

INTELLECTUAL CAPITAL VALUATION: METHODS AND THEIR CLASSIFICATION

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Abstract. *Currently, a more significant added value is created by intellectual rather than physical capital; yet, according to the current standards of accounting, only a minor segment of intellectual capital is presented in financial accounts of enterprises as it usually does not satisfy one of the criteria of property recognition in financial accounting, namely reliable valuation. As a result, there is an increasing demand for novel methods of valuation, enabling enterprises to establish reliably the value of intellectual capital or its specific segments of a given enterprise. A number of scholars have dealt with the methods of intellectual capital valuation. However, their works analyze and classify different methods of intellectual capital valuation, and different criteria of classification are employed; hence, there is no universally accepted opinion on the issue. That is why the aim of this research was to generalize a scheme of methods of intellectual capital valuation. The main methods applied in the present study are the synthesis and generalization of academic writings, including content analysis. The results of the research and its conclusions are based on the analysis of academic investigations conducted by various authors and the resulting publications. Results. The article generalizes the methods of intellectual capital valuation, suggested by a number of scholars, provides comparisons, reveals the multiplicity of the methods, and highlights the unlimited research of the academic field. Besides, the main classifications of methods of intellectual capital valuation are provided, and the applied criteria are defined. Conclusions. It was established that more than sixty different methods for the valuation of the intellectual capital of an enterprise are available. The results of the research show that these methods are classified according to the four following features. Correspondingly, a classification scheme of intellectual capital valuation methods has been developed. It has been established that most methods of intellectual capital valuation are based on scorecard, they assess specific components; of intellectual capital and in the process of valuation do not employ monetary units of measurement. This reveals a lack of the studies that focus on the financial aspect of intellectual capital valuation methods.*

Key words: *intellectual capital, valuation, valuation methods, classification of methods*

Introduction

Methods of intellectual capital valuation of an enterprise have been researched by a number of authors (Bouteiller, 2002; Ratnatunga, 2002; Rodov et al., 2002; Lev et al., 2003; Andriessen, 2004; Bareišis, 2004; Müller, 2004; Sitar et al., 2004; Vaškeliienė, 2006, 2007; Pukelienė et al., 2007; Rodríguez-Castellanos et al., 2007; Tan et al., 2007;

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Van den Berg, 2007; Jurczak, 2008; Kuzmina, 2008; Sveiby, 2010; Salman et al., 2012); their works mention and suggest more than sixty different methods of intellectual capital valuation. Some of them are of purely theoretical nature while others are practically implemented in enterprises of various types; there are also methods based on traditional financial theories. Different methods provide different opportunities, and none of the methods published in academic writings is capable of satisfying all the objectives that may have been set, while some specific methods of intellectual capital valuation will work only in specific industries or merely in specific enterprises (Vaškeliienė, 2004; Wall et al., 2004; Campos et al., 2007; Sveiby, 2010; Palumickaitė, 2008). This happens because of the complexity of intellectual capital valuation (Bontis, 2002) since in the process of valuation one of the core difficulties is encountered: the borderline between intellectual capital and other forms of capital is often blurred as intellectual capital is frequently involved in physical capital (e.g., technologies and knowledge in a new airplane) since value creation is grounded upon the interaction of intellectual and physical capital, and the stronger the interaction, the harder it is to single out the intellectual capital and to evaluate it as a distinct entity (Lev, 2001). Besides, when valuating the intellectual capital, indicators based on the potential of value creation in the future are mostly considered. Yet, they are highly dangerous as all projections into the future are nothing more than guesses which may spectacularly fail if unpredicted changes take place (Borneman et al., 1999).

Another issue in the search of methods of intellectual capital valuation is raised by Campos et al. (2007) and Palumickaitė (2008) by claiming that academic works exhibit a trend of developing yet other new methods, advising novel categories and groups of indicators, ignoring the already completed theoretical work, employing “subjective measurement”, giving preference to qualitative methods and in the majority of cases not even seeking universal acceptability. Hence, most of currently existing methods are complicated and limited qualitative or theoretical proposals with a limited proof of practical applicability, which complicates the development of a single and universal method of valuation of the intellectual capital of an enterprise. This is proven by the results of researches conducted by Wall et al. (2004), Campos et al. (2007), Pukelienė et al. (2007) and Palumickaitė (2008), claiming that none of the current methods or models has gained a universal recognition of theoreticians and practitioners, and, consequently, none is being applied in enterprises at the national or international level. Thus, the issue has not yet been resolved.

