

Research Article

Multisensor Human Resource Data Fusion and Its Application in Industrial Distribution

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Over the past 30 years of reform and opening up, China has undergone tremendous changes. With the continuous growth of China's economy, the core competitiveness of Chinese enterprises is also increasing day by day. After China joined the WTO in 2001, economic globalization hit Chinese enterprises. Under such circumstances, a large number of foreign multinational companies have entered China to establish factories, which has caused huge pressure on Chinese companies. Facing this unprecedented pressure, Chinese enterprises need to fundamentally improve management and operation problems. Companies need to change aggressively to respond to the shock of foreign companies. The development of multisensor technology has brought great changes to enterprise human resource management. The real-time changes in this technology allow the continuous optimization of human resource management. Human resource management technology also needs to adapt to the modern social environment and constantly improve and quickly existing enterprise employee management methods and methods. These technical contents need to be optimized, and the working methods need to be improved. At the current stage, enterprise human resource management has not fully understood multisensor technology. Enterprises have poor adaptability in the application of this technology, and have not carried out comprehensive planning and clear optimization of detailed rules from the macro level. On this basis, the company has also failed to establish a relatively excellent team of professional management talents. There are three issues involved in talent team management. This article firstly analyzes the effect of human resource management in contemporary enterprises based on multisensor technology. Enterprises need to improve their awareness and application of sensor technology. It also needs to establish the overall strategy of human resource management and specific means of implementation. Through the in-depth application of these technologies, enterprises can enhance the comprehensive capabilities of human resource management teams. The application of this technology also provides practical and effective help for modern enterprise human resource management.

1. Introduction

The key to improving the core competitiveness of an enterprise is to improve the ability of human resource management. The competition among enterprises in the 21st century is the competition among enterprise talents. For high-tech enterprises, the number of technical talents has become a symbol of enterprise strength. In this context, how to improve human resource management has become a topic of the times. Existing studies have carried out many new tentative studies on human resource management from the perspective of information. These studies combine

human resource management with information to explore the efficiency and effect of strengthening human resource management in high-tech enterprises [1–3]. The existing research has conducted in-depth research on the basic theory of human resource management and information, and further summarized the general practice process of information management. Existing studies have systematically summarized the great changes brought about by information to human resource management. Many enterprises have gone through the process of transforming from manual human resource management to information-based human resource management. This method improves

the management efficiency of enterprises and realizes the management connection between Chinese enterprises and foreign enterprises [4–6]. This article systematically sorts out the existing relevant theories and optimizes the human resource management model of enterprises in the current environment. It also analyzes the combination of information technology and enterprise human resource management. Multisensor technology and enterprise human resource management: in the era of multisensor technology, the human resource management model of enterprises has also undergone tremendous changes, especially for the design of human resource management mode under multisensor technology. Enterprises need to improve the efficiency of enterprise management and human resource management from a more refined perspective. On this basis, from the perspective of high-tech enterprises, this article expounds the importance of knowledge workers and technical talents to high-tech enterprises. This article further sorts out the specific role of the e-HR software system in improving employee satisfaction and enthusiasm. It further analyzes the impact of mobile devices on human resource information. The purpose of this article is to improve the competitiveness of Chinese high-tech enterprises through the e-HR system. Through the improvement of its own competitiveness, the enterprise makes its own management more modern [7–10].

On this basis, this thesis analyzes the theory of human resource management information. The text analyzes the necessity of implementing human resource management information in high-tech enterprises. This article focuses on expounding the process of implementing human resource information in enterprises [11–13]. With the global economic integration and the arrival of the information age, human resources have become more important resources than material, financial, and information resources. Information resources are regarded as strategic resources for enterprises to gain a competitive advantage. In view of the problems such as insufficient effectiveness of the current enterprise human resources informatization construction, this study believes that enterprises need to adhere to the multisensor technology as the carrier to establish a perfect human resource management module. Enterprises need to provide a carrier platform for upgrading human resource management capabilities. On the one hand, enterprises adopt multisensor technology and can design a technical model suitable for business modules. The development and management of human resources in enterprises have gradually shifted from traditional personnel management to strategic human resource management. With the continuous optimization of enterprise functions, the management concepts and methods of enterprises need to make breakthroughs. Human resource management in China is still at the basic stage [14–16]. Chinese enterprises need to cope with the transformation of human resource management functions. The management concepts and methods of enterprises need to be broken through. However, China's human resource management work is far behind the world level in terms of theory and practice. This article systematically sorts out the domestic human resource management

work. This article puts forward the specific content of enterprise human resources information management through systematic analysis. On this basis, through human resource information management, this article gives a specific method to quickly improve the operation efficiency of the enterprise. This article further analyzes and summarizes the methods commonly used in daily human resource management work in American and Japanese companies [17–19].

Through the positive and negative experiences and lessons, this article further analyzes and draws the main points of human resource management work. Guided by comprehensive strategy and corporate culture, this article ensures the correctness of the direction of human resource management work through a reasonable corporate development strategy. Enterprises can find the design of human resource management module that multisensor technology can be applied to the whole process of data resource collection, integration, and analysis. The technology can provide a scientific basis for the management of the human resources of enterprises. At the same time, enterprises also need to realize scientific planning of human resources under the guidance of multisensor technology. On this basis, this article promotes the continuous improvement of enterprise operation efficiency through systematic cultural management methods. In this article, the multisensor technology analysis method is adopted to make the management method of the enterprise continuously updated and optimized. In the specific research, this article subdivides the work of human resource management information. The specific information work is divided into the technical level and management level. Combined with the relevant research of existing scholars, this article believes that human resource information pays more attention to the management level [20]. This article further puts forward the specific ideas and measures for the development of enterprise human resources at different management levels. This technology can improve the management efficiency of human resources. Therefore, multisensor technology is of great help to the module design of enterprise human resource management. Different modules of an enterprise differ in their choice of strategy and corporate culture. Different enterprise development strategies produce different enterprise development ideas and practice models. At the technical level, companies focus on two issues. First, companies need to make forward-looking recommendations on the technical analysis of human resource management [21]. This technical analysis method can ensure that enterprises will not be eliminated for a long period. The choice of specific functions must be able to contribute to the realization of its own strategy. The development of an enterprise needs to match its own positioning and development needs. The flowchart of enterprise information management based on multisensor technology is shown in Figure 1.

2. The Research Progress on Information Management of Enterprise Human Resources

Enterprises need to deeply study the combination of information technology and human resource management.

