

# The Problems of Legal Regulation of Intellectual Property Rights in Innovation Activities in Russia (Institutional Approach)

Zhanna Mingaleva, and Irina Mirskikh

**Abstract**—Part IV of the Civil Code of the Russian Federation dedicated to legal regulation of Intellectual property rights came into force in 2008. It is a first attempt of codification in Intellectual property sphere in Russia. That is why a lot of new norms appeared.

The main problem of the Russian Civil Code (part IV) is that many rules (norms of Law) contradict the norms of International Intellectual property Law (i.e. protection of inventions, creations, ideas, know-how, trade secrets, innovations).

Intellectual property rights protect innovations and creations and reward innovative and creative activity. Intellectual property rights are international in character and in that respect they fit in rather well with the economic reality of the global economy.

Inventors prefer not to take out a patent for inventions because it is a very difficult procedure, it takes a lot of time and is very expensive. That's why they try to protect their inventions as ideas, know-how, confidential information. An idea is the main element of any object of Intellectual property (creation, invention, innovation, know-how, etc.). But ideas are not protected by Civil Code of Russian Federation.

The aim of the paper is to reveal the main problems of legal regulation of Intellectual property in Russia and to suggest possible solutions.

The authors of this paper have raised these essential issues through different activities. Through the panel survey, questionnaires which were spread among the participants of intellectual activities the main problems of implementation of innovations, protecting of the ideas and know-how were identified.

The implementation of research results will help to solve economic and legal problems of innovations, transfer of innovations and intellectual property.<sup>1</sup>

**Keywords**—Innovation activities, intellectual property rights, know-how, patents, indicators of innovation activities

## I. INTRODUCTION

**T**RANSITION from planned to market economy has given a rise to a number of problems, the most serious and important of which is the problem of innovative activities intensification and intellectual property rights protection.

Intellectual property rights protect innovations and creations and reward innovative and creative activity. Intellectual

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property rights are international in character and in that respect they fit in rather well with the economic reality of the global economy [1].

Mass media more than once has mentioned that the existing innovational system in Russia does not correspond to the requirements of the effective national intellectual property commercialization, using the latest foreign technologies, attracting investments for financing innovational programs, first of all, in basic and defense industries and does not serve the purpose of Russian economy revival. According to the Ministry of industry and science several years ago only 11% of industrial enterprises in Russia were implying development and launching innovations. Although, today the Ministry of industry and science is the Ministry of education and science, it is very much doubtful that something has changed.

The Russian intellectual property owners consider the absence of the inventions promotion mechanism to be the reason of lack of demand for domestic inventions. But this is not the only reason.

## II. DEVELOPMENT OF INNOVATION ACTIVITIES IN RUSSIA

As far back as in 2002 one of the leading specialists in the sphere of using rights on intellectual property Y.P. Fomichev, at that time the head of the Intellectual property department of the former Ministry of Industry, science and technologies, gave the following information: "Intellectual property trading volumes increase by 12% annually, while rates of growth don't exceed 2.5-5% a year. Having advantages in science and technical potential, highly-qualified staff, large science basis (12% of world scientists) Russia has only 0.3-0.5% on the civilian science intensive products market, while the part of the USA accounts for 36%, Japan – 30%, China – 6%. The largest expenses for innovation at Russian enterprises are purchases of machinery and equipment (62.2%). At the same time, only 18.3% of costs go on acquiring new technologies. Of this amount 10.5% are spent on purchasing rights to use intellectual property objects. In the total volume of enterprises inputs the owners funds account for 82.3%, foreign investments – 5.3%, federal budget – 2.8%, regional budgets – 1.3%, non-budget funds – 2.7%. World statistics shows that of 100 science and technical developments 10% appear on the market and only 4% are profitable" [2].

The head of the Federal service on intellectual property, patents and trade marks B.Simonov pointed out: "According

to the State statistics commission, in 2003 the cost of non-material assets of Russian companies accounted for 11 billion rubles. That is 0.4% equivalent on average in the country. There are half a million patents in Russia, but only 1% of intellectual property is put into practice. In the western countries the cost of intellectual property in business is about 60-78%. When the Russian rate reaches 15-20% it will be possible to talk about innovational economy” [3].

As for promotional mechanism, we suppose that the more important thing is the system of investing in such a risky business as innovations on the basis of domestic developments. This system maintains the work of the promotional mechanism and is profitable both for the owner of intellectual property and the investor and all in all for the government.

Russian scientists create breakthrough technologies, which are able not only to provide the needs of the country, but also to create prerequisites for entering the external market of new kinds of competitive products and technologies. This can reduce the dependence on the export of raw energy resources, but scientists have to sell technologies to foreign companies due to the lack of innovational system that can establish conditions for financing the process of technologies implementing.

The analysis of scientific research results, statistic data [4]-[9] made it possible to define the main tendencies of intellectual property rights regulation and protection.

In 2005 Russia ranked 21<sup>st</sup> in the world by the number of patent inventions. During the year our compatriots registered only 425 patents and that was almost by 20% less than in 2004. In the world patent rating, which was published by the World intellectual property organization, even such countries as Australia, Canada and India were ahead Russia. More than once the absolute leader was the USA: the authors of 34 300 of 134 000 inventions patents in 2005 were Americans. Following the USA far behind there were Japan, Germany, France and the UK. South Korea, the Netherlands, Sweden, Switzerland and China took the top ten (95% of all patent inventions in the world in 2005).

