

FEATURES OF MANAGEMENT OF COMPANIES USING OPEN INNOVATIONS

© 2016 DZIATKOVSKA YA. O., HARAFONOVA O. I.

UDC 005.591.4

Dziatkovska Ya. O., Harafonova O. I. Features of Management of Companies using Open Innovations

The aim of the article is studying the concept of open innovation in modern management of organizations and defining features of such management. By analyzing, systematizing and generalizing scientific works of foreign and domestic scientists, open innovations and their relevance to the present time have been considered. In the course of the study the differences between the closed and open innovation models have been identified. Also the reasons of the wide use of the open innovation model in companies' activities have been defined. Examples of the application of the open innovation model by foreign and domestic organizations are given and positive aspects of its introduction summarized. A list of the stages of transition of the enterprise to innovation activity within the concept of open innovation is proposed. The differences in innovation activity under the models of open and closed innovation are determined. Prospects for further research in this direction are to define the stages of introducing the concept of open innovation in the activity of modern organizations and to investigate the expediency of their use by domestic enterprises.

Keywords: innovation activity, open innovation, management of companies.

Fig.: 2. **Tabl.:** 3. **Bibl.:** 8.

Dziatkovska Yaroslava O. – Bachelor, Kyiv National Economic University named after V. Hetman (54/1 Peremohy Ave., Kyiv, 03680, Ukraine)

E-mail: syberia@ukr.net

Harafonova Olha I. – D. Sc. (Economics), Associate Professor, Professor of the Department of Management, Kyiv National Economic University named after V. Hetman (54/1 Peremohy Ave., Kyiv, 03680, Ukraine)

E-mail: ogarafonova@ukr.net

УДК 005.591.4

Дзятковська Я. О., Гарафонова О. І. Особливості управління компаніями з використанням відкритих інновацій

Метою статті є дослідження поняття відкритих інновацій у сучасному управлінні організаціями та визначення особливостей такого управління. Досліджено відкриті інновації та їх значення для реалії сьогодення. Виділено відмінності між закритими та відкритими інноваціями. Окреслено причини широкого поширення відкритих інновацій в діяльності компаній. Наведено приклади використання відкритих інновацій в діяльності зарубіжних та вітчизняних організацій та підкреслено позитивні сторони їх впровадження. Запропоновано перелік етапів переходу підприємства до інноваційної діяльності в рамках концепції відкритих інновацій. Визначено відмінності управління інноваційною діяльністю в умовах відкритих та закритих інновацій. Перспективами подальших досліджень у даному напрямі є визначення переліку етапів впровадження концепції відкритих інновацій в сучасних організаціях та дослідження доцільності їх використання вітчизняними підприємствами.

Ключові слова: інноваційна діяльність, відкриті інновації, управління компаніями.

Рис.: 2. **Табл.:** 3. **Бібл.:** 8.

Дзятковська Ярослава Олександрівна – бакалавр, Київський національний економічний університет ім. В. Гетьмана (пр. Перемоги, 54/1, Київ, 03680, Україна)

E-mail: syberia@ukr.net

Гарафонова Ольга Іванівна – доктор економічних наук, доцент, професор кафедри менеджменту, Київський національний економічний університет ім. В. Гетьмана (пр. Перемоги, 54/1, Київ, 03680, Україна)

E-mail: ogarafonova@ukr.net

УДК 005.591.4

Дзятковская Я. О., Гарафонова О. И. Особенности управления компаниями с использованием открытых инноваций

Целью статьи является исследование понятия открытых инноваций в современном управлении организациями и определение особенностей такого управления. Исследованы открытые инновации и их значение для современности. Выделены различия между закрытыми и открытыми инновациями. Определены причины широкого распространения открытых инноваций в деятельности компаний. Приведены примеры использования открытых инноваций в деятельности зарубежных и отечественных организаций и подчеркнуты положительные стороны их внедрения. Предложен перечень этапов перехода предприятия к инновационной деятельности в рамках концепции открытых инноваций. Определены различия управления инновационной деятельностью в условиях открытых и закрытых инноваций. Перспективами дальнейших исследований в данном направлении являются определение перечня этапов внедрения концепции открытых инноваций в современных организациях и исследование целесообразности их использования отечественными предприятиями.

Ключевые слова: инновационная деятельность, открытые инновации, управление компаниями.

Рис.: 2. **Табл.:** 3. **Библ.:** 8.

