

Empirical Study on Policies of Local Intellectual Property System to Support Scientific and Technological Innovation

-- Taking the Yangtze River Delta Region as an Example

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Abstract

Intellectual property policy is crucial to support scientific and technological innovation, while local policy is the concrete practice of national policy. Starting from the Yangtze River Delta region, based on the theory of the life cycle of scientific and technological innovation, we establish an analysis framework for the intellectual property policy system in the early research and development stage, the middle protection stage and the late application stage of scientific and technological innovation. From the perspectives of intellectual property incentive policy, intellectual property protection system, intellectual property operation system and intellectual property service outlets, the study explores the policies in the intellectual property system that support the various stages of scientific and technological innovation. The study finds that the coordination of the unified intellectual property system of the three provinces in the Yangtze River Delta region is lagging behind the development of scientific and technological innovation, the intellectual property protection policy needs to be covered in multiple aspects, and the intellectual property system still needs to evolve further in order to facilitate the transformation of scientific and technological achievements in a highly efficient and effective manner. In order to improve the intellectual property system in the Yangtze River Delta region, it is suggested that the focus on intellectual property in relevant science and technology policies and financial support should be highlighted to address the lack of coordination of the intellectual property system, a high-quality enforcement mechanism should be established and the capacity of the enforcement team should be strengthened, and the government should play an active role in establishing a diversified and commercialised mechanism for the operation of the fruits of scientific and technological innovations. This is intended to provide useful insights for the comprehensive development of science and technology innovation in China and the building of an innovative country and an intellectual property powerhouse.

Keywords

Intellectual Property System; Scientific and Technological Innovation; Yangtze River Delta.

1. Introduction

In recent years, the role of science and technology innovation in promoting economic development and global competition has become more and more prominent. However, the development of science and technology innovation does not only need to rely on the investment of research and development(R&D) resources and the accumulation of science and technology, but also need a perfect intellectual property rights system as a guarantee. The intellectual property rights system can ensure that the rights and interests of the main body of innovation are protected, so as to stimulate the research and development of them in all walks of life, and

accelerate the industrialisation process of science and technology. The industrialisation process of science and technology. Under a new stage of the international background and the conditions of the times, the establishment of a new international trade system and the rapid and sustained development of economic globalization have promoted the formation and development of intellectual property globalization. Against the background of such globalization, intellectual property rights have transformed from a single legal issue to a comprehensive issue involving many fields such as economy, policy, technology and international competition. Therefore, countries around the world have strengthened the protection of intellectual property rights as a way to attract international capital, technology and talents, and improve national competitiveness. As China becomes the world's largest developing economy, the construction and improvement of intellectual property rights system is particularly important. Especially in the context of "Double Innovation (Innovation and Entrepreneurship)", the relationship between intellectual property rights system and science and technology innovation is becoming increasingly close.

As the vanguard of China's economic development and the front window of reform and opening up, the Yangtze River Delta region has many high-tech enterprises and R&D institutions, and scientific and technological innovation appears to be very active. Moreover, after years of development and improvement, the Yangtze River Delta region has formed a set of relatively perfect intellectual property rights system, which makes the Yangtze River Delta region an ideal place for research on how IPR system can support scientific and technological innovation. This makes the Yangtze River Delta region an ideal place to study how the intellectual property system supports scientific and technological innovation. Therefore, this paper takes the Yangtze River Delta region as an example to conduct an in-depth discussion on the policies related to the support of scientific and technological (S&T) innovation by the local intellectual property system.

As far as the intellectual property system is concerned, the mechanism of intellectual property rights to support scientific and technological innovation in the Yangtze River Delta region is relatively mature, which not only includes the formulation and implementation of relevant policies, but also involves the creation, authorisation, application, protection and services of intellectual property rights. A good intellectual property system in the Yangtze River Delta region not only provides a strong safeguard for the scientific and technological innovation achievements of enterprises and R&D institutions, but also promoted the market-oriented circulation of technological achievements and the upgrading of industries. However, although the intellectual property system in the Yangtze River Delta region has achieved certain results in promoting scientific and technological innovation, there are still some problems, such as insufficient coordination of the intellectual property system in scientific and technological innovation policies, and the need to improve the rate of transformation of scientific and technological achievements promoted by the intellectual property system. These problems are not only a major challenge for innovators, but also affect the role of the intellectual property system in supporting scientific and technological innovation.

