ЕКОНОМІКА ТА УПРАВЛІННЯ ПІДПРИЄМСТВАМИ

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INTELLECTUAL CAPITAL IN THE THEORETICAL FIELD OF ECONOMIC SCIENCE

The article analyzes the meaning and role of intellectual capital, as well as its interpretation in the works of foreign and domestic scientists, identifies the main approaches to formulating the essence of the category of «intellectual capital». The essence of the concept of «intellectual capital» is revealed as the knowledge, skills and experience of enterprise employees, which have a direct impact on the development of the organization, as well as ensure its economic stability and competitiveness. The author's definition of the concept of «intellectual capital of enterprises» is given.

Focusing on the role and place of human capital in the development of the economic potential of an enterprise, it is concluded that the only correct course of events should be a strategy for innovative economic development, based on one of the main competitive advantages — the intellectual capital of employees, the development of human resources, and the most effective use of people's knowledge and skills for the constant improvement of technologies, economic results, and the life of society as a whole.

It was established that the structure of intellectual capital includes the following elements: human capital, structural capital and consumer capital. Based on this, it is proposed to attribute the economic category «intellectual capital» to non-financial assets. Methods for assessing the effectiveness of a company's intellectual capital are studied, and their main shortcomings are outlined. It is revealed that the implementation of an intellectual capital management system is the creation of an information and analytical base for solving practical issues of strategic development of an enterprise.

Keywords: *capital, intellectual capital, human capital, innovation, knowledge economy.*

Problem statement. In the conditions of the modern information economy, one of the most powerful driving forces for the development of civilization is human creative activity. The efficiency of the economy, the scientific and technical level of production, and socio-economic progress depend on the volume of knowledge accumulated by society and the efficiency of using the nation's intellectual resources. World experience confirms the effectiveness of the innovative development model based on the use of the results of intellectual activity. Scientists, entrepreneurs, managers, financiers, highly qualified engineers, and other specialists engaged in the field of high technologies, the dissemination of information and new knowledge are a new intellectual elite, which is the main social wealth of developed countries. After all, it is they who form the middle class, which is the basis of social stability and the engine of progress.

Analysis of recent research. A significant contribution to the development of the theoretical and methodological foundations of the concept of «intellectual capital» was made by foreign scientists, namely M. Armstrong, D. Bell, E. Brooking, D. Duffy, L. Gioia, L. Edwinson, D. Klein, H. McDonald, M. Malone, L. Prusak, P. Sullivan, K. Swaby, T. Stewart. The issue of intellectual capital was also studied by Ukrainian scientists such as V. Bazylevich, O. Berveno, O. Butnik-Siversky, V. Geyets, A. Chukhno. Despite the fact that many scientific works are devoted to intellectual capital, there is no single approach to defining its essence.

The purpose of the article is to analyze existing research on the essence of intellectual capital and define the concept of intellectual capital of an enterprise.

Presentation of the main material. Intellectual capital as a concept was first used in 1969 by J. Galbraith [1], a more scientific justification of the term was formed already in the 80s-90s of the 20th century. Solving the problem of measuring the intellectual resources of an enterprise, Z. Griliches, when conducting econometric research, introduced the term «intangible capital», which has much in common with the concept of intellectual capital.

Thus, the basis of intangible capital was an indicator that increases the market value of the company and depends on the number of patents it has, the volume of investments in scientific research, the size of the prestige. But from this description, intangible capital is an analogy not to intellectual capital in general, but close to one of the components of intellectual capital — technological capital. Further methodological foundations for assessing intellectual capital and its management were developed by foreign consultants in business practice — Y. Saint-Onge [2], L. Edvinsson, M. Malone [3, 4], they identified such components in the structure of this type of capital as «human» and «structural» capital. Human capital was attributed to the totality of knowledge, practical skills, creative abilities of hired personnel in combination with the system of moral guidelines and corporate culture of the enterprise in which they work.

Structural capital includes organizational capital (organizational structure, hardware and software, trademarks, patents) and client capital (relationships with clients). The difference between these components lies in the property rights, since unlike structural capital, human capital cannot be the property of an enterprise. O. Butnik-Siverskyi takes a similar position, distinguishing between human capital and intellectual assets in the composition of intellectual capital [5]. In contrast, the American researcher E. Brooking more deeply investigates the process of forming intellectual capital in its structural aspect and in this relationship highlights the infrastructure component of intellectual assets. Table 1 shows the stages of evolution of the terminology included in the concept of intellectual capital.

