

## Intellectual Property in the Shift Towards Open Innovation

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*In recent years due to the increased interest in the practice of open innovation as a promising model of innovation process management numerous studies have been conducted devoted to the discussion of various aspects of the open innovation implementation. The growing trend towards open innovation adoption causes the need for a more open approach to the management of the intellectual property (IP). However, despite the fact that the study of organizational determinants in the open innovation collaborative projects is an area of increased interest for both academics and practitioners of innovation management a modern understanding of these aspects at the enterprise level remains incomplete and needs further research. The IP management involves the implementation of the key managerial functions, such as developing a strategy and planning measures for the protection and commercialization of intellectual property, organizing activities to create conditions for their implementation, creating a supportive innovation culture and encouraging innovative climate, audit and monitoring the implementation of the IP management strategy. An effective IP management strategy should include an analysis of the internal factors of the organization, as well as taking into account market factors for the formation of an open innovation model.*

**Keywords:** *intellectual property (IP), open innovation, IP strategy, IP management*

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The acceleration of scientific and technological progress, the active dissemination of the latest exponential technologies such as biotechnology, three-dimensional printing, autonomous electric vehicles, artificial intelligence etc., the development of information and communication technologies, growing trend towards globalization of scientific research and international trade cause the spread and the need to implement an open innovation model in the practice of innovation processes for more and more industries and companies. Foreign studies devoted to the problems of managerial aspects of the open innovation implementation empirically prove that cooperation with external partners provides both direct and indirect benefits for the company. In this regard, the results of the research by K. Laursen and A. Salter (2006) confirm the relationship between the intensity of the use of external sources of knowledge and the results of the company's innovation performance: according to the research findings the effectiveness of the innovation process correlates positively with the company's ability to absorb knowledge. In the context of business sectors, the most effective examples of the adoption of open innovation practices can be currently observed in the software development, where open information sources and collaborative innovation platforms have become an essential part of the business model, especially in the digital age.

The implementation of the open innovation model stipulates the need for a more open approach to the intellectual property management (IP), more active use of external IP objects through the purchase of licenses, as well as access to own IP objects through selling, for example, patents that are not used by the company. Given the fact that in modern organizations in the process of creating and implementing innovations both inbound and outbound information flows are significantly increasing, adoption of open innovation model which assumes external partners to be involved in the innovation process can lead to the loss of control over a company's intellectual assets. From this perspective, the timely regulation of the terms of cooperation requires effective IP management during all the stages of the innovation process.

In this regard, it is necessary to emphasize the fundamental differences between the closed and open model of the innovation process. Thus, the closed model implies the implementation of the innovation process solely by its own forces inside the company through consistent fundamental and applied research, technological development, production and launching new products and services in the market. The open model envisages active interactions with other companies, laboratories, research institutions, universities, and other stakeholders in order to spread exchange and access to the new information and external technologies. In line with these arguments, it can be concluded that an essential prerequisite for the implementation of an open innovation model is the targeted and professional implementation of intellectual property management. This need is conditioned, inter alia, by the increasing complexity of scientific research, their frequent implementation by multinational teams, which leads to the emergence of numerous intellectual property objects with the need to reconcile the totality of rights to them.

## **Theoretical Aspects of the Open Innovation Model**

Taking into account the expanding network cooperation and the growing role of the knowledge and technology transfer in the modern business environment, the principles of interactions between the actors involved in the innovation system have been completely changing. These factors determine the particular relevance of interactive innovation process models which, unlike the traditional linear models, foresee the expansion of inter-firm partnership and the establishment of sustainable relationships between the various elements of the innovation ecosystem. Within the interactive models' conceptual framework, the network interaction of the innovation process participants that promotes the attraction of external information sources is recognized as one of the key prerequisites for the effective and efficient innovation performance. The world-wide experience of innovative high-technology companies has shown that the use of such forms of cooperation for the implementation of collaborative innovation projects can not only ensure the exchange of the necessary resources, experience, skills and functional competencies, but also allow innovative companies to diversify their knowledge sources and gain access to new information, as well as share technical and market risks of an innovation activity.

One of the most relevant interactive models of an innovation process is the open innovation practice, according to which the development of the innovation capabilities of a company occurs through the intensification of its interactions with the other actors of the innovation ecosystem. An integrated definition of the open innovation concept which has been widely adopted by researchers dealing with this area of innovation management was proposed by Henry Chesbrough and formulated as "the practice of using targeted input and output flows of knowledge to accelerate internal innovation and expand the markets for their external use". While the traditional "closed" model of the innovation process is based solely on ideas, knowledge, competencies and experience gained within the company, the open innovation practice suggests that the organizational innovation capability may also include external competencies and assets located outside the firm.