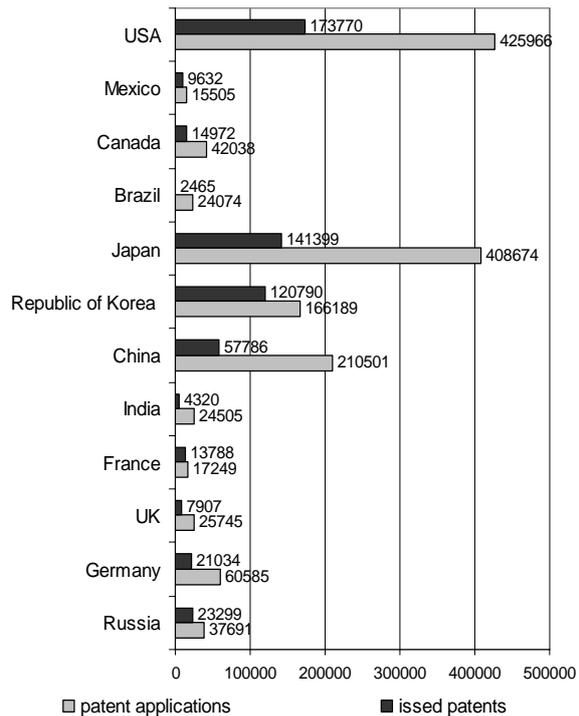


Fig. 1 The proportion of the number of patent applications to the number of issued patents in 2006

One of the important statistics indicators in this field is the indicator of “The proportion of patent applications to issued patent for inventions, industrial designs, utility models”. The brief comparative analysis is presented by Fig. 1.

According to Fig. 1 the proportion of the number of patent applications to the number of issued patents in Russia to the number of issued patents is not too bad (approximately 60%). Only France, Republic of Korea and Mexico have better indicators. In USA and Japan this indicators are 41% and 45% correspondently. But Russia is far behind the other countries by the number of patent applications. The number of patent applications in Russia is 11.3 times lower than in USA; 10.8 times lower than in Japan; 5.6 times lower than in China; 4.4 times lower than in Republic of Korea; 1.6 times lower than in Germany.

In Russia the number of issued patents is lower than in other countries: 7.5 times lower than in the USA; 6.1 times lower than in Japan; 5.2 times lower than in Republic of Korea; 2.5 times lower than in China. It is interesting that Russia leaves Germany far behind.

Another very important indicator is a proportion of the number of issued patents for citizens and foreign citizens to the number of the patent applications and issued patents. The situation in Russia differs from the situation in the other countries (Fig. 2-3).

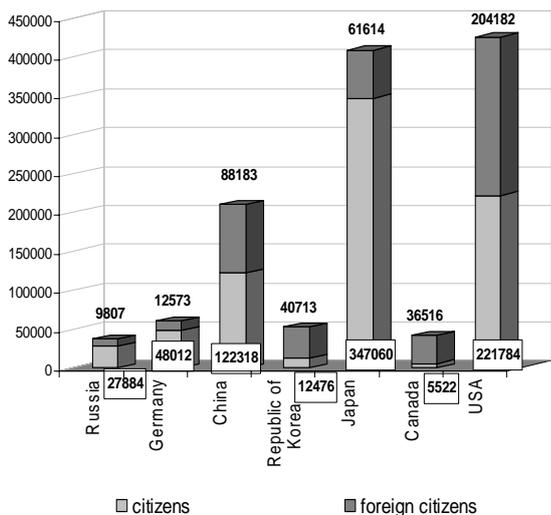


Fig. 2 The proportion of the number of patent applications from citizens to the number of patent applications from foreign citizens

In Russia the mentioned ratio is 2.8 to 1 (that is 1 patent application from foreign citizen to 2.8 patent application from citizens). This indicator is higher in the other countries: in Japan it is 5.6; in France – 5.3; in Germany – 3.8. This demonstrates the high level of national government support of researchers – citizens (see Fig. 2).

The ratio of the number of issued patents for citizens to the number of issued patent for foreign citizens in Russia is 4.6 to 1 (that is 1 issued patent for foreign citizen to 4.6 issued patents for citizens). Only Japan has higher indicators – 8.7. In the other countries this indicator is lower: 3.5 – in France; 2.8 – in Germany and Republic of Korea, 1.1 - in USA (see Fig. 3).

The situation in the field of international intellectual property exchange is not much better.

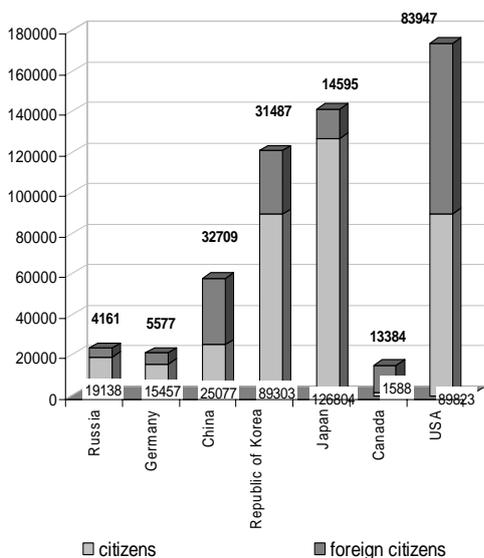


Fig. 3 The proportion of the number of issued patents for citizens to number of issued patents for foreign citizens

Developing countries frequently use technologies from developed countries and that's why they are interested in spreading technological knowledge. Insufficient mechanisms of intellectual property protection causes costs increase and industrially developed countries lose the interest in technologies transfer and investments.

At the same time strengthening of intellectual property protection causes contradictions between creating and transferring of innovations and toughening of intellectual property protection.

Intellectual property protection has visible advantages but its consequences can cause a lot of problems for developing countries.

Severe measures of intellectual property protection can lead to augmentation of the gap between technological level of developed and developing countries and strengthen monopoly tendencies on the new technologies market.

Firstly it can slow down the process of adopting technologies.

Secondly the costs of creating and transfer of new technologies will increase. All these will reduce the number of innovations and imitations.

Nothing will stimulate inventors to create new technologies. The level of intellectual property protection can influence the economy of developing countries.

It is important to come to compromise on intellectual property protection in order to provide a balance between the interests of all participants. This balance can be based on a complex of legal, economic, social and political measures.

Russian researchers of innovation problems use several indicators in order to assess quality and quantity of innovation activity level of enterprises, regions and countries. For example, number of organizations, involved in research-and-development; proportion of organizations carrying out technological innovations in the total number of organizations; expense on the technological innovations of organizations; receipt of patent requests and delivery of patents on the objects of intellectual property; trading in technologies with foreign countries, etc. (the full list of indicators in-use Rosstat is in Appendix). But such approach to quantitative assessment of innovation activity level of economic agents gives rise to several mistakes and inaccuracies which can seriously misrepresent the final results [10]-[12].

