Research on the Development of Enterprise Human Resources Management Considering Multi Skilled Talent Strategy in the Era of Big Data

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Abstract—In the era of Big data, multi skilled talent strategy has become one of the commonly used human resource management methods for enterprises in various fields. Its purpose is to increase the professional skills of personnel according to the skills of existing enterprise personnel, so that personnel can work smoothly in multiple different positions, and maximize the allocation and utilization of enterprise personnel. objective: To understand the development of enterprise multi skill person time strategy in the process of human resource management in the context of the Big data era; Method: Using literature research and model analysis methods; Result: Using literature research method, understand the problems that arise in the current human resource management process of enterprises, and propose corresponding solutions, using model analysis method; Conclusion: The human resource management of enterprises in different industries that apply multi skilled talent strategy in the era of Big data has strong adaptability to the times, and combining different human resource management models can optimize the organizational structure of enterprises to the maximum extent, and improve the production efficiency and handling efficiency of enterprises

Keywords- Big data era; Multi skill talent strategy; Enterprise human resource management; model analysis

1 INTRODUCTION

Firstly, the management concept lacks innovative spirit. Due to people's limited understanding of human resource management, it is only used in the appointment, training, and evaluation process of talents. It does not attach importance to the comprehensive evaluation of talents and ignores the abilities of employees in the work, resulting in one-sidedness in human resource management work, greatly affecting the innovation of enterprise work. Secondly, there are loopholes in the management system. The human resources management system is not perfect, the welfare system is unreasonable, and Common ownership units have the nature of public welfare, which is quite different from individual enterprises. During the operation process, due to the lack of working years, the salary share of new employees will be reduced, and there will be a big difference in the salary distribution of new and old employees in the same job and

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position [1]. Finally, the lack of an active personnel team, a fixed professional title evaluation system, and a lack of emphasis on employees' needs for their career development direction have limited their promotion to the company and reduced their sense of belonging to the company [2].

2 Problems in Enterprise Human Resource Management

2.1Selection Ideas for Innovative Personnel Workers

With talent cultivation as the core, this core goal is clarified through a comprehensive analysis of human resource management in daily work during the operation of the enterprise. Strictly control the selection and recruitment of talents, carry out fair competition recruitment activities to select outstanding personnel among numerous talents[3], integrate talent recruitment and training plans, analyze the current situation of enterprise operation, and timely update management theory and system[4].

2.2Establish a sound human resource management system

A Continuously increasing efforts in departmental construction can be seen in both the degree of emphasis and funding investment, and there is sufficient resource guarantee when establishing a sound human resource management department. Especially in the organizational structure of small enterprises, the establishment and management system of the human resources department must have strong flexibility, rigor, and discipline, as shown in Figure 1. The method is: 1) Improve department configuration and establish multiple recruitment channels; 2) Optimize and adjust the management system; 3) Improve and adjust grassroots production work; 4) Strengthen the promotion of reward mechanisms in the human resource management system.

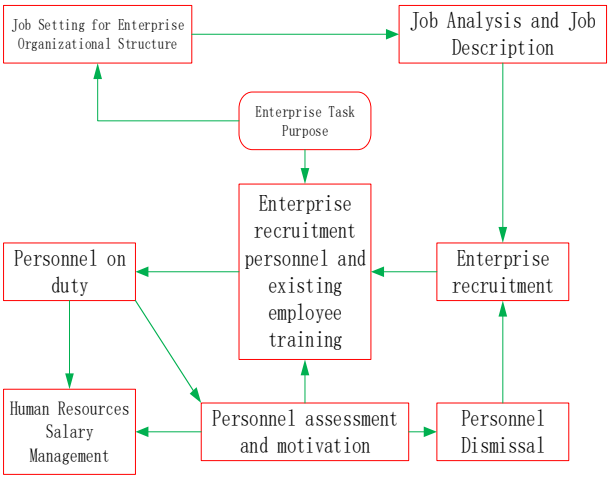

Figure 1. Flow Chart of Human Resource Management System

2.3Establish a professional personnel management team

In the era of Big data, only by grasping the development direction of the times in time and effectively combining with the implementation policies issued by the state can enterprises interpret and estimate the current and future human resource management risks [5]. For the establishment of a human resource management team in enterprises, real-time control of the company's demand for various talents and the introduction of new technological talents can enhance the company's competitiveness in the market; For full-time human resources employees, a keen sense of the times and timely adjustment of work methods are the only way to improve their own literacy and abilities; For the leadership of enterprises, establishing effective information transmission methods and scientifically responding to unexpected events in daily management; Regularly carry out vocational training activities to enhance employees' professional literacy, establish a good corporate image, and enhance corporate responsibility.

2.4Develop a fair and reasonable reward and punishment system

There are two main forms of reward and punishment systems in human resource management: material rewards and spiritual rewards. Material rewards are the main focus, while spiritual rewards are the main focus. When applying the internal and external reward system, it is not only necessary to consider the actual needs of employees, but also to strengthen whether the enterprise needs it in its development, so as to carry out scientific and reasonable implementation and effectively improve the actual effectiveness of human resource management. Such as the "Three Public Principles" and the reasonable implementation of the spiritual reward system.

