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**INTELLECTUAL CAPITAL MANAGEMENT:
STRATEGIC ASPECT**

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**INTELEKTINIO KAPITALO VALDYMAS:
STRATEGINIS ASPEKTAS**

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INTRODUCTION

Intellectual capital management (further on referred to as ICM) is a new area in management science resulting from changing business environment conditions, where managing knowledge and other intellectual assets has become a core source of strategic advantage creation. Under the new environmental conditions of „knowledge era“ (Chatzkel, 2003), „knowledge economy“ (Fitz-enz, 2000, Seetharaman et al, 2002) or just „new economy“ (Teece, 1998) it is very important to exploit, capitalize available intellectual resources and be able to attract external intellectual resources and employ them in the value creation chain.

An important aspect of intellectual capital (further on referred to as IC), excluding it from other related management objects is concerned with the exclusive feature of intellectual capital to act as strategically important value creation factor. Its potential to generate value differentiates it from other objects treated as strategically important under new business conditions, i.e. knowledge, innovations, networks, intellectual assets or intangible assets. On the other hand, IC incorporates that part of the mentioned “soft” management objects, which has *potential to generate value*. In fact, the appearance of IC concept is very much related to the need to consolidate strategically important intellectual resources, including knowledge, culture, intellectual capital, innovations and market relations, and manage them integrally.

Current theories and models found in the ICM area address identification of knowledge and intellectual capital and its classification; analysis and comparison of the existing models (Hall, 1989, Itami, 1991, Ross, et al, 1998, Stewart, 1998, Brooking, 1996, Edvinsson and Sullivan, 1996), knowledge management processes and needed preconditions; analysis and development of possible strategies (Winter, 1987, Nonaka 1991, Teece, 1998, Teece, 2000, Spender and Grant, 1996, Stankevičiūtė, 2002), intellectual capital measurement on the company and regional or country level (Sveiby, 1997, Mouritsen, et al, 2001, Bontis, et al, 1999, Danish trade and industry agency, 2000.), management specifics of IC components (Norton, 2001, Josefek and Kaufmann, 1998) or intellectual assets identification, evaluation and securing (Itami, 1991, Klaila and Hall, 2000, Joia, 2000, Lev, 2001, MERITUM, 2002).

All the aforementioned directions are very important and needed, but they capture only a part of the new strategic resource management function, and not the whole. Most of these directions can be treated as operational (e.g. measurement, knowledge management processes or separate IC components management directions), because they focus on the operational activities while striving for strategically important goals. Understanding IC only from one management perspective becomes more and more limited. ICM cannot be assigned to the one traditional functional management area. It is a new management area, incorporating many management activities and being mostly related to the strategic decision making level, because only there potential of intellectual resources to generate value can best be seen. However, no literature source was found in the area of IC and knowledge management, which would address

intellectual capital management as a strategic management function and relate it to the strategic management process. The reason may lie with the fact of non-maturity of the intellectual capital management area, which is grounded in some researches (Moffett, McAdam and Parkinson, 2002). On the other hand, the concepts of intellectual capital strategy and strategic management of intellectual capital may be occasionally found in some publications (Nickerson, 1998, Ross, et al, 1997).

In order to fill the aforementioned existing gap, it is important to produce a theoretical model of intellectual capital management, as a part of strategic management process. The model should reveal the essence of this broad and complex activity and reflect its structure and management process. While modeling ICM in the strategic level of the organization, it is important to solve not only IC management question, but also take into attention broader organization context – the whole organization’s strategic management process. None of the existing strategic management process models incorporate the new management object – intellectual capital. However, IC as a strategically important resource under new business conditions must be evaluated along with other strategically important resources before making an organization’s strategic decision on vision, mission and strategies. As one of the leading scientists in the field of strategic management Grant (1991) states, a company’s IC has to be one of the central analysis areas while formulating strategies and one of the main constants, according to which company can create its identity and define its strategy, also one of the main sources of company’s profitability.

