Intelligent Operation of Financial Department in XX Furniture Enterprise under the Background of Digital Economy

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Abstract. Driven by information technology and data capital, the scale and capital of modern enterprises and government organizations have grown rapidly. The traditional manual financial management model is no longer able to adapt to the rapidly developing economic rhythm. Modern enterprises and government organizations are promoting the intelligent application of financial management systems. However, in intelligent applications, there are still issues such as lack of financial information integrity, lack of timeliness, and low collaboration. How to help enterprises improve the comprehensiveness of financial management analysis, use intelligent information technology to improve the analysis of complex problems, provide practical guidance for enterprises to make comprehensive and accurate decisions, and reduce financial management risks. This article takes XX furniture enterprise as the research object, analyses the intelligent financial management process of the enterprise, and provides certain reference and reference for similar enterprises. The furniture industry is currently experiencing rapid technological updates and fierce competition. XX Furniture Enterprise is a technology and capital intensive enterprise that requires the financial management department to timely and accurately collect the financial status and relevant information of the enterprise, evaluate its financial decisions, and make accurate decision recommendations and risk level warnings based on financial data. This article conducts a survey on the financial department of XX furniture enterprise, points out the current situation of the financial department of XX furniture enterprise, and proposes methods to improve the financial analysis difficulties faced by the enterprise.
Keywords: digital economy; Digital management; financial management

1 Introduction

In recent years, the rapid development of artificial intelligence and big data technology has provided a feasible solution for the integration, real-time analysis, and control of enterprise data. At present, big data technology is widely used in enterprise financial management. By optimizing and upgrading financial processes through big data technology, it can greatly reduce the processing time of repetitive and cumbersome basic financial work, reduce the complexity of financial work, and improve the work efficiency of financial department employees. Through the autonomous analysis and decision-making of artificial intelligence, it can help enterprises achieve dynamic decision-making and provide support for modern enterprises to achieve intelligent management of financial data.

2 Financial intelligence systems can improve the efficiency of enterprise work

2.1 Financial intelligence systems can improve the accuracy of financial data collection

The investment, financing, and profit distribution activities of modern enterprises are all part of the work of enterprise financial management, which involves the reasonable allocation and use of enterprise funds. Reasonable monitoring and analysis of enterprise funds are all effective allocation activities for financial management of funds. The financial management behavior of enterprises can be divided into financial data prediction process, fund use analysis process, fund use control process, and fund evaluation process. Each process will generate a large amount of financial data. If relying solely on financial personnel to manually classify and organize, bind into volumes, the workload is huge. If it is a large amount of data for a large enterprise, relying solely on manual operation is very difficult, Because some financial analysis data shows geometric growth. If we rely on financial intelligence systems to complete the

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above process, it will be relatively easy. Now, we will create a data processing model based on the enterprise financial management process, use a combination of quantitative and qualitative methods to collect financial management data, efficiently and quickly classify financial information data, and improve the accuracy of financial data collection [1].

2.2 Financial intelligence systems can improve the predictive efficiency of financial management

In the era of information explosion, many effective information is fleeting, and how to make good use of this information is one of the important tasks for entrepreneurs and management. The possession of important strategic information cannot rely on speculation and estimation, but requires effective prediction and judgment of data, scientific and accurate decision-making. Behind these quasi decisions, accurate judgment and analysis of data by relevant professionals are required[2]. Enterprise financial management personnel can use financial intelligence systems to effectively organize enterprise business data, analyze financial data related to the content that management needs to focus on, and quickly provide corresponding financial data for management. This provides basic data and prediction support for managers to make decisions on inspecting content.

2.3 Financial intelligence systems can improve the accuracy of enterprise financial data evaluation

In modern enterprise management, both the management process and the management results are equally important. The management process not only includes the process of making every investment behavior or business decision, but also the evaluation of financial data as a part of the management process[3]. The use of financial intelligence systems can effectively evaluate financial data and improve the accuracy of ratings. In the management process, business decision-making is a dynamic process that is influenced by external environment or internal policy changes. Business decision-making also needs to be adjusted and changed at any time, and decision-making is a comprehensive element influenced by multiple conditions. By using intelligent systems, multi-dimensional evaluation and judgment of enterprise financial data can be carried out, generating multi-dimensional evaluation effects and providing support for managers when making decisions.