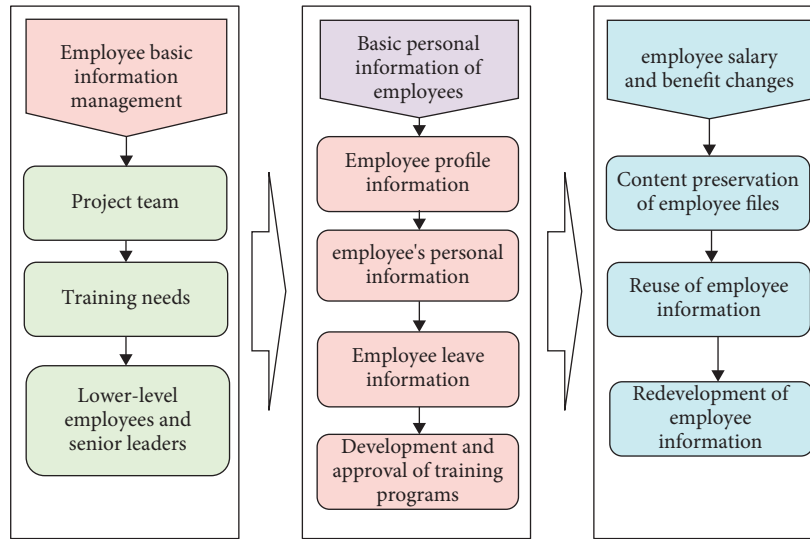


FIGURE 1: The flowchart of enterprise employee information management based on multisensor technology.

Information has become a new pillar supporting the development of our national economy. The information development of enterprises is also a new economic growth point worthy of our attention. The information industry has also received the attention of national leaders and governments. Under the background of economic globalization, information technology plays a very important role in the competition between enterprises.

2.1. The Main Achievements of Information Management of Enterprise Human Resources. The wave of information has a relatively large impact on traditional human resource management data. This kind of influence requires enterprises to abandon the original traditional concepts and take the initiative to add more information-based concepts. In the current environment, the network-based information environment has formed, and human resource management should change itself accordingly. In this case, the development of China's human resources information has entered a new era. The rapid development of information conforms to the needs of enterprise human resource management. Multisensor technology and human resource planning work: in the application of multisensor technology, the planning mode of human resources has changed. This technology provides a strong guarantee for the long-term and strategic nature of enterprise planning. In the process of continuous updating of multisensor technology, enterprise human resource management pays more attention to the actual situation. The 21st century is the era of the combination of knowledge and network, and the role of the knowledge economy is very important. In the environment of the knowledge economy, high-tech talents have become the main body of knowledge. People-oriented, knowledge-based, networked, and information-based developments are becoming more and more important. When enterprise management integrates information, human resources, as the most important factor, play a key role as a bridge. Traditional human resource management methods are often

outdated, mainly sorting out resource data in a purely manual form. The method of personnel management is generally subjective, and the enterprise managers themselves mainly determine the standard of judgment.

The standards of performance appraisal of enterprises are generally relatively subjective. However, this relatively subjective performance appraisal model is inconsistent with the development demands of enterprises. With the advent of networking and information, computer and Internet technologies have been widely popularized in society. We must make full use of the convenience brought by information technology to our work and make human resource management more scientific. The human resources department is an ordinary department of an enterprise. In the overall development of the enterprise, it has not been deliberately elevated to a strategic level. The companies do not pay attention to human resources. Businesses only see people as tools to achieve business performance. In the information age, human resources have become an important resource for enterprises. Therefore, enterprises need to raise human resources to a strategic level. In this context, human resource management is very important. Enterprises need to abandon the traditional personnel management methods and make full use of information methods for human resource management. The organizational structure of the human resource planning function module based on multisensor technology is shown in Figure 2.

2.2. The Main Problems of Information Management of Enterprise Human Resources. In more than 30 years of reform and opening up, China's information technology has developed and changed faster and faster. It can be said that without information, there will be no modernization in China. Information technology is crucial to the development of China's economy, politics, and culture. In the process of China's transition from a planned economy to a socialist market economy, the market has also paid more and more attention to the management of human resources. Human

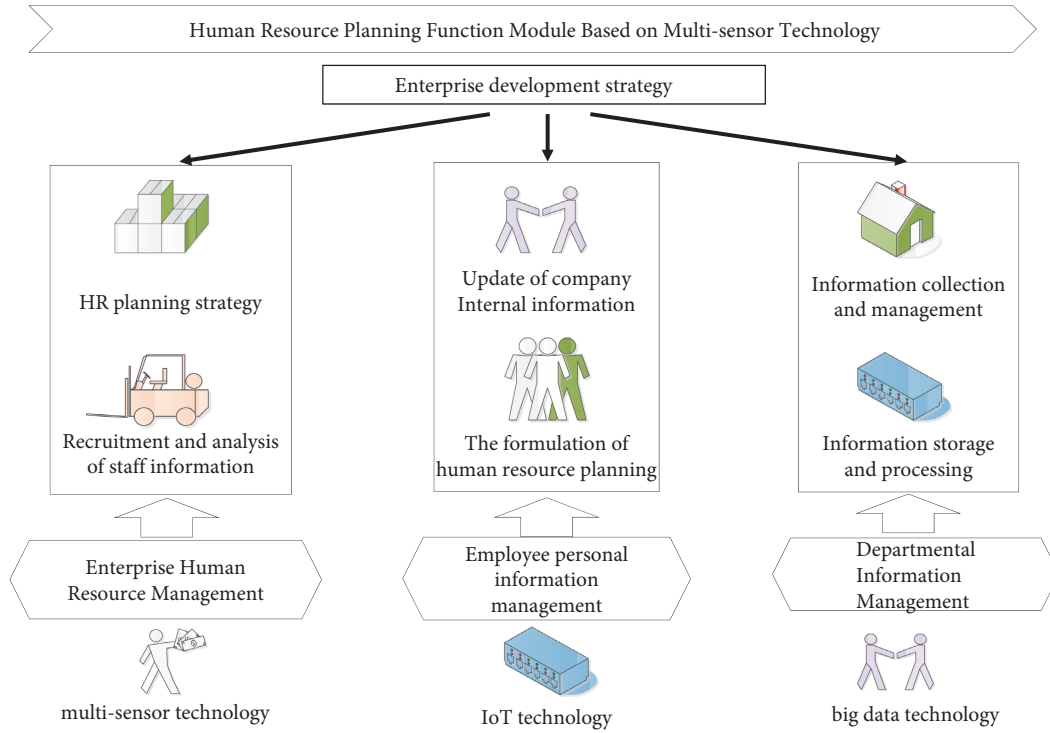


FIGURE 2: The organizational structure of the human resource planning function module based on multisensor technology.

resources have become an important resource and wealth of society. The management mode of human resources is in line with the country's people-oriented development concept. In the context of the rapid development of information technology, the combination of human resources and information has become an important part of enterprise development. The development of information technology can provide the high-speed operation of enterprises. Data integration and application in human resource management are key concerns of enterprises. The calculation formula for the information entropy of each node is as follows.