It needs to be pointed out that the open approach to the innovation process meets the current conditions of the business environment because under such a model innovation-oriented companies are able to use external information, knowledge and technologies to stimulate innovation performance, accelerate the growth of business and gain competitive advantages in the market. In addition, firms can open their own innovation processes, making their internal inventions useful for other companies which are involved in innovation cooperation. These benefits can be used if business entities are able to create a resilient ecosystem of open innovation that can be defined as a network of partners, in particular customers, suppliers, competitors and other stakeholders who cooperate with the company and contribute to improvement of innovation performance.

For the modern companies the adoption of open innovation tools in order to strengthen their innovation capabilities has become nowadays a matter of a strategic choice. Accordingly, from the practical point of view, successful implementation of an open innovation model should be based on a detailed study and systematization of existing innovation processes, as well as strategic managerial decisions regarding what should be invented within the company, what should be integrated from the outside and what should be developed in cooperation with the external partners of the innovation network.

Depending on the innovative openness degree of the organization and the intensity of its interactions with external partners with regard to collaborative innovation projects, four main types of innovation strategies can be broadly distinguished based on a literature review: closed innovators, semi-open innovators, open innovators and external innovators.

Comparing these types of open innovation strategies it can be noted that the strategic behavior of “open” and “external” innovators is to some extent similar since both types of strategies assume that the key source of the organizational innovation capability is outside its internal environment. However, there are a number of differences which relate primarily to the problematic aspects of intellectual property management and the specifics of building inter-organizational networks.

It should be noted that despite the expected positive effects of innovation partnerships and networks, many businesses still hesitate to make a decision about the adoption of open innovation tools. In recent studies devoted to the barriers, risks and difficulties of open innovation implementation various internal factors and challenges affecting the successful adoption of this model are distinguished. Thus, at the organizational level the shift from the “closed” model of the innovation process to the open innovation practice may be accompanied by a number of problems, for example, the difficulties related to the search of the relevant partners and the organization of inter-company interactions, the inability to establish an effective network communication system between the company and its market environment, the potential risk of loss of available knowledge, innovative ideas and key functional competencies, significant costs of coordination collaborative projects, as well as the risk of losing control over intellectual property.

### **Forming of an Intellectual Property Management in Open Innovation Model**

The management of IP in an organization which is striving to implement an open innovation model allows providing on a systematic basis identification, audit, registration, commercialization and protection of intellectual property objects. This also allows preventing copying and counterfeiting of company products, optimizing investment in

research and development, marketing costs and product promotion. The development of an IP management strategy leads to a strengthening of the company's trademarks and its corporate identity, turning them into competitive brands, which contributes to enhancing the effectiveness by entering new markets, so the results of negotiations on licensing conditions or franchising agreements.

The shift towards open innovation fundamentally changes the approaches to intellectual property management. Thus, patenting in the closed model of innovation management was used by companies mainly to block the activities of competitors in the market niche and to ensure its own monopoly position in the market. That is, first and foremost, the intellectual property right was used largely in terms of prohibiting others from using their results of scientific and technical research and not as potentially powerful, in terms of alternative ways of commercialization, intellectual property. But of course, companies received guarantees of safe use of their intellectual property in the market in terms of the risks of assigning their intellectual property to partners and competitors. Thus, patent protection allowed companies to reimburse their research and development costs and to increase the innovation sales rate and hence margin performance.

In the open innovation context intellectual property is considered not only as a source of costs for the creation and commercialization but also as an opportunity to generate additional income by alternative ways. That is, the shift towards open innovation allows for the considering intellectual property as a crucial asset that brings additional income to the company, as it provides for free access of external market players to the results of their own research and, conversely, the attraction of external inventions and other intellectual property to their own innovation process. Moreover, if IP was previously a by-product of innovation, now it has become one of the most important assets which facilitates the sharing of knowledge and technology between companies and can be recognized as an essential prerequisite for an efficient implementation of the open innovation model.

