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### Role of intellectual property in open innovation models

Abstract. Innovative development of economy is considered today by many countries as one of the main ways of economic growth, ensuring competitiveness. The most discussed questions of innovations in the Republic of Kazakhstan are: institutes, finance, regulation, shots, technologies, intellectual property rights. Such rather new aspect of research as open innovation can become the integral element in the mechanism of realization of Strategy of industrial and innovative development of Kazakhstan. In spite of the fact that studying of questions of innovative development was widely adopted at us in the country, the problem of open innovations is the new direction which has appeared recently in foreign literature. In this article the essence of new approach in management of innovative activity, namely application of model of open innovations for maximizing profit of the company reveals. Also comparison of the principles of traditional innovative management with the principles of management on the basis of open innovations is given that in turn leads to an explanation of trends of management on the basis of model of open innovations.

**Key words:** innovational activity, innovational management, open innovation, consumer's innovation, total innovation, human capital, spin-offs, venture systems, intellectual property, insourcing, outsourcing, research trends, business-models, business-purposes, start-up companies.

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#### Роль интеллектуальной собственности в открытых инновационных моделях

Инновационное развитие экономики рассматривается сегодня многими странами как один из основных путей экономического роста, обеспечения конкурентоспособности. Наиболее обсуждаемыми вопросами инноваций в Республике Казахстан являются: институты, финансы, регулирование, кадры, технологии, права интеллектуальной собственности. Такой сравнительно новый аспект исследования, как открытые инновации, может стать неотъемлемым элементом в механизме реализации Стратегии индустриально-инновационного развития Казахстана. Несмотря на то, что изучение вопросов инновационного развития получило широкое распространение у нас в стране, проблема открытых инноваций является новым направлением, появившимся недавно в зарубежной литературе. В данной статье раскрывается сущность нового подхода в управлении инновационной деятельностью, а именно применение модели открытых инноваций в целях максимизации прибыли компании. Также приводится сравнение принципов традиционного инновационного менеджмента с принципами управления на основе открытых инноваций, что в свою очередь приводит к разъяснению трендов управления на основе модели открытых инноваций.

**Ключевые слова:** инновационная деятельность, инновационный менеджмент, закрытые инновации, открытые инновации, пользовательская инновация, совокупная инновация, торговля ноу-хау, массовая инновация и распределенные инновации, человеческий капитал, ноу-хау, спин-оффы, венчурные схемы, интеллектуальная собственность, инсорсинг, аутсорсинг, исследовательские тренды, инновационная активность, бизнес-модели, бизнес-цели, старт-ап компании.

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#### Ашық инновациялар модельдеріндегі интеллектуалды меншіктің ролі

Қазіргі таңда экономиканың инновациялық дамуы көптеген елдерде экономикалық өсудің және бәсекеге қабілеттілікті қамтамасыз етудің негізгі жолдарының бірі ретінде қарастырылады. Қазақстан Республикасындағы инновациялар мәселеріндегі едәуір жиі талқыға түсетін тақырыптар: институттар, қаржы, реттеу, кадрлар, технологиялар, интеллектуалдық меншік құқықтары жөнінде. Зерттеудің салыстырмалы жаңа аспектісі болып табылатын ашық инновацияларды дамыту Қазақстанның индустриалды-инновациялық даму Стратегиясын жүзеге асыру механизміндегі ажырамас элементіне айналуы мүмкін. Ашық инновациялар тақырыбы шетелдік

әдебиеттерде кеңінен қарастырылып жүрген мәселе болып табылады. Мақалада ашық инновациялардың мәні, инновациялық басқарудағы пайдаланудың маңыздылығы, компанияның пайдасын арттырудағы ролі, негізгі қағидалары қарастырылған.

**Түйін сөздер:** инновациялық қызмет, инновациялық менеджмент, жабық инновациялар, ашық инновациялар, пайдаланушы инновациясы, жиынтық инновация, ноу-хау саудасы, жалпы инновация, үлестірілген инновациялар, адами капитал, ноу-хау, спин-оффтар, венчурлік схемалар, интеллектуалды меншік, инсорсинг, аутсорсинг, зерттеу трендтері, инновациялық белсенділік, бизнес-модельдер, бизнес-мақсаттар, старт-ап компаниялар.