This multiplicity of methods and the variations in their application undoubtedly complicate both theoretical and empirical researches in this field; however, according to Guthrie et al. (2000), Vaškeliienė (2004), and Wall et al. (2004) this may prompt the development of a standardized system of intellectual capital valuation; the system would

establish the already existing methods or develop new ones; the new methods might be a combination of several widespread methods or ideas, and it could enable to circumvent some drawbacks of the existing methods. Consequently, the present research seeks to systemize and generalize already conducted theoretical and empirical researches in order to assess, compare, and classify methods of intellectual capital valuation and thus to contribute to the process of creating this standardization system. Currently, with no international or national regulation of this process being employed, each enterprise has to decide which method optimally matches its objective(s), circumstances and the needs of information users. History demonstrates that the enterprises that had never given up ultimately evolved their own systems of intellectual capital valuation, applied them in practice and also managed to develop their potential of intellectual capital (Wall et al., 2004; Sveiby, 2010). That is why the **object** of this research is intellectual capital valuation methods and their classification, and the **aim** is to generalize a scheme of methods of intellectual capital valuation after having researched and systemized methods of intellectual capital valuation presented in works of various authors. The main **methods** applied in the present study are the synthesis and generalization of academic writings, including content analysis. The results of the research and its conclusions are based on the analysis of academic investigations conducted by various authors and the resulting publications.

The paper is structured as follows. Section 1 provides the concept of intellectual capital and releases its components. Section 2 extends the methods of valuation of intellectual capital and reveals their classification presented in various academic writings. Section 3 presents the results of the empirical research and discusses the findings. Section 4 concludes the paper.

1. Concept of intellectual capital

The variety of definitions of intellectual capital in academic works has been researched a number of times by other scholars as well. Some research (Engström et al., 2003; Westnes, 2005) has shown that: 1) there is no uniform definition of intellectual capital; 2) the concept of value creation occurs frequently, suggesting that intellectual capital is not useful unless it results in some form of an increased value of the organization; and 3) most of the definitions basically contain the same words: knowledge, skills, know-how, experiences, intangible assets, information, processes, and value creation. According to Ramanauskaitė (2012), intellectual capital constitutes resources created, purchased or maintained by an enterprise, which possess no material form; these resources, together with material and financial assets of the enterprise, help to create added value. This definition strives to emphasize that: 1) intellectual capital has no material form (or this form is not prevalent); 2) intellectual capital may be acquired, created or merely maintained within an enterprise without considering ownership rights (e.g., human capital cannot

belong to an enterprise, yet the enterprise may invest into it or employ other methods of its inclusion into the value creation process); intellectual capital or its components cannot act as separate entities; only as the whole and only together with other resources of the enterprise is the creation of value in the future made possible.

Research results indicate that the division of intellectual capital into human, organizational, and relational capital is widely acknowledged (Ramanauskaitė, 2012). Besides, an empirically driven model for classifying intellectual capital (Sáez et al., 2007) does not substantially differ from the three main components that have been traditionally and theoretically discussed: it was established that intellectual capital consists of human (36%), organizational (29%) and relational (35%) capital.

According to Bontis (2002), Daum (2003), Vaškeliienė (2003), Hitchner (2006), Sáez et al. (2007), Fitz-enz (2009), and Dubra (2010), human capital is perceived as the entirety of knowledge, skills, education, experience, talent, innovativeness, competence, motivation, loyalty, creativity, ability to perform a task and deal with arising issues, leadership, business skills, management and ideas leading to new products of the staff of an enterprise. It also covers the value, culture, and philosophy of the enterprise. This capital is denoted by its inability to belong to the enterprise. Claims are produced that this capital is one of the core and most influential resources of the enterprise in competitive fight as the ability of the enterprise to compete in the market depends on the knowledge and skills amassed by its staff, i.e. on the efficiency of the human capital.

