Research on Patent Trust Financial Mechanism

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Abstract

With the continuous innovation of intellectual property financial products, the patent trust has become an important way for patent financing. Compared with the patent pledge financing, the patent trust has a more powerful financing function. The current patent pledge financing can't fully meet the financing needs of various of companies. As a new intellectual property financial product, patent trust has great potential for development. This paper explores the advantages and characteristics of the patent trust and demonstrates the current patent trust financing model. Furthermore, we find that the patent trust still has some problems to be solved, such as imperfect legal systems, inadequate supervision, and difficult risk control. Therefore, we provide suggestions for the further development of patent trust financing and realize capitalization and marketization of patents in order to release the potential value of patents.

Keywords: patent trust, financing, innovation, risk, supervision

1. Introduction

Our country's economic development has entered a new normal. The innovation and intellectual property has been further developed. The combination of intellectual property and finance has been further deepened. Innovative financial products such as intellectual property trust have been introduced to assist economic development. The development of science and technology has made the value of patents higher and higher. Patent has become an important means of corporate competition. Patents have played an increasingly important role in direct financing and indirect financing of enterprises. As an emerging patent financing model, patent trusts are conducive to the promotion of patent transactions and financing. And also, it expands the financing channels for science and technology companies and enrich the patent operating models to stimulate the innovation of intellectual property.

In 2014, the State Council stated that it supports the participation of banks, securities, insurance, trusts and other institutions in the intellectual property financial services, and encourages commercial banks to develop intellectual property financing service products. In 2015, the State Council emphasized innovation in intellectual property investment and financing products and explored the securitization of intellectual property. In 2016, the State Council proposed to explore the development of intellectual property trust business and support the use of intellectual property capital to invest in shares.

China is fully advancing the "innovation-driven development strategy". National and local policies emphasize the promotion of efficient use of intellectual property rights, support the development of technology finance and innovate intellectual property financial services like property trust transactions. It is unprecedented opportunities for the development of the patent trust financing business and it also bring unlimited business opportunities for financial institutions.

2. Patent Trust Financing Theory

2.1 The Origin and Development of Patent Trust

The trust originated in the United Kingdom. There is a legal tradition of common law and equity law in the Anglo-American legal system countries. Some scholars define the trust as follows: "The trustee enjoys the legal ownership of the specific property for the benefit of others. Others are beneficiaries and they enjoy the equitable ownership of the property." Civil law countries transplant the trust system from the United Kingdom and change the trust system according to their own country. Due to the differences in legal traditions, trust expressions are also different. "Trust Law" in Japan defines trust from the perspective of the relationship between trustees and trustees. Trust means transfer or dispose the property to others so that others can manage or dispose of property in accordance with certain purposes. In Taiwan, the trust is defined as "a legal relationship in which the trustee manages or disposes property rights in accordance with the purpose of the trust for the benefit of the beneficiary or for specific purposes."

In China's "Trust Law", the trust means that the trustor entrusts his property rights to the trustee based on the trust of the trustee, and the trustee manages the property for the interests or the specific purpose of the beneficiary in his own name. " Patent trust is a kind of trust divided according to the different types of trust property. Its scope is relatively wide. It can establish a trust for the patent right itself, as well as a trust for the derivative rights of the patent right, such as claims based on patent licenses and pledges.

China's patent trust practice began early. In 2000, Wuhan International Trust and Investment Corporation launched its patent trust business for the first time. However, the legal and institutional environment is imperfect

at that time. The lack of understanding of the patent trust model led to the failure of the project. Patent trust has few successful applications in China till now. Now, economy and innovation environment in China are relatively mature. It is necessary to research and develop the patent trust system.

The flexibility of the trust system has unique advantages in supporting enterprises. It can provide individualized financing solutions for different financing needs and promote the development and maturity of patent trust financing.

2.2 Legal Subject of Patent Trust System

In the patent trust legal relationship, the trustee transfers his own patent rights to the trustee based on his trust in the trustee. The trustee manages or disposes the patent rights for the interests of the beneficiaries according to their own wishes. Firstly, the trustor must have a legally determined trust property before the legal relationship of the patent trust is established. Then the trustor has the needs and proposes to establish a trust and is willing to hand over his own patent to the trustee for management and disposal.

