

INTELLECTUAL CAPITAL AS A FACTOR OF INCREASING COMPANIES' COMPETITIVENESS

CAPITAL INTELECTUAL COMO FATOR DE AUMENTO DA COMPETITIVIDADE DAS EMPRESAS

EL CAPITAL INTELECTUAL COMO FACTOR DE AUMENTO DE LA COMPETITIVIDAD DE LAS EMPRESAS

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ABSTRACT: The purpose of this study was to substantiate the prospects of intellectual capital management to increase a company's competitiveness. The main methods of studying the problem were a review of international experience in intellectual capital management and an assessment of the possibilities of its adaptation to Russian economic practice. The international experience of the influence of artificial capital on a company's competitiveness has been summarized, which makes it possible to determine the main stages of intellectual capital management. The study made it possible to determine the principles of the formation of the intellectual capital of a company, which have a strategic goal of increasing the competitiveness of business on the world stage, which means an increase in the level and quality of life of the population, and consequently, the welfare of the country.

KEYWORDS: Knowledge management. Intellectual capital. Competitiveness.

RESUMO: *O objetivo deste estudo foi fundamentar as perspectivas da gestão do capital intelectual para aumentar a competitividade de uma empresa. Os principais métodos de estudo do problema foram uma revisão da experiência internacional em gestão de capital intelectual e uma avaliação das possibilidades de sua adaptação à prática econômica russa. Resumiu-se a experiência internacional da influência do capital artificial na competitividade de uma empresa, o que permite determinar as principais etapas da gestão do capital intelectual. O estudo possibilitou determinar os princípios da formação do capital intelectual de uma empresa, que têm como objetivo estratégico aumentar a competitividade dos negócios*

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no cenário mundial, o que significa um aumento do nível e da qualidade de vida da população, e conseqüentemente, o bem-estar do país.

PALAVRAS-CHAVE: *Gestão do conhecimento. Capital intelectual. Competitividade.*

RESUMEN: *El propósito de este estudio fue fundamentar las perspectivas de la gestión del capital intelectual para aumentar la competitividad de una empresa. Los principales métodos para estudiar el problema fueron una revisión de la experiencia internacional en la gestión del capital intelectual y una evaluación de las posibilidades de su adaptación a la práctica económica rusa. Se ha resumido la experiencia internacional de la influencia del capital artificial en la competitividad de una empresa, lo que permite determinar las principales etapas de la gestión del capital intelectual. El estudio permitió determinar los principios de la formación del capital intelectual de una empresa, los cuales tienen como objetivo estratégico incrementar la competitividad de los negocios en el escenario mundial, lo que significa un aumento en el nivel y calidad de vida de la población, y en consecuencia, el bienestar del país.*

PALABRAS CLAVE: *Gestión del conocimiento. Capital intelectual. Competitividad.*

Introduction

Intellectual capital as intangible resource was noticed for the first time in the works of the classics of political economy – A. Smith, W. Petty, D. Ricardo, K. Marx, who sought to understand intellectual capital as not so much quantity as the quality of labor resources. The Neoclassical School of Economics continued these studies, pointing out the need to increase economic efficiency by increasing the level of education of the population. The very concept of "intellectual capital" was introduced at the end of the 1960s by such economists as G. Becker, D. Gilbreth, T. Schultz, who identified intellectual capital as human and concluded that it was necessary to invest in education and development of an organization's labor resources. Later, A. Flamholz singled out the tasks of human capital management: considering employees as assets for investment and not as a costly item of expenditure; development of methods for measuring labor resources and their impact on economic efficiency; the need to collect, analyze, and process data on changes in the composition of the workforce.

Since the end of the 70s, along with the concept of human capital, tangible capital appears. H. Itami understood it as intangible assets that an organization can dispose of at its discretion for greater efficiency of its functioning and increasing competitiveness. This, in turn, allowed T. Stewart, summarizing all the above theories, to introduce the "intellectual capital" concept in 1997. Later, E. Brooking specified that intellectual capital consists of marketable assets, intellectual property, infrastructure assets, and labor resources.

Thus, intellectual capital represents the knowledge, skills, and abilities of employees of an organization expressed in the monetary form that determine the competitiveness of an organization and its share in the market of goods and services.

