

THE LOSS AND LEGAL PROTECTION OF INTELLECTUAL PROPERTY IN CHINA'S HIGH-TECH ENTERPRISES

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Abstract: It is undeniable that high-tech enterprises are the driving force for the transition of promotion for the economic development in China. However, in reality, on one hand, enterprises own new intellectual property constantly throughout increasing investment in research and development of new technology. On the other hand, enterprises' intellectual property is in a giant tendency of loss due to subjective reasons; improper use of intellectual property in high-tech enterprises leads to its value derogatory; and the loss also caused by no existing legal protection; and most of high-tech enterprises lose the chance to own the intellectual property right because of mismanagement. On the basis of analyzing the reason of loss, the protection for intellectual property right is intimately bound up with some essential initiatives, namely creating the external environment, improving the transformation system of scientific and technological achievement, formulating security measures of technological innovation stage, selection of the range of patent protection and so on.

Keywords: High-tech Enterprises; Loss of Intellectual Property Rights; Protection of Intellectual Property Rights

1. Introduction

In the 50's of last century, with the development of high technology and industrialization, an increasing number of high-tech enterprises rapidly emerged, boosting the economic development. As the era of knowledge-based economy becomes a reality in the developed countries, the global economic system will face a new international division of labor. In the division of labor, countries with knowledge-based economy are going to get rid of the cumbrance from material production, however, they will transform into countries, providing the global economy with knowledge, technology and intelligence as well as making full use of such elements. [1] In any developing country that lack of the tradition with mechanized industry, the comparative advantage of backwardness for them is to support the rise and development of a number of high-tech enterprises. However, during the process of the growth of high-tech enterprises, issue of laying emphasize on the independent development of intellectual property rights while ignoring the protection of intellectual property occasionally appears, resulting to the serious loss of intellectual property rights. In this essay, the emphasis is to research and discuss on the loss and protection of the intellectual property rights in high-tech enterprises.

2. The Loss of Intellectual Property Rights in High-tech Enterprise

In high-tech enterprises, intellectual property is increasingly becoming the main support of development. In another word, patent right, business secret proprietary rights, copyright and achievements in science and technology have become the main force of capital to support the development of enterprise, especially for high-tech enterprises, and such intellectual property rights are replacing or has replaced the long dominant plant, equipment, raw materials and other tangible assets. [2] In view of what have been stated above, China's high-tech enterprises should gain more related experiences for the protection of intellectual property throughout actively paying attention to related bilateral or multilateral international treaties, in accordance with the patent law, trademark law, copyright law, anti unfair competition law, regulations on the protection of computer software. Although the high-tech enterprises have made certain achievements in the protection of intellectual property rights, actually, China's intellectual property protection system started comparatively later than majority developed countries. When the development of science and technology has a strong impact on the traditional system mode, high-tech enterprises also face difficulties inevitably, more precisely, on one hand, brand new technological production produced constantly after increasing efforts on the research and development; on the other hand, the existing intellectual property rights loss continuously. The most importance is how to define the loss of the intellectual property rights in high-tech enterprises espe-

cially in developing countries like China, it could be summarized as five aspects as below.

2.1. Wiping off the Duty of Service Invention and Service Works

In accordance with the provisions of China's Patent Law, [3] inventions completed in the scope of high-tech enterprises' duty or making use of enterprises' resources and equipments are service inventions, and their related patent rights belong to the high-tech enterprises. However, the management system has not been established for scientific and technological achievements in majority of high-tech enterprises in China, so service inventions are now privatization, that is to say, service patent is able to be owned, exclusively used or permitted others to use by research staffs, who can even implement paid transfer to others without the permission from the high-tech enterprises. It can be found that, most high-tech enterprises in China always laid emphasis on research and development rather than the protection of intellectual property rights.

2.2. Patented Technology Reaches Achievements Without Patentability

A plenty of department of research and development in China's high-tech enterprises mainly consist of young staffs. Most of time, they further their education for future promotion, and they have to complete a certain number of academic research requested by universities in China. In another words, applying for patent rights seems to be responsible for enterprises alone. What's worse, an increasing number of young staffs and researchers prefer to submit their work on-duty for high-tech enterprises that they are working for. As a result, high-tech enterprises' scientific research achievements is indirectly published once, technological achievements will lose novelty, resulting in the fact that applying for patent right seems impossible, and the scientific research works by high-tech enterprises may possibly lost its deserved innovative value.

