

The Impact of Big Data on the Transformation of Enterprise Financial Decision-Making

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Abstract: This article explores the impact of big data on the transformation of enterprise financial decision-making. Big data, characterized by its massive volume, diversity, and value, influences the tools and processes of enterprise financial decision-making. It is of great significance in reducing costs, improving the effectiveness and efficiency of decision-making, and promoting innovative development. However, there are problems in enterprise financial decision-making, such as insufficient risk awareness, difficulty in controlling data quality, and a shortage of professional talents. Therefore, enterprises need to enhance the level of data value, improve the professional quality of managers, and at the same time pay attention to improving data analysis capabilities, establishing effective data mechanisms, applying advanced technologies, and protecting data privacy, in order to adapt to the challenges of financial decision-making in the era of big data.

Keywords: Big Data; Financial decision-making; Enterprise Finance.

1. Introduction

With the popularization of Internet technology and the development of computer technology, social and economic data continues to grow, change and exchange, and human society has entered the era of big data. In order to adapt to this environment, enterprises need to constantly update their production and operation models to improve economic efficiency and management. However, big data will bring problems such as uneven data quality, privacy and security, talent shortage, and technical barriers to enterprise financial management [1]. Therefore, how to integrate advanced big data technology into financial decision-making to quickly obtain, process and use data information to make high-quality decisions has become an important problem that enterprises need to solve urgently.

2. The Main Characteristics of Big Data

(1) Massive quantity

Big data typically exists on a massive scale, involving massive datasets. These data may come from various sources, including sensors, social media, log files, etc. With the increasing variety and innovation of storage media, as well as the upgrading and transformation of storage solutions, the total amount of data worldwide has become very large. The increase in data volume makes traditional data processing and analysis methods no longer applicable.

(2) Diversity

The diversity of big data is reflected in multiple aspects, including the diversity of data sources and data types. The diversity of data sources is mainly because various subjects, such as individuals, enterprises, and organizations, are the subjects of their own data sources, and the information disclosure of these subjects is also carried out through different channels. Individuals typically use mobile devices to store data, while businesses and organizations rely on relevant platforms to store and publicly disclose data. The diversity of data types mainly lies in the different forms of data disclosure, including various types such as numbers, text, images, videos,

and audio. Data includes not only structured data (such as tables in databases), but also semi-structured data (such as XML files, JSON data) and unstructured data (such as text, images, videos, etc.). These diverse data types require flexible processing methods.

(3) Value oriented

In big data, there is a lot of irrelevant or repetitive information that is scattered and reduces the value density of the data. Therefore, when processing big data, it is necessary to conduct data mining, cleaning, and filtering. Long term mining and extraction are necessary to fully realize its inherent value and extract useful information.

3. The Impact of Big Data on Corporate Financial Decision-Making Design

Big data technology can provide large-scale, diversified, and real-time data, providing a more accurate and comprehensive information foundation for financial decision-making. Enterprises can make more informed financial decisions by analyzing massive amounts of data to understand key information such as market trends, customer needs, and competitors. Financial decision-making is the core of financial management, and enterprise managers should attach importance to the quality of financial decision-making. However, the task of processing financial data is heavy, requiring timely collection, integration, and reporting of data, as well as extracting key information for managers to make financial decisions. Financial data includes structured, semi-structured, and unstructured data, therefore requires storing, processing, and analyzing large amounts of data. In the era of big data, traditional financial decision-making tools often cannot meet the needs of enterprises in storing, processing, and analyzing data. It is very necessary to apply new big data tools to enterprise financial decision-making, which can make up for the limitations of traditional tools.

With the changing times, the focus of financial decision-making is also constantly evolving. In the past, the focus of financial decision-making and management for enterprises was mainly on their own products, but now they pay more

attention to first analyzing customer needs through big data and then producing products based on customer needs. Big data analysis can help businesses understand customers' consumption behavior, preferences, and needs, thereby providing more personalized products and services. In financial decision-making, enterprises can utilize big data technology for customer segmentation and customized marketing to better meet customer needs and achieve growth and profitability. Big data can better integrate the actual situation of enterprises and market trends, providing accurate and reasonable data analysis conclusions, and offering valuable references for financial decision-making participants in enterprises.

