

# Application of Internet of Things Big Data in Early Warning Management of Enterprise Human Resource Crisis

Yang Yu

*Yinchuan University of Energy, Yinchuan, Ningxia, 750001, China  
xianxian20211226@126.com*

## ABSTRACT

As a new management concept, human resource has stepped on the stage of society. As an important force to promote the healthy development of enterprises, it has been paid attention to by various industries. The lack of early warning mechanism is an important factor leading to human resource crisis. The effective measure to prevent human resource crisis is to carry out early warning of human resource crisis. This paper analyzes the main problems of human resource management in China's enterprises, discusses its early warning management system, analyzes its difficulties and advantages, and puts forward effective countermeasures combined with computer technology, so as to promote the sound function and efficient operation of enterprise human resource management system.

**Keywords:** *Computer technology; human resources; Human resource crisis; Crisis warning*

## 1 INTRODUCTION

The development of an enterprise is determined by the internal and external environment. The external factors mainly refer to the economic environment, social environment and natural environment, while the internal factors mainly refer to the enterprise assets, human resources and management. With the continuous development of China's economy, great changes have taken place in the economic environment. In the long-term development, people also find that the ultimate force of social development is human resources, that is to say, human resources are the primary productive forces. Traditional enterprises regard assets as the first factor of development, so that in the whole process of development, the profit is low, and the requirement for assets is high. With the continuous development of information technology, the business model has been completely changed. Human resources have become the core of enterprise development, especially the role of talents, which is the key for an enterprise to base itself on the economic market. In the changeable organizational environment, serious mistakes and bad fluctuations in human resource management may lead to human resource management; Source crisis. However, the traditional human resource management is too rigid to meet the needs of the current economic development. In order to ensure their long-term development advantages, enterprises are constantly making adjustments to their own human resource management. Therefore, in view

of the current difficulties of human resource management, we must make corresponding early warning management to improve the efficiency of enterprise development [1]. Figure 1 shows the early warning management of human resource management.

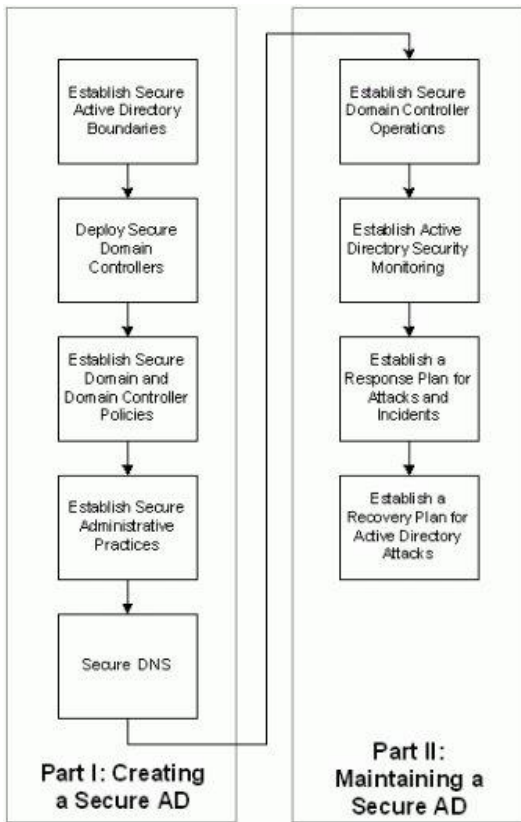


Fig. 1. Early warning management of human resource management

## 2 AN ANALYSIS OF THE CAUSES OF HUMAN RESOURCE CRISIS IN ENTERPRISES

Human resource crisis is the result of external environment, enterprise human resource management and human resource itself. Specifically, the causes of enterprise human resource crisis can be summarized as follows [2]. (1) The risk of improper selection of human capital carriers. There are differences in talent, physical condition, education level, outlook on life and values of human capital carriers. These differences make the increment of human capital obtained by the same amount of human capital investment have significant differences. The loss of human capital investment caused by this kind of risk includes not only the money and physical capital invested, but also the low morale of enterprises caused by the unfair distribution relationship, which affects the operation efficiency of enterprises[3]. When choosing the human capital bearer for human capital investment, we should also consider the adaptability of the personnel to the enterprise culture, working condi-