According to Bontis (2002), Daum (2003), Vaškeliienė (2003), Hitchner (2006), and Sáez et al. (2007), organizational capital is perceived as the organizational and financial structure of an enterprise, its strategic processes, technologies, procedures, process documentation, risk assessment methodology, technical equipment, software, systems, the use of information technologies, databases (e.g., the ones covering information on the market and clients), patents, trademarks, methods of sales management, communication systems and all other organizational capabilities supporting the productivity of the personnel and facilitating their productive cooperation. A claim may be produced that it covers the technologies, methodologies and processes that enable the functioning of the enterprise. In other words, it remains “inside” the enterprise after the completion of a work day when the staff has left. Differently from human capital, this type of capital may belong to the enterprise, and the enterprise may thus handle it. This capital is considered the second most important capital of an enterprise after human capital.

According to Bontis (2002), Daum (2003), Vaškeliienė (2003), Sáez et al. (2007), and Fitz-enz (2009), relational capital is conceived as the awareness of the enterprise, its trademarks, brands, image, external networks and complete orders, its supply streams, long-term contracts, license and franchise agreements and relations with external individuals founding the marketing and commercial capabilities of the enterprise. In this

context, external individuals include not only clients / consumers, but also business partners, suppliers, and regulatory institutions.

According to Maditinos et al. (2012), only by nurturing intellectual capital organizations will be able to remain competitive, fight against the severe competition (both domestic and foreign), and create sustainable competitive advantages. That is why organizations need to evaluate their intellectual capital and its components, and monitor their development and performance.

2. Intellectual capital valuation methods in academic writings

Academic writings provide various methods of intellectual capital valuation: financial and non-financial, applying quantitative or, more frequently, qualitative methods, external and internal, valuing intellectual capital as a universality or striving to present the value of its separate components or elements, on the basis of the traditional financial accounting of enterprises or employing market indicators to identify the established situation in the market; there are also management methods when the causes of the established situation are sought; some methods present a systematic single index-manifested value of intellectual capital while others consider multiple factors influencing the activity of an enterprise, etc. (Vaškeliënė, 2004; Campos et al., 2007; Pukeliënė et al., 2007). Many authors, in order to systemize and reveal the features common in various methods or to identify shared features, classify them according to certain criteria. Usually, scholarly works present classifications based on the general principles of valuation and single out four groups of methods (Table 1).

The second classification, which is most frequent in academic works, singles out two groups of methods of intellectual capital valuation regarding the valued objects (Table 2).

Another classification, which is frequently featured in scholarly works, divides the methods of intellectual capital valuation regarding the use of a monetary measurement unit into two groups: monetary and non-monetary (Table 3).

The fourth classification presented in academic writings groups the methods of intellectual capital valuation according to the expression of a valuation result into four types (Table 4).

Considering the logical scheme of the distribution of intellectual capital valuation methods, developed by Andriessen (2004), a generalized classification system of *valuation methods* has been developed (Fig. 1): all valuation methods are divided into *evaluation methods*, which give a quantitative monetary result when financial valuation methods are used, and *measurement methods*, which give a quantitative non-monetary result when value measurement methods are used, or a qualitative result when value assessment or measurement methods are used.

TABLE 1. Classification according to general principles of valuation

No.	Group of methods	Features
1.	Market Capitalization Methods – MCM	Based on the calculation of the difference between the market value of an enterprise and its assets, which is equaled to the value of intellectual capital. These methods are hard to apply in non-profit entities or enterprises of the public sector (e.g., market to book values, Tobin's q, Investor's assigned market value, etc.)
2.	Return on Assets Methods – ROA	Based on pre-tax average income versus average capital unit calculation. Afterwards, the obtained result is compared with the average value of the industry branch, and the result is treated as the average of return on intellectual capital. Part of these methods are based on discounted cash flow calculation and do not avoid some errors (e.g., CIV, EVA, VAIC, Knowledge capital earning, etc.)
3.	Direct Intellectual Capital Methods – DIC	Based on evaluation of intellectual capital in monetary units by identifying the specific components or elements (e.g., Technology broker-IC audit, Total value creation, The value explorer, Citation-weighted patents, Accounting for the future, etc.)
4.	Scorecard Methods – SC	Based on identification of various components of intellectual capital and attribution of specific indicators or indices to measure these components. The difference from the first type lies in the fact that this type does not seek evaluation in monetary units (e.g., Skandia navigator, IC index, Intangible assets monitor, etc.)

