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Study on Technology Innovation and Human Resources Reallocation

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Abstract: Economic globalization promotes rapid development of scientific technology. The emergence of technological innovation makes that optimal allocation of human resources has been on the agenda gradually. Relying on technological innovation, enhancing the production efficiency of the enterprises constantly, implementing cost-effective or differentiation are the key of development. Human resources in the process of development plays an important role in technology innovation. Technology innovation guides the enterprises to implement human resources reallocation for reducing the cost of human resources and strengthening the flow of human resource and the usage efficiency. Human resources as the most basic element of enterprise, is the subject of technological innovation. From the points of technical innovation and human resources, this paper analyzes the relationship between them, reveals the principle of the interaction effects, discusses the strategy of human resource reallocation under the technological innovation.

Keywords: human resources, reallocation, technology innovation

1. INTRODUCTION

The enterprise is the main body, and the staff is the most fundamental elements in the technology innovation. Gao Jian and Fu Jiaji carried out a survey about technical innovation of 1051 enterprises in our country, showed that the key factor to influence technology innovation of enterprises can be classified into economic factors, the power factor and other factors. The top six are lack of innovation fund, lack of talent, spending less of the research and development, lack of technical information, high innovation risk, the lack of market information^[1]. Hu Jichun had deep experience to the importance of technological innovation in human resources after his trip to the United States. The human resources development to improve the quality of the staff had very important significance for the technology innovation^[2]. These show the human resource has huge influence to technology innovation.

Human resource is important strategic resource. It's a key element of business success to deal with human resource management properly. Technology innovation is the power and source of enterprise development. It is backed by human resource, and has the role of control and distribution to human resource. Zhou Yaohua thought that talents are the key to success of technology innovation^[3]. To the uneven quality of human resources, enterprises want to have development and innovation, must implement human resources reallocation, optimize human resource structure, improve the operational efficiency of the enterprise.

2. THE OVERVIEW OF HUMAN RESOURCES

The human resources situation of a country related to the social development level and the country's comprehensive competitiveness directly. The United Nations deputy secretary-general Maurice Strang in "2002' THE INTERNATIONAL H.R. FORUM" had been pointed out that from the point of view of human resources, China is the richest countries in the world, China is becoming a superpower of human resources^[4]. At present our country is the most populous one with a large number of human resources in the world.

2.1 The connotation of human resources

Human resource is the sum of the population which can promote the economic and social development and have labor ability. It includes physical, mental, knowledge and skills and so on. Compared with natural resources, human resource has its unique properties. Its reproducibility can transform human resources into economic value. It makes a contribution for economic development.

American economists Denison and Department of Labor estimate the source of the the 1948-1989 economic growth of United States, showed the contribution rate of education and intellectual progress to the economic growth reached 42%, more than 37% of the material capital contribution. If adding the productivity contribution, the contribution rate of human resources to economic growth is as high as 65%^[5]. This shows the human resource have fully the important role in social progress and economic growth.

By the end of 2009, China's total population reaches 1.33474 billion (not including Hong Kong, Macao and Taiwan population). Among them, labor resource is 1.06969 billion, more than 112.67 million in 2000; the amount of employment is 779.95 million, in which the urban employment staff is 311.2 million, more than 59.1 million and 79.69 million respectively in 2000^[6]. Our country completes from the large population to the human resources great nation transformation. But only by using human resources fully, its value can reflect fully. Our country has the human resource power, but human resources quality is uneven, the technical level is differ. To earn your place in the fierce international competition, we must be the optimal allocation of human resources, improve the utilization efficiency of resources.

2.2 The reallocation of human resources

In the activities of enterprises production and operation, controlling the human resource in the space and the time is the important measure to optimize the allocation of resources.

(1) the way of reallocation

Technology innovation brings the risk of human resources, and also creates more ways for human resources relocation. Technology innovation make the labor force transfer^[7]. On the one hand, human resources can flow in different industries. Under the principle of cooperation, the reasonable labor division is the necessary premise to realize enterprise human resource allocation. In addition to special professional skills, the general human resources can used in different industries, and complete different tasks. On the other hand, human resources can flow in the enterprise. When the employee is not competent for the job duties or the post is revoked, managers can appoint them to other jobs, or provide certain professional skills training to adapt to the other posts, etc. At present, the ways of human resource reallocation is too single, it causes resources potential has not been fully developed, and brings a kind of waste more or less. After opening the situation of technical innovation, the approaches of human resource reallocation will increase.

