

# ANALYSIS OF INTELLECTUAL CAPITAL REPORTING WITHIN ANNUAL REPORTS OF COMPANIES IN SLOVAKIA

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## Abstract

In a “knowledge-based” economy, the source of companies’ economic value no longer depends on the production of material goods but on the creation and manipulation of intellectual capital. As a result, the concept of intellectual capital, which quantifies the knowledge, skills, relationships, processes, innovation and other components of intangible assets, has become the most important business factor. Companies interesting in building and maintaining a sustainable competitive advantage have to focus in larger extent on their intellectual capital as well as their knowledge activities. Although intellectual capital reports are not commonly created by Slovak companies, their annual reports are often used to inform stakeholders about different components of intellectual capital. The paper focuses on the concept of intellectual capital as a management instrument for assessing and developing resources needed for fulfillment the corporate strategy and provides a systematic research based evidence on the intellectual capital reporting within annual reports of 25 Slovak companies.

## 1. Introduction

Structural changes within Slovak economy have led the companies for proper communication of their strengths and capabilities. Qualified human resources, R&D initiatives, innovations and productivity are main areas for obtaining necessary competitiveness in major industries, such as Automotive, Engineering, Electrotechnics and ICT. Concept of intellectual capital, which quantifies the knowledge, skills, relationships, processes, innovation and other components of intangible assets, brings therefore the right schema for presenting qualities and potentials for business partners and other stakeholders who believe that there is a relationship between initiatives of intellectual capital management and outcomes in value creation area. A part of the new annual reports of companies has thus become the intellectual capital reports. Intellectual capital management and intellectual capital reporting has still not been really established in Slovak

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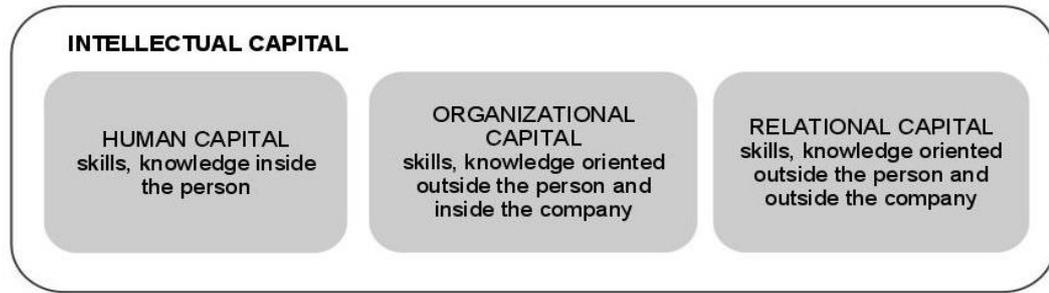
<sup>107</sup> Mgr. Jana Volná, Faculty of Management, Comenius University Bratislava, Department of Strategy and Entrepreneurship. Address: Odbojárov 10, P.O.BOX 95, Bratislava, Slovakia, e-mail: jana.volna@fm.uniba.sk

theory, neither practice. By analyzing of annual reports, we can identify the real level of awareness of intellectual capital reporting principles among Slovak companies.

