Research on the Innovative Management Mode in Enterprises during Big Data Era

Mingyu Cai*

1College of Textile, Donghua University, Shanghai, 201600, China
2Corresponding author’s e-mail: 834585941@qq.com

Abstract. In China, information technology and network information technology has developed many years, people can get massive information in time and quickly on the network platform. During the big data era, enterprises must innovate management work in combination with the current situation all over the world, so as to make enterprises develop better. To be able to adapt to the big data era, managers need to consider how to innovate management from all aspects. In order to deal with the challenges that existing in the work of Chinese enterprises during the big data era, we proposed a optimization processing method of the enterprise management mode, hoping to be helpful for the enterprise managers to innovate the management mode.

1. Introduction

Big data (BG) could be broadly understood as a collection of so much data. It is a technology that collects, manages, analyzes and integrates data through data software within a period of time. In order to effectively handle daily work during BG era, enterprises also introduce BG technology processing in their work. In this era of great change, mobile Internet and e-commerce have emerged. In order to innovate the management mode under the background of BG, enterprises need to understand the definition of BG first, so as to better carry out the innovation of management mode. With the BG rapidly developed, the service market of China’s BG has been greatly promoted by the stimulation of BG. From 2010 to 2019, the growth rate has reached nearly 10 times, and according to the prediction, the trend is still rising. During BG era, the pace of social development is faster, which also challenges the development of Chinese enterprises [1-2].

2. Challenges faced by enterprises during the BG era

The main challenges for enterprises during the BG era are: insufficient attention of enterprises to management, lack of intelligence in enterprises, enterprises do not have BG concept and BG storage security, as shown in Figure 1 [3-4].
2.1. Insufficient attention of enterprises to management
Many enterprise managers know BG, but they don't realize the importance of BG to their work, so they don't adjust their work according to the background of BG. Owing to they don't pay attention to BG technology, some great unknown dangers may exist in the development process of enterprises.

2.2. Lack of intelligence in enterprises
The great progress of data technology has become the catalyst of artificial intelligence (AI). With the exponential evolution of AI and in the steps of repeated inspection and self-correction, the efficiency is far beyond the efficiency of artificial work. However, due to the lack of understanding of business intelligence in most enterprises in China, there is no good use of business intelligence in the actual work of enterprises to assist the development of enterprises, which leads to many enterprises can not track market fluctuations in time and make effective response, which undoubtedly making the development of enterprises fall into a bottleneck.

2.3. Enterprises do not have BG concept
Enterprises could not effectively deal with huge amounts of data, which resulting in great impact on their work. At present, the enterprise data is mainly in three forms: structured, semi-structured and unstructured. At present, the largest proportion of enterprise data is unstructured data. Therefore, if enterprises want to occupy a place in the competitive market, they must standardize, integrate and unify the unstructured data scientifically and reasonably.

2.4. BG storage security
At present, many enterprises fail to keep up with the pace of market development in time in the process of development, which leads to the slow progress of data security work at this stage, and there are very big hidden dangers in data security. The main reason for this is that computers are distributed in a decentralized state, but most enterprises do not realize this problem in time. If the distribution state of computers is not timely Adjust, then it is likely to make the enterprise information be stolen, causing a serious blow to the enterprise [5-6].

3. Innovation and optimization of enterprise management mode in BG environment
The enterprise management mode is mainly to add BG center and cloud computing services compared with the original management mode. It mainly uses BG and cloud computing technology to integrate management information and data processing system of the enterprise to realize online enterprise management, which helps the management pay attention to the enterprise dynamics at any time and make efficient decisions. The enterprise innovation management mode can integrate all internal and external data useful for enterprise decision-making into BG center according to basic management
principles, and process, store, analyze and mine valuable information for enterprise management. The operation framework is shown in Figure 2.

![Figure 2. The operation framework of enterprise management innovation mode in BG era](image)

1. Enterprise data acquisition layer. The acquisition of traditional enterprise management information mainly comes from the internal business data of the enterprise. The original data is input from each system and summarized into the general data report. The enterprise management innovation mode based on BG and cloud computing mode integrates the enterprise historical data and current enterprise management information into the BG center. The data source of enterprise is more extensive, providing sufficient data foundation for the next stage of enterprise management information cloud computing.

2. Enterprise data processing storage layer. This layer is the most important part of the whole framework. Through the use of ODS, DW / DM, OLAP technology to analyze enterprise BG, we can obtain useful information for enterprise management, transfer the data to the next stage and show it to the enterprise through report tools, analysis tools, mining tools Business manager. In the data processing and storage layer of Figure 2, the cloud computing platform is mainly used to realize the enterprise to fully share cloud services, so as to realize the seamless connection of information of the enterprise and the integration of enterprise advantage resources [7-8].

3. Enterprise data output layer. After the enterprise data is mined and analyzed by the cloud computing service platform, the analyzed data is stored in various method databases and model databases, and then transferred to the report system, which is displayed by the report tools, analysis tools and mining tools. These analyzed data will affect the ultimate policy decisions made by enterprise managers.

4. Conclusion
The emergence of BG industry has brought huge business opportunities to Chinese enterprises, and also made Chinese enterprises need to deal with huge challenges. How to survive in the competitive market will be the key issue for future enterprises. In the BG era, enterprises need to innovate with the management mode of BG technology, and combine BG technology with enterprise management, so as to effectively promote the improvement of enterprise management level and the expansion of competitive advantage.

Acknowledgments
This work was supported by Donghua University.
References

[1] Lin, R.H., Xie, Z.Y., Hao, Y.H., et al. (2018) Improving High-tech Enterprise Innovation in Big Data Environment: A Combinative View of Internal and External Governance. International Journal of Information Management., 50: 575–585.

[2] Shi, P.P. (2017) Research on the Innovation of Enterprise Employee Incentive Way Management Based on Big Data Background. Agro Food Industry Hi-Tech., 28: 1434–1438.

[3] Sun, Z.H., Strang, K., Firmin, S. (2016) Business Analytics-Based Enterprise Information Systems. Journal of Computer Information Systems., 57: 169–178.

[4] Wang, L., Yang, M.K., Pathan, Z.H., et al. (2018) Analysis of Influencing Factors of Big Data Adoption in Chinese Enterprises Using DANP Technique. Sustainability., 10: DOI: 10.3390/su10113956.

[5] Zhao, C.B., Xu, L., Li, J.G., et al. (2019) Fuzzy Identity-Based Dynamic Auditing of Big Data on Cloud Storage. IEEE Access., 27: 1941–1953.

[6] Xia, Q.F., Xu, Z.C., Liang, W.F., et al. (2016) Collaboration- and Fairness-Aware Big Data Management in Distributed Clouds. IEEE Transactions on Parallel and Distributed Systems., 7: 160459–160471.

[7] Song, M.L., Wang, S.H. (2017) Participation in Global Value Chain and Green Technology Progress: Evidence from Big Data of Chinese Enterprises. Environmental Science and Pollution Research., 24: 1648–1661.

[8] Liu, H. (2013) Big Data Drives Cloud Adoption in Enterprise. IEEE Internet Computing., 17: DOI: 10.1109/MIC.2013.63.