3 Background and Motivation of Financial Intelligence in XX Intelligent Furniture Enterprise

3.1 Basic Information and Financial Situation of XX Intelligent Furniture Enterprise

The intelligent furniture industry where XX intelligent furniture enterprise is located belongs to the high-tech industry of technology. There are high technical, capital, and talent thresholds. Smart furniture has developed rapidly in the past decade, and unlike traditional home furnishings, the smart furniture industry is currently in a growth period. The technology development speed of the intelligent furniture industry is fast, requiring significant research and development investment, and the research and development cycle of new technologies is long, with a certain degree of uncertainty in technology development. Although the entire smart furniture industry has great market potential, there is uncertainty about whether specific smart furniture can meet market demand and whether it can meet the actual needs of consumers. The smart furniture industry belongs to a talent intensive industry, attracting young, highly educated, and knowledgeable technology talents. From a financial management perspective, the intelligent furniture industry where XX intelligent furniture enterprise is located belongs to a capital intensive industry, with low investment returns, short cycles, and uncertain financial risks. The operating entity of XX Intelligent Furniture Enterprise was listed in 2005, with a market value of over 10 billion yuan at the end of 2010. The equity of listed companies is relatively dispersed, with strategic investor Xiaomi Company as the largest shareholder, holding only 12.23% of the shares. Mr. XX holds less than 8% of the equity among the actual controllers of the listed company.

Before implementing intelligent financial management, XX Intelligent Furniture Enterprise had established functional institutions such as the Finance Department, Audit Department, and Information Office. The finance and other departments have improved their work mode mainly based on manual processes and established a relatively complete departmental structure and management system. The financial department has complete rules and regulations, has certain financial processes, and has achieved a certain degree of informatization.

The financial management goals of XX Intelligent Furniture Enterprise have evolved from pursuing maximum profit and shareholder value to pursuing maximum enterprise value. The reason for the change is that the use of intelligent financial systems has reduced the data asymmetry between business and finance caused by data information asymmetry. After using an intelligent financial system, enterprise data becomes more transparent, making financial management data better serve the strategic decision-making of the enterprise[4].

3.2 Reasons for Financial Intelligence of XX Intelligent Furniture Enterprise

Although XX Intelligent Furniture Enterprise is a modern enterprise, its financial processing still relies on manual recognition, operation, and processing methods are not fully automated. Moreover, XX Intelligent Furniture Enterprise faces a large number of financial analysis and processing problems, and financial management analysis faces significant challenges.

3.2.1 Low business processing efficiency

Traditional reimbursement workers need to paste bills and related materials themselves, and require financial personnel to make manual judgments. After being manually reviewed by multiple leaders, this accounting method has lower efficiency, and if encountering reimbursement approval from other places, it will be more cumbersome. If encountering bank enterprise reconciliation, it is necessary to manually add collection and payment information. Both payments and receipts need to be manually claimed, resulting in low efficiency and high time and cost. The workload of verifying invoices and other information at the end of the month is enormous, and financial personnel generally feel that the workload at the end of the month is particularly heavy.

Another troublesome aspect of manual operation is that once there are errors in the data, a large amount of modification is required later on. Due to different people's understanding of the operation, the deviation caused by errors also varies, resulting in poor comparability and compatibility of reports for the same company and its subsidiaries. The third issue with manual operations is the slow speed and poor timeliness of obtaining financial information. If we trace past financial data, the cost is high and it is not very helpful for improving business activities. The forward-looking nature of the data cannot be compared, and there is a high risk of funding decision-making costs[5].

3.2.2 The financial process is too long

In larger companies, the organizational framework is complex and requires layers of approval. Employees find it very complicated to handle general affairs, and the approval leader must also remember their approval authority and corresponding approval items. If the approval process encounters unclear permission settings, there is a financial approval risk.

Long business processes may mask deep-seated issues such as high operating costs and long accounts receivable cycles, which may be exploited by the business team to harm the company's interests. Even if the enterprise has established a sound management system, when the branch is far from the headquarters, it may take advantage of the process time difference to harm the company's interests.

3.2.3 Incompatibility between various information systems

At present, many enterprises are equipped with many information systems, and each department is responsible for its own information system. Each data is summarized in the finance department, resulting in poor information transmission efficiency. Each department, especially the finance department, needs to spend a lot of time reviewing funds and allocating resources. The business and finance departments only consider their own interests and mutual suspicion, which is detrimental to the long-term development of the company.

3.2.4 Effective information may be filtered

After a series of information processing, the financial information of a company may have some important information filtered out. Many important information can only be fully experienced by comparing it with financial information when each department agrees to report and summarize. The allocation of funds by the finance department lacks foresight and cannot be matched with the development of the business department, which may result in the enterprise being at a disadvantage in competition and missing opportunities. The finance department is tired of fund accounting, attaches great importance to accounting request analysis, attaches importance to controlling funds, and does not pay attention to serving other departments. Most finance departments tend to adopt a rigorous style, sometimes emphasizing financial returns, and sometimes planning for business that deviates from strategic goals, all of which result from filtering out effective data.