For this reason, this paper hopes to gain a deeper understanding of the operation mechanism of the local intellectual property system system in support of scientific and technological innovation through an empirical study of the policies in the Yangtze River Delta region, to identify existing problems and deficiencies, to provide references for future improvement and refinement, and also to help provide experience for other countries and regions, and to promote further mutual promotion and integration of the intellectual property system and scientific and technological innovation.

2. Research Background and Research Status of the Intellectual Property System for Science and Technology Innovation in the Yangtze River Delta Region

2.1. Research Background

In China's innovation-driven, high-quality economic development strategy, intellectual property rights as an important aid to promote the development of scientific and technological innovation has become the core of China's policy protection, scientific and technological achievements in the intellectual property rights in the creation of the source and the operation of the core position of the practice is also more and more prominent. In recent years, China from the CPC Central Committee, the State Council to the relevant ministries and commissions are deeply aware of the inevitable connection between intellectual property rights and scientific and technological innovation, and have introduced a series of relevant policies and regulations. In recent years, the Yangtze River Delta region has actively responded to the call of the state and kept pace with the times by introducing a series of policies and measures to incentivize scientific and technological innovation, with the aim of opening up the whole life cycle of intellectual property creation, application and protection. It has unswervingly pushed forward the construction of a strong intellectual property province and continuously strengthened the protection of intellectual property rights, so as to inject innovative vitality into high-quality development. By combing through the policies and regulations in the two main areas of intellectual property and scientific and technological innovation in the Yangtze River Delta region, it is found that the policy intersection between intellectual property and scientific and technological innovation in the Yangtze River Delta region is gradually expanding. A series of policies and measures have been formulated to promote innovation and economic development, safeguard fair competition and improve the level of intellectual property protection. It has given full play to the role of intellectual property rights in supporting services for building a new development pattern and promoting high-quality development, pushed forward the construction of a strong intellectual property province at a high standard, and focused on building an industrial science and technology innovation center with global influence. However, the emergence of new technologies has also challenged the IPR legal system. The Yangtze River Delta region should use the ideas, theories and methods of science and technology innovation to promote industries and enterprises to rely on innovation drive and intellectual property system and policies to achieve scientific. It should pay attention to, track, understand and master the cutting-edge and leading practices and trends in technological innovation, industrial development and operation of intellectual property strategies in countries around the world in real time, and use them as important references and direction guides to promote its own technological innovation based on the effective use of intellectual property system, and to promote the change and evolution of new industries.

2.2. Research Status

In the following, we will start from the perspective of life cycle theory of science and technology innovation to study how the institutional system of the Yangtze River Delta region supports science and technology innovation. Life cycle, as a biological concept, refers to the whole process of an organism with life phenomenon from birth, growth to maturity and aging until death, according to which Karman first proposed the life cycle theory in 1966, and Hersey and Blanchard developed this theory in 1976. The theory is based on the Quadratic Diagram Theory, and at the same time absorbs the immaturity-maturity theory of Argyris. Introducing the life cycle theory into the field of science and technology innovation, it refers to the process of a technology, product or service from its birth to its popularization to its eventual decline, which can be divided into three main stages.

