

Problem aspects of use of the intellectual property of Ukrainian enterprises

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Abstract. The article is devoted to the study of the processes of formation and use of intellectual capital at Ukrainian enterprises and the analysis of the efficiency of innovative activity of domestic enterprises. The analysis conducted showed that domestic enterprises and organizations nowadays slow down the innovation activity and reduce the efficiency of the use of intellectual capital. Such tendencies are the consequence of the imperfection of the legislative framework for stimulating innovative activity of domestic enterprises; lack of incentive mechanism for developers and inventors, innovative enterprises and organizations. Problems of innovative development are inherent in both the state level of management and the management at the level of individual enterprises. It is necessary to form effective innovative state and regional development programs, to create modern innovative infrastructure, to develop at the legislative level the mechanism of preferential taxation and crediting of innovatively active enterprises, etc.

Introduction

The development of the world economy today is directly dependent on active technological changes. New branches of economy are being formed, technological processes are being transformed, and approaches to ensuring production processes and product promotion are changing qualitatively. The active development of the Enterprise 4.0 platform companies, the deepening of the digitalization of management and production processes in the global economic environment are challenges for domestic enterprises.

The effective activity of domestic enterprises at the Ukrainian sales markets and the ability to promote products to the international markets is conditioned by the ability to stimulate innovation through the introduction of new technologies, creation of innovative products and the formation of intellectual property. The conditions for taking leadership positions in the international community are created by stimulating the processes of

intellectual capital formation, the creation of the objects of intellectual property and their further commercialization.

The purpose of the article is to study the processes of formation and use of intellectual capital at enterprises in Ukraine and to analyze the efficiency of innovative activity of domestic enterprises.

Theory of the matter

The problem of the study of intellectual capital remains relevant for a long time and takes on a new significance in the context of intensification of scientific and technological progress. Fundamental aspects of the formation of intellectual capital, its development and use have been reflected in the works of many domestic and foreign scholars. The studies of theoretical aspects of the essence of intellectual capital are devoted the works of such foreign scientists: A. Stuart Thomas [1], A. Brooking [2], L. Edwinston [3], V. Cohen [4], V. Landes [5], J. Roos [6], P. Sullivan [7] and others. Significant contribution to the consideration of methodological and practical aspects of the processes of formation of intellectual capital to make such domestic scholars as O.B. Butnik-Siverskiy [8], M.V. Vachevskiy [9], O.V.Kendyukhov [10], O. Ye. Kuzmin [11], I. Yu. Kuchumova [12] and others.

Despite the considerable number of publications, the issue of complex management of the intellectual capital at enterprises in the realities of the domestic economy needs further investigation. Today, at the level of individual enterprises, unfortunately, there is practically no effective system for managing intellectual capital formation aimed at stimulating innovation, creating intellectual property and technology transfer. This determines the relevance of the topic, and determines the direction of research in its scientific and practical aspects.

Discussion of results

Scientific and technological progress covers all spheres of human activity both in the domestic sense and in all sectors of the economy. In today's economic development, the intellectual activity of enterprises is crucially important. The processes of intellectual capital formation are the starting point for innovative development of production technologies, improvement of quality of products and services and creation of objects of intellectual property. The ability of economic systems and individual businesses and organizations to innovate and effectively use intellectual capital is a unique indicator of their success and competitiveness.

Global trends in the formation of individual economies as powerful technological systems and the transition to the creation of clusters of industry 4.0 drives enterprises to build an effective innovation strategy. Orientation of the domestic economy to the standards of the international market requires Ukrainian enterprises and organizations improve the development of innovative technologies and to integrate into the world tendencies of intellectualization of all management and production processes.

However, according to the Global Competitiveness Index, in 2018 Ukraine takes the 81st place in the ranking (index 4.11) [13]. Table 1 shows the indicators by which the Global Competitiveness Index of Ukraine in 2018 is formed.

Table 1. The system of indicators of global competitiveness index of Ukraine

in 2018 [13]

Criteria	2018
1. Quality of institutions	3.2
2. Infrastructure	3.9
3. Macroeconomic environment	3.5
4. Health care and primary education	6.0
5. Higher education and training	5.1
6. Goods market efficiency	4.0
7. Labour market efficiency	4.0
8. Development of the financial market	3.1
9. Technological readiness	3.8
10. Market size	4.5
11. Competitiveness of enterprises	3.7
12. Innovation	3.4

The rating was led by Switzerland (index 5.86), the United States (index 5.85) and Singapore (index 5.71). The ten most developed and competitive countries include the Netherlands (index 5.66), Germany (index 5.65), Hong Kong (index 5.53), Sweden (index 5.52), the United Kingdom (index 5.51), Japan (index 5.49) and Finland (index 5.49).

