METHODS OF MEASURING INTELLECTUAL CAPITAL

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ABSTRACT

This paper expands a working definition of intellectual capital. In addition, methods of measuring intellectual capital at both the individual- incorporator and organization levels are also presented. This provides a good tool for enterprises to manage their IC.

Intellectual capital is becoming the ultimate resource for creating economic wealth. It is intangible, elusive, mobile and hard to constrict. This intangible nature of intellectual capital has clear implications for organisations as well as those who try to determine their worth or estimate their performance.

Tangible assets such as property, plant, and equipment continue to be important components in the production of both goods and services. However, their relative importance has deteriorated through time as there has been an upsurge in the importance of intangible knowledge-based assets. This provides an exploratory foundation for accounting systems and processes which are useful for meaningful management of intellectual assets.

Keywords : Human Capital, Structural Capital, and Relational Capital

INTRODUCTION

One of these *hidden* assets for creating value is so-called Intellectual Capital . Intellectual Capital (IC) is the intangible stuff that provides your organization with knowledge, strategy, customer service, etc. Internal sources of IC include your people who possess the knowledge and expertise to make your organization work. Internal IC also includes your management information systems, brand names, and copyrights. External IC would represent your loyal customers and suppliers.

Evolution of economy has caused important changes in activity of companies on the global market. Nowadays we are observing a growth the importance of intellectual resources as an effective tool for increasing corporate competitiveness. This fact has caused the need to manage companies and to measure their performance in a new way.

In today's economy, the importance of knowledge capital is replacing financial capital and physica. Current accounting systems under the influence of traditional factors of labor, material and financial assets are and the importance of knowledge as a factor of production and wealth creation, they are ignored. While this is a realistic approach to the situation developing in intangible capital, we need to evaluate the importance of this investment has doubled.

In a knowledge-based organizations, traditional accounting methods, which are based on the tangible assets, for Intellectual capital valuation, intangible asset is its largest and most valuable, are insufficient.

This study assessed valuation models to measure intellectual capital and the most appropriate models and methods to assess the most simplified yet to be introduced.

REVIEW OF LITERATURE AND SCIENTIFIC FOUNDATIONS:

Paradigm has a long history of intellectual capital has been little progress in the past decade Thomas was the first person who called Stewart ", Intellectual capital "has pointed out (Stewart (1999-2000)

In a letter to economist John Kenneth Galbraith wrote it like Michelle Calc: "I'm wondering if you can tell us how we belong in the world of intellectual capital can then use to determine the value of the last few decades.

Research conducted in Oregon Philip, David Avdvnl in 2000 during the creation of the intellectual resources and symmetrical reciprocity as key organizations and the ability to create, maintain and develop the knowledge they hold and acknowledge that the possibility of accurately measuring intellectual capital not allowed But it can not be used and the application rejected.

Pablo Fernandez in 2001 with the aim of showing the limitations of intellectual capital, intellectual capital and brand Coca-Cola Company in 1998 Klags worth 24.6 billion dollars in 1993 to 102.6 billion dollars in value is assessed. Limitations of the model and propose a scheme for detecting stimuli are expressed in terms of different parameters.

Oliver Pyfyl 2003 survey identified intellectual capital in search of the best way to compare the different models is discussed. Thanked 300 large European companies between 1990 and 2001 to investigate and evaluate the models Avhlsvn 1995 and 1995 Fltam and return of capital Thought to be reviewed.

Hrmans, Company Kavrann in 2005 to establish the potential value of research in the field of intellectual capital in Finnish industrial companies to study the effects of intellectual capital on future sales of small and medium-sized companies have the tools they for valuation and sale of intangible assets have suggested waiting.

Madan Investigative Reporting intellectual capital in the Basin in 2006, including a review of concepts and methods of detection.

The first forum on intellectual capital practice started in Switzerland in 1988 and this Society's emphasis on the knowledge about static assets inventions, ideas, computer programs, royalties Etc. that are indicative of intellectual capital has. In terms of human resources and human capital Advynsn and Sullivan say openly the benefits of economic enterprises transform the intellectual property invented by human resources in enterprises where owners can have their rights. One The main tasks of the intellectual property is intellectual capital management, human resources transformation.