4 The main analysis methods for using financial intelligence in XX intelligent furniture enterprises

Big data technology is based on various big data models, which analyze enterprise data and provide support for administrators when making decisions. Most analysis methods are based on statistical analysis[6].

4.1 Cluster analysis

The clustering analysis method first preprocesses the enterprise sample data, determines how many groups there are, what are the similarities between each group, and what clustering method is used to classify and group the enterprise data to obtain the clustering results. Cluster analysis is used in marketing decisions of enterprises, such as classifying users according to different categories, in order to develop different marketing strategies based on different user needs.

4.2 Decision Tree Analysis

The decision tree method is often used for classification requirements. Now, data is classified and the

classification results are described using the structural branches of the decision tree. The decision tree model provides a solution to determine under what conditions the target value can be achieved. The decision tree forms a tree like structure, with each node setting a problem and selecting the final judgment result.

4.3 Visual analysis

People may often see visual analysis graphics in corporate promotional videos, as data visualization has become an important tool for many companies to showcase their own strength and analyze business results. Data visualization refers to the presentation of measured data or digital information generated by calculations in the form of graphical images to users, enabling them to observe and extract the information represented by the data more intuitively. Data visualization consists of multiple graph sources, enabling people to observe data from different latitudes for deeper analysis.

The display of results mainly presents analysis results to enterprise management decision-makers in the form of data visualization, such as displaying the profitability of the enterprise in the form of trend charts or maps. It is an important foundation for achieving dynamic interaction between decision-makers and hardware tools. The traditional financial analysis model and decision-making plan formulation results generally appear in a static and variable form, with a relatively simple content and form.

5 Design Scheme for Financial Intelligence Platform

5.1 Structural Design Framework for Financial Intelligence Platform

The core architecture of the financial intelligence platform built by XX intelligent furniture enterprise is divided into three parts: financial data collection center, financial storage center, financial data analysis center, and financial decision-making center.

The information sources in the entire design platform design are divided into internal information and external information. Internal financial information comes from internal annual reports, information system data, internal information, etc. External information comes from government websites, other companies in the same industry, and other data. After collecting the data, analyze and process these raw data for financial storage. Utilize big data technology and data mining for data processing, analyze stored data, and present financial decision results to managers in a visual and graphical manner. The entire design is based on the structural design framework of an enterprise intelligent financial decision support platform using data mining and big data technology. The core architecture of the financial intelligence platform built by XX intelligent furniture enterprise is shown in the figure.

5.2 Financial Data Collection Center

Financial data is the cornerstone of enterprise management analysis, and the emergence of big data technology has helped enterprises to organize dispersed financial data and improve data efficiency[7]. By utilizing intelligent financial platforms, enterprises can better achieve financial data accounting, business data collection, organization, and real-time updates, as well as policy data collection, organization, and real-time updates. Ultimately, basic financial data with high timeliness and stability can be obtained.

The intelligent finance and taxation platform collects data through crawler technology and integration with internal information systems, including past financial data, business data, and policy data of enterprises. Financial data includes various financial statement data and Ge Hong's financial capability indicators. Business data includes data on suppliers, customers, production and sales of the enterprise. Policy data includes relevant data such as government policies and regulations, industry macro data, and industry regulations.

5.3 Financial Data Storage Center

After collecting financial data, it is uploaded to the financial storage data warehouse and classified into initial database, method database, and model database.

The data in the initial database includes data collected from the financial database, while the method database includes financial data analysis methods, financial decision analysis methods, calculation methods of financial indicators, and previous management decision records of managers. Enterprise managers can support new data analysis decisions based on their previous successful decision-making experience when making investment and financial decisions in the future. The model database includes various financial analysis data models, or financial trend models related to financial indicators.

5.4 Financial Data Analysis Center

Financial data analysis uses the financial data collection database as the raw data. After financial storage and processing, it analyzes and compares the operating data and financial status of the enterprise, providing data supported financial decision-making solutions for managers. The Financial Data Analysis Center consists of a report analysis module, a financial analysis module, a business analysis module, and a real-time market analysis module.

The report analysis module includes three parts: asset analysis, liability analysis, and shareholder equity analysis. Asset analysis analyzes the asset composition, monetary capital, inventory, and accounts receivable of a company. Debt analysis analyzes the debt structure, composition, and changes of a company. Shareholder equity analysis of the company's shareholder equity situation and changes in paid in capital.