Дзятковская Ярослава Олеговна – бакалавр, Киевский национальный экономический университет им. В. Гетьмана (пр. Победы, 54/1, Киев, 03680, Украина)

E-mail: syberia@ukr.net

Гарафонова Ольга Ивановна – доктор экономических наук, доцент, профессор, кафедра менеджмента, Киевский национальный экономический университет им. В. Гетьмана (пр. Победы, 54/1, Киев, 03680, Украина)

E-mail: ogarafonova@ukr.net

Innovation activity is of particular importance in modern life, since it influences the strategy, goals and methods – the whole system of management of companies. It not only creates a future image of the company but also determines its technology, product range, potential customers and competitors, strategic market position. Today the speed of innovation processes and output developments in the market has increased significantly, so it is more appropriate and beneficial to implement a public decentralized model – a model of “open innovation”.

Such a trend in business determines the relevance of the chosen topic because the model of open innovation requires radically new models of innovation management of companies, and the analysis of such models, unfortunately, has been paid little attention.

Recently scientists have begun to pay attention to this concept – the first book by Henry Chesbrough “Open Innovation: The New Imperative for Creating and Profiting from Technology” was published at Harvard in 2003. The scientist first introduced the concept of “open innovation”

in order to describe a new trend in the evolution of innovation theory. The theoretical basis for open innovation was considered by such scholars as A. A. Tryfilova, V. I. Kalinin, W. Miller, M. Langton, V. Vanhaverbek, K. Symarda, J. Vest, J. Christensen, S. Tallaher, M. Hlud and H. Chesbrough. Most scientists focused in their work on the theoretical basis of this concept comparing the concepts of closed and open innovation.

The following issues need to be resolved: filling the gaps in studying the problem by determining major stages of transformation of innovation activity of companies within the concept of open innovation, reviewing the key features of successful business management using the concept of "open innovation" and their differences from the company management under principles of closed innovation and describing professional skills of a modern manager-innovator.

In his first monograph on open innovation Henry Chesbrough contrasts the principles that guided the company in its innovation management in the past and the principles of "open innovation" (Table 1).

The comparison of these principles clearly shows their difference, the contrast is the focus of the company on achieving competitive advantage and gain leading positions in the market. In his book Henry Chesbrough also presents schemes of closed and open innovation that have become worldwide renowned (Fig. 1, Fig. 2). Open innovation has two main driving forces. First, the best ideas are not necessarily generated by the company's own employees. The company may hire people who can feel and know the market well and help to integrate external know-how in the internal processes of R&D and commercialization.

Table 1

Differences between the principles of closed and open innovation [1]

| Closed Innovation Principles | Open Innovation Principles |
|--|--|
| Most of the smart people in our field work for us | Not all the smart people work for us, so we must find and tap into the knowledge and expertise of bright individuals outside our company |
| To profit from R&D, we must discover, develop and ship ourselves | External R&D can create significant value; internal R&D is needed to claim some portion of that value |
| If we discover it, we will get it to market first | We don't have to originate the research in order to profit from it |
| If we are the 1st to commercialize we will win | Building a better business model is better than getting to market first |
| If we create the most and the best ideas in the industry, we will win | If we make the best use of internal and external ideas, we will win |
| We should control our intellectual property (IP) so that our competitors don't profit from our ideas | We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model |

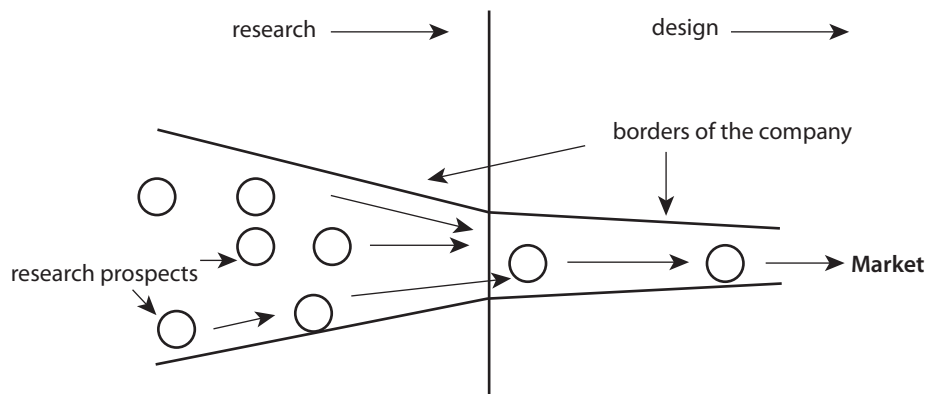


Fig. 1. Closed innovation scheme [1]