## **2. Defining intellectual capital**

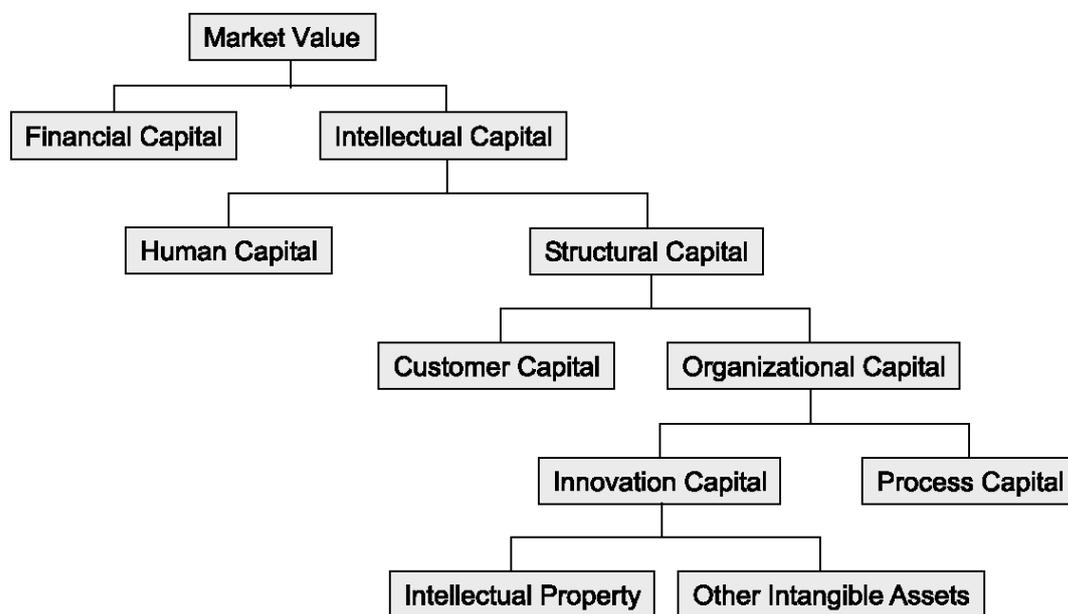
During recent years, intellectual capital has been a subject of great interest of many researches in many scientific areas including management. In managerial literature we can find many references and definitions of intellectual capital. Many are strictly limited to a specific area of organizational activity, do not describe it as a whole, thus for whole organization level of detachment. Various managerial insights into the intellectual capital include an accounting view – speaks mainly of intangible assets and in relation to the international accounting standards (IASB), which has defined the term as the non-financial fixed assets that are not of physical substance but are identifiable and verifiable entities through custody and legal rights. From the perspective of human resources, intellectual capital in the organization deals with the skills, knowledge and attitudes of employees. From a marketing perspective intellectual capital is interconnected with terms like brand visibility, customer satisfaction, creativity potential, ability to innovate and with another aspects relating to value of a brand. From the perspective of information technology intellectual capital is often mentioned as software applications and network capacity, or options.

Intellectual capital, defined as any knowledge convertible into value (Edvinsson 1997), brings the right schema for presenting qualities and potentials for business partners and other stakeholders. The concept of intellectual capital provides a comprehensive insight into the different areas that are essential for the organization. It allows organizations to monitor the interactions between different activities and gives impetus to the skilled management of all critical resources of the organization. It shows the system linking to various elements and highlights the importance of a systematic approach to intangible resources. This means that the temporary emphasis on an element and its development can stimulate the development of the whole system. There are several views at the breakdown structure of intellectual capital model presented in literature, usually consisting of three main components: human capital, internal (structural or organizational) capital and external (relationship) capital including customer relationship component (figure 1).



**Figure 1:** Main components of intellectual capital

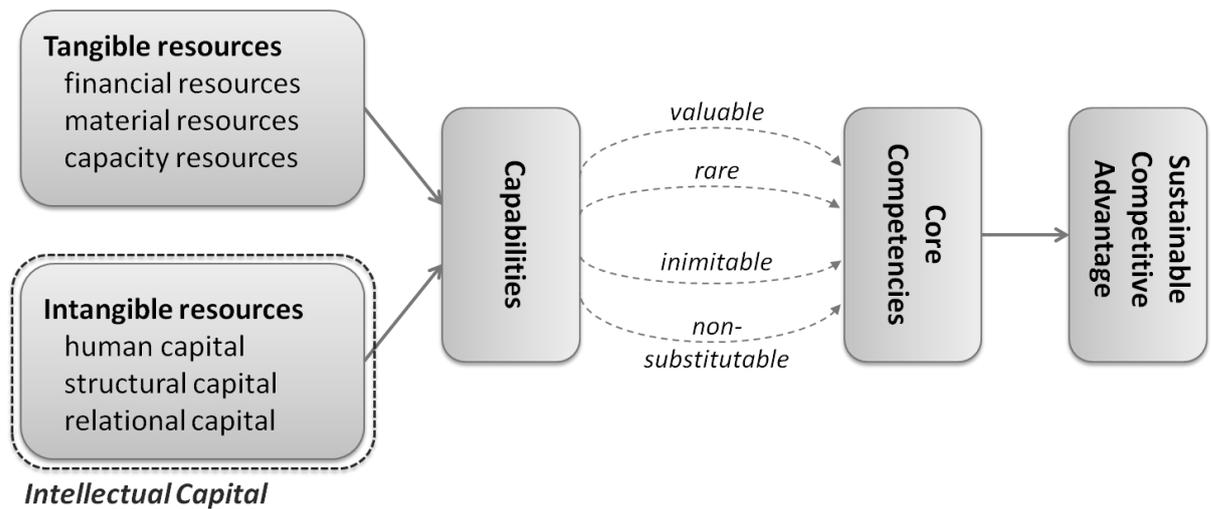
More detailed structure is depicted in a schema known as Skandia model of IC (figure 2).



