

The Influence of New Technology on Human Resource Management

—A Case Study of Tuocai Technology

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ABSTRACT

2021 is an extremely important year for Tuocai, because the expansion of the company after financing will inevitably lead to the introduction of a large number of talents. The current human resource management cannot meet the recruitment and training of talents, and it is urgent to introduce new technologies to help Tuocai's human resource management. Based on the current situation of Tuocai Company, this paper analyzes the impact of the introduction of new technologies such as artificial intelligence and virtual reality on Tuocai, and puts forward corresponding suggestions.

Keywords: Human Resource Management; Artificial Intelligence; Virtual Reality

1. INTRODUCTION

Wuhan Tuocai Technology Co., Ltd. is a high-tech start-up enterprise focusing on the research, development, production and sales of high-purity semiconductor materials. The company has more than 30 invention patents and 63 employees. With 10,000-grade purification workshops, ICP-MS and other testing equipment, it can produce various high-purity materials such as tellurium, indium and germanium, and can develop new high-purity materials according to customer requirements[5]. Since its establishment, the company has been providing stable and reliable core raw materials for semiconductor, aerospace, new energy and other industries, and is committed to becoming the leader of high-end fine functional materials in China.

2. HUMAN RESOURCE MANAGEMENT(HRM)

The company has 63 employees[7], and has 7 departments including R&D Department, Production Technology Department, General Department, Quality Management Department, Finance Department, Sales Department and Sales Management Department. The human resources management department of Tuocai Company, that is, the comprehensive department, currently has three regular employees. One of the reasons for the shortage of human resources

management personnel is that Tuocai is a start-up enterprise, and the total number of employees in the enterprise is less than 100, and the three personnel can basically meet the existing personnel; In addition, Tuocai Company is a high-end manufacturing industry, and the department with the most employees is the production R&D department[8], followed by the sales department; Generally speaking, the human resource management of Tuocai can not meet the development of the company after financing, and there is a great room for development in the future.

2.1. Recruitment

Due to the influence of COVID-19 epidemic, the semiconductor industry at home and abroad is booming[9], and Tuocai Company, which produces semiconductor core raw materials, is facing huge market opportunities. At the same time, however, the outbreak of market demand also makes the competition in the industry increasingly intensified. In addition, the second round of financing funds are in place, and the top priority for Tuocai is to introduce outstanding talents who can support the development of the company. After the Spring Festival in 2021, Tuocai has carried out various forms of recruitment work for many times to improve its competitiveness in the semiconductor raw material market. The company's personnel planning in 2021 will increase the number of employees from 63 to

more than 100, mainly due to the introduction of core production R&D technical talents.[11] For start-up companies like Tuocai, it is much more difficult to recruit than well-known enterprises, and it is necessary to introduce new technologies to solve the urgent needs.

2.2. Training

Nowadays, after the second round of financing, extension materials not only need to recruit new employees, but also need to train newly introduced talents for a long time[12], so that they can not only master the corresponding work skills, but also adapt to the culture and values of extension materials companies; In addition, the existing employees of Tuocai also need long-term training to adapt to the new development of the company. Generally speaking, the knowledge and skills of employees are particularly important for Tuocai. Staff training can make the human resources of enterprises play a sustainable role and improve the competitiveness of Tuocai Company.

At present, the training of human resources in extension enterprises is facing difficulties;

(1) Insufficient investment in training. The main purpose of the second round of financing is to expand the production capacity so that the company's production capacity can keep up with the needs of customers, so the start-ups do not have enough manpower and financial resources to train employees[15]. In addition, even if employees are trained, it is difficult for Tuocai, to realize scientific training for employees.

(2) Short-term training. For short-term economic goals, Tuocai Company provides emergency training for its employees. However, short-term training with short time and few resources can't make employees fully master skills and can't meet the needs of Tuocai Company in different development stages[17].

