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Digital Transformation of Enterprise Human Resource Management Enabled by Big Data

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Abstract: With the continuous development of big data technology, the digital transformation of enterprise human resource management has become a development trend. Human resources is one of the most important resources of enterprises, which is crucial to the competitiveness of enterprises. Enterprises need to attract, retain, and motivate excellent employees, thereby enhancing the innovation ability of enterprises and improving competitiveness and market share in the market. To maintain advantages in the fierce market competition, enterprises need to adopt more scientific and effective human resource management methods to enhance organizational efficiency and competitiveness. At the same time, this paper analyzes the dilemma faced by enterprise human resource management, points out the new characteristics of enterprise human resource management enabled by big data, and puts forward feasible suggestions for enterprise digital transformation.

Keywords: Big data; Digital transformation; Enterprise management; Human resource management

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1. Introduction

As the American anthropologist Jamais Cascio points out, we are in the era of BANI, In the era of Britleness, Anxiety, non-linearity, and incomprehensibility, these four words describe the complex changes in the world today. Coupled with the continuous development of information technology, big data technology has gradually become one of the important tools of enterprise management. Big data technology can collect, store, analyze, and process a variety of internal and external data, providing enterprises with more comprehensive, accurate, and effective decision support. In the field of human resource management, big data technology can provide enterprises with more accurate data support, assist enterprises in making scientific decisions, and help enterprises carry out more efficient employee management and recruitment management, thereby achieving digital transformation [1].

2. Current digital development trend

Based on the China Digital Economy Development Research Report released by the China Academy of

Information and Communications Technology in 2023, last year, the scale of China's digital economy reached 50.2 trillion yuan, a nominal growth rate of 10.3%, which has been significantly higher than the nominal GDP growth rate in the same period for 11 consecutive years, and the proportion of digital economy in GDP is equivalent to the proportion of secondary industry in the national economy, reaching 41.5%. At the same time, China's digital economy structure optimization promotes the effective improvement of quality. In 2022, the scale of digital industrialization and industrial digitalization in China will reach 9.2 trillion yuan and 41 trillion yuan respectively, and the 28% ratio structure of the digital economy is relatively stable [2].

In this context, the overall digital transformation of enterprises will be further deepened. Cloud computing, big data, and artificial intelligence have become important technical means of enterprise digitalization, and enterprises are more inclined to use the above modern information technology to empower the development of the organization, improve the data analysis and processing capabilities of enterprises, and enhance the efficiency and competitiveness of enterprises. The deepening of digital transformation will involve many aspects such as enterprise management, human resource management, customer relationship management, and supply chain management [3].

3. Core constructs of digital transformation of enterprise human resource management

The digital transformation of enterprise human resource management refers to the transformation of traditional human resource management methods employing digital technology and data analysis, thereby improving the efficiency, quality, and accuracy of human resource management and enhancing the competitiveness and innovation ability of enterprises.

The core of digital transformation lies in data-driven decision-making and management. Through the collection, analysis, and application of employee information, salary management, recruitment process, and other data, the human resource management process is optimized to improve the degree of automation and accuracy of human resource management. At the same time, digital transformation can also help enterprises better understand employee needs and feedback, improve employee satisfaction and loyalty, and promote cooperation and development between enterprises and employees.

Digital transformation can improve the efficiency of human resource management in enterprises, reduce the workload and work pressure of human resources departments, and enable managers to focus more on strategic decisions and business development. In addition, digital transformation also can improve the quality of human resource management of enterprises, enhance the concern and care of employees, and thus improve the job satisfaction and loyalty of employees, and then improve the performance and competitiveness of enterprises.

In short, the digital transformation of enterprise human resource management is an inevitable trend of the development of modern enterprise management and an important means for enterprises to optimize human resource management and improve employees' work efficiency and competitiveness.

4. The current predicament of human resource management in enterprises

4.1. Human resource management decision-making lacks scientific data support

The lack of scientific data support for human resource management decisions may be caused by the combination of many factors such as the lack of conscious collection and sorting of data, insufficient data analysis, inadequate data utilization, inaccurate decision-making models, or problems in data quality management. Therefore, enterprises should attach importance to the importance of data in human resource

management decision-making, adopt scientific data analysis methods, and establish accurate decision-making models to ensure the accuracy and reliability of decision-making.

4.2. Lack of internal digital compound talents

At present, most enterprises lack talents who can master digital technology and business knowledge at the same time, resulting in enterprises being unable to give full play to the advantages of digital technology in the process of digital upgrading. In addition, although some enterprises realize the importance of digital talents, there are problems in the talent training and management mechanism, resulting in the loss of internal digital talents or the inability to play a full role. For example, some organizations may lack effective training and development programs or appropriate incentive mechanisms, leading to a lack of enthusiasm or dissatisfaction among digital talent.

4.3. Technical and security risks in the digital transformation of enterprise human resource management

With the advancement of digital transformation, enterprises need to apply new technologies such as big data and artificial intelligence to improve the efficiency and quality of human resource management, but digital transformation also brings new technical and security risks, which need better management and technical protection.

Digital transformation requires the use of various new technologies, such as artificial intelligence, cloud computing, etc. The application of these technologies may bring some technical risks, such as technical failures, system crashes, etc., which enterprises need. At the same time, data security risk is one of the important issues faced by enterprises in digital transformation. If a company's data is stored in the cloud or on other shared platforms and that data is hacked or corrupted, it could lead to data loss.

5. New features of enterprise human resource management enabled by big data

5.1. Data analysis becomes the core of human resource management

Big data technology will be the core of enterprise human resource management in the future, which can help enterprises better collect, store, and analyze a large amount of employee data, thereby better understanding the performance, salary, promotion, and other aspects of employee information. Through data analysis, enterprises can make more accurate human resource strategies and decisions, and improve the efficiency and quality of human resource management. Meanwhile, data analysis can help enterprises better identify the needs and advantages of employees, and develop personalized career development paths and supports for them.