**Figure 2:** Skandia model of intellectual capital (McElroy 2002)

Management of intellectual capital is then focused on a comprehensive assessment of the organization's approach to identify the components of intellectual capital, its rigorous measurement via so called intellectual capital indicators, continuous monitoring of developments and changes of its individual components, benchmarking the key factors affecting the business segment and planning to ensure the necessary resources and their capacity for building sustainable competitive advantage.

This approach is in direct line with the Resource-Based View of Strategy and also very popular concept known as Core Competence (Hamel and Prahalad 1996).



**Figure 3:** Intellectual capital as source for building sustainable competitive advantage

### 3. Intellectual capital reporting

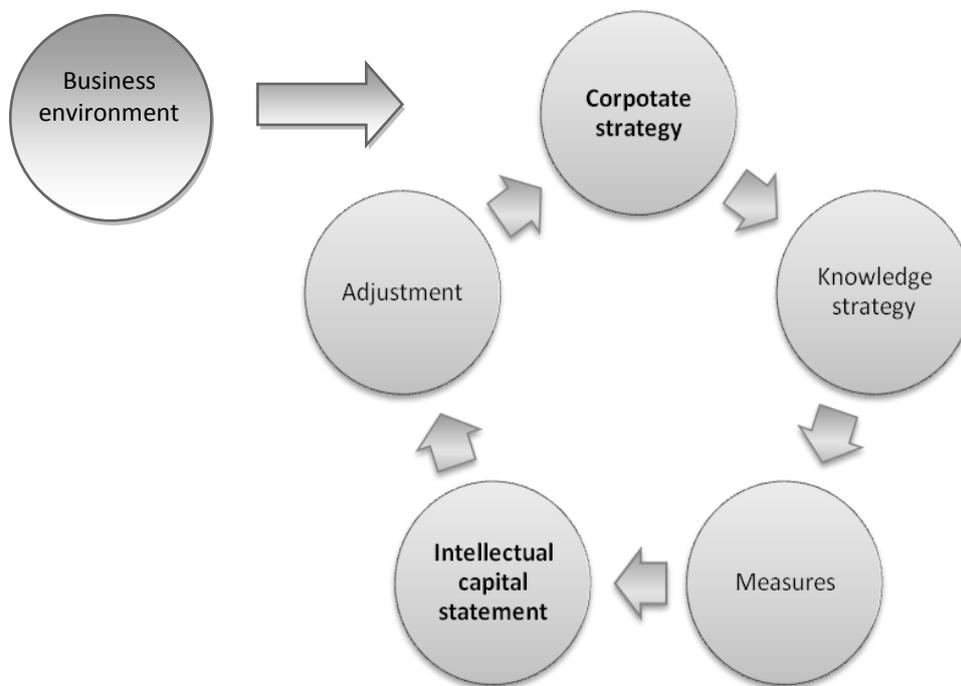
Although there is still not given sufficient attention to the issue of intellectual capital statements, some government and state institutions created methodological guides which are intended for businesses and entrepreneurs as guidelines for proper preparation of this statement, as well as for understanding the principles of intellectual capital.

These guidelines are primarily based on experiences of companies who have already tried to compile and publish intellectual capital statements. They summarize the best practices as well as benefits and the potential of their usage. Definition given in material from Danish Agency for Trade and Industry (under Ministry of Trade and Industry) has mentioned that the intellectual capital statement has been forming an integral part of working with knowledge management within a company. It reports the company's efforts to obtain, develop, share and anchor the knowledge resources required to ensure future results. The intellectual capital statement can contribute to create value for the company by improving the basis for growth, flexibility and innovation. Its merits lie in expressing the company's strategy for what it must excel at in order to deliver satisfactory products or services (Danish Agency for Trade and Industry 2000).

