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METHODOLOGICAL ASPECTS OF FORMING THE OPERATIONAL CYCLE FOR CREATING INNOVATION AND ITS COMMERCIALIZATION

GENNADIY KOSSOLAPOV

*It all starts with a need
to name everything correctly.
The name gives rise to right actions.
Confucius*

The development of the modern world and domestic economy happens in the conditions of a “new economic reality” and is characterized by strengthening mistrust, increasing competition and the worsening of conditions for growth. Determining factors of growth are the intangible assets such as knowledge, abilities and skills. This is reflected in the strategy of innovative development. Creating innovation is a systematic process that requires corresponding organisational and institutional provision. It is necessary to bring together all effort of those involved in achieving the end result. It is important to ensure the commercialization of intellectual property and the created innovation. This can be done by implementing the advantages of the division, specialization and cooperation of labour, using the power of corporate business structures in integrating the interests of participants in the innovation process. The paper deals with methodological issues of system interaction of participants of the innovation process.

Introduction

In April 2005, under the decision of the Government of Kazakhstan a programme for

the formation and development of the national innovation system of the Republic of Kazakhstan has been approved. One of the main objectives of the programme is the formation and development of infrastructure elements and mechanisms that allows translate the Kazakhstan economy on a path of innovative development.

The strategy of industrial and innovative development, adopted by the Government of the Republic of Kazakhstan, is a major direction to achieve the goal of building a competitive economy of the Republic of Kazakhstan. Provisions of the strategy were specified in the State Program of Accelerated Industrial and Innovative Development (SPAID) until 2014.

With these documents, the interest towards the innovation activity in the Republic of Kazakhstan has increased, as it is seen from statistics and notes of the major international rating agencies.

According to the Global Competitiveness Index of the World Economic Forum, by the end of 2011 Kazakhstan has moved from the group of transition countries, driven by “factors of production” and “effective control”, to the group of higher level located between the categories of countries, motivated by “manage-

ment efficiency” and “innovation”. This group also includes Argentina, Brazil, Malaysia, Russia, Turkey and others. Kazakhstan has raised its rating by 21 points and reached the 51st place in out of 144 countries (the 72nd place in 2010). Kazakhstan ranked second among CIS countries, after Azerbaijan (46th). Ranking sub-indices have also increased, technological and innovation development factors. In relation to the ranking of “the ability of companies to apply modern technology,” the country has risen by 22 points up to the 91st place. As for the “Quality of research institutions” the country has reached the 108th place, going up by 13 points.

The state of innovation development in Kazakhstan can be characterized as follows. Kazakhstan passes a stage of scientific understanding of the laws of development of innovative processes, identifying problems, smooth phase of constructing the national innovation system (Kenzheguzin, 2005, Mutanov, 2012). Opportunities for financing are created. Basic funding for fundamental and applied research is made by the Ministry of Education and Science of RK. Development activities transferred to the stage of the business process and the creation of pilot samples are financed by JSC “Fund of Science” and “The National Agency for Technological Development NATD”. The other development institutions and second-tier banks are oriented on small innovative enterprises focused on the production of finished products. The National Centre for Scientific and Technical Information of the Republic of Kazakhstan is an important element of the national innovation system, which forms the scientific and technical information resources of the country and access to global information resources.

In the Republic of Kazakhstan the best conditions for innovation in the regional aspect are the following cities: Astana, Almaty, Karaganda, Uralsk and Ust-Kamenogorsk. In these cities, there are educational, scientific, technical, human resources and production potential. Technology parks and business incubators are created. In Astana and Almaty there are innovation clusters being created based on Nazarbayev University

(Astana) and SEZ Park Innovation Technologies “Tau” (Almaty). In particular a special law on the innovation cluster in the SEZ Park Innovation Technologies “Tau” (Almaty) is prepared. There are 9 technological parks, 5 national and 15 regional laboratories, 9 venture capital funds are created across the country. Three design offices are opened, and it is planned to open new ones: of transport engineering (Astana), the oil and gas equipment (Petropavlovsk), agricultural machinery (Kokshetau) and instrumentation (Almaty) (Nazarbayev, 2011).