3. NEW TECHNOLOGIES

With the rapid development of the Internet, a series of new technologies have emerged in the market. Big data, artificial intelligence, industrial Internet, intelligent robots, cloud computing and virtual reality are gradually changing the market competition pattern[13]. Enterprises embracing new technologies are bound to have a greater chance to enjoy the dividends brought by technological progress[12]. It is necessary to introduce new technologies to help the development of human resources management of the company.

3.1. Artificial Intelligence(AI)

The arrival of the 5G era has accelerated the development of artificial intelligence. The artificial intelligence HR emerging in Silicon Valley not only has

great advantages in cost, but also can avoid prejudice. [6] Therefore, artificial intelligence should be applied to the human resource management practice of Tuocai Company.

3.2. Industrial Internet Technology

The essence of industrial Internet is to connect and integrate equipment, production lines, factories, suppliers, products and customers closely through the industrial Internet platform. [15] For a manufacturing enterprise whose production capacity is mainly increased by increasing machinery and equipment, it is conducive to promoting its leap-forward development. [4]

Most of the high-purity products produced by Tuocai Company rely on factories and equipment, and all production lines and equipment are closely integrated, which is conducive to further expanding production capacity of Tuocai; In addition, due to the high purchase cost of machinery and equipment, the grass-roots production personnel of extension materials need to work night shifts to ensure that the machines run 24 hours a day, so they need to pay high labor costs. The introduction of industrial Internet technology will help to release grass-roots human resources, reduce costs and improve efficiency.

3.3. Virtual Reality Technology

In 1980s, Jaorn Lanier put forward the viewpoint of "virtual reality" VR, aiming at establishing a new user interface, allowing users to place themselves in the 3D spatial database environment represented by computers, and creating a feeling of "immersive". Compared with the traditional computer man-machine interface, virtual reality can help employees experience scenes that are difficult to experience in real life and enhance their learning experience; Interaction and concept learning are helpful to stimulate employees' initiative and creativity; The visual presentation of training content and evaluation results and the characteristics of multi-sensory participation have significantly improved training efficiency; In addition, virtual reality helps employees overcome the shame of facing other colleagues in the virtual training class, and practice various job skills freely and fully, thus shortening the time for adapting to work.

4.THE IMPACT OF AI ON HRM

4.1. For the recruitment department

Recruitment is closely related to the future survival and development of Tuocai Company. However, Tuocai has difficulties in recruiting at present:

1. There is no perfect recruitment system, recruitment plan and recruitment process, which leads to the lack of uniform norms and standards in the work of recruiters.

2. Pay too much attention to talents' educational background. Tuocai takes candidates' qualifications and professional skills as the criteria to judge whether they are high-quality talents needed by enterprises, while ignoring the evaluation of candidates' core qualities, which makes the comprehensive quality of recruiting talents inconsistent with the actual needs of enterprises for high-quality talents.

3. One-sided recruitment channels. At present, there are many recruitment channels, which increases the difficulty for enterprises to choose.

4. The comprehensive quality of recruiters needs to be strengthened. The human resources related personnel of Tuocai have not received systematic teaching of professional theoretical knowledge and professional skills.

The above problems can be solved after the introduction of artificial intelligence technology. Artificial intelligence can not only establish a more scientific and comprehensive recruitment system based on big data, but also quickly cover all major recruitment channels and wipe out the resumes of outstanding talents suitable for Tuocai Company; In addition, special algorithms can be designed, so that education is no longer the primary evaluation condition, and the bias easily generated during manual recruitment can be avoided.

4.2. For the training department

With the improvement of workers' quality, the number of people willing to engage in high-risk industries is decreasing [3], which leads to the problems of "labor shortage" and "expensive labor" faced by Tuocai Company, and then increases the labor cost of enterprises. The extensive use of artificial intelligence robots can greatly improve the degree of automation, and thus reduce the use of labor, thus reducing the resulting training costs.

