

# **CONSIDERATIONS REGARDING THE METHODOLOGY OF ANALYSIS AND PERFORMANCE EVALUATION FOR ROMANIAN SMALL AND MEDIUM ENTERPRISES BASED ON KNOWLEDGE**

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## **Abstract:**

The key-factor in profitability of the small and medium enterprises based on knowledge is the intellectual capital and non-corporal actives of those. The empirical formers studies confirm that the intellectual capital has a great impact to the performances of the small and medium enterprises based on knowledge.

The aim of this article is to exam the inter-relations and inter-actions between the components of the intellectual capital and the non-corporal actives in the process of evaluation the performances of the enterprises based on knowledge that is a competitive sustainable advantage. These are basic for help the decisions of the management o allocate resources and the decision of the investors regarding the correlation between value and price.

**Keywords:** Competence Management, Competence Management Information Systems, Methodology of analysis, small and medium enterprises

**JEL Classification:** M10

## **1. Introduction**

The globalization and acceleration the technological changes stress inside the economical medium the importance of the ongoing the activities making the differences between the modern and classical enterprises in allocation the resources and the decision of the investors about the correlation between the value of the enterprises based on knowledge and the price of the non-corporal actives (intangible actives).In this context, there are new opportunities (or threatens) for business.

They can observe the real growth of the incorporate knowledge in human capital and also in the intellectual capital of the enterprise based on knowledge and opening the new contradictions between the liberty of the immaterial labor and its disciplinarian, between the creativity of the intellectual labor and control.

## **2. Intellectual capital**

In 1990's there was developed the concept of the intellectual capital, when the managers realized that the two problems regarding the company management and the evaluation are only the two sides of one coin.”-what you want to lead you must measure” and” what you want to measure you can lead”. The intellectual capital represents the fusion between the two flows of thinking. (Roos et al., 1997).

In Romania, since 2000, they have stressed these two flows and the two problems regarding the management and both the evaluation determined some companies to evaluate the intellectual capital and non-corporal actives.

According to the Minister of Public Finance of Romania, no. 306 of 2002 for approval of simplified accounting regulations harmonized with European Directives, intangible assets include:

- formation expenses;
- development costs;
- concessions, patents, licenses, trademarks, rights and other similar values;
- goodwill;
- other intangible assets, and
- intangible assets in progress.

The structure of the intellectual capital is deeply rooted , was the first time that the economist John Keneth Galbraith in 1969, and Peter Drucker talked about "knowledgeable workers".

The intellectual capital is an intellectual material - knowledge, information, intellectual property, experience – these may be put to increase the welfare (Stewart, 1997) of enterprises based on knowledge.

**Intellectual capital and major components**

| Potential asset value                                                                                                         | Asset value                                                                                                                        |                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Human capital                                                                                                                 | Intellectual asset                                                                                                                 |                                                                                                                                |
| <ul style="list-style-type: none"> <li>- Experience</li> <li>- Know-How</li> <li>- Abilities</li> <li>- Creativity</li> </ul> | <ul style="list-style-type: none"> <li>• Programs</li> <li>• Inven□ion</li> <li>• Data base</li> </ul>                             | <ul style="list-style-type: none"> <li>• Methodologies</li> <li>• Documents</li> <li>• Drawings</li> <li>• Projects</li> </ul> |
|                                                                                                                               | <b>Intellectual Assets</b> <ul style="list-style-type: none"> <li>▪ Patents, Copyrights</li> <li>▪ Trade Secret factory</li> </ul> |                                                                                                                                |

In the context of modern business is important to understand the entire company as a business value as the sum of all assets (tangible and intangible).

A classification of the assets of modern business, as follows:

- Differentiable Assets- this class of assets is often unique and includes assets such as production, processing and distribution, which are similar between companies, but still different in some respects from those of competitors

The following figure present market value of a company from liquidation value of the generic assets and market value of assets plus market value a generic intangible assets.

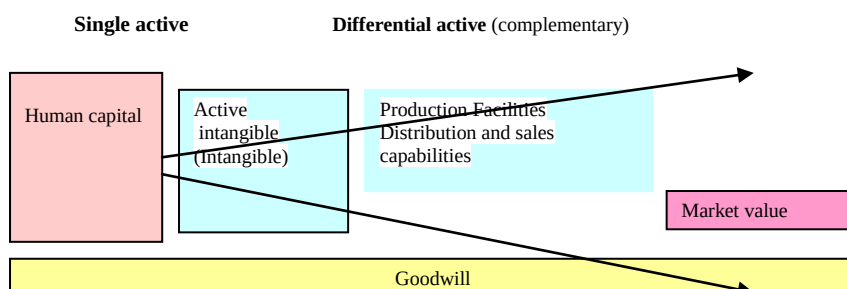
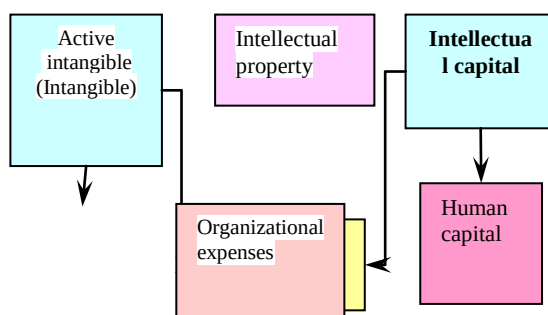