First, the stage of scientific and technological research and innovation. Firstly, Jiangsu Province gives full play to the advantages of a better foundation of blockchain industry, rich data resources and broad application scenarios, and focuses on cutting-edge technologies such as cryptographic algorithms, smart contracts, distributed transmission and networks, etc., to form a batch of high-quality intellectual property rights that lead the development of blockchain industry. Secondly, Jiangsu Province vigorously implements the high-value patent cultivation and upgrading project, establishes high-value patent cultivation demonstration centers, and produces a batch of high-value patents in key core technology fields such as computer chips, artificial intelligence, semiconductors, and so on, and in the "'14th Five-Year Plan' Economic and Social Development Indicators In the "'14th Five-Year' Economic and Social Development Indicators", Jiangsu Province has set up a target of 17.17 high-value patents per 10,000 population by 2025. At the same time, Jiangsu Province is also based on the advantages of science and education in the province, to accelerate the construction of the provincial industrial technology research institute as the leader, 3 provincial laboratories as the basis, 10 provincial or above technology innovation centers as the backbone, and N engineering technology innovation platform as a bridge of the "1 + 3 + 10 + N" science and technology innovation platform system. Finally, in order to stimulate scientific and technological innovation, Jiangsu Province has also introduced a system of scientific and technological subsidies and incentives to stimulate independent innovation and highlight the value-oriented system, such as a fixed amount of subsidies for each piece of domestically-authorized invention patents in the previous year, appropriate subsidies for the annual fee for the maintenance of invention patents, and the inclusion of intellectual property rights pledges and financing loans in the provincial "Suzhou Science and Technology Loan" risk compensation system. The system of risk compensation for intellectual property rights pledge financing.

Secondly, the market operation stage of scientific and technological achievements, the intellectual property rights involved in the scientific and technological innovation policy system of Zhejiang Province can be summarized and analyzed from the aspects of patent achievement transformation service, job scientific and technological achievements and patent navigation. First of all, in the transformation of achievements, Zhejiang Province promotes and improves the market allocation mechanism of technical factors, mainly including the following points: improving the formation mechanism of scientific and technological projects guided by enterprise demand and driven by major application scenarios; enhancing the participation of enterprises and other technical demand parties in the condensation and design of projects; improving the system of listing and trading of technological intangible assets, public auctions and public announcement of the transaction information, and discovering the value of scientific and technological achievements through the market. The value of scientific and technological achievements will be discovered through the market. Secondly, in terms of scientific and technological achievements, Zhejiang Province supports pilot units to give researchers the right to own scientific and technological achievements and the right to use them for a long period of not less than 10 years, so as to improve the value realization mechanism. Thirdly, in terms of patent navigation, Zhejiang Province emphasizes the key role of patent navigation service in overcoming bottlenecks restricting industrial development and promoting the in-depth integration of intellectual property information with regional industries, science and technology, relying on the provincial intellectual property digital management application, construction and management of patent navigation results, including patent navigation work report, patent navigation database, industrial patent navigation innovation atlas collection, and the implementation of other achievements Promotion and other demonstrative applications.

Third, the stage of protection of scientific and technological achievements. Shanghai firstly strengthens the crackdown on infringement, introduces a punitive compensation system, and significantly increases the cost of violating the law. Secondly, improve the efficiency of

intellectual property protection, play the role of China (Pudong) Intellectual Property Protection Center, deepen and expand the functions of rapid examination, rapid right confirmation and rapid right enforcement, and further shorten the patent examination and authorization cycle in key development areas of the country and the city. Shanghai has strengthened the protection of intellectual property rights in key and new fields. On the one hand, improve and optimize the review and approval process and technical review of drugs and medical devices, and strengthen the protection of integrated circuit layout designs and software copyrights. On the other hand, it has explored new modes of intellectual property protection for new industries in new fields such as big data, cloud computing, artificial intelligence, blockchain, etc. It has accelerated the improvement of scientific and technological data management mechanisms, incorporated good data management into the project management requirements of science and technology programs, promoted the opening of scientific and technological public data in an orderly manner in a hierarchical manner under the premise of security, and promoted the safe and orderly flow of data across borders in the pilot project of the Lingang New Area.

As one of the most economically developed regions in China, the Yangtze River Delta region has fully played a leading role in demonstrating the creation, utilization and protection of intellectual property rights, supporting the development of scientific and technological innovation with comprehensive intellectual property policies, and forming a strict and complete life cycle of scientific and technological innovation with intellectual property rights.