Source: compiled by the authors according to Engström et al., 2003; Lev et al., 2003; Müller, 2004; Wall et al., 2004; Sitar et al., 2004; Westnes, 2005; Vaškeliėnė, 2006; Kok, 2007; Pukeliėnė et al., 2007; Vaškeliėnė, 2007; Jurczak, 2008; Kuzmina, 2008; Sveiby, 2010; Znakovaitė et al., 2010; Salman et al., 2012.

TABLE 2. Classification according to the valued objects

No.	Group of methods	Features
1.	Holistic	Designed for the general valuation of the intellectual capital of an enterprise. These methods value the entirety of the intellectual capital of an enterprise but do not provide any information on the value of specific components or elements of the intellectual capital. This group covers the methods employing financial models based on the financial accounts of an enterprise (e.g., Market to book values, Tobin's q, CIV, IC index, EVA, VAIC etc.)
2.	Atomistic	Designed for analysis of the components or elements of intellectual capital of a specific enterprise. These methods value separate components or elements of the intellectual capital but do not provide information on the whole of the intellectual capital of an enterprise or the value of the capital. Usually, these methods are employed for the identification of specific capital components or elements and the derivation of their relative size; yet, the interpretation of these values is rather complicated. These methods of intellectual capital valuation are rather subjective as they are usually based on non-financial and relative indicators requiring a specific context for a correct interpretation (e.g., Skandia navigator, Technology broker – IC audit, Intangible assets monitor, Balanced scorecard, etc.)

Source: compiled by the authors according to Bouteiller, 2002; Lev et al., 2003; Bareišis, 2004; Pukeliėnė et al., 2007; Rodríguez-Castellanos et al., 2007; Sveiby, 2010.

TABLE 3. Classification according to the use of a monetary unit in the process of valuation

No.	Group of methods	Features
1.	Monetary	A monetary measurement unit is employed in the process of valuation. This group is assigned to the methods that enable the valuation of intellectual capital in a monetary equivalent as well as the methods that employ a monetary unit of measurement for calculating relative values (in this case, the result of a valuation is expressed in a relative value). These methods are useful for comparisons among enterprises of a specific industry branch. Besides, they are often developed on the basis of already existing principles of traditional accounting and may be easily applied in real life (e.g., Market to book values, Tobin's q, CIV, Technology broker-IC audit, EVA, VAIC etc.)
2.	Non-monetary	Non-monetary valuation methods do not use a monetary unit of measurement in the process of valuation. These methods are usually a novelty when assessing the development of an enterprise or the efficiency of its management and hence are harder to apply in practice. However, they may be successfully implemented at any level of an enterprise and in any type of organizations (non-profit, state-governed, etc.) (e.g., Skandia navigator, IC index, Intangible assets monitor, Balanced scorecard, etc.)

Source: compiled by the authors according to Lev et al., 2003; Tan et al., 2007; Sveiby, 2010.

TABLE 4. Classification according to the expression of valuation result

No.	Group of methods	Features
1.	Financial valuation	This is an expression of assets or liabilities in monetary units, i.e. these methods seek to establish the worth of intellectual capital by financial valuation. Theory presents a number of methods for obtaining this valuation; however, each of them contains both advantages and drawbacks. Considerations may be based on expenditure, market or income attitudes; a case of employing the three attitudes jointly is also possible (e.g., Market to book values, Tobin's q, CIV, etc.)
2.	Value measurement	The term of measurement is understood more broadly than that of valuation. Relative indicators are applied, and a number referring to a specific phenomenon is defined. Even though the number is related to the value of a phenomenon, the number may even be unrelated to value. In other words, specific objects, factors or other observable criteria are identified in order to show a value, their valuations are measured, and the obtained results are interpreted (e.g., Technology broker-IC audit, Balanced scorecard, etc.)
3.	Value assessment	Value assessment is used when there are no criteria available, but a phenomenon may be defined by subjective observations of a valuator
4.	Measurement	Measurement is applied when any definable variable exists, e.g., if the framework does not include a criterion for value but does involve a metrical scale that relates to an observable phenomenon. The measurement method is not a method for valuation, but this type of method is often used within the intellectual capital community. These methods do not use value scales, but use measurement scales instead (e.g., Skandia navigator, IC index, Citation-weighted patents, etc.)