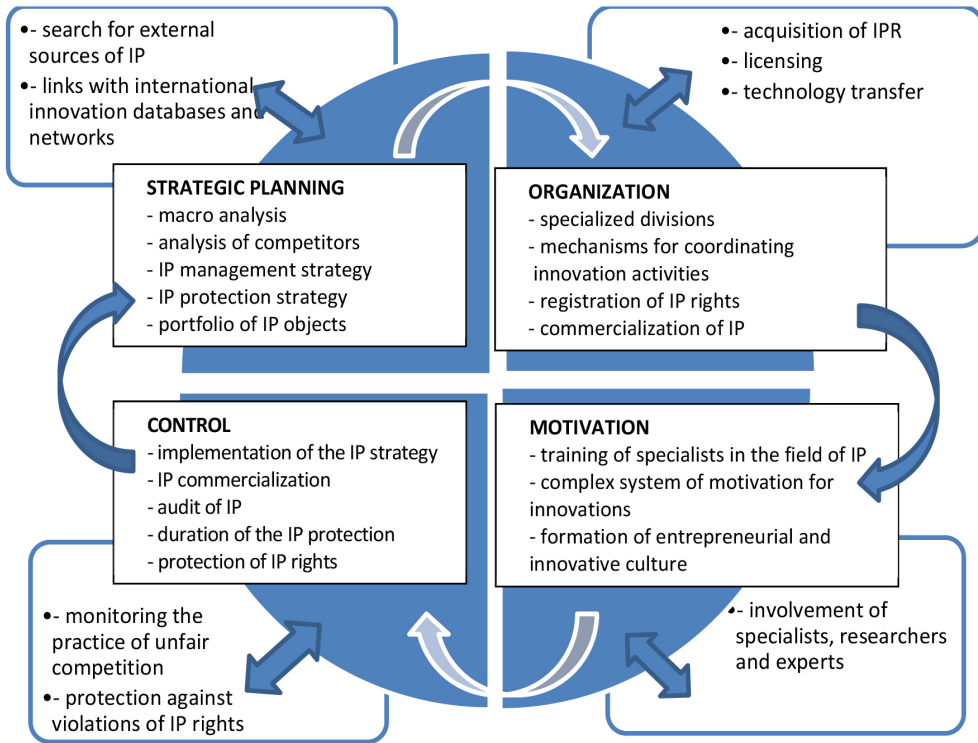
From a practical perspective, the active involvement in the use of an intellectual property as the main resource of an open innovation model inevitably causes the emergence of certain challenges that require special attention from the management of the company. Thus, active patenting of its own research, as well as the use of external patents, requires special attention to patent information, both in the case of its search and in the control of its own use as well as when it is used by competitors. Lack of understanding and careless handling of patent information in case of insufficient attention to this intangible asset of the company, as well as an unqualified level of its expertise and evaluation may result in significant losses.

The IP department of a company adopting the open innovation model is supposed to deal with the implementation of key managerial functions, such as: developing a strategy and planning measures for the protection and commercialization of

intellectual property, organizing activities to create conditions for the implementation of planned activities, creating a favourable innovation climate and encouraging open innovation culture, as well as audit and control the implementation of the IP management strategy (Figure 1).

**A Conceptual Model of IP Management in the Open Innovation Context**

**Figure 1**



Source: developed by the authors

It needs to be emphasized that from a company’s perspective in the context of open innovation the implementation of a strategic approach to the intellectual property management is a matter of particular relevance. A strategic approach to IP management is realized through the integrated approach to the analysis of the external and internal organizational conditions. Thus, during the process of external analysis such tasks should be undertaken as monitoring of the technological trends, especially in the field of the company’s research, market assessment and identification of current and potential consumer’s demand for innovative products, building a profile of potential consumers relating to their preferences and purchasing power. The legislation on innovation and research development, including in terms of preferences and preferential

taxation would also need to be examined. In line with this, it is worth considering the state innovation policy and international research programs that determine the priority directions of innovation development, and, respectively, the direction of investment. Particular attention is required to monitor the activities of existing and potential competitors. In this direction the company analyzes the strategies that competitors have in place to develop and implement innovations in the market, which measures they apply in order to protect their assets and whether they violate the rights to IP objects of other players in the market.

In the open innovation model an important direction of external analysis of the company is a search for alternative sources of IP objects for the purpose of their acquisition or licensing, as well as an analysis of the feasibility of joint R&D and the introduction of innovations with other state and business organizations through the creation of startups, joint enterprises, alliances, clusters and other organizational forms. The main purpose of such a search is to optimize the costs and time for the creation of innovations, as well as share potential risks in terms of financing of innovation projects and expand opportunities for the market launch.