The calculation principle of local consistency is relatively simple, mainly using the Kendal Concorde coefficient, and the specific calculation formula is as follows:

$$W = \frac{\sum (R_i)^2 - n(\bar{R})^2}{1/12K^2(n^3 - n)}. \quad (1)$$

The calculation formula of single-sample statistics is as follows:

$$t = \frac{\bar{X} - \mu}{\delta_x / \sqrt{n-1}} \quad (2)$$

The calculation of the statistics of the hypothesis of the single-body sample is as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2/n_1 + n_2 - 2(1/n_1 - 1/n_2)}} \quad (3)$$

2.3. The Significance of Information Management of Enterprise Human Resources. This technology can be widely used in many industries. This technology has played a very important role in the management and operation of enterprises. Enterprise human resource management is a very practical technology. With the continuous development and update of multisensor technology, traditional human resource management methods are also facing a huge impact. With the innovation of technical methods, multisensor technology has also brought more opportunities for the development of enterprises. Human resource management plays an important role in the development of enterprises. The value of human resources reflects the comprehensive competitiveness of enterprises. A good human resource management method can build an optimistic and progressive work environment within the enterprise. The application of new technology can improve the enthusiasm and sense of responsibility of the company's employees. The specific calculation formulas are as follows.

Set two random sequences X and Y , the Pearson correlation coefficient between the two sequences is r , then

$$r = \frac{\text{cov}(X, Y)}{\sqrt{\sigma_x^2} \sqrt{\sigma_y^2}} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}} \quad (4)$$

To ensure the accuracy of the results, this article uses two evaluation indexes, mean absolute error and root mean square error, to evaluate the optimization effect of the model. The specific calculation formulas are as follows:

$$\text{MAE} = \frac{1}{s} \sum_{i=1}^s |\hat{y}_i - y_i|, \quad (5)$$

$$\text{RMSE} = \sqrt{\frac{1}{s} \sum_{i=1}^s [\hat{y}_i - y_i]^2}, \quad (6)$$

$$J = \sum_{i=1}^{N_p} \left\| y(k+i) - y_{ref}(k+i) \right\|_Q^2 + \sum_{i=1}^{N_p} \|U(k+i)\|_R^2 + \sum_{i=1}^{N_p} \|\Delta U(k+i)\|_R^2. \quad (7)$$

Considering the influence of the target vehicle's speed and penalty function on obstacle avoidance, the following obstacle avoidance function is selected:

$$J_{\text{obs},i} = \frac{S_{\text{obs}} v_i}{(x_i - x_o)^2 + (y_i - y_o)^2 + \zeta}. \quad (8)$$

This technology helps to enhance the creativity of employees on the job. This technology can lay the foundation for the long-term and efficient development of the company. In the era of continuous innovation of multisensor technology, enterprise human resource management must be properly process optimized. Through refined human resource management, the enterprise guarantees the scientific validity of human resource planning. First, the enterprise adopts multisensor technology and builds a human resources multisensor technology library. This process optimization method can guide the reform and innovation of human resource management. This article needs to further strengthen the information construction of human resource management and uses multisensor technology to build a human resource management system with high accuracy, good predictability, and strong real time.

We treat each of the monomials as m input models in the original structure of the modeling network:

$$v_1 = a_0, v_2 = a_1 x_1, v_3 = a_2 x_2, \dots, v_6 = a_5 x_1 x_2. \quad (9)$$

The final information $i_t \times C'_t$ is expressed as the value that can be obtained C_t from the output information of the joint forgetting gate:

$$C_t = f_t * C_{t-1} + i_t * C'_t. \quad (10)$$

The calculation method is:

$$O_t = \sigma(W_o \cdot [h_{t-1}, x_t] + b_o), \quad (11)$$

$$h_t = o_t * \tanh(C_C). \quad (12)$$

The use of this technology can effectively promote the long-term stable development of the company. On this basis, this article focuses on analyzing the impact of multisensor technology on enterprise human resource management. This article points out the dilemma faced by human resource management at this stage and proposes corresponding management methods. The conclusion of this article can

effectively improve the effect of enterprise human resource management. The modular application framework of the e-HR system based on multisensing technology is shown in Figure 3.

3. The Influence of Multisensor Technology on Enterprise Human Resource Management

With the advent of the information age, multisensor technology has been widely used. Many enterprises have completed the analysis and integration of information through multisensor technology. Enterprises extract useful information from large-scale data, and integrate, analyze, and use it. The application of new technology promotes the close integration of enterprise management and information technology. Human resource management is an indispensable part of many management tasks of enterprises. Multisensor technology can reform and innovate the existing human resource management methods. This technology library facilitates accurate, granular analysis of multisensor technology. This technology helps to improve the planning efficiency of human resources to meet the data analysis needs of different types of structures. Then, human resource planning focuses on the systematic nature of resource management. Through this new technology and new method, the purpose, timeliness, and precision of human resource management can be strengthened. This new method can continuously improve the effect of enterprise human resource management and promote the development of enterprises in the direction of standardization and refinement. In the era of multisensor technology, enterprise human resource management is bound to closely link with information technology. Therefore, the human resources management personnel of enterprises need to have the professional ability and master certain information technology.

3.1. The Application Status of Multisensor Technology in Enterprise Human Resource Management. These enterprises need to gradually build a human resource management team with a high professional level and high level of information. In carrying out multisensor technology mining work, companies need to focus on strengthening their own level of innovation. Enterprises need to use the characteristics and advantages of multisensor technology to continuously improve and innovate the methods and paths of human resource management. Companies need to use multisensor technology to set a strategic direction for themselves. Businesses need to take advantage of multisensor technology for management. This technology can effectively promote the popularization of human resource management information. Enterprises need to build a system platform for human resource management with the support of multisensor technology. In the application of multisensor technology, enterprises need to continuously improve the management efficiency of human resources. The application of new technology provides a scientific basis for the scientific planning of human resources. In addition, the information work of enterprise human resources needs to establish a