Another definition from German Federal Ministry of Economics and Labour states, that the intellectual capital statement is an instrument to precisely assess and to develop the intellectual capital of an organization. It shows how organizational goals are linked to the business processes, the intellectual capital and the business success of an organization using indicators to visualize these elements (German Federal Ministry of Economics and Labour 2004).

The Intellectual capital statement is also a strategic management instrument for assessing and developing resources needed for fulfillment the corporate strategy. Various models of

intellectual capital statements incorporate the intellectual capital in a value added model taking into account the strategy (knowledge strategy), the performance processes, the results and the impacts achieved.



**Figure 4:** The strategy cycle in connection with the intellectual capital statement (German Federal Ministry of Economics and Labour 2004)

The intellectual capital at the core of the intellectual capital statement shows the organization's ability and potential for action. Intellectual capital is all about knowledge in action and not so much about knowledge in a philosophical sense (Danish Agency for Trade and Industry 2000).

An intellectual capital statement basically shows the assets of an enterprise which are not directly accessible, but which are vital to future economic success. This existing knowledge of an organization that is critical to success plays a vital role in the creation of innovative products or services (German Federal Ministry of Economics and Labour 2004).

We have to mention that according to us, the objective of an intellectual capital statement is not only to calculate the value of the company's knowledge in financial terms. Thus, an intellectual capital statement is not intended to explain the difference between a company's book value and its market value, although this is sometimes the stated purpose of intellectual capital statements.

Intellectual capital statement has enormous marketing and communication potential. Therefore it's usually used for targeted promoting of the individual employee skills, knowledge

management actions, valuable customer relations, research activities and market-orientated product development. All stakeholders can be a target group of an intellectual capital statement. Organization may then be more attractive among existing or future employees, just like among customers or business partners. Also it can help in acquiring future investmentmens or partners for future joint-ventures.

Because of external stakeholders, most guidelines are focusing on the preparation of intellectual capital statements for external publication. The idea is to teach the organization to publish an intellectual capital statement as a part of its annual report, or an annex to it.

We can summarize the benefits of drawing up an Intellectual Capital Statement for companies. According to European ICS Guideline 2008 it helps an organization to:

- determine strengths and weaknesses of strategic intellectual capital factors (diagnosis),
- prioritize improvement opportunities with the highest impact (decision support),
- support the implementation of actions for organizational development (optimization and innovation),
- enhance transparency and the involvement of employees (internal communication),
- reduce strategic risks and controls the success of actions (monitoring),
- facilitate the communication of corporate value towards stakeholders (reporting).

In general, the intellectual capital statements help owners and managers of organizations to facilitate the process of strategy development and strategy implementation. Intellectual capital statements are both a strategic tool for adding value to the company and a communication tool for inducing employees, customers and others to engage in this process. Therefore it points to the future and it is not primarily intended to account for the current portfolio of knowledge resources at any particular time.

#### **4. Research methodology**

For researchers, content published by companies in their annual reports has gradually became a popular area of their research, especially through so called content analysis as a research method. Content analysis is one of the more widely used research methods applied in investigating the frequency and type of intellectual capital reporting (Guthrie et al. 2004). As a technique for gathering data, content analysis involves codifying qualitative and quantified information into pre-defined categories in order to derive patterns in the presentation and reporting of information (Guthrie and Petty 2000). There exist several studies investigating intellectual capital reporting by using content analysis. The majority of studies focus on analysing annual reports of companies (Guthrie and Petty 2000, Bozzolan et al. 2003, Guthrie et al. 2004, Oliveras 2008, Brennan 2001,

Bruggen et al. 2009, Abeysekera and Guthrie 2005), several has broaden their subject of analysis to other forms of corporate reporting such as individual intellectual capital reports, sustainability reports (Oliveira et al. 2010) or web pages (Striukova et al. 2008). The content analysis has become the inspiration for our own research presented in this study, of which the aim is to discover the type of intellectual capital information presented by Slovak companies in their annual reports.