Figure no. 1 Market value of a SME's with intangible assets

Source: I., Anghel – Theoretical and Applied Economics, Editura ASE 2004

In the context of current economy, the management role is to establish enterprise based on knowledge value than generic asset value. The performance depends on today's modern enterprise knowledge and ability of human capital (potential value) in intangible assets of the organization (such as trademark, patents, licenses, goodwill, trade secrets, copyrights, intellectual property, etc.).



Source: Author's owner

### 3. Evaluation of intangible assets (intangible) under financially Reporting Standards (IFRS)

Through the performance evaluation methodology of the enterprise based on knowledge they answer questions such as:

- What is the real value market of the enterprise
- Is this value satisfactory or not?
- How did they get the results?
- Which are the wanted performances and also the results and what is the level of the performance?
- What have they do for get the wished performance?
- What is the intangible value indicated (not shown in the balance sheet)?

The general aim of the evaluation methodology consists in a continuous training and the most important think is to help the evaluators of he non corporal actives regarding in the ownership and use recognized assessment methods appropriate for determining market value or fair value of intangible assets separately, both required for carrying out

transactions based on market value and requirements for financial reporting under International Financial Reporting Standards - (IFRSs).

The five recognized methods of evaluation of separated intangible assets entered into the three traditional evaluation approaches are:

- II.1. Transactional method
- II.2. Relief from Royalty Method
- II.3. Premium Profit, or Incremental Income Method
- II.4. Multi-period Excess Earnings Method
- II.5. Replacement Cost Method

The forecast period of financial indicators used in applying the five methods above, is shorter than the remaining economic life or equal with legal life. The economic life is defined as the period in which intangible assets are expected to generate an economic benefit for their owners. Legal life is the period in which intangible assets are protected by law.

The six stages of implementation of these methods are:

- a) estimate the remaining economic life of the intangible asset ;
- b) forecast net turnover achieved by using the intangible asset;
- c) determining the appropriate royalty rate (the market);
- d) determining the discount rate specific intangible asset under evaluation;
- e) calculating the present value of net charge economy;
- f) calculating the depreciation tax benefit - but where is assessing the initial recognition of an intangible asset in the financial statements.

Classical sources of profit or cash flow are either extra an excess of selling price (premium price) reduction of expenditure items (variable or fixed-economies of scale) or a combination of the two sources above.

Comparing the flow of income or cash flow forecast can be made:

- be between the entity using intangible assets and other similar entities without an intangible asset. If a brand is product evaluation. Applying this procedure is subject to credibility than they can forecast revenue or cash flow that is not feasible to use similar entity. If there is sufficient information to make such a credible forecast, additional profit method should not be used, either between that of the entity, in two ways: with and without the use of that intangible asset. It is the evaluation of a patent and a non-compete agreement.

Always preferred result of the assessment, based on direct knowledge of the market, is where intangible assets are trade on a market, or are the current trading prices of similar intangible assets, either current trading prices of some similar intangible assets, in the second case of being necessary, some corrections to reflect differences between selected elements of comparison (respectively the differences between intangible assets and intangible assets valued comparable selected as appropriate).

The initial evaluation of identifiable intangible assets with finite economic life, so liquidated, following a business combination, fair value of these will include the tax benefit resulting from the amortization of intangible assets.

Form for calculating the tax benefit (BF) is:

$BF =$

$$\text{Estimated value} \times \frac{n}{n \times F_{cap} + S \times 1}$$

where:

Estimated value = total economy or discounted fee, or replacement cost of internal generation identified with the cost of an intangible asset similar or identical;

n = number of years for amortization of intangible assets;

$F_{cap}$  = capitalization factor and required update rate;

S = tax rate.

#### **4. Assessment of intellectual capital and intangible assets in a modern business.**

##### **Case study at S.C. Arobs Transilvania Software**

S.C. AROBS Transylvania Software has recently turned 11 years:

S.C. AROBS Transylvania Software partner becomes Microsoft Gold Certified Partner

On July 1, 2009, S.C. AROBS Transylvania Software (AROBS) has acquired the status of Microsoft Gold Certified Partner - the highest form of partnership between Microsoft and companies operating in IT & C Achieving.