3. Deficiencies in the Policies of the Intellectual Property System Supporting Science and Technology Innovation in the Yangtze River Delta Region

"The 14th Five-Year Plan is a five-year plan for China to move from "entering an innovative country" to "being at the forefront of an innovative country", and China has laid out its national laboratories and key scientific and technological infrastructures from the perspective of intellectual property strategy. From the perspective of intellectual property strategy, China has laid out its national laboratories and key scientific and technological infrastructures, strengthened basic research and original innovation, reinforced the protection of intellectual property rights, and accelerated the research and development of China's key core technologies, with the aim of creating more opportunities for China's development through scientific and technological innovation. The Yangtze River Delta (YRD) region, as a national key economic development region, cannot be separated from the integration and development of scientific and technological innovation and intellectual property rights. Here, mainly focusing on the three provinces of the YRD region, namely, Shanghai, Jiangsu and Zhejiang, there are mainly problems of insufficient coordination of intellectual property systems in scientific and technological policies, the need to strengthen the collaboration of intellectual property rights law enforcement in scientific and technological policies, and the intellectual property system for promoting the transformation rate of scientific and technological achievements that still need to be improved.

3.1. Insufficient Insufficient Harmonization of Intellectual Property Systems in Science and Technology Policies

Through the Hunan Provincial Science and Technology Innovation Policy, Hunan Province "14th Five-Year Plan" Strategic Emerging Industries Plan, Hunan Provincial Science and Technology System Reform Three-Year Action Plan, etc., it can be learned that Hunan Province in the intellectual property rights system from the creation, utilization, protection, management, services in the five aspects of the promotion of each other, interacting with each other, to help

the Hunan Provincial Science and Technology policy. The coordinated development of intellectual property system, Hunan Province has formed a digital intellectual property model, so that the five aspects of intellectual property have a better logical connection, and the establishment of intellectual property public service platform, so that research and development personnel have a better service platform to promote the development of science and technology innovation.

From the Yangtze River Delta region of Shanghai, Zhejiang Province, Jiangsu Province, although there is a strong development of intellectual property rights in science and technology policy, but the problems of intellectual property rights system is not coordinated, which is not conducive to the development of science and technology innovation in the Yangtze River Delta region. The intellectual property system between the three provinces can not coordinate the development, because each province due to their respective industrial characteristics, historical traditions and characteristics of science and technology innovation to improve their own coordination of intellectual property system, and at the same time did not work together to build a platform for information sharing, resulting in a certain degree of intellectual property system can not be coordinated in the development of the three provinces, the existence of scientific and technological core technology can not be a breakthrough problem in Jiangsu Province, the existence of scientific and technological innovation in Shanghai, the development of the problem of incongruity Jiangsu Province has the problem of scientific and technological core technology not being able to break through, Shanghai has the problem of uncoordinated development of scientific and technological innovation, and Zhejiang Province pays special attention to the protection of intellectual property rights in the four aspects of intellectual property rights, thus the intellectual property rights system of the three provinces in the development of scientific and technological innovation can not be coordinated. In the three provinces, in the five aspects of intellectual property creation, utilization, protection, management and service, each province has its own focus, but in order to form the coordination of intellectual property system, the three provinces cannot form the internal logical connection among the five aspects of intellectual property. The lack of a unified intellectual property service platform among the three provinces, due to their different geographical locations and economic development, has led to the lack of coordinated development of the intellectual property system and the lack of impetus for scientific and technological innovation.

3.2. Collaboration on Intellectual Property Enforcement in Science and Technology Policy Needs to Be Strengthened

The Yangtze River Delta (YRD) region, as a region of rapid economic development and strong scientific and technological innovation in China, cannot be separated from the strong support of Shanghai, Zhejiang and Jiangsu provinces. As the three provinces in the Yangtze River Delta region, the consultation and cooperation among Shanghai, Jiangsu and Zhejiang provinces play an important role in the scientific and technological innovation of the Yangtze River Delta. In the "Yangtze River Delta Regional People's Court and the Intellectual Property Office on the promotion of scientific and technological innovation in the Yangtze River Delta intellectual property protection memorandum" to scientific and technological innovation and intellectual property rights to synergize the development of legal ways and legal thinking to promote the development of scientific and technological innovation, thus intellectual property rights law enforcement collaboration on scientific and technological innovation plays an important role, but there are deficiencies in intellectual property rights law enforcement collaboration in the three provinces.