Source: compiled by the authors according to Andriessen, 2004; Holmen, 2005; King, 2006; Vaškeliėnė, 2006; Pukeliėnė et al., 2007; Rodríguez-Castellanos et al., 2007; Vaškeliėnė, 2007.

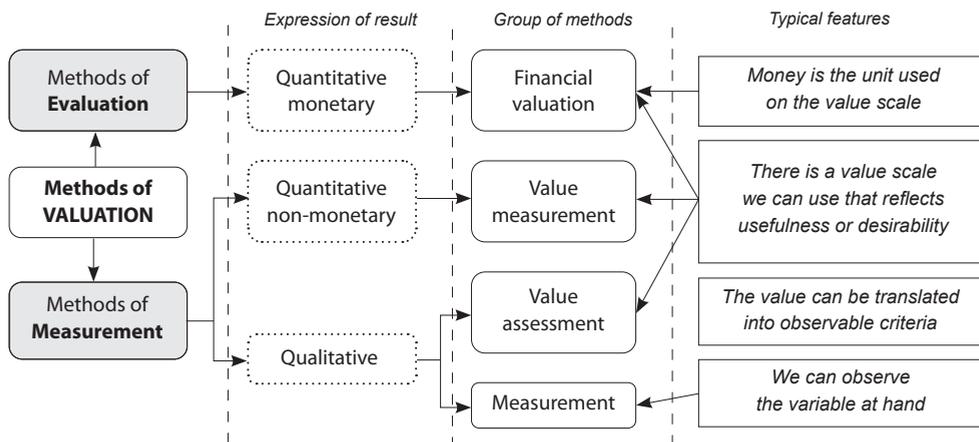


FIG. 1. **System of classification of valuation methods according to the expression of the valuation result**

Source: compiled by the authors.

Attention should be paid to the use of terms in this classification: methods of financial valuation could also be referred to as quantitative monetary methods, while the group in general may be referred to as evaluation methods. Value measurement methods could also be called quantitative non-monetary methods belonging to the group of measurement methods. Value assessment and measurement methods may also be referred to as qualitative methods which also belong to the group of measurement methods. This scheme shows the main aspects of the different valuation methods and could be a good tool for harmonizing the terms used in further research.

3. Results

Upon conducting a research and considering all the classification aspects of intellectual capital valuation methods presented in academic works, a generalized scheme of classification of these methods has been developed (Fig. 2). It was established that methods of intellectual capital valuation may be classified according to general principles of valuation when market capitalization, return on assets, direct intellectual capital, and scorecard methods are singled out. These methods may also be divided according to the valued objects when holistic and atomistic methods are singled out; classification is also provided regarding the use of a monetary measurement unit when monetary and non-monetary methods of valuation are highlighted. In the classification according to the expression of a valuation result, financial valuation, value measurement, value assessment and measurement methods are singled out. This scheme is a good tool for further research because it helps to decide which group of methods is most appropriate according to the objectives that are set in a specific study, i.e. if the goal is to evaluate

