# THE CONCEPT OF HUMAN CAPITAL IN THE KNOWLEDGE ECONOMY

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**Abstract**

*The current time brings for organizations new trends, challenges and concepts. At this time the discussion about education becomes a key element of the concept of human capital, and later an important part of the knowledge society. The aim of this article is to reflect the need to foster knowledge society through human resources features such knowledge and skills which make a competitive advantage for their organization. This article tries to point out the changing status and role of human capital, in which man with his skills, abilities, knowledge becomes the input factor of production and also the main production source for the production of new knowledge.*

***Keywords:*** *human capital, intellectual capital, knowledge, knowledge economy, knowledge worker, organization*

## 1 INTRODUCTION

Formation and development of a knowledge economy is associated with the new system of wealth creation, which can be characterized as a shift from an industrial economy to a knowledge economy. The essence of these dynamic processes is human resource. The value of human capital does not grow through its accumulation, as it happens with the material or financial capital. Its value fluctuates accordingly to the conditions of life and age of its holder - man. On the issue of human abilities has focused Adam Smith in his work "Discourse on the nature and origin of the Wealth of Nations" (Smith, 1958). In the development of skills of the workers he saw the fundamental source of economic prosperity and growth of prosperity. Significant differences in the market and book value of many organizations has decisively contributed to awareness of the existence of human capital and its importance. This concerned especially companies in rapidly growing sectors with a high proportion of human factor in the creation of added values such as pharmaceuticals, IT, manufacturing of mobile phones (Microsoft, IBM, General Electric ....).

## 2 HUMAN CAPITAL AS A PART OF THE INTELLECTUAL CAPITAL

The capital is usually understood as a value that creates the next value or added value, i. e. capital is primarily a form of wealth not for immediate consumption, but for the creation of additional capital or goods possibly services. Capital can take various forms relating to the economic area (technological, financial, commercial, banking, etc.), but also non-economic areas (social, intellectual, human, cultural).

Human capital is defined by the OECD (2003) as one of two categories of intangible property of organization now known as intellectual capital. The concept of intellectual capital in the theory and practice of organizational management is relatively new. The increase the importance of intellectual capital has encouraged the efforts of international institutions to its definition and characteristics. Currently, there are several classification and definitions of the intellectual capital, which usually modify one of the first models created by Swedish insurance company Skandia.

On definition of the intellectual capital it has created a hierarchical model (see Figure 1), which offers integrated, comprehensive view of the market value of the organization.

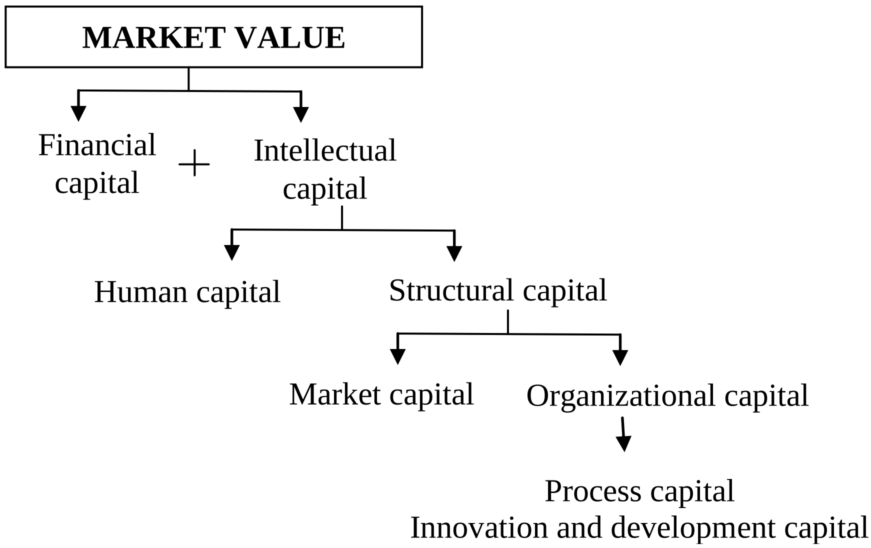


**Figure 1** Components of the intellectual capital [2]

A key component of intellectual capital consists of human capital represented by the knowledge, skills, wisdom, experience, creativity, values, culture and philosophy. The second component involves a structural capital including intangible assets of the organization in the form of contacts with the external environment (market capital), patents, licenses, software, hardware, organizational structure (organizational capital), activities and infrastructure to support the dissemination and transfer of knowledge (process capital), investment potential of the organization in research and development (innovation and development capital).