Table 1

Stages in the formation of the categorical apparatus in the economy of the intellectual type

Term name	Year	Author
Knowledge workers	1950	P. Drucker
Human capital	1962	F. Makhlup
Intellectual capital	1969	J. Galbraith
Knowledge economy	1970	D. Bell
Post-industrial economy	1991	T. Stewart
Structural capital	1990	L. Edvinsson and M. Malone
Immense capital	1990	W. Griliches
Client capital	1993	Yu. Onge
Technological capital	2002	A. Chuchno

Domestic specialist in the study of the essence and structure of intellectual capital O. Kendyukhov believes that the main task remains unresolved — the formation of an organizational and economic mechanism for managing such capital, the concept of this mechanism has not been revealed and substantiated. As a result of the analysis of the essence of intellectual capital, scientists have proposed the following formulation: «intellectual capital is the intellectual resources of an enterprise capable of creating new value, represented by human and machine intelligence, as well as intellectual products created independently or involved as a means of creating new value» [6, p. 31]. This terminological approach is characterized by functionality, but allows us to consider intellectual capital mainly as a human and technological component.

O. Kendyukhov proposes to divide intellectual capital according to various classification criteria, indicating that the types of intellectual capital depend on its form of attraction, organizational and legal form, method of assessing its value, method of formation. The scientist considers the strategic task in management to be the direction of intellectual capital to increase the added value created at the enterprise in the process of innovative activity.

According to I. Zhuravleva, intellectual capital is a set of knowledge, human abilities, skills, their mobility (training, ability to perceive new information, retraining, adaptation to new conditions) and creativity (ability to think outside the box, present and form ideas), the ability to create an additional product in the process of intellectual capital movement, as well as structural material objects (software, management systems, databases). From the scientist's point of view, intellectual capital consists of four parts: intellectual human capital, intellectual property, intellectual consumer and intellectual technological [7].

Professor S. Ilyashenko expanded the interpretation of intellectual capital by introducing the concept of interface (consumer) capital, and pointed out one of the most significant problems in updating the concept of intellectual capital — the limited methodological base regarding the applied aspects of measuring and assessing intellectual capital[8].

As can be seen from Table 2, which reflects the approaches of various authors to the structuring of intellectual capital, most scientists consider human capital to be its main component, and structural capital and market capital have different synonymous names. The group of technological capital includes structural and organizational capital, and its most common definition among Ukrainian scientists is intellectual assets. Such capitals as branded, organizational, client or consumer are an identification of market capital.

Table 2

Systematization of views on the structural components of intellectual capital

Scientists	Components of intellectual capital								
	Human	Structural	Intellectual Assets	Technological	Market	Organizational	Brand	Consumer	Customer
II. Zhuravlyova	+		+	+				+	
A. Chukhno	+			+	+				
A. Kozyrev	+	+			+				
E. Brooking	+		+						
L. Edvinsson, M. Malone	+	+							
B. Leontiev	+	+							+
V. Inozemtsev	+	+							
S. Ilyashenko, V. Los	+					+		+	
O. Butnik-Siversky	+		+						
O. Kendyukhov			+				+		+

Most researchers believe that the main structural components of intellectual capital are structural and human capital. In this case, the main function of intellectual capital is underestimated — obtaining organizational and technological advantages over competitors. Since achieving such a position is possible precisely in a market environment, that is, the inclusion of market capital in intellectual capital is a reflection of its implementation. The effectiveness of further development of intellectual capital depends on the ability of the organization to use the entire set of material, financial and intellectual resources and receive additional income from this.

Scientists declare the economic approach to establishing the essence of intellectual capital as key. In their research, they are limited mainly to a description of the socio-philosophical or legal characteristics of intellectual capital.

The Ukrainian economic school traditionally uses the main economic categories in the Marxist interpretation. The essence of the process of production of surplus value was revealed by K. Marx in his scientific work on constant and variable capital. At the same time, K. Marx used the well-known formula for the value (W) of goods in the production process:

$$W = C + V + m \quad (1)$$

where, C is constant capital; V is variable capital;m is added value.

The scientist considered constant capital to be that part of the advanced capital that is converted into means of production and does not change its value in the production process. Variable capital is that part of capital that is converted into labor and changes its value in the production process. Supporters of classical scientific political economy, criticizing attempts to highlight a new — intellectual — form of capital. They believe that there is no objective necessity and logical grounds to represent knowledge as an independent factor of production. They recognize that the income of the carrier of intellectual labor should be higher than the income of a routine worker by the amount of expenses for maintaining high quality, for continuous education.

At the same time, they believe that this is not a reason for categorical substitution. When the relatively higher income of an intellectual worker is no longer called a salary, but an income from intellectual

capital. In their opinion, one cannot equate the costs of compensation and retention of labor with investments in a qualified employee. They set as their goal to eliminate any grounds for the allocation of «intellectual capital» as an independent factor along with labor, and the introduction of the term «intellectual capital» is recognized as a kind of reflection of the increased role of human knowledge in creating the value of the capital of a modern company.

As for the increased income of an entrepreneur compared to the usual one, who capitalizes on the knowledge of a hired worker and appropriates the additional value created by the subject of knowledge, this is recognized as a type of monopoly profit, and not a special type of income on a new form of capital — intellectual. Such a principled position requires establishing differences in the terminological designations of various economic relations that arise in the process of intellectualization of labor.