In the legal relationship of patent trust, the trustee of the patent trust accepts the entrustment of the trustor to manage and dispose the patent rights in his own name for the benefit of the beneficiary or for a specific purpose.

In practice, the trustee of a patent trust should be a professional trust company. After the establishment of a patent trust, the patent rights of the trustor are transferred to the trustee. The trustee has actual control and operation of the patent property. The trustee's status and capabilities are directly related to the operation and income of the trust property.

The "Trust Law" stipulates that the beneficiary of the trust is "a person enjoying the beneficial right of the trust in the trust", and the beneficiary is one of the indispensable parties in the trust legal relationship. The beneficiary enjoys the trust income in the trust relationship. The beneficiary must also bear certain obligations when they enjoy the rights, and the beneficiary should also pay certain fees and assume certain responsibilities. In the implementation of patent trusts, the beneficiaries are usually external investors introduced by trust companies and other institutions through the trust plan to provide funds for intellectual property projects. The trustor may even designate the trustee as one of the joint beneficiaries but they could not assign the trustee as the sole beneficiary. In addition, the property acquired by the trustee's management and disposal is also attributed to the trust property. Even if the property is damaged due to various reasons, it still belongs to the trust property. The trust property was fixed at the beginning of its establishment. During the operation of the patent trust, the proceeds obtained by the trustee through management and disposal of the patent certainly became part of the trust property.

Second, the patent trust property is independent. The independence of trust property is a major feature of the trust system. First, the trust property as a separate property is independent of the owner's, trustee's, and beneficiary's own property and is not claimed by the creditor. Second, the different trust assets managed by the trustee are independent of each other, and the trust property and the trustee's own property are independent of each other. The trust property is transferred from the trustor to the trustee at the beginning of the establishment of the patent trust. The trust property is completely an independent property and is isolated from the original property of the patentee. During the operation of the trust, the trust property and the trustee's own property and other trust assets are independent and do not affect each other. The beneficiary enjoys the proceeds from the trust property, but the beneficiary cannot own the trust property.

At the same time, once the trust property loses, its loss is also independent. If the trustee has fulfilled the fiduciary duty stipulated by the law to manage and dispose the patent in accordance with the purposes of the trust, then the loss will be borne by the independent trust property. The trustor, the trustee and the beneficiary are not required to bear and compensate for the loss through their own property.

In addition, if there is a creditor in the trust property, then the creditor of the trust property may exercise rights over the trust property, and the respective creditors of the trustor, trustee and beneficiary may not exercise rights over the trust property. In addition, if the trust property has a creditor, then the creditor of the trust property has rights over the trust property. The respective creditors of the trustor, the trustee, and the beneficiary do not have rights over the trust property.

In addition, there are some other characteristics of the patent trust property. Intellectual property is an intangible property right, and its rights object is non-material and intangible. This is a unique and essential feature of intellectual property assets. Based on the essence of intellectual property rights, patent rights also have the characteristics of exclusiveness, regionality and timeliness. After the patent becomes a trust property, its unique characteristics will inevitably affect the management and disposal of the trust property. For example, exclusivity allows rights holders to dispose patents exclusively and obtain economic benefits, which ensures the value of the patent trust property. These characteristics make the trust property of the patent trust different from the general trust property, which require the trustee to pay more attention to this important characteristic when investing the patents.

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2.3 Patent trust property system

In the "Trust Law," the trust property is defined as "property obtained, managed and disposed by the trustee as a result of commitment." Patent trusts use patent rights as a trust property. Patent is different from ordinary trust property. Patent is an intangible property with certain professional and technical characteristics. Patent rights is the trust property in patent trust. Patent is different from ordinary trust property. Patent is an intangible property with certain professional and technical characteristics.

Firstly, when a patent right trust is established, the patent property that the trustor needs to transfer to the trustee belongs to the trust property.

3. Necessity of patent trust financing

3.1 Patent quantity and quality continue to increase

In 2008, after the implementation of the intellectual property strategy in China, intellectual property rights entered a new stage of rapid development.

