

Research on Technological Innovation and Intellectual Property Protection of Small and Medium-sized Enterprises in China

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Abstract: Intellectual property plays a very important role in incentive technology innovations of the small and medium-sized enterprises. But in the present situation, the small and medium-sized enterprises are serious out of joint in the use of intellectual property rights to promote technological innovations. The rights consciousness of the intellectual property of the small and medium-sized enterprises is indifference; the infringements of other's rights are serious; the intellectual property management system is not perfect; and the ability to use intellectual property rules is on a low level. For the above-mentioned reasons, China should create a favorable policy environment; perfect the legal system of intellectual property and take other measures to promote the technology innovations of the small and medium-sized enterprises.

Keywords: *The Small And Medium-Sized Enterprises; Technology Innovations; Intellectual Property*

I. INTRODUCTION

The level of technological innovations for the small and medium-sized enterprises (hereinafter referred to as SMEs) has far-reaching influence on a country's technological progress and economic development. By the effective implementation of intellectual property strategy, SMEs can promote technological innovations, develop and use intangible assets, increase market share. In order to improve the technological innovations capability and core competitiveness of SMEs, many developed countries adopt various measures to help SMEs to use intellectual property system. China's Eleventh Five-Year Plan notes clearly that China should enhance the capability of independent innovations as a national strategy and commit to the construction of an innovative country. However, compared with developed countries, SMEs of China has a big gap in independent innovations and protection of intellectual property. The innovations consciousness of SMEs is indifference; the phenomenon of infringement of intellectual property rights, such as fake or counterfeit, is serious. All these have affected the technical innovations of SMEs and make SMEs of China in an adverse position in international trade. Therefore, it is particularly necessary to research on the dilemma of the protection of intellectual property for the technology innovations of SMEs and put forward the corresponding countermeasures.

II. THE ROLE OF INTELLECTUAL PROPERTY FOR THE TECHNOLOGY INNOVATIONS OF SMES

At present, the intellectual property system is not only a kind of system for technical innovators to obtain profit, but also a tool in the market competition. Only when SMEs establish a correct awareness of intellectual property in technological innovation, they can better adapt to market and enhance market competitiveness.

A. Intellectual property system can protect the legitimate rights and interests of technology innovators

Intellectual property system itself is a product of technological innovation. In order to protected the legitimate interests of technology innovators and brought due interest returns which were obtained from the huge investment on innovation and invention, the intellectual property system came into being as the times require. Currently, more than 150 countries around the world have established their own intellectual property rights system in varying degrees. Intellectual property right system has become the most important laws for the innovation of science and technology. Technological innovation is difficult and has huge investment, but it is easy to be copied and imitated. Technological imitators or plagiarists do not invest in technological innovation, but can but can benefit from it, and technological innovators have fewer profits, even they can not recoup their investment. If there is no intellectual property system, the driving force of interests for technological innovation will disappear and technical innovation will impossible.

B. Intellectual property system can promote a virtuous cycle of technology innovation

The value of technological innovation is realized through intellectual property. The purpose of the intellectual property system for technological innovation is to protect the rights, encourage the creation of new technologies, and promote technological progress, by giving the rights and legal status to technological innovators. It depends on the actual ownership of intellectual property and the levels of protection of intellectual property rights if SMEs want to win places for themselves in the fierce market competition. On one hand, the intellectual property system provides an intense institutional environment for the right owners, encourage their technical innovation and invention, thus their ability and cleverness get due benefit and return, and they can carry more and technology innovation with high starting point. On the other hand, only when the technical innovation is transformed and enter the market, it will be reflected in the market and value-added. By encouraging and promoting the right owners and other social public to use and disseminate the technical innovation achievement within the restraints of laws, this mechanism will achieve a virtuous cycle of technological innovation.

C. Intellectual property system can promote the normal operation of market competition mechanism

Intellectual property system also plays a role of protecting fair competition in the market. If there is no sound intellectual property protection system, the new products of the inventors of new technology and new product development will be stolen or copied by the market competitors; the innovators who have invested heavily in innovation will be at disadvantage in the competition; the market competition will be the fairness and impartiality; the innovator will lose the driving force of innovation; the mechanism of market competition for technological innovation will not be able to effectively play its

role. Eventually, the market competition itself will difficult to continue. Because of this, the intellectual property system which include the patent law, the trademark law, the copyright law and so on give the exclusive rights to technology innovation, and affirm and protect the rights by these laws.