Now «the economy of knowledge» at which the possession and competent management of using of intellectual property defines competitiveness of subjects of economic system comes to change to an industrial phase of development of innovative economy. In the conditions of informatization of society and intensive formation of the market relations of the private property, created as a result of intellectual activity, knowledge turn into the main subject of innovative activity and the main component of productive forces. Throughout the last two centuries the intellectual property became one of the most important factors of a social production. With development of the Internet, electronic commerce, the international cooperation and barter in the conditions of new technological realities in the increasing number of the countries the intellectual property «forms» about 1/6 parts of their budgets, and this share continues to accrue promptly [1].

Also in the modern world the increasing significance is attached to economy of knowledge, and respectively and to objects of the intellectual property (IP). However, intangible assets, namely ideas, technologies, administrative decisions, objects of intellectual property (an exclusive right to results of intellectual activity), business reputation of the organization have no adequate forms of their cost, economic and social criteria and legal standards.

There is a need to enter concept of intellectual property. Intellectual property – the collective concept including the rights with which the relations developing in the course of creation of products of intellectual work, an exchange by them and their uses are regulated. Speaking in other words, the intellectual property represents exclusive rights to results of intellectual and creative activity in any area [2].

The term «intellectual property» was included into a scientific turn and the legislation of the Republic of Kazakhstan in the early nineties. Protection of objects of intellectual property - the

inventions, useful models, industrial samples and trademarks - new area of state regulation of independent Kazakhstan.

Intellectual property, according to article 125 of Civil Code of the Republic of Kazakhstan, the exclusive right of the citizen or the legal entity to results of intellectual creative activity and the means of an individualization of the legal entity equated to them, production of the physical or legal entity performed by them of works or services (a trade name, the trademark, a service mark, etc.) admits. Use of results of intellectual creative activity and means of an individualization which can be object of exclusive rights (intellectual property), can be carried out by the third parties only with the consent of the owner [3].

Objects of intellectual property are copyright, the adjacent rights, the right to the trademark, a service mark, the right of use of a place of goods origin, patent law.

The concept «intellectual property» has three values:

- first, it is set of human relations concerning the non-material benefits being results of intellectual activity or derivative of them;
- secondly, this collective concept relating to results of intellectual activity of the person (objects of intellectual property);
- thirdly, in a broad sense (which the legislator in the Civil code of RK meant) are objects and the rights to them [3].

The intellectual property – in broad understanding the term means the temporary exclusive right fixed by the law, and also the personal non-property rights of authors to result of intellectual activity or means of an individualization. The legislation which defines the rights to intellectual property, establishes monopoly of authors for certain forms of use of results of the intellectual, creative activity which, thus, can be used by other persons only with the permission of the first.

The concept scope «intellectual property isn't» limited to only exclusive rights, and extends on

all set of property rights on results of intellectual activity and means of an individualization. Narrower concept designating results of intellectual activity, the term «objects of intellectual property» which unites protective results of intellectual activity and means an individualization.

The founder of a paradigm of open innovations professor G. Chesbrough notes that «the concept «intellectual property» belongs to set of ideas, which are: a) new; b) useful; c) realized in practice in a material form; d) cope according to current laws» [4].

In law the phrase «intellectual property» is the uniform term, words entering into it aren't subject to interpretation separately. In particular, «intellectual property» is an independent legal regime (more precisely even – group of modes), instead of represents, contrary to a popular belief, a special case of the property right. «About copyright and the adjacent rights» the Civil Code of RK (in the section the intellectual property) intellectual property «admits the Law of the Republic of Kazakhstan an exclusive right of the citizen or the legal entity to results of intellectual activity and the means of an individualization of the legal entity equated to them, production of the physical or legal entity performed by them of works or services (a trade name, the trademark, a service mark, etc. [5].

IP plays a significant role in development of modern innovative economy. After all innovations are the main way of an advancing of competitors and receiving arrived in any branch of economy and production. In turn, protection of intellectual property is the key moment of innovative activity. And society faces a problem of protection of IS in model of open innovations.

It is known that the institute of intellectual property is rather new because quite recently it seemed that this type of property interests only small group of engineers and scientists, and now result of creative activity of the person and means of an individualization gained properties of property, the understanding of was respectively claimed that the intellectual property, just as any material resource has the economic value and cost.

Therefore the modern level of development of society demands from the state not only recognition and protection of the rights of authors on products of their intellectual production, but also providing conditions for occupation by the intellectual

creative activity directed on creation of new objects of intellectual property.

