INTELLECTUAL CAPITAL REPORTING AND DISCLOSURE IN THE ANNUAL REPORTS OF ROMANIAN MANUFACTURING LISTED COMPANIES – THEORETICAL FRAMEWORK

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Abstract: *One of the most researched topic regarding financial reporting and disclosure of today is the way intellectual capital or knowledge assets contributes to the improving of the quality of information disclosed and create or add value to business performance. Also, it is acknowledged that a company has access to a variety of tools for disclosing information on intellectual capital. In our study we have decided to investigate the concept, the measurement models and the intellectual capital disclosure practices using as the source of our documentation books, articles, working papers and online publications. So, in the first part of our research we have presented several points of view in respect to the concept of knowledge assets or intellectual capital and in the second part we have reviewed the literature on the topic highlightening several scholars opinion on reporting and disclosure issues.*

Keywords: *knowledge, intellectual capital, reporting practices, disclosure, annual reports*
JEL codes: *M41, M10, G14, D83*

1. Introduction

In knowledge based economy value is the result of knowledge and information. Moreover, business organizations can not generate profits without ideas, skills talent and intelligence of humans. As Depres and Chauvel (2000) observed beside it's concentration on intangibles, knowledge economy is characterized by networked, digital, virtual and extremely fast moving businesses, better performing, the primary factor of production is knowledge. The three pillars of knowledge economy according to Stewart (2001) are:

- knowledge as the most important factor of production; creating value through knowledge economy is the process of creating value from information;
- knowledge assets; intellectual capital has become the most important knowledge assets embedded in talent, skills, know-how, know-what, relationships and other human values that can be used to create value;
- adaption to knowledge economy in terms of adopting new business language, new management techniques, new corporate governance practices, new technologies and strategies and why not, new accounting.

Studying the literature written on the topic we have found as Tseng and Goo (2005) underlined that there is a common lack of a clear definition that would appropriately describe the concept of intellectual capital. Also, regarding intellectual capital components we have found in the studied literature that intellectual capital is not detached. As Maditinos, Sevic and Tsaidiris (2009) pointed out several scholars grouped intellectual capital in four categories: human capital; structural capital; customer capital and innovation capital (Edvinsson and Malone, 1997; Ross et al., 1997; Stewart,

1997, Sveiby, 1997; Chen et al., 2004, Tseng and Goo, 2005).

Our paper is organized as follows. The next section objective is to underline the differences between classical assets and knowledge based assets focusing on definition and recognition of intellectual capital. The literature review section is concentrated on intellectual capital measurement models and also reporting issues. In the last section we have drawn the conclusions and the limits of our study.

2. From classical assets to knowledge based assets

Companies, regardless of their size, in order to undertake their activity and create value, own both tangible and intangible assets. Buildings, work equipments and instalations, computers are, of course, tangible assets, and the ways in which these generate value for a company and affect performance have been the subject of theoretical and practical speculations in economic literature in past centuries. On the other hand, the considerable growth in the diversity of intangible assets has reoriented, in the last few decades, the focus of researchers from tangible to knowledge based assets. But, what are knowledge based assets? In contrast with tangible asssets, these are more dificult to identify, to clasify, to asses and highlight in the structures of financial situations. Yet, in a knowledge based economy, it is imperatively important to understand which activity generates real added value and to adapt contemporary financial reporting to this economic reality. Knowledge based assets or intangible assets have existed for a very long time. As Cohen (2008) so vividly remarked, the first caveman to light a fire knew that he held valuable information. This ability of his represented an intangible asset. Expanding on this reasoning, Cohen underscored the fact that the people who invented the alphabet or the ones who created the calendar or the numeral system were early inventors of extremely important intangible assets. It's a pity they did not know how to patent their inventions or protect their works through copyright (Cohen, 2008:25). It is vital to keep in mind that the terms of knowledge, intangibles and intellectual capital are usually used interchangeably. As Mansour et al. (2008) emphasize the terms of intangibles in accounting literature, knowledge assets by economist and intellectual capital in the management and legal literature are refer essentially to the same thing: a nonphysical claim to future benefits. Unlike the physical or classical assets, the knowledge assets are characterized by increasing return on scale. Return is the outcome of value generated by innovation (discovery), unique organizational designs or human resources practice (Mansour et al., 2008).