In the Yangtze River Delta, the three provinces are at the same level, the status of each province is equal, there is no command and obey relationship between the three provinces, the three provinces have their own management of their respective governments, at the same time in the

intellectual property rights law enforcement collaboration, but also because of their respective economic development, historical traditions, etc., resulting in contradictions in intellectual property rights law enforcement; the three provinces in the three provinces in the intellectual property rights law enforcement collaboration and the existence of the form of a single, can not be very well implemented Cross-provincial intellectual property cases, only rely on the judiciary to enforce intellectual property cases can not be long-term, the three provinces in the Yangtze River Delta region due to administrative divisions, there is uneven judicial resources, cross-provincial cases consume huge amounts of manpower and resources, there is a waste of resources; in the three provinces of the same level of administrative divisions, the three provinces can only be communicated through the negotiation of intellectual property rights law enforcement to reach a negotiation, but can only solve short-term problems, can not be a long-term solution to the three provinces of the three provinces. This is only a short-term solution, but not a long-term solution to the obstacles encountered by the three provinces in IPR enforcement.

3.3. The Intellectual Property Rights System to Promote the Transformation Rate of Scientific and Technological Achievements Still Needs to Be Improved

As the life cycle of scientific and technological innovation creation, use, protection, evaluation of the four processes, the four processes are closely linked, the ultimate goal of scientific and technological innovation is to transform scientific and technological achievements, to realize the value of scientific and technological achievements. Jiangxi Province to optimize the use of intellectual property rights and encourage the efficient transformation of scientific and technological achievements, there are relevant intellectual property rights system, the system to promote the transformation of scientific and technological achievements. Jiangxi Province to market-oriented, improve the distribution mechanism of intellectual property rights and interests and incentives, the establishment of patent awards selection system, and science and technology business incubators, gas pedals, parks as a carrier, to guide the local scientific and technological achievements into a better transformation of economic, social and ecological benefits, and intellectual property rights market construction, so that intellectual property rights transactions are more transparent and active. In addition, the provincial party committee and provincial government of Jiangxi Province have made every effort to promote the "No. 1 Project" major decision-making deployment to formulate intellectual property strategy to promote the transformation of scientific and technological achievements.

Look at the Yangtze River Delta region of Shanghai, Jiangsu Province and Zhejiang Province, three areas, three provinces as China's economic development in the forefront of the provinces and cities, although the development of intellectual property rights pay great attention to the number of scientific and technological patents in the three provinces is very large, but the number of high-quality patents is very small, the lack of high-quality patent operators, so that scientific and technological innovation in the patent operators to quickly get the transfer of the patent, the license to use the right to make the results of scientific and technological innovation to be utilized, rather than being used by the patent operators. innovations are utilized instead of being shelved. In addition, there is a lack of cooperation among the governments of the three provinces in formulating relevant intellectual property policies to promote the transformation of scientific and technological innovations so that social resources can be fully utilized.

4. Response to Policy Issues of Intellectual Property System Supporting Science and Technology Innovation in the Yangtze River Delta Region

In recent years, China's intellectual property strategy has achieved new results, and intellectual property rights have shaped a good business environment for the domestic economic market on a national scale, while also playing a role in boosting innovation and upgrading in the field of science and technology in China, and intellectual property rights have already played an important role in promoting the modernization of China's national governance system and governance capacity. However, in the context of China's economy shifting from a stage of rapid growth to a stage of high-quality development, the process of promoting scientific and technological innovation through the intellectual property system has gradually revealed a number of problems. Taking the Yangtze River Delta as an example, the previous article mainly describes the main problems in the construction of the intellectual property system to promote scientific and technological innovation in the Yangtze River Delta region, and in view of the above problems, this article puts forward the following three countermeasures and suggestions to solve the problems.

4.1. Promoting the Systematization of Intellectual Property Policies and Systems in the Yangtze River Delta Region

In the new era, intellectual property rights (IPRs) have become a key element and an important strategic resource for measuring the economic, technological and cultural strength and core competitiveness of a country or a region. The Yangtze River Delta (YRD) region, as one of the regions with the most dynamic economy, the highest degree of openness, and the strongest innovation ability in China, has the highest concentration of intellectual property rights in China. In view of the lack of coordination of intellectual property system in the scientific and technological policies of provinces and cities in the Yangtze River Delta region, this paper gives relevant countermeasures from three aspects: policy construction, financial support, and cross-regional protection.