We believe necessary to stop attention to stories of formation of system of government bodies on protection of intellectual property which in independent Kazakhstan began in 1992 with creation of National patent department at the Cabinet of the Republic of Kazakhstan («Kazpatent»), and also Committee on copyright at the Cabinet of the Republic of Kazakhstan.

Due to the piracy development on all objects of intellectual property the body of the special competence, coordinating activity of all interested departments – Committee on intellectual property rights of the Ministry of Justice of the Republic of Kazakhstan which is now the chief representative of the state pursuing a state policy in the field of protection of intellectual property was created. In the same direction links of this establishment, such as RGKP «National Institute of Intellectual Property» work.

Legislative function of the state allows to provide development of standard and legal base. For last years in the republic the full-fledged legal base in the sphere of protection of intellectual property is created, the Civil code of RK, the Patent law, the law «About Copyright and the Adjacent Rights», the law «About Trademarks, Service Marks and Names of Places of Goods Origin», the law «About Topology of Integrated Chips», the law «About Protection of Selection Achievements» works.

At the same time in practice certain problems of right application take place. Therefore carrying out right explanatory work on the legislation regulating questions of intellectual property, by means of the organization of seminars, round tables, etc., certainly, promotes not only to increase of legal literacy, but also forms the intolerant relation to violation of intellectual property rights in society.

Certainly, the state has to carry out regulating, coordinating, legislative functions in the field of protection of intellectual property. It should be noted that with entry of Kazakhstan into world market space the increasing value is gained by a problem of protection of objects of intellectual property.

In this regard, as implementation of the Concept of legal policy accepted by Kazakhstan, updating of the national legislation took place. Are brought a number of changes in the Constitution, the criminal, criminal procedure, civil and civil and procedural

legislation, new Budgetary and Tax codes, etc. are adopted.

It is known that the main direction of the Concept is current legislation improvement, including civil which part, certainly, is the intellectual property right.

Considering that extent of intellectual achievements in the modern world directly influences efficiency of all spheres of activity of mankind, the country, seeking to develop the industry and trade, science and culture, to provide mutually beneficial cooperation with other states, have the developed legislation, urged to stimulate innovations.

According to RK legislation objects of intellectual property right are works of science, literature and art, opening, the invention, useful models, industrial samples, improvement suggestions, signs for goods and services, results of research works and other results of intellectual work.

Depending on features of objects of intellectual property right it is possible to allocate four of its versions:

- right to opening;
- copyright and adjacent rights;
- industrial property (the right to the invention, useful model, an industrial sample which call also patent law);
- other results of creative activity used in production (the right to the trademark, a service mark, on an improvement suggestion, a trade name, protection of selection achievements, topology of integrated chips, interests of the owner of «know-how») [6].

The concept «intellectual property right» can be considered in objective and subjective meanings. In objective sense as the subsector of civil law including rules of law, the regulating and protecting rights of citizens and legal entities on results of intellectual activity. In subjective sense of the word are exclusive rights to objects of intellectual property which include exclusive competences to carry out most, to resolve and forbid other persons their use by various ways, except for the cases of free use provided by the law.

Legal protection of intellectual property in Kazakhstan is carried out by application of standards of the Civil Code of RK (the section of intellectual property).

It should be noted that in Kazakhstan among all CIS countries not only the full-fledged legal base

in the sphere of protection of intellectual property is created, but also actions of all law enforcement and government bodies in fight against illegal use of objects of intellectual property are coordinated. Not to seem unfounded, I want to notice that this fact was noted at the twelfth meeting of the Joint working commission of the participating states of the Cooperation agreement on suppression of offenses in the field of the intellectual property, taken place in Executive committee CIS (Minsk) on March 1-2, 2006 [7], and the decision to make use of positive experiment of the Republic of Kazakhstan on interaction of bodies of prosecutor's office, financial police, internal affairs, customs and tax authorities on carrying out the joint actions directed on identification and suppression of offenses in the sphere of copyright and the adjacent rights is made.

Now the majority of the countries which are carrying out legal protection of objects of intellectual property, are guided by the term approved by the World Intellectual Property Organization (WIPO) from July 14, 1967 [8]. In particular, in it it is specified that the intellectual property includes the rights relating to: to literary, art and scientific works, performing activity of actors, a sound recording, inventions in all areas of human activity, to discoveries, industrial samples, trademarks, service marks, trade names and commercial designations, protection against unfair competition, and also all other rights relating to intellectual property in production, scientific, literary and art areas.