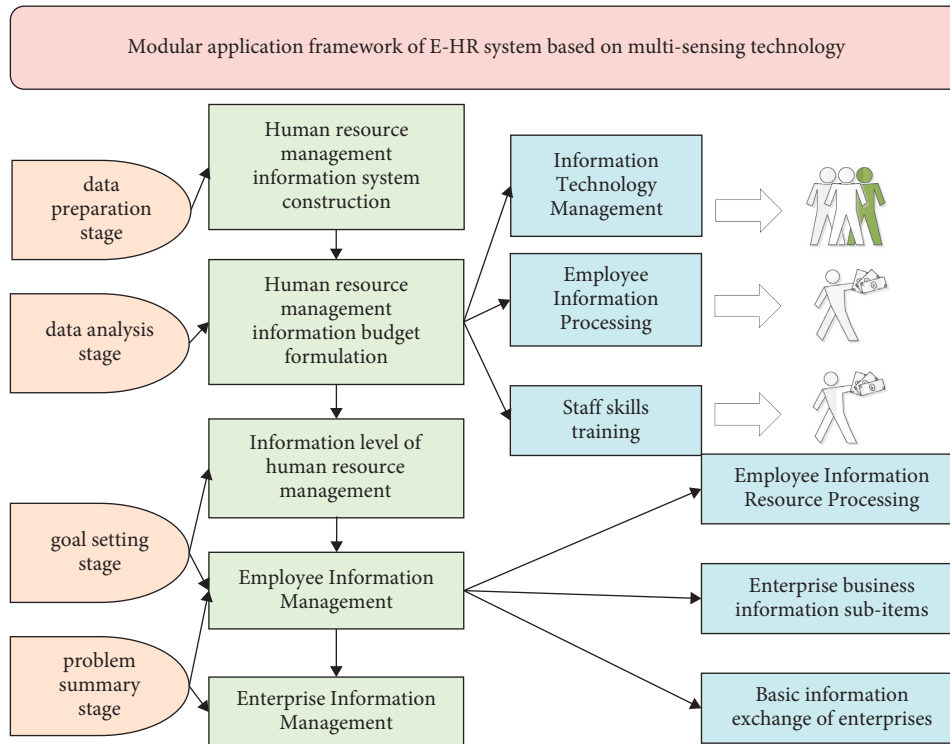


FIGURE 3: The modular application framework of the e-HR system based on multisensing technology.

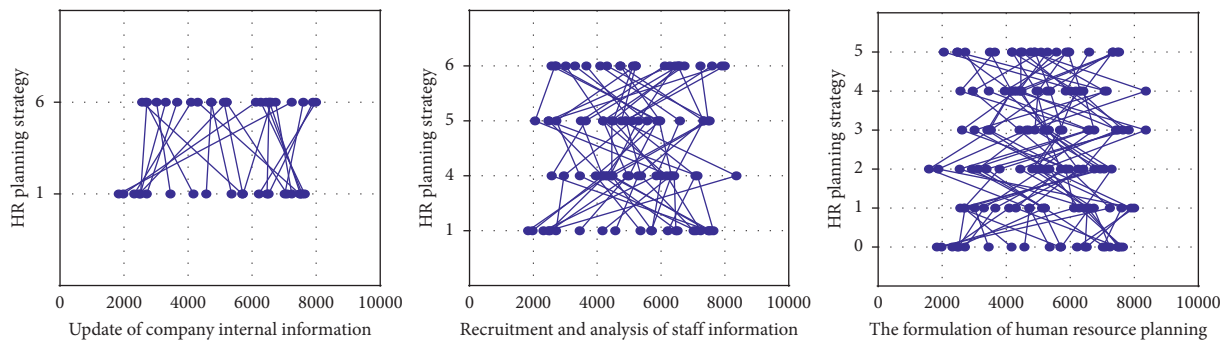


FIGURE 4: The comparison of different technologies applied in human resource management system construction.

good awareness of information confidentiality. This is because the personal information of employees, corporate information, and other contents are easily leaked on Internet data. Once the information is stolen, it will bring great loss to companies and individuals. This threatens the company's market position. Multi-sensor technology offers significant convenience. Enterprises will generate many data resources in the process of human resource management. Therefore, these massive data resources need reasonable extraction and analysis by human resource managers. These human resource managers need to identify the results of data analysis. This information can help managers obtain valuable data from a large amount of data and can also provide data support for the specific direction of human resource management. The comparison of different technologies applied in human resource management system construction is shown in Figure 4.

3.2. *Enterprises Fail to Understand the Advantages of Multi-sensor Technology.* Companies are less able to use new technologies in human resource management. The scientific nature of human resource management directly affects the long-term development of an enterprise. This situation also affects the making of important decisions within the enterprise such as multisensor technology and talent recruitment management. In the Internet era, enterprises need to use online recruitment technology as the main way to recruit talents. Through multisensor technology analysis, enterprises can understand and classify the basic data of applicants. Through basic data screening, enterprises realize the first-level check of talent recruitment. As the application of multisensor technology in enterprise human resource management continues to deepen, the influence of multi-sensor technology on human resource management is gradually increasing. This new technology has gradually

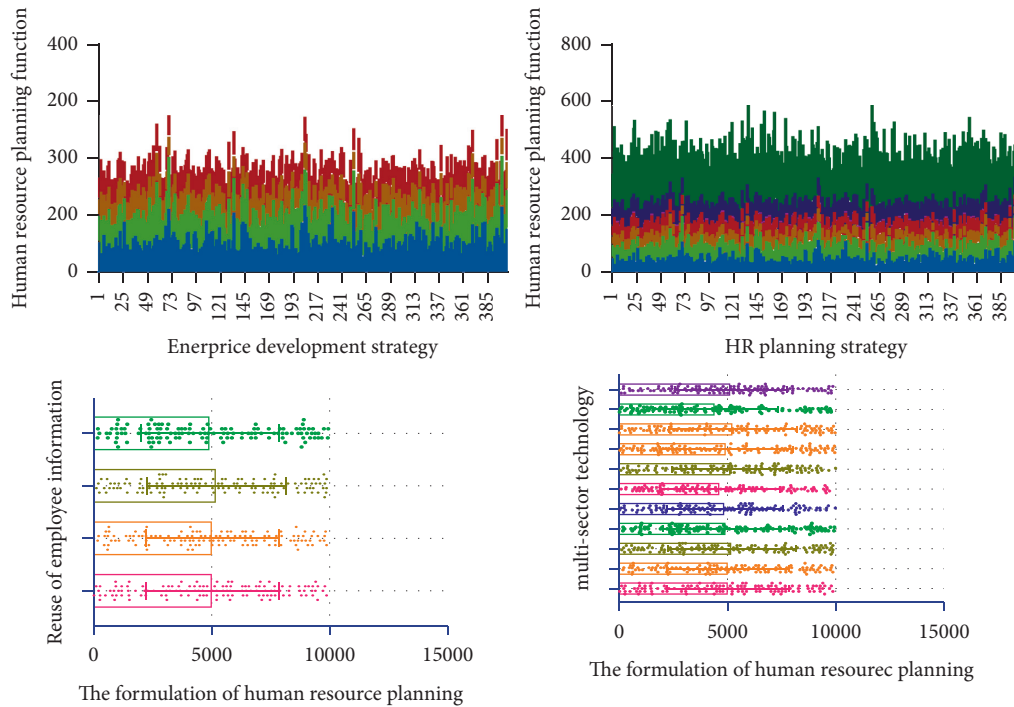


FIGURE 5: The comparison of human resource information construction in different scenarios.

