

# Intellectual property as an instrument of interaction between government, business, science and society

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**Abstract.** This article is devoted to research the characteristics associated with pledge of intellectual property in foreign and domestic practice. Holding intellectual property objects' pledge transactions accelerates the pace of creating innovative systems in the economy. In present paper the modern scheme for bank loan, financing secured with patented intellectual property is researched. The authors give the brief description of features of pledge security registration for loans in some Europe countries. The Europe Union experience shows that as collateral for monetary loans can be used trademarks, patents on the intellectual property, as well as their registration requests. Russian experience of the pledge operations of the intellectual property is too small. This way of bank lending is at an early stage of development. The main constraint is the difficulty of assessing the value of the pledged intellectual property as intangible assets. However, taking into account world and domestic practice this direction for Russian market is estimated by the authors as promising one. Pledge transactions take place within the framework of the Quadruple-Helix Model concept that involves four participants: "science", "business", "government" and "society". Intellectual property are estimates by the authors as an instrument of interaction between government, business, science and society.

## 1. Introduction

The main challenge for the world's economies today is the process of building national and regional innovation systems. The methodological basis for this is the Triple Helix Model, describing the directions and forms of cooperation between science, businesses and government in the innovation sphere, and its "evolution" sequel – the Quadruple-Helix Model, which includes the civil society along with the three listed participants.

Since then the conditions have changed. New organizational and economic diffusion (transfer) tools of intellectual activity as the basis for innovative development. Today, technology transfer takes into account the "host regions", their resource security, economic, environmental and social component. The synergistic effect plays an important role due to innovative technologies complementarity.

Practice has shown that harmonization on the basis of pledge mechanisms of intellectual property management processes can significantly speed up the innovation implementation process and serve the equalization of socio-economic development levels of individual subjects and their economy promotion in an innovative way. This is a new phenomenon in Russia. Therefore, the experience of European countries in the intellectual property management, including intellectual property rights as a pledged asset, is so important for Russia.



In recent years an institutional leap towards the formation of institutions of investment in intellectual property (IP) has been taken in Russia. As a result, in 2016 about 20 leading Russian banks concluded 81 pledge agreements over the exclusive rights to trademarks, inventions, utility models and industrial designs. The role of regional funds to support small and medium-sized innovative companies providing on behalf of the government pledges to commercial banks has been growing.

## 2. Methods of research

In this research general scientific methods of systematization and analysis of the practice of lending secured rights on intellectual property in foreign countries were used, which makes it possible to assess the possibilities of using this experience in Russia.

## 3. Results and discussion

The main purpose of commercial use of intellectual property objects is to generate profit. The objects of transactions are not the objects themselves, but the property rights to these objects, including patents and patent applications. They are the assets that are used as pledge for loans or other loan agreements [1].

Such assets are especially valuable for businesses engaged in research and results commercializing. In this situation, the cost of a patent portfolio can many times exceed the cost of other assets of a company and act as the most valuable asset. To date, in developed countries investment in IP accounts for more than 15% of GDP and almost half of all investments is made in fixed capital. The share of investment in IP in the largest international corporations is rapidly growing [2]. So, if in the early 80's of the 20th century the share of intangible assets in the structure of the cost of American companies accounted for no more than 40 %, then at the beginning of the 21st century their share exceeded 70 %. At the same time, 30-40 % of non-material property was not identified and reflected in corporate balances. This allows to say that the share of intangible assets can actually be even higher. A similar picture is typical for West European corporations [3]. According to Interbrand consulting company, tangible and intangible assets of the world well-known companies are correlated as follows: British Petroleum – 30:70, IBM – 17:83, Coca-Cola – 4:96. For comparison, in Russia, the volume of investment in intellectual property objects has not exceeded 1 % so far [4].

It is important to note that pledge transactions involving the use of IP's rights along with benefits carry potential high risks for the parties involved. To reduce them, countries are developing special legislation regulating transactions with IPO rights; companies and banks use such protection mechanisms as a preliminary assessment of IP's market value, determining the best way to calculate depreciation charges and depreciation periods, revaluing the cost, using IP as a pledge in combination with other assets of the enterprise, preliminary expert analysis of the economic efficiency of the IP use, etc.

