

Exploring the Optimisation of Enterprise Performance Management in the Context of Artificial Intelligence

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Abstract. The impact of artificial intelligence on enterprises has gradually penetrated the human resource management of enterprises, and artificial intelligence is accelerating the excess of traditional human resources to predictive human resources, which also requires more talents in the field of artificial intelligence to devote themselves to enterprises. Through literature review and relevant cases, this paper finds that the current enterprise performance management has the problems of backward performance appraisal methods, lack of effective performance communication, and insufficient use of performance evaluation results. It is found that with the help of AI, enterprises can use big data and algorithms, enterprises can establish a more scientific performance management system, use AI to select appropriate performance management tools, and finally get effective performance appraisal results. Enterprises can use AI coaching and transparent performance feedback to promote performance communication and make performance results can play a role in promoting employee performance improvement. This paper concludes that the reasonable use of AI by enterprises can solve many existing problems of their performance management and can save time and labor costs for enterprises. Therefore, enterprises need to seize the opportunities brought by AI and pay attention to the research of AI technology to help improve performance management.

Keywords: Artificial intelligence, human resource management, performance management, performance appraisal.

1. Introduction

Artificial intelligence (AI), the fourth industrial revolution, has subtly begun. Artificial intelligence is progressively being used in a variety of industries, including robotics, voice, drones, and healthcare, and is becoming more and more ingrained in people's daily lives as a result of the Internet's explosive growth [1]. In addition to high-speed computing, sophisticated algorithms, and a vast amount of high-quality data, artificial intelligence also involves human intelligence at the level of perception, voice recognition, and decision-making [2].

Driven by technology and digitization, AI will not only disrupt the original value chain in modern society and reshape the industrial structure, but it will also have a significant impact on the six modules of human resource management (HRM) (human resource planning, recruitment and allocation, training and development, performance management, compensation and benefit management, and labor relations management) [1]. However, it is also important to take into account the structural changes in HR brought on by AI, such as increased demands on AI professionals and the displacement of conventional HR practitioners [1].

In a world where people are driven by competition, performance management is seen as the key to success and competitive growth in addition to being at the center of the six dimensions [3]. According to the definition of performance management, it is "the ongoing process of identifying, measuring, and developing individual and work group performance and aligning that performance with the organization's strategic goals"[4]. Without an effective performance management system, a business is unable to retain top talent, motivate and engage employees effectively, make fair personnel choices (such as layoffs, bonuses, increases, and promotions), or gather data for efficient

resource allocation [5,6]. Performance management is therefore essential to talent management. Despite firms' efforts to innovate their strategies and models for measuring, managing, and accelerating employee performance, existing performance management systems continue to have numerous flaws [7].

The impact and challenges of artificial intelligence on human resources in businesses are the subject of this article's research. The study's primary goal is to enable performance management to work more effectively with AI in the context of the current digital era and to help businesses benefit more from the rapid changes in the environment. Reviewing recent papers that discuss the evolution of artificial intelligence in the field of human resources and the development of performance management is the primary research methodology used. The study begins by demonstrating how AI is currently making predictive HR viable and causing fundamental changes. Along with the current performance management issues, recommendations for how to create a more scientific performance management system are also explored.

2. The Impact and Challenges of Artificial Intelligence

2.1. Transition from Traditional to Predictive HRM

Artificial intelligence facilitates the shift from conventional reactive HRM to predictive HRM. Traditional HRM is reactive and after-the-fact rather than proactive, but with the strong arithmetic foundation of AI, proactive HRM becomes feasible, which not only saves a significant amount of HRM costs but also results in a rise in work efficiency [8].

Employee turnover has long been a major problem for businesses since losing key workers may make them less competitive and force them to spend a lot of time and money on hiring and training new staff [1]. Employee turnover prediction models assist firms in determining retention rates and reasons for retention so that they may devote resources to recruiting, retaining valuable employees, and improving team management [8]. In terms of hiring, Giri, Ravikumar, Mote and Bharadwaj created a thorough hiring model that evaluates personality traits and professional skills in accordance with a candidate's information on social media sites [10]. Such models give multinational corporations a thorough, bias-reducing procedure that can assess each candidate in the talent pool in accordance with predetermined criteria [10]. In terms of training, AI can assist organizations in predicting the career level of a worker at various points in his or her career so that career counseling and pertinent training can be given to the worker during his or her employment [11]. Additionally, AI can create appropriate methods to raise the performance of lower performing individuals by classifying employees into distinct categories depending on their job satisfaction and performance levels [12].