applied to all aspects of human resource management. However, judging from the status quo of human resource management at this stage, the responsible personnel and managers of the enterprise have not been able to establish a scientific understanding of multisensor technology. Managers of enterprises have an insufficient understanding of the connotation of multisensor technology. Enterprises still lack attention to the innovation of human resource management systems. In addition, enterprises need to conduct directional analysis of capability data and development potential data. On this basis, the company compares the work experience, innovation, and development ability of the recruits and other information. Enterprises analyze employee information through multisensor technology. At present, the application of information technology by enterprises is still on the surface, and it cannot give full play to the advantages of information technology. In the process of human resource management, enterprises have not applied multisensor technology to manage decision-making. Enterprises are still stuck in the traditional thinking mode of human resource management. In addition, due to the long application time of traditional management concepts and methods, enterprise managers cannot give full play to the advantages of multisensor technology in practical work. Enterprise management lacks a long-term vision for the reform and development of the human resource management system. This lack of vision causes the human resource management system of enterprises still use traditional methods. The lack of application of this new technology affects the reform and development of the human resource management model. The comparison of human resource information construction in different scenarios are shown in Figure 5.

3.3. *The Enterprise Did Not Carry Out Comprehensive Planning and Clarify the Optimization Rules.* The improvement and optimization of enterprise human resource management should focus on the overall strategy of the enterprise. Enterprise managers need to clarify the direction and implementation plan of enterprise reform. In the era of continuous updating of multisensor technology, human resource managers of some enterprises do not consider enterprise development from the perspective of the overall strategy. Corporate managers themselves have not formulated detailed reform methods. At the same time, the strategic layout of many enterprises mainly continues the previous development model. These enterprises are neither connected to Internet technology nor fully integrated with multisensor technology. This situation has caused enterprises to encounter various difficulties in the process of the human resource management system. Enterprises have not established incentive systems and guarantee systems, and many reform measures cannot be implemented. The reform of the management system of human resources still needs to consider this from many aspects. In addition, the scope of work of human resource management is concentrated within the enterprise. Business leaders have not fully realized the importance of human resource management. This situation leads to difficulties in enterprise human resource management and personnel management. Enterprises cannot establish a comprehensive understanding of multisensor technology and cannot correctly predict the development direction of multisensor technology. Therefore, enterprises cannot formulate their own human resource management reform plans in combination with multisensor technology. The reform work of enterprises cannot be effectively implemented and the formalism is serious. The

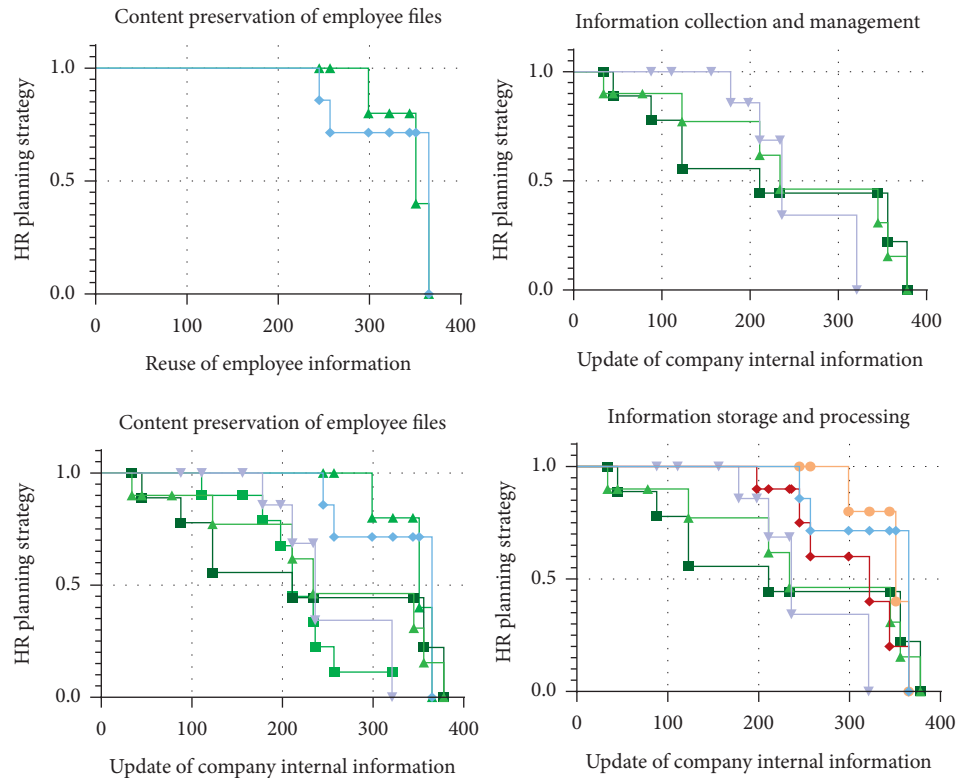


FIGURE 6: The comparison of the effect of information management within the enterprise among different departments.

comparison of the effect of information management within the enterprise among different departments is shown in Figure 6.

3.4. The Company Has Not Been Able to Build an Excellent Team of Professionals. China is in the era of the knowledge economy, and enterprises need to give full play to the value of talents. The value of talents is of great significance to the development of enterprises. In the era of multisensor technology, to achieve good results in human resource management, an excellent team of professionals must be established. Enterprises need to improve the comprehensive business level of the talent team. This analysis method can better meet the needs of the position and recruit talents that meet the needs of the enterprise. At the same time, enterprises also need to protect the value created by talents at work. Therefore, enterprises need actively carry out the application combination of multisensor technology and talent recruitment management. However, at this stage, the integration of human resource management and multisensor technology in most enterprises is not close enough. This integration is still in its infancy. In the composition of the human resource management team, only a very small number of workers have systematically learned too many sensor technologies and can flexibly use them. Enterprises need to analyze data of different characteristics, recruit high-quality talents for enterprises, and then achieve mutual benefit and win-win results. When carrying out the training of human resource managers, enterprises mainly conduct training in the traditional way. Enterprises rarely involve the

knowledge points of multisensor technology in the training process. Even if the development of enterprises incorporates multi-sensor technical knowledge, it only stays on the surface. The application of technology by enterprises is mainly based on simple and common sense knowledge. Businesses cannot really improve managers' awareness of multi-sensor technology. This situation results in multi-sensor technology that cannot be fully integrated into the management of human resources. At the same time, the company did not pay attention to the introduction of management talents and did not formulate a reasonable salary system and incentive system. This situation also leads to a more serious brain drain, and enterprises cannot establish a comprehensive human resource management team.