This doctoral dissertation attempts to find the answer to one of questions existing in this new research space: ***How ICM can be integrated into the strategic management process?***

The existence of the described scientific problem can be illustrated also by the newest researches both in the ICM and strategic management areas: „Employees and other intangible resources (i.e. intellectual capital) generally represent the most critical resources in the value creation process. Crafting strategy in such contexts is not helped by conventional models and tools of strategy” (Rylander, Peppard, 2003, p 316) or „The field of strategic management is dominated by models and theories that hold little relevance for practitioners in guiding action in knowledge-intensive companies competing in turbulent environments... There seems to be no single new theory or model emerging that covers all the areas under attack” (Rylander, Peppard, 2003, p 317-318).

The ***aim of the dissertation*** is to introduce an intellectual capital management model, which integrates strategic management and intellectual capital management processes.

Objectives of the research are the following:

1. To make a theoretical analysis of intellectual capital concept and structure;
2. To define the place of ICM in the management system of organization;
3. To reason the methodology for intellectual capital management modeling, while integrating intellectual capital management and strategic management processes;
4. Based on the strategic management and intellectual capital management theories, conceptualize theoretical integrated intellectual capital management process model;
5. To verify the produced model empirically.

Knowledge organization was selected as a **research object** in this dissertation, as ICM is more clearly understood and more expressed in such kind of organizations, compared to the traditional organization. **Research subject** – intellectual capital management.

Research methodology. The epistemological and methodological basis of this dissertation is based on the following theories and paradigms:

- Intellectual capital management and measurement theories and models.
- Qualitative research methodology based on the hermeneutic paradigm. It was selected because, the methodology of social research states, that positivistic paradigm is less efficient when it is needed to research hardly tangible, subjective objects. Those features are the attributes of intellectual capital, which is primarily related to the intellectual assets potential to generate value.
- Strategic management process model (Jucevičius, 1998).
- Epistemologies dominating in the literature on the organizational theories, sociology and philosophy (especially social constructivism influenced by postmodernism), which defined the nature and essence of knowledge, as the main component of IC.
- Knowledge management theory is a basis for evaluation of commonalities and differences of knowledge management and ICM, also for specifying other aspects of IC structure and management.
- Methodology for increasing organizational knowing (Stankevičiūtė, 2002). Preconditions of knowledge management activities were reasoned in the methodology. Those precondition were used in the dissertation for reasoning model verification criteria.

The following **research methods** were applied:

- **Analysis of research literature** was applied for theoretical analysis of the problem, while trying to highlight the conceptual and structural differences among various intellectual capital interpretations, elaborate the structure of main IC components, point the differences of ICM and knowledge management areas, also define the place of ICM in the management system of the organization. This research method

was also applied for theoretical construction and reasoning of an intellectual capital management model integrating strategic management process and ICM processes. Finally, this method was used for reasoning the methodology for researching the possibilities for ICM model application.

- **Observation, case study and interview** methods were applied in the knowledge organization „X” (1999-2003) and its results used for modeling ICM. However, those methods were primarily dedicated for the verification of the theoretically constructed model. Whole empirical research was executed as one case study in two related organizations. Interview of external experts was selected in addition striving for higher reliability of empirical data.

Scientific novelty and results of the dissertation are defined by the following:

1. Revision of the concept of IC, defining it as an intellectual asset having the potential to generate value.
2. The IC structure and the scientific approach toward IC components was specified and elaborated upon in more detail and from a different perspective after completing the following actions:
 - a) revised concept of IC and related value generating potentiality characteristic of intellectual assets were taken into account when defining IC subcomponents;
 - b) IC structure was represented as an UML class diagram;
 - c) the labeling of primary IC parts was critically reviewed and adjusted based on the findings;
 - d) the existing structural IC models were compared to each other and with the models from related areas (McKinsey „7S”, etc.), and based upon the findings they were reclassified, resulting in the suggested upgrade of IC structure.
3. The integrated function of ICM was theoretically reasoned as the function of strategic management level in the organization.
4. The strategic management process model has been modified by incorporating ICM as integrated organization’s business function and modifications theoretically grounded.
5. An intellectual capital management model that integrates the main aspects of strategic management process and intellectual capital management processes was introduced.
6. Unified modeling language (further UML) was applied for modeling ICM for the first time.