(2) the time of reallocation

In the traditional technical level, the human resources environment is relatively stable. The time of reallocation is influenced by the enterprise development and personal situation. After the technical innovation, the efficiency of human resources will improve. It will lead to a situation that a few people lose their jobs. It changes the original stable human resources supply environment, the time of reallocation will be more influenced by the technological innovation. Reasonable time arrangement not only improve the work efficiency, but also promote division and cooperation of the labor, protect the employees' physical and mental health.

(3) the space of reallocation

In the technical innovation of the period, the fluidity of resources will increase. With technology innovation constantly and the rapid development of regional economy, human resources will flow to the area of great demand and high reward, then influence the resources reallocation in space. In our country market economy environment, the configuration of in the space has greater adaptability, different regional distribution creates the

conditions for the reallocation of resources.

In the sense of the way and the time, the space of reallocation, the resources reallocation is also influenced by the technological innovation, and is helpful to improve the flow of human resources and efficiency, has great significance to the whole social development.

3. THE REALLOCATION OF HUMAN RESOURCES UNDER TECHNOLOGY INNOVATION

3.1 The connotation of the technology innovation

The Economist, J·A·Schumpeter in his masterpiece *the economic development theory* thinks the key factor of deciding economic development is innovation activities, and defines the innovation as the new setting of a production function, the reset of the production elements. It includes the following five kinds: (1) the introduction of new products, (2) the introduction of new technology, (3) to open up new markets, (4) control of raw material sources of supply, (5) to realize the new industrial organization. Our government in "decision on strengthening the technical innovation, developing the high-tech, realizing the industrialization" points out that technology innovation is the enterprises use the new knowledge, the new technology and the new mode of production and management mode to improve the quality of products, develop and produce new products, provide new services, occupy the market and realize the market value. Technology innovation influence the operation of each link, and all activities of a enterprise's each link is manipulated by men. It also affects the management mode of human resources, then promote the optimization of human resources, have the influence to the human resource reallocation.

3.2 The influence of technology innovation to human resources reallocation

Since the 1990s the reform of reducing staff and improve efficiency in state-owned enterprises in China is a hypothesis based on human resource redundancy to enterprise development essentially^[8]. Innovation and redundancy is the the core concept of Organization Theory^[9]. Technology innovation will bring the reform of human resources management system, redundant human resources will be eliminated in the trend of the technology innovation.

Benhabib and Spiegel think that human capital can affect economic growth through two mechanisms, one is the human capital level influence domestic technology independent innovation rate; the other is the human capital accumulation influence the speed of abroad and learning new technology from abroad.

Relative to the redundancy of human resources, the lack of human resources, not under utilize of human resources and so on are the important problem which should be considered into the aspect of technology innovation and human resources management. Human resources need fully consider the whole factors to carry out the reallocation of human resources, in order to improve the efficiency of resource utilization, save enterprise operation cost, enhance the enterprise the competitive ability. In the environment of technological innovation, the reallocation of human resources is influenced (Figure 1). With the emergence of new technology, influence degree deepens gradually. When the new technology reaches to a certain period, degree will deepen again after technology integration of the market.

Francis and Doucouliagos after studying the relationship between American human capital and economic growth used the Grand Case Causality Test find that, on the one hand the human capital promotes the economic growth, and on the other hand, economic growth provides a good conditions for the formation of human capital, promotes the human capital accumulation. Economic growth and human capital have mutually influenced and promoted^[10].

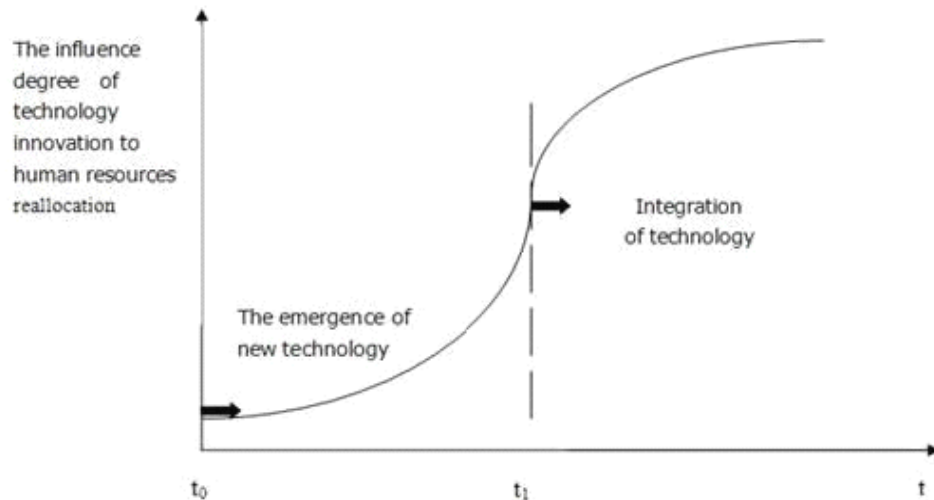


Figure 1. The influence degree of technology innovation to human resources reallocation

3.3 The strategy of human resource reallocation under technology innovation

Around the human resource reallocation in technology innovation, from three dimensions among building the environment of technology innovation, and implementing the technical innovation strategy, establishing talent service platform and so on, improve the efficiency of human resources reallocation (Figure 2).

