Research on the Innovation and Development of Financial Management in the Era of Big Data

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ABSTRACT

Financial management, as a crucial management tools and management means, Big Data has brought a rare opportunities for its innovation and development, which urges financial management to make changes in many aspects and for the sake of enterprises’ development. In this paper, we are researching on the innovation and development of financial management in the era of big data. On the base of the analysis of big data, we expound the new situation of the development of financial management, and summarize generality the innovation of the financial management. Finally, we point out that how to combine financial management with big data, so as to complete the tasks assigned by the new environment.

INTRODUCTION

With the advent of emerging information technology, such as cloud computing, Internet of things, and the widespread use of application patterns such as diversified social network, global data show explosive growth. Surprisingly, it was unheard of before. Nowadays, academics and practitioners has paid more attention to big data and its applications. It has become the focus of current research. As an important management activity and management means, which strength management to improve business efficiency. What kind of development opportunities the financial management will have? What kind of innovation and change it will make? How to effectively combine big data with financial management for the enterprise to create and manage value? This article mainly discusses these issues.

ABOUT THE “BIG DATA”

The words “Big Data” are first appeared in the IT industry. In general, big data refers to a large data acquisition, which cannot use traditional IT technology and the hardware or software tools to perceiving, processing, managing and servicing data within tolerable time. Scholars at home and abroad have lots of discussions on the

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definition of “big data”, which in a variety of forms, but mostly definitions are according to the characteristics of large data itself. In this paper, “Big data” refers to a variety of information resources, which consists of a series of date of huge volume, fast flow velocity, complex and diverse, and these data are of important value for enterprises to implement effective management. It can be easily represented as: big data = huge amounts of data (massive amounts of transaction data, massive amounts of interactive data and huge amounts of handling data) + complex data. This definition reflects the big data characteristics of “4 V” (Volume, Variety, Velocity, Value) and “1 C” (Complexity), that is generally recognized by the academic circles.

In the era of big data, all the information that around our human beings cannot keep the traces of the data. The most important thing is that these data, which are of huge number and high-speed and various data, can be stored quickly, conveniently and effectively by the new information technology, including hot cloud computing technology. And they can be analyzed and calculated at any time. In fact, in this age everyone and every organization are involved in the data producing, sharing and application. The era of “Big data” is becoming a reality!

THE NEW OPPORTUNITY OF FINANCIAL MANAGEMENT IN THE ERA OF BIG DATA

Enterprise Financial Management is Welcoming the New Developing Opportunities in the Era of Big Data.

At present, big data technology has becoming another effective technology and means of enterprise management. From the point of the enterprise organization, big data is reconstructing “enterprise wisdom”. Through the mining of data on the value of information, it is reconstructing the organization’s business philosophy, commercial operation mode and the function of the products and services incredibly. In big data era, enterprise financial management is given new opportunities. They can use the data to collect, store, process, analyze and extract useful information to exploit and make use of, so that to realize the creation of enterprise value. This is the important strategic significance of using big data. Based on the advantage of big data, enterprise can effectively use modern technology to collect, process and exploit its value. It plays an important role in modern enterprise financial management and provides an important way for enterprises to create more development opportunities and commercial value.

The Effective Integration of Big Data and Financial Management

When big data collides with business management, the role of financial management is particularly evident, making the importance of financial management and application value of great attention.

The effective integration of big data with financial management, have changed quite a bit in thinking, business and management. The idea of “Anything can be quantified” and cloud computing technology, which advocated by the big data, have brought tremendous impact on the management operation concepts and business organization process. The concrete performance is in four aspects:
(a) It helps enterprises to obtain effective information in time, and promote forecast ability of enterprise’s financial situation in the future, operating results and cash flow prospects.

(b) The popularity of mobile internet and Social Networking Services (SNS) has narrowed the gap between enterprises and customers, enabling enterprises to quickly understand changes in customer needs, product differentiation and innovation, provide more targeted services, so as to help them seize the favorable business opportunities.

(c) It makes the enterprise’s operating plan, budget and decision-making more accurate, and thus help to strengthen the process control, so as to complete business goals better. Besides, it also establishes a scientific performance examination system combine with process control to draw lessons from the past.

(d) The use of big data can help accountants to greatly improve their work ability and make their work efficiency, and promote their own development.

In short, the extensive use of big data, not only can create value to improve management quality, to enhance management efficiency, but also can enhance the core competitiveness of enterprises. It launches a broad development prospects for enterprises financial management.