First, in the construction of policy system. The strategy of strengthening the country with intellectual property rights divides the national intellectual property rights work into five aspects: creation, utilization, protection, management and service, which should be carried out throughout the whole process of promoting scientific and technological innovation by intellectual property rights in provinces and cities in Yangtze River Delta region. The intellectual property content of regional science and technology innovation policies should be enriched continuously, and the attention to intellectual property in science and technology innovation policies should be increased. At present, there are still many cities in the Yangtze River Delta region on the lack of attention to intellectual property rights, in the relevant science and technology innovation policy on intellectual property rights related content of the provisions of the relatively single, in order to enrich the Yangtze River Delta region of provinces and cities in the support of scientific and technological intellectual property rights in the content of the support of the most direct way is the provincial and municipal people's governments in the relevant scientific and technological policy to highlight the focus of intellectual property rights, intellectual property rights around the creation, utilization, protection, management and construction of the The most direct way is for the people's governments of each province and city to highlight the focus of intellectual property rights in the relevant science and technology policies, and formulate scientific and efficient policies and systems for the four aspects of "creation, utilization, protection, management and service" of scientific and technological innovation, so as to expand the coverage of intellectual property rights in the Yangtze River Delta region, and to integrate intellectual property rights into the whole cycle of scientific and technological innovation at all times.

Secondly, in terms of financial support. The Yangtze River Delta region should improve the mechanism of intellectual property pledge loans, strengthen the collaboration between the intellectual property departments of the Yangtze River Delta provinces and cities and the Banking and Insurance Regulatory Commission, accelerate the promotion of financial institutions to improve the mechanism of intellectual property pledge loans, financing and other related mechanisms, improve the financial support for innovation system, and promote the financial system to better adapt to the needs of science and technology innovation in the new era. Through financial means, enterprises in the Yangtze River Delta region will be promoted to transform their invention patents into productivity and financial support, so that the value of intellectual property rights can actually be transformed into a development impetus. In addition, it is also necessary to accelerate the expansion of the scope of intellectual property financial services, encourage financial institutions to develop financial products corresponding to intellectual property rights, and provide science and technology-intensive enterprises with more convenient and low-cost financial solutions. By grasping with both hands from both policy and financial perspectives, we will combine our efforts to boost the formation of a unified system of intellectual property policies in the Yangtze River Delta region. Finally, in terms of cross-regional protection. Due to the characteristics of intellectual property rights, such as professionalism, technology and intangibility, the infringement of intellectual property rights is often not limited to a specific region, showing cross-regional characteristics. And today's society, the high utilization rate of the Internet, virtual technology and other characteristics of the proliferation of intellectual property infringement provides technical support, so the complexity of intellectual property infringement cases is increasing. In recent years, led by a number of regional intellectual property management departments in the Yangtze River Delta region, a cross-regional collaboration circle for intellectual property protection has been initially formed, which has provided a physical guarantee for cross-regional enforcement of intellectual property rights in the Yangtze River Delta region. However, there is still a lot of room for upward mobility in the cross-regional protection of intellectual property rights in the Yangtze River Delta region. On the one hand, the legal status, setting method, organizational rules and management authority of the cross-regional IPR protection agencies should be further clarified; on the other hand, information sharing among cities within the YRD region should be strengthened in order to combat IPR infringers in a timely manner and to protect the legitimate rights and interests of IPR rights holders. In addition, when, how and what prerequisites for cross-regional IPR protection actions should be further defined.

By improving the policy system, financial support and cross-regional protection of intellectual property rights in the Yangtze River Delta region, it will further promote the coordination and linkage among the provinces and cities in the Yangtze River Delta, boost the cooperation among the regions in the Yangtze River Delta, and provide a strong impetus to jointly promote the construction of intellectual property rights in the Yangtze River Delta region to support scientific and technological innovation.