As shown in Figure 1, the number of patent applications and patent grants in China has been increasing since 2008. In addition, as can be seen from Figure 2, the number of invention patent applications and the number of invention patent grants have also increased year by year. And the level of patent creation has greatly increased. Figure 3 shows that China's IP environment development index increased from 100 in 2010 to 216.9 in 2016. The intellectual property environment in our country has been continuously optimized. The number of intellectual property service institutions and employees has been steadily increasing year by year. And the awareness of social intellectual property has rapidly increased. The increase in the quality and quantity of patents has provided significant patent assets for patent trust financing. The continuous improvement of the intellectual property environment has provided policy support for the patent trust financing. The development and operation of patent trust financing has a profound institutional foundation.



Figure 1: 2008-2016 national patent applications and authorizations



Figure 2: 2008-2016 national invention patent applications and authorizations



Figure 3: 2010-2016 IP environment development index

3.2 The Advantage of Patent Trust

In 2001, the "Trust Law" was issued. In 2007, the new "Management Measures for Trust Companies" and "Administrative Measures for Trust Companies' Collective Fund Trust Plans" were issued. They formed the "One Law and Two Regulations", which provided basics and Legal framework for the development of trust business. In 2016, the scale of trust assets entered the era of "20 trillion yuan." At present, the trust industry has become the four pillar industries of modern finance in line with banking, insurance and securities industries. Table 4 and table 5 show that trust, as an important member of China's financial system, has a steady increase in the scale of assets and a good development trend. It has become an important way to create wealth and serve the development of the economy.

At present, the patent pledge financing has been widely carried out and has achieved great results. However, the financing conditions of the patent pledge are stringent. The scale of loans still cannot meet the actual needs of SMEs. Patent trusts have opened up new channels for patent financing. In addition, compared to banks, securities, and insurance, trust operations are more flexible and have the natural institutional advantages of "borderless service and barrier-free operation". In the process of capitalization and industrialization of intellectual property, the use of trusts can develop the channels of patent financing and release the potential market value of patents with its unique system.

The trust system has important advantages and characteristics as a patent financing channel and is

specifically expressed in the following aspects: First, the patent trust financing can absorb a variety of social funds with different risk preferences. The investors of the trust have certain qualification restrictions and the scale of capital is relatively large. The trustee's risk bearing ability is strong. Secondly, patent trusts can be financed in a variety of flexible ways, such as equity financing and debt financing, in accordance with the requirements of the financing entity or the needs of the project. Third, the trust can set priority for beneficiaries and conduct structured arrangements in order to meet the needs of investors with different risk preferences. Fourth, the duration of the trusts financing is generally more than one year. The realization of the value of intellectual property rights also requires a certain period of time. Therefore, the property management and financing methods of intellectual property trusts are also more in line with expectations of intellectual property values.



Figure 4: Quarterly Trust Assets and Year-on-Year Growth (2010-2016)



Figure 5: Trust inherent assets, equity and profits (2010-2016)

4. Patent trust financing model

4.1 Patent Trust Loan Model

In the patent trust loan model, firstly, the patentee entrusts the trust company to establish a trust plan for a specific high-value patent. The trust company accepts the entrustment from the patentee and conducts due diligence on the patent to confirms that the patent as trust property meets the risk control requirements of the trust company and the patentee has not violated the existing laws and regulations. Afterwards, the trust fund is

raised to the fund trustee, and the raised capital is issued to the patentee as a loan. The patentee guarantees the repayment of the credit loan in some appropriate way and expires according to the trust contract. In essence, this type of trust product is a continuation of the bank's pledged loan method, except that the source of funds is the trust fund raised by the trust company. Its operating model is a typical trust loan model.



Figure 6: Patent Trust Loan Model

4.2 Patent equity investment model

The equity investment patent trust project operates as follows: Firstly, the trust company conducts due diligence on the intellectual property projects requiring financing. Trust companies raise trust funds from trust companies to set up trust plans for the patent trust projects that meet the legal requirements and have practical effects. The trust company will use the funds raised in the trust plan to purchase part of the equity of the company that owns the patent. Then the trust company become its shareholder and register the changes in industrial and commercial department. The trust company and the controlling shareholder of the high-tech enterprise agreed that the trust company can participate in its management and decision-making and shall be stationed with the directors. Patent holders sell patents to project companies that are set up by the trust companies for the purpose of the trust funds raised for patents. The trust company on behalf of the trust company agreed to invest the funds obtained from the sale of patents in the implementation of the patent project. After the completion of the project, the patent holder will buy back the equity held by the trust company at a premium. The trust company will use the proceeds from the sale of equity to pay the beneficiaries.

