

Prospect of Financial Analysis Under the Background of Big Data

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Abstract: With the continuous development of Internet information technology, data information is increasing and changing people's lives in various ways. The era of big data has come. In the era of big data, the financial analysis of enterprises has also changed. The most objective sign is that the data in financial analysis is completed effectively with big data, and the quality of financial analysis of enterprises has been improved significantly. However, the era of big data also brings challenges to financial analysis, which puts forward higher and new requirements for modern financial accounting. Based on this, taking the era of big data as the research starting point, this paper explores the application of big data mining in financial analysis, analyzing the opportunities and challenges faced by enterprise financial analysis under the background of big data, studies how enterprise financial analysis meets the challenges of the era of big data, probes into how financial workers should adapt to the needs of the development of the times, consistently innovate working methods and means, and find out the working path to the era of big data providers better services for the decision making development of enterprises.

Keywords: Big data Era, Financial analysis, Big data mining, Financial worker.

1. Research Background and Significance

1.1. Research Background

At present, in the context of continuous economic development in modern society, big data has been widely applied in people's daily life and production, playing a very important role in improving the quality of life and work, further promoting the arrival of the big data era.

In the era of big data, the correlation between data and information is becoming increasingly complex and diverse, which poses higher and updated requirements for modern financial accounting work. Therefore, modern enterprises need to adapt to the needs of the times, constantly innovate financial accounting work, and integrate big data information into their work. It also effectively uses the means and methods of Internet thinking and information technology to explore the problems existing in the process of financial analysis and management, and takes targeted measures to solve them, so as to better play the role of big data in promoting enterprise financial analysis and lay a solid foundation for the sustainable development of enterprises.

In the process of modern enterprise development, financial data is a very important core content, laying a good foundation for enterprise funds and reasonable operation. By strengthening financial analysis, financial data can be fully explored and utilized to reasonably solve the problems in current enterprise financial management, ultimately playing a very important role in improving the economic benefits of enterprises.

At present, financial analysis of companies mostly uses some financial indicators to reflect the operating status of the company. These indicators are divided into categories and sub items, starting as a whole, followed by parts, and individual exceptions. This type of analysis is correct, but in many cases, financial personnel may overlook the correlation of data, fail to grasp the essence of the problem, and thus affect the

accuracy and comprehensiveness of financial analysis. Firstly, the scope of financial data is relatively small, and problems can be easily and intuitively identified based on some financial indicators, which often leads to people ignoring deficiencies in management and operation; Secondly, the knowledge level of financial personnel is relatively limited, so it is impossible to analyze financial data from a deeper perspective.

1.2. Research significance

At present, society is in a data-driven era. The wave of big data development continues to rise. Data information has become a very valuable resource for enterprises. However, a series of activities operated by an enterprise will be saved and recorded in the form of data. The data shows explosive growth. Artificial work cannot reasonably complete data collection, management, and processing into useful information in a short period of time. Naisbit once said in "The Big Trend" that "although we are immersed in the ocean of information, we are very eager to obtain the knowledge we need.". From this sentence, it can be seen that what we lack is not data, but effective analytical tools for mining valuable information from massive amounts of data. In this situation, the application of big data mining technology is very necessary. In recent years, there have been many breakthroughs in the fields of algorithm optimization and data modeling, which have enabled the rapid application and promotion of big data mining technology in financial analysis. However, financial analysis is a very important part of enterprise management. Traditional financial analysis, due to its inherent limitations, makes it very difficult for financial personnel to analyze years of financial and industry data, and often cannot find the inherent connections hidden behind financial data. Therefore, it is particularly important to apply big data mining technology to financial analysis, extract useful information from massive amounts of information, and help managers make better decisions.

2. The Application of Big Data Mining in Financial Analysis

2.1. Overview of Big Data Mining

2.1.1. Concept of Big Data

At present, there is no universally recognized definition for the term "big data", which was first translated from "Big Data". In 2011, McKinsey&Company pointed out in its report "Big Data: The Next Frontier of Innovation, Competition, and Productivity" that "big data refers to data clusters that exceed the capabilities of traditional database software tools for crawling, storing, managing, and analyzing.". Although McKinsey's definition is subjective, the data it generates is exponentially increasing and much more complex than traditional data due to the continuous advancement of science and technology. Explosive growth means a huge amount of data. In today's rapidly developing society, if enterprises do not have enough ability to process massive amounts of data, they will quickly fall behind other enterprises in the same industry. And the complexity of data means that in the era of big data, data is diverse, including both traditional structured data and semi-structured and unstructured data. Therefore, in order for a company to gain sustained competitiveness and participate in market competition, it must improve its own capabilities to better process these "data" and achieve "value-added" of data.