Firstly, all these indicators are calculated autonomously and their connection and correlation is assessed only through qualitative indexes.

Secondly, several indicators do not reflect the real situation in Russian scientific and intellectual spheres (the results of scientific research invention and creation activities). But such indicators are fundamental and are the basis of innovation process.

These indicators are used in order to compare the level of innovation development of different countries.

It is impossible to describe all the problems and mistakes of Russian science and practice of assessment of innovation development of economic systems.

Let us try to analyze the situation in the field of licensing, patenting of intellectual property and the problems of legal regulation of intellectual property rights in innovation activities in Russia.

Compared with the developed countries with innovation economy the volume of export and import of licenses, patents, know-how and other scientific and technical documentation and services in Russia is very small (see Tables I-II).

TABLE I  
RUSSIAN TECHNOLOGIES TRADING WITH FOREIGN COUNTRIES  
(Number of Agreements)

Indicators	Export		Import	
	2000	2007	2000	2007
Total	1094	1825	566	1524
including:				
- patent on an invention	11	7	10	20
- patent license to an invention	12	21	21	45
- utility patent	0	1	0	7
- know-how	45	22	26	46
- trademark	2	15	19	62
- industrial designs	8	7	2	2
- engineering services	522	654	305	870
- scientific researches	239	642	36	117
- other	255	456	147	355

According to the data in Table I the structure of Russian trade of technologies is far from being rational. In 2007 engineering services ranked first both in export and import (36% and 57% respectively).

The volume of purchase of licenses, patents, know-how, industrial designs, trademarks, utility models is only 4% and the volume of sale is 2.8%. Evidently the majority of Russian enterprises prefer to improve the existing old technologies instead of adoption of new technologies and new production practices. Special agencies of technologies commercialization do not exist.

TABLE II  
RUSSIAN TRADING IN TECHNOLOGIES WITH FOREIGN COUNTRIES  
(export revenue for a year/payments for a year, million rubles)

Indicators	Export		Import	
	2000	2007	2000	2007
Total	203,5	53749	182,9	65116,5
including:				
- patent on an invention	0,07	376,4	0,26	1437,7
- patent license to an invention	0,42	367	2,53	3141,6
- utility patent	0	0	0	20,8
- know-how	2,33	523,6	11,12	3647,4
- trade mark	11,5	256,4	31,12	8412
- industrial designs	0,28	89,4	1,04	14,2
- engineering services	139,3	38118,5	110,17	35824,1
- scientific researches	23,98	6104,7	227,	2192
- other	25,7	7913	24,39	10426,7

According to the data in Tables I-II scientific and technical exchange between Russia and foreign countries has increased. In five years the volume of technologies export proceed increased 1.9 times, and import payments increased 5.2 times. But on the whole the volume of export and import of technologies in 2006 was 0.2 and 0.6% and in relation to the volume of sales of technologies on the world market – less than 0.1-0.2%.

And technological “raw-material” instead of patented projects dominates the market.

As a result Russia loses in effectiveness of technologies exchange. The statistics shows that Russia buys expensive technologies and sells simple or cheap technologies, which did not get a due estimation.

Average technologies export proceeds increased but it is still three times lower than import payments.

All these and many other problems in innovation activity field can be explained by a specific situation of intellectual property protection in Russia.

## II. THE TYPES OF INTELLECTUAL PROPERTY RIGHT PROTECTION

The analysis of scientific research results, statistic data and panel surveys, questionnaires which were spread among the participants of innovation activities revealed different types of intellectual property right protection (see Fig. 4).

Fig. 4 demonstrates the dependence of net benefit of intellectual property right protection (NBPRP) from the type of intellectual property protection and the volume of gross profit ( $\pi$ ). Legal protection doesn't satisfy the interests of small enterprises (big costs with out serious threats). The net benefit of legal intellectual property right protection appears when business begins to grow. The “protection by the third person” is reasonable for small enterprises with low profit. But it causes a lot of problems when business begins to grow. The existence and prosperity of this kind of protection can be explained by economical, historical, national, social and political factors.

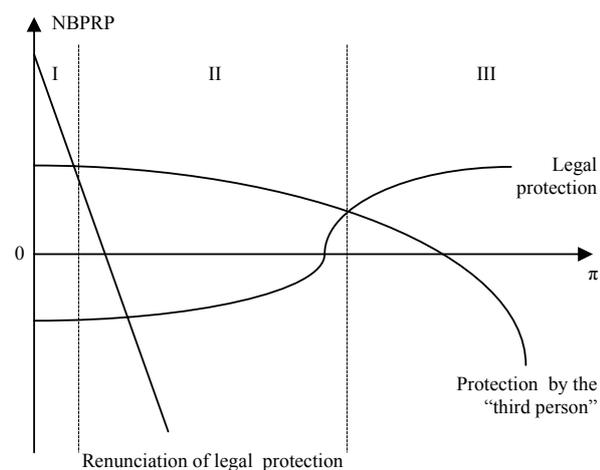


Fig. 4 The dependence of intellectual property right protection on type of business

The zones I, II, III of Fig. 4 reflect the efficiency of different types of intellectual property rights protection.

The zone I demonstrates the situation of existing Russian practice when the intellectual property owner rejects legal protection of his rights.

The zone II reflects the efficiency of intellectual property rights protection by the "third person" (any companies, that helps to imply technologies).

The zone III characterizes the efficiency of legal protection of intellectual property rights.

There are two kinds of monopoly in intellectual property sphere in Russia:

- 1) legal monopoly
- 2) secret monopoly

If the invention can be quickly imitated by help of reverse engineering it needs to be patented. In this case patent will confirm legal monopoly on intellectual property. Patent protection gives several advantages but in Russia it is more important to receive a "protection by the third party". These two kinds of protection will guaranty intellectual property rights on different stages of invention usage. If invention cannot be imitated or copied by reverse engineering, the owner can protect it as a know-how. But legal protection of know-how in Russia is very weak. The confidential nature of know-how excludes the possibility of obtaining a patent. That's why the owner of know-how can receive only secret monopoly. And it is better to obtain also "the protection by the third party (person)", which will guarantee intellectual property rights on know-how.