Factors inhibiting innovative development in Kazakhstan include:

- weak physical infrastructure;
- not innovative culture;
- weak linkages between government, business and research centres, implementation mechanisms;
- lack of government and business understanding of innovation, as well as other participants of the innovation process and the scientific community, where there is a line between science and innovation;
- weak financial incentives, bureaucratic restrictions, etc. (Mutanov, 2012).

In order to create the necessary conditions for the development of a coherent national innovation system a methodology of systematizing actions of innovation process stakeholders - scientists, government agencies, investors and businessmen, and other participants, as well as legislation foundation are required. A methodology is necessary that is systematically considering all stages of the innovation cycle, their functions, subordination, relationships and incentive mechanisms. It is important to ensure the consideration of issues on the patent system and the protection of intellectual property rights, its assessment. It is necessary for engagement in economic circulation of rights on intellectual property as collateral, the contribution to the share capital, the authors’ participation in the profits and other forms of intellectual property capitalization.

The economic nature of innovation and its role in ensuring the competitiveness of Kazakhstan

economy, the integration of innovation in the sphere of economic development investigated in works by M.B. Kenzheguzin, F.M. Dnishev and F.G Alzhanova “Science and innovation in a market economy: world experience and Kazakhstan.” The results of this study are presented in a monograph (Kenzheguzin, 2005). This work contains the scientific foundations for the transition to innovative development of Kazakhstan. These ideas were enshrined in government policy documents. The issues of innovative development related to the financing of innovation and commercialization of intellectual property are of particular concern. Some of the questions in this problem are investigated by the author (Kosolapov, 2004).

To improve the efficiency of the implementation of SPAIID, there is a need to improve its scientific and methodological support on many issues. In the future, we should look at the two of them - the essence of innovation and their relationship to organizational and economic mechanism and the search for new financial tools for engaging in business turnover of intellectual property (IP).

Our research is dedicated to the consideration of these issues. A conceptual device is used. The main stages of the innovation process and functions of the participants are formed on the basis of consideration of the process in terms of commercialization of knowledge and created innovation. The proposed methodology can also be used to determine the composition of the professional participants of the market of innovations generated. When designing it observations of the author were used while participating in various activities dedicated to innovative development in Israel, Russia, and Kazakhstan.

The general view on the problem is the participants’ lack of the systematic, multi-stage and project vision problems. As a rule, the issues of innovators, investors, businessmen or government organizations are offered to discussion. In this case, there is no desire for co-operation to achieve the final result. Our attempts to organize a systematic discussion of issues by all stakeholders at the “round table” at the International

Academy of Business (IAB) have caused concern. Claims were made against each other. There was an interesting discussion and a suggestion to make regular meetings on the issue at IAB.

But we did not receive the most important. We have set the task for the participants to articulate their requirements for partners to ensure the trust between them and the necessary conditions for their co-operation to achieve the end result - the creation and commercialization of innovations. It seems that the majority of the panel participants do not realize that innovation and its commercialization is the result of interaction of the system, the division of labour and cooperation of many participants involved in the innovation process. It seems that one of the important reasons preventing their interaction is the lack of trust between the participants and the associated risks. This problem is compounded by the lack of a mutually acceptable methodology, which can reduce the threshold of disbelief. It seems that an world widely adopted methodology of project management can be used, which systematically reflects the interests and responsibilities of the participants.

Commercialization is an often used term today. But getting this definition on the merits can very rarely possible. Representatives of second tier banks (STB) do their best to get away from innovation, stating that it is highly risky investments, and it is beyond the scope of their competencies and interests. Another issue is to establish cooperation between the developer and the investor there is a need to turn the idea into a business model. That often is not possible for the innovator. There is a need for a professional mediator, who owns the methods of preparing a business plan, project management skills and etc. There is a need for market research and marketing professionals. The commercialization is the final stage of the innovation process. But as the author’s experience of the present shows, as a rule, the problems of innovative development are reduced to the problem of commercialization, while others remain out of sight. This conclusion is confirmed by the research of S. Bishimbayeva (Bishimbayeva, 2012). Obviously, commercial-

ization remains the most important part of the process, but it completes the operation cycle of innovation. In order to make the process work, there is a need for attention and conditions at all stages of the innovation.