ELEMENTS OF INTELLECTUAL CAPITAL:

Because of the concept of intellectual capital researchers who have been working in this field are presented for each category of its own. The first classification of the " *Sveiby* " conducted in 1997 in three areas.

1. Human capital in the areas of personal competence

2. Structural capital

3. Relational capital structure of foreign

St. Hubert Ong Director of the institution stating that intellectual capital: (CIBC) "total human capital, structural and customer-oriented."

Human capital accumulation capabilities for people to create solutions for customers.

Capital structure refers to the capability of the organization to meet market needs, unlike human capital, structural capital can be studied.

Customer capital (relational) capital encompasses external dependencies such as customer loyalty, corporate reputation and relationships with suppliers of resources.

Many countries have entered an era of intellectual capital, such as the UK, Australia, Japan, but started struggling. Global knowledge infrastructure innovation may actually become a reality in the new millennium. Intellectual capital strategy is based on the following pillars:

- Highly skilled human resource and knowledge-intensive
- Enhance human capabilities
- Better synergy between the education system and the social, cultural and economic
- Enhance deep learning systems to improve efficiency and quality, with a focus on high-level scientific and technological progress
- Movements in long-term learning processes with innovative culture, the spirit of excellence And cultivation of talents.

Making the system more effective and to encourage research and development to create several centers focused on specific disciplines and locations distinctive capabilities on the track.

MEASURING INTELLECTUAL CAPITAL:

The importance of knowledge management and its impact on organizational performance depends largely explain its role in increasing the competitive strength of the organization and gain a greater share of the organization. One of the most logical approach to measuring the impact of intellectual capital on organizational performance through measurement of intellectual capital in the organization's overall performance measurement system, That can process the individual and the organization or project to be done. This phrase is meant to open a row for intellectual capital performance measurement among a number of specific rows Consider the contribution of intellectual capital, although it is very difficult to do in practice.

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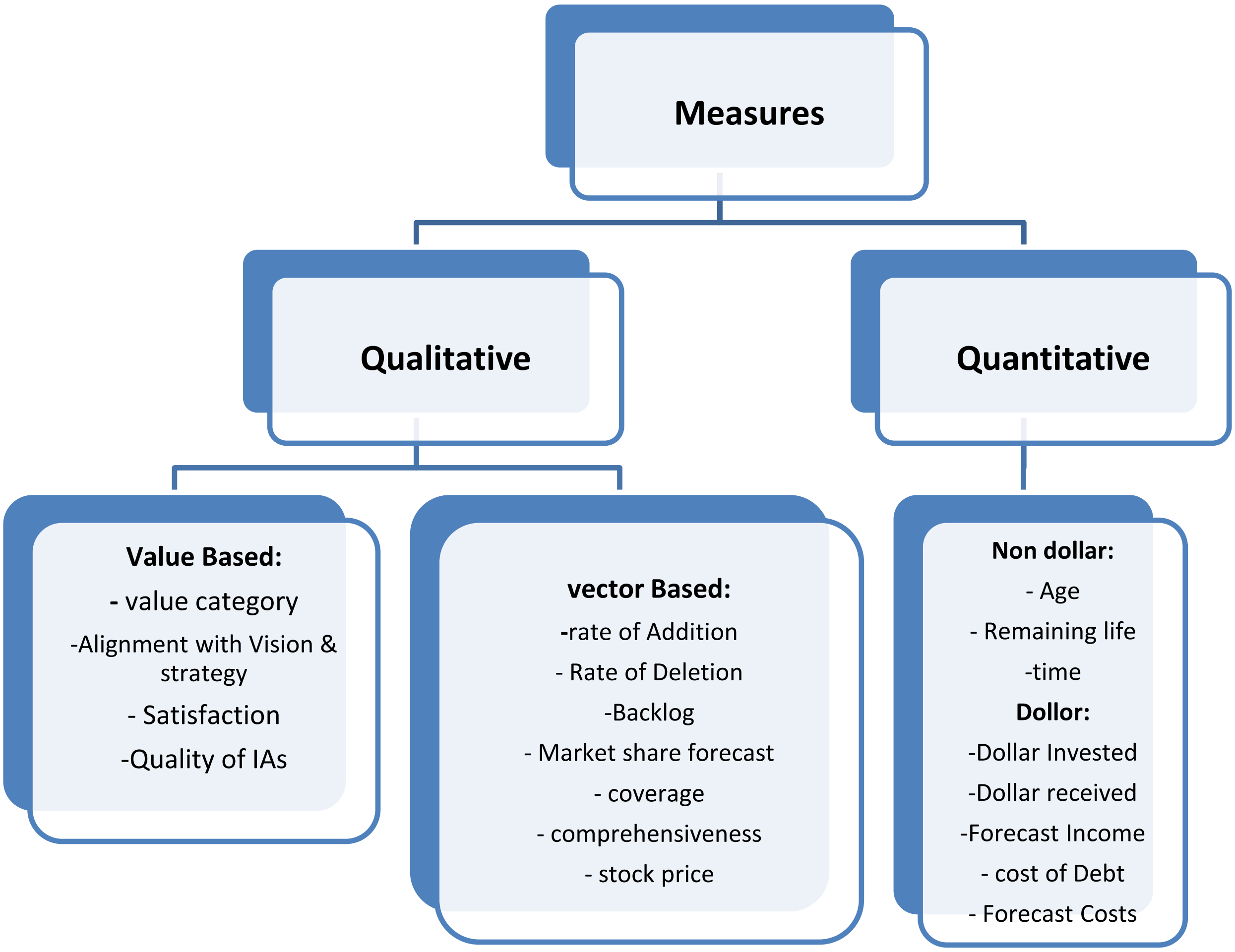
Another important trend of organizations using traditional financial measures such as return on assets is based criteria. The need for intellectual capital (MVA) and market value (EVA), such as value added economic value.

