Application Status and Development Suggestions of Internet Personal Credit Investigation
(Full Paper)

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ABSTRACT
The development of Internet finance has given birth to the Internet credit investigation industry, which has expanded the application scenarios of personal credit information from credit finance to credit life. Starting with the current development of personal credit investigation on the Internet in China, this paper introduces the typical enterprises of personal credit investigation on the Internet in China and the application scenarios of credit information. It further points out the problems of the internet personal credit reporting industry through the analysis of the industrial chain and proposes solutions.

Keywords: Internet credit investigation, Personal credit registry, Credit life.

DEVELOPMENT OF CHINA'S INTERNET PERSONAL CREDIT REPORTING INDUSTRY
China's credit reporting agency was first established in 1932 as the "China Credit Information Office". However, the substantial development of the credit investigation industry did not begin until the reform and opening up. Later, the 16th National Congress and the 18th National Congress announced the strategic goals and specific requirements of building a social credit system. The “Regulations on the Management of Credit Information Industry” was implemented on March 15, 2013 (Credit Reference Center of the People's Bank of China, 2014). Since then, China’s credit information industry has advanced in leaps and bounds in the legal system construction.

The main enterprises in the credit information industry chain can be classified into two types of businesses, corporate credit information business and personal credit information business. They collect and process corporate credit information and personal credit information to provide information services to users.

Despite that China's credit information industry started early, the personal credit coverage rate appears low. The three major credit agencies in the United States, EXPERIAN, Equifax, and Trans Union, cover over 90% of the population in the United States. The emerging credit reporting agencies, such as Credit Karma and Zest Finance, complement traditional credit reporting system by covering the rest of the market (Chyxx, 2016). China's credit information industry has a two-wheel-drive development model of “government plus market” (Credit Information System Bureau of the People's Bank of China, 2018). Statistics from People's Bank Credit Information Center showed that, in 2012, the number of natural persons recorded in China's personal credit information system was 820 million, and the number reached 880 million in 2015 (Credit Reference Center of the People's Bank of China, 2015). On March 10, 2019, Chen Yulu, deputy governor of the central bank, told the Chinese and foreign journalists that 990 million natural persons have been recorded in China's credit information system, and the number of daily inquiries of personal credit reports reached 5.55 million. The number of daily inquiries increased by 221%, and the compound annual growth rate exceeded 47% compared with the daily average number of inquiries in 2015.

In terms of service groups, the US credit industry has started earlier, and its product services cover the entire life cycle of people. On the contrary, China's credit information is mainly used by licensed financial institutions, for loan services. As people’s daily lives are increasingly integrated with the Internet, the Internet personal credit behaviors provide valuable credit data which is not recorded in traditional bank credit records. The ballooning size of the Internet financial market and the escalating credit risks have boosted the market demand for personal credit investigation business.

The demand in China’s market can be seen from the consumer credit balance. As a financial application scenario for personal credit reporting, consumer credit is a loan for an individual or family of consumers to purchase durable goods or to pay for other personal or household consumption. China's consumer credit market balance is rising, maintaining a growth rate of about 20%. Also, the market has a huge demand for the application of credit data in life services.

In January 2015, the People's Bank of China issued a document, requiring eight institutions, including Sesame Credit Management Co., Ltd. and Tencent Credit Investigation Co., Ltd., to start a personal credit investigation business (People's Bank of China, 2015). This is the first attempt by Chinese regulators to launch a market-based personal credit service.
In 2018, the People's Bank of China approved the establishment of Baihang Credit Information Co., Ltd., China's first market-oriented personal credit investigation agency (Baihang Credit, 2018). Among all the shareholders of Baihang Credit Information Co., Ltd., the China Internet Finance Association holds 36% of the shares, and eight institutions including Sesame Credit and Tencent Credit each hold 8% of the shares (CREDITCHINA.GOV.CN, 2018).

In October 2018, the People's Bank of China stated that it would issue personal credit information licenses prudently to promote the coordinated development of the first market-oriented personal credit reporting agency - Baihang Credit Information Co., Ltd. and help the Credit Information Center of the People's Bank of China to expand the coverage of personal credit information in China. The expansion of the coverage of personal credit information will reduce the overall risk of Internet finance and e-commerce and promote the healthy development of these industries. On January 10, 2019, the People's Bank of China issued the "Guide to the Service for the Examination and Approval of Credit Information Agencies of Individual Credit Information Business", which elaborated on the conditions for the establishment and approval of individual credit reporting agencies in China (CREDITCHINA.GOV.CN, 2019).