2.3. Free Use of Service Works and Service Patent

At present, service works and service patent are owned and used for free in different ways. For instance, after acknowledging and mastering enough research achievement and technological resources, staffs or researchers who their original work place or studio might bring away a certain extent of significant technological secrets. And what they have known well may also be a positive condition for them to realize a 'job hopping'. Therefore, original on-duty service work can be possibly expanded in public area, which may lead to the failure of the application for patent rights to the last high-tech enterprises.

2.4. Enforceable Patent is Idle Unreasonably

It is undeniable that high-tech enterprises seem to be an appropriate factory to work out patent, but due to related China's regulations and policies that encourage innovation as well as despise patent transformation and application, resulting in the fact that a number of high-tech enterprises can take the support from the national innovation funds throughout speculatively using political loopholes in China. More precisely, they successfully applied for a large number of patents every year, which can help them to award the support of innovation funds from all levels of government in China, but they implement nothing to transform the patent into productivity.

2.5. Technological Secrets are Opened

In high-tech enterprises, the technological innovation seems to be a kind of strategy for the protection of technological secret. Compared with the protection for patent, the protection for technological secret does not need to do any procedures for application; it is not required to pay any fees; and it can achieve a certain period of long-term for exclusive use of such technology as long as strict security measures are effectively adopted, rather than a time limitation for the protection of patent. However, there are several different ways to open the technological secrets, and there is no enough emphasis on the procedures for protection, enterprises' competitive advantages will be lost once the technological secrets have been opened whether it is direct or indirect. [4]

3. Analysis of the Cause for the Loss of Intellectual Property

3.1. The Internal Reasons of High-tech Enterprises

At first, high-tech enterprises always lay emphasis on the procedure of research and development, while despise the application and protection of intellectual property. On one hand, the nature of high-tech enterprises determines that the procedure of research and development for intellectual property rights has been laying emphasis on for a long period of time, but due to the higher conditions for the application of intellectual property rights, the degree of utilization for the intellectual property rights is relatively low. On the other hand, high-tech enterprises do not pay enough attention to the protection of intellectual property rights. More precisely, there is no enough management system in aspect of intellectual property management to be cited, so enterprises can only maintain the lower level of patent management. Secondly, high-tech enterprises lack experiences in aspects of patent application and infringement prevention. More precisely, professional staffs are not enough; consciousnesses for the patent protection are scarce during the procedure of research and development; experiences for handling infringement are not enough. Thirdly, as the technological secret, achievement of technological innovation in high-

tech enterprises has a certain extent of risk for protection. Due to a series of factors, technological secret are comparatively easy to be open or published to public area. If there is no enough measures for protecting intellectual property to be adopted in time, once patent were applied by others, the implementation of the patent would be restricted to the enterprises, they can only use as a priority right within the limitation prescribed by related legal regulation. [5] Fourthly, high-tech enterprises in China are lack of necessary driving source to protect their own intellectual property rights. In another words, high-tech enterprises occasionally found that some of achievements with patented technology or not are not implemented, that is difficult to stimulate the enthusiasm of enterprises to protect the intellectual property; high-tech enterprises do not have condition of implementation, being restricted by some factors, namely funding, equipments and capacity for market research; the channel for high-tech enterprises to implement permission to use or transfer is obstructed commonly, their patent is difficult to transfer into economic profits completely.

