

Strategies and Practices of Enterprise Human Resource Management in the Era of Big Data

Wei Gao*

Hainan Vocational University of Science and Technology, Haikou 570100, Hainan, China

**Author to whom correspondence should be addressed.*

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Abstract: With the comprehensive development of modern information technology, big data technology has been integrated into various industries and has become a pillar technology supporting industrial upgrading and transformation. In enterprise human resource management, big data technology also has a broad application space and important application value. To gain higher market competitiveness and comprehensively improve the quality and efficiency of human resource management, enterprises need to rely on big data technology for comprehensive reform and optimization, thereby building an efficient, fair, open, and scientific human resource management model. This paper analyzes the problems and changes of enterprise human resource management in the era of big data, and then puts forward effective strategies for enterprise human resource management based on the era of big data.

Keywords: Big data era; Enterprises; Human resource management; Strategies

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1. Introduction

In the process of rapid social and economic development, enterprises must continuously improve their development capabilities through innovative development models to adapt to the needs of the times and gain better development space. Human resource management imposes significant constraints on the development of enterprises. Traditional human resource management is of low quality, with problems such as insufficient recruitment capabilities, an inaccurate grasp of training, inadequate incentives for work enthusiasm, and difficulties in retaining outstanding talents. In this regard, enterprises need to fully leverage big data technology to solve the problems faced in enterprise human resource management.

2. Big data era: Issues in enterprise human resource management

2.1. Low management level and efficiency

At present, most enterprises have not fundamentally innovated their human resource management models. The

application of big data is still based on the framework of traditional management models, which not only restricts the functions and value of big data, but also makes it difficult to truly solve human resource management problems with the help of big data technology due to employees' insufficient understanding of big data technology ^[1]. It even brings new problems to enterprise development and causes negative feedback effects.

2.2. Outdated management concepts and cognition

Currently, the management of some enterprises lacks awareness and cognition of updating management concepts. On the one hand, they fail to recognize the important significance of human resource management for the long-term development of enterprises; on the other hand, they ignore the training of employees on big data technology and related management knowledge. As a result, even if enterprises implement big data application measures, they still face widespread human resource management problems, leading to the failure of big data technology to reflect its due value and role in recruitment, training, management, and other links ^[2].

2.3. Lagging management measures and technologies

Human resource managers in some enterprises still believe they have rich management experience, thus ignoring the application value of big data technology. This leads to traditional human resource management measures and technologies becoming one of the important factors affecting enterprise development. On the one hand, it weakens the enterprise's own market competitiveness; on the other hand, enterprises also ignore investment in the construction of human resource management systems using big data technology and fail to introduce human resource management concepts, measures, and plans that meet their needs ^[3].

2.4. Low management quality and capability

For modern enterprises, the traditional human resource management model is no longer compatible with the current enterprise structure, thus resulting in insufficient management quality and capability. For example, due to limitations in recruitment practices and space, the efficiency of talent recruitment is low, and the speed of selecting high-quality talents is slow; another example is that in terms of performance appraisal and evaluation, fairness risks are prone to occur, which is detrimental to the long-term development of employees ^[4]. Obviously, traditional human resource management methods can no longer adapt to the sharply increasing data volume and data processing needs in the context of the information age, which requires enterprises to fully implement the application of big data technology.

3. Changes in enterprise human resource management in the era of big data

3.1. Upgrade of training methods

In traditional human resource management, enterprises could only adopt a unified employee training model. This model was unable to design training content based on each employee's development needs and ability foundation, nor could it ensure that employees achieve the desired goals through training. However, big data support has solved this problem. By analyzing employees' data and information, it can establish employee profiles, identify employees' work competencies and weaknesses ^[5], and then propose targeted training content and suggestions based on factors such as positions and employee characteristics. This provides significant support for employees' individual development.

3.2. Transformation of management methods

Traditional human resource management methods had flaws, such as incomplete collection of employee information, which made it difficult to achieve good results and goals in management work. The application of big data has transformed enterprises' human resource management methods. Firstly, it improves the fairness and transparency of employee performance appraisals, ensures that employees have reasonable and scientific promotion channels, and thereby achieves an incentive effect. Secondly, it can also obtain data related to each employee's personality, abilities, psychology, etc. ^[6], enabling enterprises to provide salary levels that match each employee's capabilities and potential, further boosting employees' work enthusiasm.

3.3. Optimization of performance management

In traditional enterprise human resource management, performance management could only evaluate employees' performance over a certain period to a certain extent. It could neither motivate employees nor point out the weaknesses that employees need to address for their subsequent development. With the support of big data technology, a more scientific and comprehensive employee evaluation index system can be constructed. Different evaluation contents and standards are set for different positions ^[7], which not only enhances fairness and objectivity but also avoids the influence of appraisers' subjective attitudes. This can effectively reflect employees' abilities and qualities, and based on this, formulate planning schemes for employees' long-term development.

4. Enterprise human resource management strategies in the big data era

4.1. Leveraging big data to optimize human resource planning and management

For enterprises, human resource planning and management represent the primary target for the application of big data technology. This not only helps rationalize and scientize human resource planning but also effectively improves the quality and effectiveness of human resource management, thereby demonstrating the important role of the human resource management department in enterprise development.