4. The Introduction Strategy of Multisensor Technology in Enterprise Human Resource Management

4.1. Enterprises Need to Improve Their Awareness of Multi-sensor Technology. At the current stage, with the rapid development of the Internet and computer technology, the application scope of multisensor technology is becoming more and more extensive. Technology has had a major impact on various industry sectors. Enterprises pay more attention to the application of multisensor technology to human resource management. The application of new technology has become an important direction of the current reform of enterprise human resources management. Therefore, business leaders and human resource managers

must fully understand multisensor technology. Enterprises need to pay attention to the application of new technologies and continuously improve their business scenarios using multisensor technology. Multi-sensor technology and human resource development work. In the modern management system, the development of human resources is the core content of resource management. This kind of work is related to the important foundation of the strategic development of human resources of enterprises. In “multisensor technology,” companies need to carry out multisensor technology analysis. Specifically, enterprises can work from the following two aspects. First, human resource managers should pay attention to the application of multisensor technology from an ideological point of view. Managers need to understand the important role of multisensor technology in human resource management. Managers need to change their management thinking and methods and understand multisensor technology as the focus of promoting human resource management reform. Enterprises need fully integrate multisensor technology in management methods, management concepts, and workflows. Businesses need to take advantage of multisensor technology.

Second, enterprises should combine multisensor technology to build a new human resource management platform. Enterprises need to further improve the actual effect of human resource management. The enterprise management department needs to further separate the work content of human resource management and personnel management. Enterprises need to gradually establish a human resource management method based on computer data. According to the characteristics of different employees, enterprises need to carry out a comparative analysis of multisensor technology. Enterprises carry out precise development of human resources according to the strengths and abilities of employees. At the same time, enterprises need to establish a comprehensive human resource management database according to their own conditions. Enterprises need to disclose the database within the company to realize the sharing and circulation of data information. Through this database, enterprises can better improve the efficiency of enterprise human resource management. Through this database, enterprises can keep an eye on the latest developments of employees at all levels. By establishing an information resource database, enterprises lay the foundation for future human resource management.

4.2. Enterprises Need to Clarify the Means of Implementing Human Resource Management. In the era of multisensor technology, the market environment has undergone tremendous changes. Changes in this market environment require constant innovation in human resource management. Enterprise management should constantly be reformed according to the external environment. Enterprises need to formulate a scientific human resource management strategy. At the same time, to ensure that the new management system can be fully implemented; enterprises also need to build a corresponding security system. In this way, we can improve the scientific and foresight of enterprise

human resource management. Specifically, companies need to work from the following two aspects. First, enterprises should pay full attention to the application of multisensor technology in the process of human resource management. Enterprises need better tap the advantages of multisensor technology. Companies need to use multisensor technology accurately analyze their strategic goals.

On this basis, enterprises need to formulate a clear reform direction, implementation path, and ultimate goal; need to start from every detail to improve the recognition of organizational leaders and employees for human resource management. Enterprises need to change the traditional human resource development model and need to put more emphasis on the analysis of multisensor technology. It needs to scientifically realize the human resource development efficiency of “making the best use of their talents.” Then, it should make full use of the advantages of multisensor technology and mobilize every employee to participate in human resource management. Enterprises need to divide the overall strategic layout into several branches according to their actual conditions. On this basis, let each employee undertake corresponding branch tasks. On the one hand, this management method can effectively stimulate the enthusiasm of employees, mobilize their subjective initiative of employees, and make employees feel their sense of responsibility and honor. On the other hand, this management method is also conducive to changing the main body of enterprise human resource management. Enterprises can rely on multisensor technology further extract valuable information in human resource management. Enterprises need to further share useful information internally to ensure the orderly progress of enterprise human resource management reform. The application comparison of multisensor technology in enterprise human resource management is shown in Figure 7.

4.3. Enterprises Need to Improve the Comprehensive Ability of Human Resource Management. Under the background of the modern knowledge economy, the stable development of enterprises cannot be separated from the support of excellent teams. Similarly, in enterprise human resource management work, an excellent team with strong professional ability is also very important. An excellent team is a carrier that promotes the continuous reform and innovation of human resource management. Therefore, enterprise leaders need correctly understand the important role of human resource management in enterprise development. Enterprises need to invest a certain amount of money to improve the comprehensive level of the human resource management team. In addition, enterprises need to carry out training courses and seminars on human resource management on a regular basis. In the process of learning, managers should improve their professional knowledge and skills in human resource management on the one hand. On the other hand, managers also need to learn more multisensor technology knowledge. Enterprises need to cultivate a team of compound talents with professional knowledge and multisensor technology knowledge. With the popularization

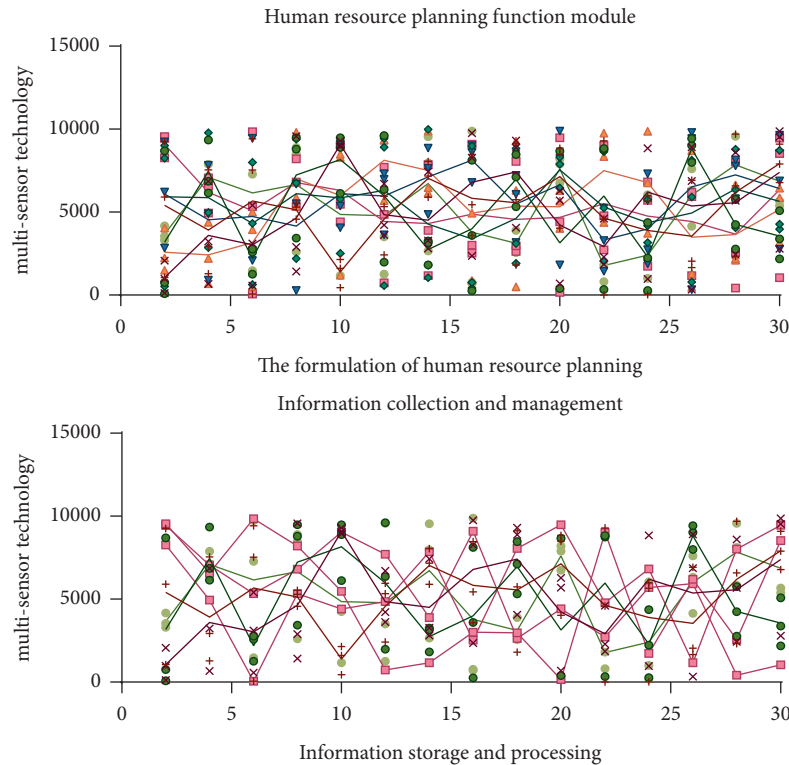


FIGURE 7: The application comparison of multisensor technology in enterprise human resource management.

