

# MEASURING THE INTELLECTUAL CAPITAL OF AN ENTERPRISE

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## Abstract

*The question we are trying to answer is how we could evaluate the intellectual capital of an enterprise. In literature, there are several models, each with own advantages and disadvantages. The proposed model focuses on four perspectives: intangible assets related to the leader, intangible assets related to human resources, intangible assets related to the enterprise, intangible assets related to the relations of the enterprise and it's an attempt to offer a more comprehensive perspective on the intellectual capital.*

**Key words:** *intellectual capital, intangible assets, goodwill, criteria, evaluation*

**J.E.L. Classification:** G32, M19

## 1. Introduction

Intellectual capital has begun to be approached since the 1980s, as the value gap between intangible and traditional production factors has grown. Those interested in this subject were trying to identify the cause that made businesses, which had essentially the same financial, physical and human resources, to achieve different results. This has led them to assume that there is another factor that explains variations in productivity and market value. As an example, the market value of S & P 500 enterprises (includes 80% of US corporations) was six times higher than the book value (Baruch, 2001). Approximately 90% of Microsoft's value was given by intangible assets, and for Ericsson and SAP, tangible assets accounted for only 5% of market value (Baum et al, 2000).

There is no unanimously accepted definition of intellectual capital - "intellectual capital is an extravagant term that economists and accountants use to describe knowledge" (Denning, 2000) and the terms used are diverse: intellectual capital, knowledge capital, intangible assets, invisible assets, hidden values, knowledge, goodwill, skills, capabilities, even technology.

When describing this phenomenon, we consider that all these terms tend to have the same meaning, the possible difference being the perspective of the approach.

Leif Edvinsson (Edvinsson, 2002) points out that intellectual capital is wrongly seen as the value of employees, human capital, the skills of employees within the enterprise. Intellectual capital is a combination of the human capital (the "brains", the skills, knowledge and potential of the people of the enterprise) and the structural capital (capital packaged in the form of customers, processes, databases, brands and the IT system). It is the ability to transform knowledge into valuable creative resources by multiplying human capital through structural capital. The challenge faced by the enterprise is to find the optimal way to transform human capital (what employees know) into structural capital.

## 2. Theoretical background

In literature we find numerous models of classification of intellectual capital components and attempts to evaluate it.

Brooking divides intellectual capital into four types of assets (Brooking, 1996): human centered assets, infrastructure-related assets, intellectual property assets and market-related assets.

Karl-Erik Sveiby (Sveiby, 2001) groups the elements of intellectual capital into three categories: the external structure, the internal structure and the competences of individuals. Bontis (Bontis, 1999) proposes a similar structure but, moreover, it emphasizes trust and culture as promoters of intellectual capital evolution.

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Leif Edvinsson (Edvinsson, 2002) divides intellectual capital into: process capital, innovation capital, and customer based capital.

Marr and Schiuma (Starovic et al, 2003) group under the umbrella of the stakeholders the relational capital, which they call the stakeholder relationships, as well as the human resources. By doing so, they reduce the composition of the intellectual capital structure to just two basic categories.

Mark W. McElroy (McElroy, 2001) proposes to improve the method created by Edvinsson by adding capital and repositioning the customers' capital

In another approach, Laurence Lock Lee (Nahapiet et al., 1998) proposes a different way of approaching intellectual capital, respectively, through the light of social capital.

From a more detailed perspective, Skyrme (Skyrme, 1999) identifies seven intangible groups (seven possible levels where knowledge is located): customers' knowledge, stakeholders' relationships, business environment scouts, organizational memory, process based knowledge, product and services based knowledge, human related knowledge.

By looking at assets, the knowledge behind the creation of new knowledge, thus of value of the enterprise, Nonaka and Takeuchi (Nonaka et al., 1995) propose a totally different approach to the previous ones: knowledge assets are inputs, outputs and moderating factors of the process knowledge-creation and enterprise-specific.

