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# INTELLECTUAL CAPITAL OF INDUSTRIAL ENTERPRISES OF THE ZAPORIZHYA REGION: PROBLEMS AND PROSPECTS

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**Key words:**
intellectual capital, intellect, intellectual property, enterprise, intellectual development of enterprise.

Approaches to the definition of intellectual capital are analyzed and its significance for the development of all spheres of society is established. The influence of internal and external motives in the process of increasing the level of intellectual capital is considered. An assessment of the factors influencing intellectual capital at the level of Zaporizhya region. The analysis of innovative activity of industrial enterprises by directions of activity and by branches is carried out. The main problematic aspects in the development of intellectual capital in Ukraine are highlighted and the main ways to overcome them are outlined.

# ІНТЕЛЕКТУАЛЬНИЙ КАПІТАЛ ПРОМИСЛОВИХ ПІДПРИЄМСТВ ЗАПОРІЗЬКОЇ ОБЛАСТІ: ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ

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**Ключові слова:**
інтелектуальний капітал, інтелект, інтелектуальна власність, підприємство, інтелектуальний розвиток підприємства.

Проаналізовано підходи до визначення інтелектуального капіталу та встановлено його значення для розвитку всіх сфер суспільства. Розглянуто вплив внутрішніх та зовнішніх мотивів в процесі підвищення рівня інтелектуального капіталу. Проведено оцінку факторів, які впливають на інтелектуальний капітал на рівні Запорізької області. Проведено аналіз інноваційної активності промислових підприємств за напрямами діяльності та за галузями. Виокремлено основні проблемні аспекти у питанні розвитку інтелектуального капіталу в Україні та окреслено основні шляхи їхнього подолання.

## Statement of the problem

In the information society, intellectual capital remains a leading resource, the availability and use of which is the basis of any individual, any economic entity and affects its effective functioning. The importance of this factor of production is growing every day, because in today's world priority is given to intellectual (creative) activities of individuals.

Given this, the study of the main deterrents in this area and the establishment of ways to improve the efficiency of intellectual capital management are becoming increasingly important.

## Analysis of recent studies and publications

Among Ukrainian researchers, such outstanding scientists as E. Brooking [2], J. Vovk [3], V. Geets [4], N. Hook [4], N. Hook [4] 6], A. Kozyrev [9], L. Melnyk [11], I. Sidorchuk [16], O. Shamanska [18] and others. Analyzing the works of foreign researchers, we can single out: J. Grayson, D. Gilbraith [5], M. Castells [8], V. Inozemtsev [7], E. Tofler [17] and others.

In the modern economic literature, such types of capital as fixed and working capital, loan and loan, industrial and human are widely covered. Intellectual capital is, today, still insufficiently studied in theoretical terms. It is believed that this term was first introduced by the famous American researcher J. J. Galbraith [5] in 1969. It was further developed in the late twentieth century in the works of such researchers as V. Bazylevych, E. Brooking [2], O. Butnik-Siversky, V. Vrublevsky, V. Geets, A. Gritsenko, D. Duffy, D. Klein, E. Libanova, M. Mandibura, Malone, L. Prusak, P. Sullivan, T. Stewart, L. Fedulov and others .

Therefore, realizing the significant role of intellectual capital, managers of enterprises and organizations will appreciate the work of staff, because it is the person who is the object of the most effective investments and the entity that turns them into productive abilities to further implement them in production [1].

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**Objectives of the article**

The purpose of the article is to study the essence of intellectual capital, to determine its place and role in the activities of industrial enterprises of Zaporozhye region and to identify the main areas of improving the management of intellectual capital of industrial enterprises.

The main material of the research

Ukraine has great potential for transformation given the global trends in the transition to the information society. The reason for this is a positive retrospective assessment of the intellectual and labor capabilities of the Ukrainian people, which was expressed in the ability to generate ideas that revolutionized the general worldview principles of mankind. Practice shows that many immigrants from Ukraine – emigrants in the new country with favorable conditions became outstanding scientists, successful individuals, which they could not achieve at home (for example, Nobel laureates from Ukraine R. Hoffman, P. Kapitsa, I. Mechnikov, S. Kuznets and others) [12]. During the years of independence in difficult macroeconomic conditions, many citizens of Ukraine also demonstrated their high intellectual abilities, which were manifested even in an unfavorable environment.

Thus, there is every reason to talk about the formed intellectual and labor potential of the population of Ukraine, but which should not be overestimated due to significant value distortions and low self-esteem of labor costs. However, in the difficult conditions of Ukraine's economic development and the need for effective implementation of its endogenous potential, it is the intellectual and labor component that should be the main factor of innovative change.