### III. THE NEW CODIFICATION OF INTELLECTUAL PROPERTY LAW IN RUSSIA

Part IV of the Civil Code of Russian Federation dedicated to legal regulation of Intellectual property rights came into force in 2008. It is a first attempt of codification in Intellectual property sphere in Russia. That's why a lot of new norms appeared.

Introduction of the Part IV of the Civil Code of the Russian Federation has completed codification of the civil legislation of Russia. It completes the work on full systematization of the whole civil legislation, regulating the relations in the sphere of intellectual property and a number of related norms in the Civil Code.

Introduction of the Part IV of the Civil Code of the Russian Federation allowed to systematize the federal legislation on intellectual property. The basis of this system is recognition of subjective intellectual property rights for the results of intellectual activity and the means of individualization (for intellectual property) as exclusive ones. However, they differ from property rights and other material rights because they are intangible, and they differ from personal non-pecuniary rights of authors and other creators of intellectual results by the fact that they become a subject of civil circulation and allow to involve the objects of intellectual property into such circulation.

### IV. THE PROBLEMS OF LEGAL REGULATION OF INTELLECTUAL PROPERTY RIGHTS

The main problems of intellectual property protection in Russia are the following:

1. The problem of idea protection
2. The problem of invention protection
3. The problem of know-how protection
4. The problem of agreements on technological and scientific cooperation

*The problems of idea protection.* Ideas are not protected by the Civil Code of the Russian Federation. An idea is the main element of any object of intellectual property (creation, invention, innovation, know-how, etc.). But even the particular expression of an idea is left unprotected. Granting exclusive property rights to the creator of an idea allows him or her to appropriate much of its social value. Consequently, the incentive to create ideas aligns closely with their social value, as required for efficient innovation. The owner of an idea has the right to exclude others from using it. Excluding others from using an idea impedes their dissemination and application [13]. The recognition idea as intellectual property will make it possible to use the intellectual property rights, that can provide an income to its owner. This profit will encourage the owner to continue his innovative work [14].

*The problems of invention protection.* According to the Civil Code of Russian Federation "a technical solution in any area, relating to a product (for instance a device, substance, microorganism strain, cell culture of plants or animals) or process (process of affecting a material object using material means) shall be protected as an invention.

An invention shall be granted legal protection if it is new, involves an inventive step and is industrially applicable.

An invention shall be deemed new if it is not anticipated by prior art.

An invention shall involve an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art.

The state of the art shall consist of any kind of information published anywhere in the world, and made available to the public, before the priority date of the invention" [15].

The problem is that inventions are patented as utility models or are protected as know-how. Inventors prefer not to take out a patent for inventions because it is a very difficult procedure, it takes a lot of time and is very expensive. That is why they try to protect their inventions as ideas, know-how, confidential information, utility models.

*The problems of know-how protection.* The protection of know-how is far from being perfect. A lot of rules (norms of Law) contradict the norms of International Intellectual property Law.

In international intellectual property trade know-how is regarded as industrial property that is transferred by license transactions.

The most valuable know-how are constructive and technological secrets of competitive production. It is possible to define the following features of know-how:

1. It is the information, technical knowledge, experience, connected with the development, launching the production, operation, service, repair, improvement and utilization of new hardware, technology and materials.

2. It has real or potential technical and commercial value;

3. It is being applied or can be applied.

4. It has confidential nature, it is not in the public domain;

5. It has no legal protection on the national, regional and local levels.

6. It is necessary to possess special knowledge and experience for using it.

7. The way of its fixation or adoption can be different (written form, oral or visual).

8. Without obtaining know-how it is impossible to improve technical objects, technology and materials, in which know-how is involved.

The fourth and eighth criteria have vital importance for evaluating the possibility of recognition the technical solution as a know-how.

The owner of know-how must believe that the release of the information would be injurious to him or of advantage to his rivals. The owner of know-how must believe that the information is confidential or secret. The two first beliefs must be reasonable. Finally, the information must be considered taking into account trade practice [16].

The old Russian Civil Code (1964) and other Russian laws did not give the definition of know-how, trade and commercial secrets. Russian legislation said nothing about protecting and guaranteeing the categories of confidential information [17].

That is why daughter companies of state enterprises could use know-how and trade secrets of "mother-enterprise" for their own needs and interests without any punishment.

This information had all identifying features of confidential information:

1) It was not in the public domain;

2) The information referred to the usage and practices of particular industry;

3) The release of such information was injurious to the state "mother-enterprise" and gave advantages to other companies.

But independent departments explained that they did not regard this information as know-how, because of the problems of legal regulation. Such daughter enterprise could simply steal some idea and develop it with the help of its high-qualified engineers and scientists and then sell it or begin to apply for itself.

The state could not control or stop this process and many technical secrets were lost. During in the process of changing of social infrastructure objects of social infrastructure (such as houses, hospitals, kindergartens, schools) were given to municipalities. So enterprises stopped social sphere financing. It was decided to resolve unemployment problems and problems of financing by means of private companies and foreign investments which began to appear in Russia. The majority of military enterprises were reorganized and became independent joint-stock companies (the result of privatization). All these ways of restructuring were accompanied by the

problem of lack of legal regulation, especially in the field of protection of commercial and trade secrets, know-how and business secrets [18].

As a result different classes of technical secrets, which related to the production of goods were lost.

The first class consisted of information in the form of skill and experience built up by individual employees in relation to the practical implementation of techniques or processes. It indicates the way in which a skilled personnel do their job. A person may make a fairly detailed written description of how to produce a particular result by a series of chemical processes or reactions; but as all the world knows in practice the best result is obtained not by merely following all the directions in the book, but by the way in which the experienced person applies these directions.

Another class of such technical secrets ('know-how') is used to refer to disembodied information in the form of technical knowledge of industrial significance which has been built up in one organization and is not in the public domain. In this sense, the term relates to the application of technology in an industrial situation rather than to creativity. As such, know-how may comprise items of information retrieved from the general body of information which is available to all. Its importance lies, however, in the context in which those items of information are applied, and their collection as a separate entity which has acquired a significance and identity of its own. Know-how of this kind can constitute a trade secret, for, as an independent entity of information, it is inaccessible, and the law does not require any degree of novelty provided that information is inaccessible.