Indicators of the Global Competitiveness Index include, in particular, “technological readiness” and “innovation”, which characterize the efficiency of the use of intellectual capital and the innovative activity of enterprises and organizations. Let us analyze the results of the use of intellectual capital of domestic enterprises in the dynamics of the recent years. Figure 1 shows the dynamics of applications for inventions in Ukraine in the period from 2014 to 2018.

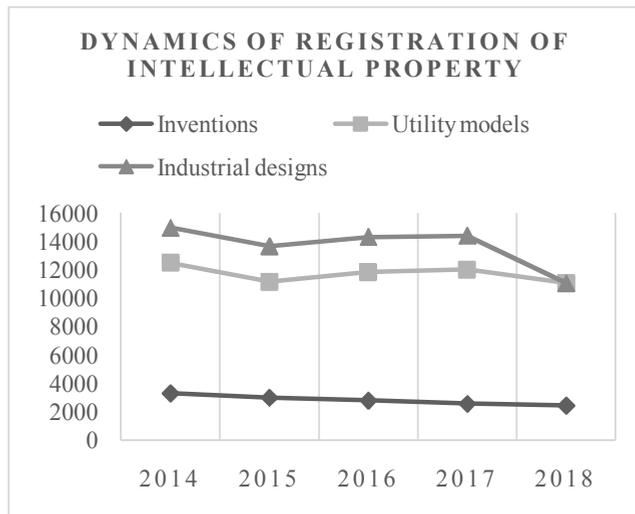


Fig.1. The dynamics of applications for inventions in Ukraine in the period from 2014 to 2018 [14].

Analysis of indicators in Fig. 1 shows that there is a clear downward trend in the amount of intellectual property in Ukraine during the study period. Table 2 shows the

structure of applications for inventions and utility models from national applicants in Ukraine for 2014-2018.

Table 2. Structure of applications for inventions and utility models from domestic applicants in Ukraine [14].

Indexes	2014	2015	2016	2017	2018
Total amount of applications	100.0	100.0	100.0	100.0	100.0
Inventions	21.0	21.1	19.1	20.3	19.0
- entities	11.4	10.5	10.3	10.7	10.5
- individuals	9.6	10.6	8.8	9.6	8.5
Useful models	79.0	78.9	80.9	79.7	81.0
- entities	51.3	49.2	54.0	52.9	56.8
- individuals	27.7	29.7	26.9	26.8	24.2

The analysis of Table 2 shows that a significant part of inventions and utility models in Ukraine are registered by individuals. Taking into account the negative trends in the dynamics of registration of intellectual property objects (Fig. 1), it is possible to make a conclusion about the decline in innovation activity of domestic enterprises over a long time.

The detailed research on the formation and use of intellectual capital at Ukrainian enterprises that we conducted allowed making the following conclusions [15, p.194]:

- there is a tendency to decrease the total number of employees involved in the implementation of research and development;
- inventive activity is not developed at domestic enterprises, that are mainly focused on providing their own products with appropriate signs for goods and services;
- the number of specialists having a scientific degree and taking part in research and development decreased significantly;
- there is a decrease in the number of inventions and utility models in the domestic industry;
- there is a decrease in the innovation activity of domestic enterprises, which impedes the processes of commercialization of innovative development and technology transfer [15, p.194].

V.V. Prokhorova emphasizes that active innovative position of the enterprise is an important element of crisis management at enterprises [16]. Therefore, it is necessary to create an effective mechanism for enhancing the effective use of intellectual potential of domestic enterprises.

In our opinion, there are some obstacles to the effective utilization of enterprise intellectual capital, the processes of intellectual property creation and technology transfer, such as:

- imperfection of the legislative framework to the stimulation of innovative activity of domestic enterprises (contradictions in existing laws and regulations);
- underdevelopment of the incentive mechanism for developers and inventors;
- insufficient stimulation of innovation activity of enterprises and organizations;
- lack of effective innovative programs for development of individual regions;
- lack of effective national and regional innovative programs to support technology transfer;
- imperfection of mechanisms and criteria for selection of promising innovative projects;
- underdevelopment of innovative infrastructure (technology transfer centres, innovation incubators, etc.);
- lack of support at the national level of rationalization and invention;

- limited public funding of priority innovation programs;
- imperfect mechanism of formation of favourable investment climate in Ukraine, etc.