Financial and non-financial metrics used and integrated measurement system, which is used as a debit item is considered and the value of (IC) indices and non-financial measures of the intellectual capital

IC helps managers make in terms of financial returns is measured as an intangible asset, the asset growth or reduce the view of the finding.



Measure may be either qualitative or quantitative. Qualitative measures are typically judgment-based and often are used when the item to be measured or the attribute of interest dose not lend itself to precise or quantifiable measurement. The point is that some things, even very important once like love do not lend themselves to accurate or quantifiable measurement.

PURPOSES OF MEASURING INTELLECTUAL CAPITAL:

- To assist organizations in formulating strategies for their teeth
- To evaluate the implementation of strategies

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- Contribute to the expansion and diversification of the company's decision
- The non-evaluate intellectual capital can pay and bonus plans, managers should communicate
- To establish a relationship with outside shareholders who have intellectual capital.

BENEFITS OF MEASURING INTELLECTUAL CAPITAL:

- Greater understanding of how this knowledge, a series of interactions that lead to the opening.
- Identify best practices across the organization
- Identification and mapping of the detector (the surveyor) intangible assets
- Understanding patterns of knowledge flows within the organization
- Prioritizing critical knowledge and critical issues
- Facilitate and accelerate the learning patterns of inter-organizational
- Increased collaboration and sharing culture dance activities to increase awareness of the benefits of knowledge management
- Increase employees' perceptions of their organizations and increase their motivation
- Creating a culture of rule-oriented performance

METHODS OF MEASURING INTELLECTUAL CAPITAL:

Traditional methods for evaluating intellectual capital, the value lies in the skill, experience, and well worth the learning capabilities of existing network connections between people and organizations, and ignores the many attempts to explain the difference between these values Market is conducted.

1) Direct intellectual capital methods: Words have estimated the monetary value of intangible assets or intellectual capital, by identifying its constituent elements. According to this method one can compute the value of the individual components and the total value of the asset value of the different classes of feeds. The characteristics of this method are:

- Because they are based on historical values, offers the potential to create a more comprehensive picture of financial health
- Institutions provide.
- The method further details have been provided to analysts and can easily be used at any level of the organization.
- In this approach, bottom-up sources of capital are measured and compared to the market rate of return on assets and investments, faster and more accurate measure of resources.
- No need to measure financial condition.
- The methods for non-profit organizations, businesses, governmental agencies, and environmental and social goals are very useful.

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- The main disadvantage of these methods is that they can not be easily derived from the results in relation to the financial results.

2) Score Card method (SC): When they are used to define the various components of intellectual capital, which can be reflected in terms of the scorecard and graphs.

