

Indicative Method of Human Capital Management in the Planning of the Strategic Development of the Company



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Abstract: *In modern market conditions in the era of rapid scientific progress, the usual assessment of the market value of an organization may not give an objective assessment, which is why the concept of human capital is of particular importance. Human capital and its components determine the value of the company's intellectual and labor resources. The complex nature of human capital determines a special approach to its assessment and management.*

This article discusses the methodology of indicative management, whose advantages in the form of flexibility and adaptability make it especially effective for managing such a complex concept as human capital. The methodology of the approach is described from the perspective of the firm, and not the state as a whole, therefore, in the article, a number of capital characteristics will be omitted as insignificant.

The data for the experiment were collected by questioning, and indicative indicators were calculated based on an expert assessment of a specific market situation, respectively, in other cases, indicators should be recalculated..

eywords : *Capital, Development, Indicative Method, Human, Management, Planning, Strategic.*

I. INTRODUCTION

Human capital, being one of the main economic categories, is at the same time the most widely interpreted. Previously, this concept was mainly understood as investments in education and training that increase a person's ability to work, but now it has expanded significantly. In particular, the World Bank interprets human capital as a combination of the health, skills, knowledge and experience of the population.

From the point of view of the company, in this article we

will accept the definition of human capital as a combination of competence, skills, reputation, experience, education and labor potential of employees of the organization.

This type of capital is called human because it is not separable from its carrier, a human person, and is capital, since it serves as a source of future income or future consumption [1-3]. Human capital is a key component of a firm's market value, and for many high-tech companies, it is human capital that makes up the bulk of market capitalization. The combination of human and structural capital, form the intellectual capital of the company (Fig. 1).

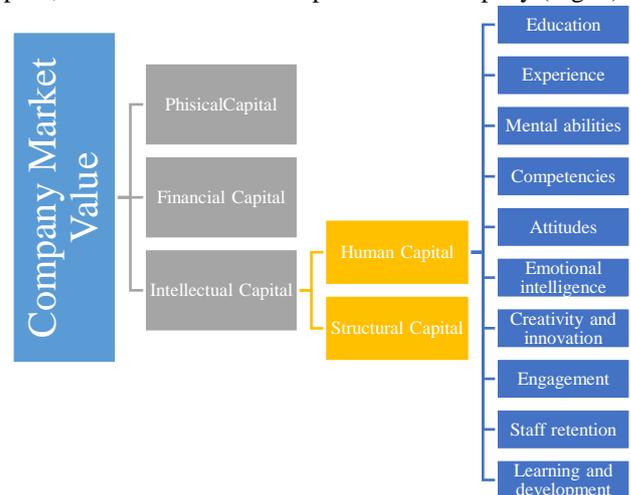


Fig. 1. The position of human capital in the market value of the company.

Being an important factor in the economic development of an enterprise, human capital needs a systematic approach to quality management [4]. It goes without saying that human capital management should be carried out as part of an overall development strategy.

It should be noted that an interesting feature of human capital as a factor in the production process is that, unlike other factors, it is not only consumed in the production process, but also developed - the staff gains experience, develops its competencies, improves knowledge and hones skills [5-7].

Despite the fact that the concepts of human resources and human capital seem identical, they have significant differences, because human capital includes a greater number of qualitative characteristics [8].

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The versatility and complexity of the very concept of human capital determines various approaches to its assessment and planning.

II. INDEX METHODOLOGY IN MANAGEMENT

There are many methods of planning and managing human capital, one of the most popular is the indicative method.

The essence of the indicative approach is to determine a number of planned indicators - indicators, and assess how much the real situation, at a given time, corresponds to these indicators [9-10].

At the same time, the approach itself is more of a recommendatory nature, and indicates the nature of the changes taking place in the system, and can also effectively signal possible problematic issues during the human capital management process. The essence of the human capital and human resources management system lies in its main elements:

Planning - a stage aimed at setting goals and objectives.

Organization - an activity consisting in the creation or modification of an organizational structure.

Regulation - a stage aimed at maintaining the functioning of the system in a given working rhythm.

Development - optimization and improvement of both individual elements and the entire system as a whole.

Control - collection and analysis of information on the implementation of planned decisions.

This scheme is not linear, that is, there is no clear transition from one stage to another, it is rather cyclical in nature, with a possible reduction or even skipping of each of the stages.