The internal analysis determines the company's capability for R&D, the structure of production and resource potential, the current IP management strategy, and the currently formed portfolio of IP rights. Particular attention is required to audit and evaluation of their own IP objects in terms of their consideration when devising a strategy, correctness of the value estimation of such objects, their proper registration and commercialization. In planning for the creation and registration of IP objects it is also particularly important to take into account the organization's policy on intellectual property management. Accordingly, the established principles of such a policy will determine the priorities and approaches to the creation and realization of their own intellectual assets to other organizations as well as the involvement of external IP objects to the development and implementation of innovations inside the organization. The IP policy also establishes approaches to the distribution of intellectual property rights between authors, investors, company's founders and other stakeholders, which is prescribed in contracts and other documents when creating the relevant objects.

The result of the analysis of external and internal factors of the organization's environment is a basis for devising an appropriate IP management strategy as well as the development and implementation of tactical measures for its realization. To ensure reliable analysis results such tactical activities have to be implemented as the formation and revision of the IP objects portfolio, the patent pools creation, the development of a licensing strategy and measures to protect IP objects of the organization.

In order to implement IP management in an open innovation context, the company should be the part of an international innovation communications system, be involved in global innovation networks with researchers and innovators, public and private institutions and organizations to generate own knowledge and technology and

provide a flow of external ones in its internal environment. The company can implement collaborative innovation projects in various organizational forms, among which: network creation, crowdsourcing, consortia and alliances, both in the form of joint ventures and separate research projects. In any case, the model of open innovation assumes the joint creation of intellectual assets, the exchange and transfer of know-how and technologies, the control and preservation of which is ensured precisely through an effective IP management system in companies.

A necessary element of the successful implementation of the open innovation model is the introduction of incentive mechanisms that stimulate innovation activity and team work, as well as support internal and external cooperation. Implementation of the open innovation concept requires the development of a certain type of organizational thinking based on the creation of a corporate culture that recognizes the value of external knowledge and competencies and perceives continuous learning as an important part of the current operational activities of the company. In this vein, the shift towards open innovation requires special attention both from the managers and employees to the processes of adapting new ideas, inventions and technologies inside of the organization, which are often accompanied by different types of organizational changes. Another threat to the effective implementation of the open innovation model is the so-called “invented not here” (NIHS) syndrome, which manifests itself in the exclusion of personnel from innovations created outside of their own company, explaining this to be very likely to fit their needs and organization requirements. In order to overcome the psychological impediments to the adoption of external IP objects in the company it is necessary to actively involve the personnel in the development and implementation of innovative development programs, IP management strategies, explaining the necessity and benefits of such actions.

An important role in ensuring the intellectual property management in an organization plays also an effective implementation of the control function. Among the main tasks with regard to this managerial function is an audit of all intellectual property of the company in order to identify unrecorded and unregistered objects, which involves applying due diligence to the audit approach. This approach requires consideration of the following elements, such as an IP asset structure, property rights verification and their legitimacy, including for example the validity of a company’s patents, analysis of restrictions on the use of intellectual property rights and possible violations by all stakeholders. Particular importance in this regard is acquired by the audit of intellectual property of partners in preparing contracts for the purchase or licensing of intangible assets.

The audit aims to determine the value of IP objects, as well as define the risks that companies may encounter when implementing collaborative innovation projects, for example, in case of improper registration of rights to an intangible asset when it is disposed by a previous owner or developer. Assessing the value of IP objects during an



audit allows making effective strategic decisions on how to commercialize them and justifies the reorganization of the IP portfolio in order to increase its competitiveness.

Thus, IP management in the implementation of the open innovation model becomes crucial for ensuring the company's competitiveness in the market and, accordingly, the success of its activities. Effective IP management in this case protects the company's core knowledge and competencies, preventing them from being duplicated and used by competitors, or by ensuring the balance of the interests of all stakeholders in the open innovation framework. At the same time, attention should be paid to the internal security of the company's intellectual assets primarily through the creation of necessary conditions for the protection and commercialization of IP objects and preventing the leakage of commercial secrets outside the organization.

Providing enabling conditions for the protection of intellectual assets of the company as a result of targeted managerial actions prevents unfair competition practices from competitors and inside the company, thereby enabling the active generation of its own innovative ideas and inventions.