- The advantages of direct intellectual capital scorecard methods that are easily applicable at any level of the organization Calculate and compare the financial, organizational values provide a more complete picture, since an event or reporting methods to more accurately measure.

3) Investment market methods (methods of capital market) : To calculate the difference between the market value of the company (based on market prices) and shareholders' equity adjusted for inflation or cost of replacement, as the value of intellectual capital or intangible assets are considered. Strengths and weakness of this method is as follows:

- These methods focus on financial figures are incomplete, however, have the ability to audit.
- These methods attempt to provide an evaluation of the real.
- The main advantage is that they can be useful for simple comparisons between companies in the same industry, used, but very few details will be given to financial analysts.

4) Return on Assets methods: The mean number of years of earnings before taxes and dividing by the average tangible assets of the Years, the result of this calculation is called the rate of return on assets, which is then compared with the industry average The difference between these two figures, on average tangible assets is multiplied by the average annual income of an intangible asset are obtained. Then the average income, the weighted average cost of capital or interest rate, divided by an estimate of the value given to the intangible assets or intellectual capital obtained. The characteristics of this method are:

- Methods of asset returns are very sensitive to interest rates.
- The method of direct comparison with the values of the market value cannot be used, but only some of the factors in its evaluation of market analyst firm they use, can be used.
- These methods as well as methods of investment markets focusing on financial figures, which are incomplete, are capable of auditing.

5) Methods of measuring intellectual capital kiwi Tobin: Tobin kiwi method, which was developed by James Tobin winner of Nobel economics. The ratio between a company's market value and replacement value of Shrek (Shrek the replacement cost of its assets) is measured

Kiwifruit is very similar to the principle of Tobin's office market is the difference between the Tobin when calculating the cost of replacing the book value of physical assets rather than physical assets used to get. Than that obtained in this way is used, the ratio of a firm kiwi, kiwi much larger than the amount of units to be competitive, the company has the ability to earn higher profits than similar companies

6) Methods of measuring the value of intellectual capital's office market: Market value of the office generally known methods for the measurement of intangible assets and intellectual capital. This value of the difference between market value and book value of the company is calculated. Despite its simplicity, this method has some Problems in the measurement and interpretation of results. Book value is based on national and international standards accounts have been prepared, which may act to change the book value. The market value of the shares in the changing the results will be valid only for a short time.

7) Methods of measuring intellectual capital Declaration of Human Resources: As one aspect Applicable from the ACCOUNTING and costing human resources extensive pretreatments in Finland took shape. Profit and loss of human resources, costs related to human resources into three categories rehabilitation costs, development costs, costs of depreciation into work.

8) Methods of measuring intellectual capital balance sheet intangible: Subtle balance sheet as one of the leading methods in the field of intangible assets, by Svyby was introduced in Sweden. Svyby The inability of traditional systems to provide relevant information for the evaluation of technology reacted and developed a framework for reporting intangible assets that subtle balance sheet was called. Subtle balance sheet difference between a company's stock market value and book value of its net assets as interdependent with three floors; capital, human capital, organizational capital cannot be explained by the customer.

9) Methods of measuring intellectual capital Technology broker model: Has been developed by Brookings, organizational knowledge into four categories: human assets - centric infrastructure assets, Intellectual property assets and classified market value of intellectual capital within the organization defines an evaluation process. Each model is part of a special audit questionnaire about relevant variables are investigated by asset class. The first part of the questionnaire consisted of 20 questions, which emphasizes the need to strengthen the intellectual capital and the questionnaire has maintained 178 questions related to the four categories of intellectual capital is named. In comparison with other frameworks, the second part of the model (or the internal structural capital) to capital infrastructure (processes, procedures and technology) and intellectual property (intellectual property, inventions registered trademarks and trade secrets) are separated.

10) Methods of measuring intellectual capital Costing human resources: This method was developed by Johansen. HR hidden costs associated with the effects of reduced profit, the calculated pattern. Intellectual capital expenditures divided by the amount of participation, human rights, investment properties are measured. Grvjr and Johansson emphasizes that accounting and costing human resources are associated with a wide range of applications:

- As a political tool, to show the abuse of human resource management in the discussion for further investment and better management;
- As a teaching tool for analysis and thus better understand the structure, personnel problems and a practical perspective thus better able to balance the functional value against other values;
- As a decision-making support to ensure that decisions on human resource management point of view is more reasonable.