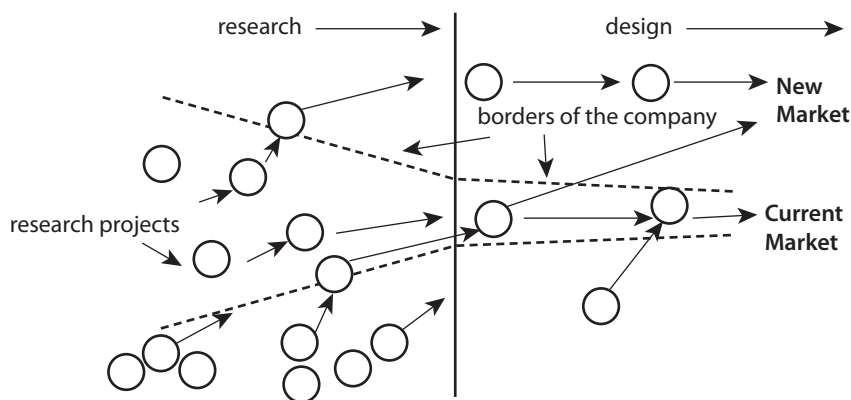


Fig. 2. Open innovation scheme [1]

The author uses a tunnel to illustrate the innovation process, solid and dotted lines of which show the nature of yesterday's and today's fundamentals of innovation activity – today the search for information and innovation is not limited to the internal environment of the company, innovation activity has a global character now.

Thus, the essence of open innovation is the use of purposive inflows of knowledge to accelerate internal innovation processes as well as to expand markets for more efficient use of innovation. There are a number of factors fostering open innovation:

- ✦ global mobility of talent;
- ✦ state support of small innovative companies;
- ✦ market orientation of research;
- ✦ the need to commercialize projects implemented by state laboratories;
- ✦ the emergence of private research institutes;
- ✦ availability of the Internet and search technology [8].

Markets for knowledge and innovation exist for a long time, but until recently they were largely inefficient. Information technology radically changed the situation, became the impetus for the creation and development of ideas.

It should be noted that the theory of open innovation is a set of urgent changes and it describes the latest global trends. This theory is a strong push forward to the transition to fifth generation knowledge management, technology and innovation based on the principles of openness.

The conducted analysis shows that the introduction of open business models is not an easy task. Most companies spend a large amount of money solving it and have significant difficulties. But, of course, there are a few striking positive examples. For example, IBM has built a systematic innovation ecosystem including internal research laboratories, universities, venture capital companies, developers, industrial consortia, involving the relationship of cross-financing and offshore innovation, which allows the company to draw external ideas and improve the efficiency of its own research laboratories. In addition, IBM is the leader in US patents – 10 years ago it received up to \$2 billion per year as royalties on its licenses and this amounted to 30% of its annual income. Such strong licensing strategy is based on aggressive patenting to expand the market beyond the customer base. It is important to understand that open innovation does not mean handing out own ideas. Ensuring protection of copyright is an important point before entering the market [2, p. 91].

The company Procter&Gamble (P&G) always strives to offer the brightest ideas for new products to support the recovery in the market – which is why several hundred researchers always work for the company. However, at one point the question arose: what is the chance that its researchers invent the best idea if the number of researchers in the world is measured in millions? So P&G decided to use a huge innovation potential that exists outside its own laboratories. The company has adopted an active acquisition strategy of using external knowledge to create new products or integrate and stimulate further its own research. To make this real, P&G redesigned its Research and Development

department into Connect + Develop. With this new banner the company is looking for innovations and inventions in external sources to purchase licenses, ideas or products for their commercialization under its own brand. Besides P&G not only randomly selects technologies as they become available but also interacts with those researchers who are most prone to develop bright ideas [2, p. 91–92: 8].

As for the company Philips Group Corporation, it even has its own high-tech campus, where the interested companies have an opportunity to participate in projects with Philips and other companies. The Residents of the campus are IBM, Atos Origin, Philips Semiconductors, FluXXixon, Cytocentrics and others – more than 70 companies in all.