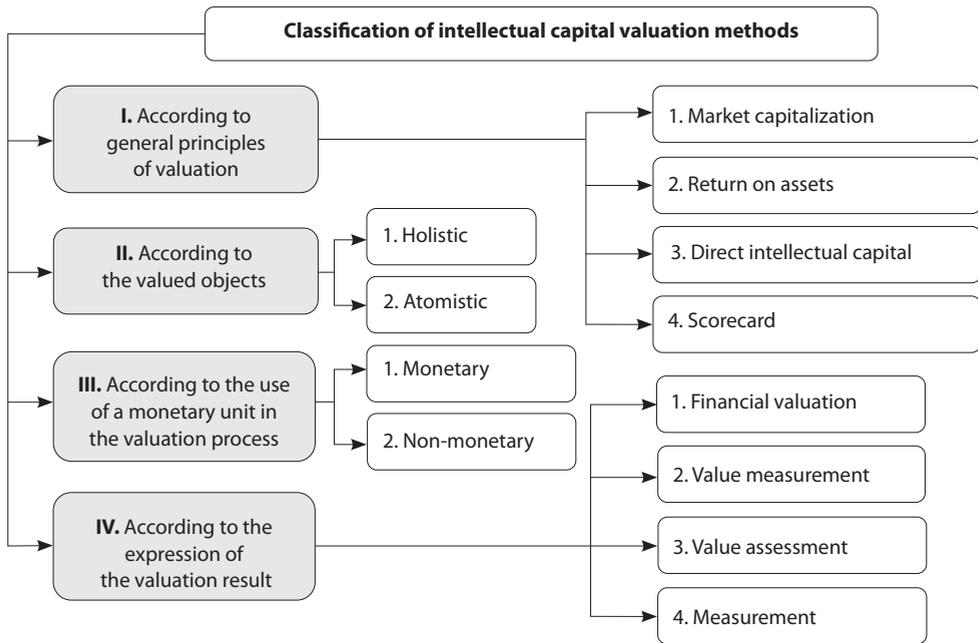


FIG. 2. **Scheme of classification of intellectual capital valuation methods.**

Source: compiled by the authors.

the intellectual capital in monetary units, then holistic, monetary, and financial valuation methods should be selected, etc.

In order to find out which specific methods of intellectual capital valuation are attributed to a certain classification, the content analysis of theoretical and empirical researches of various authors (Bouteiller, 2002; Lev et al., 2003; Andriessen, 2004; Bareišis, 2004; Müller, 2004; Sitar et al., 2004; Rodríguez-Castellanos et al., 2007; Tan et al., 2007; Van den Berg, 2007; Jurczak, 2008; Kuzmina, 2008; Sveiby, 2010; Salman et al., 2012) was used. The generalized and systemized data are presented in Table 5. Only the methods that feature in academic works three or more times are presented here; as a result, the list contains only 28 positions, even though more than 60 methods have been discovered in total. Methods are listed according to their frequency of repetition, indicating the number of academic publications in which a specific method was mentioned and attributed to a certain classification. Columns represent the most frequent classification groups while the digit at a specific method indicates the number of academic works in which the method was classified accordingly. From the presented data, one can see that some methods (Nos. 5, 6, 11, 12, 16, 22 and 25 in Table 5) are classified differently by various authors, i.e. they are attributed to several groups in the same classification. This may be explained by the following: 1) methods possess several features of the same clas-

sification and hence it is complicated to unequivocally attribute them to a specific group; 2) all methods are very different, and the researchers trying to systemize them have selected different features or aspects or subjectively assessed the obtained results. The fields in bold mark the attribution most frequently occurring in academic works. At the bottom of the Table, concluding rows show the number of methods assigned to a specific classification group and the number of methods in a certain classification.

The data presented in Table 5 show that, according to the first classification, most methods are assigned to the ‘scorecard’ group, i.e. intellectual capital is valued without employing monetary units but rather by attributing indices or indicators to its specific components. This is corroborated by the number of methods presented in the ‘atomistic’ group of the second classification, i.e. most methods treat intellectual capital not as an entirety but rather deal with its specific components. In the third classification, the number of methods attributed to either group is more or less equal; yet, the majority of methods in the process of valuation do not use this unit of measurement. According to the fourth classification, most methods are assigned to the group of ‘financial valuation’ methods; however, considering the fact that this classification has been researched least of all in academic works, it is possible to claim that this field has not been adequately explored yet and that these results shall impact the generalizing conclusions to the least extent. In addition, this fact reveals directions for the further research.

When generalizing the obtained results, it is possible to claim that most methods of intellectual capital valuation are based on scorecard, assess specific components of intellectual capital, and do not employ monetary units in the process of valuation; as a result, the expression of the valuation result is non-monetary, i.e. it is qualitative and presented as a text or quantitative and presented as an index. It reveals the lack of the studies that focus on the financial aspect of intellectual capital valuation methods, and this fact should be considered when choosing directions for the further research.

When performing the research, it has been noted that some academic works study and compare only a few specific methods of intellectual capital valuation. This choice is usually motivated by authors stating that the relevant methods are most frequently presented. However, as revealed by the present research, some methods are similar because different authors attribute them to the same groups in a specific classification (Table 6).

As a result, it could be a foundation for the further academic studies on the comparison of intellectual capital valuation methods, revealing their advantages, drawbacks, and possibilities of improvement. It is also useful in choosing the technique that could be alternatively applied for intellectual capital valuation.