**CHINA'S INTERNET PERSONAL CREDIT REPORTING SYSTEM AND ITS CHARACTERISTICS**

**China's Internet Personal Credit Reporting System**

China's personal credit reporting system can be divided into three parts: credit data sources, credit information processing enterprises, and credit information users. The credit data is collected from data sources. After the collection and analysis of credit information processing enterprises, credit information services will be provided for users.

As the core of the personal credit reporting system, credit information processing enterprises not only undertake the task of data collection, but also have to prove the authenticity of the data through cross-validation. Therefore, credit information processing enterprises need to obtain data from different sources to achieve the cross-validation function between different data sets.

Personal basic information, personal credit information, Internet credit data and other information reflecting credit status are China's personal credit data sources. The credit center of the People's Bank of China, private credit reporting agencies, and Baihang Credit Information Co., Ltd. are credit information processing enterprises. The main application scenarios of using credit information are financial scenarios including banks, licensed credit departments and Internet financial institutions. In addition, there are life application scenarios for public utilities, public sectors, and other innovative application scenarios. The financial application scenario and life application scenario of personal credit information together constitute a rich usage scenario of credit information.

Internet personal credit reporting enterprises refer to enterprises that use personal credit information on the Internet as one of their data sources. This paper will introduce the credit data processing enterprises and information application scenarios in the third and fourth parts.

**Characteristics Of Internet Personal Credit Reporting Business**

**Diverse data dimensions**

Traditional personal credit data mainly comes from personal financial transactions of financial institutions. These data have low dimensions and insufficient coverage, and there is a large gap in credit data, which is not conducive to the stable development of the financial system. Internet personal credit information integrates multi-dimensional data such as personal consumption, living, and relationships, and combines traditional credit information to jointly build a more comprehensive portrait of user credit information. The Internet personal credit service has greatly improved the coverage of credit data, reduced system risks, and improved financial efficiency. At the same time, it has also facilitated individuals to obtain their own credit reports and provided a more comprehensive credit service.

**Diverse data structures**

Different from the structured financial data submitted by traditional financial institutions, Internet personal credit reporting business has added non-structured data dimensions such as user consumption data, individual behavior preference data, and interpersonal relationship data. Internet personal credit data more accurately depicts the user's credit portrait. While improving the coverage of personal credit data and the credibility of credit results, Internet personal credit reporting business also puts forward higher requirements for the integrated processing capabilities of credit data. The development of big data, cloud computing, machine learning and other data processing technologies has laid the foundation for the advancement of Internet credit.

**Emerging data processing technologies**

With the integration of the Internet and daily life, more and more traces of residents have left on the Internet. This makes it possible for personal Internet credit reporting enterprises to obtain a variety of personal credit data, but at the same time it also increases the cost of data identification, extraction, and consolidation. Therefore, one of the most important differences between Internet credit reporting business and traditional credit reporting business is that Internet credit reporting business...
requires a higher requirements for data processing technology. Big data and intelligent algorithms are commonly used in the Internet credit reporting industry to deal with the complex network of information clusters (Xiao-Lin Li & Yu Zhong, 2012).

**Different participants in the industry chain**

In the traditional personal credit reporting business, banks and other financial institutions collect personal credit data and submit it to the personal credit database of the People's Bank of China. The credit reporting center of the People's Bank of China provides financial institutions with personal credit data query services. However, in the Internet credit reporting business, personal credit information providers accumulate personal credit data through their own channels, and hand them to credit information processing enterprises after preliminary cleaning. The credit information processing enterprises then establish personal credit portraits and provide services to credit information users. Therefore, the core participant in traditional personal credit reporting business is the credit reporting center of the People's Bank of China, and the core participant in Internet credit reporting are credit information processing enterprises.

**Comprehensive credit services**

Traditional personal credit reporting services are mainly for financial institutions. The personal credit reporting center of the People's Bank of China provides personal credit information to banks and other financial institutions to reduce systemic risks and improve the efficiency of financial transactions. Credit information processing enterprises in Internet credit reporting not only provide services to banks and other financial institutions, but also provide personal credit data query services to public utilities, the public sector, and other enterprises. In addition, in the era of Internet personal credit reporting, individuals can obtain credit information services such as credit report inquiry, credit certification, and asset certification, which improves the use scenario and value of credit information.