An interesting point of view is of Bontis (1998). He emphasized that intellectual capital has been considered by many, defined by some, understood by a select few and formally valued by practically no one. Most of the literature written on intellectual capital, according to Bontis (1998) makes a set of claims that are related to the value and intangible nature of this resource. As Bontis (1998) noticed the concept of intellectual capital was first introduced by Kenneth Galbraith in 1969, who believed that intellectual capital was more than pure intellect but included "intellectual action". It is the move from "having" knowledge and skills to "using" the knowledge and skills that is captured in a numerous way in the literature. The management literature shows two main streams that discuss knowledge assets, in opinion of Marr et al. (2004). One of them, taking an epistemological approach, interprets knowledge as an entity and discusses the differences between information and knowledge and the implications for knowledge management, whereas the other stream of literature discusses knowledge as an organizational asset that has to be managed in order to improve organizational performance. The later stream of research seeks to help managers in managing and

evaluating the company performance (Teece, 2000; Roos et al, 1997; Stewart, 1997). In Marr et al. vision a major contribution provided by this research stream is the concept of intellectual capital, which help managers to identify and classify the knowledge components of an organization. The authors also considered that intellectual capital contributed to a better understanding of knowledge assets and was a first step towards a less abstract and more operative conceptualizing of knowledge.

As Abeysekera (2007) noticed several authors have taken a long-term view in defining and analyzing the nature of intellectual capital, though their definitions have varied significantly (Edvinsson and Sullivan, 1996; Brooking, 1997; Edvinsson, 1997; Edvinsson and Malone, 1998; Klein, 1998; Knight, 1999). Because in our paper we are analysing mainly intellectual capital reporting and disclosure, we are interested in the definition of Edvinsson and Sullivan (1996). In their opinion intellectual capital can be defined as knowledge that can be converted into value. Buck et al. (2001) consider that the expression "intellectual capital statement" refers to "capital", emphasizing the accounting value. While some authors use the concept of intellectual capital while referring to the knowledge of a social community, such as an organization or professional practice groups (Nahapiet and Ghoshal, 1998), other scholars interpret intellectual capital as a human resource (Boudreau and Ramstad, 1997; Liebowitz and Wright, 1999) or associate it with information technology (Davenport and Prusak, 1998). Abeysekera and Guthrie (2002) consider there is considerable ambiguity as to what constitutes intellectual assets, some scholars including all intangibles (Ross et al., 1997; Knight, 1999) but others do not recognize intangibles in the financial statements (Caddy, 2000; Edvinsson and Sullivan, 1996). Abeysekera and Guthrie (2002) also point out the fact that most of the definitions of intellectual capital are based on recognizing knowledge or intellectual assets only. They have ignored the possibility of existence of intellectual liabilities in the concept of intellectual capital (Harvey and Lusch, 1999; Caddy 2000) and external intellectual liabilities (Dzinkowski, 2000). But Abeysekera (2001) suggests that if knowledge is well managed then value is added via intellectual capital and if it is badly managed, this may lead to intellectual liabilities. According to Tseng and Goo (2005) there is a common lack of a clear definition that would appropriately describe the concept of intellectual capital. However, they seem to adopt Stewart's (1997) definition, also widely, recognized, that intellectual capital has been formalized, captured and enforced so as to generate an advanced value to the organization. Regarding intellectual capital components we have found in the studied literature that intellectual capital is not detached. As Maditinos, Sevic and Tsaidiris (2009) pointed out several scholars grouped intellectual capital in four categories: human capital; structural capital; customer capital and innovation capital (Edvinsson and Malone, 1997; Ross et al., 1997; Stewart, 1997, Sveiby, 1997; Chen et al., 2004, Tseng and Goo, 2005).