From the evaluation point of view, Sveiby (Sveiby, 2007) makes a classification of the identified models, according to the criteria: application level (organizational, departmental), financial or non-financial nature, and direct intellectual capital methods, scorecard methods, return on assets methods.

In another approach, they could be grouped in (Bailesteanu *et al*, 2008):

- models for determining the global value of intellectual capital - "The invisible balance sheet" (Sveiby, 2001), "Market value added" (Stewart, 1999), "Calculated intangible value" (Stewart, 1995), "Knowledge-based earnings" (Starovic *et al*, 2003), "Accounting for the future," (Humphrey, 1998);
- evaluation models from the point of view of intellectual capital efficiency – "Productivity of intellectual capital" (Pulic, 1993), "Knowledge Productivity" (Straussmann, 1996), "Knowledge value analysis" (Housel *et al.*, 2001);
- qualitative assessment models: "Balanced scorecard" (Kaplan *et al.*, 1992), "IC/Business philosophy" (Edvinsson, 1994), "Intangible assets monitor" (Sveiby, 2001), Holistic Value Approach (Pike, 2000), The Holistic accounts (Pedersen, 1999), Company IQ measurement system (Starovic *et al.*, 2003), Technology broker's IC audit (Bontis, 2000);
- models focused on certain components of intellectual capital - "Human Resource Costing & Accounting" (Flamholtz, 1985), Learning Curves (Nissen, 2006) Intangible Revenues (Sveiby, 2003).

### **3. Proposal of structure and evaluation of intellectual capital**

We believe that any structure of intellectual capital must be useful at least in the following directions: identifying intangibles in order to be analyzed as evolution and for evaluation, grouping intangibles according to the source and location, developing and valuing the intangible asset of the enterprise. From any classification should not lack human assets, structural assets and relations assets:

- intangible assets related to human resources: they are owned by individuals and must be regarded as potential, capacity, action and not as an object. Human resources are the primary source of intellectual capital generation. They allow enterprises to operate, innovate, adapt, are those that determine the enterprise's ability to solve problems. Being the most dynamic form of intellectual capital, human resources allow the enterprise to be flexible and to adapt quickly to changes in the business environment, but, as well as

the reverse, can be very difficult to manage. The difficulty of defining and managing comes also from the fact that the vast majority of human knowledge and capabilities are inherently silent. Unlike the other classifications, we consider that the leader and the management team should be treated differently from human resources because of their importance to the enterprise;