In 1994 the new Civil Code of the Russian Federation defined what a commercial secret is. Information can be defined as a commercial (trade) secret if it meets the following requirements: 1) it has real or potential commercial value, 2) it is unknown other persons, 3) there is no free legal access to the information, 4) the owner of the information does something to protect the information. Those who received the commercial secret illegally must recover the losses and pay the damages.

The Law on State secrets and the Criminal Code of Russia (1996) introduced into the Russian legal system the responsibility for the breach of confidence.

Russian legislation (the Civil Code, the Law on commercial secrets) makes no difference between trade secrets and know-how and this contradicts the norms of International Intellectual property law.

Know-how plays an exceptional role in the world. Know-how along with inventions provides acceleration of science and technical progress and socio- and economic development of countries.

Companies prefer not to take out patents on inventions, which are involved in newly developed hardware and technology, leaving them in secret. Companies act in this way hoping that know-how becomes obsolescent, the competitors will not be able to reproduce it without serious and expensive research. Accordingly, competitors cannot gain information

about directions of research and company's developments through patent protection.

It is important that patent monopoly (inventions) is legal mainly in the countries where patent was received, while secret monopoly (know-how) works in all countries of the world until it comes into public domain or becomes available for rivals.

International trade practice shows that generally without know-how knowledge it is absolutely impossible to reproduce new technology through patent descriptions, published technical information, samples of new hardware that are presented on markets, national and international fairs. Furthermore, it is also impossible to improve the technology and create next generation models on the same basis. Therefore, a choice of type and form of purchasing a foreign technology should be predetermined by the possibility of purchasing licenses for know-how exploitation [19].

Many specialists, suppose that know-how form the basis of licenses and patents. Know-how allows to protect intellectual property from improper use in case of divulgence.

The role of know-how increases because know-how and inventions underlie intensifying globalization. Unfortunately, Russian Federation is the only country in the world where know-how is neglected.

The described situation in Russia is worsening by researchers and inventors (about 80%), who do not understand the role and value of know-how in the world production, external and internal trade.

The building of market economy in Russia revealed the following problems:

- The necessity of staff training (engineering staff, economists and lawyers). They can use know-how in their scientific, production and commercial activities.
- Determination of technical, economic and commercial value of a know-how; estimation the possibility of using know-how for accelerating scientific and technical progress and socio- and economic development of the country, increasing competitiveness of the production and providing economic and state safety of Russia.
- Keeping know-how in secret and prevention of industrial espionage.

Besides, it is necessary to register contracts on selling domestic know-how abroad and to put transmission of know-how to foreign companies and entrepreneurs under control.

*The problems of agreements on technological and scientific cooperation.* Russian owners of intellectual property often apply to the "Licensor" with a request to help in protecting their interests, which, in their opinion, were infringed by foreign partners. The analysis of contracts often shows that foreign partners fulfill the terms of contract. When Russian partners are made to pay attention to the terms that "infringe their interest", the common answer is that the foreign partner and the Russian partner meant completely different things.

One of the French colleagues, a member of the work group on science and technical cooperation, figuratively characterized such agreements: "An agreement on science and

technical cooperation is a consolidation of emotions (Russian partner) and the common sense (foreign partner)".

After signing an agreement, which was based on "Russian emotions" and the text that was prepared by the foreign partner using "common sense", the Russian partner often loses intellectual property rights because of negligence and shortage of legal protection.

The panel survey, questionnaires which were spread among the participants of innovation activities revealed the main problems of innovation transactions and made it possible to formulate several recommendations:

1) It is important to take into account the costs of intellectual property rights in the international market based on the specific parameters, describing a volume of rights usage.

2) It is necessary to define the types of a license: exclusive or non-exclusive.

3) The contract must contain the following terms:

a) the precise definition of the concrete intellectual property rights;

b) the duration of the contract;

c) guarantees of payment or compensation even in case of non-use received rights by the partner. It can be a flat-rate fee payment, or minimally guaranteed payments;

d) guarantees of the reception of true information about volumes of real use of the received rights by a partner (it is an obligation to make reports for the licensor («Licensee's Report» or «Royalty report»), the possibility of audit by the licensor or by the auditor of account books);

e) guarantees of licensee activities for prevention of non authorized use of the intellectual property rights, which are received from the licensor, terms on a confidentiality, the sanctions for breach of confidence;

f) the way of the information exchange on innovation improvement between the partners;

g) the regulation of the relationship between the licensor and the licensee after termination of the contract; the conditions of prolongation of the contract duration; the possibility of technology use after termination of the contract.

## V. CONCLUSION

The market of innovation activities is developing in Russia.

The indicators, used by Russian researchers and state statistics for analyzing the innovation problems do not reflect the real situation in Russian scientific and intellectual spheres.

The protection of intellectual property rights by the third person is very popular in Russia. This can be explained by economical, political, historical and social factors.

The contract on innovation transfer must contain several specific terms aimed to protect intellectual property rights and confidential information (know-how).