3.2. The External Reasons of High-tech Enterprises

Firstly, related institutions do not have enough experiences as well as cannot work well in aspects of the protection for the intellectual property rights, which leads to the protection that cannot achieve an ideal effect. In legal practice, authorized institution like courts and arbitration cannot achieve the cutting requirements timely and correctly in dealing with intellectual property disputes, and they also cannot effectively punish in tort dispute of tort behavior and its related tortfeasor; additionally, although China's provincial court and part of the municipal intermediate people's court have already established specialized intellectual property court, in fact, encounter issues are still difficult to be handled due to most judges and arbitrators in China are lack of professional knowledge of intellectual property law and knowledge of science and technology; furthermore, neither collective management organization nor agency of intellectual property has given full play to the dominant role, which is also an important factor that hinders the development of high-tech enterprises in China as well as causes many disputes of intellectual property rights. [6]

Secondly, as the standard of measurement develops towards the scientific development, the application for patent has been laid more emphasis than the procedure for transforming it into productivity. [7] At present, the number of patent owned by an enterprise is still an important indicator in the evaluation of ability and level for industrial enterprises, research institutions, government and other scientific and technological development.

Thirdly, incomplete investment and financing system seriously restricted the transformation of patented achievement in time; that is to say, the transformation of

scientific and technological achievement needs the support from the complete investment and financing system. At present, China's capital market and risk investment system cannot provide effective systematic support for the industrialization of innovation, and that causes several difficulties for many enterprises to get funds for the implementation of the patent. Especially for the high-tech enterprises, venture investment is an important driving force to promote the transformation of the patent. Although our country has had related risk investment management, the risk of the financial market has not been set up. The lack of venture capital funds and source of supply as well as lag and related system seriously restricted the transformation of patented achievement.

4. Countermeasures and Suggestion for the Loss of Intellectual Property Rights

In view of issues existing in the protection of intellectual property rights in high-tech enterprises in China, several countermeasures could be put forward as following:

4.1. Creating and Establishing Related Principles for the Protection of Intellectual Property Rights in High-tech Enterprises

Firstly, it is the principle of institutionalization. High-tech enterprises should set up specialized agencies, equipping with staffs with inner quality; they also should pay attention to the unified between internal system of enterprises and the law of the country while in the study of the relevant national laws and regulations; and they should refine the internal intellectual property system of enterprises into the aspects of technological research and development, patent application, innovative creation, patent management, incentive patent invention, the use of patent and other process; and high-tech enterprises should rely on the complementation of related system, to overcome the randomness of the government and enterprises, to promote the formation of people's behavior and consciousness of intellectual property protection as well as the expected values. [8]

Secondly, it is the principle of making adjustment to the technological innovation. It the undeniable that technological innovation is the key component for high-tech enterprises, and the protection of intellectual property rights must also constantly adapt to the technology innovation; high-tech enterprises should also make adjustment to the aspects of the requirement of technological creativity and novelty, authorized examination period of patent and period of validity for intellectual property rights. [9] Additionally, modern technology is an experimental technique rather than a kind of technology only with enough experiences (especially high technology); therefore, theoretical innovation in the research stage and uncompleted technology should also strengthen the protection.

Thirdly, it is the principle of promoting by government. Enterprises' development strategy of intellectual property rights is not the business of enterprises alone; government should play a leading role in promoting. And the precise promotion by government should not only be reflected in the formulation of laws, regulations and policies, administrative guidance and services also should be strengthened. For instance, the China's National Ministry of Science and Technology carried out the pilot work for the protection of intellectual property rights in forty-five enterprises and institutions in 1997 around China, which was an appropriate way to promote the protection of intellectual property rights for enterprises and institutions to a certain extent. [10]

4.2. Completing Related Legal System for the Transformation of Scientific and Technological Achievement

As the core, law should be established to promote the transformation of scientific and technological achievements, including completed system for transformation of scientific and technological achievements like investment law in science and technology, scientific and technological achievements appraisal law and promotion management law. In order to adjust the transformation of scientific and technological achievements management subject, supply subject and subject of conversion and the protection of the behavior of the main body and the interrelation among them. China also need to establish scientific and technological investment law, risk fund law, basic research methodology, industrial promotion law and other relevant laws, promoting the implementation of scientific and technological achievements.

In the meantime, the quality and professional level of judicial personnel should be improved, they should strict enforcement of the law as well as make judicial justice, they also should seriously correct and crack illegal behaviors, in order to effectively protect the legitimate rights and interests of scientific and technical personnel. [11] Additionally, the role of the government and market in the transformation of scientific and technological achievements should be played properly, more precisely, the government should strengthen macro-control, increase investment in science and technology, pay attention to the transformation of scientific and technological achievements, implement effective intervention in the science and technology resources allocation, the competitive environment of the cultivation, put the adjustment of industrial structure, which is to give full play to the role of government in promoting the cooperation among production, education and research; the role of the market is to determine the economic value of the transformation of scientific and technological achievements and transformation of scientific and technological achievements, and

the two sides of supply and demand through the market to broaden financing channels.