Mocherny S. defines the intellect of society as a set of abilities and creative talents of people, their educational and qualification level. Intelligence is the ability to assimilate new knowledge, information and use them for the development of science, culture, creation and implementation of new technology, development of optimal solutions in the spheres of public life. This, of course, refers to the driving force of socio-economic transformations [13, p. 24].

In most researchers, the role of intellectual capital is due to economic growth, so among modern scientists studying this problem, the analysis is aimed at finding ways to effectively use intellectual capital. Thus, the interpretation of "intellectual capital" is revealed in scientific works: E. Brooking [2], D. Gilbraith [5], M. Castells [8], E. Tofler [17], V. Geets [4], V. Inozemtsev [7], A. Kozyrev [9], B. Leontiev [10], L. Melnik [11] and many others.

The research of the above scientists analyzes the theoretical and methodological aspects, which relate mainly to the macro level of the economy. At the same time, the problems related to intellectual capital as one of the main factors of development of an individual enterprise remain insufficiently studied. In a number of researches certain applied aspects of use and an estimation of the intellectual capital of the enterprise and economy of the country as a whole are considered, however they have rather limited character.

Inozemtsev V.L believes that intellectual capital is information and knowledge that play the role of "collective brain", which accumulates scientific and everyday knowledge of employees, intellectual property and experience, communication and organizational structure, information networks and enterprise image [7, c. 78].

Leontiev B.B under the intellectual capital of the enterprise understands the value of all its intellectual assets, including intellectual property, its natural and acquired intellectual abilities and skills, as well as the accumulated knowledge base and useful relationships with other entities [10, p. 112]. That is, brands, clientele, brand name, sales channels, licensing and other agreements, etc.

High-tech companies need not so much investment as highly skilled workers who have extensive knowledge, skills and abilities. Effective entrepreneurship becomes impossible without the daily practical use of intelligence as a factor in accelerating scientific and technological progress. Moreover, the vector of intelligence should be aimed at combining environmentally friendly technological and socio-cultural innovations on a fundamentally different basis of human civilization, different mentality, spirituality, culture, improving the quality and competitiveness of products, improving management and increasing the welfare of society. Given the modern understanding of the challenges of the time, there should be a formation of a new vision of the purpose of the intellectual potential of society, its socio-human responsibility, the possibility of balanced development and implementation.

Summarizing the above, it should be noted that in the general case in the structure of intellectual capital there are three components:

− human capital: knowledge, skills, experience, know-how, creativity, creative thinking, moral values, work culture, etc .;

− organizational capital: patents, licenses, know-how, programs, trademarks, industrial designs, hardware and software, organizational structure, corporate culture, etc.;

− consumer capital (according to Ilyashenko SM, it should be interpreted more broadly as interface capital): relations with economic counterparties (suppliers, consumers, intermediaries, credit and financial institutions, authorities, etc.), information about economic counterparties, the history of relations with economic counterparties, trademark (brand) [19, p. 35].

Motivation of effective employment in the regional labor market, as noted by M.V Semikina – is a complex, multilevel and multi-vector process of interaction of objective and subjective factors associated with the peculiarities of the consciousness of the population (or individual), and with the levers of external influence governing the employment of highly skilled workers, labor behavior and productivity of intellectual activity [20, p. 6].

Here it is important to focus on the state of motivation of employees to intellectual self-development and creativity in the labor process. Motivation acts, first, as a process of external influence (in particular, by the state, employers, the labor market) on labor behavior, labor consciousness, values of the employed population. Secondly, the motivation of the population depends on the characteristics of internal needs, interests, motives, mentality and perception of environmental influences.

Thus, the effectiveness of both external incentives and the peculiarities of the formation of internal motives of employees to use and develop their own intellectual potential is important.

However, at the present stage of the country's development there are active processes of labor migration of the

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Table 1 – Characteristics of migration movements of urban and rural population of Zaporozhye region in 2019.

| | | Zaporozhye region | urban settlements | countryside |
|---|---|---|---|---|
| all streams | arrival | 98,8% (16 761) | 93,4% (12 265) | 117,1% (4 496) |
| | disposal | 111,5% (18 916) | 101% (13 261) | 147,3% (5 655) |
| | migration increase (decrease) | -12,7% (-2 155) | -7,6% (-996) | -30,2% (-1 159) |
| interstate migration | arrival | 5,9% (1000) | 7,2% (946) | 1,4% (54) |
| | disposal | 2,9% (495) | 3% (395) | 2,6% (100) |
| | migration increase (decrease) | 3% (505) | 4,2% (551) | -1,2% (-46) |
| Total migration growth rate (reduction) (-) per 10,000 population | | | -7,6 | -30,2 |

Note. Source: [14, c. 149-151]

working population outside Ukraine, which directly affects the ability to use intellectual capital as a key element of national economic growth.