D. Intellectual property system can optimize resources of technical innovation

Intellectual property system not only can promote technological innovation and progress, but also can motivate the trades of intellectual property and promote dissemination and application of knowledge and technology, so as to promote the intelligence resource to optimize configuration. 1st, Intellectual property system can effectively protect the business interests of the enterprises which holds technological innovation and ensure high benefits by the application and transactions of intellectual property. That will encourage and promote the company to invest more resources to innovation. 2nd, with the forceful protection of intellectual property, technology innovation companies can open the content of their patent without troubles bake at home. That will promote the dissemination and communication of technological achievements. 3rd, the intellectual property system can help the technical innovators to transfer their technological achievements and attract more resources into the field of technological development to accelerate the transformation of technological achievements. Accompanied by the anti-unfair competition system, intellectual property system can also effectively prevent fake and shoddy products and intellectual property infringement behavior so as to purify the market environment and promote effective competition in the market. 4th, Perfect intellectual property system is helpful to promote global trade of knowledge and technologies. It not only encourage the richer of technologies (mainly developed countries) to output technology products or patents, but also help the poorer of technologies (mostly developing countries) to obtain new products and new technologies.

III. THE CURRENT PLIGHT OF INTELLECTUAL PROPERTY FOR THE TECHNOLOGY INNOVATIONS OF THE SMES

Although intellectual property has very important significance to improve the innovation ability of the enterprise, on the current situation, SMEs is not good enough in the intellectual property strategy to promote of technological innovation. Those mainly show in the following respects:

A. The awareness of intellectual property is weak and the phenomenon of infringement is serious

The awareness of intellectual property of China's SMEs is weak. China's SMEs are lack of the understanding of the value of intellectual property rights and the awareness of intellectual property system and protection systems. Those mainly show in the following respects: 1st, the phenomenon of imitation is serious. Technological innovation of SMEs in China mainly takes the way of import and imitation. According to statistics, in the 50 varieties of chemical products, the rate of imitation is 95%, and in 3600 varieties of fine chemicals, the rate of imitation is 96%. The phenomenon of counterfeiting in the clothing and toy industries are equally serious. 2nd, the phenomenon of infringement is serious. Because SMEs fear to bear the costs and manpower of applying for patent or worry about the disclosure of technological secrets, they do not willing to protect their products of technological innovation by registering patent. And the technical secrets are often revealed, and the enterprises are difficult to safeguard their rights and

interests through legal means.

B. The cost of the protection of intellectual property rights is high and the time of register cycle is long.

According to the survey of EPO (European Patents Organization), only 1 / 3 of manufacturing enterprises with R & D activities consider applying for patents and only 1 / 3 of the enterprises really apply for patents. The main reason that SMEs do not apply for patents is largely due to the high cost of patent applications and long period of the register cycle. If an enterprise wants to apply for patent right and trade mark right, they need not only pay examination fees, but also pay agent fees, translation fees, etc. And if it wants to apply for foreign patent or trademark registration, they need pay staggering fees. It is a huge expenditure for SMEs with less financial strength.

C. The financing system of intellectual property is lack

Due to the lack of tangible property as security, the majority of SMEs, especially SMEs with scientific and technological innovations, often face financing dilemma. European Commission study shows that the important reason for SMEs to finance by the use of intellectual property rights is that the value of intellectual property is difficult to be determined. This makes the majority of commercial banks are reluctant to provide loans to the intellectual property rights.

D. Intellectual property management system is not perfect

Many SMEs haven't set up a special management department of intellectual property. Though some SMEs have set up the management department of intellectual property, they put it under the corporate legal departments. They don't recognize that intellectual property management is not just a legal issue, but also extends to the initial stages of the R & D activities, and legal services can not include these. In fact, the poor management of intellectual property greatly reduced the profit that the SMEs can achieve from the intellectual property. It is also because of the lack of management of intellectual property, SMEs is difficult to attract management personnel that are learned in the law and has special knowledge of technical innovation and capital operation.

E. The ability of practical application for intellectual property rights is low

Many SMEs are not good at applying intellectual property rules in the competition of the market to reap maximum economic benefits. Some enterprises did not search patent literature and analyses and demonstrate the technological innovation before initiation. These have resulted in duplicate or inefficient labors and the waste of research funding. In the exploitation of the international market, some enterprises didn't sufficiently analyze the patent system of the export countries which led to the infringement and caused unnecessary losses.