In addition, in financial decision-making, big data technology can use historical data and patterns to predict future market trends and risk factors, helping enterprises predict sales trends, market fluctuations, capital flows, etc., thereby better conducting financial planning and risk management. Through the analysis of big data, enterprises can identify high cost and low benefit links, better manage and optimize costs, improve the efficiency and accuracy of financial decision-making, and take corresponding measures to enhance financial performance and profitability.

4. The Significance of Big Data in Transforming Financial Decision-Making for Enterprises

(1) Reduce costs

Before analyzing financial decisions, it is necessary to recognize that financial management is a holistic process and should not be studied separately from the management process. To ensure the authenticity and reliability of research results, it is necessary to analyze and study the processes related to financial decision-making based on the overall financial management.

The current popular framework for enterprise financial decision-making under big data includes four main parts: data sources, data processing, data analysis, and enterprise financial decision-making. Therefore, in order to ensure that financial decisions can achieve expected goals, multiple processes such as obtaining, processing, and analyzing multiple data in the decision-making process are needed to ensure the authenticity and reliability of financial decision results. During the decision-making process, it is necessary to record and provide feedback on data from each stage to ensure accurate control of phased decisions and timely adjustment of existing issues. After the decision is made, it is necessary to write relevant programs to evaluate and analyze the decision results, and make targeted improvements based on the evaluation results to improve the efficiency and quality of the financial evaluation process.

According to different types of data costs, they can be divided into data acquisition costs, data processing costs, and data analysis costs. Due to the characteristics of large quantity and rapid acquisition of big data, enterprises can usually use related technologies such as big data to control costs. Given the diversity of sources and types of big data, enterprises usually need to select data types that meet the requirements based on actual situations in order to improve the efficiency of data analysis and reduce the cost of data analysis and processing.

(2) Improve the effectiveness and efficiency of financial decision-making

Enterprises can use big data analysis technology to construct financial models and improve the accuracy of financial decisions [2]. By analyzing and predicting a large amount of real and up-to-date business data, big data has advantages in processing data, which can assist enterprise managers in effectively conducting data mining and help them establish financial decision support systems to provide scientific and reasonable countermeasures. By utilizing big data technology, on the one hand, financial and non-financial data of enterprises can be integrated, making the financial decision-making process more scientific and reasonable, thereby avoiding to some extent the uncertain risks brought by making decisions based solely on financial data. On the other hand, big data technology can make it faster and more convenient for enterprises to process data, and fully tap into the potential value of data, thereby better allocating resources to advantageous growth areas and improving the efficiency of financial decision-making for enterprises.

(3) Promote innovative development of enterprises

Big data plays an important role in the innovation and development of enterprises, helping them discover business opportunities, optimize operations, enhance customer experience, and drive innovation in new products and services. By fully utilizing big data analysis, enterprises can better adapt to market changes, enhance competitiveness, and achieve sustainable innovative development. By analyzing big data, enterprises can obtain valuable information about market trends, consumer behavior, and competitive intelligence. These pieces of information can help businesses discover new business opportunities, adjust product and service strategies, and implement innovative solutions. Big data can also help companies improve and iterate their products to meet constantly changing market demands. Based on these insights, businesses can provide personalized products and services to increase customer loyalty and satisfaction by improving the customer experience.

5. Problems in Enterprise Financial Decision Making under the Background of Big Data

(1) Enterprise financial decision-making risk awareness needs to be improved

With the advent of the big data era, enterprise financial management is facing unprecedented risks and challenges [3], therefore, clearer requirements have been put forward in the processing and analysis of enterprise financial data information. After data disclosure, companies need to integrate internal and existing external information, but due to issues such as asymmetry between internal and external information, this may lead to operational risks for the company.

