

# Research on the application of enterprise internal control and risk management under the background of digital intelligence

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**Abstract.** In the era of big data, the accelerated development of digital technology has become the leading force leading a new round of scientific and technological revolution. Manufacturing enterprises have also embarked on the journey of digital transformation. Under the digital background, the traditional risk management and control mode of enterprises is facing great challenges. As the external business environment and internal business process of the enterprise are becoming more and more complex, in the process of implementing internal control and risk management, there will be related problems such as inadequate data acquisition, low information processing efficiency and lagging information transmission. Therefore, how to find a way for enterprises to survive and develop in the context of big data is particularly important for modern enterprises to effectively avoid risks and achieve high-quality sustainable development. While enjoying the convenience brought by the big data system, enterprises also face many uncertainties. Based on the theory of internal control and risk management, this paper analyzes the defects of internal control and risk management of most enterprises in the market at present, looks for the causes of risk, and puts forward specific solutions to help enterprises improve their ability to resist risks and ensure high-quality and sustainable development.

**Keywords:** Digital; Internal control; Risk management.

## 1. Introduction

The internal control theory has been in the process of continuous improvement since its development, and its theory has been constantly improved in the historical experience and practice summary. Risk management will gradually become an important management tool in enterprise management, and will become an inevitable choice for enterprises with internal control management ability to further improve their management level.

In order to give full play to the decisive role of the market in the process of resource allocation, it is particularly important to vigorously promote the interconnection and open sharing of public data and eliminate information islands. Enterprises began to attach importance to the application of big data, and constantly refined the relevant contents, and regarded big data as an important tool to promote industrial and economic development. Throughout the development history of big data, big data is developing in the direction of resource-based, close and deep integration with cloud computing. European and American countries have promoted big data to the strategic level, but there are still many difficulties in the practical application of enterprises. For enterprise internal control and risk management, the application of big data technology is both a challenge and an opportunity. How to make good use of big data technology to help enterprise comprehensive risk management is a problem that every large and medium-sized enterprise should pay attention to at this stage.

## 2. Analysis of enterprise risk management dilemma under the background of big data

### 2.1 Low digital application capability

The number of information systems applied by the enterprise is large and the scope is wide. The synchronization of logistics, information flow, capital flow and workflow of the main business has

been initially realized. While the process operation is carried out, the information communication channels have been widened and the sharing of information has been enhanced.

However, although enterprises vigorously promote information communication under digitization, in the process of actual operation and application, there are still problems of information transmission. The use of various systems by enterprise personnel is still at a low level, and it is only limited to the skilled operation and information communication of the enterprise's regular activities. Only a small part of the system functions are applied, and the convenience brought to enterprises by digitization is not fully brought into play. The information platform initially built by the enterprise is used for information management, but its application is mainly reflected in the collection and management of the supplier's credit status, and it involves less other internal and external information.

Due to the unimpeded information transmission, the enterprise will have poor ability to cope with emergencies or special business, and weak emergency response ability to cope with internal and external environmental changes, which will increase the enterprise's operation and management risk to a certain extent.

## **2.2 Risk information transmission lag**

When conducting risk management, enterprises mostly summarize the experience of the events that have occurred in the previous period, and input the relevant historical data and standards into the system, thus forming a new risk early warning mechanism to prompt the risk early warning. Although the enterprise makes use of the data information in this process, it mainly uses the data information system to collect and transfer data, and has not yet extended it to the data integration and analysis process. Such operation does not really play the role of risk early warning, and the enterprise's risk management lags behind.

Due to the lack of independent risk management departments to carry out special risk management work, the enterprise has a serious lack of activities such as collection, classification, summary and sorting of risk information. Risk is accompanied by business. Risk information is scattered in various business systems, and there is a lack of horizontal communication and overall planning among systems, forming a "data chimney". As a result, the collection of overall risk information is incomplete and lagging. The corporate governance cannot follow the concept of risk portfolio view and lacks an overall analysis of the enterprise's risk situation.

In addition, the enterprise management can not get the feedback of risk information in time, and can not formulate risk prevention policies from a comprehensive perspective to reduce risks. There are large loopholes in risk monitoring and feedback, which hinder the internal control and risk management activities. The backwardness of the risk feedback mechanism will cause the enterprise to deviate from the actual situation when conducting risk management, and cannot timely listen to the opinions of various business departments to make adjustments. The delay in information communication will affect the business activities of the enterprise.