## APPENDIX

**List of indicators, in-use Rosstat for the estimation the level of innovative activity in Russia**

1. Organizations, executing research-and-development
  - 1.1. Total number of organizations, including:
    - 1.2. research organizations
    - 1.3. designer bureaus
    - 1.4. project and project-findings organizations
    - 1.5. experimental factories
    - 1.6. higher educational research establishments
    - 1.7. project-designer subdivisions in organizations
    - 1.8. others
2. Organizations, executing research-and-development in different activity sectors
  - 2.1. Total number of organizations, including:
    - 2.1. state
    - 2.2. enterprise
    - 2.3. higher professional education
    - 2.4. noncommercial organizations
3. State academies
4. Quantity of personnel, deals with research-and-developments
  - 4.1. Total number of quantity of personnel, deals with research-and-developments, including:
    - 4.2. researchers
    - 4.3. technique
    - 4.4. auxiliary personnel
    - 4.5. other personnel
5. Quantity of personnel, deals with research-and-developments on the sectors of activity
  - 5.1. Total number of quantity of personnel, deals with research-and-developments on the sectors of activity, including:
    - 5.2. state
    - 5.3. enterprise
    - 5.4. higher professional education
    - 5.5. noncommercial organizations
6. Quantity of state academies researchers
  - 6.1. Total number of quantity state academies researchers, including:
    - 6.2. professors
    - 6.3. with PhD degree
7. Basic indicators of post-graduate study
  - 7.1. The number of post-graduate study indifferent scientific branches
  - 7.2. Post-graduate study admission according to scientific branches
  - 7.3. Graduating from post-graduate study admission according to scientific branches
  - 7.4. Graduating from post-graduate study with thesis defense admission according to scientific branches
  - 7.5. Doktorantury activity basic indicators
  - 7.6. Professors admission and graduating, according to scientific branches
8. Scientific financing from federal budget
  - 8.1. Total expenses from federal budget, million rubles, including:
    - 8.2. to fundamental researches
    - 8.3. to the applied scientific researches
    - 8.4. to the expenses from federal budget, %
    - 8.5. to the gross internal product, %
9. Internal expenses on research-and-developments, billion rubles
  - 9.1. Internal expenses on research-and-developments in actually operating prices, billion rubles
  - 9.2. Internal expenses on research-and-developments in the fixed costs of 1989, %
  - 9.3. Internal expenses on research-and-developments to the gross internal product, %
10. Internal expenses on researches and development according to sources
  - 10.1. Total expenses, million rubles, including:
    - 10.2. of budget facilities
    - 10.3. scientific organizations personal funds
    - 10.4. by off-budget funds means
    - 10.5. by organizations and enterprise sector means
    - 10.6. by higher educational establishments means
    - 10.7. by private noncommercial organizations means
    - 10.8. by foreign sources means
11. Internal expenses on researches and development according to the activity sectors
  - 11.1. Total expenses, million rubles, including:
    - 11.2. state
    - 11.3. enterprise
    - 11.4. higher professional education
    - 11.5. noncommercial organizations
12. Internal expenses on researches and development differentiating to the kinds of expenses
  - 12.1. Total expenses, million rubles
  - 12.2. Internal current expenses
  - 12.3. Labour payment
  - 12.4. Deduction on the united social tax
  - 12.5. Equipment acquisition
  - 12.6. Other financial expenses
  - 12.7. Other current expenses
  - 12.8. Capital costs
  - 12.9. Lot lands and buildings
  - 12.10. Other capital costs
13. Internal current expenses on researches and development differentiating to the types of works
  - 13.1. Total expenses, million rubles, they are the following to the types of works:
    - 13.2. fundamental researches
    - 13.3. the applied researches
    - 13.4. developments
14. Internal current expenses on research-and-developments in state academies differentiating to the types of works
  - 14.1. Total expenses, million rubles, they are the following to the types of works:
    - 14.2. fundamental researches
    - 14.3. the applied researches
    - 14.4. developments
15. The patent application and issued patents
  - 15.1. The number of patent application

- 15.2. The number of Russian applications from the total number of inventions.
- 15.3. The number of utility patent application
- 15.4. The number of Russian applications from the total number of inventions.
- 15.5. The number of patent of utility industrial design application
- 15.6. The number of Russian applications from the total number of inventions.
- 15.7. The number of patents giving out
- 15.8. The number of patents giving out to the inventions
- 15.9. The number of patents giving out to Russian applicants
- 15.10. The number of utility patents giving out
- 15.11. The number of utility patents giving out to the inventions
- 15.12. The number of utility patents giving out to Russian applicants
- 15.13. The number of patents giving out to industrial designs
- 15.14. The number of patents giving out to industrial designs to Russian applicants
- 16.1. The number of existing patents  
including:
- 16.2. - to inventions
- 16.3. - to useful models
- 16.3. - to industrial designs
17. Number of the established leading technologies on different directions
- 17.1. The leading production technologies,  
including:
- 17.2. Planning and engineering
- 17.3. Production, treatment and assembling
- 17.4. Automatic handlings; transporting of materials and details
- 17.5. Apparatus of the automated supervision (control)
- 17.6. Connection and management
- 17.7. Production informative systems
- 17.8. Computer-integrated management and control
18. Number of the established leading production technologies according to the degree of newness
- 18.1 The leading production technologies,  
including::
- 18.2. new in a country
- 18.3. new principle
- 18.4. created on the base of patents
- 18.5. to inventions
- 18.6. to useful models
- 18.7 .to industrial designs
- 18.8. possessing a patent cleanness
19. Number of established leading production technologies, based on the degree of newness
- 19.1. Total leading production technologies and the years of their implementing  
including:
- 19.2. ... to 1 year
- 19.3. ....1-5 year
- 19.4. ...6-9 year
- 19.5....10 and more
- 19.6. The number of inventions in used technologies
20. Technologies trading with foreign countries on the transactions objects
- Export**
- 20.1. Technologies trading with foreign countries on the transactions objects, total number of agreements  
including:
- 20.2. patent on an invention
- 20.3. patent license to an invention
- 20.4. utility patent
- 20.5. know-how
- 20.6. trademark
- 20.7. industrial designs
- 20.8. engineering services
- 20.9. scientific researches
- 20.10. other
- 20.11. Technologies trading with foreign countries on the transactions objects, agreements value, million rubles  
including:
- 20.12. patent on an invention
- 20.13. patent license to an invention
- 20.14. utility patent
- 20.15. know-how
- 20.16. trademark
- 20.17. industrial designs
- 20.18. engineering services
- 20.19. scientific researches
- 20.20. other
- 20.21. Technologies trading with foreign countries on the transactions objects, export revenue for a year, million rubles  
including:
- 20.22. patent on an invention
- 20.23. patent license to an invention
- 20.24. utility patent
- 20.25. know-how
- 20.26. trademark
- 20.27. industrial designs
- 20.28. engineering services
- 20.29. scientific researches
- 20.30. other
- Import**
- 20.31. Technologies trading with foreign countries on the transactions objects, total number of agreements  
including:
- 20.32. patent on an invention
- 20.33. patent license to an invention
- 20.34. utility patent
- 20.35. know-how
- 20.36. trademark
- 20.37. industrial designs
- 20.38. engineering services
- 20.39. scientific researches
- 20.40. other
- 20.41. Technologies trading with foreign countries on the transactions objects, agreements value, million rubles  
including:
- 20.42. patent on an invention
- 20.43. patent license to an invention
- 20.44. utility patent
- 20.45. know-how
- 20.46. trademark
- 20.47. industrial designs
- 20.48. engineering services
- 20.49. scientific researches
- 20.50. other
- 20.51. Technologies trading with foreign countries on the transactions objects, total payments for a year, million rubles  
including:
- 20.52. patent on an invention
- 20.53. patent license to an invention
- 20.54. utility patent
- 20.55. know-how