Moreover, which is characteristic at each stage, it is possible to establish indicative indicators by which the effectiveness of their implementation will be monitored.

Let us consider in more detail what determines the value of human capital. This parameter is complex and, depending on the chosen approach, a number of indicative indicators can be distinguished in it, in this article we define the following:

Health capital - a set of physical characteristics, such as age, state of health, that is, a tendency to disease, etc.

Labor capital - a series of characteristics defining experience and qualifications, including practical knowledge and skills.

Intellectual capital - includes such values as the level of education, as well as additional knowledge

Cultural and moral capital - a number of indicators that determine the human personality, as well as personal relationships, for example, conflict, a tendency to fraud, stress resistance, etc.

Organizational and entrepreneurial capital is a separate set of characteristics defining managerial skills.

As can be seen from the structure of human capital, its components are heterogeneous elements defined in different numerical terms. To bring them to a homogeneous form, the formula for calculating the index value is used:

$$X_{index} = \frac{v - \min(v)}{\max(v) - \min(v)} \times 100 \quad (1)$$

where X_{index} is an index whose values are in the range [0,100],

v - a numerical indicator that must be presented as an index,

$\min(v)$ and $\max(v)$ are the minimum and maximum values that v can take.

This approach allows you to calculate and summarize various indicators, which is certainly convenient when part of the indicators are expressed in units of time, part in monetary terms, and part in general is a conditional score of expert evaluation [11].

The calculation of the index indicator of each capital separately, we will produce based on the formula:

$$CE = \frac{\sum_{i=1}^m (Xi \times Wi)}{m} \quad (2)$$

where m is the number of characteristics that make up this type of capital,

Xi is the index value of a specific characteristic,

Wi is the value that determines the weight of this characteristic.

Indicators of the values of each of the components of human capital can be evaluated and monitored separately, while to determine the total value of human capital, we use the formula:

$$HC = 1/5 \times \sum_{i=1}^n Ci \quad (3)$$

where C_i - each of the components of human capital

III. EXAMPLE OF THE APPLICATION OF THE INDICATIVE METHOD OF HUMAN CAPITAL MANAGEMENT IN PLANNING THE STRATEGIC DEVELOPMENT OF A COMPANY IN PRACTICE

The practical basis for the experiment is the human capital management in planning the strategic development of a company in practice. An example of the application of the indicative method of human capital management in planning the strategic development of a company in practice is the experience of an IT company working in the field of software development. The main assets of the company are an extensive client base, as well as highly qualified personnel.

The company is structurally divided into several large separate divisions located in different countries, each of which has its own circle of projects and clients, and specializes in the development of specific software:

ProBank Team, 120 employees, cash register and ATM software, mobile banking applications.

AgroApp, 75 employees, satellite navigation systems, terrain modeling programs, automation of agricultural monitoring systems.

TestDrive Corp, 40 employees, car software, navigation systems, road monitoring software.

WinProg Account, 56 employees, creation of database management systems for industrial enterprises, electronic access systems, programs

The data for the calculations were taken from the quarterly monitoring of the index indicators of the state of human capital of each of the units. In total, human capital is composed of 80 indicator indicators identified by management experts:

Health capital - 8 indicators

Labor capital - 15 indicators

Intellectual capital - 27 indicators



Cultural and moral capital - 19 indicators
 Entrepreneurial capital - 11 indicators
 Consider the calculation of an indicative indicator on one example: an indicative indicator of Health Capital No. 2 is the cost of medical insurance for one employee per year. Statistical sampling for all structural units. for a year gives such values: $\min(v) = 25.000\$, \max(v) = 175.000\$$.

Here is an example of a calculation for one employee, the AgroApp programmer, working in a team of 10 employees, was insured for \$ 37,000, then the calculation is as follows:

$$C_{Health\ No.2} = \left(\frac{37000 - 25000}{175 - 25000} \right) \times 100 = 8$$

In this case, the individual indices of each of the employees can be additionally used taking into account the level of his salary, which will allow to calculate such an indicator as - individual human capital.

The indices of structural units are much more obvious, for example, in the table (Table 1), the calculation of the index for a structural unit of 10 people working on one project is shown.