**PERSONAL CREDIT INFORMATION PROCESSING ENTERPRISES**

**Enterprises Starting Personal Credit Reporting Services**
The People's Bank of China issued the "Notice on Preparing for Personal Credit Information Business" in 2015. Table 1 lists the credit data sources, credit evaluation dimensions, credit reporting services provided by eight companies starting credit reporting business and their industries.

<table>
<thead>
<tr>
<th>Name</th>
<th>Basic data source</th>
<th>Evaluation dimension</th>
<th>Services</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sesame Credit Management</td>
<td>E-commerce transaction data, online financial data, data from public institution, data of business partners, data uploaded from users</td>
<td>Credit history, behavioral preferences, personality traits, levels of commitment, interpersonal relationship</td>
<td>Travel, accommodation, finance, shopping, social and daily activities</td>
<td>Internet</td>
</tr>
<tr>
<td>Tencent Credit Information</td>
<td>User's historical data on WeChat and QQ</td>
<td>Commitment history, security, wealth, Spending habits, Socializing status</td>
<td>Anti-fraud, credit assessment, personal credit application, risk alert, post-loan management</td>
<td>Internet</td>
</tr>
<tr>
<td>Shenzhen Qianhai Credit Information Center</td>
<td>Ping An Group's integrated data, external data partners, bad credit data reported by cooperative financial institutions</td>
<td>Risk of breach of trust, behavior characteristics, personality characteristics, performance, consumption preference, social credit, growth potential</td>
<td>Personal credit score inquiry, Anti-fraud products, credit risk identification, data access, consulting services, intelligent technology</td>
<td>Insurance</td>
</tr>
<tr>
<td>Peng Yuan Credit</td>
<td>Collect data from third parties with user authorization</td>
<td>Credit history, behavioral habits, personality characteristics, earning capacity, asset and wealth, public evaluation</td>
<td>Identity authentication, credit verification, credit report, credit score, anti-fraud, automatic risk alert</td>
<td>Credit reporting</td>
</tr>
</tbody>
</table>
China Chengxin Credit

| Source: Organized from public information. |

China Zhicheng Credit

| Koala Credit |

| Beijing Huadao Credit |

| Credit history, behavioral traits, identity attributes, performance, social data, public record |

| Personal credit score, personal credit report, credit authentication, risk information inquiry, Internet authentication services |

| Credit history, credit activity, personality characteristics, performance, consumer credit |

| Personal credit score, anti-fraud services, identity authentication, credit monitoring |

| Credit history, credit activity, transaction behavior, identity attributes, performance, social relations |

| Koala individual credit score, credit certification, credit information query |

| Bank transfer, credit card repayment and other services, direct access to personal credit and debit card data; data support from shareholders and public sectors; other industrial cooperation data |

| Personal identity information, public service information, traces of personal consumption, Internet user and behavior information |

| Huadao personal credit assessment, consumer credit information sharing platform CISP, credit service cloud platform |

| Startup with data resources |

| Credit reporting |

| Credit reporting |

| Startup with data resources |

From the perspective of the industry, Sesame Credit Management and Tencent Credit Investigation serve for Internet enterprises, Shenzhen Qianhai Credit Investigation Center for insurance enterprises and Peng Yuan Credit Investigation, China Chengxin Credit and Zhicheng for credit investigation enterprises, while Koala Credit Investigation and Beijing Huadao Credit Investigation are essentially newcomers with data resources.

The nature of the enterprise determines its business model. The differences in industries and business characteristics of the eight credit investigation enterprises lead to the different data sources for credit investigation. The data of Sesame Credit comes from the online transaction data of "Ali-affiliated" e-commerce, enterprises with equity participation and Alipay (credit card repayment, utility payment, and personal transaction, etc.) (JU Chuanxiao, 2018; Xiao Kaiven, 2019; ZHANG Yun, XIAO Yu & ZHU Nan, 2016). Tencent Credit Investigation can easily access users' social data on WeChat and QQ and Tenpay's financial data. Qianhai Credit Information Center has Ping An Group's online data, financial data provided by over 50 partnered financial companies, and location and speech data from the Ping An Group’s mobile APP, etc. Pengyuan Credit Information Co., Ltd is supported by government data. For China Chengxin Credit, its advantage comes from having over 100 small and medium-sized banks in China (it started to help banks build credit risk control models since 2003). Koala Credit is competitive in owning over 400,000 offline convenience stores. Eight enterprises carry out separate credit investigation business based on different data sources.