In our opinion, the priority tasks for activating the processes of formation of intellectual capital of domestic enterprises, creation of objects of intellectual property and promotion of technology transfer include:

- formation of the state tax and credit policy aimed at promoting the innovative development of enterprises;
- development of national and regional innovation programs;
- creation of infrastructure innovation system;
- building an integrated technology transfer network that integrates existing centres of innovation and technology transfer into a single network to formulate a common strategy for entering international markets and coordinate areas for international cooperation;
- formation and financing of innovative state programs aimed at activating priority directions of technological development;
- improvement of the system of protection of intellectual property rights;
- development of the state invention support programs and rationalization and promotion of participation of domestic inventors in international competitions and programs.

Conclusion

According to the Global Competitiveness Index, Ukraine took the 81st place in the ranking in 2018, indicating that there are systemic crises in all sectors of the economy, and these trends have been maintained over the past years. The domestic economic system is in the crisis, in comparison with the strong growth over the last decades of the world leaders on the basis of the activation and effective use of their intellectual capital.

The analysis of innovative processes and the use of intellectual capital at enterprises in Ukraine showed the presence of negative tendencies: the imperfection of the legislative framework to stimulate innovative activity of domestic enterprises; underdeveloped incentive mechanism for developers and inventors; insufficient stimulation of innovation activity of enterprises and organizations; the lack of effective innovative programs for the development of individual regions; lack of effective national and regional innovative technology transfer support programs; imperfection of mechanisms and criteria for selection of much promising innovative projects; the imperfection of the mechanism of formation of favourable investment climate in Ukraine, etc.

In our opinion, the formation of effective innovative state and regional development programs, comprehensive support for priority areas of economic development, creation of the necessary innovative infrastructure and the formation of a system of preferential taxation and crediting of enterprises-innovators will help to overcome crisis phenomena in the economy of Ukraine, to activate innovative activity of enterprises and to use their intellectual capital.

References

1. Stuart Tomas A. Intellectualnyy kapital. Novyy istochnik bogatstva organizatsii; per. s angl. V. Nozdrinoy. Moskva. Pokolenye. (In Russian). (2007).
2. Brooking A. Intellectual capital: Core Asset for the Third Millenium Enterprise / Annie Brooking. L.: International Thompson Business Press. (1998).
3. Edvinsson L., Malone M.S. Intellectual Capital: realizing your company's true value by finding its hidden brainpower (1st ed.). N.Y: Harper Business. (1997).

4. Cohen W.M., Goto A., Nagata A., Nelson R.R., Walsh J.P. R&D Spillovers, Patents and the Incentives to Innovate in Japan and the United States. *Research Policy*. (2002).

5. Landes W. M., Posner R. A. *The economic structure of intellectual property law*. The Belknap Press of Harvard University Press: Cambridge, Massachusetts and London, England. (2003).

6. Roos J., Roos G., Edvinsson L. *Intellectual capital: navigating in the new business landscape*. N.Y. : HarperBusiness. (1998).

7. Sullivan Patrick H. *Value-driven Intellectual Capital; How to convert Intangible Corporate Assets into Market Value*. Wiley. (2000).

8. Butnic-Siverskyi O. Transformatsiya intelektualnoyi vlasnosti v innovatsiynyy product. URL: <http://iv.org.ua/index2.php?kontent/navkdial/articles/article-2.php>. (2003).

9. Vachevskyi M.V. Dzherela patentnoyi dokumentatsyi ta patentnykh opysiv do objectiv intelektualnoyi vlasnosti. *Actualni problemy ekonomiky*. (In Ukrainian). (2004).

10. Kendjuhov O.V. *Efektivne upravlinnya intelektualnym kapitalom: Monohrafiya*. NAS of Ukraine. Institute of Industrial Economics. Donetsk: DonIEE. (In Ukrainian). (2008).

11. Kuzmin O. E., Hiduha L. G., Lypych O. A. *Upravlinnya intelektualnym kapitalom machynobudivnykh pidpryemstv: teoretychnyi ta prykladnyi polozhennya: Monohrafiya*. Luzk. Vezha-Druk. (In Ukrainian). (2014).

12. Kuchumova I.Y. *Intelektualnyi capital v systemy upravlinnya pydpryemstvom*. *Biznes Inform*. (In Ukrainian). (2013).

13. The Global Competitiveness Index. URL: <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>

14. The official website of the State Service of Intellectual Property of Ukraine URL: <http://www.uipv.org/> [in Ukrainian].

15. Maslov Y., Semenova V. *Finansovy aspekty formuvannja intelektualnogo kapitalu pidpryemstv i zabezpechennja transferu tehnologij*. *Financial and credit activity: problems of theory and practice*. (In Ukrainian). (2019).

16. Prokhorova V., Davydova O. *Objectyvny umovy formuvannja innovaziynogo upravlinnja rozvytkom pidpryemstv: naukovo-istorychne pidgrunttja podolannja naslidkiv kryv*. *Bisnes Inform*. (In Ukrainian). (2018).