

Intellectual Capital Of Entrepreneurship: Inter-Connections And Ways Of Stimulating The Development

Kateryna A. Alekseieva, Liuba Y. Turchyn, Olha M. Sobko, Iryna M. Boichyk, Svitlana V. Stakhurska

Abstract : The article substantiates the essence of intellectual capital and shows its crucial role in economic development. It has proved that in current conditions, intellectual capital can consider as the primary resource of the economy and the basis for constructing a knowledge economy of any country. The structure of intellectual capital has presented. Intellectual capital consists of human capital and intellectual property, and these are two main directions for regulating. Nowadays, Ukraine meets the situation of losing human capital because of migration abroad and losing intellectual property (inventions) due to falls in relations in the sphere of intellectual property. Stimulating of development of innovative entrepreneurship can become an effective mechanism of preserving and development of intellectual capital of Ukraine in current conditions.

Keywords: Economic Development, Entrepreneurship, Intellectual Capital, Knowledge Economy.

I. INTRODUCTION

Intellectual capital has played a significant role in the innovative development of Western countries. The new ideas have quickly implemented into science and technique, and the results were interfering into different spheres of life, raising its quality. The application of scientific and technological progress has changed the structure of production and employment. The rise of the welfare of people has prompted a revision of traditional materialistic values. The developed personality proved to be a source of productive thoughts. It determined the prior position of the human development and intellectual capital in the economy. The shift from the materialistic values to the human values together with the simultaneous shift to the priority of the intellectual capital in comparison with physical capital took place in all the developed countries of the world with national peculiarities. The new economic society provided new quality of life and stimulated the entrepreneurial activity of its members have, however, guaranteed substantial social protection in case of potential falls.

The market economy gradually obtained features of social orientation with a humanistic accent and required fast development of the intellectual capital. In such economic conditions, a significant role has played by the ability of people to carry out the economic activity at their own risk to get a profit. This activity stimulated the development of the middle stratum (the cradle for the intellectual capital development) of the new societies and became its economic basis and the guarantee of economic stability.

II. LITERATURE REVIEW

For the first time, the term "intellectual capital" has proposed by Galbraith, J.K. in 1969 as a concept that included human intelligence [3]. Then it was Becker, G. (2003) who also made a significant contribution to the fundamental theory of intellectual capital [2]. In his work "Human behaviour: an economic approach" the researcher distinguished general and special investments into human capital. One of the first to use the term "intellectual capital" was Stewart, T. (1997) In his work "The Intellectual Capital", where he defined it as the sum of the knowledge of all employees of the company to ensure competitiveness [15]. In current conditions, problems of development of the intellectual capital are in the field of view of theorists. In particular, various aspects of the general process of development of the human capital have fundamentally explored in the works of Golovinov, O. (2004) [6] Several Ukrainian researchers carry out basic research in the field of intellectual capital, its transformation into the primary resource of development, an increase of the degree of intellectualization of production. In works of Grishnova, O. (2014) the essence of the human, intellectual and social capital has shown and the mentioned terms determined. [4] In research of Androschuk, G. (2019) [1] the problems of protection of intellectual property have been stated. The attention of the Ukrainian scholars is also being kept by stimulating of development of innovative entrepreneurship in current conditions by different means. For instance, in the works of Reznik, N., Ostapchuk, A., Alekseieva, K. (2019) and others development of entrepreneurship, in particular through the creation of public-private partnerships in current conditions to stimulate digitalization and innovative development has been researched. [13] Despite the importance of the research. That has already been carried

- *Kateryna A. Alekseieva* As. Professor of Production and Investment Management Department, National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine; katerinaalex@ukr.net
- *Liuba Yaroslavivna* Candidate of Economic Science, Associate Professor of the Department of Entrepreneurship and Trade, Ternopil National Economic University, ORCID: <https://orcid.org/0000-0001-6238-1812>, Web of Science Research ID: I-4469-2017.
- *Olha* Doctor of Economic Science, Head of Department for Entrepreneurship and Trade, Ternopil National Economic University, ORCID: <http://orcid.org/0000-0001-8317-0563>, Web of Science ID, H-6434-2017.
- *Iryna Myhailivna*, candidate of economic sciences, associate professor of the department of entrepreneurship and trade, Ternopil National Economic University, ORCID: <http://orsid.org/0000-0002-6212-8072>, Web of Science Researchers ID, G-6774-2017
- *Svitlana*, Ternopil National Economic University, ORCID: <https://orcid.org/0000-0001-7333-8764>