In order to provide systematic innovation, the process requires considerable resources. The problem of attracting investments that can give a strong impetus to the development of innovation business is relevant for the majority of domestic entrepreneurs. However, not everybody receives them. It is necessary to consider the conditions under which the company receives investments and determine what kind of return they will provide the business. An investor, who provides cash benefits, is interested in the future income and possible risks. To reduce the risk any business requires a business model or business project for the commercialization of innovation. *A business project can be considered as an organizational document linking business processes into a single system.* The basis for its creation is a business idea that opens new perspectives in the development of the old business or possibilities for creating a new business. A business idea can be seen as an innovative base of the investment project for the creation and development of business. Every large corporate business needs a business project, as in this case the interests of many parties are involved and they all need a document that allows them to coordinate mutual benefits of cooperation. The only question is whether the innovator is able to do it by himself. Typically, in this case, he needs professional help from other members of innovations market. For now this understanding in the domestic market is not formed yet.

In order to improve the efficiency of the SPAIID realization, its scientific and methodological support on many issues also needs to be improved. In the future, we should look at the two of them - the essence of innovation and their relationship with organizational and economic mechanism, and the search for new financial tools for engaging in business turnover of Intellectual Property (IP).

Innovation is defined by international standards as the end result of innovation activity, embodied in the form of a new or improved product, embedded in the market of a new or improved technological process used in practice or in a new approach to social services.

This definition is suggested by the experts of the Organization for Economic Cooperation and Development (OECD) in the "Oslo Manual" that contains explanations of key terms in the field of innovation (Dixon, 1998).

The innovation process is the only one of its kind process that combines science, technology, economics, business and management. It consists of the development and implementation of innovations and extends from the birth of an idea to its commercial implementation, covering the full range of relations of production, exchange and consumption. Formation of innovation depends on many factors, enabling the transformation of new knowledge to the benefit, which is in demand on the market. In aggregate, a number of factors provide a favourable environment for innovation. These include:

- the availability of the patent system capable of ensuring the protection of intellectual property;
- the level of technology that determines the ability to create and apply new knowledge and developments, their conversion into finished product, a service;

- level of entrepreneurship development, ensuring the implementation of innovations, the conversion of new knowledge into innovation, their diffusion and commercialization;

- human capacity for innovation system. Science and education to create human resource capacity of the country;

- maturity of the financial system and its ability to provide the financial resources for the innovation process at all stages of its implementation.

Later in the study, the following definitions of the terms are used.

Innovative activities - the activity of creation, development, distribution and use of innovations, i.e. a set of measures aimed at creating the conditions for the implementation of the innovation process.

Innovation process - the process of turning ideas into coherent innovation passing phases of fundamental and applied research, engineering development, marketing, production and distribution (Mutanov, 2012).

Innovative system - a set of actors and institutions, which jointly and individually contribute to the reproduction, storage, dissemination and use of knowledge to produce new products, technologies and services to meet the needs of the individual and society (Bishimbayeva, 2010).

One of the main features of a knowledge economy is the predominance of the assets of enterprises of intangible assets (primarily the

