Talking about Enterprise Human Resource Management from the Perspective of Big Data

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Abstract

With the third revolutionary wave in the world, the world has gradually entered a period of massive data explosion. The popularity of computer technology and the wide application of Internet tools have laid a broad foundation for the rise and development of big data. The era of big data has brought new development opportunities for enterprise human resource management. This paper first introduces the concept and connotation of big data. Secondly, it talks about the innovation of six modules of enterprise human resource management from the perspective of big data. Then it puts forward the advantages and disadvantages of enterprise human resource management development under the big data environment. The last part is the conclusion.

Keywords

Big data, Enterprise human resource management, Enterprise human resource management module.

1. Introduction

With the rapid development of information technology, big data has almost penetrated into various industries and fields. It has become a new production factor, intangible assets and valuable social wealth in the background of the data age. It has become a new opportunity for business transformation and management change. The economic and social development has brought about earth-shaking changes. How to fully understand big data, grasp the opportunities and challenges of big data, accelerate the formation of big data thinking, make full use of the value of big data, actively change the human resources management of enterprises, and boldly promote management innovation, is undoubtedly a realistic choice that cannot be avoided. As part of the management discipline, human resource management is also accepting the baptism of big data. How to grasp and treat big data in the current situation and realize the innovation of human resource management is an urgent need for human resources management system to explore.

2. Interpret "big data"

2.1 The arrival of the era of big data

In recent years, big data theory and big data action have formed a boom in academic circles, business circles, and government agencies at home and abroad, indicating the coming of the era of big data. In 1980, the famous American futurist Alvin Toffler praised big data as "the third wave of cadenza" in the book "The Third Wave". Based on the limitations of the current technological level, the world Not ready to embrace the era of big data. In the early 1990s, Bill Neng, the father of data warehousing, first proposed the concept of "data warehousing" and earlier stated the theory of big data. He pointed out that unlike database applications, data warehousing is more of a process of integrating, processing, and analyzing business data distributed throughout the enterprise. In the late 1990s, a new term for business intelligence (Business Intelligence) emerged in the foreign business community. It used the acronym ETL (Extraction Transformation Loading), meaning advanced information such as data extraction, transformation and loading, data warehousing, data mining, etc. Technology transforms

the company's existing data into knowledge, which supports the decision-making process of managers and further promotes the development of big data theory. In 2005, John Webster and Chris Stakutis first described the impact of large-scale data on business development and people's lives in the book All-Inclusive Data. Since then, the Internet has developed rapidly, and the wide application of social media and smart phones has provided rapid development space and technical support for data diversification, diversification and scale. In September 2008, Nature published an album called Big Data [2], which first proposed the concept of Big Data. At the beginning of 2009, the word “Big Data” began to be gradually absorbed by information technology. The importance of the industry. In 2010, British scholar Victor Meyer Schonberg, known as the "Prophet of the Big Data Era," published a 14-page forward-looking study of big data applications in The Economist. The idea of the era of big data was put forward. In June 2011, the McKinsey Global Institute published a research report, “Big Data: The Next Frontier of Innovation, Competition, and Productivity,” first proposed that “the era of big data has arrived”. The report shows that data has penetrated into every industry and business function area and has gradually become an important production factor. The mining and application of massive data will indicate a new wave of productivity growth and the wave of consumer surplus. “Big Data” is the key to the future innovation and competition of information society enterprises and the improvement of social productivity. The Davos World Economic Forum, held in January 2012, listed big data as one of the themes. The conference also published a series of reports on big data, big impact: new possibilities for international development, especially for big data. Under the new data generation method, how to make better use of data to generate good social benefits, and focus on the integration and utilization of personal generated mobile data and other data. The UN Global Pulse initiative launched a report in May 2012, “Developing Big Data: Challenges and Opportunities,” which highlights the opportunities that countries, especially developing countries, face in the face of data torrents in the era of big data. Challenges, but also a preliminary interpretation of the application of big data. In December 2012, a group of well-known enterprises and universities in China jointly initiated and announced the establishment of “Zhongguancun Big Data Industry Alliance” in Beijing, taking the lead in integrating the big data industry into “Zhongguancun Strategic Emerging Industry Cluster Innovation Leading Project (2013-2015)” Promote the development of world-leading big data technologies, products, industries and markets. This fully shows that China has embraced the "big data era" with an open mind and vision, the courage of innovation, and the development of the world.