out by scientists. There are some aspects of the development of intellectual capital left without attention. That is why the topic of the current research has considered being relevant and actual, and the interconnections between the development of intellectual capital and innovative entrepreneurship have considered in the article. The most important tasks of the article are substantiation of the intellectual capital in current conditions, its impact on the economic development; demonstrating the crucial role of the intellectual capital in the Ukrainian economy and outlining the ways of stimulating of its development, in particular through stimulating the innovative entrepreneurship; and working out the leading solutions to the challenges that arise in the process of development of intellectual capital.

III. METHODOLOGY

To achieve the stated goals of research, several scientific methods (substantial parts of the overall implemented methodology) have used. The method of analysis and synthesis has used to analyze the crucial role of intellectual capital. In its close connection to the development of entrepreneurship in the economy. Using the method of constructing schemes has made it possible to present visual schemes of the research showing the interconnection between the development of the innovative entrepreneurship and development of intellectual capital of the country for constructing knowledge economy. The method of logical conclusions has implemented to offer the leading solutions to the problems of losing the intellectual capital of Ukraine due to its migration. There also has been used as a statistical method. To show some essential figures indicating the state of the intellectual capital of Ukraine. It has allowed using the method of comparison to compare some essential figures on intellectual capital for the economy of Ukraine.

IV. RESULTS

At present strategic orientations of Ukraine are characterized by the increasing importance of market priorities, on the one hand, and the realization that there is no alternative to stimulating the intellectual development at all economic levels, on the other. It is clear that in this way, the primary role belongs to the intellectual capital of the country. The availability of intellectual potential to turn into intellectual capital in a particular economy and the level of entrepreneurial activity in the country are key factors ensuring the long-term intensive economic growth. It is the intellectual capital that is capable of accelerating the entrepreneurial activity in the economy and of forcing the economy to develop innovatively. Intellectualization of the economic environment due to the entrepreneurial activity and the subsequent diffusion of knowledge together with the degree of mastering different information resources become the necessary grounds for the existence of a highly efficient and competitive market economy. It is possible to increase the competitiveness of the country at the expense of the innovative component by activation the processes of knowledge acquisition, transfer and use. It is necessary to create a powerful and flexible system of development of the intellectual potential of entrepreneurship as the primary resource of development. The concept of "intellectual

capital" is quite general and usually means the amount of knowledge of employees of a company which ensures its competitiveness [14, 45]. This concept may also include organizational capabilities and information channels that can use to create wealth [5, 117]. Intellectual capital is an integral part of the concept of "human capital". Which also includes health capital (biophysical capital), labour capital (professional knowledge, skills and work experience of the person), organizational & entrepreneurial capital (realization of potential in business, entrepreneurship), cultural – spiritual capital (dominant system of values and norms of business morality), social capital (social status of an employee or firm in a particular system of social relations), brand (capital of the firm, characterizing its market position, the firm's business reputation), structural capital (the firm's ability to manage its organizational structure) organizational capital (a portfolio of innovations for competitive product range upgrades and business processes that generate value-added products at a competitive level). Intellectual capital is the form in which the peculiarities and essence of human capital are most manifested. Intellectual capital is determined by the level of education, competence and creativity of specialists, development of intellectual abilities in solving various problems [14, 43]. Intellectual capital is a type of human capital that along with biophysical, labor, organizational, entrepreneurial and cultural-moral types of human capital is not alienated from the employee's personality. These are abilities, knowledge, and experience. Other types of human capital are alienated and owned by the company. At the state level this means that if the conditions for the free development of the employee have not created his security and well-being are not ensured, he may wish to change living conditions and activities that would be leading to the outflow of intellectual capital in his person. The system of management of intellectual capital is a set of strategically agreed and interrelated methods and means of management of intellectual capital, aimed at increasing the value and efficiency of intellectual capital and business as a whole [12, 43]. The development and implementation of an intellectual property management system would enable the creation of additional intellectual property assets, attract them to business, use them effectively as a resource, and protect against misuse to generate additional revenue. All this would help to ensure the investment attractiveness and competitive advantages of the country. According to the Law of Ukraine "About Entrepreneurship" Entrepreneurship is a direct independent, systematic, onown risk activity on production, execution works, provision of services to make a profit [9]. Entrepreneurial skills are skills possessed by human beings and therefore are the skills to be developed in the process of development of intellectual capital. At the same time, people in the process of their entrepreneurial activity develop themselves and provide recognition of their inherent potential, i.e. in the process of entrepreneurial activity, it is possible to reach economic and social goals, to provide being and to obtain recognition in the society. That is why such basic economic terms as intellectual capital and entrepreneurship are closely connected and should research together.