3. Literature review on intellectual capital measurement models

As reflected in the various studies conducted by different scholars found in the literature, measuring intellectual capital is not a science as "exact" as mathemathics or accounting. According to CEN (2004) (1), there are many interdependencies with other activities and quite often the context in which value is created is not the same as the one in which some of the knowledge efforts take place. And as noted by Iske and Boekhoff (2001) value is not an "intrinsic" property of knowledge: the value of knowledge fully depends on how knowledge is being used. Some knowledge can have a lot of value in one situation but be worthless in another. As

we can see in the figure bellow, value can be added in five dimensions:

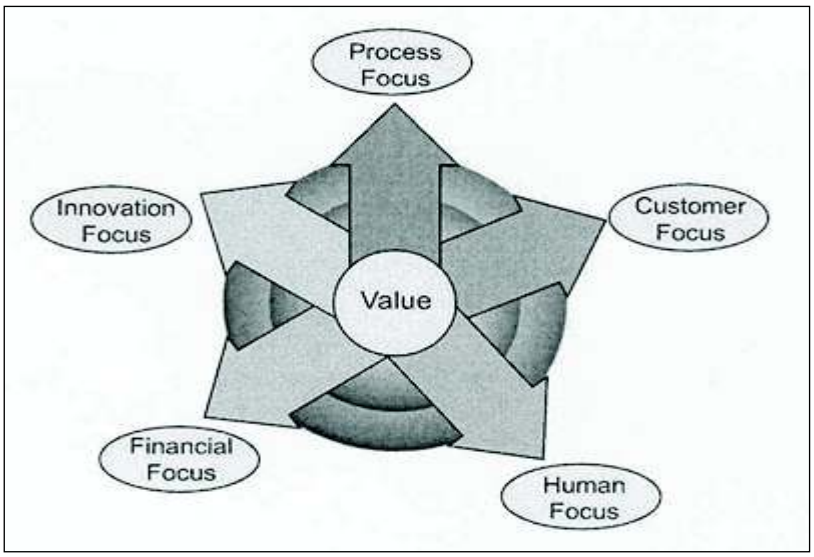

Fig 1.

Source: CEN (2004), European Guide to good Practice in Knowledge Management – Part 4: Guidelines for Measuring Knowledge Management, pg. 7

Many approaches to the measurement of intellectual capital can be identified in the literature. In Sveiby's (2) view the measuring approaches for intangibles fall into at least four categories of measurement approaches.

Direct Intellectual Capital methods (DIC) estimates the value of intangible assets by identifying its various components. Once these components are identified, they can be directly evaluated, either individually or as an aggregated coefficient. **Market Capitalization Methods (MCM)** calculates the difference between a company's market capitalization and its stockholders' equity as the value of its intellectual capital or intangible assets. **Return on Assets methods (ROA) -** average pre-tax earnings of a company for a period of time are divided by the average tangible assets of the company. The result is a company ROA that is then compared with its industry average. The difference is multiplied by the company's average tangible assets to calculate the average annual earnings from the intangibles. Dividing the above-average earnings by the company's average cost of capital or an interest rate, one can derive an estimate of the value of its intangible assets or intellectual capital. **Scorecard Methods (SC) -** the various components of intangible assets or intellectual capital are identified and indicators and indices are generated and reported in scorecards or as graphs. SC methods are similar to DIC methods, expect that no estimate is made of the value of the intangible assets. A composite index may or may not be produced. The figure bellow highlights the four above mentioned well known measurement approaches and shows that one may consider various facets, such as financial valuation, or high levels of evaluation that measure the effect of a knowledge management implementation in terms of macroelements or at a lower level, that is at the organizational component level.