IV. THE INTELLECTUAL PROPERTY STRATEGY FOR THE TECHNOLOGY INNOVATION OF SMES

A. To create a favorable policy environment

The government should play an active role in increasing support, regulating market order, building an independent policy support system for technical innovation of enterprises, creating a favorable policy environment for technical innovation, so as to further enhance the innovation capability of SMEs. 1st, we should strengthen the coordination between government departments. We should establish the joint working mechanism between management departments of science and technology and economic management

departments so as to strengthen cooperation and coordinate the corresponding work of the departments of planning, economy, technology, finance, taxation, finance, customs and the business. 2nd, we should formulate preferential tax policy and foster the development of SMEs through tax. In recent years, the external environment for the development of SMEs has become deterioration. Due to the rising cost of production, the increasing foreign trade barriers and the shrinkage of the international market after the international financial crisis, some SMEs even falls into the difficult predicament. The statistics of the SMEs Department of National Development and Reform Commission shows more than 67,000 SMEs above designated size closed their doors. 3rd, we should foster the financing market for SMEs and make full use of the risk investment. In 1958, the United States Congress passed the "Small Business Investment Act" and established the small business investment company (SBIC). This is the most successful legislation for venture capital in 20th century. And this legislation provides a learning experience and foundation for venture capitalists. China should also learn from the practices in developed countries, establish company of venture capital investment and innovation fund, and use venture capital to undertake technical innovation. The government should also greatly support the risk investment, give preferential treatment of tax reduction or exemption for venture capital income and capital gains, and make special plans to incentive the technology innovation of SMEs. And only by this means is it possible to create the conditions for SMEs to gain venture capital and improve the technical innovation enthusiasm of SMEs.

B. To improve the legal system of intellectual property

The role of the intellectual property legal system is to encourage and promote the enterprises to develop intellectual achievement and promote social and technical progress by giving the exclusive proprietary rights to the right holders in a period of time. Our country has had a relatively perfect legal system of intellectual property rights. The "Patent Law", the "Trademark Law", the "Copyright Law", the "Anti-Unfair Competition Law" and all levels of government rules and regulations constitute our legal system of intellectual property. However, the law enforcement and the patent management call for perfection on the way to advance. 1st, we should strengthen the position of patent administrative authorities, increase the intensity of law enforcement, enforce the laws more strictly, and impose tougher punishment on any act of infringement of intellectual property rights such as counterfeit and counterfeiting. 2nd, we should speed up the patent approval rate, so as to properly resolve the problems of the rapid growth of patent applications and the insufficient capacity of patent examination. 3rd, we should speed up the pace of patent information automation so that the enterprises can know accurately the patent status of a particular technology and prevent duplication of research or patent infringement.

C. To improve the management system of intellectual property for SMEs

1st, SMEs should set up the consciousness of intellectual property rights. They should attach importance to their [5].

intellectual property and use legal means to defend their rights. At the same time, they also should pay attention to the intellectual property of others, and do not use imitation, plagiarism, theft and other means to infringe intellectual property rights of others. SMEs should carry out deeply the training work of corporate intellectual property, increase the training of talents of intellectual property, and improve the ability to use the intellectual property system. 2nd, SMEs should establish a special agency of intellectual property management. This agency will analyze the status of intellectual property rights of related domestic and foreign products. That will prevent their own technological innovation to infringe others' patent rights and avoid duplication of innovation. 3rd, SMEs must strengthen technical security and improve the protection system of core technology secret, so as to prevent the loss of intellectual property rights. 4th, SMEs should strengthen technical cooperation and research between enterprises and set up strategic technology alliances. SMEs can not only set up strategic technology alliances with domestic or foreign large enterprises, or cooperate with universities and research institutes, but also cooperate with other SMEs in research and development. Through cooperation, SMEs can reduce the risk of technological innovation, make up for the lack of scientific research personnel, and avoid duplication of research. These will have a positive impact on the innovation ability and the management system of technical innovation of SMEs.

CONCLUSION

In conclusion, only when SMEs strengthen technical innovation, it can gain the initiative in the fierce market competition. In today's society, as the cornerstone of the competitiveness of enterprises, the ability of independent innovation greatly influences the economic. While in the process of technological innovation, SMEs must pay attention to intellectual property. And only in this way, SMEs can enhance the core competitiveness of enterprises, gain the driving force for sustainable development, improve the market reaction speed, seize the commanding heights of the market, gain more profit and market share, and win in the competition.

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