of multisensor technology in human resource management, this technology will inevitably lead to changes in the human resource management system. At the same time, enterprises need simultaneously carry out reforms and innovations in talent incentives and salary management. Enterprises need to strengthen the introduction of talents in multisensor technology. Establish strategic cooperative relations with institutions of higher learning, scientific research institutions, and other institutions through the school-enterprise cooperation model. Enterprises need to introduce more multisensor technology professionals in human resource management. It needs to improve the deficiencies in human resource management work and promote the improvement of human resource management efficiency and quality.

5. Industrial Distribution of Human Resources

5.1. Personnel Configuration Module Design. In the existing human resources management system, though some daily personnel management work needed information input, register, statistics, and daily tasks, such as function modules, but all of these works are directly on the existing data processing, on the basis of no in-depth integrated use of the data mining analysis function. In particular, there are still some deficiencies in the design of human resource allocation based on data mining information.

By building a human resource allocation data mining analysis module in the system, combining indicator data of different description types, and using K-Means clustering algorithm for classification and analysis research, a unique human resource allocation analysis indicator system is

proposed, which provides a method to improve the system's comprehensive human resource allocation analysis function.

5.2. Human Resource Allocation Needs. Before the design of the human resource allocation data mining function, we must first conduct a requirement analysis to clarify what basic functions need to be achieved by the mining function, which steps are necessary, the indicators that may be used, and the program language or program algorithm that needs to be used to achieve the function, etc., and then, we can carry out the specific function implementation program design.

According to the concept of modern human resources "personnel quality concept," human resources allocation is not simply a matter of increasing or decreasing the number of personnel, but more importantly, considering the comprehensive quality, work ability, work efficiency, work attitude, health condition and other factors of the personnel in the workforce. At present, before conducting staffing, human resource management departments usually give priority to the job responsibilities of each division, business characteristics, annual workload, and the number of personnel required to complete the tasks, according to the importance procedures of various factors, and conduct a comprehensive study to determine the staffing plan of the division according to whether the age structure, knowledge structure, gender structure, and ability of the existing personnel of the division can meet the needs of completing the tasks. Therefore, the analysis and study of human resource allocation tasks should not only analyze the issue of staffing

quantit but also analyze the structure and quality of the staffing of different divisions according to whether the divisional staffing is reasonable. In the past, when the human resource management department analyzed the basic quality configuration of the staff in the division, it was usually based on perceptual understanding, and there was a lack of in-depth data mining analysis tools and corresponding data analysis conclusions to support whether the configuration plan was reasonable, whether it could not meet the different needs of different divisions, and how to allocate human resources in a balanced manner when the number of existing staff structure could not be changed quickly.

This paper attempts to use the existing basic human resources data to cluster and analyze the basic quality of personnel, and visualize the basic quality of divisional personnel allocation through visual display so as to facilitate a more convenient judgment of whether the staffing is reasonable and provide a decision basis for the next human resources allocation adjustment.

5.3. Human Resource Allocation Data Mining Analysis Main Functions. Human resource allocation data mining is a new functional module in the original HR management system. According to the design plan of data mining analysis process and the need of data mining analysis task, this function module should have the following main functions: selection of data analysis index, entry display of data index, cleaning and modification of original data, construction of new data index, integration processing of data, selection of data mining algorithm, parameter setting and adjustment of data mining algorithm, realization of data mining algorithm, display of data mining, the display of results, backfill of data mining results, and graphical display of staffing situation. The functional design of the module combines some existing functional modules in the existing software, and at the same time extends it with the analysis needs. Among them, the selection and re-integration of analysis indicators can be done by using the original functions of the system, while the implementation of data mining algorithms and the presentation of results need to be redesigned to be realized.

5.4. Human Resource Allocation Module Data Mining Analysis Process. The general idea of the data mining process design of human resource allocation module is to use some basic functions of the existing human resource management information system and add algorithm analysis function and graphic display function; the main steps are as follows:

(1) Analysis of the data mining task. The initial analysis of the data mining task is carried out to clarify the main purpose of the mining task, the specific steps to be implemented, the main indicators involved, the overall effect you want to achieve, etc.

(2) Selection and construction of basic analysis index items. Based on the analysis results, the basic index items required for analysis are selected from the human resource information system, and a preliminary judgment is made as to whether the basic index items are complete. When there

are incomplete indicator items, they are constructed by building new subtables and new indicator items as needed.

(3) Improvement of data of basic index items. The data of the basic index items are adjusted and improved; especially, the important data needed for analysis must be added and completed.

(4) Construction of personalized index items. Without changing the data of basic index items, new process index items are constructed through the system function, and the process index items are mainly processed in various forms such as merging, calculating, format converting, and intelligent fetching of basic index items to create personalized index items for data mining analysis in the next step.

(5) Human resource allocation analysis. Through the interface of human resource allocation analysis function module, K-Means clustering algorithm is used to cluster personnel. When analyzing, you need to select the analysis index items, set the number of clusters, the number of iterations, select the initial clustering center, and then cluster the personnel by K-Means clustering algorithm. After the clustering is finished, the clustering effect is judged whether it meets the expectation, if it meets the expectation, the result of clustering is backfilled into the basic index item; if it does not meet the expectation, the clustering is reclustered by adjusting the clustering parameters, initial centroid, or adjusting the clustering index until the clustering effect meets the expectation.

(6) Visualization display. According to the clustering results of backfill outputting the two-dimensional point diagram of divisional staff quality analysis, study and judge whether the staffing structure is reasonable, if it meets the task requirements, then end; if it does not meet the task requirements, then make appropriate staff adjustment, and then output the two-dimensional point diagram of divisional staff quality analysis to study whether it is reasonable.

Based on the analysis results and intuitive graphic display, management can more easily study and judge whether the staffing of each office is balanced and reasonable, and provide a basis for decision making on the staffing adjustment of the office at a later stage.