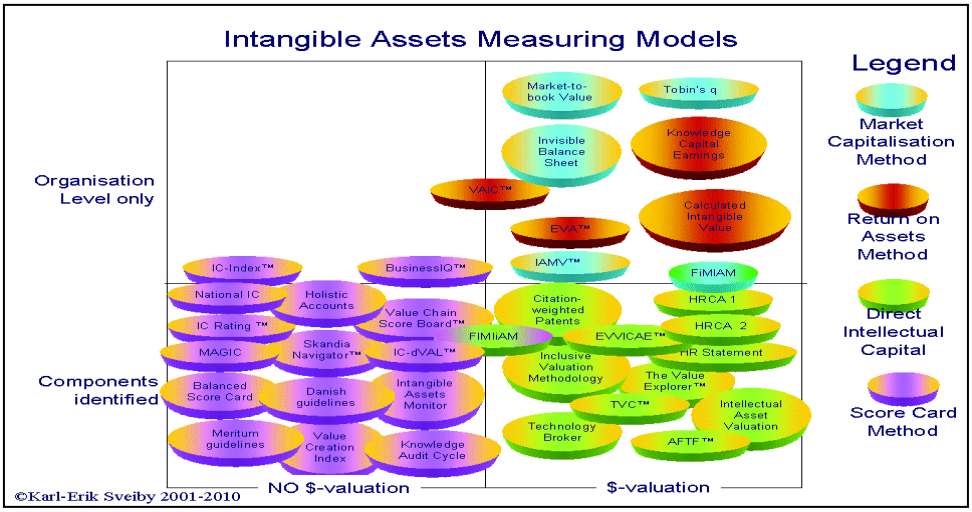

Fig. 2

Sourse: Karl-Erik Sveiby , Methods for Measuring Intangible Assets, 2001, updated 27.04.2010

As we have found in the studied literature **Skandia** is considered the first large company to have made a truly coherent effort at measuring knowledge assets (Bontis 1996; Huseman & Goodman, 1999). In 1985 Skandia developed the first internally intellectual capital report and became the first company to issue an intellectual capital addendum accompanying its traditional financial report to shareholders in 1994. Leif Edvinsson, the chief architect behind Skandia's initiatives, developed a dynamic and holistic intellectual capital reporting model called the Navigator with five areas of focus: financial, customer, process, renewal and development and human capital (Bontis, 2001). According to Edvinsson and Malone (1997) the new accounting taxonomy sought to identify the roots odf a company's value by measuring hidden dynamic factors that underlie the visible company of buildings and products. As Bontis (2001) noticed Skandia's value scheme contains both financial and non-financial building blocks that combine to estimate the company's market value. This conceptualization achieved a balance for Skandia in trying to represent both financial and non-financial reporting, uncovering and visualizing its intellectual capital, tying its strategic vision to the company's core competencies reflecting knowledge sharing technology and knowledge assets beyond intellectual property and reflecting its market value better.

The **Intangible Assets Monitor** (Sveiby, 1997) is a method for measuring intellectual capital and a presentation format that displays a number of relevant indicators for measuring intellectual capital un a simple fashion. The choice of indicators depends on the organizational strategy. On the surface, the Intangible Assets Monitor looks similar to the Kaplan Norton Balanced Score Card, however there are significant differences. The Intangible Assets Monitor can be integrated into management information systems and it should be accompanied by a number of comments. Only a few of the suggested indicators should be selected and designed the main purpose to achieve is to get a broad picture. So, essentially management selects indicators, based on the strategic objectives of the firm, to measure four aspects of creating value from three classes of intellectual capital labeled: people's competence, internal structure, external structure and value

creation ways are: growth, renewal, utilization/efficiency and risk reduction/stability.

Intellectual Capital-Index is an example of "second generation" practices that attempt to consolidate all the different individual indicators into a single index, and to correlate the changes in intellectual capital with changes in the market (Roos et al., 1997). The concept of an IC-Index was first advanced by Goran Roos and his colleagues at Intellectual Capital Services Ltd., and was first used by Skandia in its IC supplement to the annual report. According to Roos et al. (1997) the IC-Index has several distinct features: it is an idiosyncratic measure; it focuses on the monitoring of the dynamics of IC; it is capable of taken into account performance from prior periods; it shed light on a company different from an external view typically based on an examination of physical assets; it is a self-correcting index meaning that if performance of the IC-index does not reflect changes of the market value of the company, then the choice of capital forms, weights and/or indicators is flawed. Like most other measures of tangible assets, an IC-index does depend on value judgements, in the choice of weights, indicators and even the assumption that intellectual capital is present and important in company operations. Also, Roos et al. (1997) argue that intellectual capital measurement and especially a consolidated measure such as the IC-index makes a larger part of the organization visible and open to valuation.

