Research on the countermeasures of intellectual property protection in the process of resource-based cities’ transformation and upgrading

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Abstract. The protection of intellectual property in the process of resource-based cities’ transformation and upgrading is a worldwide problem; China's large-scale resource-based cities’ transformation process is facing this problem. The research object of this paper is to protect the intellectual property in the process of Daqing City’s transformation and upgrading. This paper inspects the protection of intellectual property in Daqing City in the process of transformation and upgrading and puts forward the specific measures to improve the protection of intellectual property based on the analysis of the present situation of intellectual property protection in Daqing City, as well as combined with corresponding research in the process of cities’ transformation and upgrading.

1. Introduction
In 2011, Heilongjiang Province People's Government issued the "Heilongjiang Province Intellectual Property Strategy Outline", clearly stating that one of the basic principles for implementing Heilongjiang's intellectual property strategy is to combine effective use with strong protection, actively promote the effective use of intellectual property, and strengthen the protection of intellectual property. Intellectual property judicial protection and administrative law enforcement are the most direct and important manifestation of intellectual property protection in a region [1]. With the acceleration of urban transformation and upgrading, Daqing City has strengthened the protection and law enforcement of intellectual property. At present, Daqing has successively formulated a series of related documents, carried out a series of activities of intellectual property innovation and protection and taken practical actions to control the phenomenon of intellectual property infringement. These actions have purified the market environment, created a good economic order and investment environment and powerfully promoted the transformation and upgrading of Daqing City.

2. Reflection on intellectual property protection

2.1 The intellectual property protection system is not perfect enough
As a sub-center city of Heilongjiang Province, Daqing City has not yet formulated an outline for intellectual property development planning. The formulation and revision of intellectual property protection related documents are not timely, and there is a lack of targeted guidance documents in the industry. This cannot satisfy the need of quick change of intellectual property protection. At present, Daqing City's intellectual property management model is still in its infancy, and it has not formed its own unique positioning and measures in the transformation of intellectual property applications. Daqing
lacks directional guidance, and even the relevant departments are difficult to integrate effectively. The pace of work among different departments is inconsistent. This situation has an indispensable relationship with the lack of a sound coordination mechanism. Daqing Intellectual Property Office was established in December 2015 and is affiliated to the Daqing Science and Technology Bureau. This has dispersed the human, material and financial resources of intellectual property related work in Daqing. In addition, the use of multi-headed management mode for intellectual property management has resulted in insufficient coordination of effective linkages, and has also made intellectual property protection and the promotion of results transformation relatively confusing and slow.

2.2 Intellectual property results are narrow in scope and thin in variety
As a typical resource-based city, Daqing City's intellectual property achievements are mainly reflected in patents. Based on the statistical results of the Heilongjiang Intellectual Property Office, the number of patent applications, authorizations and growth rates in Daqing City stably ranks among the top three in Heilongjiang Province each year. The patent content is mainly in petroleum and chemical industry. Applicants mostly come from universities, petrochemical-related research institutes and enterprises. High-tech enterprises and private technology enterprises with independent intellectual property as the core are relatively few, and the zero-patent enterprise even exists, which has greatly weakened the development of industrial clusters in Daqing City and delayed the pace of transformation and upgrading.

2.3 Conversion rate of intellectual property achievements is low and famous brands are scarce
The low quality of intellectual property is the main reason for the low application conversion rate. Taking patent as an example, Daqing is a city which has high patent production in Heilongjiang Province. In the past six years, the total number has ranked among the top three in the province, but the total amount of invention patents and the amount of authorization which can best reflect the innovation and creativity of enterprises have greater market value and longer protection period is not satisfactory. At present, Daqing still has a small number of high-tech enterprises, which are small scale, and lacks of leading enterprises. Technology-based SMEs have financing difficulties, low investment. R & D institutions and production enterprises are not tightly integrated, and enterprises' innovation ability is not strong.

2.4 Lack of intellectual property protection professionals
The lack of intellectual property protection professionals in Daqing City is mainly reflected in two sides. The first is the government side. Intellectual property has strong professional and legal characteristics. Staff members need to have high professional quality and need to systematically study relevant legal systems or receive training. Daqing City has a small number of intellectual property management staff and with high work intensity. This is an indisputable fact, which has made it difficult to effectively exert intellectual property protection at the law enforcement level. The second is the enterprise side. Looking at most enterprises in Daqing City, especially small and medium-sized enterprises, there are very few departments that deal with intellectual property protection and management. In the face of complex and professional intellectual property declaration, document writing, legal rights protection, etc., the comprehensive talents who are familiar with the industry knowledge and skilled in the law are insufficient. The lack of intellectual property protection professionals will put us in a disadvantageous situation when we are in the era of rapid development of science and technology, cross-regional and even cross-border intellectual property exchanges, and increasingly frequent intellectual property disputes. Once related matters are involved, only outsiders can be hired to respond.

2.5 Awareness of intellectual property protection is weak and protection is insufficient
In recent years, although Daqing City has taken certain measures to crack down on IPR infringements, its protection and publicity efforts are still too low compared with IPR demonstration cities, mainly reflected in the overall lack of awareness and inadequate protection capabilities. First, at the government level, compared with the actual measures, publicity, and investment funds introduced by economic
growth and project construction, intellectual property protection work is more on the verbal level; second, at the enterprise level, many companies which have independent research and development capabilities do not know how to protect their intellectual property; third, at the people level, the concept of intellectual property protection is far from universal.