5.2. The application of machine learning and artificial intelligence in human resource management becomes increasingly extensive

Big data technology can help enterprises make better use of machine learning and artificial intelligence algorithms to process and analyze large amounts of data, and provide more accurate and intelligent support for human resource decisions of enterprises. At the same time, artificial intelligence can also be used to automate employee feedback and survey management, improving management efficiency.

5.3. Data security and privacy protection have become important challenges for enterprises

With the application of big data technology, enterprises are faced with more data security and privacy protection

challenges. Enterprises need to establish a sound data security and privacy protection mechanism to ensure the security of employee data and protect the personal privacy of employees. For example, with the increasing amount of data collected by enterprises, the risk of data leakage is correspondingly higher. If the data protection measures of enterprises are not in place, data leakage events may cause serious losses to enterprises, including trade secret disclosure and reputation loss. To sum up, data security and privacy protection have become one of important challenges faced by enterprises, and enterprises need to establish a sound data security and privacy protection mechanism to ensure data security, privacy, and compliance.

6. Suggestions on the digital transformation of enterprise human resource management

6.1. Make good use of data-driven human resource management decisions

Data-driven human resource management decision-making means that enterprises optimize the human resource management process and improve the efficiency and quality of human resource management by collecting, analyzing, and using data such as employee information, compensation management, and recruitment processes. Data-driven human resource management decisions can help enterprises better understand employee needs and feedback, improve employee satisfaction and loyalty, and promote cooperation and development between enterprises and employees [4].

(1) Employee information management: Enterprises should establish a sound employee information management system to collect, organize, and store employee information, including name, gender, age, education, work experience, salary, and other information. Through the employee information management system, enterprises can easily query and count employee information, understand the background and ability of employees, and provide data support for human resource management decisions.

(2) Salary management: By establishing a sound salary management system, enterprises can collect, analyze, and process employee salary data, understand employee salary level, salary structure, salary difference, and other information, and provide data support for enterprises to formulate reasonable salary policies and strategies.

(3) Recruitment management: Enterprises should establish a sound recruitment management system to provide data support for enterprises to formulate reasonable recruitment policies and strategies by understanding recruitment channels, recruitment methods, recruitment costs, and other information. At the same time, enterprises should establish a recruitment investigation mechanism to understand employees' feedback and suggestions on the recruitment process and methods, thereby providing references for enterprises to improve the recruitment process and methods [5].

(4) Staff training and development: Enterprises should establish a sound staff training and development management system through the collection, analysis, and processing of staff training and development data as well as understand staff training needs, training methods, training effects, and other information to provide data support for enterprises to formulate reasonable staff training and development policies. At the same time, data-driven human resource management decision-making can also help enterprises better formulate human resource management policies and strategies, and improve the efficiency and quality of human resource management.

6.2. Focus on cultivating internal digital composite talents

At present, the shortage of digital compound talents within enterprises is an important factor limiting the digital

transformation of enterprise human resource management. Just as Robinson, an American change partner company, puts forward the GAPS model, to better achieve training results and improve performance, enterprises should follow the following four steps: (1) Goal clarification; (2) Analysis of the situation; (3) Problem definition for service; and (4) Solution proposal. Through the in-depth analysis of business requirements, then more targeted analysis and problem-solving.

Therefore, enterprises can first develop digital talent training plans, including digital knowledge training, skill training, leadership promotion, etc., to equip employees with skills and knowledge in the digital age. To better motivate employees, enterprises should also provide digital career development opportunities, drive digital innovation, and open up digital new businesses, so that digital talents have more development space and opportunities, and improve their professional literacy and competitiveness. Fourth, establish a digital talent management system, including digital talent recruitment, digital performance management, digital salary management, etc., to better manage digital talents and improve their work efficiency and satisfaction.

6.3. Build a human resource digital management system that matches the development status of the enterprise

Establishing an efficient digital management system for enterprise human resources is an important part of enterprise digital transformation, which can improve the efficiency of enterprise human resources management, reduce management costs, and improve employee satisfaction and loyalty. However, the construction of a digital management system does not happen overnight and requires the following several steps:

Firstly, determine the goals and requirements of the digital management system. Enterprises should clarify the goals and needs of the digital management system, such as improving the efficiency of human resource management, employee satisfaction, and employee loyalty, so that the system can better meet the needs of the enterprise, and at the same time ensure that it matches the existing human resource management process of the enterprise.

Secondly, choose the right digital management system. According to the goal and vision of the management system, the enterprise needs to determine the appropriate digital management system (modules and functions), considering the function of the management system, ease of use, reliability, security, and other factors. Such as human resource information systems (HRIS), compensation management systems, performance management systems, etc., to automate and digitize human resource management processes.

Lastly, implement and optimize the digital management system. Enterprises should continuously optimize the digital management system, such as optimizing the human resource management process according to the system data analysis and improving the system functions and performance to refine the efficiency and quality of the digital management system.

7. Conclusion

To achieve the integration and consolidation of the management system, it's crucial to consider the compatibility of the human resource digital management system upon its introduction. Ensuring seamless integration with other enterprise systems requires conducting necessary system integration, possibly employing middleware or integration tools.

Establishing a monitoring and evaluation mechanism for the digital management system is essential. Enterprises can maintain the stability and reliability of the system by implementing such a mechanism. This involves periodically analyzing and evaluating system operation data, along with promptly adjusting system parameters and policies as needed.

Disclosure statement

The author declares no conflict of interest.

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