In connection with the components of the intellectual capital is necessary to emphasize their common characteristic - are the products of human creativity and the ability to create innovations in every sphere of human activity.

## 3 HUMAN CAPITAL MANAGEMENT

Human capital is a complicated economic and social phenomenon that is little empirically and theoretically analyzed and explained. One of the significant reasons is connection the human capital with specific human personality, which has tacit (implicit, hidden) and explicit knowledge. Explicit knowledge is systematic, in number or words and therefore they can be captured, stored, transported. On the contrary the tacit knowledge are learned by interactions explicit knowledge and experience, intuition and personal preferences of the individual (e.g. an individual's ability to conclude a contract) and therefore it is difficult to formalize them.

Accumulation of knowledge has no meaning for the organization. Knowledge has meaning only when they are used in the value creation process. However, to manage knowledge is impossible because most knowledge is hidden in the heads of employees of the organization. Managers can "only" to create human capital and manage the environment in which it is located. Creating human capital means working with each person to bring up and educate him. Human capital is the set of all abilities of individuals. Organization or employer can not own it. It can own only people who themselves decide when, where and how to will invest it and thus contribute to achieving an objective. People therefore have a choice. The work is so bilateral exchange of values and not the unilateral use of any resources of its owner. Human capital theory understands workers as the file of skills, abilities, which employers can hire [5].

When we talk about the knowledge economy, we talk about knowledge-based companies and knowledge institutions, which in its activities rely on a quality educational system, cooperative scientific research base and advanced communications infrastructure. Knowledge-based companies and knowledge-based institutions, this means that knowledge is consciously applied in the process of creating products or services. Conscious application of knowledge means that the process is conducted and it is a system that allows spreading, creating and acquiring knowledge - knowledge management. Effective knowledge-based organization can transform human capital into structural capital, which will bring the desired effect - increased performance, productivity, flexibility and innovation.

In terms of personnel work the issues of human capital relate mainly to attracting, stabilization, development and reward people for the purpose of shaping and keeping a skilled, loyal and well motivated people in the organization. One of the challenges for organizations today is the transformation of human capital on knowledge workers, i.e. workers who have a high level of education and expertise, which are combined with the ability to use these skills to recognize and solve problems. Knowledge workers may be not only professional manager, but also skilled worker or creative worker.

Knowledge workers are able to determine themselves what is their task and goal of their work and they should be able to manage themselves. It is therefore necessary, that the organization give them considerable autonomy and responsibility for their contribution to organizational goals. The work with knowledge requires continuous learning, sharing information, knowledge, teaching others and teamwork. Into the work of knowledge worker is constantly integrated innovation, which is considered as duty. Lifelong learning employees at work in a network of training centers or constantly requalification for new skills and knowledge, the use of network systems for individual learning (e-learning) enables organizations to build knowledge / human capital. Knowledge workers should be seen as assets not cost, because cost must be systematically reduced and assets must be developed.

Already Tomas Baťa has viewed the organization as a living organism - learning, adaptive and self-organizing and he also led his employees in this philosophy. Employees were considered as part and component of the living organism. „There were no managers and no computers. There was just always ready gray cortex of the organization consists of creative workers. It was a fighting ideas body. Selected individuals were "gladiators" fighting in the arena with their thought products. " [6] Baťa relied on the knowledge and leadership, creativity and innovation as a key organizational and strategic tools. Baťa was the first, who find that no money, technology, labor or property, but knowledge is the most important form of capital and the only source of sustainable competitive advantage. The only carrier of knowledge is a man - an employee and this makes of him the most valuable asset of the organization.