3. The improvement of intellectual property protection countermeasures

3.1 Improve the intellectual property protection system

The intellectual property protection system has regional characteristics, so it is necessary to integrate regional characteristics and combine independent innovation capability with intellectual property protection. Under the atmosphere of national implementation of the strategy of strengthening the country with intellectual property and Heilongjiang's efforts to increase the development and protection of intellectual property, Daqing in the stage of transformation and upgrading should formulate an intellectual property development program that meets the needs of Daqing and adapts to the needs of transformation and upgrading as soon as possible. The establishment of the outline needs to strengthen normalization, operability and pertinency on the basis of summarizing the advanced experience at home and abroad, fully carrying out the research of city's situation and comprehensive analysis. The specific contents include guiding ideology, development direction, stage division, specific measures, and stage tasks and completion goals.

Daqing should establish an independent and perfect municipal IP management service organization, and increase the introduction and training of intellectual property management and service personnel. Daqing also should set up a professional intellectual property law enforcement team to unify the law enforcement power of the city's intellectual property management department, so that the division of labor is clear and the work is efficient. Intellectual property management and service institutions should be set up at the county, district and even township level to facilitate the demand for intellectual property information services of enterprises in the districts and counties. A special intellectual property protection committee should be established. The committee can appear as a government think tank. It is mainly composed of judges, lawyers and related professional experts who are familiar with laws and professional skills. It will be responsible for analyzing the real-time intellectual property situation and providing legal advice to relevant government IP departments. Compared with the existing 53 national IPR demonstration cities and combined with the city’s situations, Daqing should increase capital input and improve the city's intellectual property management, protection and service levels.

In accordance with the overall arrangement of the "National Intellectual Property Strategy Outline" and "Heilongjiang Province Intellectual Property Four Major Projects" Daqing should improve the intellectual property protection policy, improve the investment environment, and maintain the market economic order combined with the government's promotion. We should strengthen policy guidance mechanisms, implement supporting measures, and guide universities, research institutes, and enterprises to use intellectual property systems to promote scientific and technological progress and innovation, and provide corresponding policies, such as intellectual property pledge guarantees, loans, financing, to transform results, achieve productivity and realize the capital value of intellectual property. Daqing should make full use of the advantages of technological R&D in universities and the transformation conditions of enterprises' achievements, and strengthen the research on cooperation between industries, universities and research institutes. Daqing should strengthen the links among existing universities, and work closely with enterprises R&D institutions to focus on cultivating high-value intellectual property, speeding up the formation of a number of core patents with independent intellectual property, creating leading-edge scientific research results which can be applied. Daqing also should strengthen incentives and formulate incentive policies. While formulating the incentive policy, we must not only embody the spirit of reward, but also appropriately open the gap to widely mobilize the enthusiasm of the people for innovation and promote the formation of a harmonious atmosphere of innovation.
3.2 Strengthening the "Double-track System" protection of administrative protection of intellectual property and judicial relief

In today's world, economic competition has essentially evolved into competition of intellectual property [2]. Economic development and competition will inevitably involve the competition and protection of intellectual property. This is particularly evident in the process of urban transformation and upgrading. The development of local enterprises and the investment of foreign enterprises will face intellectual property issues. When the rights of the parties are violated, they should give full play to the protection mode of the "dual-track system" of administrative protection and judicial relief, and create favorable conditions for the protection of intellectual property in this municipality [3,4].

3.3 Strengthen IP publicity and training, education work

Daqing should establish and improve the publicity mechanism, with government propaganda as the leading factor, the news media as the support, and the broad-based participation in the intellectual property protection publicity system. The Intellectual Property Office should set up a special website or use various media platforms to regularly and irregularly carry out IP publicity into the communities and enterprises, publicize intellectual property laws and regulations, publicize intellectual property knowledge, raise awareness of intellectual property protection among various groups, and enhance the intellectual property legal concepts of all groups.

Japan has introduced the private intellectual property protection association through legislation, and made policies to encourage and fund private intellectual property search institutions and evaluation centers to improve the speed of intellectual property services, such as patent examination, trademark and patent value evaluation. The establishment of private intellectual property protection organizations has made up for the shortage of manpower and technology for government management and services, and has also effectively promoted the coordination and cooperation in the fields of intellectual property publicity among government, groups and enterprises [5]. Most domestic cities, especially the national intellectual property demonstration cities, have established different forms of civil organizations such as industry associations, consulting service platforms, and results trading transformation platforms. Daqing can also take the lead in establishing a number of private intellectual property organizations that specialize in meeting different needs and provide necessary policy support to develop and mature as soon as possible to serve the intellectual property industry in this city and even the whole country.

The IP training work is mainly targeted at IP management unit cadres, officers, law enforcement personnel, patent agencies and other service units as well as corporate IP management personnel [6,7]. We should enhance their intellectual property awareness, so that managers have the ability to formulate policies from a strategic height, so that service units have the ability to serve enterprises and society, so that law enforcement personnel have a higher overall quality of law enforcement for the people. Intellectual property education mainly refers to the education of academic qualifications. It is necessary to rely on the colleges and universities to accelerate the training of a group of specialized professionals who can understand the profession and the law. We should advocate the establishment of intellectual property elective courses in primary school, middle school and colleges and universities, to popularize intellectual property knowledge, and focus on intellectual property education among students.

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References

[1] Lin G H 2007 Hebei Law Science 25 181
[2] Wu H D and Hu K Z 2002 Intellectual Property Law in the Age of Knowledge Economy (Beijing: Law Press) p 30
[3] Zheng S Q 2007 Journal of Henan University (Social Science), 47 63
[4] Jiang F R 2014 Intellectual Property 2 76
[5] Yao J C and Le C X 2007 Social Sciences Review 22 32
[6] He L H 2018 Performance Study on Intellectual Property Administration and Judicial Protection (Beijing: China social sciences press) p 35
[7] Meng H Z 2011 Study on New Situation of Intellectual Property Administrative Protection (Beijing: Intellectual Property Publishing House) p 56