## **2.3 Poor internal horizontal communication**

The horizontal communication within the enterprise usually exists in the communication between the top management, the middle-level departments in the organization and the general employees in work and thought.

From the above analysis of corporate governance and culture, we can see that the enterprise does not set up a risk management department in its organizational structure, nor does it have a full-time risk section. This lack of organizational structure will lead to the lack of a carrier and organization for risk information communication, which reflects the lack of risk management awareness of the management level, including the board of directors, and the lack of clear commitment and judgment on risk management and risk preference. Unclear authorization leads to decentralized risk control and poor internal communication. Due to the unclear definition of functions, it is likely to lead to the shifting of responsibilities between departments and the reduction of efficiency, which will increase the risk. Poor horizontal communication will lead to excessive concentration of power, management

fault and communication barrier of the group leaders; In the sinking of authority and responsibility, the delegation of authority and post responsibility of risk management business were not clearly defined, which caused resistance to horizontal communication.

In addition, there is no clear information communication mechanism within the enterprise, the lack of mechanism to guide employees to develop good habits, and the lack of efficient horizontal communication will weaken the coordination and linkage between various departments, and it is difficult to give full play to the overall efficiency. At present, most of the communication of enterprises is only to say what they want to express, without actively seeking an efficient information communication platform to ensure that their descriptions are correctly understood. Such communication is inefficient and lacks positive and effective feedback.

### **3. Suggestions on enterprise internal control and risk management under the background of big data**

At present, the internal control and risk management carried out by manufacturing enterprises should not only closely integrate with the era background of big data, but also closely follow the current relevant national policies and conform to the trend of emerging technology development. While solving the internal problems of the enterprise, we should also focus on the establishment of the social image of the enterprise and how to realize the social value of the enterprise, i.e. "cultivating nature" and "cultivating morality".

#### **3.1 Improve the risk isolation mechanism of upstream and downstream enterprises**

"Big smart cloud" refers to big data, artificial intelligence, mobile Internet and cloud computing. Due to people's continuous uptake, analysis and utilization of information and data in the current era, people call it the era of "great wisdom moving to the cloud". At present, the risk isolation between enterprises is mainly reflected in the risk isolation between supply chain enterprises and core enterprises. With the help of technical means in the era of "big intelligence moving to cloud", manufacturing enterprises can use data from all parties and supply chain finance to realize effective risk isolation and help upstream and downstream small and medium-sized suppliers obtain bank loan support. Under this measure, the upstream and downstream enterprises of the supply chain can not only bear some capital risks for the core enterprises, but also help the upstream and downstream enterprises of the supply chain to obtain bank loans smoothly with the support of their own credit. The technical means under the "big smart cloud" environment can help itself master the complete core data on the supply chain in real time, so as to control risks more effectively. It can be seen that the supply chain finance under the "big smart cloud" can effectively isolate the risks between the supply chain enterprises and the core enterprises, prevent the risks from expanding from "points" to "areas", and avoid the structural and subversive major business risks of enterprises.

#### **3.2 Jointly build enterprise network to promote information sharing**

Building enterprise networks together and realizing knowledge sharing can speed up the flow of knowledge among enterprise networks to achieve the goal of innovation and integration of information resources. At the same time, the construction of enterprise information network can expand the knowledge capacity of individual enterprises and improve the innovation ability and competitiveness of enterprises. Through this initiative, manufacturing enterprises can establish and improve the knowledge information sharing platform to realize knowledge exchange and resource sharing. With the help of advanced and convenient technologies provided by the big data era, establish and improve the knowledge sharing platform, optimize the internal enterprise system of the network, define the internal enterprise strategy of the network, maximize the use of existing resources, give full play to the potential of information resources, and make effective use of various internal resources. Managers of enterprises can improve the accuracy and efficiency of knowledge and information resource sharing by building websites and using social software. In addition, the information

resources are effectively transmitted through the platform. Effective communication can not only timely inform and transmit the discovered risk and hidden danger information, but also ensure smooth information communication between different departments, enable relevant departments of risk management to know the latest situation, and provide new ideas for the situation faced by relevant business departments. Therefore, enterprises can enhance communication by building a knowledge and information sharing platform, and can also strengthen communication by means of daily contact with local enterprises.