The above actualizes the problem of intellectual capital management, in particular, the use of digital educational platforms to improve the quality of intellectual capital, changing technologies and teaching methods, the formation of a new educational ideology.

The hypothesis of this study was based on the fact that goal setting is fundamental for the management of intellectual capital.

The goals and objectives of intellectual capital management should fully comply with the state policy of education development. Otherwise, intellectual capital management will be ineffective.

The purpose of this study was to concretize the tasks, principles, and promising directions for improving intellectual capital management that meet modern international trends in economic development.

The objectives of the study were as follows:

- to highlight the features of intellectual capital management and assess Russia's position in the ranking of countries by the level of intellectual capital in the country;
- to analyze the regulatory framework and practice of state regulation of intellectual capital management, clarify the tools and functions of state regulation of the level of intellectual capital in the country;
- to specify the strategic goals of intellectual capital development and key indicators of its evaluation in the concept of the state education program;
- to determine the tasks, principles, and promising directions for improving intellectual capital management.

Methods

The main research method was the analysis of statistical data characterizing the level of formation of intellectual capital in a company, as well as the relationship of intellectual capital with a company's competitiveness.

The benchmarking method of the international practice of intellectual capital formation in a company was used to establish knowledge management technologies that are promising for Russian practice.

The goal-setting method was the basis for determining the tasks, principles, and directions for improving the management of intellectual capital in a company.

Special attention was paid to general logical methods, namely the deduction method. It allowed describing in detail the principles of intellectual capital management necessary for the successful realization of the labor potential of employees in the conditions of the development of the knowledge economy. We used the induction method, which contributed to the description of the specifics of the formation of intellectual capital and its impact on a company's competitiveness. The synthesis method allowed combining the findings of the study into a single whole, and the method of analysis aimed at studying the subject of research.

The article also used the method of studying a specific case, which made it possible to identify cause-and-effect relationships in the management of intellectual capital and the method of systematic review based on the principles of competitiveness of a company.

Results and discussion

Intellectual capital management is gaining special value today, which is associated not only with the emergence of new professions and the emergence of virtual jobs but also with the need for retraining and advanced training of personnel. This means improving the quality of intellectual capital, which will lead to an increase in the level and quality of life of the country's population (GRYNKO *et al.*, 2018, p. 248).

The formation and development of intellectual capital have always attracted the attention of economists. There are still many attempts to develop criteria for measuring intellectual capital and reporting forms indicating criteria for changes in intellectual capital in a company. However, this problem has not been solved so far; among the reasons, we can mention the lack of a unified interpretation of the "intellectual capital" concept (MAIMINA *et al.*, 2019, p. 37).

According to most economists, intellectual capital is an intangible resource of an organization that plays a fundamental role in the economic activity of an organization, contributing to improving the efficiency of functioning and competitiveness of an organization in the market (GINESTI; CALDARELLI; ZAMPELLA, 2018, p. 915).

Sustainable economic development is unthinkable without the introduction of innovations, but it is innovations that include knowledge and skills management, and hence intellectual capital management (HAZAK, 2018, p. 229).

The success of any organization directly depends not so much on the availability of intellectual capital, but on its quality, which allows an organization to focus on its strengths, make the most effective use of its capabilities and reveal its full potential (WESTON, 2018, p. 304).

Scholars note that intellectual capital management includes regular training (in particular, self-study), staff learning and concentration, the presence of a common goal and psychological climate in an organization, the presence of staff rights and responsibilities, enthusiasm, self-management, positive emotions for the team, empathy and respect for others (SUGIARTI; SUHARIADI; ERLANGGA, 2018, p. 277].

All the above factors are not reflected in the financial statements of an organization, which does not allow the head to receive timely reliable, and complete information about changes in the intellectual capital of an organization, and therefore does not allow building a strategy for the development of a company (BADIA *et al.*, 2018, p. 22).

Effective management of intellectual capital also depends on the management style of an organization. It has a direct impact on the motivation, stimulation, empowerment of personnel, and therefore contributes to the growth of economic efficiency and competitiveness of an organization. That is why experts advise conducting pieces of training, courses to reveal and increase the potential of staff, encouraging their behavior, also considering individual differences between employees, in particular, when assigning jobs and tasks (ALQATAWENH, 2018, p. 17).