tions, interpersonal relationship and enterprise system. In addition, we should also consider the individual outlook on life and values. The theory of goal congruence proposed by Japanese scholar Yoshiro Nakasone (as shown in Figure 2) shows that when a person's goals and objectives (value orientation) are consistent with the organization's goals, the individual's potential can be brought into full play.

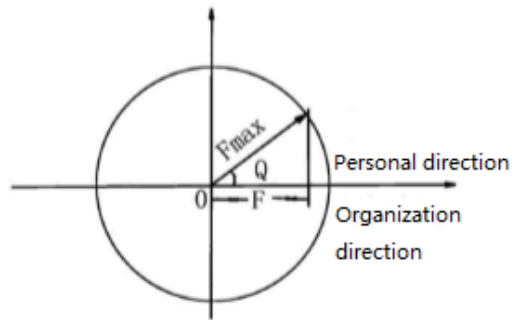


Fig. 2. The relationship between the development of individual potential ability and the angle between individual direction and group direction

$F = F \max \cos Q (0^\circ \leq Q \leq 90^\circ)$  . When the individual goal is completely consistent with the organizational goal,  $Q = 0$ , the individual's potential can be brought into full play. When the two are inconsistent,  $0^\circ < Q < 90^\circ$  , When  $\cos Q < 1$ ,  $F < F_{\max}$ , the individual's potential is inhibited.

- (2) Institutional risk. The risk of insufficient subjective effort, failure to play creativity and negative effect on the morale of other employees is called institutional risk due to the defects of enterprise management system[4].
- (3) Environmental change risk. Due to the changes of external environment such as market demand, technological change and industrial structure adjustment, the knowledge and skills of human capital bearer are outdated or unfit. The human resources of enterprises can not meet the needs of strategic objectives.
- (4) Risk of death or incapacity of employees during employment due to disordered site management or lack of adequate medical care or other reasons.
- (5) The crisis of the incongruity between the construction of corporate culture and the cognition of employees. Enterprises should pay attention to cultural construction, but in the process of construction, if we neglect the education level of employees, the ideas of individual employees and informal organizations, the cultural characteristics of the enterprise location, blindly emphasize learning from the first-class enterprises, it will be difficult to create a good corporate culture and can not create a good working atmosphere.

(6) Other crises in enterprises lead to human resource crisis. When other crises occur in enterprises, which damage the social reputation of enterprises, it may also induce human resource crisis.

### 3 COMPUTER TECHNOLOGY

From the birth of the first computer, after decades of development in processing speed, storage capacity, networking and software sophistication, the computer has infiltrated into the fields of science, commerce and culture in an unimaginable way, and intelligent engineering will turn it from quantitative change to qualitative leap, and the computing function will increasingly become simulation and execution. In science, computing can simulate climate change and crack human genes; In business, low-cost computing, Internet and digital communication are changing the global economy; In the field of culture, computing products such as iPod, youtube and computer animation are ubiquitous.

Characteristics of computer technology:

(1) The calculation speed is fast. In the top 500 supercomputers released in June 2009, the peak computing speed of all the top 10 supercomputers exceeded 300 trillion times, and the "Roadrunner" made by IBM reached a very high computing speed of 1.456 trillion times / second.

(2) Large storage capacity. The storage property of computer is an important feature that distinguishes computer from other computing tools.

(3) It is universal. Generality is the basis that computer can be used in various fields, any complex task can be used

To decompose into a large number of basic arithmetic operations and logic operations[5].

(4) Work automation. The operation inside the computer is automatically controlled and executed according to the pre programmed program.

(5) High accuracy. The reliability of the computer is very high, the error rate is very low, generally speaking, only in those places where human intervention may occur errors.