Although this mode of operation is more complicated than the IPR trust loan model, the risk is slightly lower for the patent holder because the trustee of the trust plan assumes the risk of project implementation failure. At the same time, according to the financial principle that risks and benefits are equivalent. The beneficiaries of the trust plan can obtain proceeds from the dividends held by the enterprises that hold the patents. Besides, the trustor shall pay the stock purchasers a one-time payment at the end of the trust plan. In such a trust plan, trustee may obtain a floating interest with a higher fixed interest rate than a trust loan because of the strong social applicability of the patent project.



Figure 7: Patent equity investment model

4.3 Patent asset securitization

In the use of patents by developed countries, the United States and Japan have successful cases of patent trust financing and patent asset securitization. At present, China's patent trust financing and patent asset securitization are still under exploration and trials. In the securitization of patent assets, high-tech patents that lack liquidity but can produce predictable and stable cash flows in the future are transferred to a Special Propose Vehicle (SPV) through a certain structural design. The Special Propose Vehicle entrusts rating agencies to grade and upgrade patent assets. Then the SPV separates and restructures risk and income elements in patent assets and sells securities to investors for financing. This approach is based on financial technology and supported by the expected earnings of high-value patents. It can greatly combine securities capital and intellectual capital to solve financing problems through the financial market.



Figure 8: Patent asset securitization transaction structure

5. Problems with patent trust financing

5.1 Patent assessment mechanism need to be improved

The premise and basis for the marketization and capitalization of patent assets is to make a scientific and reasonable assessment of the value of patents. The assessed patent value will provide important value and price reference for patent trust financing. The trustee designs a patent trust product based on the value of patent evaluation and conducts a patent trust. Patent value assessment is a process by which a specialized evaluation agency quantifies the value of patent assets according to a certain evaluation index system, behavioral norms, and technical specifications. A patent is an intangible asset whose value is easily affected by many factors such as the market and technology so that its value is unstable. Problems such as the assessment method and the assessment system are still inconsistent. The accuracy and objectivity of the assessment have yet to be improved. The current patent value assessment mechanism is not perfect.

First of all, in terms of assessment methods, patent valuation methods are diverse. Traditional assessment methods include cost method, reset method, market assessment method and present value of income method, book value adjustment method and liquidation value method. The assessment method and evaluation system are inconsistent. A standardized and unified intellectual property assessment model has not been formed in practice. It is difficult to make a unified and accurate valuation of patents. Secondly, as far as the evaluation object is the patent itself, the patent is an intangible asset whose value will be affected by the patent time limit, patent status and market factors. In terms of patent subjects, there are few professionals for patent evaluation, and the levels are inconsistent, which will also have a certain impact on the accuracy of patent valuation.

5.2 Patent trust legal system is incomplete

At present, there is no special law for the intellectual property trust system in China. The number of laws and regulations related to trust in our country is very small. The "Trust Act" promulgated in 2001 also has a lot of imperfections. The provisions concerning intellectual property rights and patent trust systems are also scattered in the "Trust Law" and other specifications documents that stipulate the contents of financial trusts and real estate trusts. Most of the departmental regulations and normative documents are related to the guidance provisions of the trust company's business operations. But there is still a lack of the regulation of the intellectual property trust.

At present, there are no specific and clear provisions on the basic issues of transfer of trust assets and

ownership of trust assets. As a result, the huge use of space for patent trusts in the actual operation process has not yet been fully explored. The further development of the potential and role of patent trusts has been limited. In addition, for managed intellectual property trusts, domestic trust law and trust company management methods basically do not provide any relevant support. And there is a large legal gap. As a result, patent trusts have high operating costs and there is a risk of compliance. So the trust companies have less involvement in the field. Table 1: Trust-related legal documents in China

Table 1: Trust-related legal documents in China			
Year	Issuing authority	The name of law	Main Content
2001	The People's Bank of China	Administrative Measures for Trust and Investment Companies	Add the intellectual property into the category of trust objects formally.
2001	NPC Standing Committee	The Trust Act in People's Republic of China	The prescribed trust property must be the property legally owned by the trustee. Intellectual property rights as lawful property may become a subject of trust. The intellectual property is legally recognized as a trust property.
2007	China Banking Regulatory Commission	The act of Trust company management	The law stipulates the scope of the trust: capital trust; movable estate trust; real estate trust; securities trust; other property or property rights trust. Although intellectual property trusts are not listed explicitly list in legal provisions. The intellectual property rights can be trusted as real estate.
2006	China Banking Regulatory Commission	The act of Trust company collects fund trust plan management	Standardize the operating behavior of the trust company's collective fund trust business and guarantee the legitimate rights and interests of all parties involved in the collective fund trust plan.