Therefore, the construction of intermediary service organization and agencies should be strengthened, it is necessary to establish the results of appraisal science, impartiality, authority and system, to develop investment, business, education and training, capital operation, technical information and other intermediary service organizations, to train technical personnel, information, property transactions and other intermediary services market, to provide a platform for the transformation of scientific and technological achievements, open up channels.

4.3. To Create a Good External Environment for the Protection of Intellectual Property Rights in High-tech Enterprises

At first, it is necessary for developing country like China to guide and support the development of high-tech enterprises throughout carrying out related industrial policies. The government can also give a certain extent of support and financial aid in order to stimulate the enthusiasm of enterprises for applying for patent during the application procedure. And, throughout providing technical advice and literature service, it is significant to reduce the application fee, examination fee and annual fee as well as reduce the economic burden of high-tech enterprises. For instance, in the field of copyright protection, it is significant to establish the copyright information center and specialized market to provide convenience for transactions to high-tech enterprises with queries and copyright trading. More precisely, on one hand, copyright information center as a collection of various copyright information as one of the information of the supermarket, can provide information services to the public, to facilitate the user to query; on the other hand, copyright collective management organization and market coordination of copyright, copyright trading way, in terms of content to do the demonstration of adjustment, the copyright transaction can increase in size and speed. [12]

Secondly, it is necessary to strengthen and increase the input of the human resources and equipments in aspects of the authorized administration of patents, trademarks and copyright. In addition, the review organization's technology, equipment and quality of personnel influenced the successfulness of application for patent, to improve the quality of personnel is as important as to increase the number of staffing and technical equipments, such as the use of electronic technology to improve the review retrieval speed, saving the expenditure for application. More precisely, except for the current situation of the development of information technology in the technical requirements, the patent office, bureau of copyright and trademark office should also improve the file management and retrieval system, acknowledge the development of intellectual property rights both here and

abroad, which refers to provide timely and accurate consulting services and enquiry services for high-tech enterprises. In the meantime, the regulatory organization of intellectual property rights also must strengthen and increase the effort to crack down on infringement. Additionally, the administrative way has the advantage of fighting against infringement in aspects of simple program, short period of time for ending cases and lower cost, thus intellectual property management agencies should give full play to its flexibility and convenience. The investigation of legislative mode and judicial organization for the corresponding criminal responsibility also should be reformed, in order to adapt to the changing market and community.

Thirdly, intellectual property agencies should strengthen their functions of acquisition and protection in intellectual property rights. In accordance with authorized professional survey, the effort that high-tech enterprises made for specialized agencies and professional personnel is comparatively insufficient, and services supported for these specialized agencies are still lack of enough understanding and recognition. And agencies should also gain public recognition throughout propaganda, promoting typical successful cases and the advantage of specialized services. Moreover, the administrative patent organization can also recommend such agencies to intellectual property owners in the process of specific operation, in order to help parties to do a good job in terms of the protection of intellectual property rights. [13]

Fourthly, high-tech enterprises may also spontaneously organize industrial association to exchange experiences about the countermeasures and solutions for the protection of intellectual property rights, as well as discuss on the management and service to high-tech field of intellectual property rights, and they can even prevent and combat to infringement with the behalf of industrial association in giving aid to victims of enterprises when necessary. [14] And the industrial association can be intimately bound up with related association, establishing relationship like lawyers' association as well as inviting some experts, setting up their own publications or brochures in the name of the association. And such association can even organize specialized personnel to coordinate in providing the personnel, information, technology and legal services especially when high-tech enterprises' technology suffered from extraterritorial infringement.

