Research and Application of Computer Technology in the Transformation Mode of Scientific and Technological Achievements in Chinese Universities

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Abstract. Colleges and universities are the important gathering place of high-end talents in China. Every year, colleges and universities undertake many national scientific research projects, so there will be a large number of patented technologies and scientific and technological achievements. But in the end, over 90% of these achievements were "locked away" and the achievements were not transferred, not allowed to transfer, or there was no benefit after transformation. Therefore, how to apply computer technology effectively transform and apply scientific and technological achievements in universities is of great significance to promote mass entrepreneurship and innovation. Therefore, this paper discusses the transformation mode of scientific and technological achievements in colleges and universities in China. At present, the scientific and technological achievements of foreign universities account for the mainstream of the national transformation activities while the transformation of scientific and technological achievements in China is still in its infancy. Through years of effort and based on our country launching a series of related policies that give corresponding support, encourage, guide and make unremitting efforts to innovation and exploration, we have obtained some experience in the field of transformation of scientific and technological achievements and achieved a certain economic and social benefits. Up to now, a number of universities in China have established scientific and technological achievements transformation centers, which can be seen that China attaches great importance to the transformation of scientific and technological achievements in universities. Therefore, in the current era, how to transform the scientific and technological achievements of colleges and universities into practical social application more efficiently is a problem that must be deeply studied.

Keywords: Colleges and Universities, Scientific and Technological Achievements, Conversion Mode, Computer Technology
1. Status quo of transformation of scientific and technological achievements in China's universities

In 2001, Shanghai Jiaotong University, Xi'an Jiaotong University, Tsinghua University and other six universities' technology-transferred institutions were identified by China, confirming these six universities technology-transferred institutions as the national technology-transferred centers. Currently, China has more than 100 technology markets, including more than 10 national technology transfer centers and more than 40 international university science and technology parks. It can be seen that China has a certain scale in the transformation of scientific and technological achievements in the service organization and also continues to grow in the direction of development[1].

However, compared with American universities, the United States has certain advantages in the practical transformation of scientific and technological achievements. The main reason is that the United States has a strong sense of intellectual property protection and the relevant laws and regulations are relatively perfect, which has formed a very good technology research and development protection atmosphere and environment in the whole society. At the same time, the United States, with hundred years of efforts, has been very mature in the transformation of scientific and technological achievements. In addition, many American enterprises have very strong technology development and integration capabilities, so the United States has little pressure in the commercialization of university technology and has formed a programmed process of transformation of scientific and technological achievements.

In recent years, China has also issued some policies and regulations to support and encourage the transformation of scientific and technological achievements in Chinese universities. National technology transfer centers have been established in many key universities, including Tsinghua University. However, there are still great differences between China and the United States in the way of transformation of scientific and technological achievements. For example, one of the main ways of transformation of scientific and technological achievements in Chinese universities is university enterprises, while in the United States, universities authorize new technologies to companies and enterprises outside the university.

Colleges and universities in China have to face many difficulties in the process of transforming scientific and technological achievements. First of all, China's legal system related to intellectual property is still imperfect, and there is no strong law enforcement. Therefore, we need to invest more trust cost in the transformation of scientific and technological achievements and cannot effectively protect the corresponding new technology. For the good technical cooperation between universities and enterprises in our country, it has greatly hindered their initiative. Secondly, in the process of transformation of scientific and technological achievements in China's universities, there is a serious shortage of personnel with experience in intellectual property management. The differences between China and the United States in the transformation of scientific and technological achievements are mainly caused by the differences in legal, political, economic and other aspects of the system, environment and development[2].

Finally, in the United States, after an inventor hands over his or her technology to the OTL, he or she will have a technical manager who will contact all parties to decide whether or not to apply for a patent based on a large amount of information. At the same time, they will find the appropriate licensing
company, and then the technical manager will be responsible for the negotiation of patent licensing, agreement signing and other matters. However, the scientific research achievements of China's universities are generally only focused on academic research. If the relevant technological inventions can be transformed, these achievements will also be waiting for the relevant companies to negotiate transfer. In this way, the conversion rate of scientific and technological achievements will surely decline significantly.

Figure 1. The Number of Patent Achievements and the Number of Transfer.