According to experts, intellectual capital management should be understood as a process that promotes the creation, transformation, transfer, and use of knowledge, skills, and abilities of personnel. It follows that the purpose of studying intellectual capital will be to evaluate, collect, and analyze the knowledge and skills of personnel, which helps an organization to become more competitive (MARULANDA; BEDOYA, 2018, p. 534).

The factors influencing the management of intellectual capital of a company have not been studied today, which leads to the need for more qualitative research on improving the quality of intellectual capital management and its evaluation (COOKE, 2018, p. 13).

The components of intellectual capital can constitute a system of intangible company value factors, the development of which, along with financial assets, leads to the achievement of sustainable competitive advantages, the growth of business value (ZAVYALOVA; KUCHEROV; TSYBOVA, 2018, p. 319).

Most economists note that intellectual capital includes human, relational, innovative, and technological. Each of the above components is subject to decoding in the financial

statements documents, which is necessary for calculating the total intellectual capital throughout an organization (JARDÓN; MOLODCHIK; PAKLINA, 2018, p. 237).

The results of a survey conducted by 460 small business owners indicate a positive relationship between the two components of intellectual capital, human capital, and organizational capital, as well as the results of an organization's activities. The results show that well-functioning organizations use highly qualified employees to achieve the best performance through innovation (MCDOWELL *et al.*, 2018, p. 321).

Today, this structure of intellectual capital is supplemented by social capital, which includes the totality of the existing knowledge and skills of an ordinary employee. Analyzing social capital as part of intellectual capital, it is important to remember that social capital can have not only a positive but also a negative impact on the work of an organization's personnel, for example, worsening the psychological climate in an organization (ALLAMEH, 2018, p. 858).

Human capital and relational capital play a key role for the service sector, being the basis of the quality of service in the field of sales. While in industry, the structure of intellectual capital is dominated by structural and social capital (SARDO; SERRASQUEIRO; ALVES, 2018, p. 67).

The analysis of intellectual capital should include, in addition to the costs of training and advanced training of personnel, an analysis of information technologies and information security of an organization, the presence of vulnerabilities in the system, and the possibility of unauthorized access to an organization's databases and the protection of personal data of personnel, an assessment of an organizational structure of an organization (GHASEMI; VALMOHAMMADI, 2018, p. 190).

The method of calculating the value of intellectual capital, which is the result of evaluating innovative projects, is based on determining the price of research and development contracts, the main component is the expected result of placing on the market, created using intellectual capital by an organization in its economic activity (MAYMINA; PUZYNYA; EGOZARYAN, 2018, p. 37).

Analyzing intellectual capital, special attention should be paid to the interests of stakeholders, the implementation in practice of directions for improving competitiveness and achieving the goals and mission of an organization (BRUSCA; LABRADOR; LARRAN, 2018, p. 347).

The results of the conducted research emphasize the importance of knowledge sharing in the software development process. The results show the importance of the exchange of

knowledge and experience between the employees of an organization, which indicates its key role in the effective functioning of an organization (BALLE; OLIVEIRA, 2018, p. 143).

The conducted scientific research shows that intellectual capital, as well as relational capital, have a direct impact on the intelligence of the knowledge exchange chain, whereas structural capital affects only the integration of the knowledge exchange chain through relational capital. This study indicates that intellectual capital appears as a means of integrating the intelligence of the knowledge supply chain both within an organization itself and outside it (SHOU; HU; XU, 2018, p. 118).

The improvement of the intellectual capital management process is based on improving the efficiency of the staff, as the main resource of any organization, the efficiency itself is determined not so much by quantity as by quality (TRAN; VO, 2018, p. 897).

Improving the management of intellectual capital is unthinkable without direct and indirect methods of state influence, which seeks to improve the quality and standard of living of the population. Therefore, it is necessary to consider state economic policy for a comprehensive analysis of intellectual capital, in particular measures and programs to improve the quality and standard of living of the population (BELTRÁN-MORALES; ALMENDAREZ-HERNÁNDEZ; JEFFERSON, 2018, p. 55).

In addition to the above, intellectual capital management also includes the optimization of production factors, their percentage ratio depending on qualitative characteristics, nevertheless, the human factor remains dominant in the system of improving intellectual capital management (N.D., 2018, p. 3).