2.1.2. Concept of Data Mining

Data mining refers to the non trivial process of revealing implicit, previously unknown, and potentially valuable information from a large amount of data in a database. Data mining is a decision support process that is mainly based on artificial intelligence, machine learning, pattern recognition, statistics, databases, visualization technologies, etc. It highly automates the analysis of enterprise data, makes inductive reasoning, excavates potential patterns from it, helps decision-makers adjust market strategies, reduce risks, and make correct decisions. Its goals include pattern distribution, concept learning, feature recognition, rule extraction, and prediction.

Analyzing data with specific associations in business activities and making appropriate speculations based on it can help enterprises optimize business operations, identify risks, and predict new business opportunities by further exploring potential relationships within massive amounts of data. The process of data mining can generally be divided into three stages.

2.1.3. Feasibility analysis of using data mining techniques for financial analysis

Nowadays, computer technology and big data technology are rapidly developing, and hardware technology is constantly updating and iterating, which provides a guarantee for the collection, processing, and storage of massive financial data. At the same time, big data technology can also standardize unstructured and semi-structured data. In addition, with the development of software technologies such as web storage and cloud computing, enterprises have better software support when conducting financial analysis. The development of software and hardware has made it possible to use data mining techniques for financial analysis.

On the other hand, companies will make every decision from a cost-benefit perspective, and using big data mining technology in financial analysis can greatly improve the efficiency of information utilization and effectively reduce

costs. When an enterprise carries out financial analysis through data mining technology, it can efficiently obtain a large amount of relevant useful data. The whole process can be fully realized through the Internet, connecting the Internet with the enterprise's information system, and does not need to invest huge manpower and material resources like traditional financial analysis. And in the later stage, the specific analysis is also carried out on the computer. Therefore, overall, using data mining techniques for financial analysis can achieve high returns through low-cost means.

2.2. The specific application of big data mining in financial analysis

2.2.1. Application of big data mining to financial indicators

Quantitative analysis method is the most commonly used method in traditional financial analysis, but it is limited to historical data and relies on the financial statements of the enterprise. After the financial statements of the enterprise are released, various indicators can be calculated. From this perspective, the quantitative analysis methods in traditional financial analysis have a certain degree of one-sidedness and lag. Without changing the calculation formulas of various financial indicators, applying big data mining technology to its calculations can efficiently comprehensively process a large amount of data in accounting databases and other business databases, achieving real-time analysis. At the same time, it can quickly compare indicators with other companies in the same industry, timely grasp the situation of competitors, and improve the competitiveness of its own enterprise in a targeted manner.

2.2.2. Application of big data mining in investment and financing decision-making

Investment and financing are a very complex process for enterprises. When making investment and financing decisions, enterprises need to comprehensively examine the internal and external environment of investment projects, using a large number of statistical tools and application models.

Big data mining technology can provide real-time investment environment and industry information for enterprises. Based on this, models established can help enterprises mine more high-value information, thereby ensuring the efficiency and accuracy of enterprise investment.

In the process of making financing decisions, enterprises should pay special attention to the amount, methods, and channels of financing. They not only need to understand the political, cultural, legal, and financial environment they are in, but also need to know the purpose and nature of raising funds. At this point, if the enterprise utilizes big data mining technology, it can not only break free from the constraints of the original preset model, use regression analysis models to accurately predict the future funding amount needed, but also use association models to discover the most suitable financing method for the enterprise, so that enterprise managers can make better decisions.

3. Opportunities and Challenges Faced by Financial Analysis in The Era of Big Data

3.1. Opportunities for Financial Analysis in the Era of Big Data

With the development and extensive use of big data, it has

become an increasingly important resource for enterprises. If enterprises want to gain higher market competitiveness and participate in market competition, they need to make good use of the opportunities brought by big data, use big data according to the specific situation of the enterprise, and promote the long-term development of the enterprise.

3.1.1. More convenient information acquisition

With the continuous development of Internet technology and China's economy, Internet related technologies have been widely used in people's lives and work, providing opportunities for the improvement of people's quality of life and the rapid development of enterprises. Meanwhile, the continuous development of globalization in recent years is also driving the process of enterprise information digitization. We are currently in the era of rapid development of big data, which provides possibilities for enterprises to obtain financial information more conveniently and conduct financial analysis more quickly and accurately. In this way, it is beneficial for enterprise managers to make accurate decisions and avoid financial risks. On the other hand, this also places higher demands on the data processing ability and risk prevention ability of financial analysis personnel. Overall, in the era of big data, financial analysts and enterprises can more conveniently access relevant information.