Last but not the least, it must be emphasized that the outer environment of the protection of intellectual property rights in China's high-tech enterprises should be optimized, which refers to strengthen legal advocacy work about the protection of intellectual property rights. That is to say, under such countermeasures, public could be awareness of the importance of the protection of intellectual property rights, the role of supervision, exposition and prosecution could be played effectively, which is

able to reduce the phenomenon of infringement due to legal-illiterate; what's more, the concept of intellectual property rights could be gradually established throughout the promotion, and the environment that the whole society respects and protects the intellectual property rights could be formed throughout cultivating the awareness of intellectual property rights.

4.4. Formulating Security Measures During the Stage of Technological Innovation

At first, the scope of the protection for intellectual property right should be limited, excluding those technological innovation that does not fit for protection of patent, which do not belong to the subject to the protection of patent law; in fact, although technological innovation has great commercial value, otherwise it does not have the patentability regulated by China's Patent Law; moreover, for those technological achievement with higher level of risks for patent protection, in order to achieve the purpose of long-term, borderless and monopoly market, it could be protected by recognized as commercial secret. [15] However, that technological innovation protected as technical secret by enterprises has obvious limitations; it is undeniable that patent protection is still the main form of protection. Enterprises should be more careful when select the form of protection for technical secret; the comprehensive application with other measures should be paid more attention even after the form of protection for technical secrets has been decided to implement.

Secondly, for the stage of technological innovation, confidential work is significant before the application, in order to avoid the technology losing the novelty due to being opened to the public. In general, enterprises should not be anxious to hold news conference or achievement appraisal before the application of patent, and they also should not disclose any invention details on general exhibition, newspaper, magazines and so on. [16] If any other parties are interested in the technology that the enterprise intends to apply for a patent, they should sign a confidentiality agreement if they need a license to use such technology, and the agreement should expressly engage the legal liability for breach of the agreement. And China's Patent Law stipulates that such invention still does not lose the novelty even if unauthorized disclosure of the contents of the invention.

4.5. The Selection to the Scope of the Protection for Patent Application

The selection to the scope of the protection for enterprises' patent application exactly has great significance for improving the quality of patent application as well as achieving real right of exclusive monopoly. In practice, the scope of the protection for patent application is determined by the affidavit of claim while applying for the patent. According to the principle of patent law, affidavit

of patent claim intends to state technical substance of invention or utility model throughout the sum of the technical characteristics. Such affidavit of claim plays an important role in defining the scope of protection of the patent application request and the scope of patent protection. After the application for a patent has been granted with a patent right, the affidavit of claim is the basis for confirming the scope of protection for the invention or utility model patent, as well as the basis that determines whether others encroach right. For the strategy of enterprises' patent application in practice, if the scope of the requested protection for the patent right is inappropriate, a high quality of the invention will only get lower level of protection by patent law.

In addition, in the problem of determining the scope of protection for the patent application, enterprises could implement the corresponding 'anti-circumvention strategy' in order to prevent 'circumvention strategy' by other competitors. The basic idea is that recognizing technical personnel beyond patented technological personnel as competitors of patentee as well as evaluating the patent application from two opposite point of views, then the consideration had better focus on the 'circumvention strategy' that may adopted by competitors, and the affidavit of claim for the patent application should also be modified appropriately, in order to expand the scope of protection to a certain technological scope that competitors might consider as possible in the affidavit of claim. Furthermore, And the objective of 'anti-circumvention strategy' refers to prevent competitors fighting against obligee's patent throughout making use of 'circumvention strategy', then the basic point for the implementation is circumventing own patent before the competitors, reapplying a brand new patent on same object in order to avoid competitors circumventing the patent throughout adopting the same measure.

5. Conclusion

The concept and implementation to the protection of intellectual property rights definitely play a significant and positive role in maintaining and boosting the development of the high-tech enterprises under such a rapidly developing global economic background in developing countries like China. After ensuring all factors that may cause the loss of intellectual property rights have been acknowledged, both related personnel and agency are able to carry out appropriate countermeasures and consultation for protecting intellectual property rights of high-tech enterprises. Related legal organizations like

specialized court of intellectual property right also have to correct the scope of objects that should be protected by related law and regulations of intellectual property, and they can make sufficient effort to prevent infringement as well as reduce the damages to enterprises caused by the loss of intellectual property rights.

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