3 CLOUD MODEL FOR HUMAN RESOURCE MANAGEMENT IN LOGISTICS ENTERPRISES

3.1Model Overview

Definition: Set a quantitative domain U, where the qualitative concepts on U are represented by C. If the quantitative value x is a random implementation of C and $x \in U$, the uncertainty of x over C $\mu(x) \in [0, 1]$ is a random number with a stable tendency, represented as $\mu: U \rightarrow [0,1]$ $x \in \mu X \rightarrow \mu(x)$ Then, we can obtain the distribution of cloud droplets in the universe U using $(x, \mu(x))$ represents. Digital features: This model is commonly represented by Ex, En, and He, which mean expected value, entropy value, and superentropy value [7].

3.2Cloud generator

The cloud algorithm under the influence of software and hardware is called a cloud model generator, and the cloud generator is fixed. The relationship between qualitative and quantitative needs to be established through the use of cloud generators. Therefore, the relationship between quantitative and qualitative is: mutual coordination, peaceful coexistence. The composition of cloud generators includes forward and reverse cloud generators, and cloud generators with X and Y conditions. This study mainly elaborates on the former. Therefore, the forward and reverse

cloud generators are classified based on the three digital features mentioned above, and the cloud droplet principle structure is shown in Figure 2.

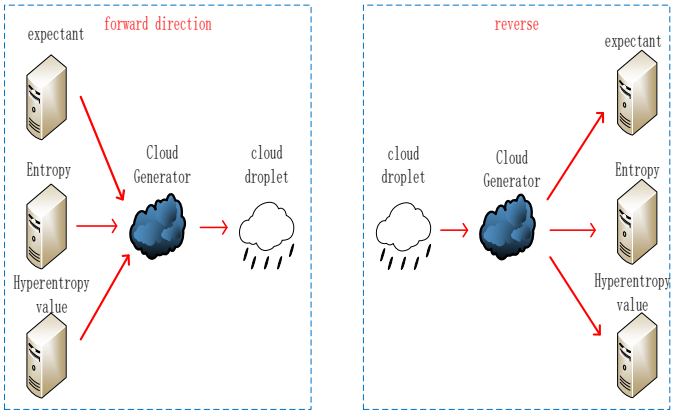

Figure 2. Structure diagram of cloud droplet principle for forward and reverse cloud generators

3.3Cloud Model Role

This cloud model is mainly applied to risk assessment of outsourcing human resource management in logistics enterprises. Firstly, by establishing the outsourcing influencing factors, a corresponding single factor set is formed, and the weight coefficients of different factors in the overall goal are determined through expert analysis; Secondly, clarify the set of comments, which is the evaluation level standard (as shown in Table 1); Furthermore, the Delphi method method is used to clarify the composition structure of corresponding factors, so as to carry out the transformation of quantitative and qualitative indicators of outsourcing risk assessment with the above cloud model generator content; Finally, analyze the multi factor model and effectively process the transformed data to obtain the final comprehensive rating. The steps roughly include: determining the evaluation index system for outsourcing risks → determining evaluation standards → data processing and calculation → organizing price cloud comprehensive indicators → drawing characteristic maps and conducting comprehensive analysis. In addition, the calculation formulas are the corresponding calculation formulas for the three numerical features mentioned above, as follows:

$$E_x = \frac{E_{x1}w_1+E_{x2}w_2+\cdots+E_{xn}w_n}{w_1+w_2+\cdots+w_n} \tag{1}$$

$$E_n = \frac{w_1^2}{w_1^2+w_2^2+\cdots+w_n^2}E_{n1} + \frac{w_2^2}{w_1^2+w_2^2+\cdots+w_n^2}E_{n2} + \cdots + \frac{w_n^2}{w_1^2+w_2^2+\cdots+w_n^2}E_{nn} \tag{2}$$

$$H_e = \frac{w_1^2}{w_1^2+w_2^2+\cdots+w_n^2}H_{e1} + \frac{w_2^2}{w_1^2+w_2^2+\cdots+w_n^2}H_{e2} + \cdots + \frac{w_n^2}{w_1^2+w_2^2+\cdots+w_n^2}H_{en} \tag{3}$$

Table1 Cloud Model Evaluation Level Standards

Standard	Score interval
Very high risk	90＜x≤100
High risk	80＜x≤90
Risk is average	60＜x≤80
Relatively low risk	40＜x≤60
Very low risk	0≤x≤40

3.4 Example analysis

The human resource management of a logistics enterprise uses a cloud model to evaluate the risk of outsourcing human resources [6]. Firstly, corresponding evaluation indicators and evaluation system are established, as shown in Table 2, and the evaluation indicators are taken as Table 1; Afterwards, the weight coefficients of the evaluation indicators are determined, and the corresponding digital features are obtained from the reverse cloud generator. The cloud image is generated from the forward cloud generator (as shown in Figure 3); Finally, the digital feature risk indicator data of the cloud model was analyzed to summarize the outsourcing human resource risk situation of the logistics enterprise, as shown in Table 3.