(6) Logical judgment ability. With the help of logical operation, the computer can make logical judgment, analyze whether the proposition is established or not, and take corresponding countermeasures according to whether the proposition is established or not.

## 4 EARLY WARNING MANAGEMENT OF ENTERPRISE HUMAN RESOURCE CRISIS BASED ON COMPUTER TECHNOLOGY

### 4.1 Early warning model of human resource management crisis in Enterprises

According to the operation mode of enterprise early warning management system, the model of enterprise human resource management early warning system can be established based on computer technology, as shown in Figure 3.

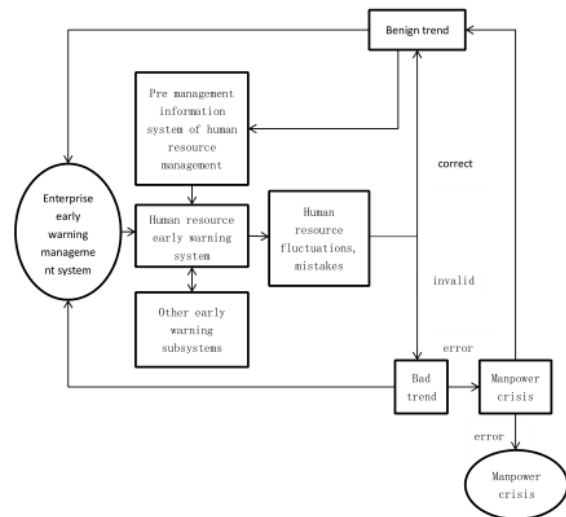


Fig. 3. The model of enterprise human resource management early warning system

The management object of enterprise human resource early warning system is mainly the fluctuation and error of enterprise human resource. The fluctuation and failure of enterprise human resources are embodied in various problems in the organization, development and management of enterprise human resources. The development trend of enterprise human resources includes benign and inferior, which occur alternately[6]. The early-warning function of enterprise human resource early-warning system can monitor and identify the adverse trend of enterprise human resource, and then diagnose it. On this basis, it can pre control it, so as not to step into the human resource crisis state. The early warning and pre control of enterprise human resource management will produce two results: the correct and effective management process will change the inferior fluctuation of enterprise human resource into benign fluctuation[7], while the wrong and failed management process will aggravate the inferior fluctuation of human

resource and make it into a crisis state, but the early warning system can adopt the "crisis management" mode for human resource management. The successful result of the early warning and pre control activities is that the human resource function of the enterprise returns to normal, showing a benign trend movement, and the organization enters into a favorable business environment; The result of failure is the collapse of the whole enterprise organization and the paralysis of the whole. The operation of enterprise human resource early warning system is to effectively promote the former and prevent the latter. The early warning system model of human resource management is a guide to the implementation of early warning management in enterprises. To successfully apply the above model in enterprise management practice, the key technology lies in the construction of early warning index system [8]. Figure 4 shows the construction of early warning index system.

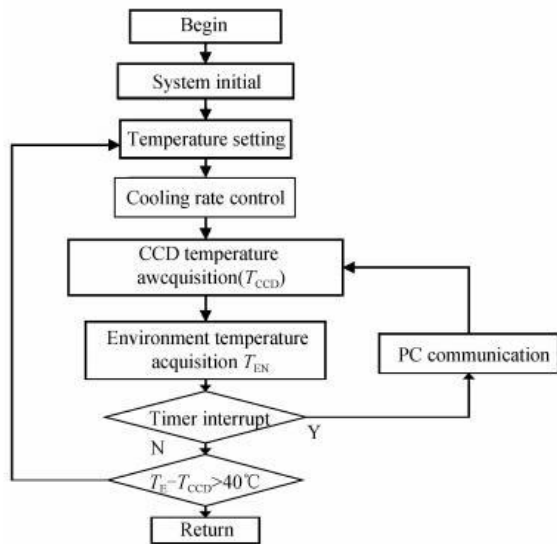


Fig. 4. Build early warning index system

4.2 Early warning analysis of enterprise human resources based on computer technology

Early warning analysis is a management activity to identify, analyze and evaluate the human resource management status of an enterprise, and to make warning, which includes monitoring, identification, diagnosis and evaluation [9].

