

**8th INTERNATIONAL CONFERENCE ON LIFELONG LEARNING AND  
CONTINUOUS EDUCATION FOR SUSTAINABLE DEVELOPMENT**

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**CONTRIBUTION OF LIFE LONG LEARNING TO COMPANY'S  
VALUE GROWTH**

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*Summary: In the context of knowledge based economy and human capital, the paper treats of the relation between lifelong learning and the generation of value for the stockholders. The advantages provided by the financial resources have been exhausted in recent years, so learning and knowledge accumulation have become a major source of economic growth and a key factor ensuring the competitiveness of a company nowadays.*

*Key words: lifelong learning, intellectual capital, human resources, knowledge based economy, added value.*

*JEL: I21, O15, G30*

**INTRODUCTION**

Access to relevant information and knowledge along with motivation and skills to use them intelligently has become in the 21-st century the key to increasing the competitiveness of companies and economies as well as to the improvement and adaptation of the work force on a European level. Today the traditional understanding of competitive advantage as acquisition of tangible assets (capital, land, raw materials, technologies) is not the only factor for business success. In a society based on knowledge, the future is determined by the abilities of the economic subjects, irrespective of their size and branch, to take advantage of their knowledge. Thus, the new criteria for economic growth are related to innovations and education. This obviously requires shifting of the strategic priorities to the *intellectual capital* of the companies at the expense of the more conservative financial capital.

In modern economic literature, intellectual capital is understood to refer to a set of intangible assets based on knowledge that brings benefit to society. According to T. Stewart, intellectual capital is a combination of patents, processes and management skills, technologies, expertise and information about consumers and suppliers<sup>3</sup>. Similarly, the views of K. Bradley and R. Albert<sup>4</sup> are that knowledge and intangible assets have become a useful resource for creating competitive advantage for business. The International Federation of Accountants

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<sup>3</sup> Stewart, T.A., „Brainpower”, Fortune, June 3,1991, p. 42-60

<sup>4</sup> Bradley, K., Albert, S, Intellectual Capital as the Foundation for New Conditions relating to Organizations and Management Practices, Working Paper Series No. 15, Milton Keynes, Open University Business School, 1996

(IFAC) identifies three components in intellectual capital<sup>5</sup>: human, customer and organizational capital. This classification is derived from the structure of intellectual capital and was developed and applied to the practice by the Swedish insurance company "Skandia" (Fig. 1), which has included this capital in a special section of its annual financial statements since 1995<sup>6</sup>.

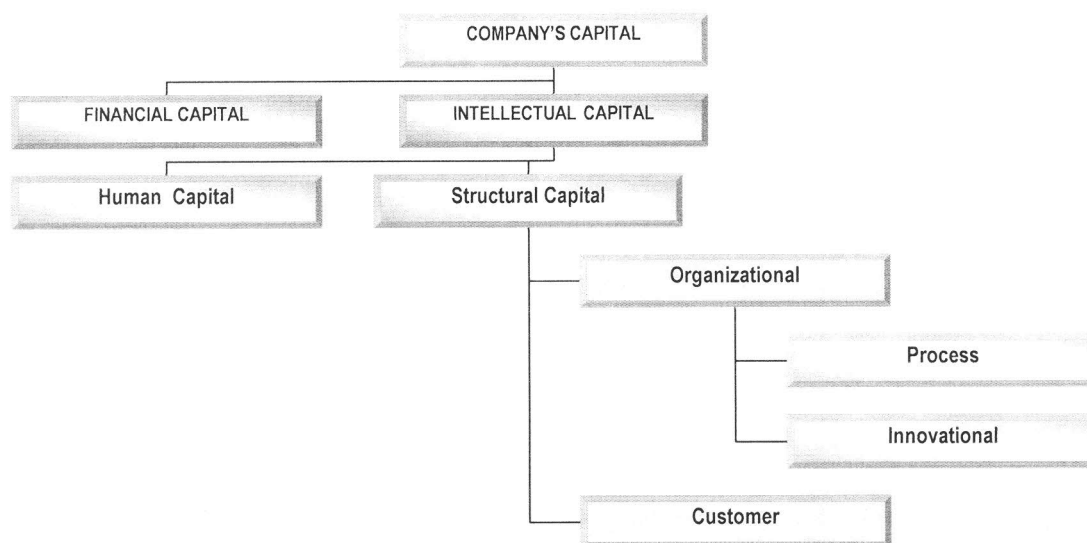


Fig.1. Structure of intellectual capital (based on Scandia's model<sup>7</sup>)

The structure of intellectual capital developed by „Skandia” defines most precisely its components and covers the whole set of intangible assets<sup>8</sup>. Human capital occupies an important place in this structure and is treated as a combination of knowledge, skills, education, qualification, experience, habits, learning ability and loyalty. It characterizes the human side of the company and similarly to all other types of capital is the result of resource investments.