The result of the existence of the campus is Philips privileged access to the wealth of ideas produced by its residents. In addition, Philips willingly serves as a technology incubator that offers financing, business planning and partnership for start-up companies. Also Philips encourages its workers to create new small enterprises based on advanced research projects and technologies that do not fit Philips by its main type of activity [2, p. 92].

Threadless is a shirts manufacturing company in Chicago. The design process consists exclusively of conducting online competitions. Each week the company receives hundreds of ideas from amateur and professional artists. Threadless publishes pictures of new designs on its website, and each registered user can evaluate a particular shirt. Each week from four to six most popular designs are put into production, but only after a large enough number of buyers make a preliminary order, so the company would not incur losses.

Weekly the competition winners receive \$2,000 and various prizes, but the real motivation is the desire to see the work put into production. Threadless prints the developer's name on the label of each T-shirt. For designers it is a creative outlet, for buyers – an additional choice. Companies do not need to hire a team of designers, while it invests in only proven, pre-ordered designs, which is a significant reduction in risk [3].

Muji is a Japanese furniture company. First, its corporate website collects new radical ideas for its products through the base, which includes about half a million members. Then Muji asks them to evaluate the designs. The list of the most popular ideas is passed to professional designers, who develop the products themselves. Then the company tests the market, collecting pre-orders instead of gathering focus groups, conducting surveys or using other traditional methods of market research. To put it simply, if 300 people make a reservation, the product will go on sale [4].

If we consider Ukraine, in general, there is a global trend of the weighted approach to using the concept of open innovation in searching for new ideas. A too high level of transparency may adversely affect the company's long-term success in its innovation activity, since it can lead to losing control and core competencies. The approach based on the concept of closed innovation does not meet the increasing requirements of reducing development cycles and time to market. Transnational corporations in Ukraine's market fol-

low the approach to innovations adopted by their headquarters and present innovative products of other regions where TNCs operate. Local companies, in turn, in the course of their collaboration with external sources of ideas are on the way of using the concept of open innovation. Such companies as PJSC Kyiv Vitamin Factory, JSC UkrGasbank and CJSC Kyivstar are characterized by the highest in the industry breadth and intensity of searching for new ideas outside the company. As to the food industry of Ukraine, the concept of open innovation is introduced by LLC Nestle Ukraine, LLC Kraft Foods Ukraine and LLC Mars Ukraine, but, in fact, they are branches of TNCs, thus their activity within the concept of open innovation complies with the international practice [5].

Referring to characteristics of enterprise management, it is possible to identify three main stages of transition of the company to innovation activity: first, it is necessary to find appropriate technologies, and second, be sure that the use of external ideas will really help in creating unique products and third, build an organization that will recognize and not reject these ideas (Table 2).

- 2) establishing at the enterprise the department specialized in searching for links with suppliers of innovations;
- 3) opening research labs and obligatory involvement of other companies, including competitors, or related industries in their work;
- 4) financing start-up projects and companies;
- 5) stimulating employees to creative search for new ideas;
- 6) building a real systematic innovation ecosystem;
- 7) developing the company's activities through such intermediary platforms as InnoCentive, NineSigma, Big Idea Group, Ocean Tomo, brokers of Innovation Exchange, Shanghai Silicon IP Exchange.

InnoCentive is the meeting place for companies facing complex innovation problems, scientists, engineers and inventors. Companies place on its web-site an application with the description of their problem. The price of the issue is from \$5,000 to \$1,000,000! The reward is received by the person, whose decisions appears to be the most interesting and effective. [6] Ocean Tomo is a subdivision of ICAP, which provides brokerage services in the field of intellectual

Table 2

Transition of the enterprise to innovation activity within the concept of open innovation

| Stage | Stage characteristics |
|--|---|
| 1. Searching for necessary technologies | An important aspect of searching for technologies is the target orientation: the company should direct to the market exactly the request that will orient numerous firms towards the realization of their innovative abilities within those technologies that are necessary specifically for the enterprise. This can be done through conferences, smaller meetings, distribution of documented information |
| 2. Justifying expediency of the use of the newest external ideas | At this stage the manager focuses on the fact that the main principle of market leadership is to create valuable products that are different from what competitors can offer. So it is not enough just to get some knowledge from the external market, where they were and still are in open access for competitors but create a product based on the received knowledge. On the contrary, it is necessary that the knowledge perfectly complemented the resources that belong to the company exclusively and are not intended for sale |
| 3. Ensuring perception of the new concept by the organization as a whole and its staff in particular | The essence of the third stage is that even the best external ideas can not be first perceived by the company's own staff, which will lead to a number of problems. The main problem in reforming the existing organization could be employees themselves – people have to start thinking by new categories, they should accept the principles of open innovation and completely agree with them |

Source: developed by authors.