Table- I: Indicator No. 2 of Health Capital for structural unit

Profession Grade	Position	Health insurance costs	Peronal Index
6	project manager	136 000	74,00
9	senior programmer	47 500	15,00

Table- II: The table for calculating the Human Capital indicator by structural units

Component of human capital	W	ProBank Team		AgroApp		TestDrive Corp		WinProg Account		target	
		X index	CE	X index	CE	X index	CE	X index	CE		
Health capital (8 characteristics)			68,39	-1,61	70,28	0,28	69,62	-0,38	87,50	17,50	70,00
Characteristic 1	1	3,68	3,68	2,31	2,31	3,62	3,62	4,43	4,43		
Characteristic 2	2	60,64	121,27	51,98	103,96	40,95	81,90	53,20	106,39		
Characteristic 3	5	14,65	73,24	27,75	138,75	37,19	185,94	37,33	186,65		
Characteristic 4	2	4,58	9,16	1,69	3,38	1,80	3,60	46,85	93,70		
Characteristic 5	3	28,78	86,33	19,10	57,31	27,41	82,23	17,57	52,71		
Characteristic 6	3	58,71	176,12	64,62	193,85	40,98	122,93	53,00	159,00		
Characteristic 7	5	9,31	46,57	8,89	44,45	9,47	47,36	14,19	70,96		
Characteristic 8	2	15,37	30,74	9,12	18,23	14,70	29,39	13,10	26,19		
Labor capital (15 characteristics)			74,79	-5,21	85,91	5,91	79,10	-0,90	71,80	-8,20	80,00
Characteristic 1	4	28,37	113,48	27,44	109,77	14,79	59,16	23,02	92,09		
Characteristic 2	5	37,06	185,31	21,12	105,61	21,66	108,29	15,28	76,42		
Characteristic 3	3	59,80	179,41	60,12	180,37	77,40	232,19	59,21	177,63		
Characteristic 4	2	2,41	4,82	2,10	4,20	5,66	11,32	15,79	31,58		
Characteristic 5	1	32,25	32,25	21,73	21,73	30,62	30,62	37,90	37,90		

9	senior programmer	46 200	14,13
10	programmer (core)	35 400	6,93
10	programmer (IE)	37 000	8,00
10	programmer	37 800	8,53
10	programmer	36 900	7,93
10	interface designer	37 200	8,13
12	QA tester	32 300	4,87
12	QA tester	31 900	4,60
index of the structural unit			15,21

Further calculations are already made for each component of human capital, for example, labor capital, and expert assessments of the importance of each of the indicators, which are weights, on a scale of 1 to 5 are taken into account.

Table 2 presents the calculation of the annual indicator of human capital for all structural units, while the calculations of all components of capital are also indicated. At the same time, a deviation from the established planned indicators is seen, both for each of the structural divisions, and for each of the components. It can be seen that the greatest deviation from the planned indicator was caused by the capital of intelligence, which will make it possible to make managerial decisions in terms of indicators included in the risk zone.



Indicative Method of Human Capital Management in the Planning of the Strategic Development of the Company

Characteristic 6	3	13,62	40,86	18,74	56,21	22,17	66,51	21,42	64,27	
Characteristic 7	4	22,42	89,68	24,45	97,81	28,61	114,43	30,36	121,43	
Characteristic 8	2	18,97	37,93	19,36	38,73	17,85	35,69	34,88	69,76	
Characteristic 9	2	26,60	53,20	30,78	61,55	65,43	130,86	27,99	55,98	
Characteristic 10	4	16,92	67,67	38,54	154,15	29,06	116,25	32,45	129,80	
Characteristic 11	5	37,95	189,73	22,19	110,95	37,10	185,51	26,40	132,00	
Characteristic 12	1	42,41	42,41	53,31	53,31	58,62	58,62	46,13	46,13	
Characteristic 13	3	3,00	9,00	76,20	228,60	10,88	32,65	2,66	7,99	
Characteristic 14	1	18,10	18,10	3,51	3,51	2,79	2,79	0,23	0,23	
Characteristic 15	1	57,95	57,95	62,11	62,11	1,62	1,62	33,84	33,84	
Intellectual capital (27 characteristics)		75,00	-5,00	69,24	-10,76	63,23	-16,77	59,03	-20,97	80,00
Cultural and moral capital (19 characteristics)		60,41	-9,59	95,48	25,48	77,37	7,37	77,31	7,31	70,00
Entrepreneurial capital (11 characteristics)		43,64	-16,36	64,50	4,50	88,19	28,19	61,42	1,42	60,00
Human capital (total)		64,45	-10,55	77,08	2,08	75,50	0,50	71,42	-3,58	75,00

For clarity, changes in indicators, they can be represented in the form of a graph. In Fig. 2, you can track the change in both human capital as a whole and each of its components, and for all structural divisions of the company.

from the planned indicator was caused by the capital of intelligence, which will make it possible to make managerial decisions in terms of indicators included in the risk zone.

