

Application of Big Data Technology in the Field of Financial Innovation

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Abstract

In today's world, with the rapid development of Internet technology, the amount of data generated and recorded every day is increasing day by day, making big data technology plays an important role in all fields. The financial sector is no exception. Customers' credit information, borrowing records, and the number and volume of transactions in the financial market can all bring effective information and use value to enterprises through big data technology. Scholars at home and abroad have also done a lot of research in this field before. For example, He Xiaoman analyzed the forecasting effect of big data on financial risks, which can be used to evaluate customer credit risk and market risk, etc. Researchers at the Massachusetts Institute of Technology used big data analysis to determine that emotions affect the Dow Jones, S&P 500 and Nasdaq. This paper will introduce several existing big data technologies, combine them with existing problems in the financial field, and give several financial innovation applications.

Keywords

Big Data; Financial Innovation; Risk Control; Insurance Products; Investment Decisions.

1. Application of big data in risk control of banking industry

1.1. Advantages

Data is closely related to the effective control of risk in various business areas of a bank. Users' basic identity information, user consumption records, user borrowing records, enterprise financial reports, enterprise assets evaluation and other data can help banks to conduct risk assessment and make correct decisions when handling business [1]. With the support of big data technology, the data scale of banks will be further improved under the traditional database storage mode. Banks can not only obtain data from their own users, but also through third-party platforms, such as the Industrial and Commercial Red Shield, Enterprise Inspection, Legal Documents and Judgments, the penalty data of Environmental Protection Bureau, social platform data and other media platforms, etc., which can become the sources of data acquisition [2]. In addition, big data technology can greatly improve the timeliness of data. The sheer scale of the data being produced on a daily basis, and the rapid pace of change in the customer's own circumstances, means that the validity of large amounts of data is getting shorter. Expired data will not only lose its analytical value, but also may become wrong data and affect the final conclusion. Big data technology can effectively improve this problem. With the continuous improvement of bank informationization, each piece of business data will be completely and accurately recorded, and the data will be updated all the time to help the banking system to carry out risk analysis and control, and make the correct decision in the first place.

1.2. Future development trend

At present, big data technology has been widely used in the banking industry and is of great help to risk control. But the technology is still evolving.

1.2.1. Establish an efficient analysis system

At present, big data technology can collect massive data completely and accurately, but how to screen data, select high-value data and analyze them, and get the potential laws that are helpful for risk control is still not perfect. To solve this problem, banks should recruit more data processing related technicians, pay attention to the upgrading and improvement of big data system, and establish a system to improve the efficiency of data consolidation, such as data classification and data integration.

1.2.2. Pay attention to data security

Applying big data technology to bank risk control is still a practice in the field of financial innovation, and ensuring its safety is the top priority of work. The primary problem of banking industry is property and information security, which is also the most important problem in the development of banking informatization. In addition to the traditional security system, the need to ensure the security of network information has gradually increased in recent years. Preventing data leakage and resisting network attacks will be the problems that need to be paid attention to in the future banking field. Therefore, seeking a balance between convenience and security on the basis of big data technology is an important work in the future. In addition, data system operators need to be trained and supervised to prevent safety problems caused by misoperation.

1.2.3. Develop big data cloud platform

At present, the data of the banking industry is still mainly obtained from its own customers. Due to the single data source, the data obtained is likely to have problems of repeated content and incomplete information. So you can solve this problem by building a big data cloud platform. The emergence of cloud platform can not only reduce the cost of storing information for banks, but more importantly, it can collect data from different organizations, and improve the integrity of data and the effectiveness of conclusions on the basis of reaching security agreements.

2. The application of big data in insurance product design

2.1. Advantages

Data information also plays a vital role in the insurance industry, especially in the design of insurance products. In today's Internet era, People's Daily behavior data will be recorded by all kinds of organizations all the time, which has great commercial value for the insurance industry. Commercial insurance company can get information through the cooperation with other institutions, through the technology of data analysis, the potential demand for insurance products, which not only help to design innovative insurance products, can provide the basis for improvement of the existing of insurance products, insurance also helps to reduce the risk and maintain the stability of the social economic environment. For example, in the field of agricultural insurance, enterprises can track the futures trading data of soybean, corn and other bulk commodities, and analyze the rise and fall of the insurance demand of related products. In the field of medical and health care, enterprises can obtain data from hospitals, pharmaceutical companies and other organizations, analyze the insurance needs of potential customers and design insurance products in line with them. Western countries in this respect has a lot of practical experience, such as the United States, Germany, Britain's large commercial health insurance companies and hospitals, health data exchange management institutions, has a lot of people basic data and data related to health, are able to carry out customer orientation, product design, accurate accounting pricing, HePei underwriting, claims service work and so on,