All normative legal acts concerning results of intellectual creative activity, make separate subsector of the civil legislation - the legislation on intellectual property. This subsector, includes about 70 regulations of various level according to electronic legal base. In system of institutes and sections of civil law this subsector it is accepted to call «intellectual property right». Over time the public relations in the sphere of protection of intellectual property rights developed step by step and supplemented with new laws, normative legal acts.

Thus, the Kazakhstan legislation in the sphere of intellectual property allows to provide the right to its protection at appropriate level. Nevertheless, work in this direction will proceed as there are new objects of the intellectual property, new ways of their use. Legislation improvement in this sphere - infinite process, as well as in other spheres which will proceed. Protection of intellectual property

becomes one of the important factors defining position of the country in the world. Reliable level of this protection stimulates scientific researches, cultural development, literatures and arts, practical use of achievements of science and technology, and also the international exchange with them.

Due to the transition to open innovations undergo changes approaches of the companies to management of intellectual property. Important and that the phenomenon of intellectual property tends to representing unique knowledge as something static as stiffened, to some extent external object in relation to the company whom it is possible to treat almost as with «thing». However in the conditions of the today's competition some «turbulence», dynamic functioning, hashing of the most various knowledge which can be unique is important, and can and isn't present. For this reason the accent in management is substantially displaced today from the «stiffened» knowledge, standing behind this or that object of intellectual property, on all dynamically proceeding process of knowledge of the organization. In this regard, the intellectual property represents the next source of increase in profit of the company.

In the world abounding with knowledge, the companies have to be active buyers and active sellers of intellectual property. However while only few companies fully get commercial advantage from the intellectual property when decide to use it not only in the business. Besides, each company can win and from use of someone else's intellectual property in the business instead of independently from the very beginning being engaged in all inventions necessary to it. Certainly, such option demands absolutely other approach to management of intellectual property: instead of operating so that not to allow competitors to the intellectual property, it is necessary to operate it so that to get profit of that others use it. Experience of Millennium Pharmaceuticals, IBM and Intel demonstrates what excellent opportunities appear at the correct management of intellectual property [9].

Due to the transition to «open» innovations undergo changes approaches of the companies to management of intellectual property. For example, the role of legal departments of the organizations in adoption of license decisions was traditionally powerful. It is clear, that at new tendencies the accent in adoption of license decisions is considerably displaced in favor of research and development

divisions. After all now all technological areas with which the company deals, becomes a subject considered within uniform technological strategy of the company. This strategy, in particular, provides that we have to not only sell actively the knowledge, but also get the external.

Important and that the phenomenon of intellectual property tends to representing unique knowledge as something static as stiffened, to some extent external object in relation to the company whom it is possible to treat almost as with «thing». However in the conditions of the today's competition some «turbulence», dynamic functioning, hashing of the most various knowledge which can be unique is important, and cannot be those. For this reason the accent in management is substantially displaced today from the «stiffened» knowledge, standing behind this or that object of intellectual property, on all dynamically proceeding process of knowledge of the organization. Let's note that functioning of process of knowledge of the organization makes a subject of new administrative discipline «management of knowledge». Due to the phenomenon of «open» innovations many other aspects of management of intellectual property in the company change also.

Many heads in the analysis of management of intellectual property think of this direction of business only as about opportunity to receive value due to technology or set of technologies. Though the intellectual property, of course, can be considered from this point of view, it only part of its role and the importance. The firms developing new technologies and new products are engaged in intellectual property first of all for achievement of the protective purposes to guarantee opportunity to put new technologies into practice in the business without fear that someone in it will prevent them. Existence of patents becomes some kind of insurance policy against undesirable lawsuits and works as powerful advantage in situations if such lawsuit after all arises.

However in the world of open innovations even such approach is insufficient. At its application intellectual property it is impossible to use to take from it the value until by means of technology or technologies value won't be created. The intellectual property can be operated so that to create value, instead of it is simple to receive part of this value. It is especially possible when management of it is joined with business model of the company

and with its internal process of innovations. For example, the companies could choose version of the publication of information on any intellectual property or in general distribute it free of charge to create standards, or to allocate part of the property in general use, that is to receive some kind of safe harbor where it is possible to be engaged quietly in development as they are carried out on the basis of the general knowledge, and thanks to this development quicker and more dynamically to achieve useful improvements which, in turn, can increase scales of their business.