3.1.2. Faster information processing

In the era before big data was applied to financial analysis, financial workers usually used manual information collection and table preparation in their daily accounting processing. This not only brings a lot of work to financial personnel, but also greatly increases the possibility of errors in their work, greatly reducing the reliability of information. With the advent of the big data era, the way financial information is collected has undergone tremendous changes. While reducing the workload of financial workers and improving work efficiency, it also ensures the accuracy of financial information.

At the same time, enterprises can use big data mining technology to quickly identify associated and hidden information from a massive amount of financial information. Based on this, they can deeply analyze the filtered data information, efficiently complete data processing, and make sufficient preparations for the subsequent financial analysis work of the enterprise. Reasonable use of big data is also beneficial for enterprises to build their own databases. The construction of a database means that the processing of financial information has taken it to a higher level.

In summary, the arrival of the data age has provided the possibility for enterprises to quickly process financial information.

3.1.3. More accurate financial forecasts

The improvement of enterprise financial forecasting ability is based on the correlation of data mixing in the context of the big data era. In the context of big data, due to the strong correlation between data, it arises from specific economic behaviors, which are not purely economic and often directly related to social, human and other factors. Therefore, utilizing big data can improve financial forecasting capabilities [2]. With the application of various mobile terminals, enterprise employees can more timely understand the business situation and grasp "data-driven" financial information. For example, some enterprises' APP financial software internal accounts and WeChat official account directly use big data to track, evaluate and forecast financial data, which is conducive to

achieving a higher level of enterprise financial evaluation and audit. With the rapid flow of large-scale financial data information and the strengthening of adaptation methods, it is possible to make more accurate financial forecasts and plans.

3.1.4. Financial analysis and decision-making are more efficient

Traditional financial analysis work analyzes a single target object or data module, but in the context of big data, financial analysis can achieve overall data analysis rather than sample analysis, which can utilize the advantages of data to broaden analysis ideas, form analysis structures based on multiple models and correlation relationships, and improve the efficiency of data analysis and decision-making [3]. In the era of big data, financial personnel can make full use of big data to thoroughly investigate and analyze the industry market situation of enterprises, compare and determine the product positioning, production scale, financial management plan, etc. based on relevant models of financial data, help enterprises improve the efficiency of financial budgeting, financial management, and financial supervision and control, and make efficient financial analysis decisions. The constantly changing financial data is beneficial for financial personnel to more efficiently analyze and make decisions on production, sales, and other aspects of the enterprise at a multidimensional level.

3.2. Challenges faced by financial analysis in the era of big data

3.2.1. Security issues of data information

The biggest threat faced by financial data analysis in the era of big data is security issues. Computer network technology itself has insurmountable security challenges, and big data is based on the emergence and development of computer network technology, which poses challenges to the security of data information. With the continuous development of the economy and society, competition between enterprises is becoming increasingly fierce, and the relationship with competitors is also becoming more complex. If financial analysis extracts data in areas with low information security, it may lead to illegal activities such as leaking commercial secrets or stealing, which will bring irreparable huge economic losses to the enterprise. The security issues of data information involved in financial analysis need to be addressed from both technical and ideological perspectives. At the technical level, it is necessary to continuously strengthen the security of big data information storage and usage; At the level of consciousness, it is important to carefully protect the security of financial data usage and always pay attention to information security issues during various analysis processes.

3.2.2. Cost issue of data information

In the era of big data, obtaining data information requires a certain cost, and the extraction and use of internal and external data information within the enterprise will cause an increase in enterprise costs. If a company only focuses on information extraction and neglects benefits, it will also bring financial risks to the company. If enterprises want to use big data models to analyze and manage their finances, the cost of obtaining data information is an urgent issue that small and medium-sized enterprises need to consider. For example, for the maintenance of WeChat official account, if an enterprise wants to obtain information through official account, it needs to pay additional fees related to technology and personnel.

How should the enterprise deal with the relationship between costs and benefits. At the same time, screening big data information is also a high cost job. How to ensure the authenticity of the data information brought by WeChat official account and the resulting cost is also a challenge for enterprises.

3.2.3. Professional processing of financial data information

In the era of big data, enterprises use big data for financial analysis, which requires financial workers to not only understand the financial data information of the enterprise, but also screen the data. This places higher demands on the professional competence and work ability of financial workers. For example, the traditional financial analysis model utilizes relevant data from financial statements to analyze financial risks and other related content. In the era of big data, with the widespread application of management software such as ERP, it is not only used in financial analysis, but also in the supply chain management and market environment of enterprises, which poses a new challenge to the work of financial workers. Nowadays, there is a severe shortage of professionals who can freely utilize big data technology to complete financial analysis work with high quality, which leads to the low quality of financial analysis used by enterprises using big data.