In addition, many countries provide for the possibility of registering transactions with industrial property in the public registry, which guarantees the rights of parties involved in the transaction. The French Intellectual Property Code defines the rules regarding the pledge of the right to use the software. Article L 132-34 of this Code provides for mandatory registration of a pledge in the special register of the National Institute of Industrial Property (INPI) [5, 6, 7, 8, 9]. In Austria and the United States, the exclusive rights are not the subject of the pledge, but the patent itself as movable property is. A pledge transaction must be registered with the Patent Office [10].

In the case of a pledge over formal intellectual property rights the EU countries take into account the following points:

- public registers operate a priority system granting to the first applicant a priority pledge right over Formal IP Rights;
- formalities for creating the pledge over the Formal IP Rights are regulated by the law of the country in which the pledge right needs to take effect;
- the Formal IP Rights remain vested in the company-borrower, which will continue to be responsible for the maintenance of the Formal IP Rights.

- formalities for creating a pledge over the Formal IP Rights are comparable to the ones that are traditionally provided for the immovable assets (real properties) [7].

In accordance with the pledge practice of Great Britain, the pledger will need to consider and estimate carefully the consequences of entering into the pledge agreement and scrutinise its terms. The pledgee will have the right to sell the patents in the event of a default by the pledger. If the pledgee has taken pledge over not just the patents but the other business assets, the pledgee may have other options too, such as the power to appoint an administrator with authority to run the business of the defaulting pledger. The pledgee will wish to ensure that the value of the pledged patents is maintained; in the agreement, it may seek to impose obligations on the pledger to comply with such a guarantee. The pledger would be well advised to seek to reserve the right to allow to lapse, or abandon, patents or patent applications it reasonably considers are no longer of value [9].

In most cases the pledger will want the freedom to continue to exploit the patent portfolio as part of its business. In this regard, it must make sure any pledge document does not its freedom to do this in any material way. It should be emphasized, that there is normally a community of interest between the pledger and pledgee in this context because the pledgee wants the business to generate revenue to repay the debt. The pledger has to negotiate the terms with the pledgee at the outset so as to make clear that any future licensee's interest is not at risk of being defeated by the pledgee exercising its right to sell the patents in the event of default on the loan. In such cases the pledger could offer as a compensation to the pledgee an access to the revenue generated by the licence either by agreeing to pay it directly to the pledgee or by giving the pledgee a pledge over the revenue stream itself [9].

Under the European Patent (EP) regime, EPs may be granted as pledge (see Article 71 of the European Patent Convention) and the relevant pledge needs to be filed with the EPO. National laws apply in relation to the effect and validity of the pledges, including formalities in order to oppose the right to third party at the local level (see Articles 74 of the European Patent Convention) [7].

In Russia, the experience of IP pledge transactions is not big. This version of bank lending in the country began to be used only in 2009 and is at the initial stage of development (table 1). The conclusion of any contracts (including pledge agreements) related to the disposal of an exclusive right to patented objects of intellectual property and trademarks in Russia are the subject to registration in Rospatent [11].

**Table 1.** Number of IPO pledge agreements registered by Rospatent in 2009-2016.

	2009	2010	2011	2012	2013	2014	2015	2016
Pledge agreements over exclusive rights to the results of intellectual activity	-	8	16	17	20	15	13	9
Pledge agreements over exclusive rights to trademarks	16	62	52	24	60	40	58	72
Number of trademarks referring to which the pledge agreements are concluded	n/d	195	280	82	191	258	362	689
Total number of pledge agreements over exclusive rights to IPOs	16	70	68	41	80	55	71	81

\*Source: compiled by the authors on the basis of [11]

The main constraint on the issue of extending the practice of bank lending against IP's pledge is the difficulty in assessing the value of pledged assets as intangible assets [12, 13]. From the authors' point of view, the existing Russian experience with the use of IP's as a pledge for obtaining credit and applying the experience of European countries today can serve as a solid foundation for activating lending in the banking services market; and the pledge over IP rights can be a promising tool for the development of companies actively engaged in the implementation of intellectual activity results.