TABLE 5. Intellectual capital valuation methods and their classification

No.	Frequency of repetition in scientific works	Methods	Classifications				I				II		III		IV			
			1. Market capitalization	2. Return on assets	3. Direct Intellectual capital	4. Scorecard	1. Holistic	2. Atomistic	1. Monetary	2. Non-monetary	1. Financial valuation	2. Value measurement	3. Value assessment	4. Measurement				
1	13	Market to book values	9				5		3		1							
2	13	Tobin's q	9				5		3		1							
3	11	CIV		8			5		3		1							
4	11	Skandia navigator				7		3		3							1	
5	10	IC index				6	2	1		3							1	
6	10	Technology broker-IC audit			6			3	2	1		1						
7	10	Intangible assets monitor				6		3		3	1							
8	10	EVA		7			2		2		1							
9	10	Balanced scorecard				7		2		3		1						
10	9	VAIC		7			2		1		1							
11	8	Total value creation			6		1	2	2									
12	8	The value explorer		1	6			3	2									
13	8	Citation-weighted patents			6			2	2								1	
14	7	Knowledge capital earning		5			2		2									
15	7	Value chain scoreboard				6		2		2							1	
16	7	Accounting for the future		1	5		1	1	2									
17	6	Investor's assigned market value	6				2		2									
18	6	Human resource costing & accounting		4				2	2									
19	6	Intellectual assets valuation			6			2	2									
20	6	Inclusive value (valuation) methodology			5			2	2				1					
21	5	Human capital intelligence				5		1		1								
22	4	Human resource accounting			3							1	1				1	
23	3	Holistic value approach				2								1				
24	3	Human resource statement			3			1	1									
25	3	FiMIAM	1		1			2										
26	3	IC Rating				3		1		1								
27	3	Danish guidelines				3		1		1								
28	3	Meritum guidelines				3		1		1								
...																
Total methods in a group of classification:			6	12	15	21	17	30	18	22	13	5	1	8				
Total methods in classification:			54				47		40		27							

Source: compiled by the authors.

TABLE 6. Similarities among the methods of intellectual capital valuation

No.	Methods assigned to the same groups in different classifications			
1.	1) Market to book values		2) Tobin's q	
2.	1) CIV	2) EVA	3) VAIC	
3.	1) Technology broker – IC audit		2) Inclusive value (valuation) methodology	
4.	1) Skandia navigator		2) Value chain scoreboard	
5.	1) Investor's assigned market value		2) Invisible balance sheet	
6.	1) Knowledge capital earning		2) Intangibles scoreboard	
7.	1) Human resource costing & accounting		2) Technology factor	
8.	1) Total value creation	2) The value explorer	3) Intellectual assets valuation	4) Human resource statement
9.	1) Human capital intelligence	2) IC rating	3) Danish guidelines	4) Meritum guidelines
	5) Value creation index	6) MAGIC	7) Knowledge audit cycle	

Source: compiled by the authors.

Conclusions

A generalized system of the classification of *valuation methods* has been developed in order to find out the terminology most suitable for the relevant methods: financial valuation methods could also be referred to as quantitative monetary methods, while the whole group could be titled as evaluation methods. Value measurement methods could also be called quantitative non-monetary methods belonging to the group of measurement. Value assessment and measurement methods could also be referred to as qualitative methods also belonging to the group of measurement methods. This scheme shows the main aspects of the different valuation methods and could be a good tool for harmonizing the terms used in further research.

It has been established that more than sixty different methods of valuating the intellectual capital of an enterprise are available. The results of the research show that these methods are classified according to the four features: 1) general principles of valuation (market capitalization, return on assets, direct intellectual capital and scorecard methods are singled out); 2) the valuated object (holistic and atomistic methods are singled out); 3) the use of a monetary unit in the process of measurement (monetary and non-monetary objects are highlighted), and 4) the expression of the valuation results (financial valuation, value measurement, value assessment and measurement methods are listed). Correspondingly, a classification scheme of intellectual capital valuation methods has been developed. This scheme is a good tool for the further research, because it helps to decide which group of methods is most appropriate according to the objectives of a specific study.

By using the content analysis of academic writings by various authors, it was established that most methods of intellectual capital valuation are based on scorecard; they

assess specific components of the intellectual capital and in the process of valuation do not employ monetary units of measurement. As a result, the expression of the valuation result is non-monetary, i.e. it is qualitative and presented as a text, or quantitative and expressed with an index. It reveals the lack of the studies that focus on the financial aspect of intellectual capital valuation methods, and this should be considered when choosing directions for the further research.

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