According to Bontis et al. (1999), **Economic Value Added (EVA)** was introduce by Stern Stewart as a comprehensive performance measure that uses the variables of capital budgeting, financial planning, goal setting, performance measurement, shareholder communication and incentive compensation to account properly for all ways in which corporate value can be added or lost. While several scholars consider that economic value added is the net result of all managerial activities, Bontis et al (1999) described EVA as providing a common language and benchmark for managers to discuss value creation and also can increase the legitimacy of a company in the eyes of financial markets. EVA is intended to offer improvements to market value added calculation. Similar to EVA, MVA method derives from the Alfred Marshall concept of „economic profit". MVA is the difference between actual market value of the company (invested capital) and the present value of invested capital. In other words MVA is the difference between cash out or what investors could get by selling at the present conditions of firm and market and cah in or what investors contributed over the years from the beginning of the firm.

Tobin's Q ratio named Q ratio or q, is the market value of invested capital relative to assets replacement cost (Tobin, 1969). The Q is the ratio of the stock market value of the firm divided by the replacement cost of its assets and changes in Q provide a proxy for measuring effective performance or not of a firm's intellectual capital. Tobin developed the Q ratio as a measure to help predict investment decision independent on macroeconomic factors such as interest rate. In Stewart's (1997) opinion Tobin's Q ratio was not developed as a measure of intellectual capital, but former Federal Reserve chairman Alan Greenspan has noted that high Q and market to book ratios reflect the value of investments in technology and human capital. Norton and Kaplan's **Balance Score Card** was created to help managers to transform organization's strategy into a reliable set of performances that will provide framework for a strategic measurement and management system (Anghel, 2008). A company's performance is measured by indicators covering four major focus perspectives: financial perspective, customer perspective, internal process perspective and learning perspective (Kaplan and Norton, 1996). Balance Score Card indicators are based on the strategic objectives of the firm. This measurement model of intangible assets was developed considering the ability of a

company to exploit and develop its intangible assets. The **Value Added Intellectual Coefficienttm (VAIC^{tm})** methodology, developed by Ante Pulic (1998), is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of VA by a firm's total resources and each major resource component. Pulic (1998) states the higher the VAIC^{tm} coefficient, the better the efficiency of VA by a firm's total resources. Formally, VAIC^{tm} is a composite sum of three indicators: (1) Value Added Capital Coefficient (VACA) – indicator of VA efficiency of capital employed; Value Added Human Capital (VAHU) – indicator of VA efficiency of human capital; and (3) Structural Capital Value Added (STVA) – indicator of VA efficiency of structural capital.

Baruch Lev's model (1999), knowledge capital earnings, reveals a way to measure assets, intellectual eranings and knowledge earnings. As Lev's describe his model in an interview taken by Alan Webber in 1999 (3), „*it's a computation that starts with what I call normalized earnings – a measure that's based on past and future earnings...My approach looks at the past. Based on those forecast, I create an average and I call that average normalized earnings. From those normalized earnings, I then substract an average return on physical and financial assets, based on the theory that these are substitutable assets...when I substract from the total normalised earnings a reasonable return on the physical and financial assets I define what remains as the konwledge earnings*". Further on in the same interview Baruch Lev mention that technological capabilities index is based on measures of inputs, such as investment in R&D, investment in product development, investment in information systems; on measures of intermediate outputs, such as patens and trademarks; on measures of competitive position such as the number of people who access a particular web site and on measures based on the ultimate output – commercialization.

These where some of the models that over the past years were developed to measure intellectual capital or in general intangible or knowledge assets.