From the result data in figure 1 above, it can be seen that from 2009 to 2015, the number of patent applications and the number of authorizations of universities in China increased every year. But if you look at the pace of patent sales, the growth and growth rate are very slow. In particular, there was negative growth from 2013 to 2014. In the past 7 years, the patent sales rate of universities in China has been declining.

2. Countermeasures for promoting the transformation of scientific and technological achievements in China's universities

2.1. Create a good legal and policy environment to promote the transformation of scientific and technological achievements in universities

The success of the transformation model of scientific and technological achievements in American universities is closely related to the relevant laws in their countries. For example, the Bayh-Dole Act effectively supports the ownership of intellectual property rights and the Federal Technology Transfer Act is also a supplement to this act. They ensure good distributive incentives for the relevant technical staff. According to the summary of these acts, the rights and interests of the online technical staff shall not be less than 15% of the total income from their work. After the enactment and implementation of the act, the United States began to establish an incentive mechanism for technological innovation, which has obvious market-oriented characteristics. At the same time, relevant laboratories and universities in the United States have formulated relevant rules for the distribution of the income from the transformation of scientific and technological achievements. For example, the income from the transformation of scientific and technological achievements is shared equally among the school where the scientific and technological personnel are located, the scientific and technological personnel and the school. In this way, not only the enthusiasm and creativity of universities and enterprises are improved, but also the enthusiasm of relevant scientific and technological personnel is greatly stimulated[3].

2.2. To set up special institutions for transformation of scientific and technological achievements and
give full play to their functions and duties

In the United States, almost all research universities, as well as some educational institutions, have set up special departments for the transformation of scientific and technological achievements. These departments have played an important role in promoting and developing the transformation of scientific and technological achievements. First of all, these specialized organizations and departments have a very sound system and standardized operation. They can fully integrate the information resources of the university in order to provide more accurate and rapid services for enterprises in need. Secondly, they can help college students to choose scientific research topics according to industry information and they can also exhibit and sell relevant scientific and technological achievements to enterprises. Based on these activities, they can provide college students with information about the needs of enterprises so that they can help enterprises buy corresponding technologies from college students, which will fully integrate the resources of both sides, effectively transform the scientific research results of colleges and universities into social productivity and improve social and economic benefits. Finally, these specialized institutions can directly take charge of the evaluation of the scientific research achievements of college students, judge whether their achievements can be applied for patents, promote the scientific and technological achievements that meet the patent application standards with related enterprises and sign relevant license agreements with enterprises.

In addition, it can also effectively play the role of intermediary service agencies as a bridge to promote the relevant intermediary agencies to realize the transformation and development of service development. With the intermediary organization as the platform, the corresponding flexible scientific and technological team and intermediary base should be established and the corresponding funds should be collected by the intermediary organization so that the intermediary organization can have the ability to improve the results and technology[^4].

2.3. Focus on the collection, training of science and technology project development, transfer, promotion of personnel

In the transformation of scientific and technological achievements in colleges and universities, the ultimate goal is to face the real market. Therefore, in the whole process of transformation of scientific and technological achievements, professional talents in law, market, management, engineering and other aspects must be possessed, and these talents are required to have strong examples and rich experience. However, none of the administrators or professors in today's universities can undertake this task. In response to this situation, the United States has focused on training professionals in intellectual property management and operation for many years. In the technology transfer departments of many universities in the United States, they will invite talents and experts with relevant professional knowledge and practical experience in enterprises to carry out the transformation of scientific and technological achievements in colleges and universities and at the same time, provide them with special staffing and expenses in order to ensure the enthusiasm and professionalism of relevant experts and talents in the actual work. At the same time, it can also improve the skills and level of relevant personnel in the team[^5].

3. Conclusion
In the era of knowledge economy, the market has an increasingly fierce competition atmosphere, among which the transfer and licensing of scientific and technological achievements of computer technology are also increasingly frequent. In the process of China's development, scientific and technological achievements in universities have become an important part of it. Universities have a large number of talents, so we should not only take the production of technological achievements as the goal, but also take the application of technological achievements in practice to promote the productivity and social progress of our country as the ultimate goal\[6\].

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