In addition, it is difficult for start-ups to bear the high training cost. At present, Tuocai Company generally spends 1.5%-3% of its sales on training, which makes it difficult to achieve the ideal training effect. The application of artificial intelligence will reduce the training cost, and help to improve the enthusiasm of senior managers for employee training. At the same time, artificial intelligence training for employees can design more reasonable training programs according to employees' behaviors and enterprise needs.

4.3. Disadvantages of AI

1. resulting in a large number of citizens unemployed. A research report by Citibank and Oxford University shows that artificial intelligence will replace 47% of jobs in America, 35% in Britain and 77% in China. The World Economic Forum predicted in 2016 that in the next five years, artificial intelligence will lead to the disappearance of 5.1 million jobs in nearly 15 industrialized countries [12].

2. Leading to a shortage of artificial intelligence professionals. Tuocai Company has introduced artificial intelligence technology, and there are not many artificial intelligence professionals in China, so it faces the risk of introducing relevant core talents from the United States.

3. Risk of data leakage

Artificial intelligence will inevitably make most of the management decision-making information of Tuocai Company digitized, facing the risk of hacking and disclosure of company secrets.

5. IMPACT OF VIRTUAL REALITY

5.1. Advantages of virtual reality

Some companies at home and abroad have incorporated virtual reality technology into the personnel training system, some of which are mainly applied to the study of employees' industry knowledge and work skills, and some are applied to the training of leadership skills. Virtual reality technology has great development space in Tuocai Company.

(1) Virtual reality technology completely breaks the space and time limit of training. Virtual manufacturing technology can also establish a virtual production operation environment, so that employees can freely communicate the manufacturing process appearing on the screen like in the production workshop [12].

(2) Virtual reality technology provides a method for training and constructing virtual objects and virtual objects. Virtual reality technology can build a virtual environment that is highly similar to the real working environment [15], and help employees have a real training experience and experience the fun in the training process. Virtual reality system can virtualize various managers and create virtual classrooms [14].

(3) Virtual reality technology has realized open online exploratory learning. Using virtual reality technology, resource sharing can be realized, and employees can freely choose suitable learning resources at their own convenience according to their own learning characteristics, and learn at their own way and speed. [19]

(4) Virtual reality technology shows the teaching content from all directions and angles. By applying virtual reality technology, some wrong practices can be properly demonstrated, and all the consequences of wrong practices can be simulated, so that the expected results can be achieved without wasting actual resources, thus greatly enriching the teaching content of training.

5.2. Disadvantages of virtual reality

1. resulting in a large number of unemployed people. With the introduction of virtual reality technology, Tuocai Company does not need too many trainers, resulting in the risk of unemployment of a large number of people.

2. The cost is high. At present, most large enterprises have introduced virtual reality technology, and start-ups such as Tuocai need to spend a lot of cost to introduce virtual reality technology.

3. Risk of privacy leakage. Virtual reality technology virtualizes real objects and realizes virtual objects, which will make employees worry about privacy leakage.

6. CONCLUSION

For the recruitment department of the company, this paper suggests that the recruitment department introduce artificial intelligence technology. Although it will cause huge expenses and face a series of risks for start-ups, the introduction of artificial intelligence technology in start-ups can greatly improve the recruitment efficiency and find the most suitable talents for expanding materials. In addition, the introduction of artificial intelligence into manufacturing enterprises can also facilitate the company to attract investors in the third round of financing, and the advantages outweigh the disadvantages.

For the training department of the company, this paper suggests introducing virtual reality technology into the training department. The three-dimensional experiential teaching of virtual reality technology can greatly improve the training efficiency of extension materials. Although there are risks such as high cost, possible data leakage and unemployment, these are pains that must be faced in the reform process and will eventually be solved; After all employees of the company get used to it, Tuocai will gradually occupy a dominant position in the market competition because of having virtual reality technology, so virtual reality technology is worth introducing.

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