4.2. Measures to Address the Inadequacy of Law Enforcement Collaboration in the Policy of Intellectual Property Rights Supporting Science and Technology Innovation

Strengthening the protection of intellectual property rights is an inherent requirement for building an innovative country, and at the same time, it is an indispensable and important measure for promoting high-quality development. In recent years, improving the protection of intellectual property rights has become the main content of market supervision departments at all levels to carry out comprehensive enforcement of market supervision, and they have continuously increased the enforcement of intellectual property rights against infringement and illegal behaviors in the fields of patents and trademarks, aiming to protect the legitimate

rights and interests of the relevant right holders and to shape and maintain a good environment for innovation and development. However, at present, infringement and counterfeiting behaviors are increasingly characterized by cross-regional, chained, online and offline multi-dimensional operations, and thus IPR enforcement work is facing new challenges and tests. In order to further strengthen the enforcement of intellectual property rights, improvements and innovations should be made in the following aspects.

Firstly, to establish a high-quality enforcement mechanism in key areas; in view of the high incidence of infringement and illegal acts on the Internet in today's society, focusing on analyzing the laws and cases of illegal acts in the Internet area, and accelerating the improvement of the system of investigation and evidence collection in the network environment. At the same time, it supports cities or regions with conditions to prioritize law enforcement pilots, establish and complete communication and cooperation mechanisms between law enforcement departments and platform operators and right holders, and strengthen the whole chain and multi-angle law enforcement system based on big data resources of e-commerce platforms, information such as express logistics and cross-departmental articulation and inter-regional collaboration mechanisms, and opening up multiple links such as production, circulation and sales.

Second, strengthen the working capacity of the law enforcement team; in the process of comprehensive law enforcement reform, it is important to focus on strengthening the configuration of law enforcement forces and strive to solve the problem within the existing establishment. For example, if a comprehensive law enforcement department absorbs all the functions of the original department's administrative law enforcement, the original law enforcement department should be abolished in accordance with the relevant requirements, etc., so as to ensure the coherence of the internal system of law enforcement agencies. At the same time, because the administrative law enforcement team is mainly faced with the work of daily public social management and other affairs, so must ensure that the grass-roots front-line law enforcement personnel sufficient, in the allocation of posts staff should increase the proportion of grass-roots staff to ensure that the law enforcement work does not appear in the problem of job gaps. Finally, we must continuously improve the administrative law enforcement team's working ability and professionalism, such as focused and planned for law enforcement personnel to carry out comprehensive legal knowledge training, and continuously improve the working ability of law enforcement personnel and professionalism, and will law enforcement personnel training and education institutionalized, normalized. At the same time, the construction of administrative law enforcement team dynamic frequency rotation system, so that law enforcement officers are not bound to a small area of work and work skills, multi-faceted to stimulate the work of the law enforcement team's vitality and enthusiasm.

Finally, improve the people's inherent concept of comprehensive administrative law enforcement, the real realization of the law for the people; in the process of urban management, the masses are usually comprehensive administrative law enforcement is oriented to the main object of law enforcement, in the law enforcement process often exists in the law enforcement means of machinery, the way of the humanization of the problems, etc., for the majority of violations of the law is mainly used to suspend the goods, fines, expulsion, and other rigid means, it is easy to stimulate the law enforcement team and the contradiction between the people and the masses, the law enforcement team and the people. It is very easy to stimulate the contradiction between the law enforcement team and the people, which leads to the problem that it is difficult for law enforcement to penetrate into the masses, and the authority can not be truly established. At the same time, a normalized and systematic control mechanism for law enforcement departments should be established to eliminate formalism and ensure that the orderly development of law enforcement work not only exists in the period of various

inspections, but also in daily life to ensure high-quality work and enhance the credibility of law enforcement departments in the hearts of the people.