In the context of knowledge based economy, human capital becomes a major source of economic growth and a key factor for competitiveness.

The aim of this paper is to attempt to clarify the contribution of human capital to the value of a company.

<sup>5</sup> Measurement and management of intellectual capital, IFAC, 1998

<sup>6</sup> Georgieva, T., Intellectual Capital of the Company. - <http://im2.hit.bg/Text/Resources/8-13.pdf>

<sup>7</sup> Power of Innovation. Intellectual Capital, Supplement to Skandia's 1996 Interim Report.

<http://www.skandia.com/en/includes/documentlinks/annualreport1996/e9606Power.pdf>; Edvinsson, L., G.

Brüning, Aktiv Posten Wissens Kapital, Gabler

<sup>8</sup> Intangible assets are non-financial assets. Some of them are included in the financial statements of a company. According to Bulgarian legislation (Accounting standard 38 "Intangible assets") they are: rights over industrial property ( trademark, copyright including computer software, brand name, rubrics and publishing rights, licenses and franchise, patents); concession rights, rights over technology such as recipes, formulas, models, designs, prototypes, instruments, matrices, patterns, etc. goodwill. This list, however, does not include a number of intangible assets (hidden valuables) which have no place in the financial statements nevertheless their contribution to the competitiveness and success of an organization. For example, this category includes loyalty to the customer, creativity and loyalty of the personnel, organizational culture, efficiency of the communication, management know-how, etc.

## ***LIFE LONG LEARNING AND HUMAN CAPITAL***

In conditions of rapid development of technology and constantly changing requirements of the labor market, those who want to be competitive and up to the realities around them, can not rely only on the years spent in academic institutions. They should develop throughout their lives, through the mechanisms of the so-called Life Long Learning (LLL), i.e. life long (continued) acquisition of new knowledge and skills - from preschool to late old age. Thanks to these mechanisms the traditional diploma "for life" gradually loses its leading role. It is replaced by Portfolios: electronically stored Curriculum Vitae, which changes and is enriched over the years.

LLL is a mechanism for the formation and development of human capital in the context of competitiveness and people's employment, social cohesion, active citizenship and professional development because:

- it begins in early childhood, continues throughout the years of schooling and training, and may continue throughout higher education, continuing education or vocational training for adults;
- it includes training in the formal education system (schools and universities), non-formal education (e.g. at work) or informal training - at home or with friends and colleagues;
- it offers a "second chance" to acquire basic skills and new opportunities for learning at a specialized level.

Therefore, if LLL is *the action*, human capital is the *result*, directly affecting the economic systems. This effect explains, for example, the gap between the book value of public companies and their market value. If in 1980 the market capitalization exceeded the book value of public companies by 25%, now it reaches 300 percent excess<sup>9</sup>. According to information from Bloomberg agency, the market value of U.S. and European banks exceeds their book value 2.5-3.5 times.<sup>10</sup>

In other words, in the knowledge economy, human capital directly, and LLL indirectly, create added value, which requires the selection of appropriate metrics for measuring the knowledge assets in the companies and their contribution to the effectiveness of the company's business. This is necessary because, as P. Drucker noted, "the most important contribution of management in the 20th century was the growth in workers' productivity, while the 21 century's most important contribution will be the increase of the productivity of knowledge and the staff involved with it"<sup>11</sup>.