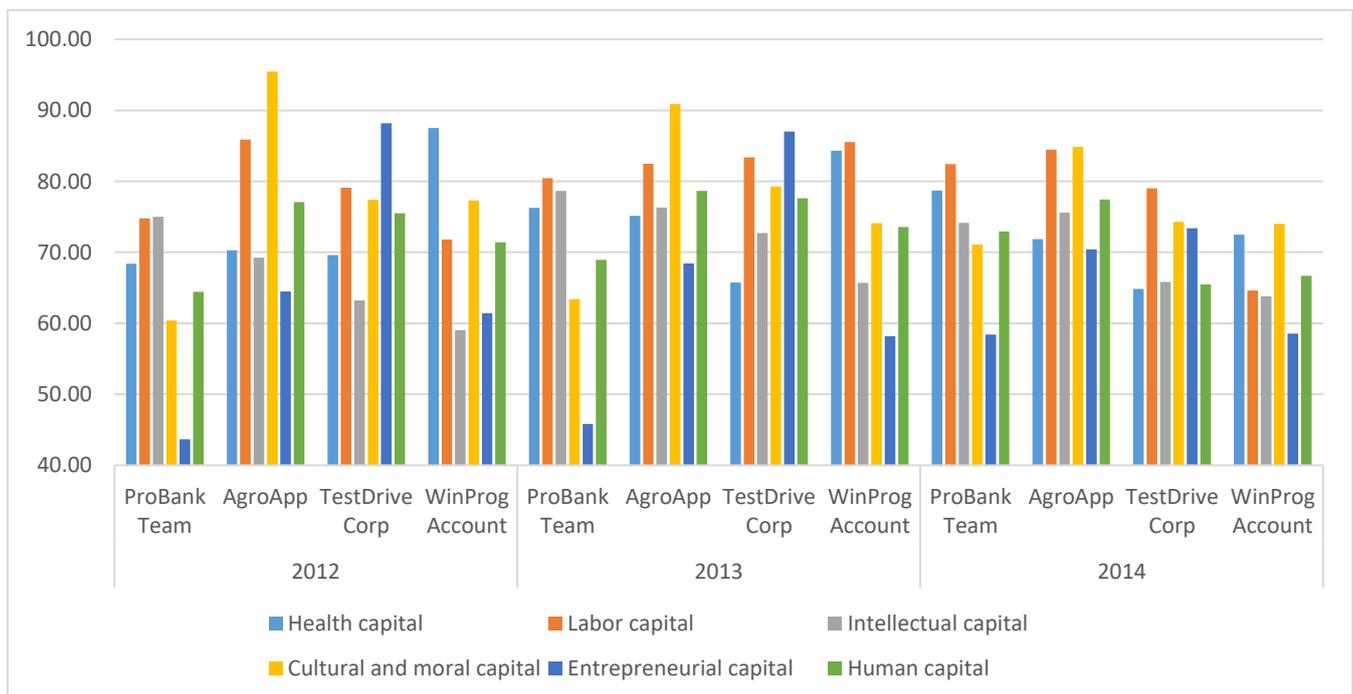


Fig. 2. Three-year schedule of changes in indicators of human capital by units.

The graph shows that the Pro Bank Team division for two years had a significant lag in terms of organizational and entrepreneurial capital, a more detailed analysis of each characteristic of this capital allowed the Pro Bank Team management to identify weaknesses in the organizational structure, in particular, it was revealed that teams working on small the projects were subjected to excessive fragmentation, which led to an increase in the share of management personnel and an increase in the number of managerial

positions to the detriment of program positions ists and testers. The identified reasons made it possible to make managerial decisions on the reorganization of working groups, which led to an increase in this indicator in subsequent years.

The convenience and flexibility of the control system using indicative techniques is particularly effective in situations where you have to track changes both in the long term and at relatively short intervals. On fig. Figure 3 shows

the so-called anti-crisis human capital management plan. Although in 2012 and 2013 the human capital of the company steadily increased, in 2014, however, signs of an impending crisis were revealed in three of the four divisions.