11) Measurement methods have been patented intellectual capital appreciation - Rhythmic: The Dove Chemical Company Bvntys fore front of registered patent as an alternative for measuring intellectual capital are feasible. In this method, by a factor technology developed by the company's score is calculated. Intellectual capital and performance thereof by the methods of research efforts on a set of indicators Such as the number of patents registered, recorded franchise into the back of cost of sales, research and development costs Currency per unit of sales and project life cycle cost per unit of sales is measured in money. The Dove's assets, a 6-step process for managing intellectual property that can be implemented include:

- Defining the role of knowledge in business
- Evaluation of competitive strategies and knowledge assets
- The company's portfolio of classification
- Evaluation of these assets in order to maintain, develop, sell or abandon
- Investment in areas in which there is a significant gap
- Shopping integrate new knowledge and repeat the above

12) Askandya guiding intellectual capital measurement methods: Askandya widely different tools and methods for measuring intellectual capital and experience the special measuring tool Under his guidance, the value of Askandya with the model developed. Guiding tool for evaluation of software assets within an organization that has such a reporting system, management, and development managers in the illustration Criteria that intangible assets are helping to tell them that in order to guide future. Every organization needs to develop indicators of intellectual capital is critical to create the future. Avdynsvn as Mmarmbahs Askandya innovative companies, a comprehensive dynamic model of intellectual capital reporting that conduct was called with five areas of financial, customer, process, renewal and development, and the development of man. The principal Skandia, human capital and structural factors behind when combined will form the intellectual capital.

13) Methods of measuring intellectual capital assets to intangible display: Intangible assets were developed by display three types of intangible assets between market value and book value of the company is defined by the development. These intangible assets consist of the external structure (brands, Customer and supplier relationships), internal structure (management, law, statute, attitude, application) and personal competences (education, experience, expertise) are. Intangible assets for each of the three indicators of growth and renewal, efficiency and stability are the focus. When the culture of Scandia’s guiding philosophy and human capital management as part of that deal, it shows the internal structures of intangible assets are classified. Because of the emphasis on the model, the model on the assumption that the equator is the only true humans and other structural aspects of the business including the internal and external is implicit in human activity**.**

14) Intellectual capital measurement methods using balanced scorecard: This method was developed by Kaplan and Norton, tries to short-term and long-term goals, measures of financial and non financial indicators as well as forward and backward to balance the internal and external aspects. Four general customer perspective, Financial, internal process and learning and translate high level strategies are used to measure the actual Associated with each perspective, objectives, indicators, criteria and basic requirements are listed. The relationship between each of these four aspects should be considered together. Compared with traditional accounting measures, balanced scorecard focuses on the financial measures of net has changed so much that the three key success to encompass intangibles. These three components of intellectual capital are roughly equivalent to the human capital (knowledge and maple d), structural capital (the knowledge of systems and processes within the organization) and customer assets (customer relationships) are known. Based on these aspects can be adequately to assess the current situation of knowledge management and its evaluation are implemented. Although the method "A parallel scorecard" of Method "Quality Function Deployment" is more difficult, but the results are much more balanced.

CONCLUSION:

Several studies have been conducted on the pricing of intellectual capital. Some of these methods are summarized in this paper has already been shown that there is no single definition of the concept of intellectual capital in the world. Revision was revealed that four major classes of approaches exist to measure intellectual capital. These methods are: Method of direct intellectual capital, return on assets, methods, techniques and methods of investment market scorecard. These four categories can be divided into 32 independent way. None of the methods are not expected to be independent of the requirements Measuring intellectual capital to meet an organization's needs and operates as a combination of the methods used .These methods can reflect an amount of money and intellectual capital or criminal portion of the measure. The literature review was conducted, significant gap between the level of intellectual capital Kerry as the donkey (the systems and processes) and macro (organizational level) is considered.

Methods of measuring intellectual capital above it Never mentioned an exact analysis of experimental studies have been hunting them is their weakness. One of the ways that can be done to overcome this field study is higher.

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