2.2 The connotation of big data

At present, the definition of big data in academia and industry is a matter of opinion. In terms of the definition of big data, there is a more authoritative point of view. Wikipedia believes that: Big data or massive data means that regular software cannot be used within the allowed time. A collection of data that the tool crawls, manages, and processes content. The definition given by McKinsey is: Big data refers to a data set that exceeds the capabilities of conventional database tools for acquisition, storage, management, and analysis. In particular, it is not that data sets that must exceed a certain TB value can be considered big data. Gartner, a research and information organization, believes that “big data” is a massive, high-growth, and diverse information asset that requires new processing models to have greater decision-making, insight, and process optimization capabilities. At the same time, IBM has descriptively defined big data from three perspectives: large data volume, fast growth rate and type diversity.

As a new thing in the development of the information society and a symbol of an era, "Big Data" is still in the initial stage of understanding, exploration and research, and will be increasingly enriched with the development of practice. For the time being, its meaning is mainly understood from four levels: First, “Big Data” refers to the massive amount of decision-making, insight and process optimization capabilities that need to go beyond conventional technical tools and new processing models. High growth rates and diverse information assets. Second, “Big Data” is rich in volume, Variety, Velocity, Variability, huge data value, Veracity, and Viscosity. The "7V" of the flag is the "Vs" feature of the logo. Third, big data has the dual attributes of technical attributes and social attributes. It is not only the most advanced systematic technical tools and analytical capabilities and

methods for the efficient and feasible processing of data sets marked by "7V", but also the market and organization. And the method of government-civil relations, showing the social regularity of human behavior development. Fourth, "Big Data" is a new way of thinking about big data and data intelligence. It can be said that big data has opened up a major era transformation, which has become an important social resource and a driving force for economic and social development. Understanding the meaning of big data has important theoretical guiding significance for the transformation of human resources.

3. The six modules of human resources management under big data

3.1 Big data in human resource management

The content of big data presented in different fields varies. In the field of human resource management, when the human resources department works around "people" and "things", it generates a lot of data. In general, the data types can be roughly divided into four types, as shown in Table 1.

Table 1 Data types that constitute big data in human resource management

Type of data	Main indicator	Big data type
Basic data	Age, education information, professional skills, time experience, current position, class, etc.	Structured data dominates, a few are semi-structured and unstructured data
Capability data	Training experience, training assessment, efficiency of problem solving, participation in competition results, rewards and punishments, etc.	Semi-structured and unstructured data dominated
Efficiency data	Work task completion efficiency, single task completion time, bad piece rate, failure rate, etc.	Mostly structured and semi-structured data
Potential data	Work efficiency improvement rate, income increase level, job title increase frequency, performance improvement rate, etc.	Mostly structured and semi-structured data

3.2 Innovation of the six modules of human resource management from the perspective of big data

Human resource management includes six modules: human resource planning, recruitment and configuration, training and development, performance management, compensation management and employee relations. The six modules complement each other and connect with each other, which plays a key role in solving the problem of "retention, selection, education and use" of enterprise talents. The arrival of the era of big data has injected new energy into it. Some people think that big data will become the seventh module of human resource management, penetrate into six modules, provide excellent data support for each module, and promote human resources. Comprehensive innovation in resource management systems.

1). Human resource planning from the perspective of big data

For human resource planning, its main task is to predict the needs of personnel. The tools currently used include expert prediction, regression analysis, trend analysis and ratio analysis. Managers are mostly subjective and cautious when using these tools, and they cannot be comprehensive and objective, but the arrival of the era of big data can solve this problem well. In the context of big data, through the collection of information inside and outside the organization, managers can accurately grasp the various data reflecting the true situation of each employee. Understand the basic information of employees, educational information, internship or work experience, general interest and hobbies, and other structured and unstructured basic data, problem-solving timeliness, participation in competition, and other unstructured ability data, as well as employees After the tasks complete the

efficiency data and potential data such as efficiency and performance results, the human resources department can do the quantity, quality, structure, etc. of the employees in combination with the individual goals and development needs of the employees and the human resources flow of the company in recent years. Objective static analysis, accurate dynamic analysis of personnel mobility, etc., to predict the number of vacant positions at any time, to see which of these positions can be filled through internal training, and which positions must be obtained through external recruitment [3] . The Human Resources Department develops future human resource planning by collecting, stating, and analyzing data and combining the company's strategic goals. According to this principle, all personnel decision-making in the enterprise is carried out in the form of "facts + data". It can not only objectively determine the priorities of future human resources work, but also determine specific plans and plans. The human resources department should be good at using data and making proper use of data. Every step of the plan must be based on facts and based on data. This will be incalculable in terms of fair establishment, formulation and implementation of personnel policies. Impact.