Although having different data sources, the eight credit investigation enterprises have similar data dimensions in personal credit assessment. Companies, in order to improve the accuracy of the credit investigation results, will try to obtain the assessment data from various sources. Except Sesame Credit focuses more on the application scenarios in daily life, while the application scenarios of the other credit investigation enterprises are more inclined to financial scenarios.

The eight companies have different backgrounds and data processing methods. The Internet enterprises, led by Sesame Credit, are born in the information era and have promoted data processing technology to maximize the practical significance behind the credit investigation data. On the contrary, traditional financial enterprises with credit investigation businesses are accustomed to using structured data and cannot respond well to changes in the data structure. Most traditional financial companies are still using big data analysis for personal credit investigations on the Internet.
As the Internet has become an important source of personal credit information, eight personal credit investigation enterprises are involved in the Internet credit investigation business. Sesame Credit and Tencent Credit Investigation rely on the massive user data of their parent companies and use the Internet as the main data source for credit investigation services.

**Baihang Credit Information Co., Ltd.**

Although the above eight individual credit reporting companies launched innovative application products during implementing the credit information preparation work, the enterprises still independently operate their credit information systems. The presence of credit data barriers has hindered the exchange of personal credit information between enterprises. Each enterprise regards its own superior data source as the main dimension of the personal credit evaluation model. Thus, the deviation between the credit evaluation results of different enterprises has halted the formation of an Internet credit information market.

Baihang Credit Information Co., Ltd. was established in March 2018 under the supervision of the People's Bank of China. It is administrated by China Internet Finance Association and Sesame Credit, Tencent Credit, Qianhai Credit, Pengyuan Credit, China Credit, and Zhongzhi. Based on the principles of "joint business construction, mutual benefit, and win-win cooperation", the eight companies jointly established the first market-oriented personal credit reporting agency with a registered capital of 1 billion yuan. As the only licensed market-based personal credit reporting agency, Baihang Credit Information Co., Ltd. is managed by China Internet Finance Association and the eight enterprises mentioned above. By aggregating eight companies' business advantages, Baihang Credit Information Co., Ltd. supplements the traditional People's Bank of China and contributes to a more comprehensive and effective market-oriented personal credit information system. The establishment of Baihang Credit Information Co., Ltd. shattered the information barriers between the eight enterprises, which is beneficial to the data sharing between enterprises. However, the amount of Internet credit data and its complex data structures pose challenges for data sharing. Users may present different behavior patterns in different platforms. Resolving problems brought by these differences is an urgency for data integration companies.

As of October 2019, the number of banking institutions that have granted credit to Baihang Credit Information Co., Ltd. has exceeded 1,200. 750 of which have signed information-sharing agreements with Baihang Credit Information Co., Ltd. and 500 have developed API interfaces and obtained system access. The personal credit information system of Baihang Credit Information Co., Ltd. has recorded 100 million natural person information subjects, and the number of credit accounts exceeded 120 million. Baihang Credit Information Co., Ltd. has launched three personal products, special attention list and information verification and verification products. The cumulative number of credit reports exceeded 30 million with an average daily inquiry of 400,000, and the peak number of inquiries in a day reached 900,000. The total number of inquiries for information verification products exceeded 13 million. According to its planning and development of the next three years, Baihang Credit Information Co., Ltd. is committed to creating a credit ecosystem that upholds mutually beneficial cooperations, enriches product content and broadens product designs and product promotions.

As China’s only licensed market-based personal credit reporting agency, Baihang Credit Information Co., Ltd. will continue to adhere to the concept of “joint business construction, mutual benefit, and win-win cooperation” and work with other financial institutions and industries. It aims to strengthen partnerships to build a credit ecosystem and make even greater contributions to the healthy development of China's credit information industry.

**USERS OF INTERNET PERSONAL CREDIT INFORMATION**

The main users of personal credit information in China are credit departments. Besides banks, licensed credit institutions and Internet financial institutions, the traditional credit information application scenarios also include public utilities and other public sectors. In the Internet era, the application of credit information also includes some life scenarios.

Based on the personal credit information of the borrower, the financial institution analyzes the borrower's credit level and default risk with the help of a credit model, and makes specific decisions on whether to grant the loan, the specific terms of the loan, and whether mortgages are required. The public utility sector possesses the personal non-financial debt data and is the main provider and user of personal credit data. Public agencies such as social security units, courts, and industrial and commercial bureaus are also users of personal credit information. Taking the court as an example, under certain circumstances, the court may query the individual credit report of the subject involved without obtaining their consent and use it as the basis for the case's decision.