In order workers began accepting the new concept of the company the manager should be a role model – a new innovation manager has some special qualities: he trusts his partners, he is not afraid to take risks, he is ready to face new challenges and rapid changes, able to adapt, he is the undisputed leader, and not just has a number of managerial powers, it has a high level of communication skills and is focused on looking for ways to maximize profits of the enterprise through global external interaction, searching for new partners, ideas, knowledge outside the enterprise.

On the basis of the experience of companies with a worldwide reputation and in the course of the study, the following forms of cooperation within the concept of open innovation can be identified:

- 1) purchasing and selling its own patents in the market and licensing;

property and holds the world's most famous patent auction [7].

The work of the enterprise, namely its management features within the concept of open innovation significantly differs from management features within the closed innovation model. Their characteristics are shown in Table 3.

So, we can see a diametric difference between these two concepts by a considerable number of criteria – from the list of participants of innovation activity, characteristics of relationships with competitors and other subjects of innovation activity to the ways of forming financial resources and principles of personnel motivation. The concept of open innovation is not fundamentally new: many companies use the whole concept or its parts in their activities not even being aware of it. Application of the principles of open innovation is not the future, it is our dynamic present.

Differences of innovation management under open and closed innovation models

| Criterion | Closed innovation | Open innovation |
|--|--|---|
| 1. Who is involved? | Internal subdivisions of the company, only its own experts. So-called traditional resources – scientists from research institutes of the first level, the US and the EU, contract laboratories (FTE), individual networks | Everyone can be a participant, and the company often anonymously supplies problem issues to secure itself from competitors. Non-traditional resources are used – scientists from research institutes of the second level, as well as universities and colleges outside the top of the most developed countries, researchers from less developed countries, scientists in other areas, additional options of contract laboratories, retired specialists |
| 2. Features | Innovation activities inside the company aims at creating new knowledge, inventing new technologies | Knowledge is not created but used to improve and manufacture new products |
| 3. Financial resources | A certain fixed part of the company's budget is allocated to its innovation activity each year | Venture capital; savings by buying, not developing knowledge (information technology) by the company and receiving income from selling unnecessary knowledge |
| 4. Risks | All risks are accepted by the company | Risks are incurred by the market – that is, by all companies that intend to take part in searching for new knowledge. The enterprise faces risks of losing its uniqueness and infringing its intellectual property rights |
| 5. Reward | Employees of the innovative unit earn their wages regardless of the outcome, so they are rewarded for the process | The reward is received only for the result – the innovative knowledge necessary to resolve the set tasks |
| 6. Planning and Strategy | For the implementation of the innovative strategy there applied both product and thematic and other types of planning. Searching for solutions to new problems is assigned to R&D department, which increases time to market and the volume of financial resources required to solve them. | For the implementation of the innovative strategy there applied both product and thematic and also other types of planning, but to find solutions to new problems, outside organizations, pensioners, individual scientists, who are aware of the problem, are involved |
| 7. Motivation of the participants in the innovation process | Financial – wages, bonuses, performance pays. Non-material – image, career growth, status | 1) money (independent participants are involved in solving a specific problem for the sake of material reward); 2) interest (participants become interested in the competition, in general resolution of certain issues); 3) new ideas (P&G, Philips attract new ideas for product updating, and participants developing ideas can learn a lot of new information from other participants); 4) establishing new relationships (participants can establish contacts both with each other and with the company that buys their idea or knowledge – P&G not only acquires knowledge but also establishes links for its further work); 4) establishing new relationships (participants can establish contacts both with each other and with the company that buys their idea or knowledge – P&G not only acquires knowledge but also establishes links for its further work); 5) image, popularity (winners of competitions held by the Threadless company can see their names on labels of its T-shirts and it brings them satisfaction) |
| 8. The R&D department | R&D department is intended for carrying out scientific and technological activities, creating knowledge and inventions | R&D department is not abolished at the company, but besides the creation of new knowledge, it starts performing an important task of attracting necessary strategies for the implementation of innovative ideas from the market, their analysis, evaluation and adaptation to the internal use |
| 9. Relationships with competitors and the external environment | The situational approach to developing strategies of the company's behavior in relation to its competitors and other market entities | Developing the strategy of interaction with the competitors according to the motivation of the participants. Active but cautious cooperation, attracting all interested people to new developments and resolution of the same common problems. Relations with the external environment is presented as innovative interaction with customers, suppliers, competitors, innovation intermediaries and other innovation-oriented entities connected with the company horizontally or by anonymous involvement in solving problems |

Source: developed by authors.