There are several models and methods of assessing intellectual capital in world practice. However, there is not enough information presented today in financial statements for the practical application of these models. It is recommended to introduce state and international standards for the assessment of intellectual capital to eliminate this shortcoming (FAZLAGIĆ; SZCZEPANKIEWICZ, 2018, p. 732).

Combining the above, intellectual capital is a highly liquid asset and investments in it are easily and quickly paid off, while the assessment of investments in intellectual capital is especially difficult, and it is quite problematic to carry out this analysis today (BONTIS *et al.*, 2018, p. 712).

Therefore, several economists propose to evaluate intellectual capital through the competitiveness of an organization, identifying its strengths and weaknesses, assessing opportunities and threats, thereby conducting a SWOT analysis (VAZ; SELIG; VIEGAS, 2018, p. 45).

Intellectual capital should be reflected in financial reporting documents, it is advisable to indicate the added value per employee, which will determine the irreplaceability of an employee in an organization. Therewith, it makes sense to compare the added value of one employee with the costs of his/her training and retraining, which will allow calculating the economic efficiency of investments in intellectual capital (VAHANYAN; VAHANYAN; GHAZARYAN, 2018, p. 71).

Several economists suggest using a model for assessing and analyzing intellectual capital, which includes the knowledge and skills of personnel, the development and implementation of innovations, as well as various innovative tools for studying intellectual capital (FEDOSOVA *et al.*, 2017, p. 28).

These innovative tools should make it possible to evaluate not only the intellectual capital of a company but also to find hidden reserves for increasing the added value of each employee (SUGIARTI; SUHARIADI; ERLANGGA, 2018, p. 277).

The study of innovative tools for the study of intellectual capital plays a special role, as it contributes to the competitiveness of each company with intangible assets, in particular knowledge, research, and development, which significantly increases the value of the intellectual property and intellectual capital of a company (LOYARTE *et al.*, 2018, p. 787).

Considering the management of intellectual capital in the Russian Federation, the main trends in the intellectual property market are: on the one hand, the rapid growth of trade in industrial property objects and, on the other hand, attempts to control scientific and technical cooperation ties. Based on these trends, firstly, more active participation in international and all-Russian trade in industrial property, and secondly, the intensification of activities for the development and use of proprietary technologies, in particular through the development of a regional network of engineering centers, are of great importance for the innovative growth of Russian enterprises (USTINOVA, 2018, p. 51).

The interpretation of quantitative assessments of the structural components of innovation potential makes it possible to determine the innovative opportunities existing in a company, as well as the factors hindering the development of its innovation activities. The characteristic of the integral indicator of innovation potential allows judging the level of innovative development of an enterprise and determines the choice of an innovation strategy (FEDOSOVA *et al.*, 2017, p. 23).

A company's competitiveness includes intellectual capital, determines a company's development strategy. The problems of formation and management of intellectual capital are caused by the lack of a single definition of the "intellectual capital" concept, the replacement

of intellectual capital with human capital, but the concept of human capital is only one of the components of intellectual capital, it was mentioned earlier. By combining human capital with an organizational unity of the entire company, we can obtain intellectual capital, while it is by improving the qualifications of personnel, managing the knowledge of a company's employees that its intellectual capital can be increased.

Combining the above, we can conclude that intellectual capital consists of organizational, human, and client capital, which are the main factors in increasing a company's competitiveness. Unlike human capital, intellectual capital considers the relationship of individual qualities of employees, such as creativity, competence, skills, abilities, and knowledge. It is the knowledge that makes it possible to effectively manage the intellectual capital of a company, since intellectual capital is not only formed within a company itself but can also come from outside, for example, by sending personnel to advanced training courses or retraining.

The improvement of the process of formation and management of intellectual capital implies the existence of a legislative framework on the world market, which would allow regulating relations on the formation and evaluation of the intellectual capital of a company, analyzing factors and criteria for changes in the intellectual capital of each company, thereby increasing its competitiveness.