The financial analysis module consists of profitability analysis, debt repayment ability analysis, operational ability analysis, development ability analysis, cash flow analysis, and capital composition analysis. Profitability analysis mainly analyzes the changes in asset return rate, asset return rate, and various profits. Debt paying ability analysis mainly analyses situations such as asset liability ratio, quick ratio, and current ratio. Operational capability analysis mainly analyses asset turnover rate, inventory turnover, and other situations. Development capability analysis mainly analyses asset growth rate and changes in shareholder equity. Cash flow analysis mainly analyses the changes in advanced inflows and outflows and cash from operating activities. Capital composition analysis mainly analyses changes in self owned assets and changes in current assets and liabilities.

The business analysis module consists of three parts: production and operation analysis, sales analysis, and inventory analysis.

The real-time market analysis module mainly analyses the analysis of industry competitors, market share, and real-time changes in industry information.

5.5 Financial Decision Center

The financial decision-making center consists of a business analysis decision-making module, an investment decision-making module, a financing decision-making module, and a profit distribution decision-making module.

As shown in Figure 1.The business analysis decision model includes decision plans for production, sales, and inventory.The investment decision-making module requires type analysis of investment projects, combined with long-term and short-term corporate goals, in-depth analysis of relevant indicators for investment decision-making, and delineation of investment decision-making risk levels. Considering the comprehensive factors of practical time, financial indicators, market conditions, and peer enterprises in project investment, predict and analyze the return situation after investment, and select the most suitable investment project based on the successful data of previous enterprises.

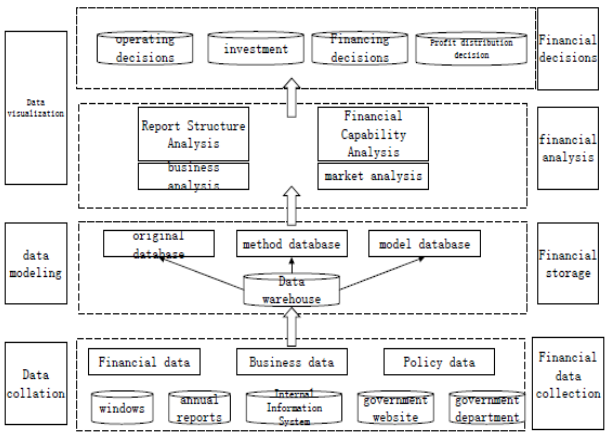

Fig. 1. Financial Intelligence Platform

The purpose of the financing decision-making module is to reduce the financing costs of enterprises and improve their efficiency. In the process of financing decision-making, enterprises can use big data technology to collect more information and resources, expand their financing channels, develop various financing strategies, and provide support for enterprises to choose the most suitable financing method.

The profit distribution decision-making module should determine the corresponding profit distribution system based on the economic and operational status, debt status, shareholders, and relevant industry regulations of the enterprise. We need to consider the cash flow, asset liquidity, and asset structure of the daily operation of the enterprise, as well as the economic strength and controlling rights of shareholders, and also consider the reasonable rights of creditors.

The financial function platform of XX Furniture Enterprise is ultimately presented through a data visualization interface, as visualization can provide managers with a more intuitive visual presentation effect, and real-time visualization presents data changes. The deep data information of financial data is presented in detail to managers. Using data from the financial repository, various quantitative indicators and hierarchical data are visualized using various graphics, and real-time data transmission is achieved through time and date slicers.

6 Conclusion

This article uses annual report data as the basic data for research, providing support for corporate financial decision-making and enhancing the research on the correlation between annual report data and financial decision-making. Secondly, utilizing the principles of visualization, relevant indicators of the enterprise are displayed to support financial decision-making and provide effective strategies for reference.

References

1. Gill Ron.Why Cloud Computing Matters to Finance[J].Strategic Finance,2011,(1):46 ~ 49.
2. LIAO H C, XU Z S. Consistency of the fused intuitionistic fuzzy preference relation in group intuitionistic fuzzy analytic hierarchy process[J]. Applied Soft Computing, 2015, 35:812-826.
3. Derven L.Advancing the Shared Services Journey Through[J].Training.2011,(9):58 ~ 64.
4. Demil B and Lecocq X. Business model evolution: Insearch of dynamicconsistency [J]. Long Range Planning. 2010.43（2/3）:227-246.
5. Zhou Z, Wei H, Xie H. Improved community structure discovery algorithm based on penalised matrix decomposition for complex networks[J].Microprocessors and Microsystems, 2020, 75(173):103047.

6. Ostovan S, Mozaffari M R, Jamshidi A, et al. Evaluation of Two-Stage Networks Based on Average Efficiency Using DEA and DEA-R with Fuzzy Data[J]. International Journal of Fuzzy Systems, 2020, 22(5):1665-1678.
7. Tala, Yimin C, Junmei L, et al. Evolution Analysis of Research Hotspots in the Field of Machine Learning Based on Complex Network[M].China:Artificial Intelligence,2021:238-245.