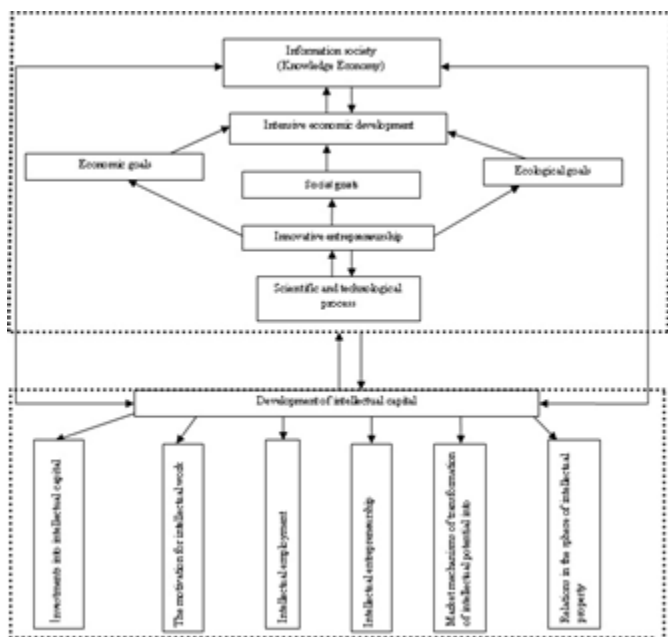


Fig.1

Interconnection between the development of innovative entrepreneurship and development of the intellectual capital for constructing knowledge economy

*Source: created by authors

In such countries where there are favourable conditions for the development of intellectual capital, it (intellectual capital) turns into a leading endogenous driver of economic growth. The working mechanism of it can describe like this: the combination of intellectual capital and innovative entrepreneurship stimulates the entrepreneurial interest that in its turn provides the economic motivation for the intellectualization of production, and the entrepreneur becomes the main driving force of the process of intellectualization of economy [8, 146]. In current conditions, the development of intellectual capital is a strategic task in Ukraine, since the increase of the intellectual component in production would accelerate its intellectualization and push scientific and technological progress. Scientific and technological progress is, as we know, a powerful driving force for development, the Schumpeter's "source of energy capable of independently breaking any equilibrium that can only be achieved" [7]. For Ukraine, this means the possibility of providing an endogenous model of economic growth with the dominant growth of production of modern information technologies. All this would accelerate the intense economic growth and a fundamental restructuring of the economy for the benefit of knowledge-intensive industries. Innovative development would take place. Gradually, evolutionarily, there would be a conflict-free expansion of production capacities; there would be a shift from "humans for the economy" to "economy for humans". It is then that a potential opportunity would emerge to reform economic relations to simultaneously achieve the economic, social, and environmental goals, i.e. to provide sustainable development and to construct the aspired knowledge economy. (Fig. 1) However, there is a drawback in total reliance on the entrepreneurs in the process of

