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Research and Measurement Methods Intellectual and Innovative Capital

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Abstract: These methods assume that the difference between the market and book value of assets is the price of intellectual capital. The disadvantages include the conventionality of the definition of intellectual capital and the limitation of separation from the difference between the values of factors such as business reputation and partnerships of the company.

Keywords: capital, intellect, method, results, lack, quality, counting

Intellectual capital is difficult to measure, because it concerns first of all the quality of intangible assets, and its measurement should focus on researching what is expected in the enterprise in the future. There is still no valid standard regarding the measurement of intellectual capital. To date, a large number of various methods have been developed to assess intellectual capital, which differ both in the set of calculated indicators and in qualitative characteristics.

1. Scoring Methods - Scorecard Methods. This group of methods is based on indicators and indices, which are determined using the calculation of points and points. The main disadvantage of this group is that the assessment results are of an informational nature and do not allow a monetary assessment of the value of intellectual capital.

2. Market Capitalization Methods - Market Capitalization Methods. These methods assume that the difference between the market and book value of assets is the price of intellectual capital. The disadvantages include the conventionality of the definition of intellectual capital and the limitation of separation from the difference between the values of factors such as business reputation and partnerships of the company.

3. Methods for direct measurement of intellectual capital - Direct Intellectual Capital methods. This category includes all methods based on the assessment of individual components of intellectual capital. After the individual parts of the capital are assessed, an integral assessment of the intellectual capital of the company, as well as of its employees, is derived.

4. Methods of return on assets - Return on Assets methods. The asset profitability ratio compares to that of the industry as a whole. To calculate the average additional income from intellectual capital, the resulting difference is multiplied by the company's tangible assets. Further, by discounting the received cash flow, the value of intellectual capital can be estimated. This group of methods is also not without drawbacks, in particular, the lack of differentiation between intellectual capital and various forms of intangible assets, such as databases, software, etc., can be attributed to the drawback. But, despite this drawback, the quantitative assessment of the intellectual capital of this

group of methods allows the most accurate assessment of both the amount of capital and the degree of influence on the results of the company's activity. The table shows the most commonly used methods for assessing intellectual capital.

Table 1. Brief description of methods for assessing intellectual capital [2]

№	Assessment method	a brief description of
1	D. Tobin coefficient	The ratio of the market value of an object to the replacement cost of its real assets
2	Method K. Sveibi	Intellectual capital is assessed according to a system of indicators, ordered in a matrix, reflecting the state of an organization's intellectual assets
3	Scorecard by D. Norton and R. Kaplan	There are 4 blocks of indicators characterizing the relationship with customers, internal business processes, the process of training and development of personnel and finance
4	L. Edwin Sleep Skandia Navigator	A technique aimed at building a picture of value creation in a company. The approach combines the assessment of financial aspects, consumer aspects, process aspects, renovation aspects and human capital
5	A. Pulik's method	Determines the efficiency of using three types of firm resources: added value of physical capital, added value of human capital, added value of structural capital

Let's take a closer look at these methods.

1. D. Tobin coefficient This coefficient is calculated as the ratio of the market price of the organization to the replacement price of its real assets (buildings, structures, equipment and stocks) according to the formula:

Q = Market value of object / Replacement cost of object (1)

Next, a comparison is made of the results obtained before and after the organization of knowledge management. In this case, it is possible to make a qualitative assessment of how the knowledge management organization has affected the market value of the organization (positively or negatively).

The main disadvantages of this method include:

— the effect of the time factor (the effect of organizing knowledge management is manifested in the long term);

— imperfection of the organization's accounting policy, which does not allow formally attributing many types of expenses to the formation of intangible assets. If it is determined that the Tobin coefficient, calculated after the organization of knowledge management, in terms of its value, it surpasses a similar coefficient before implementation and this is not associated with the partial liquidation of tangible assets, it is possible to determine the impact of changes in the amount of intellectual capital on the performance of an organization using the formula:

$$Kism = \Delta IK / \Delta Profits, \quad (2)$$

where K meas - coefficient reflecting the impact of changes in the amount of intellectual capital on the performance of the organization;

ΔIK is the difference between the value (cost) of intellectual capital before and after the organization of knowledge management;

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Δ Profits - the difference between the profits obtained before and after the organization of knowledge management (or the average profit obtained with the previous amount of intellectual capital and the new amount of intellectual capital).

2. Method K. Sveibi. This method is the most attractive of the set of methods for non-cost assessment of knowledge in terms of the breadth of coverage and assessment of all components of the organization's knowledge management system. K. Sveibi's intangible asset monitor is a system of various indicators that reflect the state of the organization's intellectual assets. The methodology for determining the effectiveness of a knowledge management organization is not so much in calculating specific digital values, but in comparing two states of an object - before and after the implementation of a knowledge management system. This approach is attractive for commercial organizations, since it takes into account such criteria as customer satisfaction, sales level, share of large consumers, frequency of repeat orders, brand loyalty index.

3. The system of indicators of R. Kaplan and D. Norton. The system for assessing intellectual capital - a balanced scorecard - was created in 1992 by professors R. Kaplan and D. Norton on the basis of a study of American companies. The balanced scorecard is a method for assessing the activities of organizations and their divisions, allowing to bring to all divisions the benchmarks of their activities and contributing to the implementation of the organization's strategy. The goal of creating a balanced scorecard is to enable managers to look at their company from four important perspectives:

- from the point of view of clients: how do our clients see us?
- from the point of view of internal business processes: what should we improve?
- in terms of training and development: can we continue to add value to the company and create value?
- from a financial point of view: how do we look in the eyes of our shareholders?

The most important premise of this model is that intellectual capital is formed as a result of the integration of human and structural capital. The human capital of the organization does not belong.

4. Method A. Pulik. This model determines the efficiency of using three types of firm resources: physical capital value added (CEE), human capital value added (HCE), and structural capital value added (SCE). The calculation of the indicator is represented by the formula 2.3, the larger this indicator, the higher the potential of the company is assessed, its ability to create added value.

$$VAIC = CEE + HCE + SCE \quad (3)$$

$$CEE = VA / Investment\ capital \quad (4)$$

$$HCE = VA / Human\ capital\ (labor\ costs) \quad (5)$$

$$SCE = VA — Human\ capital\ (labor\ costs) / VA \quad (6)$$

Where VA value added (revenue — costs excluding labor costs)

There are many models for measuring intellectual capital, both qualitative and quantitative. The choice between them must be made based on the objectives of the study, the specifics of the company and the applicability of the models. We compared five different models for measuring intellectual capital: among them two quantitative (Tobin's coefficient and Pulik's method) and three qualitative models (balanced scorecard, "Scandia navigator", intangible assets monitor). There are similarities and discrepancies between these models. All models are using different indicators and indicators.

Their choice is made expertly depending on the purpose of the company and its specifics. The differences lie in the grouping of these indicators and indicators. It is also worth noting that, despite the differences, all models showed that intellectual capital is an important component of a company, and also, in our case, its competitive advantage. Intellectual capital management using these models

will help not only to see where the company's problem areas, but also help to identify those factors that will help increase both profit and value of the company, depending on the goals.

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