Segment-sized GPS and PDA S.C. Transylvania AROBS 2010 estimate for growth this year lower than that recorded last year in 2009 to a figure approaching 5 million and estimated a forecast for market share between 20 and 25%.

An estimated 2 million revenues from outsourcing services company, approximately 20-30% of the total business of SC AROBS Transylvania.

The enterprise based on knowledge management, internally generated computer programs are also an advantage for the organization and ensure long term sustainability of the company are internally generated for the skills and knowledge that group of authors who contributed to making them part of the company's intangible assets.

Internally generated computer programs to describe their functionality to address the cost of historical costs for generating computer programs, if these expenses are not shown separately requested:

- a. number of man-hours required for recreation program;
- b. the categories of personnel needed;
- c. employee wages in section b., and
- d. share information to determine administrative costs or overheads;
- e. the registration fees.

But especially for the income approach:

1. income / savings to the historical software;
2. forecast revenue from licenses including values for the remaining life of the software;
3. direct expenditures related to income forecast point b.;
4. forecast expenditure (eg. maintenance costs).

Remaining economic life to meet the following requirements:

- i. which was originally expected economic life and that is the date of valuation;
- ii. when it was put into service program;

- iii. description of internal development that could prolong the economic life;
- iv. description of internal development to replace the computer program that could reduce its economic life, and
- v. description of external factors that may affect the economic life remaining.

-Euro-

| Function                   | Number of persons | Rate/hour * |
|----------------------------|-------------------|-------------|
| Project manager            | 1                 | 120         |
| System Analyst             | 2                 | 100         |
| Technical editor           | 1                 | 80          |
| Programers                 | 5                 | 75          |
| Documentarists             | 1                 | 50          |
| <b>Average fare €/hour</b> |                   | <b>82,5</b> |

\*including direct wage costs and overheads

| Created Module | Code lines | Labor productivity<br>( Code lines/hour) | Number of hour to recreate the program |
|----------------|------------|------------------------------------------|----------------------------------------|
| Module 1       | 6000       | 3,0                                      | 2.000                                  |
| Module 2       | 4000       | 4,0                                      | 1.000                                  |
| Module 3       | 8000       | 2,0                                      | 4.000                                  |
| Module 4       | 3000       | 2,0                                      | 1.500                                  |
| Module 5       | 2000       | 3,0                                      | 666                                    |

| Nr. crt. | Indicators                              | Value          |
|----------|-----------------------------------------|----------------|
| 1.       | Total number of code lines              | 2.300          |
| 2.       | Total number to recreate                | 11.166         |
| 3.       | Average fare (€/hour)                   | 82,5           |
| 4.       | Recreate cost (€)                       | 921.195        |
| 5.       | Depreciation (33%)                      | 303.994        |
| 6.       | Net replacement cost (€)                | 617.201        |
| 7.       | <b>Net replacement cost rounded (€)</b> | <b>617.000</b> |

## 5. Evaluation of a method patent economy / fee exemption

For the value of a patent application involves:

- List of patents for which protection pay legal fees;
- List of patent applications;
- The case of patents, the economic effects achieved;
- R & D spending to generate historical patents.
- Identification of patents and products share the administrative costs or overheads;
- Identification of patents and related products are expected to have commercial life;
  - a) estimates of income from patent over the remaining economic life;
  - b) estimates of direct costs related revenue in a.
- Feedback about the possibility of extension of patent protection legally provided over the life;
  - Details of possible transmission of economic rights through patent license agreements or assignment.

Under assessment is a patent for a new product, the company used SC AROBS Transylvania Software, owner of the patent, which is acquired by the company Mio.

To assess the balance sheet is a patent by the method of acquisition, that company's acquisition by the company Mio SC AROBS Transylvania Software.

Type the requested amount is fair value.

Date of assessment: January 10, 2009

Assumptions for assessment are:

- ☐ useful life of the patent was estimated to be 5 years
- ☐ sales for products manufactured using patent was as expected:

- thousand.Euro-

| Ye<br>ar | Amount |
|----------|--------|
| 2009     | 4.400  |
| 2010     | 4.840  |
| 2011     | 5.227  |
| 2012     | 5.541  |
| 2013     | 5.818  |

- ☐ fee turnover rate, the field was set at 4%;
- ☐ company profit tax rate is 16%;
- ☐ economic discount rate (exemption) of net charge was set at 16%.