The first is to monitor the whole process of human resource organization, development and management; The second is to process a large number of monitoring information. Recognition is the analysis of monitoring information through computer technology, and the application of early warning indicators to identify the status of enterprise human resource management. For ex-

ample, the brain drain rate is an important early warning indicator, especially the job hopping of key talents should arouse leaders' high vigilance; At the same time, when the sense of identity and job satisfaction of group cohesion to organizational goals are lower than the warning value, or the sense of unfairness and employee complaint rate are higher than the warning value, an early warning signal should be issued immediately[10]. Figure 5 shows the organization, development and management of human resources.

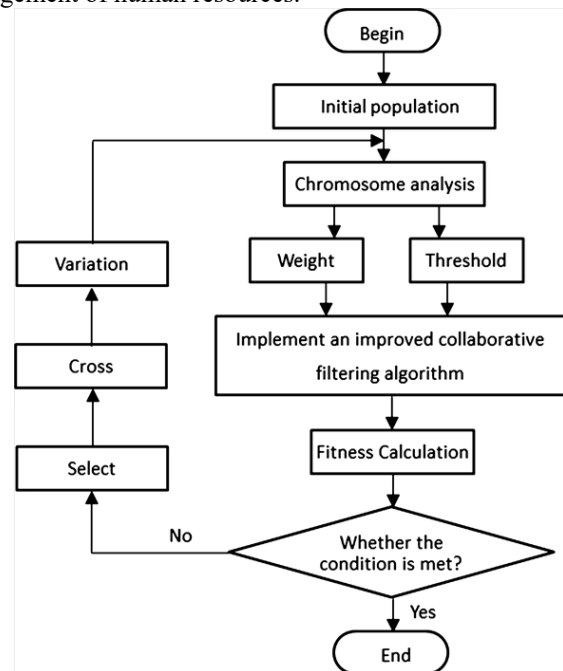


Fig. 5. Human resources organization, development and management

Diagnosis is to analyze the cause process and predict the development trend of the identified crisis symptoms, so as to determine which phenomena are major and which are subordinate. For example, the overrun of the above indicators may reflect problems such as poor performance appraisal, improper selection or recruitment of talents, lack of strength in salary incentive system, asymmetry of rights and responsibilities, unfair rewards and punishments, and insufficient spiritual incentive. The main purpose of evaluation is to make a loss evaluation on the confirmed crisis signs. Diagnosis and evaluation is a technical analysis process, which provides scientific basis for enterprises to take pre control countermeasures or crisis management countermeasures.

### 4.3 Measures for early warning management of enterprise human resource crisis

Crisis early warning management is a special management activity when human resources of enterprises may or have fallen into crisis[11]. This is also the enterprise in the original human resource management system has lost control, take special crisis strategy, management means, emergency measures to participate in enterprise management, so that the operation of the whole system tends to be normalized. However, limited by the traditional management system, the crisis early warning management of various enterprises in our country is not perfect, and even there are many serious problems, which restrict the development of enterprises. In the face of this kind of situation, I think we need to start from the following aspects. Crisis early warning management measures are shown in Figure 6.