Practical significance of the research:

1. An improved strategic management model allows an organization to consider its intellectual capital as one of the strategic values generators before making organization-wide strategic decisions.
2. The developed ICM model to be applied in the organization’s corporate and business strategies implementation stage of the overall strategic management

process provides the step-by-step guidelines for management personnel on how to formulate ICM functional strategy and implement it. ICM strategic alternatives are suggested.

Approbation of research results:

- The presentations on the dissertation topic were presented in 3 conferences, out of which one was the international 24th McMaster World Congress, held 15-17th January, 2003, where doctoral consortium was organized for the first time in order to approbate the scientific problems in the area of ICM, KM and e-business and provide advice by world-wide recognized experts from the area.
- Research results were discussed with the managers from various knowledge organizations; the managers of the researched organization reviewed case study results.
- Academic review of the research results was going on through several iterations in the seminars organized by Strategic Management Department at the Kaunas University of Technology for doctoral students and business executives.

CONTENT OF THE DISSERTATION

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 - 3.2.3. Formulation of ICM strategies
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 - 3.2.7. Generalization of the ICM model evaluation results and further research directions

CONCLUSIONS

REFERENCES

AUTHOR'S PUBLICATIONS

APPENDICES

GENERAL REVIEW OF THE CONTENT

The rationale for the research problems, definition of the research subject, aim, main objectives, research methodology and applied methods, and theoretical and practical significance of the dissertation are all described in the introductory part of the dissertation.

The first part of the dissertation formulates the theoretical background for further ICM modeling. It starts with the analysis of IC concept and formulation of a new IC definition, showing its novelty and the relationship of IC with other intangible objects. IC structure is analyzed afterwards, and new, more detailed structure of IC is composed and presented as a structural model of IC. ICM questions are addressed in the first part, attempting to analyze and define ICM, analyze and determine its place in the whole organization's management system, present its relations to knowledge management area, which is the most closely related with ICM; and finally the current models of ICM are analyzed and compared, culminating in the outlining of ICM specifics.

Section 1.1. draws a conceptual separation line between the terms intellectual assets and intellectual capital, where capital implies first to all those intellectual assets, which have potential to generate value. This new approach towards intellectual capital is based mainly upon the initial meaning of capital, which was lost during its long-term existence, but eventually was revealed by Hernando de Soto (2001) who concluded that capital is related jointly to the assets and their potential to generate value. Following this definition, IC is described in this research as all intellectual assets, which the company has as a property or that are available for exploitation through defined ways, and which have potential to generate value to the company. Potential for value generation is theoretically a broad concept. In macroeconomics almost all assets has potential to generate values, but for a company, it is very closely related to company's vision, mission and strategies and ability to apply the assets in the activity. Thus, the author defines IC in the dissertation as all intellectual assets belonging or by defined ways available to the company, and which have potential to generate value to the company.

Section 1.2. discusses the different approaches to the structure of IC and in its subsections presents the author's newly developed more detailed IC structural model. Discussions related to the problem of different classification of IC components are carried out in *subsection 1.2.1*. Some authors (Stewart, 1998, Bontis, 1998) think that IC consists of human, structural and customer capital. IC structure presented by Sveiby (1998) does not essentially contradict this opinion, but analogous parts are described as individual competence, internal structure and external structure. Other authors (Chatzkel, 1998) do not deny the presence of customer capital, but treat it as a part of a bigger component – relational capital - which contains no less important relations with suppliers. Curry and Cavendish (1999) structure relational capital to three separate parts, while introducing an additional part to supplier and customer capital – mind share. The author of the dissertation supports the dominant opinion that IC consists of the three main parts: human capital, organizational capital and social capital. Organizational

capital in its essence has the same meaning as structural capital, but as it contains not only elements, which can be called structures (e.g. organizational culture) and as all those elements belong to the organization, author suggests to call it organizational capital. Various IC approaches and other management models (e.g. McKinsey „7S” model) are applied in further analysis of each of the three elements of IC and its decomposition.