The development of the personal credit investigation industry and the wide application of big data and cloud computing technology have further expanded the application scenarios of personal credit investigation data. Sesame Credit scores individual credit status from five dimensions: credit history, behaviors, identity, commitment level and interpersonal relationships. Sesame Credit covers rent, travel, accommodation, communication, finance, etc. Life service providers and financial institutions can refer to users' Sesame points to provide corresponding deposit relief, procedures simplification and other services.

The credit finance scenario in banks and other licensed institutions and the credit life scenario represented by innovative application scenarios apply for personal credit data. Table 2 summarizes the main scenarios of the use of personal credit data in

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the Internet personal credit business.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Instance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>Commercial Banks, rural credit cooperatives, etc.</td>
<td>Credit in finance</td>
</tr>
<tr>
<td>Other licensed credit institutions</td>
<td>Consumer finance, small loans, guarantee, financial leasing, etc.</td>
<td>Credit in finance</td>
</tr>
<tr>
<td>Internet financial institutions</td>
<td>Internet banking, Internet consumer finance, P2P lending, Internet small loans</td>
<td>Credit in finance</td>
</tr>
<tr>
<td>Public utilities</td>
<td>Telecommunications, power grids, etc.</td>
<td>Credit in life</td>
</tr>
<tr>
<td>Public sector</td>
<td>Social security, industry and commerce, taxation, court, public accumulation fund</td>
<td>Credit in life</td>
</tr>
<tr>
<td>Innovative application scenarios</td>
<td>Free of charge, post-payment, privileges, sharing economy application enterprises</td>
<td>Credit in life</td>
</tr>
</tbody>
</table>

Source: Organized from public information.

It is worth noting that innovative scenarios have made people’s daily life more convenient while creating profits for enterprises. Taking the deposit-free bicycle sharing service as an example, the multi-dimensional credit data of the residents is collected by the credit reporting company, depicting a complete user portrait and reflecting the overall credit level of the user. Residents with a high level of credit will enjoy the bicycle sharing service without paying the deposit. At the end of the ride, they only need to pay the rent of the bicycle. The deposit-free feature gained an easier entry for bicycle sharing service into daily life, allowing bicycle service providers to explore the user market. Also, as the deposit-free service is based on the results of credit evaluation, the person who uses this service must be a resident who has a good performance in the credit evaluation, a high credit rating and low risk of default. Customers selected based on the above models are of high quality, and the risks faced by service providers are relatively controllable. As seen from the example, the deposit-free service is beneficial to both users and service providers, that's why this business model has been widely accepted by the market.

PROBLEMS IN THE APPLICATION OF INTERNET PERSONAL CREDIT INVESTIGATION

Social Problems of Credit Data Collection
First is insufficient privacy and data security protection. As credit assessment is increasingly involved in personal life, more personal data and information will be collected. However, Internet credit investigation is still in its infancy with inadequate supervision. Measures have to be taken to ensure the privacy and safety of users in the Internet credit investigation industry (XIANG Liling & CHEN Xiulan, 2019).

Second, the openness of the Internet challenges the protection of credit enterprises and user data. Take Sesame Credit as an example, its data source is mainly from user transaction data of "Ali department" enterprises and platforms, containing bank card number, ID number, mobile phone number and other sensitive information. Besides its own data, Sesame Credit also accesses data from a third party. Mutual benefits aside, Sesame Credit must take measures to ensure the safety of this part of data in transmission and use (M Ke, S Chen, N Cai & L Zhang, 2018).

The third is the insufficient credit coverage of enterprises’ credit information. Without a uniform model, the validity of the credit information is in doubt. Sesame Credit relies on user transaction data for personal credit evaluation; while Tencent uses individual social data, Tenpay financial review, and data from credit reporting companies to design the credit evaluation standard. Little information exchange between channels leads to biased evaluation results. Thus, the evaluation standard for showing the user's real credit level is questionable.

Still, unreliable credit data may be used for credit evaluation. In order to improve the credibility of credit score, some Internet personal credit investigation enterprises led by Sesame Credit have published their credit evaluation dimensions and their respective proportions. However, the virtuality of the Internet makes the reliability of credit investigation data hard to achieve. Individuals may deliberately beautify their credit data to get better services, resulting in inaccurate credit score results.