Table2 Outsourcing Risk Assessment System

Goal	Primary indicators	Secondary indicators
Risk of human resource outsourcing in logistics enterprises	Internal risk	Theoretical immaturity A1；Immature market A2；Inadequate guarantee A3
	External risks	Input estimation error A4；Mode application error A5；Flexible Growth Error A6
	Outsourcing risk	Information layering error A7；Business quality and literacy errors A8；Business Failure A9

Table3 Digital Feature Risk Indicator Data of a Logistics Enterprise Cloud Model

Index	Digital features (Ex，En，He)	Weight	Results
A1	(86.6，1.3,0.4)	0.0244	High risk
A2	(55.2,3.4,0.3)	0.355	Relatively low risk
A3	(50.2，3.4,0.3)	0.0329	Very low risk
A4	(58.5,3.4,0.4)	0.0718	Very low risk
A5	(49.7,2.6,0.4)	0.0904	Very low risk
A6	(83.6,1.5,0.4)	0.1260	High risk

A7	(34.3,6.2,1.3)	0.01564	Very low risk
A8	(90.0,1.4,0.1)	0.03085	Very low risk
A9	(44.1,3.2,0.2)	0.01487	Very low risk

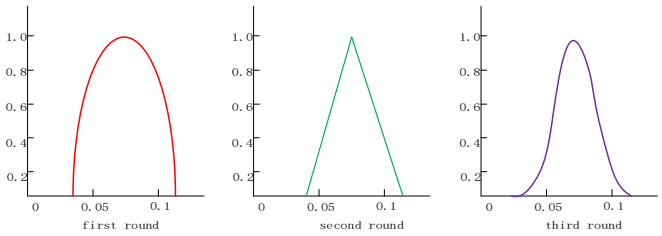

Figure 3. Cloud Chart

From this, it can be seen that cloud droplets are mainly distributed within a relatively small range, and the expected value remains within ≤ 55, thus reducing the risk of human resource management outsourcing for the logistics enterprise; From Table 3, it can be seen that the comprehensive analysis and evaluation of the risk level of human resource management outsourcing for the logistics enterprise is relatively low. Therefore, the logistics enterprise adopts the form of outsourcing for human resource management, which has a relatively small impact on the development of human resource management for the enterprise. Furthermore, adjustments and optimizations can be made to human resource management based on the actual development situation of the enterprise[8].

1) Example analysis

Taking the human resource management of a logistics enterprise as an example, this study aims to explore the specific extension of the Shapiro model and evaluate its effectiveness. By real-time monitoring the logistics information in the logistics information system, the real-time labor efficiency of each frontline employee can be grasped [9], thus completing the sampling mechanism in the expanded Shapiro model; By using the logistics management information system to monitor the timely completion rate, accurate completion rate, delayed completion rate, loss rate, and other indicators of frontline employees' logistics for each month and quarter, we can grasp the working status of employees in the enterprise under employment conditions [10]. The loan interest rate issued by the National Bureau of Statistics is taken as the Bank rate and substituted into the extended Shapiro model. The rating results issued by a third-party rating and evaluation agency for this unit are used as the probability value for the continued existence of the enterprise. Finally, the actual negative utility of employees' work was determined using numerical values such as actual labor time and labor intensity. The results are shown in Table 4.

Table 4 Application Effect of Expanded Shapiro Model in Human Resource Management of a Logistics Enterprise

Effect Content	2020		2021	
	Q3	Q4	Q1	Q2

Accuracy rate of goods delivery (%)	3.2	5.2	7.3	11.5
Timely delivery rate of goods (%)	4.3	6.8	8.9	11.9
Loss rate of goods delivery (%)	-1.6	-1.7	-2.4	-2.9
Delay rate of goods delivery (%)	-2.1	-2.4	-3.6	-4.4

From Table 4, it can be seen that the service quality of the logistics enterprise has increased, and the timeliness, accuracy, loss rate, and delay rate of goods delivery have shown an increasing and decreasing trend. It can be fully explained that the personnel employed by the logistics enterprise have relatively high work enthusiasm, with almost no unemployment and only a small number of people slacking off, but it does not affect the overall service quality of the logistics enterprise. Therefore, the labor investment (labor cost) of the logistics enterprise can exchange for higher economic benefits. Therefore, expanding the Shapiro model can be applied to evaluate and analyze the human resource management of the enterprise, In order to optimize the level of enterprise human resource management and ensure that human resource management promotes the development of enterprise human resource management when applying multi-skilled talent strategies.

4 Conclusions

To sum up, considering the research on the development of enterprise human resources management of multi skilled talent strategy in the era of Big data, the first part of the problem and the second part of the strategy are to provide solid theoretical support for this research, and the third part is to introduce the cloud model. Taking logistics enterprises as examples, from a practical perspective, combined with the content of actual human resources management, introduce the value and application of this model in actual human resources management, Thus confirming some specific measures in the above strategies, providing a solid theoretical and application foundation for the above strategies. From this, it can be seen that the upper and ower parts of this study correspond and confirm each other, thereby improving the feasibility, scientificity, and practical value of this study.

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