projects and general IT projects. The difference is that the technology used in big data project is not as simple as the traditional database SQL development one. It requires higher abilities for programming and troubleshooting in case of problems. Because of the distributed operation, the troubleshooting becomes very complex.

6.1. Problems to pay attention to
In the process of organizing and implementing big data projects, the following six mistakes should be avoided to keep away from the pitfalls and ensure the smooth implementation:

- **Negative attitude.** Such as passive waiting, has nothing to do with oneself, conservative wait-and-see, awe inspiring, etc.;
- **Improper big data plan, or blind pursuit big;**
- **Bypassing security for the project;**
- **The user participation fit is not good.** One is the user experience is not friendly, another is pursuing endless user participation projects;
- **Data is not prepared or cleaned correctly, and lack of checking its accuracy;**
- **Limiting innovation.** Either the application mechanism of big data does not match, or continuing to develop and manage big data project as an ordinary business one.

6.2. Implementation method and suggestions of the project

6.2.1. Layering projects. Divide the project into: Edge, Perception Layer → Cognition, Reflection Layer → Intelligent Reasoning, Prediction, Decision Layer → Wisdom Discovery Layer - Artificial Intelligence Layer driven by big data. Layering is a method of system engineering for any difficult question. If the layered or divided question is still hard, then continuously split them in small questions till all the divided questions feasible before assemble them. On the others, it should use different
methods of human resource in construction and Implementation for different levels. For example, before analyzing data, data needs to be cleaned and prepared, which should not be carried out by senior data engineers. Else while, once algorithms and applications using big data are developed, they should be tested and phased before deployment. The best way to achieve these goals is to add a skilled project manager to the data science team, or use the project management skills and human resources of the IT department.

6.2.2. Jointed with traditional IT development team. Big data engineering, as well as artificial intelligence and machine learning applications, must be integrated with other IT applications and systems to get the most value. This is the only way to truly integrate big data analysis with other systems and applications across the organization.

6.2.3. Setting up big data maintenance and monitoring team. Whether the network and hardware infrastructure, or ensuring that big data is executed correctly within or independent of the application, once big data are deployed in production, the process must be monitored and maintained continuously.

6.2.4. Using agile development method of software engineering. In other words, it’s to say “Running in small steps and iterating quickly”. With a small run, fast iteration can quickly find a balance between demand and supply. Furthermore, since data change and algorithm modification are iterative and continuous processes, data scientists need to understand the concept of algorithm iterative modification. In this case, both from IT and data science teams, they must learn management on how to combine traditional IT project. Data algorithms emerge as the change of application requirements.

6.2.5. Business demand oriented. It was well known that designing and R & D based on business requirements. So, go back to user requirements and analyze what the market really needs. Otherwise, you'll lose the goal of big data projects. As Information needs to share, data needs to flow. Thus, big data needs application and service scenarios to generate real value.

6.2.6. Personnel skills and technical team training is the key. What the most lack is not the concept, methodology, market and policy promotion, but the talents and the environment to nurture talents. So many provinces and cities are working on big data with a lot of emphasizing. There may be others. Big data talents still have been in short supply. Big data doesn't work without talents. The responsibility of colleges and universities lies here. At present, the education of talents and the training of skills that the market really needs in Colleges and universities have been lagging behind. Talent project is a long-term strategic project of every country. Both managers and ordinary engineers need to have certain big data capabilities.

6.2.7. Bottom-up and top-down running parallel
It should not only care about the concepts and requirements of the upper level, but also pay attention to the business details of the lower level and the real usage scenarios. This is a very important thinking when doing big data projects.

6.2.8. Not pursuing new. when the hustle and bustle past, is the beginning of maturity. New technology and new platform emerge in endlessly, don't blindly pursue new. Case is forever in the race after a vicious circle, continuously adjusted in confusion. No matter how the outside world jollificatly, it should keep rational analysis, to ensure the security and stability of the solution. If a new technology hasn't yet been fully understood thoroughly, it is best not to apply. Otherwise it will cause a lot of solution risks and uncertainty factors.

7. conclusion
Beginning from analyzing the risks of big data, this paper analyzes the advantages and disadvantages
of Chongqing’s big data development. It proposes to establish a Comprehensive Analysis and Layered Service Project of Big Data footing on the existing, focusing on the long term, with police-civilian integration oriented. This paper also describes the future vision of Chongqing’s big data construction. Then it puts forward feasible project implementation suggestions and opinion based on the analysis of big data construction and development strategies.

References

[1] [UK] Viktor M.S, Kenneth C. (2013) Big Data: A revolution that will transform how we live, work and think. Zhejiang people's publishing house. Hangzhou. pp. 61-62.
[2] [USA] Albert, L.B. (2012). Explosion: a new way of thinking about the future in the age of big data. China Renmin University Press, Beijing. p109.
[3] [PRC] Zhangwenxian. (2019) Seven propositions of human rights jurisprudence in the new era. Human Rights. 2019/03. pp12-27.
[4] [PRC] Zhangwenxian. (2019) No Data, No Human Rights. http://www.aisixiang.com/data/116468.html. d. 20191205
[5] [PRC] Big data standard working group of National Information Technology Standardization Technical Committee. (2018) Big data standardization white paper (2018). China Institute of electronic technology standardization (CESI). Beijing. pp10-12
[6] [PRC] Yangjun. (2014) Development concept of a western city: Guiyang wants to transform high-tech by big data. http://www.rmlt.com.cn/2014/0422/260668.shtml. d. 20191205
[7] [PRC] Fynlch. (2017) "Internet +" and National Engineering Laboratory of big data area to confirm the list of commitment units. http://www.cbdio.com/BigData/2017-01/04/cont ent_5422405.htm. d. 20191205
[8] [PRC] Huangzhennie. (2016) Research on the development system of government big data. http://www.echinagov.com/viewpoint/48509.htm. d. 20191205
[9] [PRC] Anonymous Commentator of Guiyang Daily. (2015) Lightening the new vision of big data development. http://www.gysdj.gov.cn/djxx/llyj/56939.shtml. d. 20191205
[10] [PRC] Hanyong, Xumin, Wenhui, Cui. (2018) Exploration and practice of data police training. Public Security Education. 2018/09. pp7-12
[11] [PRC] The State Council. (2015) White paper of action platform for big data development. Beijing.
[12] [PRC] Chengdu Tianma Technology Co., Ltd. (2018) Information security risks and strategies faced by big data technology development and innovation in the new situation. http://www.sohu.com/a/257119857_506171. d. 20191205.
[13] [PRC] Liuquan. (2019) Big data confronted situation and Countermeasures. http://master.infosws.cn/20190401/20002.html. d. 20191205.
[14] [PRC] Shenchangxiang. (2016) Strengthening information security protection in the era of big data. http://it.people.com.cn/n1/2016/0527/c404362-28383933.html. d. 20191205
[15] [PRC] Luo, Feng, Zhang. (2019) Chongqing starts the construction of national big data comprehensive standardization system. http://cq.people.com.cn/n2/2019/0331/c365402-32795327.html. d. 20191205
[16] [PRC] Shubangke. (2019) Six leading strategies for Guiyang big data. http://www.sohu.com/a/244618153_468714. d. 20191205