CONCLUSIONS

Thus, in the course of the study it has been found that the basis for successful enterprise management within the concept of open innovation is the consideration of all differences in innovation management. There formulated three main stages of the transition of the company to innovate activity within the concept of open innovation: choosing among all the variety of knowledge available in the market for innovation intermediaries only that, which is required by the company and its effective using; protecting the company from the actions of competitors – introducing in manufacturing only the newest products, which are exclusive and are difficult to copy; transforming the entire organization, and, what is most important, directing all employees towards understanding and accepting principles of the concept of open innovation, because these points are the key factors of success. In addition, by analyzing the theoretical basis of the concept there was developed a table of differences in features of innovation management under the open and closed innovation models by such criteria as risk, motivation, resources, participants, reward, planning and strategy, and others. Also a number of characteristics of modern innovation manager were highlighted in the study. ■

LITERATURE

1. Chesbrough H. Open Innovation. The New Imperative for Creating and Profiting from Technology. Harvard Business School Press, 2003. 272 p.

2. Торккелі М., Кок К., Савицкая І. Інноваційний менеджмент в Росії і концепція «Open innovation»: перші результати досліджень. *Інновації*. 2009. № 11 (133). С. 89–95.

3. Threadless. How earning works. (2016). URL: <https://www.threadless.com/artist-shops/signup/default/features>

4. About MUJI (2016). URL: <http://www.muji.eu/pages/about.asp>

5. Кір'якова М. Є., Панченко Є. Г. Концепція відкритих інновацій та її використання транснаціональними корпораціями в Україні. *Стратегія розвитку України*. 2013. № 1. С. 155–163.

6. Як заробити на вирішенні завдань НДДКР для провідних світових компаній (2015). URL: <http://megasite.in.ua/84864-yak-zarobiti-na-virishenni-zavdan-nddkr-dlya-providnih-svitovih-kompanij.html>

7. About Ocean Tomo. Innovation management (2016). URL: <http://www.oceantomo.com/innovation-management/>

8. Джордж М. Л., Воркс Дж., Вотсон-Хемфілл К. Стремительные инновации/пер. с англ. Київ: Companion Group, 2006. 350 с.

REFERENCES

"About MUJI". <http://www.muji.eu/pages/about.asp>

"About Ocean Tomo. Innovation management". <http://www.oceantomo.com/innovation-management/>

Chesbrough, H. *Open Innovation. The New Imperative for Creating and Profiting from Technology*: Harvard Business School Press, 2003.

Dzhordzh, M. L., Vorks, Dzh., and Votson-Khemfill, K. *Stremitelnyye innovatsii* [Rapid innovation]. Kyiv: Companion Group, 2006.

Kiriakova, M. Ye., and Panchenko, Ye. H. "Kontseptsiia vidkrytykh innovatsii ta yii vykorystannia transnatsionalnymy korporatsiiamy v Ukraini" [The concept of open innovation and its use by

transnational corporations in Ukraine]. *Stratehiia rozvytku Ukrainy*, no. 1 (2013): 155-163.

Torkkeli, M., Kok, K., and Savitskaya, I. "Innovatsionny menedzhment v Rossii i kontseptsiya «Open innovation»: pervyye rezultaty issledovaniy" [Innovation management in Russia and the concept of "Open innovation": first results of the research]. *Innovatsii*, no. 11 (133) (2009): 89-95.

"Threadless. How earning works". <https://www.threadless.com/artist-shops/signup/default/features>

"Yak zarobyty na vyrishenni zavdan NDDKR dlia providnykh svitovykh kompanii" [How to make money on the tasks of R & d for leading global companies]. <http://megasite.in.ua/84864-yak-zarobiti-na-virishenni-zavdan-nddkr-dlya-providnih-svitovih-kompanij.html>