2). Recruitment and configuration of talents from the perspective of big data

In the process of recruitment, most of the companies use online recruitment, campus orientation recruitment and on-site recruitment. Recruiters only have a general understanding of some basic data of job seekers, such as professional information, internship experience and other semi-structured data, but Some important unstructured ability data such as the ability of the job seeker and the mastery of professional skills are not well understood. Some of the employee's performance completion time and job title increase rate are completely unknown. In the context of big data, a new form of recruitment that continuously integrates social networks has gradually attracted people's attention. One of the more successful social networks is LinkedIn, which can make up for the shortcomings of traditional recruitment with social genes, which can enable recruiters to have a detailed understanding of the social information of recruiters, improve the quality of recruitment, save recruitment costs, and broaden job hunting. They understand the channels of the company's information and application, and improve the efficiency of their application. Social networks have many data clusters that cover all the information about a person, such as job information, living conditions, social relationships, work efficiency, capabilities, and potential development. The HR department can directly access the candidates' various information by means of the big data of the social network, including not only the big data information involved in human resource management, but also other financial data information and private data information, etc., so as to form a candidate. The three-dimensional information set, a comprehensive understanding of the actual situation of the candidates, to achieve a precise "personal post matching", to achieve the best use of talent, to make the best use of the state, appropriate personnel. The selection and hiring of enterprise talent recruitment in the large database of "social network" can not only avoid the vision of "the frog at the bottom of the well", but also prevent some people with human rights from taking power for personal gain, thus promoting the efficient flow of talents. For the human resources department, on the one hand, the job seeker's resume information, job application information, etc. should be continuously gathered to lay the foundation for big data analysis of recruitment work [4]. On the other hand, on this basis, we should make full use of modern cloud computing technology to process large amounts of data, filter useful information, discard useless data, obtain a series of analysis results such as job status and employment trends, and combine human resources of enterprises. The planning situation has been recruited by various departments of the enterprise, so that the recruitment work is justified, the process is more effective, the positioning of the configuration work is more precise, and the artistic combination of "introduction" and "use" is realized.

3). Employee development from a big data perspective

As an important part of human resource development, career management plays an important role in the human resource management of enterprises. It can more effectively develop and utilize the internal talent resources, reduce the dependence on external recruitment, save recruitment costs and save. Recruitment time, enhance employee loyalty and centripetal force to the company, improve the

initiative of the work, reduce the turnover rate [5]. In the era of big data, massive amounts of quantitative data can provide more convincing information for career management and enhance the feasibility of decision making. Under the concept of big data, career planning is based on all data, so in the collection of information, the human resources department should not only understand the structured and unstructured data information of employees' job positions, promotion willingness and career planning. It is necessary to dig deeper into other information related to career planning, and strive to ensure the integrity and integrity of the information, and then quantify and analyze the information, abandon some of the interference data, and finally form a three-dimensional information set of employees, so that career planning and occupation The guidance is more targeted and persuasive. Enterprises can use software technology to develop and design a career management evaluation system based on big data concept. Take the best of traditional career management, go to its dregs, and combine with the career management under big data to give full play to their advantages. . As a result, the company can comprehensively grasp the behavior of employees, and actively provide staff with tailor-made personnel services, help employees to compete for work and explore the maximum potential of employees, and enhance the competitiveness of enterprises. However, in the era of big data, the existing methods of human resource development have serious limitations, and the more obvious one is the training and development of human resources. The training is divided into pre-job training and on-the-job training, which enables employees to understand the job responsibilities of the post, identify the key points of work, improve the deficiencies in the work, improve work efficiency, and achieve “personal post matching”. Therefore, it is important to train employees. At present, most companies use questionnaires to involve employees in determining the content of training. However, with the advent of the era of big data, these methods have seen their one-sidedness. A “big value” in big data is to correct errors in the application, so the human resources management department should pay attention to the errors displayed by the relevant data, implement targeted training, and make a lack of traps [6].