development of intellectual capital. It is worth admitting that entrepreneurs would invest in intellectual capital only as long as it remains profitable. Against this background, the Government should encourage companies to invest in intellectual capital via economic methods. Intellectual capital, in its close connection with innovative entrepreneurship, reflects the main peculiarities of the human capital but does not correspond to it. Identifying of intellectual capital with a human is methodically incorrect because the intellectual capital goes beyond the knowledge that only belongs to employees as an element of their workforce. As a result of intellectual activity knowledge at the time of its production is unique and stays in the human brain in the form of ideas, hypotheses, and plans. But using knowledge as intellectual capital in the process of reproduction requires some legal approaches. The second component of intellectual capital includes patents, licenses, trademarks, organizational structures, databases, guides, computer programs, consumer lists, electronic networks and other objective factors that ensure productive work of employees. In simple words, these are all elements of intellectual capital which remain at some firm when the employees are out (the working day is over). Therefore, the intellectual capital of entrepreneurship in terms of forms of implementation include knowledge that merges with the employee and cannot fully capture and knowledge that gains the ability to exist independently, separated from employee and can be possessed by entrepreneurs as intellectual property. Intellectual resources, becoming objects of intellectual property, require legal protection. Each type of security allows entrepreneurs implementing different strategies concerning intellectual capital based on obtaining exclusive rights. Nowadays there are many discussions in scientific publications which raise the problem of migration of highly qualified workforce from Ukraine to other countries. It had widely said that Ukraine loses its intellectual potential due to "brain migration" abroad. In the year 2017, an anonymous electronic survey about the migration intentions of the young Ukrainian scientists has conducted. It covered 287 people (average age - 30.5 years) from 14 branches of NAS of Ukraine and 3 institutions at the Presidium of NAS of Ukraine. The results of this sociological survey revealed, in particular, that the socio-economic status of young scientists at the Academy had a significant impact on their migration intentions. Thus, among the main reasons that make one think about possible emigration (temporary or permanent residence), the authors point out the low salary and insufficient funding of the scientific field, unfavourable working conditions, difficulties with professional self-realization. The authors found the distribution of answers to the question "Are you planning to go abroad for further research or study shortly?" One fifth (18.8%) have an intention to go abroad, and one-sixth (15, 7%) demonstrate the intention to leave for permanent residence. Positive from international mobility may be considered an indicator of scientists who plan to visit abroad for scientific and educational purpose and to come to Ukraine - 32, 4%. However, it is essential to be sure that they will, indeed come back. [11] It should also say that there is also a lack of control of the process of transition of the achievements of science and innovation to other countries without the proper registration as intellectual property in Ukraine. Uncontrolled

leakage of innovative technical solutions abroad from Ukraine harms the economic security of the country. Ignoring Article 37 of the Law of Ukraine "On Protection of Rights for Inventions and Utility Models" [10], which provides for the registration of a priority application for an invention (utility model) in Ukraine (not abroad), many inventors apply for inventions directly to other countries without applying for an invention (utility model) in Ukraine. The unauthorized flow of inventions, the so-called "patent migration" from Ukraine, is continually growing. The level of "fugitive patents" is 10-12% of the annual patent volume. The most active sectors of migration are medicines, IT technologies (systems and equipment), and pharmacology. The geography of migration is expanding: the Russian Federation (51%), the United States (11%), South Korea (9%), Taiwan (3%), and Germany (2%). As a rule, the group of "fugitive patents" includes the most competitive inventions, which have then returned to Ukraine as innovative products of foreign companies. In such conditions, protection of the results of scientific and technological activities through patents becomes one of the critical aspects of the development of the intellectual capital of entrepreneurship. It should note that this process is quite expensive. For instance, the cost of services and the amount of duty on foreign patenting of inventions depend on the scope of the application, the number of claims, the reasoning of the answers to the examination requests, the length of the case and the fee of a specific foreign patent attorney: in the USA - from 10 thousand US dollars, in Canada - from 3 thousand in Australia - from \$ 2.5 thousand, in the EU - from \$ 2.5 thousand per country, in Japan - from \$ 25 thousand. The standard European patent for 16 countries of the European Union costs around 25 thousand Euros. The task of foreign patenting of inventions becomes a national task since it allows to secure the priority of Ukraine in the achievements of science and high-tech production and to increase Ukraine's international reputation in the fields of science and production of high-tech products, to provide the position of a country with developed intellectual capital. [1] On behalf of the Government of Ukraine. It is essential to improve the relations in the sphere of intellectual property in the direction of more accessible and cheaper recognition of intellectual property of inventors and to obtain an individual right for the inventions by them. For example, in Ukraine, more utility models are patented than inventions, i.e. there are 73% of models and 27% of inventions in the overall volume of the inventions patented. In neighbouring Poland, 9 inventions have attributed to each utility model. The main reason for such situation is financial. In Ukraine, a utility model patent can obtain cheaper, more comfortable and faster. At the same time, the level of the legal protection of such patents is much lower, and it is valid only for 10 years instead of 20 years. It is a characteristic feature of Ukraine whereas in the developed countries this form of protection for new developments is not accessible at all because from the concept of "utility model" it follows that such models usually protect less significant developments. There is also one more alarming fact: more than 90% of utility model patents registered by Ukrainian inventors abroad for the period 2007-2017 have obtained in Russia. In the face of an unannounced war with Russia, which has been going on since 2014, such dynamics are threatening. Altogether