4.3. Feasible Measures for the Conversion Rate of Scientific and Technological Innovation Achievements to Reach the Bottleneck Period

Transformation of scientific and technological achievements refers to the fact that the main body of scientific practice, based on the scientific knowledge, technological conditions, and practical experience that it already possesses, in order to improve or diffuse science and technology, promote the development of production, and improve the quality of people's lives within a specific period of time, makes the achievements of science and technology more acceptable to consumers during the activities of research, testing, development, sales, and promotion, and thus realizes the commodification, industrialization, and concretization of the achievements. In recent years, China's provinces have actively implemented the policy of supporting the construction of strong provinces in science and technology innovation through intellectual property rights, with the aim of increasing the protection of intellectual property rights in the field of science and technology, so as to increase the output rate of scientific and technological innovation results and put them into use on a large scale. However, there are still a lot of problems in the transformation of scientific and technological innovation achievements in China, such as the rigidity of the scientific and technological structure and system, and the low degree of marketization of a large number of scientific research achievements, which cannot be fully utilized and the social value created by them needs to be further improved. In view of these problems in the actual transformation of scientific and technological innovation achievements, the following measures can be taken to improve and innovate the policies and systems.

Secondly, strengthen the enterprise intellectual property management and build a mechanism for the protection and transformation of scientific and technological achievements based on the intellectual property organization and management institution; each enterprise should equip a special department in charge of intellectual property, formulate comprehensive and feasible intellectual property rules and regulations and a development strategy of intellectual property to support the transformation of scientific and technological innovation achievements, and do a good job in declaration, licensing, operation and protection of intellectual property, and organize regular training on intellectual property for its staff to raise their awareness of intellectual property protection. At the same time, it should do a good job in the declaration, licensing, operation and protection of intellectual property rights, and organize regular training on intellectual property rights for the staff of the enterprise to improve their awareness of intellectual property rights protection.

Finally, form a systematic intellectual property operation platform and establish a diversified and commercialized operation mechanism for scientific and technological innovation achievements; commercialization of intellectual property is an important means to realize the maximum value of intellectual property. After an intellectual property achievement is transformed into a product, in order to meet the needs of different consumers, it needs to be further commercialized. In order to successfully complete the transformation process from achievements to commodities, it is indispensable to have the connecting role played by the important link of transaction. In the transaction stage, some systematic intellectual property operation platforms can be utilized, such as the one-stop intellectual property service and operation platform that gathers high-quality intellectual property resources, which provides various kinds of scientific and technological newest achievements, as well as services on the use and operation of the platform for the demanders. According to the service characteristics of different platforms and the various needs of different clients, systematized and concrete classification is carried out, so that the demanders of intellectual property rights can get the

services they deserve at the fastest speed, thus enhancing the rate of transforming scientific and technological achievements into commodities of high social value, and promoting the achievements of scientific and technological innovations to better serve the society and benefit the people.

5. Conclusion

Firstly, China is in background of the national rejuvenation strategy, within the wider context of once-in-a-century changes taking place in the world. Therefore, the development of scientific and technological innovation is an inevitable requirement to comply with the global scientific and technological revolution and industrial revolution, an objective requirement to cope with the fierce international competition, and an intrinsic requirement to comprehensively promote the great rejuvenation of the Chinese nation with Chinese-style modernisation.

Secondly, through the analyses in this paper, we can conclude that the intellectual property system in the Yangtze River Delta region has played a positive role in supporting scientific and technological innovation, and the incentives for the creation of high-quality intellectual property achievements, the increase in the intensity of intellectual property protection, and the establishment of the relevant service system have provided a strong support for the enhancement of the innovation environment and the innovative capacity of the Yangtze River Delta region. Therefore, in the period of innovation and leapfrog in China's scientific and technological development, it is all the more necessary to give full play to the role of the intellectual property system in supporting scientific and technological innovation, and to encourage the promotion of the high-quality and sustainable development of China's scientific and technological innovation through the continuous optimisation of the intellectual property system.

Finally, as one of the regions with the most active economic development, the highest degree of openness and the strongest innovation ability in China, the development of intellectual property rights and scientific and technological innovation is better on the whole. Although it is typical and scientific to take the Yangtze River Delta as an example to start a study, there is still room for further research on whether such a development model is completely in line with the development planning of some small and medium-sized cities, especially the third- and fourth-tier cities.

Acknowledgments

Research Project: Research on the policy system and operation mechanism of intellectual property supporting the construction of sci-tech strong province(20213BAA10W18).

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