5.3 Patent trust risk is high

Trust investment and financing itself has a certain degree of risk. Patent right is an intangible property right that is different from property ownership. It has the characteristics of exclusivity, urbanity, timeliness, and reproducibility. It is a time-limited property right. The special nature of the patent right will inevitably show the risk that other trust property rights do not after combining with the trust. The patent trust increases the risk of the investment and operation of the patent trust because of the intangibility of its property, the high-end nature of the technology, and the complexity of the profession. During the existence of patent rights, there are legal risks. In terms of the quality of rights, it has the right to bear the risk if a patent is to be set up with pledges, licenses, etc. There is a risk of litigation if the patentee infringes the rights of others or suffers infringement. When the term of the patent expires, the trust intellectual property rights will become social public resources and have deadlines and risks. If the annual payment for intellectual property is not paid or if the appeal is invalid and revoked, the right will have the risk being eliminated. Patent rights may also be subject to irrational use such as private transactions of intellectual property rights and compulsory licenses, which results in unstable patent values.

5.4 Patent trust supervision system is not in place

It is necessary to regulate the development and operation of patent trusts. But the expertise, risk and complexity of patents raise higher and newer requirements for supervision. With the increasing number of innovative products such as patent trusts, the difficulty and intensity of supervision will increase too. It is very urgent to establish a professional supervision team and perfect the supervision system.

At present, the China Banking Regulatory Commission is responsible for the supervision of our trust business. However, intellectual property trusts including patent trusts are emerging industries and there is no specific oversight to intellectual property trusts. In addition, due to the strong professional nature of patent trusts, there is still a shortage of professionals and institutions to supervise patent trusts, which increases the risk of patent trust transactions and investment and financing. China's financial industry implements separate operations and supervision. Banks, securities, and insurance industries all have their own specialized regulatory agencies. With economic development and dramatic changes in the market environment, the trust business has been greatly expanded and innovated. It has gradually involved and penetrated insurance and securities industries. As for some businesses operated by trust companies, other financial institutions also have operational rights. Banks, insurance and securities institutions have also launched a series of businesses that are essentially trusts. Although the trust company's business is supervised by the China Banking Regulatory Commission, the business of securities and insurance institutions is supervised by the China Securities Regulatory Commission and China

Insurance Regulatory Commission.

Therefore, the multi-headed supervision of patent trusts will most likely lead to inconsistent regulatory standards, resulting in regulatory differences. It is not conducive to the overall supervision of the trust business which hinders the improvement of supervision efficiency and is not conducive to fair competition. As an innovative trust business, patent trust transactions and investment and financing have complex characteristics such as cross-industry and wide-ranging fields. The inconsistent regulatory system will affect the long-term and orderly development of patent trust transactions and investment and financing. The regulatory system for this has yet to be further improved.

6. Patent Trust Funding Countermeasures and Suggestions

6.1 Improve the patent value assessment mechanism

For the evaluation of the most complex value of patent rights, there are no corresponding specific guidelines and systems. China's patent resources are abundant. Patent trusts for this large number of patent resources will bring about objective transactions and investment and financing. In response to the assessment of intangible assets such as intellectual property, the Ministry of Finance of the People's Republic of China promulgated the "assets assessment criteria - intangible assets" in 2001. According to the provisions of the evaluation criteria, the Internet, big data, cloud computing and other technical tools can be used to strengthen the study of patent evaluation. We will gradually establish a patent evaluation big data platform and improve the quasi-system for patent evaluation to conduct scientific and intelligent assessments of patents. In combination with the actual situation of the patent itself, we choose to use appropriate assessment methods to evaluate and provide more valuable results for patent trust financing.