3.2.4. Problems in financial analysis methods

Based on the actual situation, it can be known that when conducting financial analysis, enterprises mainly conduct strict analysis of financial statements. However, currently there are still some enterprises in China that use ratio analysis and comparative analysis methods, which can only reflect the economic activities of the enterprise when used, because in the process of use, they are often affected by the diversification of accounting treatment methods, resulting in some differences in the final reference data provided. In addition, when enterprises analyze and judge their existing financial situation, using previous data can also to some extent affect the authenticity of the final financial analysis results, leading to the inability to fully realize the value of financial analysis work.

4. How to Respond to The Challenges of The Big Data Era in Corporate Financial Analysis

4.1. Improve the financial risk warning mechanism

As an important management resource in the survival and development process of enterprises, it requires sufficient attention from enterprise leaders and managers. In today's era of big data, enterprises need to pay timely attention to financial problems that exist in their daily business processes. This requires actively establishing and improving a scientific and reasonable financial risk warning mechanism, which helps to reflect the financial risks of enterprises, and thus formulate plans in advance to better play a role in future development and avoid possible losses in production and operation. This is a preventive measure for enterprises and has a positive effect on protecting their financial security.

4.2. Strengthen the construction of financial internal control system

For the sustainable development of enterprises, internal

control plays a very important driving role. A sound internal control system helps to strengthen communication and exchange between managers and employees, ensure the transmission of relevant instructions, and ensure the reasonable and normal operation of various departments in the enterprise. Therefore, for enterprises, strengthening the construction of financial internal control systems can help them avoid financial risks.

4.3. Promoting the optimization and upgrading of financial information systems

A sound financial information system is of great guiding significance in the process of financial analysis and management. Therefore, for enterprises, it is necessary to actively promote the optimization and upgrading of financial information systems, and continuously repair loopholes in the system. At the same time, it is necessary for relevant financial personnel to maintain the accounting system and ensure its normal and orderly operation, in order to provide necessary support for enterprise managers to learn from decision-making departments and improve the efficiency of enterprise investment and operation management.

According to the actual situation analysis, the data information involved in the big data era not only includes letters, numbers, and codes, but also includes a very rich range of voice, images, and network logs. To address this phenomenon, a comprehensive upgrade will be made to the existing financial management software functional modules. In this way, valuable information can be smoothly extracted from a large amount of data, providing a very important foundation for financial management. Firstly, it is necessary to strengthen the development of financial data information keyword search engines and improve the efficiency of screening value information. The second is to strengthen the standardization and management of data information transmission ports, and carry out reasonable standardization from the beginning of information input, fundamentally ensuring that data information can meet certain standardization and unification requirements. It plays a very important role in improving the quality and efficiency of data information.

5. The Work Path of Financial Workers in the Era of Five Big Data

5.1. The Impact of Big Data on Financial Workers

In the era of big data information, every enterprise is passively or actively changing its traditional way of working. It is not an exaggeration to say that in the future development process, financial intelligent data will be increasingly applied to work, and many jobs that originally belonged to basic accounting service personnel will gradually be replaced. Therefore, in the era of big data, migrant workers must have a clearer understanding of their positioning and then undergo appropriate transformation in order to better serve enterprises.

In the era of big data, if enterprises want to continue to develop and further improve their development level, improving their financial management level is definitely the top priority. Traditional financial personnel's way of thinking is no longer suitable for the needs of enterprises in this era. With the passage of time, this phenomenon will become increasingly apparent, and they will be unable to create greater value for the enterprise. At this time, enterprises must

improve the big data literacy of financial personnel, develop their big data thinking, strengthen the training of financial personnel, increase big data and Internet training in the training, improve the professional quality of financial personnel, and transform the existing financial personnel of enterprises into composite talents. At the same time, when recruiting new employees, enterprises should also pay attention to recruiting more Internet big data financial compound talents, or jointly cultivate a group of such new financial talents with colleges and universities.

I think there are mainly two new types of financial personnel. The first type is what I call business oriented financial personnel, who are mainly responsible for data processing and then making corresponding reports on the analysis results of the data. The second type I refer to as strategic finance personnel, whose main job is to participate in internal or external strategic analysis and strategic management decisions of the company, and provide certain suggestions and guidance for decision-making of senior enterprises. [4]

For financial personnel, big data is a double-edged sword. On the one hand, it reduces the value of traditional financial accounting skills and even eliminates some financial personnel. On the other hand, it also generates new skills and talents. Therefore, in future work, financial personnel must actively adapt to the trend of the times, constantly learn new skills, overcome difficulties and challenges, seize opportunities, and constantly create new value.