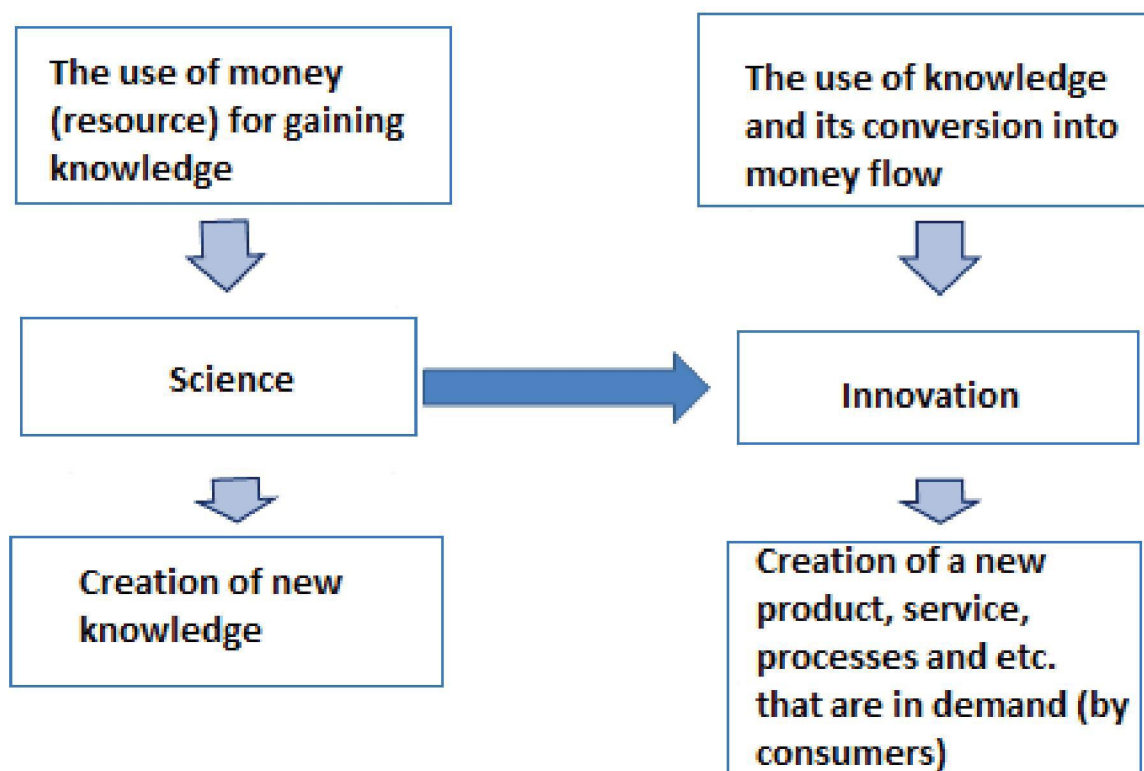
knowledge) of the material. The process of turning knowledge into tangible and other benefits reflects the essence of innovation.

To delineate between the two main stages of the innovation process - science and innovation - we use the following concise definitions, giving principle difference between these concepts in terms of commercialization.

Science is the process of turning money into knowledge.

Innovation is the process of transformation of knowledge into money. Certainly, both stages are interrelated and interdependent (Pic. 1). The subject of further research is innovation.

The main stages of innovative process and conversion of knowledge into money flow



Pic. 1. The main stages of innovative process

Source: Designed by the author.

The operating cycle of innovation can be described as follows. The process of innovation starts with acquisition new knowledge, i.e. science. The transition from science to innovation begins with the protection of rights on the knowledge that should be protected in the form of patents, copyrights, etc. At this stage, there are objects of intellectual property (OIP) and their owners. There is a need to get their valuation for the conversion of OIP into assets (i.e., to assess their potential utility of money).