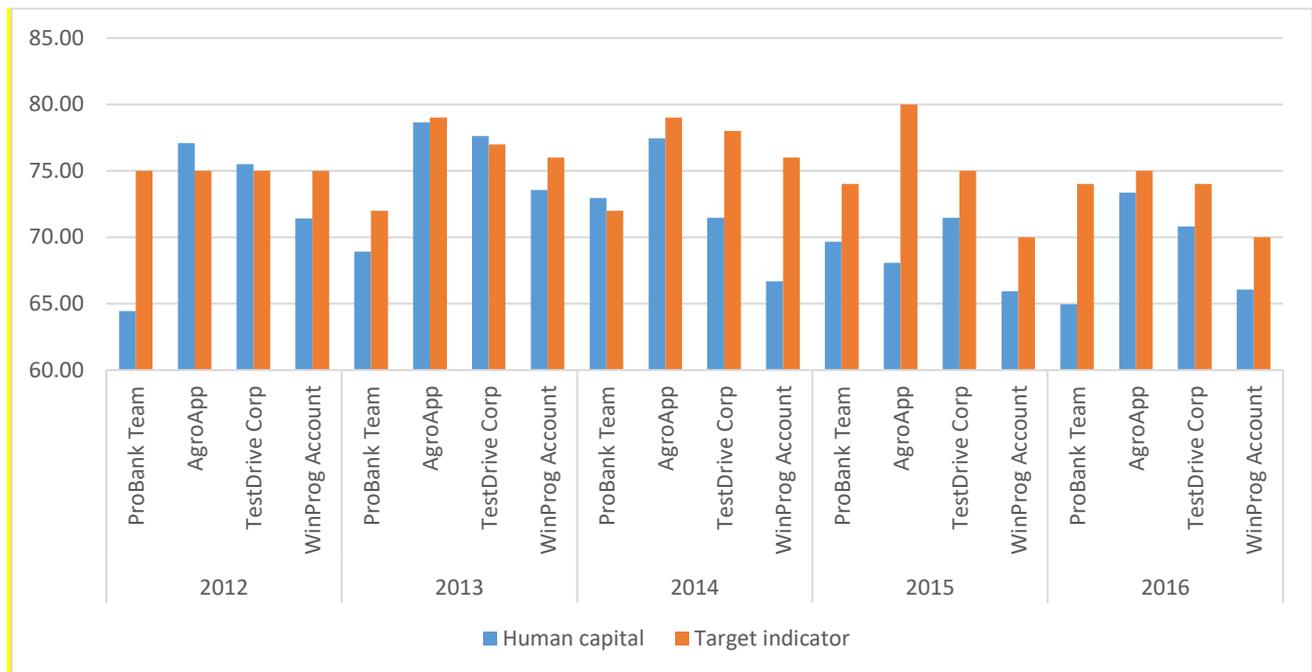


Fig. 3. Five-year anti-crisis human capital management plan.

The crisis itself was caused by a change in the political situation in the markets in which Agro App, Test Drive Corp, Win Prog Account units worked, the most serious problems were expected by the last two units. In the light of the emerging prospects for reducing the volume of orders, the company management has developed and implemented a plan for the gradual reorientation of its units to work in other markets, and to create fundamentally new software products. At the same time, it was clear that no loss in human capital could be made. In particular, Test Drive Corp, had to reduce a part of highly qualified specialists, due to the fact that their skills and knowledge did not correspond to the new development systems, and the cost of retraining did not justify the investment. In turn, Win Prog Account, a change in orientation from software development to its support and maintenance, necessitated much larger structural changes, which significantly affected the overall human capital ratio.

Despite this, the anti-crisis plan allowed the company, albeit with losses, but still to overcome the crisis period, a significant role in this was provided by the ability to quickly track changes and managerial response to changes in any of the indicative indicators.

IV. RESULT AND DISCUSSION

The results of the calculation of indicators of human capital, allows us to conclude about the simplicity, convenience and visibility of this technique. The coordinated work of an expert group of analysts allows any organization to correctly present such a complex economic category as human capital. The human capital management system itself should be especially useful to companies where the most valuable resource is highly qualified specialists.

Calculation approaches, weights, and a set of specific

characteristics can be successfully adapted to any specific economic situation, which will allow to determine and analyze this show at any economic level, both of a separate structural unit and a group of related companies.

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