### **3.3 Blockchain helps enterprise risk management innovation**

Blockchain technology is a derivative under the big data era and a product after the big data era. In the blockchain, the mutual integration of data in different scenarios will further expand the richness of data in the blockchain, that is, the data scale will expand with the increase of blocks. Due to the characteristics of blockchain, it is innovative in the application of risk management.

Innovation of supply chain management mode - the importance of supply chain management for manufacturing enterprises is self-evident. In the long future, it will be one of the important directions of traditional and emerging manufacturing enterprise management. However, if the enterprise supply chain is too long, it will lead to the increase of the operating cost borne by the enterprise, affect the stakeholders of upstream and downstream enterprises, and inevitably lead to the difficulty in controlling the product quality. Therefore, enterprises must focus on monitoring the key points in the supply chain during the operation process to ensure that problems can be traced back to the source in time. Because the information in the blockchain is non tamperable and highly transparent, the blockchain has the function of preventing the risk of information missing, being tampered with and hidden in the supply chain. In addition, in the traditional supply chain management, there is a phenomenon of information asymmetry. The order volume of upstream and downstream customers fluctuates with the extension of the supply chain, which will cause the "bullwhip effect" that hinders the operation of the supply chain. However, the data information of all nodes in the blockchain is the same and is open to the whole hospital, so the negative impact of information asymmetry can be eliminated and the operating cost can be reduced.

Improve the efficiency of financial management - due to its inward nature, financial management puts forward higher requirements for the confidentiality, accuracy and integrity of data and other information, and blockchain technology is safe. Its important characteristics such as accuracy, stability and non tamperability make it widely used in the fields of enterprise operation and financial management. At present, many enterprises have widely used sap and other systems, which can automatically handle complicated accounting problems, but it needs to spend a lot of money to update and maintain the system. The Distributed Accounting Technology of the blockchain can effectively solve these problems. It is decentralized, non tamperable and highly consistent among the blocks. It can make a qualitative leap in the efficiency of accounting processing and the automation of the process, and ultimately achieve the goal of reducing operating costs. In addition, by using the innovative achievement and technology of electronic block chain application of special tickets and integrating it with the management accounting work of enterprises, the circulation efficiency of special tickets information can be greatly improved, and the tax handling cost and operation management cost of enterprises can be saved. The promotion of electronic block chain application technology for special invoices can accurately monitor invoice information and improve the tax compliance of the whole industry.

Improve the quality of Internal Audit - blockchain technology makes it possible to implement efficient audit work. The verification of blockchain technology information is realized through the block of each node and its internal transaction information, so that the enterprise can make an accurate judgment on the integrity of the ledger information of each node. Through the internal system authority, auditors can easily obtain and query the effective information on the blockchain, so as to judge whether the corresponding measures are effective and reasonable and make timely corrections. Through the above means, auditors will obtain sufficient and appropriate audit evidence in a timely

and efficient manner, which will undoubtedly greatly improve the efficiency and effect of audit work. The blockchain technology endows data with liquidity, and solves the problem of information islands between enterprises and industries. Through the establishment of a horizontal data circulation mechanism, a collection of industry and enterprise data is formed, so as to effectively reduce the risk caused by information asymmetry within the enterprise. The effective use of blockchain technology by manufacturing enterprises can reduce their own risks and help enterprises strengthen internal control and risk management.

#### 4. Conclusion

With the progress of social economy, digital transformation and application have been expanding and deepening in enterprise management. High and new technologies such as big data and cloud computing have become important tools for enterprises to make decisions and judgments, and are affecting the development lifeline of enterprises all the time. Whether an enterprise can succeed in digital transformation and make efficient use of digital technology depends on the company's development scale, business type, self qualification and governance mode. In order to promote the deep integration of artificial intelligence and big data with audit, internal control and risk management, enterprises should continue to strengthen digital construction, build a big data analysis platform, make full use of the value of data assets, realize data mining by increasing the investment in cloud computing, big data and other technologies, extract the information needed by enterprises, and strengthen risk management. At the same time, extract valuable information for the enterprise, so as to optimize the strategy, product optimization and market business of the enterprise, so that the enterprise can adapt to the development needs in time in the trend of reform and innovation, and will not be eliminated by the market.

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