THE INNOVATION AND DEVELOPMENT OF FINANCIAL MANAGEMENT

In recent years, scholars began to explore the effective integration of financial management with big data, analysis the challenges and opportunities in the process of integration, looking for the future development direction of financial management. This paper argues that the arrival of the big data era makes enterprises pay more attention to the analysis and application of large data, which has a profound impact on the financial management, and thus effectively promotes the innovation and development of financial management. It sends a signal that the traditional financial management must make changes under the big data. To be specific, in the process of organizational development of enterprises, financial management should take advantage of big data and the processing technology to change the thinking mode, adjust the scope of services and broaden the focus of services, extend and enhance its management functions. It is important to make use of large data processing technology to adjust the way it works and the content it contained, so as to sufficiently exert the role of big data in the financial management of enterprises.

The Change in the Mode of Thinking: Starting From Finance to Integration of Finance and Business

In Big data era, financial management thinking is also changing. We argues that the financial management data thinking transformation is manifested in analyzing, synthesizing, judging and reasoning from data quantity, complexity, timeliness and related value in the work of data collection, storage and process. The traditional financial management system focuses on the accounting activity. Enterprise in accounting, it only record the production and business activities in the form of financial information, which tend to ignore the production status of enterprises, production processes, material needs and external market development. In addition, the traditional
financial management system is a regular reporting system. In a relatively stable situation, it can meet the needs of managers to use the existing data to predict the future development of enterprises, but the obvious lag is a big criticism. The amount of information and its accuracy had increased sharply in the era of big data. The financial management personnel can collect the relevant data to in-depth analysis and mining, establish their own integrated information system to improve the financial management of real-time and applicability. It will help enterprises to grasp the market trends quickly, make decision in time, avoid market risks effectively and improve economic efficiency and enterprise value.

The change on the function of financial management: A shift from the service-oriented to the management and control-oriented

In the era of big data, function orientation of financial management has shifted from a technical method which in the service of internal personnel to the decision support system which in the service of the stakeholders. In the new business environment, especially the extensive use of big data, the function of financial management have been expanded. It requires that financial management is no longer simply to provide decision-making service for management, but also hope that it can directly participate in enterprise management of decision-making. It has become a continuous service system to improve the value of corporation.

The change in data processing

IN THE ASPECT OF DATA COLLECTION

In the traditional financial management, the sources, channels and platforms of data collection are relatively simple, with few data types and general structured data. The method and content of data collection has changed in the era of big data. Financial management is becoming increasingly diverse. Today, data gathered in a variety of ways in all aspects of e-commerce, Internet of Things and social network, such as the picture, audio, video, document and network log, etc. And most of them are unstructured or semi-structured data, which is essential for business management.

IN THE ASPECT OF DATA STORAGE

In the era of big data, enterprises should actively take the initiative to complete the transformation from traditional relational database management system to big data warehouse management system. Traditional databases’ performance is disappointing due to the huge amounts of data and various types of data, especially in the aspects of mass data demands of high storage capacity, high availability and high expansibility. There are performance bottlenecks in the complexity of operation and high cost. In order to realize the integration and processing of massive data in a short time, enterprise should establish a large data warehouse, through which to extract the effective data and tap the value of data fully. In addition, the traditional database model hinders the sharing of information among various departments of enterprises, resulting in "information island" in different business systems/operation system. In the era of big data, the traditional closed-end management model will be break down gradually.
Through the establishment of enterprise internal integrated data information network, it can accelerate the free transfer and flow of information, and can share information.

IN THE ASPECT OF DATA PROCESSING, ANALYSIS AND UTILIZATION

The data processing method of financial management has been transformed from the traditional method to the big data processing technology. After the large data warehouse integrates and organizes the massive data, the user can directly process the stored data, analyze and extract the valuable data to make use of it. This is the process of data mining. The traditional data processing technology, which is based on the result, single structure, sampling for a long time, is no longer suitable for data mining under big data. Today, it is data processing, which based on the process, the whole and real-time that is the core demand of the mining of the data value.

In addition, how to screen out the effective data quickly and find out the correlation from the chaotic data? This is a key step in data processing. The traditional method is to convert unstructured data into structured data, then processing them; this would weaken the timeliness of information in a certain extent, and reduce the efficiency of data analysis. Perhaps most alarming of all, some potential important information may be missing during the conversion process. But in the big data calculation mode, through the implementation of metadata management, standardization of the system data source, unified standards of data service and data caliber, establishment of a metadata model and a fine data quality audit model for statistics; we can achieve closed-loop management of data quality, and on this basis to achieve visual management and meticulous management. At the same time, the data can be stored in the center of the Internet, which can not only improves the enterprise data storage capacity and analysis efficiency, but also realize the depth of data mining and improve the value of data.