2.2. Structural Changes in Human Resources

In addition to increasing organizations' maintenance expenses, the widespread usage of AI raises the demand for both quantity and quality AI personnel [1]. Professionals needed in the field of artificial intelligence include, but are not limited to, developers, maintenance staff, and senior talents who know the fundamental technologies of artificial intelligence [1]. This may considerably increase an organization's maintenance and support costs for artificial intelligence (AI) systems [1]. Due to the replacement of a larger workforce in large businesses, the cost can be amortized; however, due to a number of factors, including the low demands placed on human resource managers and the high cost of deploying AI, the application of AI in human resource management is restricted in small and medium-sized businesses [13].

Additionally, the HRM sector will see a rise in the number of individuals with technical expertise, putting existing HRM practitioners under competition[1]. After the simple and transactional work in human resource management is replaced by artificial intelligence, the work of human resource management will tend to be more strategic, and the content of the work will tend to be more

complex[1]. In other words, enterprises will eliminate a large number of traditional human resource practitioners[1].

3. Current Problems Prevalent in Performance Management

3.1. Outdated Methods of Performance Appraisal

In the external market economic environment is constantly changing today, and many companies still use the previous performance appraisal methods. These performance appraisal methods, if not updated and improved, will not be able to adapt to the rapid development of the market environment. Since 2020, Google has been advocating the OKR finally cannot support Google in the market, Googleist annual survey results show that 47% of the employees think that the original performance evaluation is a waste of time [13]. Of course, not only Google, but many Silicon Valley Internet technology companies have seen their share prices plummet, and investment institutions have stated that they are withdrawing their investments, so they have begun to adjust their employee performance to try to break through the dilemma.

A performance tool may be able to bring a good profit for the company at the beginning, but with the changes of time, personnel composition, external market and enterprise strategic goals, the performance management tool cannot work as well as it did at the beginning. Enterprises will appear inappropriate performance appraisal methods, appraisal methods that are out of touch with the company's strategy, and appraisal indicators that fail to motivate employees, etc.

In the digital age, companies are in a position to collect sufficient data to detect changes in external markets and internal conditions, which allows them to obtain information to adjust and choose the optimal performance appraisal programme. Thus, the full use of AI may be the optimal solution for companies to improve their performance appraisal methods.

3.2. Lack of Continuous and Effective Performance Communication

Performance communication serves in performance planning and performance feedback, which enables supervisors to obtain the opinions of subordinates on performance indicators, and is also a necessary means to promote employee performance and improve performance management methods. Only continuous and effective performance communication can reasonably adopt the views of employees to improve the work effect [14]. However, in reality, many enterprises, especially small and medium-sized enterprises, often ignore the role of performance communication or can not do continuous performance communication.

In the general top-down work mode of communicating tasks, employees will lose the right to speak on the decomposition of tasks when there is already less communication between the upper and lower levels. This will lead to a lack of rationality in the performance appraisal indicators due to the lack of participation of lower-level employees, and it is very likely that the performance appraisal indicators will not reflect the real work situation.

Companies look forward to being able to use AI to create a new model of performance communication that allows for effective and continuous communication between top and bottom levels, allowing performance management to be fully utilized.

3.3. Inadequate Use of Performance Appraisal Results

The ultimate goal of performance management is to improve performance, not to grade rewards and punishments according to performance results. The performance results obtained by an organization should be used as a reference for the next performance plan, not just for the distribution of performance bonuses. The application of performance results is one of the most important tasks for managers. If the enterprise does not pay enough attention to performance management, or lack of performance management experience, the results of the performance appraisal will likely be reduced to the distribution of bonus tools.

In addition, the results of the performance appraisal can also be used as the basis for employee promotion, which needs to be achieved through the division of grades and systems that can convince employees [15]. However, there are a lot of enterprises whose career promotion channels are influenced by the subjective will of the leaders. At the same time, the subjective will of the appraisers often also impression performance appraisal makes the performance results bias, coupled with the performance management process is not transparent, the performance results will lack of employee trust, for the use of performance results to increase resistance.

4. Solving Performance Management Problems with the Help of Artificial Intelligence

4.1. Human-AI Synergy to Build a Performance Management System

In the future, enterprises need a set of coordinated, flexible and systematic performance management systems. Artificial intelligence performance management systems are able to analyze the internal and external conditions of the enterprise, combined with the strategic objectives of the enterprise and historical performance, and quickly design a more scientific performance programme [16]. Such a performance programme will be fully feasible and reasonable due to the accurate calculation ability of AI. Artificial intelligence can help managers deal with the tedious work of obtaining and screening information, and take them out of the complicated work, so that they can devote themselves to more important and complex work, thus achieving "human-AI synergy".