Calculation of Tax Benefit due to the deductibility of depreciation, is:

-thousand Euro-

| Indicators                      |         | 2009         | 2010  | 2011  | 2012  | 2013  |
|---------------------------------|---------|--------------|-------|-------|-------|-------|
| Net turnover                    |         | 4.400        | 4.840 | 5.227 | 5.541 | 5.818 |
| Economics gross royalty         | 0 , 4   | 1 7 6        | 193,6 | 2 0 9 | 221,6 | 232,7 |
| 16 % Tax                        | 0 , 16  | 28,2         | 3 1   | 33,4  | 35,5  | 37,2  |
| Net fee economy                 |         | 147,8        | 162,6 | 175,6 | 186,1 | 195,5 |
| 16 % discount factor            |         | 0,862        | 0,743 | 0,641 | 0,552 | 0,476 |
| Economy royalty net present     |         | 127,4        | 120,8 | 112,5 | 102,7 | 9 3   |
| Economy updated total fee       |         | <b>556,4</b> |       |       |       |       |
| Tax benefit of depreciation     |         |              |       |       |       |       |
| Discount rate                   | 0 , 16  |              |       |       |       |       |
| T a x                           | 0 , 1 0 |              |       |       |       |       |
| Depreciation                    | 5 years |              |       |       |       |       |
| Tax benefit of amortization (1) |         | 65,1         |       |       |       |       |
| The fair value of patent        |         | <b>621,5</b> |       |       |       |       |

For assessment was to highlight the difference between book value figures of the company acquired its real market value through intellectual capital and intangible assets owned by default

Tax benefit of depreciation is worth € 651,000 and the fair value of the patent was calculated to € 6,215,000.

The difference between the two values is the subject of our study, by default of intangible intellectual capital of SC Transylvania AROBS maintains financial goal for this year 2010 and aimed at business between 7 and 8 million €, an increase over the previous year in 2009 with 30% for 2011 and plans to achieve a figure of up to 10 million € .

## 6. Conclusions

In practice evaluation of intangible intellectual capital of the firm's default to normal traditional highlight of the five methods with rigorous approaches. Evaluation methods of intangible intellectual capital default of enterprises based on knowledge in Romania meet international standards.

The investigation conducted by the author with reference to intellectual capital market has allowed the establishment of fundamental issues related to the formation of intangible intellectual capital implication of enterprises based on knowledge.

Among these are:

- a) the state has relegated many market institutions;
- b) the scarcity of specialists for the "production and marketing knowledge;
- c) reduced integrity of the national economy in the world economy;
- d) lack of incentives to professionals able to create and invent states tend to conceal innovations and know-how;
- e) the inventors migration abroad;
- f)lack of financing sources of business innovators, etc. ..

According to research conducted at the micro level analysis has shown that driving out local businesses need and opportunity rather than actual market cost of the product via appropriate intellectual and rational management of intangible assets, and in particular, intellectual property default.

But once the assessment bears a theoretical and practical, roll the balance sheet as at most companies, these intangible assets are not indicated.

Research results showed that in practice, local businesses face a number of problems associated with managing intellectual capital, intangible assets, including the highlight:

- a) lack of sources of funding for both development and for recording intangible assets;
- b) lack of knowledge needed in the recording of intangible assets;
- c) moral rapid aging of intangible assets;
- d) lack of incentives from the state enterprises for the creation of intangible assets;
- e) non-recovery of costs for creating and recording of intangible assets related to small volume production;
- f) unenhancing the legal framework protecting intellectual property.

Suggestions:

1. Today, innovation is needed and setting up infrastructure. Achieving that goal is only possible as a result of carrying out state policy innovation active mass use of various levers and instruments.

Basic tasks that faced Romania in the formation of innovative system is derived first, the formation of normative-legal basis favorable to innovative activity, above all in matters of protection, disposition and use rights to the intellectual capital ( starting point should be to enact law on intellectual property), and secondly, building an infrastructure developed to support the intellectual activity and rapid transmission of the results of scientific research that has commercial potential, business sector for production and removal market innovations in the form of goods and services.

2. A major innovation in creating infrastructure has training infrastructure. In Romania it is necessary to form an effective system of financing of innovative activity, both at the expense of budget resources and extra budgetary funds account. State funding for innovative scope should be oriented in the following areas:

capital injection (partially without being paid) for innovative projects that have a high commercial potential able to become the "locomotive" to increase innovation, innovations in financing off-budget funds, full state funding irreversible and innovative projects, which bears the national character, but of interest to private business.

3. It requires the protection of local entrepreneurs by providing innovative risks and other risks related to intellectual property objects.

To address this problem, the state must ensure market transparency and stability of national security, contribute to implementation of international standards in insurance business and supervisory standards, to continuously improve insurance legislation, to create conditions for integration Romania's insurance market in insurance and reinsurance schemes.

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