Insufficient today is the presence in the country of an intellectual elite, which is an important driver of innovative change, able to cause a powerful influence on public opinion through scientifically sound statements and, most importantly, effective in generating new ideas. Such ideas should comprehensively address all spheres of public life with a view to improving the quality of human life. The formation of an intellectual elite must be preceded by the phenomenon of so-called intellectual monopoly. This is the only type of monopoly in world business, which is defined and encouraged both nationally and internationally, as the creation of the most favorable conditions for the development of the intellectual elite in the country provides opportunities for innovative economy [11, p. 85].

Analyzing the main directions of migration of the population of Zaporozhye region in 2019, it was found that the number of arrivals amounted to 16,761 people, departures – 18,916 people, ie the balance of migration is negative and is 2,155 people. With regard to interstate migration, the number of arrivals (1,000 people) exceeds the number of departures (495 people) by 505 people. However, the overall migration reduction rate per 10,000 of the current population in the Zaporizhia region in 2019 was 12.7 [15, p. 17].

The migration of the most qualified specialists, the best labor force causes significant damage to the human and intellectual capital of industrial enterprises in the region. The disguised form of migration is the invitation of Ukrainian scientists and specialists by foreign companies located on Ukrainian territory. The intellectual capital of these people really works not for the benefit of regional and Ukrainian science and economy, but for their foreign employers. As a result of migration in all its forms, the industry of the region, like our country as a whole, suffers losses, and the host country reaps the harvest of intellectual capital generated in Ukraine) [21].

Along with the assessment of migration processes, it is also advisable to analyze the unemployment rate by different methods (Tables 2, 3).

Table 2 – Registered unemployment rate (as of January 1) 2019

| Total | Women | Men | Urban settlements | Countryside |
|---|---|---|---|---|
| 2,4% | 3% | 2,1% | 2,3% | 4,2% |

Note. Source: [15]

Table 3 – Unemployment rate according to the ILO methodology (as of January 1) 2019

| Total | Women | Men | Urban settlements | Countryside |
|---|---|---|---|---|
| 11% | 11% | 10,5% | 10% | 13,8% |

Note. Source: [15]

Thus, we can conclude that the unemployment rate of the working age (according to the ILO methodology) exceeds the level of registered unemployment, calculated in relation to the economically active population of working age in the Zaporozhye region.

All these processes directly affect the efficiency of formation, development and use of intellectual capital of enterprises, which, in turn, is reflected in the volume of innovation of industrial enterprises in the region and the sale of innovative products to consumers (Table 4).

Table 4 – Innovative activity of industrial enterprises in the areas of innovation in 2019

| | Interest on the total number of industrial enterprises in 2019 |
|---|---|
| Number of enterprises engaged in innovation activities | 12,3% |
| of them had costs by areas | |
| internal research and development | 1,2% |
| external research and development | — |
| purchase of machinery, equipment and software | 6,2% |
| acquisition of other external knowledge | — |
| staff training and education | 2,9% |
| market introduction of innovations | 3,8% |
| others | 3,9% |

Note. Source: [15]

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If we consider the types of industrial activity in 2019, the innovations of the chemical and petrochemical industry (23.5% of the total number of enterprises in the industry), mechanical engineering (22.5%), pulp and paper production were more active; publishing (17.6%), metallurgical production and production of finished metal products (13.3%), light industry (12.5%)).

The study of scientific sources and practical experience of domestic enterprises indicates that in Ukraine there is a widespread equalization of wages and bonuses, there is excessive regulation of employment of intellectual workers, administrative pressure, vulnerability and copyright infringement, complexity and high cost of patenting procedures. All this destroys invention and innovation, in addition, indicates the lack of effective innovation management and the insufficient level of implementation in Ukrainian enterprises of progressive approaches to international practice in this area.

**Conclusions**

In conclusion, it should be noted that the intellectual potential of the employed population is a set of knowledge, intellectual abilities and capabilities of the population employed in the country's economy, which is able to enhance innovation, economic growth and quality human development to ensure social progress. At the same time, in Ukraine there are currently no acceptable socio-economic conditions for the formation of a high level of motivation of the able-bodied population to develop and effectively use their own intellectual potential.

Ensuring the innovative development of Ukraine's economy at the expense of intellectual potential should be based on the formation of a general innovative culture of the population. This can be achieved systematically and consistently through the impact, primarily on young people.

Creating opportunities for the implementation of innovative ideas through a system of motivation for self-education, the development of knowledge of professional transfers between generations should be the impetus for the intensification of innovation, which will bring the economy of Zaporozhye region to a higher level with clear signs of information society.

The creation of such conditions should take place at all levels of the economy by means of state support of domestic production and entrepreneurship, promote quality human development through education, science, health care, raising social living standards, reforming wages and incomes.

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