ON THE USE OF INFORMATION TECHNOLOGY

In the financial management, the efficiency and quality of financial management has been greatly improved with the help of information technology. With the arrival of big data era, methods of financial management have undergone important changes. The previous processing methods of information and data have been difficult to adapt to market and enterprise development. In big data era, enterprises will focus on large data processing on the basis of ensuring the effectiveness of the data processing and storage to improve the timeliness, accuracy and comprehensiveness of the information as far as possible. In addition, the operation of information technology has also changed due to the changes in the use of information technology.

The Changes in the Mode and Content of Financial Management

THE WORK OF FINANCIAL MANAGEMENT

Traditional financial management focuses on the results of the data analysis. It cannot have a comprehensive understanding of the enterprise. In big data era, the whole process and full dynamic analysis are the most important for financial management. Through the application of big data, financial management can not only analyze the results, but also carry out a series of management, such as re-identify key success factors in the process, correct deviation of key indicators, analysis discrepancy
and find out the key reason, revise plans and programs, and reconfigure the core elements of resource. From this perspective, financial management can manage to conduct a comprehensive analysis with the application of big data in the entire process, so as to effectively enhance the processing ability of enterprise, and provide more reliable and more valuable data for long-term development of the enterprise.

THE EMPHASIS OF FINANCIAL MANAGEMENT

The traditional financial management is controlled financial management, it emphasize on tactical management, and just simple for management. Besides, it is lack of consideration of external factors and value chain, such as market environment, competitors and customer needs, so it is not conducive to the development of enterprises under the new situation. The application of this new technology (big data) has created new management tools and business models, making the traditional "integration of finance and business" and logistics, capital flow, information flow "three-in-one" truly possible. It is not only to put a large number of financial information and non-financial information together, but also to improve their reliability and value through the processing of this information, in order to help companies make scientific development decision. In short, this change is significant for the development of enterprises, making it win the initiative, implement strategic development, change management mode and promote enterprise's core competitiveness.

THE TRANSFORMATION OF MANAGEMENT REPORT

The previous management report is the analysis of cost structure, which is based on the DuPont model. It emphasizes a list of various ratios, and also exposes some problems, such as internal standard simplification, lack of comparison data between the internal and external industry, etc. Therefore, it is difficult to evaluate the reasonability. In the era of big data, Internet thinking make changes in organizational structure, responsibility accounting has played an important role in the financial management. It requires financial management gather small data within the enterprise projects with the help of the Internet, make use of new tools and methods to mining all kinds of information (financial and non-financial), provide different reports for different users, fundamentally to improve the connotation and value of internal report and establish long-term competitive advantage for enterprises. Thus, the internal management report that based on big data, should focus on the strategy, and pay more attention to the relevance of various data to enrich the content of the report. At the same time, it should pay attention to the real-time report, in order to maximize the value of financial management.

THE CHANGE IN TERMS OF TALENT CULTIVATION

In the era of big data, what companies needed is the professional talent, who masters the professional knowledge and skills of big data, and knows how to use the big data analysis tools. With these talents, enterprises’ capacity of mining the effective data and the capacity of analysis and processing information can be fundamentally improved. It also helps enterprises to innovate business decision-making methods to make it efficiently and scientifically, leading enterprises continue to develop forward. All of these require enterprises to strive to build a professional interdisciplinary talents who are specialized in data mining and data analysis. It also ask enterprise to attach
importance to the integration of the financial professionals' knowledge, and pay more attention to the cultivation of talents' ability to work together, in order to improve the comprehensive ability and management level of financial management.

CONCLUSION

In conclusion, the financial management in big data era needs to innovate and make changes in order to adapt to the requirements of the development under the new situation. We argue that financial management in the future will be the management activities that aim at the maximization of value of the enterprise, take data processing method as the main means, bring financial data and non-financial information together, and provide support for enterprises to promote value creation ability. The pace of Big data urges financial management to move forward, those who steeped in the traditional financial management mode and refused to make innovation and changes and will be defeated eventually in the fierce market competition. Therefore, on the one hand, enterprises must fully recognize the shortcomings of traditional financial management, and fully understand the innovation and changes of financial management in the era of big data. On the other hand, management and professional personnel need to participate in learning big data knowledge and technology actively, and constantly improve their own professional ability and management capabilities to adapt to changes. And finally realize the effective application of large data in financial management.

Finally, we must note that there are both opportunities and challenges in the wave of large data. For instance, some companies do not realize the role of big data in financial management, the storage space of financial management information is insufficient, the security of information is still not guaranteed, the technology of information analysis needs to be improved, and so on. Enterprises need to seize the vast development opportunities of financial management, grasp the current situation for development. Meanwhile, enterprises should take effective measures to cope with the challenges actively, and realize the goal of “great-leap-forward development”.

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