- 20.56. trademark  
 20.57. industrial designs  
 20.58. engineering services  
 20.59. scientific researches  
 20.60. other
21. Technologies trading with foreign countries in different activity sectors
- Export**
- 21.1. Technologies trading with foreign countries in different activity sectors, total number of agreements including:  
 21.2. state  
 21.3. enterprise  
 21.4. higher professional education  
 21.5. noncommercial organizations  
 21.6. Technologies trading with foreign countries in different activity sectors, agreements value, million rubles including:  
 21.7. state  
 21.8. enterprise  
 21.9. higher professional education  
 21.10. noncommercial organizations  
 21.6. Technologies trading with foreign countries in different activity sectors, export revenue for a year, million rubles including:  
 21.11. state  
 21.12. enterprise  
 21.13. higher professional education  
 21.14. noncommercial organizations
- Import**
- 21.15. Technologies trading with foreign countries in different activity sectors, total number of agreements including:  
 21.16. state  
 21.17. enterprise  
 21.18. higher professional education  
 21.19. noncommercial organizations  
 21.20. Technologies trading with foreign countries in different activity sectors, agreements value, million rubles including:  
 21.21. state  
 21.22. enterprise  
 21.23. higher professional education  
 21.24. noncommercial organizations  
 21.25. Technologies trading with foreign countries in different activity sectors, total payments for a year, million rubles including:  
 21.26. state  
 21.27. enterprise  
 21.28. higher professional education  
 21.29. noncommercial organizations
22. Technologies trading with foreign countries on the organizational ownership forms
- Export**
- 22.1. Technologies trading with foreign countries on the organizational ownership forms, number of agreements including:  
 22.2. Total Russian property  
 22.3. State form  
 22.4. Federal form comes from the state form  
 22.5. The subjects of the Russian Federation  
 22.6. Private  
 22.7. The mixed Russian  
 22.8. Foreign
- 22.9. Joint Russian and foreign property  
 22.10. Technologies trading with foreign countries on the organizational ownership forms, agreements value, million rubles including:  
 22.11. Total Russian property  
 22.12. State form  
 22.13. Federal form comes from the state form  
 22.14. The subjects of the Russian Federation  
 22.15. Private  
 22.16. The mixed Russian  
 22.17. Foreign  
 22.18. Joint Russian and foreign property  
 22.19. Technologies trading with foreign countries on the organizational ownership forms, export revenue for a year, million rubles including:  
 22.20. Total Russian property  
 22.21. State form  
 22.22. Federal form comes from the state form  
 22.23. The subjects of the Russian Federation  
 22.24. Private  
 22.25. The mixed Russian  
 22.26. Foreign  
 22.27. Joint Russian and foreign property
- Import**
- 22.28. Technologies trading with foreign countries on the organizational ownership forms, number of agreements including:  
 22.29. Total Russian property  
 22.30. State form  
 22.31. Federal form comes from the state form  
 22.32. The subjects of the Russian Federation  
 22.33. Private  
 22.34. The mixed Russian  
 22.35. Foreign  
 22.36. Joint Russian and foreign property  
 22.37. Technologies trading with foreign countries on the organizational ownership forms, agreements value, million rubles including:  
 22.38. Total Russian property  
 22.39. State form  
 22.40. Federal form comes from the state form  
 22.41. The subjects of the Russian Federation  
 22.42. Private  
 22.43. The mixed Russian  
 22.44. Foreign  
 22.45. Joint Russian and foreign property  
 22.46. Technologies trading with foreign countries on the organizational ownership forms, total payments for a year, million rubles including:  
 22.47. Total Russian property  
 22.48. State form  
 22.49. Federal form comes from the state form  
 22.50. The subjects of the Russian Federation  
 22.51. Private  
 22.52. The mixed Russian  
 22.53. Foreign  
 22.54. Joint Russian and foreign property
23. Technologies trading with foreign countries on the economic activity types
- Export**
- 23.1. Technologies trading with foreign countries on the economic activity types, total number of agreements including:

- 23.2. agriculture, hunting and forestry  
 23.3. mining processing  
 23.4. manufacture productions  
 23.5. electric power, gas and water production and distributing  
 23.6. building constructions  
 23.7. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.8. transport and connection  
 23.9. public-call connection activity comes from transport and connection  
 23.10. operations with the real estate, lease and services offering comes from transport and connection  
 23.11. scientific research-and-developments  
 23.12. other types of services  
 23.13. education  
 23.14. public, social and personal utilities grants  
 23.15. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.16. other types of economic activity  
 23.17. Technologies trading with foreign countries on the economic activity types, agreements value, million rubles including:  
 23.18. agriculture, hunting and forestry  
 23.19. mining processing  
 23.20. manufacture productions  
 23.21. electric power, gas and water production and distributing  
 23.22. building constructions  
 23.23. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.24. transport and connection  
 23.25. public-call connection activity comes from transport and connection  
 23.26. operations with the real estate, lease and services offering comes from transport and connection  
 23.27. scientific research-and-developments  
 23.28. other types of services  
 23.29. education  
 23.30. public, social and personal utilities grants  
 23.31. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.32. other types of economic activity  
 21.33. Technologies trading with foreign countries on the economic activity types, export revenue for a year, million rubles including:  
 23.34. agriculture, hunting and forestry  
 23.35. mining processing  
 23.36. manufacture productions  
 23.37. electric power, gas and water production and distributing  
 23.38. building constructions  
 23.39. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.40. transport and connection  
 23.41. public-call connection activity comes from transport and connection  
 23.42. operations with the real estate, lease and services offering comes from transport and connection  
 23.43. scientific research-and-developments  
 23.44. other types of services  
 23.45. education  
 23.46. public, social and personal utilities grants  
 23.47. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.48. other types of economic activity
- Import**
- 22.49. Technologies trading with foreign countries on the economic activity types, total number of agreements including:  
 23.50. agriculture, hunting and forestry  
 23.51. mining processing  
 23.52. manufacture productions  
 23.53. electric power, gas and water production and distributing  
 23.54. building constructions  
 23.55. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.56. transport and connection  
 23.57. public-call connection activity comes from transport and connection  
 23.58. operations with the real estate, lease and services offering comes from transport and connection  
 23.59. scientific research-and-developments  
 23.60. other types of services  
 23.61. education  
 23.62. public, social and personal utilities grants  
 23.63. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.64. other types of economic activity  
 23.65. Technologies trading with foreign countries on the economic activity types, agreements value, million rubles including:  
 23.66. agriculture, hunting and forestry  
 23.67. mining processing  
 23.68. manufacture productions  
 23.69. electric power, gas and water production and distributing  
 23.70. building constructions  
 23.71. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.72. transport and connection  
 23.73. public-call connection activity comes from transport and connection  
 23.74. operations with the real estate, lease and services offering comes from transport and connection  
 23.75. scientific research-and-developments  
 23.76. other types of services  
 23.77. education  
 23.78. public, social and personal utilities grants  
 23.79. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.80. other types of economic activity  
 21.81. Technologies trading with foreign countries on the economic activity types, payments for a year, million rubles including:  
 23.82. agriculture, hunting and forestry  
 23.83. mining processing  
 23.84. manufacture productions  
 23.85. electric power, gas and water production and distributing  
 23.86. building constructions  
 23.87. wholesale and retail trade, vehicles, motor cycles, domestic wares and articles of the personal use repairing  
 23.88. transport and connection  
 23.89. public-call connection activity comes from transport and connection  
 23.90. operations with the real estate, lease and services offering comes from transport and connection  
 23.91. scientific research-and-developments  
 23.92. other types of services  
 23.93. education  
 23.94. public, social and personal utilities grants  
 23.95. rest and entertainments, culture and sport activities comes from public, social and personal utilities grants  
 23.96. other types of economic activity

## 24. Basic innovation activity indicators

- 24.1. The share of the organizations executing technological innovations implement on to the total number of organizations, %
- 24.2. The share of innovation goods, works, services to the total volume of the shipped goods, executed works and services, %
- 24.3. Technological innovations expenses in actually operating prices, million rubles.
- 24.4. Technological innovations expenses in constant prices of 2000, million rubles.
- 24.5. The share of technological innovations expenses to the total shipped goods, executed works and services, %
- 24.6. The share of organizations having reporting year to the total number of organizations, %
- 24.7. The share of organizations having implement marketings innovations to the total number of organizations, %

## 25. Innovation activity of organizations of different branches of economy (including extractive)

- 25.1. Total number of organizations having carried out technological innovations  
Including:
- 25.2. The share of organizations having implement technological innovations to the total number of the inspected organizations, %

## 26. The expenses to the technological innovations of different branches of economy (including extractive) according to the types of innovative and economic activity

- 26.1. Total technological innovations expenses, million rubles including:
  - 26.2. research-and-development
  - 26.3. acquisition of machines and equipment
  - 26.4. acquisition of new technologies
  - 26.5. acquisition of rights on patents, licenses from acquisition of new technologies
  - 26.6. acquisition of programm facilities
  - 26.7. production planning
  - 26.8. other types of preproduction
  - 26.9. teaching and preparation of personnel
  - 26.10. marketings researches
  - 26.11. other expenses

## 27. Technological innovations expenses in organizations of different branches of economy (including extractive) according to financial sources

- 27.1 Technological innovations expenses in rubles including:
  - 27.2. organization funds
  - 27.3. federal budget funds
  - 27.4. budgets of subjects of Russian Federation and local budgets funds
  - 27.5. off-budget funds
  - 27.6. foreign investments
  - 27.7. other facilities

## 28. The volume of the shipped innovative goods, works and services of organizations of different branches of economy (including extractive) according to the types of economic activity (in % and billion rubles)

## 29. The share of organizations having carried out the definite kinds of organizational innovations to the total number of organizations which

were having organizational innovations during the latest three years in different types of economic activity

- 29.1. Realization of a new considerably changed corporative strategy
- 29.2. Implementation of modern methods of management on the basis of information technologies
- 29.3. Implementation of new or considerably changed organizational structures
- 29.4. Innovation in the use of shift working hours
- 29.5. Using the modern checking quality systems, certificates in giving to goods, works, services
- 29.6. Introduction of the modern systems of logistic and supplying of raw material
- 29.7. The establishment of the specialized subdivisions to carry out scientific research-and-developments, works and to fulfill practical realization of scientific and technical achievements
- 29.8. The introduction of cooperating knowledge control system
- 29.9. The realization of measures on personnel development
- 29.10. The realization of new forms of strategic alliances, partnerships and other types of co-operation connections with the users of products, suppliers. Russian and foreign producers
- 29.11. Transmission of some business functions to the strategic contractor (outsourcing)
- 29.12. Other organizational-administrative innovations

## 30. Factors, impedimental innovative activity of organizations of industrial production

- 31. The share of organizations having carried out definite types of marketing innovations to the total number of the organizations, having had prepared marketing innovations during the last three years, on the types of economic activity, %
  - 31.1. Introduction of considerable changes in goods and services design
  - 31.2. Introduction of considerable changes in goods packing
  - 31.3. Realization of new marketing strategy, oriented to expansion of users or sales markets
  - 31.4. Using new ways of goods promotion
  - 31.5. Using new sales channels
  - 31.6. Introduction of new conceptions of goods presentation in trade
  - 31.7. Using new price strategies for goods and services sales
  - 31.8. Other marketing innovations

## 32. Number of the used leading production technologies on different directions

- 16.1. The leading production technologies, including:
  - 16.2. Planning and engineering
  - 16.3. Production, treatment and assembling
  - 16.4. Automatic handlings; transporting of materials and details
  - 16.5. Apparatus of the automated supervision (control)
  - 16.6. Connection and management
  - 16.7. Production informative systems
  - 16.8. Computer-integrated management and control

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