## ***EVALUATION OF HUMAN CAPITAL CONTRIBUTION TO THE EFFICIENCY OF COMPANIES***

Practically, the standard tools for evaluating the efficiency of business such as EBT - Earnings Before Taxes, ROI - Return on Investments, EPS - Earnings per Share and others do not give a clear enough picture for investors and managers to assess the real potential of the

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<sup>9</sup> Ballow J., Burgman R., Roos G., Molnar R. A New Paradigm for Managing Shareholder Value. 2004

<sup>10</sup> Cited from Солдатов Е.В. Интеллектуальный капитал как стратегический фактор стоимости коммерческого банка - <http://uecs.mcnip.ru/modules.php?name=News&file=article&sid=65>

<sup>11</sup> Drucker. P. California management review, 1999, vol. 41, No.2

company in the strategic context of its development. According to B. Milner<sup>12</sup> the ongoing processes in economy show that the capital in the traditional forms of tangible capital and financial capital gradually ceases to be the basis for assessing the value of the company as a major criterion for economic efficiency. The reason is the increasing role of intellectual assets as a source of competitiveness. These assets, according to R. Kaplan and D. Norton, are difficult to imitate by competitors, which makes them a powerful source of competitive advantage<sup>13</sup>. The thesis is supported by W. Buffett<sup>14</sup> whose opinion is that as the investors pay for shares of a company they receive more than a generator of cash, namely they get the opportunity to participate in the increasing long-term potential for value creation based on intellectual capital.

An appropriate quantitative measure of the company value created with the participation of intellectual capital is the coefficient VAIC<sup>TM</sup> - Value added intellectual coefficient<sup>15</sup>. This measure provides a single basis for comparison between companies in different economies and economic branches and uses data from their financial statements.

The main idea of this indicator is that a successful value creation in the company is based on the coefficient of effective use of intellectual capital and the coefficient of effective use of invested capital<sup>16</sup>, or:

$$\mathbf{VAIC}^{\mathbf{TM}} = \mathbf{ICE} + \mathbf{CEE}$$

where: *ICE* - Intellectual capital efficiency coefficient; *CEE* - capital employed efficiency coefficient

The model treats **ICE** as the sum of its constituent elements: Human capital efficiency coefficient (HCE) and Structural capital efficiency coefficient (SCE):

$$\mathbf{ICE} = \mathbf{HCE} + \mathbf{SCE}$$

What is specific here is that human capital is a key resource for generating added value in the company and is treated as an investment not an expense. The effectiveness of human capital is calculated as follows:

$$\mathbf{HCE} = \mathbf{VA} / \mathbf{HC}$$

where: *VA* - value added; *HC* - Human capital, measured by the expenditure on employee wages in the company.

If the index values are below 1 the company does not create enough added value to cover its obligations to the employees. The optimal levels of HCE have values above 2,5, which is testimony to a highly efficient organization. They are usually observed in the high-tech industries.

The second component of intellectual capital - Structural capital efficiency coefficient (SCE), is calculated by the formula:

$$\mathbf{SCE} = \mathbf{SC} / \mathbf{VA}$$

where: *SC* - Structural capital; *VA* - Value added

<sup>12</sup> Мильнер Б. З. Управление знаниями. М. ИНФРА-М, 2003, с. 9

<sup>13</sup> Kaplan. R., Norton, D., Measuring the strategic readiness of intangible assets, Harvard business review February, 2004, p. 52-63

<sup>14</sup> Баффет, У., Эссе об инвестициях, корпоративных финансах и управлении компаниями, Альпина Бизнес Букс, Москва, 2005

<sup>15</sup> The measuring VAIC<sup>TM</sup> is a trademark of "Intellectual Capital Centre", Zagreb

<sup>16</sup> Pulic, A. - Intellectual capital - does it create or destroy value?, Journal of Business Performance Management, vol.8, No.1, 2004

Structural capital is calculated as the difference between Value added in the company and Human capital measured by the expenditures on employee wages in the company.

Since intellectual capital operates in conjunction with physical and financial capital, their role can not be ignored. Therefore, in order to obtain complete information on the effective use of company resources the Capital employed efficiency coefficient (CEE) must be taken into account:

$$CEE = VA / CE$$

where: *VA* - value added; *CE* - Capital employed

## **CONCLUSION**

The coefficient VAIC<sup>TM</sup> can be considered as a first step in defining the involvement of intellectual and, in particular human, capital in the value creation in the company. The measure is of mainly diagnostic nature, which requires its use with other systems and models for assessing the intellectual capital of the company. The potential use of VAIC<sup>TM</sup> is associated with its integration in the Balanced scorecard (BSC), as well as its joint use with Tobin's Q ratio and Economic Value Added (EVA<sup>TM</sup>). Our further studies of the public companies in Bulgaria will be oriented in this direction, especially because our country occupies one of the last places as regards LLL<sup>17</sup>.