Based on the research findings it can be concluded that in today's business reality under the conditions of which the principles of interaction between the participants of the innovation process have been radically changed, the practice of open innovation is an effective tool for improving the efficiency of innovation performance. However, the model has its own limitations, which is why the decision to engage in open innovation cooperation and the justification of the extent to which own innovative processes of a company can be opened requires a deep understanding of the specifics and a profound analysis of the potential opportunities and risks of this type of interaction from the managerial point of view. In particular, the potential risks of implementing open innovation practices include possible loss of knowledge, technologies and key functional competencies. In addition, the high degree of an organization's innovation openness might be accompanied by difficulties in protecting intellectual property objects and lead to disputes over the assignment of innovation performance results. Accordingly, it can be argued that within the open innovation framework intellectual property has a significant role to play, hence efficient intellectual property management is essential for the success of the collaborative projects.

## **References:**

- Barge-Gil, A. (2010) Open, Semi-Open and Closed Innovators: Towards an Explanation of Degree of Openness. *Industry & Innovation*, Vol. 17, P. 577-607.
- Chesbrough, H. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston, 272 p.
- Chesbrough, H., Crowther, A.K. (2006). Beyond High Tech: Early Adopters of Open Innovation in Other Industries. *R&D Management*, 36 (3), P. 229-236.

- Chesbrough, H., Vanhaverbeke, W. and West, J. (eds.) (2006). *Open Innovation: Researching a New Paradigm*, Oxford University Press, Oxford, 392 p.
- Coras, E.L. and Tantau, A.D. (2014). *Open Innovation – The Good, The Bad, The Uncertainties*. *The USV Annals of Economics and Public Administration*, 14 (1), P. 38-47.
- Durst, S. and Stähle, P. (2013). *Success Factors of Open Innovation – A Literature Review*. *International Journal of Business Research and Management*, 4, P. 111-131.
- Gassmann, O., Sandmeier, P. and Wecht, C.H. (2004). *Innovationsprozesse: Öffnung statt Alleingang*. *IO New Management*, 73, 1-2, P. 22-27.
- Henttonen, K., Pussinen, P., Koivumäki, T. (2012) *Managerial Perspective on Open Source Collaboration and Networked Innovation*. *Journal of Technology Management & Innovation*, Vol 7 (3), P. 223-225.
- Johannessen, J.-A. (2009). *A Systemic Approach to Innovation: The Interactive Innovation Model*. *Kybernetes*, Vol. 38 (1/2), P. 158-176.
- Laursen, K. and Salter, A. (2006). *Open for Innovation: the Role of Openness in Explaining Innovation Performance among U.K. Manufacturing Firms*. *Strategic Management Journal*, 27 (2), P. 131-150.
- Lichtenthaler, U. (2010). *Open Innovation: Potential Risks and Managerial Countermeasures*. *Proceedings of the R&D Management Conference*, P. 1-10.
- Paasi, J., Luoma T., Valkokari, K. (2010) *Knolwedge and Intellectual Property Management in Customer Supplier Relationships*. *International Journal of Innovation Management*, Vol. 14 (4), P. 629-654.
- Stucki, A. (2009). *Internal and External Factors Influencing the Implementation and Diffusion of the Open Innovation Models: The Case of the Postal Sector*. In: *3rd Global Postal Research and Education Network Conference*, Lausanne, Switzerland, P. 1-21.
- Ullrich, A. and Vladova, G. (2016). *Weighing the Pros and Cons of Engaging in Open Innovation*. *Technology Innovation Management Review*, 6 (4), P. 34-40.
- West, J., Gallagher S. (2006) *Challenges of Open Innovation: the Paradox of Firm Investment in Open Source Software*. *R&D Management*, Vol. 36, P. 316-331.

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ბოლო წლების განმავლობაში, ინოვაციური პროცესის მართვის პერსპექტიული მოდელის – ღია ინოვაციის პრაქტიკისადმი გაზრდილი ინტერესიდან გამომდინარე, მრავალი კვლევა ჩატარდა მისი დანერგვის სხვადასხვა ასპექტის შესწავლისთვის. ღია ინოვაციების გამოყენების მზარდი ტენდენცია განაპირობებს ინტელექტუალური საკუთრების მენეჯმენტისადმი ასევე უფრო ღია მიდგომას. თუმცა, მიუხედავად იმისა, რომ ღია ინოვაციების ერთობლივ პროექტებში ორგანიზაციული დეტერმინანტების შესწავლა წარმოადგენს მკვლევართა და ინოვაციების მენეჯმენტის პრაქტიკოსების გაზრდილ ინტერესს, საწარმოო დონეზე ამ ასპექტების თანამედროვე გაგება ჯერ კიდევ არასრულია და შემდგომ კვლევას საჭიროებს.

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