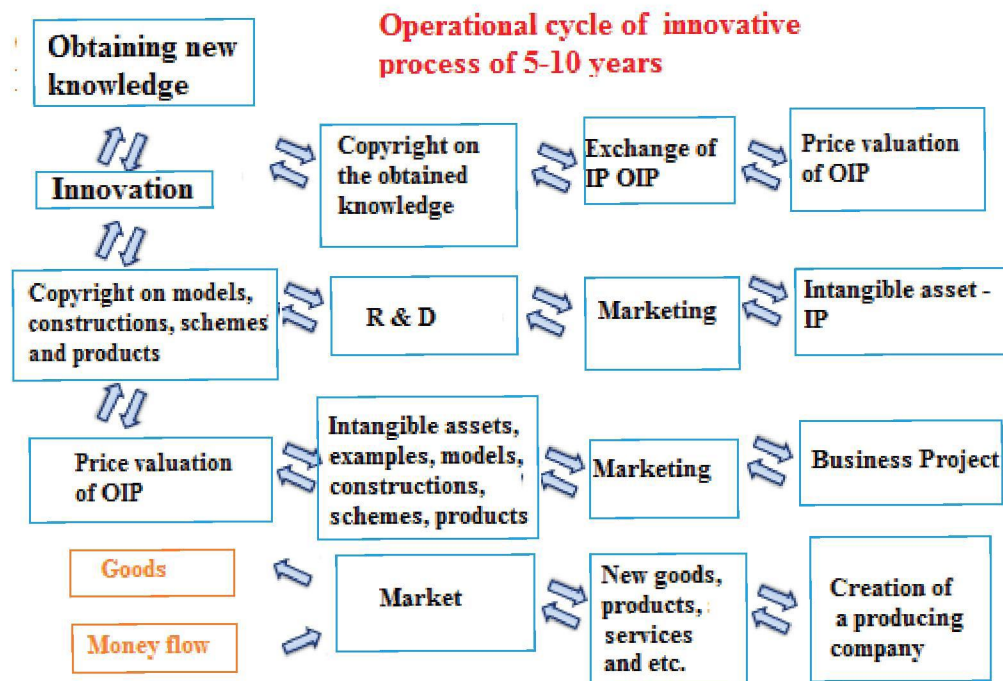
The next step of creating innovation includes market research (and in many ways this is logistics study) related to the search and the formation of the pool and the OIP with a common goal to create an innovative product demanded by the market. Here traditional marketing does not work: we need marketers who have knowledge of the intellectual property market, research and development (R & D), etc.

Next, there is a call for an industrial R & D in the creation of the final intellectual product, first on paper (models, designs, diagrams and software), and then in the form of pilot samples. After taking an experimental sample to a

consumer-ready sample, there is a necessity of organizing the mass production of an innovative product, i.e. development and implementation of the corresponding business project and managing time to market the product.

Implementation of a business project should be accompanied by the relevant market research and organizational intelligence management at all stages. There is a little number of such professionals in the Republic of Kazakhstan, which complicates the problem at all stages of the innovation process.

Production and sale of innovative products (goods) on the market is truly the final stage of commercialization of intellectual property (i.e., the conversion of intangible assets (OIP) into money). Prior to implementation of innovative product on the market, all participants of the innovation process experienced investment costs, which can be covered only by selling an innovative product in the market. Thus, the actual conversion of knowledge into capital (money) is when they become tangible and intangible goods that are in market demand. The process is demonstrated on Pic. 2.



Pic. 2. Operational cycle of commercialization of knowledge

Source: Designed by the author.

Business process of transformation knowledge into goods and its conversion into capital can be presented in the form of two opposing flows. The first (direct flow) describes the transformation of the property owners of the OIP, investments of venture capitalists, and other sources of funding into the new product (good). This is done by converting knowledge into intangible and tangible assets that create new benefit for consumers in the market. Counter (reverse) flow arises from the sale of the newly created goods in the market. This stream provides conversion (capitalization) of knowledge capital and grants a return on investment for investors, owners of Intellectual property and other participants in the process. They get a return on invested capital income defined by the market, which can be used for developing new innovations and for consumption.

Methodology

Let us consider the methodology of financing innovative projects with the use of mortgage and asset securitization.

Securitization - accounts receivable financing requirements through the issuance of securities backed by dedicated assets.

It is important to ensure legally sound agreements. Small banks attract investors to combine their loans into pools and issue securities backed by them (Rose, 1995). The method of forming a business structure is offered to address the problems of financing of innovative project and commercialization of intellectual property in the investment environment through the use of the mortgage and securitization.

The technique of constructing management of funding innovative projects and commercialization of intellectual property in the investment environment, is represented by a number of stages and circuits. There was a request for the invention based on this scheme, and two patents (in Kazakhstan and Russia) are obtained. (See: Patent System for managing credit and financial operations of innovative project in investment environment. Patent Number: RU2459257-C1. Derwent Thomson Reuters).

The proposed methodology includes the following main stages.

1). The originating company wishing to take advantage of the securitization, forms pools of INSO as innovative projects and works with the owners of intellectual property. It also generates intangible assets that will continue to provide cash flow, accumulates them, then combines assets similar by their structure into one big pool and sends it to the target company (SPV), specially created for this project.