Our sample consists of all 25 Slovak firms participating in the best Slovak 2010 annual report contest. According to Global Industry Classification Standard, our sample includes companies from following sectors:

- Energy;
- Industrials;
- Information Technology (Software and Services);
- Telecommunication Services;
- Financials (Banks, Insurance);
- Consumer Discretionary;
- Utilities;
- Materials.

Firstly, 18 intellectual capital sub-categories have been defined and grouped into three broad categories - the internal (structural) capital, the external (relational) capital and the human (employee) capital as shown in table 1. Then, the analysis of occurrence of the specific intellectual capital information according to predefined intellectual capital sub-categories was conducted to find out what kind of intellectual capital information Slovak companies show in their annual reports. In contrast to previous studies which have used content analysis, the frequency of occurrence of the intellectual capital information is not analyzed in this study. The methodology consists of the analysis of existence versus not existence of individual intellectual capital information for every predefined sub-category and has been conducted for every single annual report of all companies.

**Table 1:** Defined categories and sub-categories of intellectual capital

Internal capital	External capital	Human capital
1. <i>Intellectual property</i>	7. <i>Brands</i>	14. <i>Employees</i>
2. <i>Management philosophy</i>	8. <i>Customers</i>	15. <i>Education</i>
3. <i>Corporate culture</i>	9. <i>Customer satisfaction</i>	16. <i>Training</i>
4. <i>Management processes</i>	10. <i>Goodwill</i>	17. <i>Work-related knowledge</i>
5. <i>Information systems</i>	11. <i>Distribution channels</i>	18. <i>Company management</i>
6. <i>Financial relations</i>	12. <i>Business collaborations</i>	
	13. <i>Social responsibility</i>	

## 5. Results

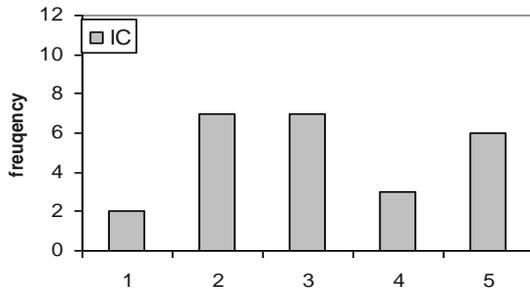
As a result, we have acquired an electronic database consisting of information about existence (1) or not existence (0) of every predefined intellectual capital sub-category information (horizontal line) and for every annual report from the sample (vertical line). Data collected are presented in this paper through descriptive statistics and analyzed based on histograms (figures 5 to 7), net charts (figures 8 to 10) and statistics summaries such as average, median and standard deviation (table 2).

**Table 2:** Statistics summaries of analyzed data for the category of internal capital (IC), external capital (EC) and human capital (HC)

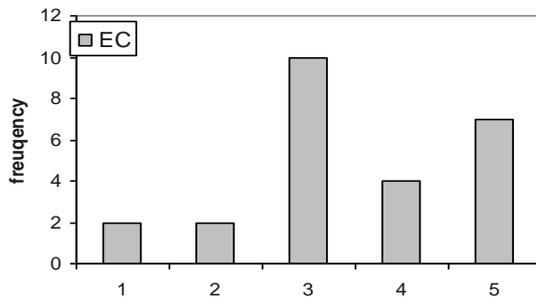
		Total sub-categories	Average	Median	Standard deviation
<b>IC</b>	Nr.	6	3.28	3	1.51
	%	100%	54.67%	50.00%	25.24%
<b>EC</b>	Nr.	7	4.32	4	1.75
	%	100%	61.71%	57.14%	24.99%
<b>HC</b>	Nr.	5	3.76	4	0,97
	%	100%	75.20%	80.00%	19.39%

Analyzed histograms presented in this study show the distribution of companies according to the percentage of reported intellectual capital sub-category information for every intellectual

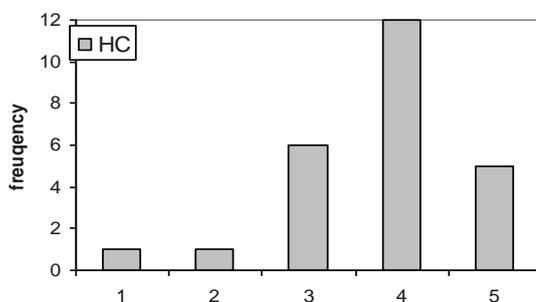
capital category. If all sub-categories within specific category defined in table 1 was reported by the company, the company would represent 100% on the histogram. On the other hand, if a company reported none of intellectual capital information according to subcategories within a broad category in its annual report, this company would represent 0% on the histogram. The histogram for the category of internal capital shows figure 5. Figure 6 gives information about the category of external capital whereas figure 7 gives information about human capital category.