New approach to management of intellectual property is best of all visible when studying experience of the companies which confirmed force of the patents during judicial proceedings. As the era of open innovations began in the USA, we proceed from experience of this country as the most developed in the direction of open innovations. Situations with the Texas Instruments (TI), Polaroid and IBM [10] companies are especially interesting in this regard.

The TI company engaged in development of semiconductors, apply new receptions to receiving profit on licensing of intellectual property. This company in 1959 submitted an application for issue of the patent in Patent department of the USA, and then and in Patent department of Japan. But only 1989 I could take out the patent when business of semiconductors became global branch. Just taken out patent granted TI the right to exclude other participants from occupation by many aspects of design of semiconductors if they didn't pay TI and didn't obtain from it the license. Though TI conducted cross licensing with many companies, exchanging with them intellectual property, in branch there were many other companies, especially in Japan and Korea which didn't sign with TI of the agreement on cross licensing. Thereby, TI started having legal proceedings with many companies and within the next several years received some hundred million dollars from these patents. In separate years about 50% of all the corporate net income of TI fell on the royalties generally connected with patents. From this followed that TI was not only the manufacturer, but also the owner of the valuable intellectual property providing receipt of a considerable share of profit of the company. To example of such business then other companies, as Polaroid followed also, to IBM, ARM, Qualcomm, Rambus, etc. [10]. The most part of profit of these companies began to fall on

transactions with intellectual property, instead of on products. Experience of the USA companies once again confirm economic feasibility and advantage of such management with intellectual property in the conditions of development of open innovations. This example, undoubtedly, is very important for Kazakhstan concerning wide use of model of open innovations in the country companies.

In the directions demanding further development in Kazakhstan, such as production of cars, biotechnology, pharmaceuticals, health care services, production of computers, the software, communications, the banking and insurance services, the packed-up consumer goods, communication systems and even the military weapon, is expedient to use models of open innovations.

In this regard, for our country receiving huge prospects and opportunities of further development of intellectual property on the basis of model of open innovations, is possible only at effective cooperation of authorities and universities. More and more fundamental opening becomes at universities. To carry out transfer of these opening in innovative products, achieving their obligatory licensing (for protection of intellectual property) and commercializations by means of suitable business models, the industry it is necessary to interact more closely with universities.

That knowledge still was much and that the companies effectively used not only own, but also external knowledge, institutes of the power need to promote an exchange of intellectual property. One of versions of the decisions, allowing to make it, – processes in the form of patent protection – transparent, clear and predictable. Patent remunerations, as well as borders of protection of intellectual property, have to be registered very accurately.

One more role of authorities – to pass the decision on an occasion of demands competing with each other on possession intellectual property. The power has to solve effectively the disputes, arising concerning similar violations, to reduce the levels of harm which are inevitably arising at such violations, and to use the corresponding receptions of restoration of the rights. The task here has to be formulated so: to eliminate all elements of chance and biases that the companies which are engaged in innovations could carry out reliably the transactions connected with the ideas from judicial review. Discrepancy and complexity which accompany

present processes, actually act as some kind of tax on innovative processes because of which the small and beginning companies appear in much more severe conditions, than other participants. Because of this «tax» the number of experiments with new combinations of the knowledge which is carried out in our society decreases.

One more, even more difficult question consists in, whether authorities should distribute the rights to the intellectual property received by results of researches which are financed by the power and if yes, as it to do that. In the USA, for example, Bayh-Dole's (Bayh-Dole Act) law of 1980 allowed universities which conduct researches on money of authorities, to submit an application for patents. These patents belong to university and therefore it (university) can grant on them licenses [11]. There are the facts, testifying that universities can get considerable profit on these experiments, especially in sector of the sciences which have been directly connected with human life.

Summing up the aforesaid, it would be desirable to note that is possible, in due time, when knowledge wasn't widespread in society scales, and the companies had to carry out the most part of the works connected with opening, to make something useful to others, carrying out the confidential and closed researches was the normal phenomenon in business. However today it isn't so obligatory and even it is inexpedient to lock important knowledge and ideas in the mines where they will be used, only if in them there is a need at own business of the company. The world of opportunities expects that the company will be able skillfully to use ideas from environment and at the expense of it to advance own business, and also will be able to use own ideas, without being limited to borders of the present types of business. If such society invests in knowledge, abilities, people and institutes and are supported by an exchange of this knowledge, it will be able to provide the good future for all citizens.

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