Analysis and decomposition of human capital is carried out in *subsection 1.2.2*. Following the main line of thinking on the perception of IC, human capital is perceived as intellectual assets belonging to humans or organizations individually or collectively and as having potential to generate value for the organization.

Subsection 1.2.3 discusses the structure of organizational capital – tangible and intangible intellectual assets belonging to the organization and having potential to generate value. The scope of organizational capital components is broadest; therefore it is structured further downwards. The essence of the knowledge lying within each component is applied for further classification of the component of organizational capital. There are three main types of knowledge: tangible, intangible and legally protected. The author of the dissertation suggests three organizational capital subcomponents groups, that correspond to the aforementioned knowledge types, and defines the groups as follows:

- Infrastructural capital – knowledge that is potentially able to generate value and can be captured in the organization’s systems, mechanisms, structures, processes, methods or technologies.
- Innovational capital – organization’s intangible knowledge and abilities, which have potential to foster innovative development in the organization.
- Proprietary capital – organization’s intellectual property having potential to generate value. Intellectual property here is treated as legally protected intellectual assets.

The structure of each of the above mentioned sub-capitals of organizational capital are analyzed in the *subchapters of subsection 1.2.3*. The overall structural model of organizational capital, which is the most diversified and detailed out of the three main IC components, is presented as the class diagram according to UML standard in the dissertation. The model is illustrated in the Figure 1, developed and reasoned in detail by the author. The structure of proprietary capital is drawn in the dissertation referring to the decomposition of intellectual property suggested by lawyers and formalized in the laws on intellectual property. Innovational capital refers primarily to the „soft S” elements from the McKinsey „7S” model, but definitions are revised by the author and new concepts common to the ICM area are introduced. Finally, infrastructural capital represents the „hard S” elements from the McKinsey „7S” model, but their conceptual labeling and reasoning is adjusted by the author. This new structure allows more understanding and capturing of IC parts than that of current models.

Subsection 1.2.4 addresses the structure of last IC element - social capital, often referred to as customer capital (Stewart, 1997), or relational capital (Brennan,

1999). The term suggested by McElroy (2002) is used in the dissertation, as it is broader and better reflects all possibilities of an organization in the value creation process through the exploitation of intellectual capabilities available in the external environment. Essentially, relational capital represents the potential an organization has because of the relationship of that company with an external organization or audience, i.e. knowledge of clients, suppliers, government organizations and industrial associations. The longer relationship, the greater and more valuable relational capital is. When relationships disappear, social capital also disappears. When a company wins total trust from the customer and/or both companies (supplier and customer) understand companies (supplier and customer) understand each other's needs and internal business processes very well, relational capital fosters. Creating social capital for a company is very difficult, because it is the most remote of company's internal activities. Scientific definition of the social capital is revised in the dissertation and defined as intellectual assets that have potential to generate value and residing in the organization's relationships and reputation with the external stakeholders.