2). Next, the main character and the holder of the assets pool is the target company. After receiving the SPV assets it issues its own securities backed by the upcoming cash flow from the assets received. Usually this is a different type of debt - bonds or bills. *In our proposed form this is an intellectual property and other intangible assets presented in the form of innovative projects that need to increase their liquidity.*

3). The next step (probably the most important) is the stage of securitization: receiving a credit rating for the new securities.

4). After obtaining credit rating, SPV issues securities and place them on the stock market, where investors buy them.

5). At the final stage the profits received from the sale of its shares are passed from the target company to the creator, thus paying for the assets received. Generally a company-maker subcontracts the target company to manage those same assets, which happens parallel to the transfer of assets.

So, figure 1 represents the proposed scheme for commercialization of intellectual property. There is a need to create corporations to finance innovative project. Creation of corporations is to be governed by the contract. The contract defines the activities and responsibilities of the sides in the process of implementation of the innovative project as well as the procedure for storage and management of stock assets.

The most important objectives of a corporation are the legal regulation of relations between the participants of the process of securitization, and effective attraction of additional investment and expansion of current investments.

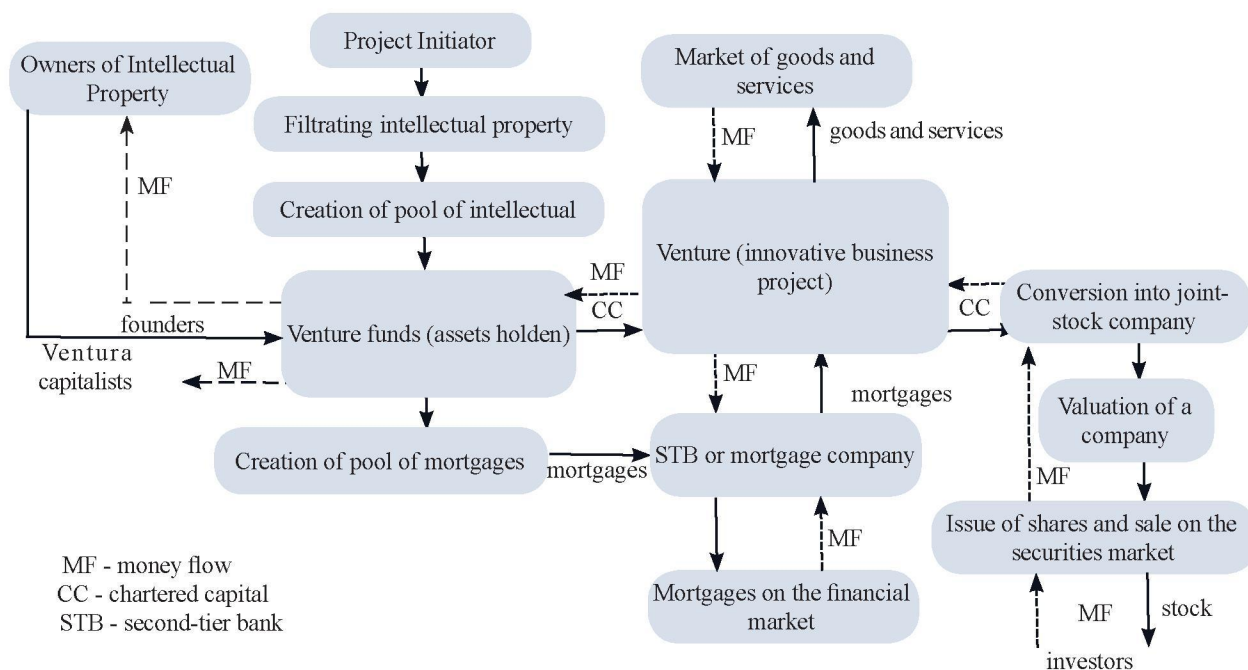


Figure 1. How it works. Financing innovative process covered by the mortgage and asset securitization.

Source: Designed by the author

Justification of opportunities for implementation of the offered scheme.