Analyzing the meaning of the term «intellectual capital», V. Logachev and E. Zhernov [9] consider it inappropriate to consider it as a new economic category, which was previously disclosed in already known terms, such as «means of production», «constant and variable capital», «labor force». Referring to the founder of the Marxist direction of political economy, they consider human capital as variable capital and indicate that it is equal to the value of labor force. Thus, the very existence of intellectual capital is denied, because even the possibility of its objective measurement is questioned.

According to these scientists, intellectual resources act only as factors of increasing the rate of profit above the average, but are not independent factors of production, since they contribute not to the creation, but to the movement of the value of capital, to the redistribution of value in the process of competition. Based on this, critics of the theory of intellectual capital still recognize the existence of the so-called intellectual rent, which is a factor of the entrepreneur's monopoly in the competitive struggle. At the same time, according to the prominent Ukrainian economist A. Chukhno, «intellectual resources have significantly expanded the traditional three-factor model of economic development «labor-land-capital», transforming labor into labor, land and subsoil — into production conditions, and savings — into innovations that open up new opportunities for investment» [10].

Foreign scientists who questioned the existence of intellectual capital are mistakenly attributed to M. Modigliani and F. Miller. According to their theory, the capital structure is independent and does not affect the value of the firm. The main argument of this theory is the statement that the value of capital depends only on the profit received. But the conclusions of the theory of M. Modigliani and F. Miller concerned the ratio of borrowed and equity capital, while they did not apply the classification of capital by materiality — physical or intellectual. That is why, in our opinion, the limitations that accompany this theory should not be taken into account in the real practice of intellectual capital management [10, 11].

The specificity of such a special type of capital as intellectual is due to its complex nature and the processes of its formation and implementation. The relationship between the components of intellectual capital is characterized by synergistic properties, and determining the magnitude of the synergistic effect allows us to establish the presence of interdependence between the elements of intellectual capital. Thus, human capital generates the creation of intellectual products of its mental activity, which in the process of commercialization are transformed into intellectual assets, which, in turn, increase the technological capital of the enterprise, and when selling products on the market, the market capital of the enterprise.

Intellectual capital has the following specific features:

– is simultaneously in the forms of stock and product, its consumption is at the same time its multiplication;

– is stored and accumulated in specific, non-traditional forms;

– is not material in the traditional sense, although the forms that intellectual assets take can be material;

– is the main component of determining the market value of modern enterprises[1].

Intellectual capital performs a number of functions, the main of which can be considered the following:

– informational is accumulation, systematization, and transfer of knowledge, skills, abilities, information;

– cognitive-epistemological is acquisition of knowledge about processes and phenomena;

– transformative is transformation of knowledge into new results of intellectual activity (information, products, services, etc.);

– scientific and research is organization and conduct of scientific research in the economic, political, social, spiritual spheres of public life;

– axiological is assistance to individuals in realizing the significance for themselves and for society of certain events and phenomena, products, works, services, participation in the formation of personal attitudes towards them, choice of behavior based on conscious action and in accordance with values;

– integrative is orientation to research in all areas and branches of knowledge in order to create new products, works, services;

– regulatory is establishment of traditional norms and rules that regulate the behavior of subjects;

– cultural is participation in expanded cognition, in education, self-education, development of thinking of subjects, etc.;

educational is formation of self-awareness in individuals;

– practical is assistance in solving socio-economic, cultural and other tasks;

– protective is protection of the results of intellectual labor by using them in everyday activities.

Intellectual capital can be considered as a generalizing economic category:

– intellectual capital as a generalizing category is a set of humans, machine intelligence and intellectual product;

– intellectual capital as an economic category includes only those intellectual resources of the enterprise that are capable of creating new value or bringing additional profit. If some patents or design rights are not capable of creating new value (bringing additional income), do not have market value, then they should not be attributed to intellectual capital, although they are an intellectual product;

– intellectual capital is a means of creating new value, which fundamentally distinguishes it from intellectual potential;

– the basic function of intellectual capital is the creation of new value.

Most researchers agree that at the organizational level, intellectual capital is the sum of three components: 1) human capital — capital embodied in the organization's employees in the form of experience, knowledge, skills, innovation capabilities, as well as in the general culture, philosophy of the organization; its other components are the organization's moral values, work culture and management culture, and a general approach to business; 2) structural capital — the most diverse part of intellectual capital; this includes hardware and software, organizational structure, and patents.

Conclusion. Thus, intellectual assets determine the existence of an interconnection of the components of human, technological, and market capital, the effect of synergy. This is manifested in the fact that when the elements of human, technological, and market capital interact, the enterprise receives a greater effect than when individual components of intellectual capital are used separately.

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