



Big Data in Financial Management

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Abstract. In the current digital era, data has risen to be one of the most precious resources for enterprises. The rapid progress of information technology and its wide application have prompted enterprises to accumulate a huge amount of data in their daily operation activities, which cover multiple dimensions such as internal financial information system, external market information and macroeconomic indicators. Mastering the systematic collection, storage, analysis and application of such information through big data technology to strengthen the decision-making process of enterprise financial management has become a major issue and potential opportunity for enterprises. In addition, this direction of application of big data technology has far-reaching significance. The article begins by defining the connotation and characteristics of big data, then discusses its diversified applications in financial management practice, involving financial forecasting, decision-making assistance, financial supervision and in-depth analysis, and finally puts forward strategies and reflections on the challenges that may be encountered in the implementation of big data technology in financial management.

Keywords: big data, financial management, significance, application

1 Introduction

In today's era, massive data has become a key element for enterprises to seek competitive advantage. As the center of the enterprise management system, financial management has also encountered the coexistence of opportunities and challenges brought by big data. How to efficiently tap the potential of big data technology to promote the dual improvement of financial management efficiency and level has become a core issue of common concern in the business community.

2 Characteristics of Big Data

2.1 Large Amount of Data

The scale of big data is significant, usually involving TB, PB and even EB in magnitude, which is far beyond the limit of traditional database processing capacity.

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2.2 Variety of Data Types

Big Data covers a variety of data formats, including structured, semi-structured and unstructured data types, specifically involving such multi-dimensional information carriers as text records, image files, audio materials and video content.

2.3 Data Processing Speed

In order to adapt to the needs of the enterprise instant decision-making, big data technology must have the ability to efficiently process and analyze large amounts of data to ensure the timeliness of information processing.

2.4 Low Density of Data Value

Although big data sets include a huge amount of information, the proportion of really valuable data contained in them may be low, which requires the use of data mining and other related technical means to be refined.

3 Big Data in Financial Management

3.1 Financial Projections

3.1.1 Sales Forecast.

Based on the historical sales records, market dynamics and competitors intelligence and other massive data, sales forecasts can provide powerful data support for the enterprise planning production programs and sales strategies.

3.1.2 Cost Prediction.

With the support of big data technology to deeply analyze the cost composition of the enterprise and the trend of cost changes, it is possible to predict the cost situation in the future, and offer a scientific basis for the cost management and control of the enterprise.

3.1.3 Forecast of Capital Demand.

Through in-depth analysis of the enterprise's operational activities, investment behavior and fund-raising activities and other big data, we can scientifically predict the scale of capital required in the future, providing powerful data support for the enterprise's capital allocation strategy.

3.2 Financial Decision-Making

3.2.1 Investment Decision-Making.

The apply of big data to analyze the market prospects of investment projects, risk and return, etc., can provide a scientific basis for the enterprise's investment decision-making.

3.2.2 Financing Decision-Making.

By analyzing the financial status of enterprises, credit ratings, market interest rates and other big data, it can provide reference for enterprises' financing decisions.

3.2.3 Dividend Distribution Decision-Making.

Based on the company's profitability and future development trend and other massive data, the dividend distribution plan can be scientifically formulated, so as to fully meet the shareholders' income expectations.

3.3 Financial Control

3.3.1 Budget Control.

The use of big data for real-time monitoring and analysis of the implementation of the enterprise's budget, you can find budget deviations in a timely manner, and take appropriate control measures.

3.3.2 Cost Control.

With the help of big data technology to explore the economic indicators of peer enterprises, it helps to realize the dynamic tendency of the industry and the competitive pattern, and provides powerful data support for the enterprise's strategic development planning.

3.3.3 Risk Control.

The use of big data to analyze the various risks faced by enterprises, such as market risk, credit risk, operational risk, etc., you can formulate the appropriate risk control strategy to reduce the risk of corporate losses.

3.4 Financial Analysis

3.4.1 Financial Statement Analysis.

The use of big data to analyze the financial statements of an enterprise in depth can reveal the enterprise's financial position, operating results and cash flow, and provide decision-making support for the management of the enterprise.