**Figure 5:** Histogram for the category of internal capital. On the vertical axis, Nr. 1. represents 0-20%, Nr. 2 represents 20-40%, Nr. 3 represents 40-60%, Nr. 4 represents 60-80% and Nr. 5 represents 80-100%.

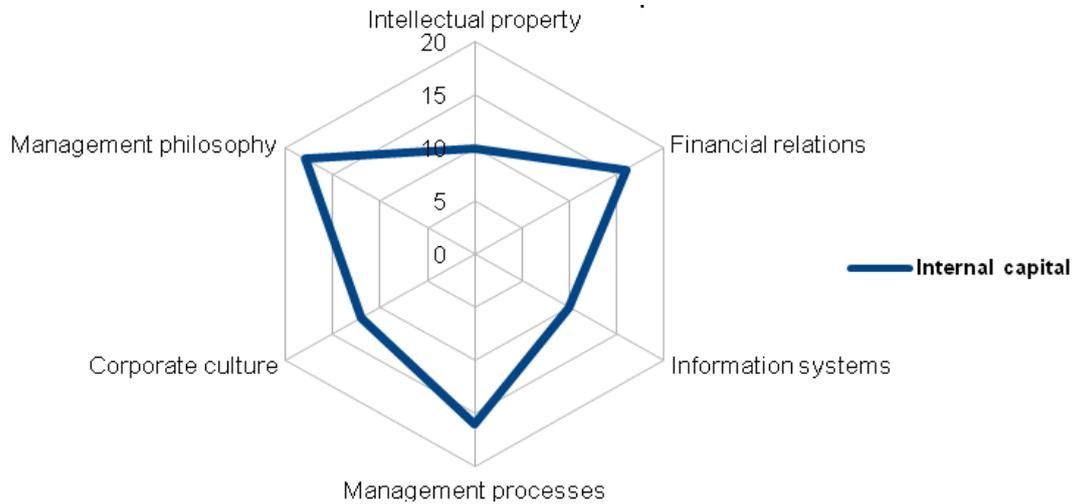


**Figure 6:** Histogram for the category of external capital. On the vertical axis, Nr. 1. represents 0-20%, Nr. 2 represents 20-40%, Nr. 3 represents 40-60%, Nr. 4 represents 60-80% and Nr. 5 represents 80-100%.

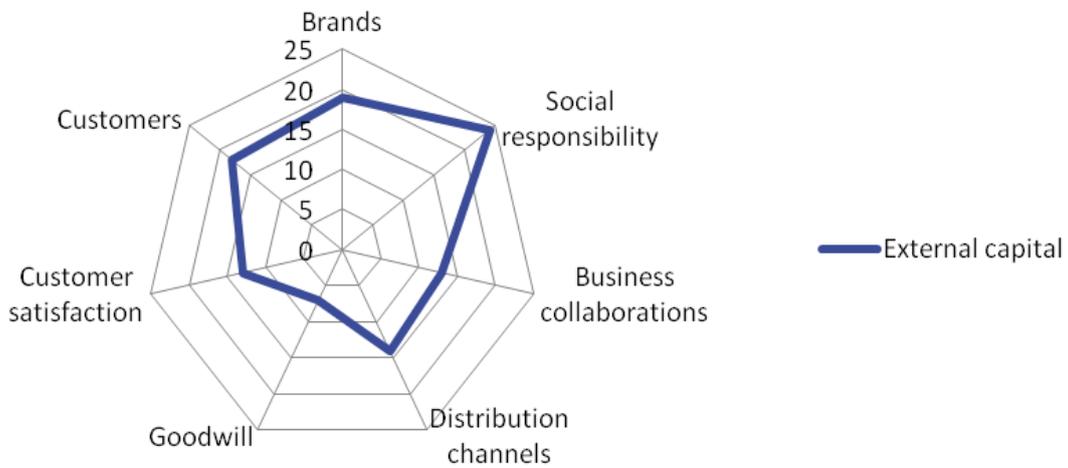


**Figure 7:** Histogram for the category of human capital. On the vertical axis, Nr. 1. represents 0-20%, Nr. 2 represents 20-40%, Nr. 3 represents 40-60%, Nr. 4 represents 60-80% and Nr. 5 represents 80-100%.