Thus, the pledge over intellectual property rights is an opportunity to build a close and, most importantly, mutually beneficial interaction between science and business, which are the two

participants in the Quadruple-Helix Model of building national and regional innovation systems. The third party is government. The role of government, when using the mechanism of pledging intellectual property rights as the starting point of innovative development of the economy is to ensure, including the legislative provision, the security of pledge transactions. Government that acts as a guarantor in an IP pledge transaction significantly reduces the risks of the pledgee, thereby increasing the attractiveness of such transactions.

Government influences pledge relations through economic and administrative methods which are based on the guarantee mechanism. The basis of legal regulation of pledge relations is the government guarantees of pledgee's rights which are called upon to provide an adequate protection in case of owners' interests violation while carrying out innovative activities. Wherein, government, as a rule, guarantees first of all the stability of rights, which is very important in long-term relations.

In order to define the meaning of "government guarantee mechanism of pledging intellectual property objects" concept, it must be borne in mind that these are a form of social guarantees. These mean material and legal means that ensure the realization of the social and economic rights of society members. Consequently, legal guarantees of investment are legal means ensuring the implementation of the rights of the parties.

If we analyze the state of Russia's notion of "government guarantees as the basis for ensuring a secure IP pledge", the following should be highlighted: IP is a specific object, with a complex estimation of its value and, therefore, very risky.

For full-fledged government involvement as a guarantor, when conducting IP pledge transactions between science and business, it is necessary:

- to expand the pledge law on the basis of the world's leading practices, international agreements on the forms and methods of protecting the rights of participants in IP pledge transactions;
- to define clearly, preferably legally, the ultimate goal of government actions in this area, which is ensuring the security of participants' property in IP pledge transactions and the actual realization of their rights as well.

After implementing the above measures, we will get a clear and transparent model of interaction between science, business and government (authorities) in creating innovative growth points based on the mechanism of IP rights pledging.

At the same time, in Quadruple-Helix Model of building national and regional innovation systems, there is another participant. It is a civil society. Government, science, business and society are not separate subsystems. The same participant can be an element of two subsystems. For example, enterprises that own a significant share of government participation should be classified as both government and business; commercial structures that are owned by public organizations can be attributed as intersection of society and business. The intersection of such spheres as society and government covers the specifics of the functioning of elective authorities, parties, and the electoral system.

If we consider innovation based on the example of an enterprise, it is worthwhile to say that modernization development depends on the involvement of employees in the work process, the use of experience and abilities of employees, as well as motivation and incentives. The more employees of the company are involved in the innovation process, and each of these employees is motivated to innovate, the better the result is [14]. Only with the participation of all the participants within the framework of the Quadruple-Helix Model concept the greatest economic effect can be achieved.

#### **4. Conclusions**

Thus, we can say that "society" is inseparable from the "three" which is science, business and government; in case of its isolation it is impossible to consider the interaction mechanisms of the "three" in any sphere, including the sphere of IP pledges. The role of society in developing innovative systems on the basis of IP pledge relations is enormous, because it is connected with all the other participants in the Quadruple helix concept. IP's are created by science for the needs of society; there

is a relationship between society and science. Business in assessing the cost of IP's will always take into account the attitude of society to the product or service created or provided using IP's; there is a relationship between society and business. Government (authorities) in the development of guarantee mechanisms legislation within the framework of IP pledge transactions will rely on representatives of the society (for example, deputies of various levels); there is a relationship between society and government (authorities).

Summarizing the above, we can conclude the following. Holding IP pledge transactions accelerates the pace of creating innovative systems in the economy. These transactions take place within the framework of the Quadruple-Helix Model concept that involves four participants. They are science which creates, business which invests, government which guarantees the observance of the participants' rights and society which determines the type of IP's and the rules of interaction between science, business and government. So, intellectual property can be used as an instrument of interaction between government, business, science and society.

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