4). Performance appraisal from the perspective of big data

In the past assessments, most of the appraisers rely on limited records to conduct subjective evaluations of the appraisers, and then determine the appraisal results. For example, employee-to-business contributions are determined by recording general-purpose structured and semi-structured basic data such as employee attendance and enthusiasm, and job-based efficiency data such as failure rate and task completion efficiency. However, in the era of big data, if you want to be objective and fair in the assessment and eliminate the opportunistic behavior of employees, the human resources department must change the original assessment method and establish data-based staff assessment and competency analysis tools. In the design of performance appraisal indicators, the first thing to do is post analysis. Therefore, enterprises should make full use of modern science and technology and platform, comprehensively collect and in-depth mining of post-related data, establish performance-based performance evaluation indicators, and then design analytical tools for employee assessment, so that they can not only objectively affirm the past employees The contribution can also provide quantitative guidance on the improvement of employees' future work. In addition, it is also possible to establish information sharing and interactive platforms within the enterprise, such as WeChat and Weibo, so that employees can express their opinions on the selection of performance appraisal indicators, the determination of content, and the implementation process, and actively discuss and interact.As a result, the human resources department can use the large amount of data generated by the platform to objectively determine the performance management plan, and clarify the most concerned issues and the most desired ways for employees to solve. With such an interactive platform, employees are indirectly involved in the formulation of performance appraisal policies, and can directly assess the performance of corporate leaders and other personnel, helping to promote transparency in organizational management and performance appraisal, and leadership of employees. Performance control and employee supervision of leadership work and information sharing and communication between employees. Let employees participate in it, so that they can feel the

importance of the company, and then mobilize their enthusiasm for work and enhance their loyalty to the company.

5). Salary incentives from a big data perspective

Effective incentives are not only affirmation of employees' past performance, but also a sense of accomplishment, and also have great significance for the improvement of employees' future work enthusiasm. With the continuous development of the human resources management system, the means of salary incentives are increasing and the system is becoming more and more perfect. For the time being, there are mainly the following incentives: material interest incentives, career incentives, and emotional incentives. The material interest incentives mainly include salary incentives and welfare incentives, such as basic salary, performance bonus allowance and five insurance and one gold, which are the guarantee for the basic living and stable work of employees. In the era of big data, it is necessary to use the facts to express the salary system in order to achieve objective and fairness and ensure the stability of the talent team. Through the understanding of the basic data, those who have long served the company should increase the intensity of material incentives, and can adopt the policy of providing interest-free home purchase loans and determine the loan amount through comprehensive data analysis. For those employees who excel in competency data and potential data, it is not enough to use only substantial material incentives, but also to adopt diversified incentives. According to Maslow's theory of hierarchy of needs, people have the need for self-realization. In enterprises, especially high-level or key employees, they all hope to make achievements in their profession, improve their positions, and have an honorary authority ratio. The material benefits are even stronger. Therefore, companies can develop corresponding training plans, and the assessment and determination of their lists must be based on the big data generated by employees.

In addition, emotional motivation is also a good incentive, respect and trust for employees, understanding and support, care and consideration. Appropriate use of emotional incentives can fully mobilize employees' work enthusiasm and cultivate employee loyalty and trust, thus creating a stable work team. For example, an early warning system for economic difficulties is established within the enterprise. When the employee's meal consumption in the cafeteria is less than a certain amount, the system will automatically send a notice to them asking if they need help. The relevant personnel will further elaborate according to the warning. Verify and finalize the level of assistance and assistance.

6). Employee relations from a big data perspective

The labor contract clearly stipulates the rights and obligations between the enterprise and the employees. In the era of big data, the labor contract should reflect the principle of humanization to ensure the satisfaction of employees and reduce the turnover rate of enterprises. For example, in the aspect of attendance management, with the advent of the era of big data, the extensive development and application of computer technology, the development of attendance by punching and recording employees to fingerprint records, some companies have even adopted some more advanced pupil recording. The means, these are a good example of the people-oriented principle. In addition, it is not enough for enterprises to establish relationships with employees only through labor contracts. It is also necessary to establish a psychological contract based on a shared vision. Conducting personnel decision-making based on data and objective facts, allowing employees to participate in it, comprehensively analyzing the data, making employees feel objective and fair, thus making the work more active and easier to reach consensus on core values, thereby cultivating employees Professional ethics, to achieve self-development and management of employees. The informationization and globalization of human resource management in the era of big data enable employees to gradually change their original working methods through computer technology and network technology, continuously improve work efficiency, standardize business processes, and bring better value-added services to enterprises. The company and its employees grow and develop together, and work together to achieve a win-win goal.