In order to address these challenges, enterprise financial management needs to improve financial information management and keep up with the development of the big data era as soon as possible, timely change and improve its risk awareness and crisis management capabilities, in order to avoid the occurrence of adverse effects. However, many enterprises lack scientific management awareness in financial management. When using big data to acquire resources, they first need to establish internal financial management systems in order to fully utilize big data technology.

(2) Difficulty in controlling the quality of data related to corporate financial decision-making

With the advent of the Internet era, data is growing exponentially on the network, and human beings can generate massive data every day. For enterprises, in order to make correct financial decisions, the first step is to integrate financial data. However, for many small and medium-sized enterprises, their ability to apply big data analysis technology is limited, which makes it difficult for them to obtain a large amount of valuable data.

Enterprises are closely related to various stakeholders (such as government, banks, etc.) in the production and operation process, and the sources of financial data involved are diverse. When conducting data analysis, it is difficult for enterprises to consider all data, so there may be errors in the results of data analysis, which can have an impact on the operation and decision-making of the enterprise. In addition, under a highly shared Internet platform, data distortion problems also occur from time to time. If the personal information entered by consumers on the business and sales platform is not authentic, or if multiple people use the same account or even one person uses multiple accounts, the user information recorded by the enterprise may be distorted.

(3) Shortage of financial management talents with big data technology

In the era of big data, enterprises need many talents who understand big data technology to carry out financial management. However, there is an extreme shortage of talent related to enterprises, and companies urgently need to have talents with knowledge in both statistics and machine learning. For financial managers in enterprises, they lack sufficient understanding of big data technology. Due to the shortage of big data talents, this limits the work of enterprises in financial management.

6. Reform Measures for Corporate Financial Decision-Making

(1) Enhance the value level of enterprise data

In the era of big data, enterprises face enormous opportunities and challenges. In order to enhance the value of their data, enterprises can start from both internal and external aspects. Internally, enterprises should optimize data acquisition channels, data storage, and processing

Hardware facilities and supporting equipment for management and analysis. In addition, companies should also adopt software suitable for financial data processing, including data mining, processing, and analysis tools. At the same time, enterprises need to establish a professional and composite talent team that understands finance, management, and could process and analyze data. For external parties, enterprises can outsource some professional technical services to save manpower and time costs, and optimize the data value ability in financial decision-making activities. In addition, enterprises can also enhance their data application capabilities and fully utilize the professional advantages of their partners by collaborating with professional universities or research institutes.

In short, to comprehensively enhance the level of data value, enterprises need to make improvements in both internal and external aspects. Only by optimizing hardware facilities, equipping appropriate software tools, cultivating professional talents, and collaborating with external parties can enterprises better cope with the opportunities and challenges brought by

the big data era.

(2) Enhance the professional competence of managers

Excellent business managers are closely related to the level of financial decision-making in enterprises. They are able to timely and sensitively capture effective market information and financial data, and can quickly make corresponding financial decisions, thereby helping the enterprise gain benefits. On the contrary, managers with limited abilities find it difficult to make financial decisions that match good resources. Therefore, enterprises should attach great importance to cultivating the professional competence of managers, and cultivate excellent talents by establishing internal and external talent training mechanisms and corresponding assessment systems. For internal personnel, enterprises should strengthen the cultivation of professional ethics and sense of responsibility among management personnel. This can be achieved by providing relevant training and development plans. At the same time, companies can also encourage managers to participate in industry exchange activities, broaden their horizons and knowledge reserves.

7. Conclusion

In the era of rapid development of information technology, in order for enterprises to achieve sustainable development, management personnel cannot rely solely on traditional financial statement data for financial analysis and decision-making. They should also obtain more data information from suppliers, banks and governments through the Internet, social networks and other media [4]. Traditional financial analysis and decision-making methods are difficult to cope with today's massive and diverse data, and enterprise financial decision-making also faces various problems. Managers need to think about how to make decisions that are suitable for the interests of the enterprise in the era of big data.

In the era of big data, when making appropriate financial decisions, enterprise managers need to improve decision-making efficiency while also facing the risks related to big data. In the actual financial decision-making process, enterprises should fully consider their own circumstances and respond reasonably and effectively to various challenges.

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