4. Literature review on intellectual capital reporting practices

Several scholars have concentrated their efforts toward understanding and analyzing intellectual capital reporting practices. For instance, Abeysekera and Guthrie (2006) identify the following categories of intellectual capital reporting: ratios and values; reporting intellectual capital via intellectual capital statements; theoretical models. Concerning reporting intellectual capital as ratios and values Roos et al. (1997) states that intellectual capital is by definition intangibles and therefore the only possible way to measure them is by proxy variables or indicators. Authors like Abeysekera and Guthrie (2006) considered that there techniques could be classified into two broader sub-categories: the firm macro level for inter-firm comparisons; and of measuring and reporting within firm level (micro) for interdivisional comparisons. In regard to reporting intellectual capital through intellectual capital statements, empirical models have been proposed to measure intellectual capital items (Leibowitz & Wright, 1999; Decker & Hoog, 2000). Some models used activity based costing to determinate cost and market value to determine revenue. In Abeysekera's vision (2001) another conceptual approach is to report intellectual capital in relation to the "fair value" of the firm and to recognize intellectual revenue or intellectual expense as the difference of fair value between two periods within the traditional accounting system. Also, Abeysekera and Guthrie (2006) identified five major frameworks of intellectual capital reporting: structures holding intellectual assets, developed by

Sveiby (1997), focused on intellectual assets; capital holding intellectual items, that analysis intellectual capital in relation to intellectual assets (Edvinsson, 1997; Edvinsson and Malone, 1998; Roos et al., 1997); assets representing intellectual capital, that focused on intellectual assets and was in Brooking (1999) interest; strategic and measurement root focused on the role of intellectual capital, that was in attention of Roos et al. (1997) research and a combination of assets and capital representing intellectual capital, developed by IFAC in 1998 and Dzinkowski (2000).

As Abeysekera (2001) noted annual reports are an ideal research location for applying the intellectual capital framework because they provide a good proxy with which to measure the comparative positions and trends of intellectual capital between firms, industries and countries. Several papers and studies that we have found in the literature concerning intellectual capital issues has used annual reports as source documents to discover the status of intellectual capital of companies (Abeysekera and Guthrie, 2005; Brennan, 2001; Guthrie and Petty, 2000; Vergauwen and van Alem, 2005). The value-creation capabilities of different organizations and entities are studied in the last decade by several authors like Edvinsson (2002), Bontis (2004), Tallman et al. (2004), Bonfour and Edvinsson (2005), Schiuma et al. (2005). Also, several theoretical contributions have underlined the strategic importance of intangible resources for the value creation capabilities, some of them tried to build approaches and tools more oriented towards project and management processes or analyzed the relationship between knowledge resources, value creation capabilities and competitiveness (Bontis, 2004; Bonfour and Edvinsson, 2005; Pulic, 2005). Lev and Sougiannis (1996) valued and calculated intangibles and then correlated those values with financial measures while Edvinsson (1997) identified the so called "hidden values" of a company and developed an intellectual capital management model. Also, various prior studies have suggested that the level of intellectual capital disclosure in annual reports is relatively low.

5. Conclusions and limits of the research

As it can be understood from the above presented issues concerning the intellectual capital concept, measurement models and reporting practices we did not found in the studied literature on the topic much homogeneity and uniform views. Also, our work was a difficult one taking into account the very rich and diverse literature. However, we consider that we have synthesized the main or important aspects regarding the definition, the measurement and reporting of knowledge assets. But, there are a few aspects that were not discussed and this is surely one of the limits of our study. Another limit refers to the fact that we have not pointed out separately the contributions of domestic authors interested in this subject.

Note

(1) European Committee for Standardization (Comite Europeen de normalization), European Guide to good Practice in Knowledge Management – Part 4: Guidelines for Measuring Knowledge Management

(2) http://www.sveiby.com/articles/IntangibleMethods.htm/updated 07 April 2010

(3) http://www.fastcompany.com/magazine/31/lev.html?page=0%2C3/download on 10.01.2011

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