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<sup>17</sup> According to statistics data, in 2005 in the EU 10.2% of people aged between 25 and 64 years participated in training programs, while in Bulgaria they were only 1.3%.

Баффет, У., Эссе об инвестициях, корпоративных финансах и управлении компаниями, Альпина Бизнес Букс, Москва, 2005

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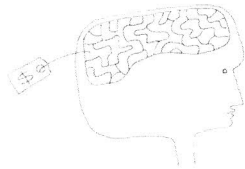
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**Objects**

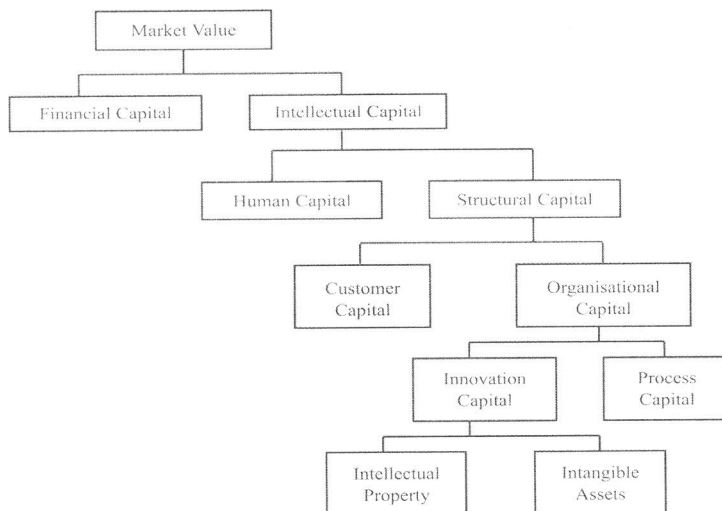
- To highlight the role of intellectual capital in the system of Value-Based Management (VBM)
- To examine the relationship between life long learning (LLL) and creating value for shareholders
- To present the role of continuing education as a major source of economic growth and a key factor for the competitiveness of each company
- To examine the importance of Value added intellectual coefficient (VAIC<sup>TM</sup>) in Bulgarian companies

## Value creation

- Shift from cost control towards value creation in a long run
- **Positive spread** only when  $ROIC > WACC$   
*ROIC – return on investments; WACC – weighted average cost of capital*
- Intangible value (knowledge, services, experience, benefits, speed, quality, image) transforms into tangible forms (income, profit, value added, shares, market value)
- Modern approach stands for intangible assets valuation and reporting



## Intellectual capital (Hidden value)



Source: Adapted from Edvinsson (1997)



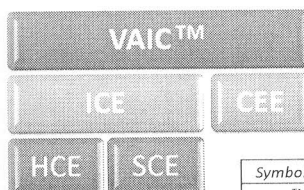
## Life Long Learning and Human Capital

- In the context of knowledge based economy, human capital becomes a major source of economic growth and a key factor for competitiveness
- *LLL is a mechanism for the formation and development of human capital* in the context of competitiveness and people's employment, social cohesion, active citizenship and professional development
- Thanks to these mechanisms the *traditional diploma* "for life" gradually loses its leading role. It is replaced by *Portfolios*: electronically stored Curriculum Vitae, which changes and is enriched over the years
- Human capital *directly*, and LLL *indirectly*, create added value, which requires the selection of appropriate metrics for measuring the knowledge assets in the companies and their contribution to the effectiveness of the company's business
- Therefore *LLL is the action*, human capital is the *result*, directly affecting the economic systems

## Human capital contribution to the efficiency of companies

- The standard tools for evaluating the efficiency of business such as EBT - Earnings Before Taxes, ROI - Return on Investments, EPS - Earnings per Share and others do not give a clear enough picture for investors and managers to assess the real potential of the company in the strategic context of its development
- Investors pay for shares of a company they receive more than a generator of cash, namely they get the opportunity to participate in the increasing long-term potential for value creation based on intellectual capital (*Buffet, 2005*)
- Appropriate quantitative measure of the company value created with the participation of intellectual capital is the coefficient **VAIC**<sup>TM</sup> - Value added intellectual coefficient