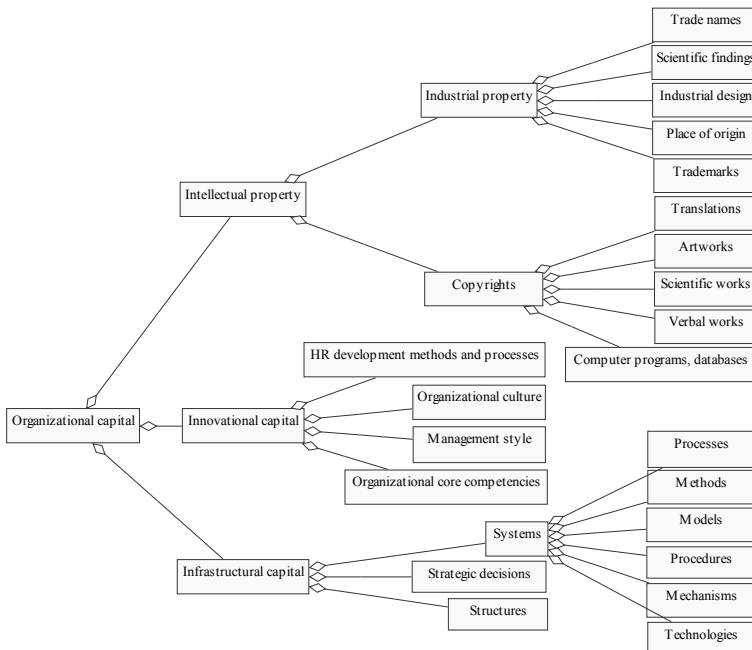


Figure 1. Structural model of organizational capital

Section 1.3. of the dissertation deals with the ICM concept and how this new integral function should be positioned with regard to other management functions. In order to clarify the essence of IC management, analysis and comparison of ICM and knowledge management (KM) is performed by the author, as currently there is much conceptual confusion of ICM and KM areas.

Subsection 1.3.1. presents the author's adjusted definition of ICM as the process, in which a subject, using his knowledge and resources available to the organization, plans, coordinates, organizes and controls business processes related to the identification of intellectual assets belonging or available to the organization, evaluation of their potential for value generation, and ensuring effective exploitation of identified IC, for reaching the goals of organization. The specific of ICM, outlined in the dissertation by the author, is that it starts by managing intellectual assets and ends by managing IC that is identified during the management process.

The place of ICM in the whole organization's management system is revealed by the author in the *subsection 1.3.2.* Section starts with the analysis of ICM functions. The results of such analysis show that ICM is a part of strategic management process. Because the strategic management covers several layers, depending on the structure and size of the organization, further discussions stretch to the analysis of strategy levels. Large companies with many divisions or diversified strategy should plan strategy in two or three levels (Cole, 1994). Depending on the level, three different types of strategy exist: corporate strategies, business strategies and functional strategies (Hunger, Wheelen, 1996). Thompson and Strickland (1990) mention also the fourth level – operational strategies. Analysis of the essence of each of the strategies show that ICM strategy is clearly a functional type of strategy sharing its characteristics of maximizing productivity of resources and supplying organization with core competencies, which give company or business unit core competitive advantage. Among many types of functional strategies, the following strategies can be met in the management literature: marketing, finance, R&D, production and human resources management. ICM strategy is a new type of functional strategy, supported by the author of the dissertation, also some other authors like Harrison, Sullivan (2000) who indicate the same place of ICM strategies while defining the functions of IC management. Also ICM strategy is interrelated with other functional strategies and even overlap in some instances, e.g. ICM and human resource management strategies, ICM and marketing strategy, if the latter is oriented to relationship marketing or business intelligence. Such interrelations may imply that ICM strategy is not needed as a separate strategy at all, because its objects are spread among functional areas anyway. However, IC structural parts are interrelated as well and they cannot exist in isolation. According to Rastogi (2003), the value of all parts of IC may appear only as a result of their dynamic relations and unified interaction. Other authors support similar position (Stewart, 1997, Leliart, Candries, Tilmans, 2003). Therefore, ICM would hardly be efficient, if it is managed under different functional areas. The author concludes the *subsection 1.3.2* with the sworn

statement, that ICM is a new functional area, integrating elements of intellectual assets, which are also found in traditional functional areas.