5.2. The Impact of Big Data on Financial Work

The impact of big data on financial work is mainly reflected in its impact on financial analysis. For financial analysis, big data can have a beneficial impact. Firstly, big data is beneficial for improving the accuracy and completeness of corporate financial data. The traditional financial work model may ultimately lead to deviations in management decisions, as it filters out many useful information that cannot be recorded or expressed due to technical reasons. However, in the era of big data, it is entirely possible for this information to be recorded and transmitted to decision-makers, providing them with more complete and accurate financial analysis data information, and achieving more scientific and effective decision-making.

Secondly, the development of big data is also beneficial for improving the efficiency and reliability of enterprise financial budgeting. Traditional financial budgeting work is inefficient in data collection and processing due to technical reasons, ultimately hindering the development of enterprises. Big data technology can greatly improve the speed of financial budgeting, accelerate work processes, ensure work quality, and provide stronger support for the development of enterprises. Finally, the development of big data makes it easier for enterprises to extract key and effective information from massive data, establish corresponding databases, and further explore useful information for enterprise development. On this basis, enterprises can make better and more comprehensive assessments of risks, thereby reducing operational risks.

However, while big data brings many conveniences to financial work, it also brings many challenges to financial work. Firstly, information security in the era of big data is a very significant issue. The development of big data makes it easier for enterprises to access data, thereby increasing the risk of data theft and causing losses to enterprises. Secondly,

in the era of big data, as the amount of information that enterprises can obtain increases, once there is a significant difference in data demand among departments, the resulting differences in data extraction will increase proportionally. Over time, this may lead to a significant decrease in the efficiency of cross departmental work. Finally, financial work is done by people, and big data actually places higher demands on the quality of personnel. Once old employees cannot adapt quickly, it will also affect the development of the enterprise.

Big data is a double-edged sword for financial work, but it is more active and proactive for financial work. As for its positive returns, it depends on whether financial personnel can seize opportunities and overcome difficulties, and whether they can perfectly and organically combine big data with financial work.

5.3. How Financial Workers Manage Financial Work in the Era of Big Data

Financial management in the era of enterprise big data cannot be separated from the efforts of financial personnel. Financial personnel must be familiar with methods and have a clear and profound understanding of the value that big data can bring in traditional financial work. At the same time, they should have a sense of crisis. Once unable to keep up with the pace of the times, one can only be eliminated. The functions of future financial personnel will be more strategic and forward-looking. The speed and degree to which financial personnel accept changes in big data will determine the degree to which relevant financial work utilizes big data, thereby affecting the development of the enterprise.

It can be said that the emergence of big data has completely overturned previous financial management concepts in certain aspects. Financial work is not just traditional financial work, but it has led to the development of financial work in more fields such as research and development, sales, and logistics. Many jobs that were not originally part of financial work have entered the vision of financial personnel. Financial personnel are transitioning from simple financial accounting to management accounting, requiring them to master more or even all business department data, which can be referred to as "finance+". Financial personnel should apply the "finance+" management model and thinking mode, make reasonable use of big data as a tool, so that financial work can be carried out smoothly and efficiently, and ultimately provide satisfactory answers. Big data forces financial personnel to learn new knowledge, cultivate new thinking, use big data methods to analyze and make decisions on different plans and processes, bring different profits and risk costs to enterprises, and choose the best plan and process.

In order to better control financial work in the era of big data, financial personnel must liberate their minds, keep up with the development of the times, keep up with the development of technology, and constantly accept new advanced concepts. Financial personnel should learn to organize and summarize various data, and organize information that others may not easily obtain from existing data; Continuously learning new analytical skills to deepen financial analysis; Learn to break down data and distinguish between what needs to be conveyed to decision-makers and what needs to be conveyed to decision-makers. Communicate with relevant business departments through massive amounts of data.

In the era of big data, financial personnel must be in a more

proactive position, face challenges bravely, seize opportunities, and it is imperative for financial personnel to transition from financial accounting to management accounting. With the passage of time, science and technology will further develop. In order for enterprises to handle the relationship between big data, financial personnel, and financial work well, ultimately it is at the critical point of financial personnel that they must keep up with the times, start from the source, make financial personnel more compatible with financial work, make financial personnel a bridge for communication and coordination between big data and financial work, and enable financial personnel to play a key role in handling the relationship between the three. Only by promoting the collaborative integration of these three enterprises can they seize the opportunity in this fierce market

competition and further enhance their core competitiveness.

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