specialized level is higher, A large number of case data is beneficial to control product design risk; In terms of controlling the risk of compensation, managed medical organizations in the United States reduce the loss rate and compensation expenditure by supervising the medical process and providing health management services [3]. In addition, the acquisition of customers' personal data can also help enterprises to provide targeted services and improve service quality, so as to enhance corporate reputation, win customers' good reputation and stimulate the potential market.

2.2. Future development trend

2.2.1. Security issues

In the insurance industry, data security also needs the attention of enterprises. Especially in today's increasingly digitized and informationized society, data will not only affect the operation status of enterprises, but also some core customer data will affect the overall stability and security of the financial market. Therefore, similar to the banking industry, commercial insurance companies have an increasing demand for technical personnel in network security, database management and other aspects.

2.2.2. Faster replacement of insurance products

With the support of big data technology, commercial insurance companies can timely understand the changes in customers' needs and adopt responsive product design strategies. Many of today's ten - and five-year policies may be shortened to two - and one-year terms, and even now some one-year short-term policies may be shortened to a few months. In this way, the renewal cycle of insurance products can be shortened to meet the current demand and improve customer satisfaction. In addition, the price can be reduced, and the threshold of insurance can be lowered from long-term to short-term, so that more people are able to buy more different kinds of insurance products, and the types of insurance can be changed in time to improve the transaction efficiency.

2.2.3. More types and finer services

There are a large number of insurance products available, but there are still gaps in many areas. For example, commercial health insurance coverage is less than 10%. In the future, with the help of big data technology, the types of insurance products will be more comprehensive. From disaster insurance to health insurance, customers' needs can be obtained through big data analysis, and excellent products can be designed to fill the existing gaps. At the same time, big data technology also plays a huge role in personal customization services. Enterprises can analyze customers' product needs and preferences through data, and even make insurance plans for each customer.

3. Big data is applied to analyze investment decisions

3.1. Advantages

Investment is now more and more widely into people's life, from the small Yu 'ebao of Alipay to the big public offering fund, all belong to investment behavior. Big data technology also has a big role to play in this area. First of all, big data technology is able to process a much larger amount of information and in a much shorter time than traditional human decision making. With the gradual increase of information, this advantage will become more and more obvious. Rich reference information data means more comprehensive consideration and more accurate decision-making. Shortening the time means that when faced with market changes, we can respond in a timely manner, greatly reducing customer losses and increasing profits. By making use of existing information technology and programs, enterprises can establish mathematical models and make corresponding analyses of different risk factors and portfolios, so that enterprises can quickly identify potential risks in a very short period of time and conduct

precise quantitative analysis on them to control investment risks [4]. Secondly, another obvious advantage of big data technology is that it can help people who do not have professional financial knowledge to invest. Today's high-yield investment strategies require the guidance or hands-on control of professionals, leaving ordinary people either with low-return wealth management products or with fees to be managed by professional institutions. However, when the big data technology is popularized and perfected, the program can calculate the optimal strategy by itself, which can effectively help a large number of non-professionals to conduct their own investment behavior and improve the rate of return.

3.2. Future development trend

Investment decision-making is the core business of many fund companies. How to maintain its competitiveness after the popularization of big data technology is an important issue. Researching the data analysis model and optimizing the core algorithm of the program will be the important work of every investment enterprise. The influence of Internet technology on this industry will be more and more significant. Only by constantly improving the return rate of investment strategy obtained by its own program and speeding up the efficiency of operation of the program, can it ensure customer satisfaction, improve its competitiveness in the industry, and thus expand the number of customers and the scale of capital. Corresponding information security will also become particularly important. Compared with the traditional model, not only the customer information and other data need to protect its security, its own program algorithm, system design model are the content that needs to be strictly protected.

4. Conclusion

With the development of big data technology, its application scenarios in the financial field will be more and more broad. This paper illustrates its existing applications in bank risk control, insurance product design, investment decision making and its influence on the future development trend of the industry. The application in the broader financial field still needs to be further studied by the development of big data analysis technology.

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