The dividing line between KM and ICM areas is drawn in the *subsection 1.3.3*. Many different points of view are analyzed and the distinctions among them are unclear, as the areas are so much interrelated. For example, EFQM (1997) and others, although they use those terms as synonyms, also state that KM and IC are different, but related areas. Brooking (1997) offers to treat KM as a process for strategic and operational management of IC. KM, according to such view, is understood as the procedures needed for IC recognition and exploitation, especially focusing on areas which are usually under-exploited by the company (e.g., employees). Such approach is very similar to the one presented by Handy (1990), who speaks of creation of value from intangible assets. All those approaches state that main aspect of KM is IC and its management. Bontis, Crossan and Hulland (2001) also support this approach and state that IC represents the stock of knowledge in the organization at some specific moment. In such a way IC shows what organization has learned up to a given moment. Management of those stocks is the area of knowledge management. Some authors raise the questions as to whether the creation of ICM strategies is purposeful regarding costs and benefit in the long-term perspectives, and in some way contradict their own statements that IC management strategies does not exist and IC management is in the scope of KM. Existence of ICM strategies is mentioned in analytical papers of other authors (Nickerson, 1998, Huang, 1997, Ross et al, 1997). The author of the dissertation also supports this approach. For additional reasoning the analysis of many definition of KM presented by authors in recent works (Wiig, 2000, Grant, 2000, O'Dell, Grayson, 1998, Wensley, Verwijk-O'Sullivan, 2000, Frey, 2001, Takeuchi, 1998, Skyrme, 1997, Kochikar, 1999) was done. Results show that most of the authors define KM as the operational management process, which is nothing more than the implementation stage of ICM strategy. So, although KM is an area essential for implementation of ICM strategy, it is not the only one. Human resource management practices, relationship marketing, and organizational behavior management are no less important to the implementation of ICM strategy. The understanding reached during dissertation research on the division between KM and ICM, was recently supported also by Zhou and Fink (2003), who stated that ICM is considered at the strategic and pinnacle management levels. It focuses on value creation and extraction, and the goal of ICM is creating and leveraging intellectual assets to improve a firm's value establishing capabilities from a strategic perspective. In addition, KM focuses on tactical and operational implementations of knowledge related activities to facilitate knowledge creation, capture, transformation and use with the ultimate aim of pursuing a more intelligent organisation by creating and maximising IC.

Subsection 1.3.4. deals with the analysis of existing management models. Up to now there were many attempts to make the models for IC, some even widespread with regard to application and quotation by others, like Skandia navigator, Dows Chemical IC management model, Edvinsson and Malone IC management model, IBM

IC management model, Intellectual property management portfolio model, Roos process model, etc. Common characteristics of current IC management models are that they are limited to one diagram or picture, which according to the best business modeling practices is a very limited way of expressing representations, and possibly only theoretically. In reality, business is so complicated and presents so many aspects, that one diagram cannot cover all information (Penker, Ericsson, 2000). Also, most of the current models used for ICM might be called structural business models: Skandia navigator (Edvinsson, Malone, 1997), Balanced scorecard (Kaplan, Norton, 1992), ICM model for knowledge organization presented by Edvinsson, Sullivan (1996). All of the above show the elements of IC and some of them show relationships between the elements, but they do not reveal the process. There was no ICM model found that would represent the ICM process. Literature is limited to analyzing the process of intellectual assets management, a part of which is also to be included in ICM process. IC management system model designed by ICM management group, intellectual property management portfolio presented by Klaila and Hall (2000) and Dow Chemical intellectual property (IP) management model can be treated as the representatives of this group. Dow Chemical and ICM models represent management process more than the structure, but the process also fits into one diagram and no objects participating in the process, or the interaction among the objects are shown there. According to Petrash (1996), Dow intellectual property model is oriented towards the operational IC management for achieving strategic goals. It was implemented in the area of patents for the first time. In the ICM system model, the influence of Dow model might be felt strongly – even the concepts are the same: intellectual assets portfolio, technology adoption, etc. ICM system differs from Dow model in that it contains a decision point in the whole management process. Regarding modeling technique, those two examples illustrate well the lack of modeling technique with standardized notations in IC management modeling.