Credit Data Processing Capacity Needs Improvement
Lack of a universal evaluation model in the credit evaluation market is troublesome. Although different Internet personal credit enterprises have similar credit evaluation dimensions, the dimensions are varied proportionally. Credit reporting companies rely on their competitive strengths to provide credit reporting services, leading to different individual credit evaluation results. The lack of a universal Internet personal credit evaluation model in the market will be detrimental to the effectiveness of the personal credit market.
Also, the analysis technique employed by non-Internet enterprises for massive unstructured credit data needs to be improved. Traditional financial credit investigation businesses mostly rely on structured financial data, which requires less processing capacity. However, the complexity of Internet data requires more advanced data processing technology of credit investigation enterprises. The non-Internet companies headed by Qianhai Credit Co., Ltd. have not fully adapted to the characteristics of the Internet data, and the data processing technology is mainly based on big data analysis. It is inevitable to deal with complicated and unstructured data from the Internet when conducting credit reporting. Non-Internet credit reporting companies need to fully comprehend the characteristics of the data and improve their own unstructured data analysis technology to respond to changes in their data sources.

The Significance Of Improving The Use Of Credit Data
The second presentation of credit data makes it difficult for users of credit information to know the true credit status of the credited person (Xie Li & Yao Shikun, 2018). Internet credit investigation enterprises integrate various information of users and establish credit portraits of users, most of which are presented in credit scores. In personal credit investigation, the overall credit status is judged from credit scores. The raw data shall be reported to the central database by various institutions, and the credit investigation institutions shall conduct secondary processing and presentation of the data. The user of credit information cannot directly read the raw data as the information obtained from the credit report is limited and it is impossible to know the details of each business.

Insufficient development of life service application scenarios. In the Internet personal credit industry, the data application scenarios have expanded from credit finance to credit life, bringing more convenience to creditors. Credit information derives from life and should serve life. Internet credit reporting companies have made great attempts in the application of sesame credit in terms of life applications. However, other enterprises are more inclined to provide services for the financial market and refuse to explore possibilities in life application scenarios.

SUGGESTIONS ON THE DEVELOPMENT OF INTERNET PERSONAL CREDIT INVESTIGATION

APPLICATION

Strengthen The Construction Of Information Security System
Users in the Internet era pay more attention to personal privacy. As sensitive data, credit information must be given enough attention and protection. Besides building an information security system to defend against external attacks, Internet personal credit reporting companies should also strengthen the privacy protection of internal systems and avoid using creditors’ information for other purposes without approval.

Strengthen Government Supervision And Law Construction
Regulatory policy lags are common in emerging industries and markets. The data barriers and data authenticity problems in China's Internet personal credit information market are mainly due to regulatory and legal lags. To improve the efficiency of the credit information market, we must strengthen government supervision, improve industrial policies, and introduce laws and regulations on personal privacy protection, credit data sharing, and credit data verification.

Improve The Personal Credit Evaluation System
Improving the credit evaluation system is essential in ensuring the validity of credit evaluation results. The key to improving the effectiveness of Internet personal credit reporting results is to establish a universal credit evaluation model. Individual credit information enterprises should expand their data sources, strengthen data sharing among enterprises, enhance the underlying information mining capabilities of data, and strive to establish a universal personal credit evaluation model that is more responsive to users' true credit levels.

Improve Data Processing Technology
Faced with complex data clusters and data structures in the age of the Internet, data users must improve their adaptability. Internet credit reporting companies must give full play to their data analysis capabilities while non-Internet credit reporting companies should focus more on data analysis techniques and data verification capabilities. Artificial intelligence, machine learning, blockchain and other technologies can further enhance data processing technology and data foundation information mining of Internet personal credit information enterprises. Also, the cross-validation of data should be taken seriously.

Boost Credit Data Sharing
The secondary presentation of credit data is beneficial to the efficiency of credit data. However, in some application scenarios, relying solely on integrated credit data may lead to inaccuracy. Certain application scenarios may be more inclined to a certain credit dimension of the creditor. Thus, companies should establish a credit data sharing mechanism. Under the premise of user authorization, the credit information enterprise can provide the user's desensitization data level interface while providing the user's comprehensive credit score to the credit sub-use main body to reduce the information asymmetry between the credit information holder and the user. More multi-dimensional data helps to portrait the user while verifying the authenticity of the data, providing users with comprehensive and reliable credit evaluation data.

Expand The Application Scenarios Of Credit Investigation Data In Life Services
The development of the personal credit investigation industry has expanded the application of credit data from credit finance to
Credit life. Credit information originates from life and should also serve life. Internet credit investigation enterprises should take the initiative to explore more life application scenarios of credit investigation services and provide more convenience for credit holders.

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