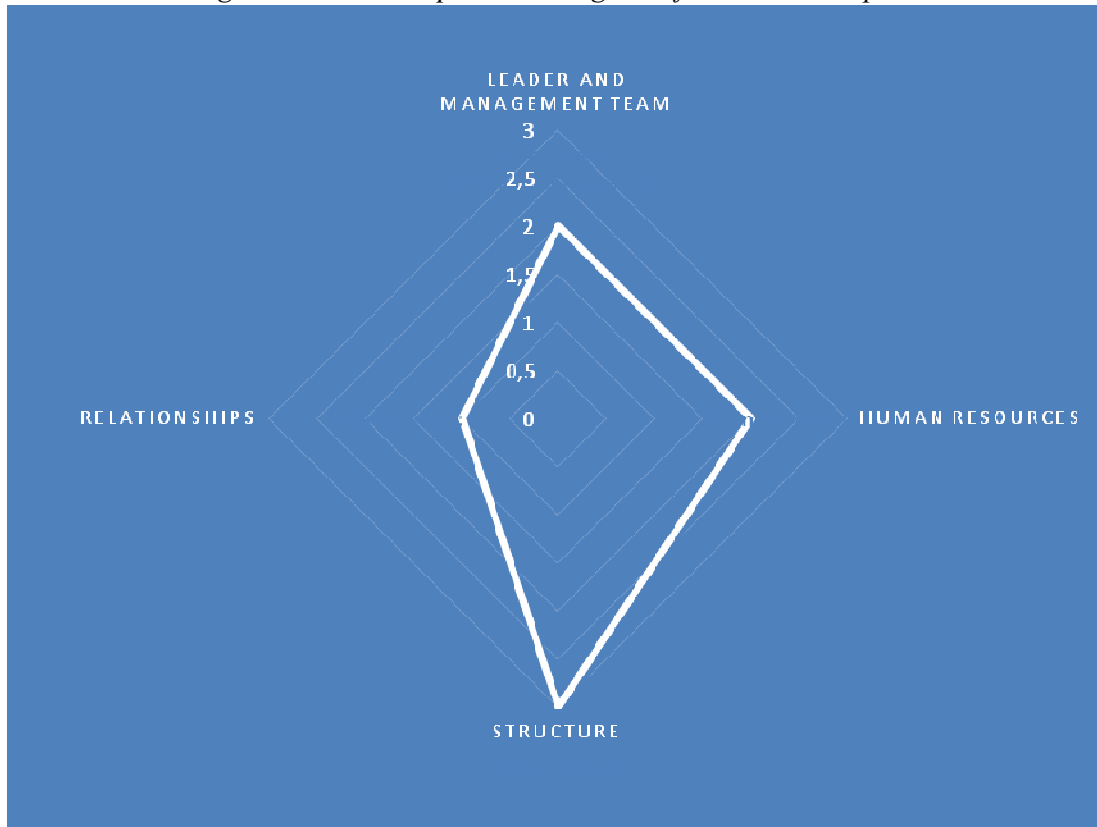
- intangible assets related to the enterprise/structure: they are owned by the enterprise, they generally have a routine nature and complement the human capital, providing the necessary means (infrastructure) to coordinate the efforts to transform knowledge into products (they are the ones that amplify the human resources capacity to solve problems). These assets, despite their seemingly intangible nature, are the easiest to manage;
- intangible assets relation based: in addition to human and structural capital, businesses also benefit from the potential of existing relationships with suppliers, customers, partners, etc. Relationships can have both a formal nature (contracts, strategic partnerships) and an informal one. Due to the complexity of relationships, these assets are difficult to achieve because they require a long time to form and improve and depend to a large extent on the company's history, position and reputation.

In synthesis, we present the profile graph of an enterprise's intellectual capital and radar potential diagram.

*Table no. 1 The profile graph of an enterprise's intellectual capital*

<b>Intangible assets</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Leader and management team</b>			
Leader (cognitive, emotional, social and practical intelligence) Managerial team (cohesion, diversity, trust, involvement, etc.)			
<b>Human resources</b>			
General personal characteristics (intellect, education, experience, culture, personality etc.) Personal characteristics of relationship (communication, relationship, collective experience etc.) Activity based features (job-specific level of knowledge, level of knowledge about the business, awareness of the culture of the enterprise, etc.)			
<b>Structure</b>			
Organization (structures, networks, processes, etc.) Culture and leadership (culture, leadership style, managerial methods, strategies, etc.) Physical infrastructure (technical and technological solutions, documented information, lease, etc.) Protected assets (intellectual property, trade secrets, internally developed concepts, etc.)			
<b>Relationships</b>			
Customer relations Relationships with suppliers Relations with the media Relations with investors, financial markets Relations with strategic partners Relations with regulatory agencies Relationships with the community (in terms of characteristics - number, size, durability, diversity, profitability, depth; and quality - loyalty, knowledge, reputation, potential)			

Figure no. 1. Radar potential diagram of intellectual capital



#### 4. Conclusions

Regardless of the method chosen, there are three approaches to the assessment of intellectual capital: quantitative indicators; qualitative assessments; qualitative assessments complemented by quantitative indicators. From the perspective of the scope, there are methods that aim to make a global assessment of intellectual capital and methods that aim at assessing the components of intellectual capital. The proposed model has the advantage of centralizing all the components of the intellectual capital found in literature, which facilitates their identification in practice. It also highlights the leadership and management team from the human resources category. The limitations of the proposed model of intellectual capital assessment consist in the possibility that not all components of intellectual capital had been captured and the subjectivity of their evaluation.

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