In 2008, the statement of the European Commission „New Skills for New Jobs", which was followed by two conclusions of the Council and an independent expert report, set prediction labor market needs, skills requirements and their harmonization as a top priority of the EU. In May 2009, member states agreed on the „Strategic framework for European cooperation in education and training" which is focused on lifelong learning and skills development of people of all ages. A serious shortage of qualified professionals and weaknesses in management and technical skills specific for particular job prevents organizations achieve their goals. „By 2015 we will be missing from the 384 000 to 700 000 experts in IT, what endangers not only IT sector but also the expansion of IT in all other sectors of the economy." [4] It is equally important to ensure an appropriate mix of skills as is important to avoid a situation where the talent and potential of humans has not been fully exploited. The European Commission has adopted key measures to increase skill levels and their adaptation to market needs, within which wants to implement from 2012 EU skills panorama (see Table 1). Panorama will present skills survey in order to increase transparency for job seekers, workers and companies. Panorama will be available online and will include updated forecasts of skills supply and labor market needs by 2020. If necessary, she will report the skills requires in particularly important areas such as science, technology, engineering, mathematics.

**Table 1** Project Panorama [4]

| **Chosen tasks of the project Panorama (2012 -2020)** |
|---|
| **updated information about the 25 fastest-growing jobs of the EU and the five jobs for which there is greatest demand in each member state,** |
| **analysis of skills requirements, based on data from the European Monitoring Centre on vacancies,** |
| **analysis of the mismatch of skills and the use of skills in the workplace through surveys of employers, students and graduates,** |
| **prospective analysis on the sector level based on the results of activities of EU councils for sector skills and employment,** |
| **estimates of the European Centre for the Development of Vocational Training (CEDEFOP) and of the member states.** |

## 4 LINKING ASSESSMENT OF HUMAN CAPITAL WITH FINANCIAL RESULTS

Human capital as the ability to create innovation in the knowledge economy takes nature of the production and the economic capital. As pointed out G. Becker, „teaching in schools, computer courses, spending on health care and lectures about the need of precision and honesty are also capital in meaning, that they improve the health, increase earnings and help a person enjoy literature for most of his life. Consequently, it is entirely consistent with the traditional definition of capital, when we say that spending on education, training, health care and so on are investing in capital. They produce human, not physical or financial capital because of inseparable knowledge, skills, health, or values from the person. " [5]

On the intellectual capital can be applied Porter's value chain model. Repeated use of information and knowledge in various stages of the value chain leads to benefits in the form of multiplier effects of their value, without any decline in their value because of their use in the process of value creation. [2]

For companies is challenge to prove, how investment in human capital leads to better economic performance. Common indicators EVA (economic value added) and ROI (return on investment) only partly explain the performance of human assets of the organization. „Methodology HCDF (Human Capital Development Framework) brings new practices in human capital management. They show the possibility of linking processes of human capital management with the achieved financial results.” [3] They are based on the assumption that if an organization wants to achieve the best results, it has to connect investments in their employees with the achieved economic results.

The company Accenture developed a model HCDF (Figure 2) based on four levels, which reflect the key variables affecting the relationship between human capital and financial performance of the organization. Economic results are located on level 1 and they consist of performance measurement of organization (e.g. traditional financial analysis: EVA, revenue growth, market share and so on).

On level 2 are located key factors, which stimulate performance and consist of measuring performance of the organization (e.g., productivity, quality, innovation and customer satisfaction). They are often obtained by filling out the scorecards.

Competences of human capital (level 3) consist of the most visible human qualities that are necessary to achieve critical business results. Their influence is possible to perceive through the key factors stimulating performance for example management of competencies, evaluation of the performance and broader processes of human resources such as training and knowledge management.