According to Kazakhstan's experts, the unique combination of conditions for development of such structural forms of financing, as securitization, a mortgage and a project financing within the country (Dzhankabayev, 2004) has been created in Kazakhstan. It gives a number of advantages to economy of Kazakhstan, especially for its corporate and financial sectors: ensuring the maximum protection for investors; decreasing risks and debt cost; creation of conditions for off-balance financing and improvement of structure of the capital; increase of liquidity of the seller of assets (company-initiator); creation of a platform for release of new financial instruments by securitization and a project financing.

The way of expansion of intellectual property by the use of a mortgage and the securitization mechanism allows to resolve issues of commercialization, converting and use of intellectual property for financing of innovative projects.

The modern legislation of RK allows to use intellectual property as pledge. According to section 5 of Special part of the Civil Code in Kazakhstan called "Intellectual property right" the owner of intellectual property is allocated with the property and non-property rights. Intellectual property rights have the cost which is fixed, given out by the organization having the state license for carrying out the estimates. Property rights for intellectual properties can be transferred to the another person on the basis of the franchising contract according to chapter 45 of the Civil code of RK, and also the Law RK "About the Complex Enterprise License (Franchising)" issued on June 24, 2002. On the basis of paragraph 3 of chapter 18 of the General part and articles 59, 117 of the Civil code the cost of intellectual property can be used as pledge and investment to share capital of the enterprise, also with any other financial operations allowed by Kazakhstan's legislation.

The facts mentioned above prove the existence of a legal basis for usage of intellectual property as pledge in RK. Novelty of the offered scheme of securitization is involvement of second level banks to the scheme. In this case the initiator (venture fund or trust company) uses the pools of innovative projects (intellectual property) created by it as mortgages and obtains a mortgage loan on the security of intangible assets.

Conclusion

The invention promotes application of information technologies to create control system for credit and financial operations. It allows to involve intellectual property into business, using mortgage lending and securitization, provides distribution of risks between participants of innovative process and the most effective management to commercialize intellectual property; also, it provides transformation of intellectual property into liquid assets and source of financing of innovative projects. The offered technique can be used for formation and management of large

complex innovative projects which are being realized by venture funds, sole innovators and the companies. The scheme promotes integration of the financial and intellectual capital and expands the chain of added value to create innovation for the end user and obtaining commercial result. The offered technique can be mostly effectively applied while managing newly opened or already established innovative clusters.

To implement the proposed scheme of commercialization of intellectual property (Fig.1) and the financing of innovative project, there is a need for creation of corporations. Creation of corporations is to be governed by the contract. The contract defines the activities and attitudes of the parties in the process of implementation of the innovative project; the procedure for storage and management of stock assets.

The most important objectives of a corporation are the legal regulation of relations between the participants of the process of securitization, and provision of the effective attraction of additional investment and expansion available to securities investors.

SOURCES:

1. Bishimbayeva S.K. The development of an effective system of commercialization of technologies in Kazakhstan // Intellectual Property in Kazakhstan - № 4 - 2012. - Pp. 22-32.
2. Bishimbayeva S.K. Model of successful commercialisation of IP objects in economically developed countries. // Innovative Congress Proceedings of thesis and reports. – Karaganda, “ARKO” LLP, 2010
3. Dixon P.R. Marketing Management. Translated from English. – M.: «Binom» Publisher, 1998. – Pp. 195, 241.
4. Innovation infrastructure (review). // Biznes I Vlast - 2007. -№ 9. - pp. 5.
5. Kenzheguzin M.B., Dnishev F.M., Alzhanova F.G. Science and innovation in a market economy: world experience and Kazakhstan. - Almaty, IE RK 2005. - P. 256.
6. Kosolapov G.V. Mortgage business relationship. // Entrepreneur and law. - 2004. - № 7.- P. 12.
7. Kosolapov G.V. Intellectual property and mortgage business relationship. // Proc. Materials of the Republican Scientific and Practical Conference. / Under the scientific supervision of G.V. Kosolapov - Builders Association of Kazakhstan, KazGASA. - Almaty, 2004. - P. 58.