The process of patent value evaluation is complex, involving many fields such as patent technology, technology docking industry, finance and law, etc. The requirements for evaluation agencies and appraisers are relatively high. Therefore, it is necessary to cultivate professional and neutral intellectual property assessment agencies and improve the professional level of the assessment agencies. It is important to cultivate high-level, professional and compound intellectual property assessment personnel. A sound patent value assessment mechanism is gradually established include the evaluation methods, evaluation standards, evaluation techniques, assessment agencies and evaluation personnel.

6.2 Creating a good patent trust environment

A complete legal system can effectively guarantee the operation of the system to some extent. The long-term and orderly development of patent trust transactions and financing in China must be regulated by laws and regulations and allow patented trusts and other intellectual property financial innovation products to develop well within the legal and institutional framework. Therefore, we must constantly improve the legal and institutional environment for the development of patent trusts in China. Formulate special intellectual property trust laws. Provide specific and clear provisions on all aspects of intellectual property rights, including patent trusts and copyright trust operations, such as transfer of intellectual property trust rights, collection of intellectual property trusts can be clearly defined in practical operations.

6.3 Government support for the development of patent trusts

Optimize the establishment and use of entrepreneurial (risk) investment guidance funds, seed investment funds, industrial development investment funds, SME development funds, angel investment funds, etc. to support the development and operation of patent trusts. Encourage domestic and foreign venture capital to invest in intellectual property trust projects. Invest and manage the fund according to the principles of "government guidance, market operation, scientific decision-making, and risk prevention". Regulate the use of funds in accordance with the government investment fund management regulations. Support the implementation and expansion of intellectual property trusts through the parent fund. Play the role of financial capital guidance, incitement, and incentives. The government guides social capital to set up sub-funds and play the role of fund groups to help technology-based companies to carry out intellectual property rights. Regulate the operation of investment funds. The preferential policies such as loan interest subsidy and taxation subsidy are supplied for enterprises, trust institutions, banks, guarantee companies that carry out intellectual property trusts in order to encourage the further development of patent trusts.

6.4 Patent Trust Risk Prevention and Control

The intangible nature of patents, the uncertainty of their rights, and the risk in the management process make patent trusts more risky than other asset trusts. The legal environment and institutional environment are not perfect, and there will be irregularities in the operation of patent trusts. The potential risks will likely bring losses

to the trustees, trustees and beneficiaries of the patent trust. Once the patent is infringed or revoked or the patent is invalid, the legal property of the trust property has been lost and the intended target of the patent trust cannot be achieved. In order to support and guide the development of intellectual property trusts, it is necessary to improve the intellectual property risk prevention system so as to reduce the risks of patent trusts and ensure the smooth implementation of patent trusts.

First, introduce the insurance mechanism of the intellectual property trust. when the trust is established, insurance is set up for the trust at the same time to determine which risks can be dispersed and reduced through the insurance system. In the event of financial difficulties in the trust project, the insurance company will inject certain funds to ensure the continuous operation of the patent trust to achieve the intended purpose of trust transactions and investment and financing. For intangible assets such as patents, a trust company and an insurance company are required to jointly design an insurance product that meets the nature and characteristics of the patent, with the trust property as the subject. A series of trust insurance expenses are withdrawn from the trust proceeds. The trustor, trust company, insurance institution and beneficiary jointly agree on the distribution of income and the sharing of risks. The introduction of the insurance mechanism makes the operation of the intellectual property trust more secure and reduces the concerns of trust institutions, beneficiaries, investors, and third parties on the risk of intellectual property trusts. Most importantly, it can promote the operation and implementation of intellectual property trusts and accelerate the transformation of intellectual property rights.

Second, introduce the venture capital in patent trusts. Venture capital institutions assume investment risks, gain capital appreciation, and withdraw after the venture company's assets growth gains the maximum return. After the combination of a patent trust and venture capital, the trust company used patents of patentees to set up venture companies to attract venture capital institutions. Venture capital agencies negotiate with venture companies to conduct comprehensive management of venture companies and help venture companies achieve asset appreciation. The trust institution shall pay a certain amount of revenue in accordance with the contractual agreement with the patentee after obtaining the proceeds. The venture capital institution withdraws from the risk institution in an appropriate period and distributes the proceeds from the investment to investors according to the agreement. As a result, the participation of venture capital institutions has reduced the investment risks of trust companies. It is also conducive to the implementation and industrialization of patent transformation.

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