Level 4 most distinguishes the organization from the competition of these four levels of measurement. To each variable in level 4 is incorporated multidimensional scale of maturity based on the best practices in the industry and modified as a result of employee evaluation. After collecting the data there are generated ratings which expresses (in numbers, graphs, comparisons with competitors), the organization's ability to use human capital to achieve business results. Each of the attributes of the model is evaluated in order to express the maturity factor, with which corresponds to. Low scores indicate a lack of capability or maturity and a high score indicates an extensive level of competence and maturity. These evaluations can be compared between different divisions of the same organization.

It can be said that „no system of „accounting human capital“ have succeeded in trying to create a convincing method of assigning financial value to human resources, in any case, it reduces the added value, which can bring people into the organization. This has complicates the observation of mutual relations of human capital and other economic variables. “ [5]

Managers require measurements that reflect how organizations create value and must also make sense in terms of investment. The challenge of effective connection the human capital development with the financial results is a triple [3]:

- measuring must capture the direct and indirect effects,
- the measurement process must be simple, repeatable and lead to conclusions that can be realized,
- results must be expressed in such a way that they could be used on planning and forecasting.

| | | | | | |
|---|---|---|---|---|---|
| **Economic results** | | | | | **Level 1** |
| **EVA** | The ratio of share price and earnings per share | Revenue growth | Net operating profit after tax | | |
| **Key factors stimulating efficiency** | | | | **Level 2** | |
| **Productivity** | Quality | Innovation | Customers | | |
| **Competence of human capital** | | | | **Level 3** | |
| **Management** | Professional ability | The performance of the workforce (WF) | Involvement of employees | Flexibility | |
| **Efficiency of human capital** | Developing talent of employees | | | | |
| **Processes in human capital** | | | | **Level 4** | |
| **Management of competencies** | Career development | Performance evaluation | Development of management/ planning of successors | Recruiting | |
| **Rewards and recognition** | Relations between employees | Human capital strategy | Training | Knowledge management | |
| **Proposed structure of the WF** | Planning the WF | Infrastructure of human capital | | | |

**Figure 2** Model HCDF [3]

## 5 CONCLUSION

Results and efficiency of economic production in the new economy depends exclusively on the abilities, skills, experience and other personal characteristics. This defines the task of the production management in the new economy - the focus of all the problems, expectations, vision, progress and so on - all this combines with the human capital, and therefore the emphasis in management of manufacturing enterprises and organizations is placed on the position and role of man in the manufacturing process. [5]

The concept of knowledge society and knowledge economy significantly helped to progress and increased living standards in countries such as Finland, Sweden and Japan. In these countries, knowledge and innovation are key engines of growth, wealth creation and employment in all sectors of their economies. Despite the enormous increase in the share of intellectual capital on the total capital of organizations, many organizations are still dealing with the question of existence and management of knowledge assets only superficially. Managers of many organizations prefer financial capital before human capital and intellectual capital and they are focusing on activities that bring short-term effect. The essential in the human capital is primarily the dimension of knowledge, it mean´s individual's ability to transform the acquired knowledge on innovative works, which are a source of efficiency, productivity and increasing competitiveness of the organization.

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**REFERENCES**

[1] KATUŠČÁKOVÁ, M. 2010. Manažment znalostí: sociálne aspekty, Žilina: EDIS, 2010. ISBN 978-80-554-0244-4.

[2] KOKAVCOVÁ, D. 2011. Nová paradigma znalostného manažmentu, Bratislava: Iura Edition, 2011. ISBN 978-80-8078-395-2.

[3] KURUCOVÁ, Z. 2004. Ako prepojiť hodnotenie ľudského kapitálu s finančnými výsledkami In. Etrend [online]. 2004. vol. 4. no. 3 [cit. 2012-02-20].

[4] Program pre nové zručnosti a nové pracovné miesta: Európsky príspevok k plnej zamestnanosti In: KOM (2010) 682 v konečnom znení z 23. novembra 2010.

[5] VOJTOVIČ, S. 2006. Personálny manažment, Bratislava: Iris, 2006. ISBN 80-89018-98-X.

[6] ZELENÝ, M. 2005. Cesty k úspěchu (Trvalé hodnoty Soustavy Baťa), Brno: Čintamáni, 2005. ISBN 80-239-4969-1.