4. The benefits of combining big data with enterprise human resource management

1). Big data application makes the human resources management of the enterprise Internet

One of the core elements of big data is the sheer volume of data, and the sheer volume of data is a prerequisite for big data analysis. However, the internal data that can be stored by the enterprise is not enough to support the "big" requirement. Therefore, the internal human resource management system is effectively linked with the external network to form a database. On the one hand, the human resource management system is broadened. The data source can obtain more reference data; on the other hand, the internal data can be effectively combined with the external data to make the human resource decision more accurate. For example, by linking employees' information generated by external social software with the human resources management system, it is possible to judge the low-performance reasons and stability of employees through internal and external data integration, so as to carry out effective employee care or motivation. But it also brings more challenges and requirements to the enterprise's human resource management system. It not only has a supportable storage space for the system, but also enhances the information collection capability of the system, and also generates scientific and effective algorithms and mathematical models. To achieve data calculation and analysis. Therefore, big data makes man-made resource management Internet, which is both a necessity and a challenge.

2). Big data applications provide comprehensive quantitative basis for human resources work

Using the "big data" analysis method, the complex human resources system can collect more information, such as behavioral information, visual information, voice and video information, text and document information, when this information The integration and integration, into the database, can achieve a comprehensive quantification of organizational personnel work. Through the repeated deep mining of these quantitative data to establish a reasonable algorithm, we can truly reflect the concept of human capital. At this time, human resources are no longer an information capital, but a kind of information that can help enterprises continue to operate effectively. Human capital is a working capital that can provide strategic predictive capabilities for organizational development.

3). Big data applications create more favorable conditions for enterprise management and employee services

In the era of big data, the human resources information system is no longer only maintained and applied by the head of the personnel department and the information network department, but will be closer to ordinary employees. Breaking the traditional organizational model of hierarchical reporting, employees can interact with business managers through social software or platforms to generate more interactive data, create a better working atmosphere, and participate in organizational human resource management. In the work, give more suggestions or opinions on the status quo and problems of the company in the process of development and operation, and promote relevant departments to establish more standardized systems and processes. It can also break down departmental barriers, promote collaboration between departments, and improve work efficiency.

At the same time, human resources departmentalization and departmental managers can optimize the organizational structure through feedback and interaction of these information, give employees more timely care and services, and mobilize employees' enthusiasm for work.

4). Big data applications can establish an effective talent data management model

In the Internet age, technology updates make the links between people simpler and more straightforward, and data is everywhere. In such an era, the talents, traits, and behaviors of talents can be characterized and measured by data. The brain of employees is no longer the carrier of information, but evolves into data that can be called at any time. The core asset of data is increasingly being Pay attention to it. When we store these ubiquitous information into computer terminals and store them as data, establish an effective talent data management model and analyze and export the results, big data has created tremendous value for human resource management.

5. The problem of combining big data with enterprise human resource management

1).Reasonable treatment of the advantages and disadvantages of big data

In order to integrate big data into the human resource management system, enterprises must first consider their feasibility, that is, to consider their scale and assets, but also to weigh the benefits and costs, and always aim at maximizing profits. At present, some small and medium-sized enterprises blindly follow the trend and eagerly introduce big data into the human resource management system. They believe that having big data is a magic weapon to have the opportunity and stand out. However, many companies do not know the true meaning of big data and collect useless information data at a glance, consuming a lot of money to build a data-based information management system. Such behavior completely ignores the relationship between income and cost, and may not be worth the loss, which may easily lead to the paralysis of the human resource management system. Therefore, in the future development process, enterprises must first consider the necessity of combining big data with human resource management systems, avoid blindly following the trend, and weigh the pros and cons with a careful and serious attitude.

2). Sharing security issues of human resources data

The arrival of the era of big data brings advantages and convenience, but also has drawbacks. At present, countermeasures and technologies for big data security issues are constantly being proposed, but their sharing and security issues still exist. The human resources system of big data also has security risks. For example, the new recruitment model in the era of big data—network recruitment, that is, the human resources department obtains all the data information of candidates through the network, including not only work-related data, but also a large amount of privacy data and financial data related to life. How to protect the data of the applicants and employees, how to set the access rights, etc. should be highly valued by the enterprise. Once the data is leaked or lost, the consequences will be unimaginable. Therefore, data security issues will become the focus of future human resource management system innovation.

6. Conclusion

The advent of the era of big data has changed the internal environment for the survival of enterprises and the external environment for enterprise development, and urged the management of enterprises to adapt to the times and make innovations to adapt to new market competition. Human resource management is an important part of enterprise management, and it is also the focus of applying big data technology for innovation. Enterprises should fully understand the development opportunities brought by the arrival of the big data era and actively carry out innovation in human resource management.

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