The development of intellectual capital is directly related to the knowledge management of personnel, highlighting both intellectual and business competencies, therefore intellectual capital can be increased not only in an intensive way but also extensively, which is especially important in the modern economy. Accounting for intellectual capital allows a company:

- to increase market capitalization both in the regional and global markets;
- to increase the level of trust in a company both from third-party companies and from their staff;
- to draw up a strategy for the development of a company, revealing in detail each direction of development with an indication of criteria for evaluating the achievement of the strategy.

The detailing of information about intellectual capital will contribute, on the one hand, to the disclosure of confidential information, on the other hand, it will allow manipulating data about intellectual capital for the selfish purposes of a company's management to increase the valuation of its own business.

When managing intellectual capital, it is important to consider a systematic approach that considers the socio-economic environment of a company, including information resources, staff knowledge, intellectual resources, and products of a company itself. However, when managing intellectual capital, it is important to consider not only its cost but also the effectiveness of its use to improve the quality of a company's intellectual capital (Table 1).

Table 1 – Form of accounting for the formation and development of the intellectual capital of a company, units

Indicators	2021	2022	2023	Change
1) Human capital:				
Personnel training costs				
The costs of luring highly qualified personnel				
Conducting personnel certification				
Staff development				
Retraining of personnel				
2) Organizational (structural) capital				
The value of a company's brand				
The costs of maintaining a company's information system				
Information security costs of a company				
Patent development				
Sale of patents				
Purchase of a license				
Sale of a license				
3) Client capital				
Costs of eliminating production defects				
Handling customer complaints and suggestions				
Costs of monitoring work with clients				
The total value of a company's intellectual capital				

Source: Developed by the authors

It is possible to improve the quality of a company's intellectual capital by optimizing the management style, delegating authority when making managerial decisions at all levels of management, detailing the results of monitoring a company's activities with subsequent analysis and development of effective recommendations, adjusting a company's management structure to increase its competitiveness in the market, compliance with corporate ethics in a company's work.

Based on this, it is possible to distinguish the principles of intellectual capital management of a company:

- determination of the structure of intellectual capital and its subsequent analysis to eliminate the shortcomings of the existing management system of a company;
- formation of a customer-oriented approach of a company considering the individual needs of consumers;
- analysis of the competitive advantages and disadvantages of a company to identify opportunities and threats to its development.

The absence of a single definition, principles of formation and development of intellectual capital, as well as reporting forms, leaves the issue of intellectual capital management debatable.

Comparing the results obtained above with international practice, intellectual capital is a fairly new element of the economic system and requires close attention. Thus, the relationship between intellectual capital and the financial results of a company's activities is practically not substantiated.

The previously undiscovered principles of intellectual capital management did not contribute to determining the management features of companies of various forms of ownership and industry specifics, which significantly complicates the process of managing the business processes of a company itself.

The formation of a unified approach to the management of intellectual capital will help solve several problems of the formation and management of intellectual capital, namely, it will allow identifying the main elements of intellectual capital for their subsequent analysis and increase the efficiency of their management.

Accounting for intellectual capital will allow a company to respond promptly to changes in its competitiveness minimizing threats in its activities and realizing opportunities, which will have a favorable impact on the entire company's activities.

The lack of a unified regulatory framework also complicates the management of intellectual capital, in particular, the lack of a single definition of the "intellectual capital" concept does not allow for its full management. It is the regulatory framework that will be the foundation of a company's intellectual capital management.

The system approach outlined above in the management of intellectual capital will allow competently building a chain of formation of a company's competitiveness with the allocation of its main elements. Therefore, a special role in the assessment is played by the quality of the intellectual capital itself and the factors influencing it, since it allows determining the economic efficiency of the entire company and the management decisions taken to regulate the main business processes.

Conclusion

Thus, the definition of intellectual capital presented above makes it possible to identify its main elements, to determine the indicators of intellectual capital assessment according to the designated criteria. The principles of managing the formation and development of intellectual capital allow proposing a business model for managing the results of changes in the formation and development of intellectual capital.

Summing up, most of the problems of the formation and management of intellectual capital remain unresolved. Firstly, the lack of uniform forms of reporting on the formation and movement of intellectual capital within a company, secondly, the need to develop specific methods for assessing intellectual capital and methods for assessing the development of intellectual capital of a company, thirdly, the lack of a regulatory framework for the regulation of intellectual capital both within a company itself and in the global market.

The problems outlined above require a more thorough study and will be covered in our next articles.

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