## VAIC™ - Value added intellectual coefficient\*



Symbol	Index name	Description
VAIC™	Value added intellectual coefficient	$VAIC = CEE + ICE$
CEE	Capital employed (CE) efficiency coefficient	$CEE = VA / CE$
ICE	Intellectual capital (IC) efficiency coefficient	$ICE = HCE + SCE$
HCE	Human capital (HC) efficiency coefficient	$HCE = VA / HC$
SCE	Structural capital (SC) efficiency coefficient	$SCE = SC / VA$
VA	Value added	$VA = \text{Operating profit} + \text{Employee costs} + \text{Deprciation} + \text{Amortisation}$

\* VAIC™ is a trademark of "Intellectual Capital Centre", Zagreb

### Benefits of VAIC™

- Measures the IC performance (how efficiently a company uses its intangible resources)
- Can be applied to different levels (macro and micro)
- Uses audited and published data from the company financial statements
- Produces objective and quantitative measurement without the requirement of any subjective grading
- Provides a standardized measurement and allows comparison across a divisional, company, industry and national level
- Human capital is treated as an investment not an expense

## Intellectual capital efficiency coefficient by countries

GDP & ICE of EU Countries

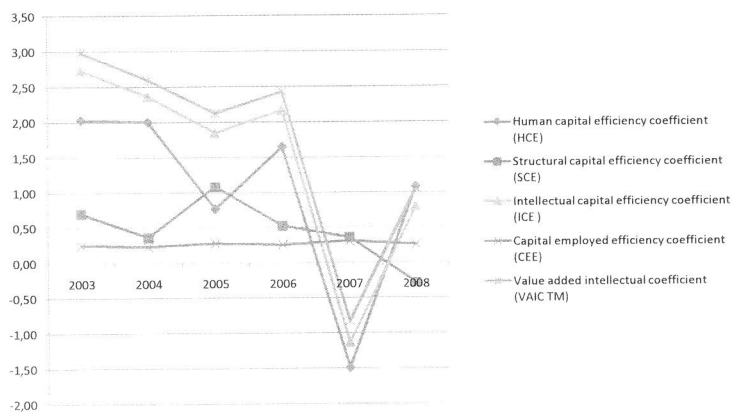
2001	GDP p/c €	ICE
Luxemburg	50.039	2,21
Denmark	33.196	1,94
Ireland	29.821	2,72
Sweden	27.500	2,58
United Kingdom	27.143	1,89
Nederlands	26.845	2,23
Austria	26.374	2,28
Finland	26.141	2,79
Germany	25.155	2,06
Belgium	24.664	2,12
France	24.289	2,18
Italy	21.034	2,85
Spain	15.849	2,25
Greece	11.951	3,26
Portugal	11.882	2,18
EU TOTAL	23.289	2,21

Created value added

2001	VA € m	Share %
Germany	1.863.830	23,33
United Kingdom	1.383.844	17,32
France	1.358.900	17,01
Italy	1.140.830	14,28
Spain	589.648	7,38
Nederlands	393.843	4,93
Belgium	227.369	2,85
Sweden	214.557	2,69
Austria	200.394	2,51
Denmark	152.522	1,91
Finland	118.499	1,48
Greece	114.568	1,43
Portugal	106.395	1,33
Ireland	102.691	1,29
Luxemburg	19.737	0,25
EU TOTAL	7.987.627	100,00

Source: Pulić, A. - Efficiency on National and Company Level, 2003

## Value added intellectual coefficient in Bulgarian companies\*



\* The test is implemented upon 24 Bulgarian companies

## Results

- Value added in the sample has an increasing trend during the period, implementing fall twice in 2006 and 2008
- It is noted that human capital grows in absolute figures, but HCE drops. Especially critical is the year 2007
- SCE declines significantly and in 2008 has negative values, meaning that companies infrastructure do not support the creation of value added
- ICE in the sample marks a decline for the period 2003-2007 and has stabilized in 2008
- Capital employed grows almost 2 times, but CEE is constant figure - a sign for assets which are not used effectively
- VAIC <sup>TM</sup> declines during the period, even in 2007 has negative value, but stabilized in 2008 due to improved efficiency of intellectual capital

**Conclusion:** We can summarize that the main generator of value creation for the Bulgarian companies is intellectual capital

Thank you for the attention!