3.4.2 Performance Analysis.

By analyzing the financial and non-financial indicators of an enterprise, it is possible to evaluate the enterprise's business performance and provide a basis for the enterprise's performance appraisal.

3.4.3 Industry Analysis.

With the help of big data technology, in-depth exploration of the economic indicators of peer enterprises helps to gain insights into the dynamic trend of the industry and the competition pattern, and provides powerful data support for the enterprise's strategic development planning.

4 Challenges and Coping Strategies for the Application of Big Data in Financial Management

4.1 Challenges

4.1.1 Data Security.

The primary challenge is to ensure the effective protection and security of data containing large amounts of financial information and trade secrets of enterprises.

4.1.2 Data Quality Issues.

Given that big data comes from diverse channels, its quality inevitably varies, how to effectively carry out data purification and screening, so as to improve the quality of data, big data technology in the field of financial management applications must face the problem.

4.1.3 Technology and Talent Issues.

The implementation of big data technology in the field of financial management, the urgent need for both financial management and big data technology specialized knowledge of comprehensive talents. The current lack of such talent within the enterprise has become an important factor limiting the application of big data technology in financial management.

4.2 Coping Strategies

4.2.1 Strengthen Data Security Management.

Companies need to build a great data management system, the implementation of data encryption, regular backup and strict access control and other strategies to ensure data security.

4.2.2 Improvement of Data Quality.

Enterprises should build a data quality management system and implement data purification, selection and validation processes in order to improve the overall quality of data.

4.2.3 Cultivate Composite Talents.

Enterprises should strengthen the big data technology education for finance department personnel, improve their technical level, and consider absorbing those who have both professional knowledge of financial management and big data technology capabilities of comprehensive talents.

5 An Overview of the Current State of Domestic and International Research

In China, many enterprises have recognized the importance of big data, and gradually apply it to financial management. Through big data technology, enterprises can improve the accuracy of financial data. However, there are some problems. For example, data security cannot be guaranteed, and the ability of resource integration is relatively weak. Although the enterprise can obtain a large amount of data, but the ability to integrate these data is still to be improved and other issues. [1] Mu Qingjuan scholars pointed out that the application of big data technology in financial management is conducive to improving the efficiency of financial operations and strengthening the risk monitoring mechanism, but the process still exists in the data security protection is not in place, the integration of technology is difficult, the cost is high. [2] Liu Yahui scholars believe that big data technology can optimize the operation process in a data-driven way to improve efficiency and create value, but there are still multiple challenges such as data security, technology and talent. [3] Ye Lixin discusses the new methods, challenges and coping strategies of financial analysis in the era of big data. Firstly, he analyzes the source and processing of data, as well as the theoretical and practical basis of the new methods, and describes the application of big data technology in financial analysis. Secondly, it focuses on the challenges faced by financial analysis in the era of big data, including the issues of data quality and security, technology implementation and talent training. In this paper, we will discuss the following issues

There are many researches and practices on the combination of big data technology and financial management abroad, involving budget management, risk management and other fields, and constantly explore how to better use big data technology to improve the efficiency of financial management and the scientificity of decision-making. However, there are still some problems and challenges, such as data security and talent shortage. [4] Cui Ying believes that with the development of big data technology, its application will lead to the next wave or a new wave of consumer earnings, but financial risk management is also particularly important. [5] Academician Alcidio Silva Figueiredo pointed out that it is very necessary to introduce RPA technology into financial management, which effectively replaces ordinary employees and brings

senior technicians, which is conducive to the long-term development of enterprises. However, introduction of tech personnel is also a major problem.

6 Conclusion

The application of big data technology has brought higher accuracy and timeliness to the information processing of enterprises, which strongly promotes the improvement of financial management level and enhances the competitive advantages of enterprises. However, along with its application comes a series of challenges in terms of data security, data quality and the construction of professional personnel. Therefore, enterprises need to implement effective strategies to cope with these challenges, including strengthening data protection measures, improving data quality standards, and focusing on cultivating composite talents who are both technologically savvy and proficient in financial management, so as to maximize potential and value of big data in financial management.

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