First, enterprises should integrate big data technology with human resource planning. They need to establish a big data platform to collect human resource-related information from internal and external environments, including employee data and talent market data ^[8]. Based on the analysis and research of such information and data, enterprises can formulate scientific human resource development strategies aligned with their current-stage development needs and assess the actual status and development demands of their human resources. Second, a big data analysis system should be established, incorporating human resource-related planning information, performance evaluation information, and compensation management information. By leveraging computers to analyze and process basic data sorting work, the quality and efficiency of work can be enhanced. Third, enterprises should rely on big data to build accurate employee profiles. Based on employees' daily behavior information, a behavior prediction mechanism can be established to assess each employee's capabilities, qualities, development needs, and skill gaps. Furthermore, a comprehensive quantitative index system for employee assessment can be developed ^[9] to analyze each employee's contribution to enterprise development, including both current and future contributions. This enables a scientific evaluation of employees' work value and provides data support for human resource management and talent job adjustments. Finally, a human resource management system should be established, with big data as the foundation, to build corresponding modules such as self-service, strategic management, business management, and human resource management. Under the human resource management module, sub-modules like personnel information management, compensation management, attendance

management, and performance management can be further established, thereby forming a systematic human resource management model.

4.2. Improving human resources recruitment and training with big data

Big data technology also holds significant application value in the recruitment and training aspects of enterprise human resources. It can effectively reduce the workload and pressure on human resource managers, transforming traditional manual-based resume screening and interviews into big data-assisted screening and online interviews. This not only enhances the quality of enterprise talent recruitment and training but also maximizes the strengths and capabilities of talent.

Firstly, in human resources recruitment, the traditional model relies solely on managers to manually screen and review resumes. After identifying potential candidates, they send emails or make phone calls to invite them for offline interviews. This process is not only cumbersome and complex but also involves a great deal of ineffective work. Additionally, the capabilities of interviewees vary widely, making it difficult to select talents that meet the company's needs. In the assessment of talents' qualities and abilities, reliance is placed solely on interviewers' experience and subjective judgments, which lack scientific rigor and objectivity. It also easily leads to nepotism, resulting in mismatches between talents and positions. The application of big data technology can transform this recruitment model and process. By leveraging online recruitment platforms, enterprises can intelligently screen through a vast number of resumes, selecting candidates that match requirements based on criteria such as educational background, professional field, and work experience^[10]. After highly precise searches, staff only need to manually review a small number of resumes to find the most qualified candidates. Secondly, big data technology also has important applications in talent training. Big data enables the construction of a more comprehensive training system. On one hand, based on employee profiles, companies can understand each employee's professional skills and comprehensive qualities, thereby developing personalized training programs tailored to individual needs. On the other hand, intelligent training platforms can be established, where big data analytics intelligently recommend relevant professional books, video courses, and other resources^[11], providing employees with opportunities for independent learning and development.

4.3. Leveraging big data to advance the construction of human resources data modules

In the process of building enterprise human resources data modules, big data is also an indispensable technology. It enables enterprises to implement hierarchical and classified management of human resources, thereby enhancing the scientificity and efficiency of human resource management. Modern enterprises attach great importance to the construction of human resources data modules. With the help of big data technology, they can conduct in-depth analysis to understand the work characteristics of different positions and employees' development goals. By organizing and managing the specific data and information of all employees in a classified manner, targeted data support and services can be provided for other work. Specifically, enterprises can establish modules such as basic data, capability data, efficiency data, and potential data. Through the division of different data modules, unstructured data can be collected via crawler technology, classified, and stored in the corresponding modules^[12].

First, in the basic data module, data such as employees' gender, age, position, rank, political affiliation, education level, skill level, and foreign language proficiency are mainly collected to demonstrate their comprehensive capabilities and basic qualities^[13]. Second, in the competence data module, the focus is on collecting information related to employees' work abilities, daily performance, and personal qualities in their

current positions or before taking up positions, including specific details like training experience, training results, competition achievements, and award records, so as to determine whether employees meet the requirements of their current positions. Third, in the efficiency data module, based on individual tasks, data such as the duration of each employee's work in different positions, error rate, and work completion efficiency are recorded to assess their work standards and efficiency levels, thereby providing a basis for customizing training programs. Fourth, in the potential data module, a comprehensive analysis is conducted on information such as employees' work efficiency improvement, income growth, and professional title promotion frequency. This helps observe the potential indicators of employees' continuous development and growth, and thus enables the judgment of their long-term development qualities, which is of great guiding significance for the construction of enterprise talent training plans and career planning ^[14].

4.4. Establishing a talent team guarantee for human resources relying on big data

Employees are the implementers and executors of work deployment, task fulfillment, and management practice. Therefore, excellent human resources management talents are indispensable for the development of enterprise human resources management. Enterprises must thus rely on big data to establish a talent team guarantee for the human resources management department, so as to ensure the comprehensive reform and optimization of human resources management work.

First, a sound training mechanism for staff in the human resources department should be established. Enterprises should carry out regular training activities and set up special training courses focusing on big data technology application, information literacy, big data thinking, and computer knowledge and skills ^[15], to ensure that the department's personnel can use computer systems and big data platforms to complete various tasks. Second, enterprises should also regularly organize outstanding employees to participate in external exchange programs, further study, or even overseas visits and investigations, so as to learn advanced experiences and methods and solve practical problems faced by the enterprise. In addition, enterprises should actively introduce high-quality and interdisciplinary talents majoring in human resources management, ensuring that they possess certain big data application capabilities, information literacy, and data thinking. At the same time, through strict assessment activities to evaluate their comprehensive skills and professional quality, enterprises can select outstanding talents who meet the needs of current enterprise human resources management positions based on big data systems, thereby providing a talent team guarantee for the development and construction of the enterprise's human resources management department.

5. Conclusion

In summary, against the backdrop of the big data era, human resources management is becoming increasingly important for the development of enterprises. Modern enterprises should fully leverage big data technology to optimize the level of human resources planning and management, improve human resources recruitment and training work, promote the construction of human resources data modules, and establish a talent team guarantee for human resources, thereby providing important support for the modernized management and data-driven construction of enterprises.

Disclosure statement

The author declares no conflict of interest.

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