these are all proofs of poor development of relations in the sphere of intellectual property in Ukraine. There also should be mentioned that the supply of intellectual capital in the market depends mostly on investment. Investing directly in intellectual capital is different from investing in human capital in general. Investments in human capital include investments in educational, health and migration measures that have tied to specific conditions of work, contribute to improving skills, improving health, mobility of workers, according to their potential, solving the problems of enterprises and national interests. Investment in intellectual capital should be understood only as an investment in the knowledge of the employees of each particular company, the formation of their creative skills, which ensures the competitiveness of these companies. Recognizing the importance of investing in health and education, it is worth noting the critical value of investing in the development of employees' creative skills. Investments in intellectual capital can significantly improve production efficiency. Employees trained in advanced methodology and state-of-the-art equipment, utilizing the latest NTP technologies and achievements, can eventually turn into valuable capital for their country, bring dividends not only to their professional skills, development and research, but also to become the intellectual wealth of society. Development of innovative entrepreneurship by the Government has closely connected to raising the volume of investments into intellectual capital. Stimulating entrepreneurship can become an effective mechanism in stimulating the development of intellectual capital, both human capital and intellectual property.

V. DISCUSSION

Nowadays, in the conditions of necessity to construct a knowledge economy in Ukraine, the role of man in the multifaceted system of socio-economic relations of society has become crucial. Intellectual capital of the economic system has turned in fact into the primary resource of development: the development of modern society has become dependent on the ability of intellectual capital to create innovations. At the same time, it is the innovative entrepreneurship that can stimulate the development of intellectual capital. In the process of their activity and aiming to obtain profits, entrepreneurs need to be competitive. It means, first of all, providing the development of intellectual capital as a moving force for creating and implementing innovations. Intellectual capital has determined by the level of education, competence and creativity of specialists, development of intellectual abilities in solving various problems. At the same time, intellectual capital is the form in which the peculiarities and essence of human capital are most manifested. Ukraine faces a negative for its development process of "brain migration" abroad. Various factors cause it, but the main factor remains the economic one, i.e. non-adequate economic state of the Ukrainian scientists. Intellectual capital cannot be fully seen as human capital as besides the human component it contains such component as intellectual property. Possessing the unique legal rights for inventions can also add substantially to the competitive position of some company and of a country as a whole. Here we can also observe the process of "patent migration" caused by falls in the development of relations in intellectual property. Otherwise, the process of yielding the inventions made in

Ukraine in favour of other countries would continue and indeed would be threatening for its development. Improvement of the relations in the sphere of intellectual property is an essential task for the Government today. Development of intellectual capital through stimulating the innovative entrepreneurship is a strategic task in Ukraine since the increase of the intellectual component in social production would accelerate the intellectualization of production and push scientific and technological progress.

VI. CONCLUSIONS

So that in current conditions in Ukraine, it is necessary to provide development of intellectual capital through stimulating the innovative entrepreneurship. It would accelerate the intellectualization of all spheres of the economy and push the innovative changes in the Ukrainian economy towards constructing a knowledge-based economy. Intellectual capital of economy should consider as a combination of human capital and intellectual property, i.e. something that belongs to some person and can never alienated and something that can be created by a person but then alienated. The firing of some employee simultaneously means losing his "brains". If some inventions are not correctly protected the right legislatively for using them can be lost forever. These two significant issues state the problems of protection of intellectual property and creating conditions for preserving the valuable human capital in the country. The main challenges of current Ukraine in such conditions are to stop migration and to improve the relations in the sphere of intellectual property. It can do through the development of innovative entrepreneurship where there are opportunities for the self-realization of people and the application of inventions. Practical implications. The results of the research can use as a source of information concerning providing development of intellectual capital through stimulating innovative entrepreneurship in current conditions in Ukraine to stimulate constructing knowledge economy there.