The use of performance appraisal tools is extremely important in the design of the performance system, and the selection of performance management tools needs to be adjusted with the adjustment of corporate strategy. Artificial intelligence has a strong learning ability, it can adjust the performance management tools with the changes in corporate strategy, but also can be combined with a variety of performance management tools to deduce the optimal solution. Afterwards, it combines managers' intuition and judgement to make decisions, avoiding the rigidity of completely relying on artificial intelligence. A flexible, reasonable and efficient performance management system can only be constructed with the supplement of completely rational processing results of artificial intelligence and human sensibility [17].

4.2. Artificial Intelligence Calculates Performance Appraisal Results

The vast amount of information obtained by AI can assist managers in accurating performance appraisal results. 3M uses AI to develop performance assessment tools that leverage the powerful learning and data analysis technologies of AI to quickly calculate and generate performance ratings based on employee work status, behavioral indicators and other relevant factors. This greatly reduces management's workload and improves the accuracy and consistency of performance appraisals.

Performance appraisal results obtained through AI have the advantage of being more rational and persuasive, as they avoid excessive subjectivity on the part of the performance appraiser in the performance evaluation. Artificial intelligence naturally enters this information into the enterprise's human resource management information base in the process of tracking employees' workflow, which may include employees' key performance results, customer feedback, growth and development elements, co-worker and supervisor evaluations, and heterogeneous data on employees' behavioral performance, etc. depending on the choice of the performance management tool [18]. The performance appraisal results are derived by AI from these objective data and are assigned reasonable weights prior to their evaluation, and employees naturally agree with the final performance appraisal results when the performance appraisal method is made public [19].

4.3. Artificial Intelligence Powers Performance Coaching

AI training of employees has been practiced for a long time, with life insurance company MetLife using AI coaches to advise employees, and AI learning to summaries skills to improve customer

service by tracking customer service conversations with customers [17]. From Lou's research on AI coaching, the combination of human coaches and AI coaches in enterprises can bring out the maximum performance training effect, which is better than using only any one of them [20]. So, in the future performance coaching enterprises can refer to the combination of AI coaching and human training.

Artificial Intelligence digital systems are able to provide more timely performance feedback, and 10 per cent of Fortune 500 companies have already adopted transparent performance data that is available to employees in real-time. The ability to make timely performance adjustments after employees observe their performance through performance data fed by AI systems has helped employees create better performance results. Through AI, employees and managers are able to establish real-time touch points through e.g., chatbots, which is an online face-to-face communication method that is more immediate and efficient compared to offline face-to-face communication [21]. Afterwards, AI can also provide different solution strategies and response plans for managers through learning, which saves managers' time, and managers can devote themselves to difficult or serious performance communication.

5. Conclusion

In summary, in the context of the era of AI widely used in various industries of society, the continuous development of artificial intelligence technology. The application of AI in performance management is used to build management systems, assess performance results and help performance coaching. This application greatly improves the passive and unpredictable problems of traditional human resource management. Performance management in the AI era will be more accurate, personalized, real-time and intelligent. Enterprises should make full use of AI technology to optimize the performance management mode, improve employee performance, and then be able to improve the overall performance of the enterprise. Specific practices include, but are not limited to: on the one hand, with the assistance of the intelligent platform, managers can use the Internet to start the collection of data and information in a timely manner, and complete the work of employee training (such as how to improve performance) at a high level with a low cost - the sales department, the administrative department, and especially the financial department are all benefiting from this. On the other hand, through AI to achieve a refined mode of operation to improve the construction of the company's operational monitoring system, the company's operational health to carry out effective monitoring. In terms of practical application, the use of big data technology and AI technology will bring convenience and positive impact on performance management, and the above practices can create more favorable conditions for the healthy operation of the company.

In view of this, companies should further strengthen the application of AI technology and technology penetration research efforts, in accordance with the company's performance appraisal needs and conditions, to develop a more reasonable artificial intelligence-assisted performance management measures, by constantly adjusting the management mode and improve the management process, to do a good job in the application of the technology to control the disadvantages of technology, to ensure that the potential value of the technology can be fully tapped, and then to achieve the best performance management effect. This study provides examples of the relevance of AI in enterprise performance management to provide data-driven decision support for efficiency improvement, as well as personalized and fair assessments to enhance employee engagement and participation, and to motivate and retain talent. These implications will drive the modernization and optimization of corporate performance management, informing senior management, delivering long-term economic benefits, and contributing to the long-term growth of organizations. Nevertheless, from an objective point of view, this paper is unable to show whether AI can be used as a long-term and efficient tool for solving real-world problems in the context of the rapidly changing modern market. As more enterprises apply AI technology in various aspects, the research team will collect

more interesting and insightful examples in the future and find a more relevant scientific method for enterprise performance improvement in the analysis of the examples.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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