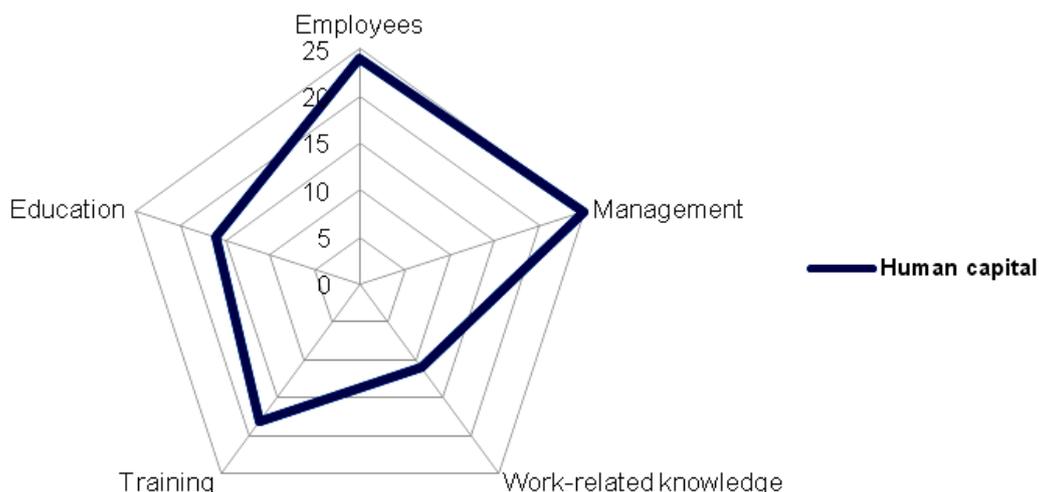
Besides histograms, we have analyzed our collected data via net charts. This analysis gives the view on sub-categories for all three main categories: the internal capital (figure 8), the external capital (figure 9) and the human capital (figure 10) of analyzed Slovak companies.



**Figure 8:** Net chart for category of internal capital



**Figure 9:** Net chart for category of external capital



**Figure 10:** Net chart for category of human capital

## 6. Discussion and conclusion

Intellectual capital management and intellectual capital reporting has still not been really established in Slovak theory, neither practice. This paper presents the real level of awareness of intellectual capital reporting principles among Slovak companies and analyzes the result in connection with the structural aspects of Slovak economy. Individual information was presented essentially well, but the linkage to the strategy and competitive advantage was not apparent.

Organizations have achieved the best level of reporting in the category of human capital, especially in the field of management and employees. Comparing the standard deviation we can state that the companies were also most consistent in reporting content within the dimension of human capital. From the category of internal capital it is the management philosophy (vision, mission, strategic value). For external capital the dominated reported information is the field of social responsibility. On the other hand, the lowest level of reporting represents intellectual property and information systems from the dimension of internal capital, goodwill, customer satisfaction and business collaborations from the category of external relations and work related knowledge and education from the human capital dimension.

These findings point to the traditional approach of organization to inform through annual reports.

Every organization has to focus on proper reporting the key information for stakeholders. Not only to inform, but also to present interconnections between sources and results, links between strategic priorities and resources for creating desired values.

The process of intellectual capital reporting is only one stage of intellectual capital management in an organization, the one which summarizes the results of the reporting period. On

this stage organization could set this process as a starting point for the development of objectives and strategies into the future. The actual level of intellectual capital initiatives reported in annual reports could set up the mirror for managers of Slovak organizations, as a reflection of reality, and as a start of the process of an effective functional application of intellectual capital management concept.

Advantages of measuring and reporting of intellectual capital are really huge. However, the progress of these activities can now be considered slow due to several facts. These correspond to the main shortcomings of the theoretical and practical knowledge of intellectual capital as it is still relatively new discipline whose origin is not completely settled, the lack of acceptable measurement and reporting standards and practical solution.