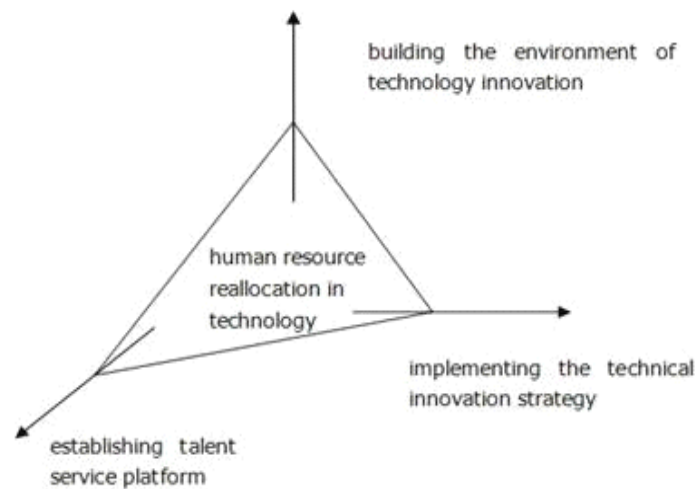


Figure 2. The strategy of human resource reallocation in technology

3.3.1 Build the environment of technology innovation, implement innovation incentive measures

Enterprise want to implement technology innovation strategy, must build the atmosphere of technology innovation. According to the phenomenon of innovation atmosphere not strong, the managers of the enterprise should take seriously, look for reasons, call on the staff innovation actively. The staff's career development is linked with the fate of the enterprise. Employees can feel the potential of enterprise development, have faith in the enterprise, will make the most potentials of the staff.

In the process of innovation, the staff takes on risk themselves. Enterprises implement innovation incentive measures, that is helpful to encourage employees to undertake the task of technology innovation. The enthusiasm and the creativeness of the employees are benefit for circulation technology. Lack of incentives or improper incentives will influence technical innovations. Incentive measures should meet the most urgent needs of

employees under the basic demand, then meet other needs such as esteem needs, sense of identity and sense of accomplishment needs and so on to promote the staff to delve into technical innovation spontaneously and prevent brain drain^[11].

3.3.2 Improve enterprise of talent, implement technology innovation strategy

Enterprises must establish the correct talent view, and guide the staff by it, help them to transform from the pure technical talent view to a full range talent view. The internal environment influences the staff's working status. Implementing technology innovation strategy must start from managers, make the exchange of ideas among the staff about the strategy. Everyone fully understand the specific content and important significance of the technology innovation strategy, the strategy implementation will be successful. The internal environment improved, thought of the staff unifies, the enterprise can better implement technology innovation strategy and seek better development.

3.3.3 Establish a talent service platform, promote talents' raining and communication

Establishing talent service platform can help enterprises and individual to understand human resources supply and demand. The government as the leading, build up talent service platform, enhance the transparency of talent information, that is helpful for human resources development and utilization. For technology innovation enterprises, talent is the key factor of enterprise development. In the fierce market competition, enterprises pay attention to talents' training and reserves. Establishing talent service platform is useful to construct the rational personnel training plan, can create multi-level approaches of human resource reallocation, promote talents' communication and knowledge sharing among enterprises, Keep the inheritance of the technology and documentation, programming^[12].

4. CONCLUSIONS

Whether enterprises will be able to promote technological innovation, it Not only is subject to many external conditions, but also have close relations with the enterprise's internal factors, especially human resource elements. The human capital element in the enterprises is the foundation of enterprise technology innovation. In the process of innovation, the accumulation of human capital is an important factor to determine the success of the enterprises innovation. It is a product of the process. The accumulation of human capital is from enterprises' innovation activities, and it as the internal factor of human resources influences the reallocation of human resource.

According to the human resources relocation risk of technological innovation, from building the environment of technology innovation, the implementing technical innovation strategy, and establishing talent service platform and so on, discusses the strategy to promote efficiency of the human resources reallocation. It is of great significanc to increase efficiency and promote enterprise's technological innovation. Technological innovation is the vitality source of modern enterprise, human resource is the root of enterprises, They influence and interact each other, promote the development of society and the progress of the enterprises.

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