REFERENCES:

- [1]. Androschuk, G. (2019) Patent Activity of Ukrainian Inventors Abroad: Impact on Economic Security. Available at: <http://yur-gazeta.com/publications/practice/zahist-intelektualnoyi-vlasnosti-avtorske-pravo/patentna-aktivnist-ukrayinskih-vinahidnikiv-za-kordonom-vpliv-na-ekonomichnu-bezpeku.html> (accessed 07 January 2020)
- [2]. Becker, G. Human behaviour: an economic approach. Selected works on economic theory. Edited by Kapelyushnykov R. Moscow, Russia, 2003.
- [3]. Dunn, S., Pressman, S. (2005) The economic contribution of John Kenneth Galbraith. Review of Political Economy, Volume 17, (2), p. 161 – 209. Available at: https://www.researchgate.net/publication/24088369_The_Economic_Contributions_of_John_Kenneth_Galbraith (accessed 07 January 2020)
- [4]. Glazyrin, M. (2007). The innovative social and industrial complex at the level of the municipal education. Centre of economic and mathematical research of Russian Academy of Sciences. Moscow. Russia.
- [5]. Golovinov, O. (2004) Human capital in the system of industrial relations. Monography. Donetsk, Ukraine.
- [6]. Grishnova O. (2014) Human, the intellectual and social capital of Ukraine: essence, interconnection, evaluation, directions of development Sotsialno-trudovi vidnosyny: teoriia ta praktyka: Zb. Nauk. Prats, 1(7),p. 34 – 42.
- [7]. Hanusch, H., Pyka A. (2007) Elgar Companion to Neo-Schumpeterian Economics Edward Elgar Cheltenham, UK, Northampton, MA, USA. Available at: <http://digamo.free.fr/elgarneoschump.pdf> (accessed 07 January 2020)
- [8]. Klymko, S., Pryhoda, V., Syzonenko, V. (2006) Human capital: world experience and Ukraine, Kyiv, Ukraine.
- [9]. Law of Ukraine "On Protection of Rights for Inventions and Utility Models" from 23.12.93, № 3769-XII Available at <https://zakon.rada.gov.ua/laws/show/3687-12> (accessed 07 January 2020)
- [10]. Law of Ukraine "About Entrepreneurship" from 26.02.91, N 785-XII, edited 05.04.2015. Available at: <https://zakon.rada.gov.ua/laws/show/698-12> (accessed 07 January 2020)
- [11]. Migration Intentions of Young Scientists of the NAS of Ukraine: According to the 2017 Poll. Available at: <http://vnz.org.ua/statti/10456-migratsijni-namiry-molodyh-uchenyh-nan-ukrayiny-za-danymy-sotsiologichnogo-opytuvannja-2017-roku> (accessed 07 January 2020)
- [12]. Morozov, O. (2008) Intellectual capital management system as a mechanism for protection of intellectual property rights // Intelektualna vlasnist. 1 (1),p. 43 – 52.
- [13]. Reznik, N., Ostapchuk, A., Alekseieva, K., Cherkasov, A., Fedun, I. (2019) Development of Public-Private Partnerships in the Agrarian Sector of Ukraine: Digitalization as a Priority. International Journal of Recent Technology and Engineering, 8 (3). Available at: <https://www.ijrte.org/wp-content/uploads/papers/v8i3c/C10461183C19.pdf> (accessed 07 January 2020)
- [14]. Rodionova, E., Kuzmina, E. (2007) Institutional innovations in the human capital market of Russia // Innovatsii, 10, p. 41 – 45.
- [15]. Stewart, T. (1997). The Intellectual Capital. The New Wealth of Organizations. New-York – London.