## 7. Acknowledgements

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## Bibliography

- [1] ABEYSEKERA, I. - GUTHRIE, J. (2005) "An empirical investigation of annual reporting trends of intellectual capital in Sri Lanka", *Critical Perspectives on Accounting*, Vol. 16, No. 3, pp. 151-63.
- [2] BOZZOLAN, S. - FAVOTTO, F. - RICCERI, F. (2003) "Italian annual intellectual capital disclosure: an empirical analysis", *Journal of Intellectual Capital*, Vol. 4, No. 4, pp. 543-58.
- [3] BRENNAN, N. (2001) "Reporting intellectual capital in annual reports: evidence from Ireland", *Accounting, Auditing & Accountability Journal*, Vol. 14, No. 4, pp. 423-36.
- [4] BUKH, P.H.- LARSEN, H.T. - MOURITSEN, J. (2001) "Constructing intellectual capital statements", *Scandinavian Journal of Management*, Vol. 17, pp. 87-108.
- [5] BRUGGEN, A. - VERGAUWEN, P. - DAO, M. (2009) "Determinants of intellectual capital disclosure: evidence from Australia", *Management Decision*, Vol. 47, No. 2, pp. 233-45.
- [6] Danish Agency for Trade and Industry. 2000. A guideline for intellectual capital statements – A key to knowledge management. p.112. ISBN 87-90704-51-7
- [7] EUROPEAN COMMISSION. 2008. European ICS Guideline. InCaS: Intellectual Capital Statement - Made in Europe. DG Research under the EU 6th Framework Programme.
- [8] EDVINSSON, L. (1997) "Developing intellectual capital at Skandia", *Long Range Planning*, Vol. 30, No. 3, pp. 366-73.
- [9] EDVINSSON, L. - MALONE, M.S. (1997) *Intellectual Capital. The proven way to establish your company's real value by measuring its hidden brainpower*. Harper Business, London.
- [10] Federal Ministry of Economics and Labour. 2004. *Intellectual capital statement – Made in Germany. Guideline*. Berlin: Harzdruckerei, Wernigerode, 2004. Documentation Nr. 536
- [11] GUTHRIE, J. - PETTY, R. (2000) "Intellectual capital: Australian annual reporting practices", *Journal of Intellectual Capital*, Vol. 1, No. 3, pp. 241-51.
- [12] GUTHRIE, J. - PETTY, R. - YONGVANICH, K. (2004) "Using content analysis as a research method to inquire into intellectual capital reporting", *Journal of Intellectual Capital*, Vol. 5, No. 2, pp. 282-93.

- [13] HAMEL, G. - PRAHALAD, C. K. (1996) *Competing for the future*, Harvard Business School Press, Boston. 1996. ISBN-10: 0875847161. 384 p.
- [14] MCELROY, M.W. (2002) "Social innovation capital", *Journal of Intellectual Capital*, Vol. 3 Iss: 1, pp.30 - 39
- [15] OLIVEIRA, L. - RODRIGUES, L. - CRAIG, R. (2010) "Intellectual capital reporting in sustainability reports", *Journal of Intellectual Capital*, Vol. 11, No. 4, pp. 575-94.
- [16] OLIVERAS, E. - GOWTHORPE, C. - KASPARSKAYA, Y. - PERRAMON, J. (2008) "Reporting intellectual capital in Spain", *Corporate Communications: An International Journal*, Vol. 13, No. 2, pp. 168-81.
- [17] SEDLÁK, B. - VOLNÁ, J. (2010) Pozícia konceptu intelektuálneho kapitálu pri budovaní trvaloudržateľnej konkurenčnej výhody pre organizáciu In: *Zborník z vedeckej konferencie doktorandov: Súčasný trendy a smery v manažmente organizácií*, Bratislava : KARTPRINT, 2010. p. 205-210, ISBN 978-80-88870-93-7
- [18] STEWART, T. (1998) *Intellectual Capital*. Nicholas Brealey Publishing, London.
- [19] STRIUKOVA, L. - UNERMAN, J. - GUTHRIE, J. (2008) "Corporate reporting of intellectual capital: evidence from UK companies", *The British Accounting Review*, Vol. 40, No. 4, pp. 297-313.