6. Conclusion

The theoretical significance of this study mainly includes the following aspects. First, the application of information technology has brought systematic innovation to the theory of human resource management. Information technology plays an important role in innovation and management practice. The combination of information technology and human resources fully meets the requirements of system management. This article takes high-tech enterprises as the research object and studies the information construction of human resource management. The article further sorts out and clarifies the specific solutions of human resource management. This study has practical significance in two aspects. On the one hand, the application of information technology can support enterprises in the comprehensive management of human resources. Information technology is very helpful for enterprises to carry out the information

construction of human management. Specifically, it can be reflected in management processes, functional design, training and compensation, and external consultation. On the other hand, information technology can provide relevant experience for other management work.

Especially for the management work related to human resources, the tools of information technology can bring good results. The application of information technology can provide a reference for the theoretical innovation of human resource management. In today's rapid development of the global economy, the competition between enterprises is the competition of talents. The importance of human resources has been valued by more and more enterprises. Under the background of rapid information iteration, enterprises need to make better use of talents to create a performance. The rapid development of enterprises also requires more professional talents and intellectual services. Enterprises need to use a variety of new technologies and new methods to efficiently manage talents. High-tech enterprises are the vanguards of enterprise reform and possess more knowledge-based talents. The management mode of human resources information of high-tech enterprises is also provided to other related industries for reference. The results of this study can drive the rapid development of Chinese enterprises as a whole. This article systematically sorts out the information problems of enterprise human resources, which helps to reduce enterprise human capital and improve enterprise management efficiency. The research in this article will help Chinese enterprises to develop as a whole and improve their international competitiveness. Therefore, this article has important practical significance to study the information work of enterprise human resources.

Under the background of the development of multi-sensor technology, enterprise leaders and managers must fully realize the application prospect of multisensor technology. In the work of human resource management, enterprises need to focus on strengthening the reform and innovation of human resource management technology. Enterprises need to improve the cognition and application level of multisensor technology and establish a strategic layout of human resource management. At the same time, enterprises need to set up an excellent compound human resource management team to lay the foundation for continuously improving the effect of enterprise human resource management.

Data Availability

The dataset can be accessed from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

References

- [1] M. T. Ballestar, A. García-Lazaro, J. Sainz, and I. Sanz, "Why is your company not robotic? The technology and human capital needed by firms to become robotic," *Journal of Business Research*, vol. 142, pp. 328–343, 2022.
- [2] Y. Ramírez and N. Tejada, "University stakeholders' perceptions of the impact and benefits of, and barriers to, human resource information systems in Spanish universities," *International Review of Administrative Sciences*, vol. 88, no. 1, pp. 171–188, 2022.
- [3] R. Kutieshat and P. Farmanesh, "The impact of new human resource management practices on innovation performance during the COVID 19 crisis: a new perception on enhancing the educational sector," *Sustainability*, vol. 14, p. 2872, 2022.
- [4] A. Imamuddin, "An enterprise resource planning system solution for small-mid size enterprises: an information system development case study," *Information Technology and Management*, vol. 2, no. 1, pp. 160–168, 2021.
- [5] T. M. Truong, L. S. Lê, E. Paja, and P. Giorgini, "A data-driven, goal-oriented framework for process-focused enterprise re-engineering," *Information Systems and e-Business Management*, vol. 19, pp. 683–747, 2021.
- [6] C. Atkinson, B. Lupton, A. Kynighou, and V. Antcliff, "Small firms, owner managers and (strategic?) human resource management," *Human Resource Management Journal*, vol. 32, no. 2, pp. 449–469, 2021.
- [7] M. Kumar, J. B. Singh, R. Chandwani, and A. Gupta, "Context in healthcare information technology resistance: a systematic review of extant literature and agenda for future research," *International Journal of Information Management*, vol. 51, Article ID 102044, 2020.
- [8] C. E. Oehlhorn, C. Maier, S. Laumer, and T. Weitzel, "Human resource management and its impact on strategic business-IT alignment: a literature review and avenues for future research," *The Journal of Strategic Information Systems*, vol. 29, no. 4, Article ID 101641, 2020.
- [9] S. Jeon, I. Son, and J. Han, "Exploring the role of intrinsic motivation in issp compliance: enterprise digital rights management system case," *Information Technology & People*, vol. 34, no. 2, pp. 599–616, 2020.
- [10] Z. Liu, S. Mei, and Y. Guo, "Green human resource management, green organization identity and organizational citizenship behavior for the environment: the moderating effect of environmental values," *Chinese Management Studies*, vol. 15, no. 2, pp. 290–304, 2020.
- [11] H. Annabi and J. Locke, "A theoretical framework for investigating the context for creating employment success in information technology for individuals with autism," *Journal of Management & Organization*, vol. 25, no. 4, pp. 499–515, 2019.
- [12] S. Choi, "Organizational knowledge and information technology: the key resources for improving customer service in call centers," *Information Systems and e-Business Management*, vol. 16, no. 1, pp. 187–203, 2018.
- [13] Z. Peng, Y. Sun, and X. Guo, "Antecedents of employees' extended use of enterprise systems: an integrative view of person, environment, and technology," *International journal of information management*, vol. 39, pp. 104–120, 2018.
- [14] J. C. Field and X. W. Chan, "Contemporary knowledge workers and the boundaryless work–life interface: implications for the human resource management of the knowledge workforce," *Frontiers in Psychology*, vol. 9, 2018.
- [15] H. Liu, "Research on organizational change and its management under changing environment," *Human Resource Management Review*, vol. 2, pp. 1–21, 2018.
- [16] F. Wang, "Analysis on the strategy of application of statistical analysis method in human resource management of

- modern enterprise,” *International Journal of Technology Management*, USA, 2017.
- [17] N. Evans and J. Price, “Enterprise Information asset management: the roles and responsibilities of executive boards,” *Knowledge Management Research & Practice*, vol. 14, no. 3, pp. 353–361, 2017.
- [18] S. Slaughter and B. Cantwell, “Transatlantic moves to the market: the United States and the European Union,” *Higher Education*, vol. 63, pp. 583–606, 2012.
- [19] W. Wan and L. Liu, “Intrapreneurship in the digital era: driven by big data and human resource management?” *Chinese Management Studies*, vol. 15, no. 4, pp. 843–875, 2021.
- [20] D. Choi, H. Lee, H. Y. Lee, and H. Y. Park, “The association between human resource investment in IT controls over financial reporting and investment efficiency,” *International Journal of Accounting Information Systems*, vol. 43, Article ID 100534, 2021.
- [21] C. Zhao, L. C. Fang, and Z. Wang, “Human resource management in China: what are the key issues confronting organizations and how can research help?” *Asia Pacific Journal of Human Resources*, vol. 59, no. 5, 2021.