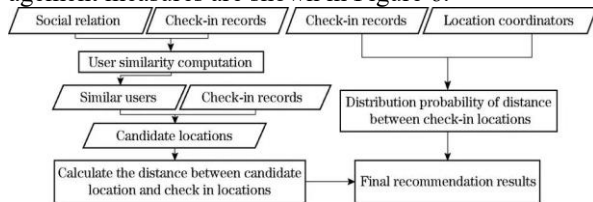


Fig. 6. Crisis early warning management measures

(1) Implement enterprise operation and improve early warning management system. The existence of system is not only the basis of all kinds of management work, but also the guiding consciousness of its work. Management execution is the foundation of management[12]. This can be mainly from two parts: first, the establishment of enterprise human resource crisis early warning management department, to ensure the early warning management execution. In the traditional enterprise early warning management, there is no corresponding department to implement its system, which leads to the development of management, there is a serious lack. Establish corresponding early warning management department, and allocate corresponding personnel, so as to ensure its execution. Second, improve the enterprise human resource crisis early warning management system. From the prediction of the crisis to the treatment of the crisis, we must formulate specific measures according to the business situation of the enterprise.

(2) Strengthen personnel training, improve the ability of management personnel. At present, the early warning management system of most enterprises in our country exists, but in the actual crisis response, it is still difficult to play its effect, which is mainly due to the lack of executive ability of managers. Therefore, it is necessary

to strengthen personnel training and improve the executive ability of management personnel[13].

(3) Improve the enterprise information management system. To a certain extent, the existence of human resource crisis is inevitable, but the occurrence of the crisis has certain avoidability. The best way to avoid it is to add the corresponding information collection measures in the early warning management. Comprehensive understanding, accurate analysis and reasonable use of information are the basis of early warning management. Therefore, it is necessary to improve the enterprise information management system[14].

## 5 CONCLUSION

Enterprise human resource crisis is an inevitable setback in the development of enterprises. Facing the inevitability of this kind of problem, enterprises need to make efforts to avoid and actively deal with it. However, the current early warning management is relatively one-sided, it can not make an accurate prediction of the crisis, and it can not make a positive response after the crisis, which makes the development of enterprises seriously limited. In order to ensure the stable development of enterprises, we must rely on computer information technology, according to the business status of enterprises, improve their own early warning management system, and formulate corresponding early warning management measures, implement the management personnel, improve the working ability of management personnel, so as to effectively ensure the development of early warning management, and obtain greater development space in the fierce economic environment.

## REFERENCES

- [1] Luo fan, she Lian. Early warning management of enterprise human resource crisis [J]. Industrial engineering and management, 2003.8 (4): 10-14.
- [2] Ma Li. Early warning management of human resource crisis in Xi'an Botao company [D]. Northwest University of technology, 2006.
- [3] Wei Yingying. Research on enterprise human resource crisis warning based on Balanced Scorecard theory [D]. Inner Mongolia University of science and technology, 2013.
- [4] Human resources crisis, how to warn enterprises [J]. Liu Weihua. Human resources. 2020 (10)
- [5] Analysis on the perception of enterprise human resource crisis and preventive measures [J].

- Tang Youlei. Metallurgical management. 2019 (03)
- [6] Human resource crisis of small and medium-sized enterprises and its prevention [J]. Li Yanfeng, Mou Lili. Cooperative economy and science and technology. 2016 (04)
- [7] On early warning management of enterprise human resource crisis [J]. Mou Qingmei. Accounting of Chinese township enterprises. 2016 (04)
- [8] Analysis on human resource crisis management of T College [J]. Liu Xiaoyan. New economy. 2016 (30)
- [9] Preliminary study on human resources crisis response [J]. Shen Jia. Oriental corporate culture. 2015 (12)
- [10] On enterprise human resource crisis management under the new normal [J]. Liu Zhui, Zhang Jiale. Xinjiang agricultural reclamation economy. 2015 (07)
- [11] Research on perception and prevention measures of enterprise human resource crisis [J]. Li Dongdong. Human resource development. 2015 (22)
- [12] Research on human resource crisis of contemporary enterprises [J]. Zhang Dandan. Human resource management. 2013 (02)
- [13] Analysis of enterprise human resource crisis management [J]. Miao Yulin. China Science and technology investment. 2013 (11)
- [14] Mou Qingmei. On early warning management of enterprise human resource crisis [J] accounting of township enterprises in China, 2016, (4): 174 – 174175.