During the verification stage of the model created in the dissertation, one more model was published and that was CICM (Comprehensive intellectual capital management) presented by Al-Ali (2003). It is similar in nature to the one developed in the dissertation in such a way, that it begins with the management of IC on the strategic level and goes to the operational level, where knowledge management, innovations management and intellectual property management processes are presented. Limitations of the model compared to the one developed in the dissertation are that it does not show the integration with the whole organization's strategic management process, and it is limited because of the different perception of IC applied in the model. Al-Ali (2003) described IC as consisting of knowledge, intellectual property and innovation, while in the dissertation, the scope of IC is much broader and contains elements such as organizational culture, human attitudes, etc.

Second part of the dissertation reasons the methodology of the research, the logic of research organization is reasoned, and the main methodological aspects for theoretical model development; and presents the empirical research design for developed model verification.

Section 2.1. provides a basis for the theoretical research on ICM discussion and modeling its process on the constructivist paradigm and provides the guidelines for the empirical research upon the qualitative research methodology based on the hermeneutic paradigm. Such choices are made by the author, because it is believed, that positivistic paradigm is less efficient, when researching organization's intellectual capital, first associated with the potential of intellectual assets to generate value, and which is very closely related to the characteristics of subjectivity and intangibility.

Research methods that were applied for the research and main research stages are presented and grounded in the *section 2.2.* Referring to the main goal of the dissertation to introduce a new model, main stages needed for such research following March and Simons (1995) recommendations are construction and verification of the model. In the construction stage, the main research method was analysis of scientific literature. International scientific literature sources served as the main source of information for the analysis, as there is almost none research performed in this area in local environment. Literature analysis method was applied in the theoretical analysis of the problem, to show the differences in defining the IC phenomena and its structure and also to define the intellectual capital place in relation to the other organizational management areas and management levels. Also this method was applied by the author for reasoning IC model development. The modeling technique chosen in the research for the construction of the model was UML, which since its introduction, has quickly become the standard modeling language for software development and more and more intensively used for management modeling. The dissertation author's choice of such modeling language might be considered a great development of the ICM area, because it makes the model more widely understandable and applicable in different areas (e.g. ICM information systems development) and accessible for more organizations. In addition, it is easier to compare one model to another and contribute to the management science development. Construction of the ICM model was based on the strategic management process model provided by Jucevičius (1998). Reasoning of the aforementioned model selection is presented in the *subsection 2.2.1.*

Subsection 2.2.2. deals with research design of the model verification stage. The goal of the verification stage is to verify whether the constructed model meets the criteria that were established during its construction. The standard criteria usually used for verification of models developed were used for verification of ICM model, as well. The literature analysis method was used for substantiating those criteria and as the research background for examining the possibilities for application of intellectual capital management model. Verification of the model was mainly focused to the empirical application of the model in the knowledge organization where many intellectual assets are accumulated, and their repeated application is one of the basics for efficient business. Empirical research design, guidelines and places are discussed further in the *sub-section 2.2.2.* Empirical research was executed as a case study, observing the business of two interrelated companies, interviewing its key employees, and analyzing historic business cases of the company. Observation, document analysis, interview, and

case study analysis methods were used in the case study research execution. The type of selected empirical research approach was action research, i.e. the author of this article was involved in the daily management operation of the researched company, observing the actions taken and the pre-conditions. For the analysis of personal actions of the researcher made during the action research process in the company, the retrospective analysis of the results was performed. The interpretation of the findings was not directed to the accurate description of the real surroundings, but for a deeper, closer understanding of the environment. Then, while influencing the environment, results were interpreted in order to understand what is right today and how can it be developed with new approach, which at the end inspires and opens possibilities for new researches and findings. For the higher validity of the empirical results, interviews of several external experts from three similar type and origin organizations were performed as well.

Subsection 2.2.3 presents the methodological guidelines that were used during case study research process and for the documentation and analysis of findings, and report preparation.

Third part of the dissertation is dedicated for answering the primary research questions and modeling intellectual capital management, integrating strategic management and intellectual capital management processes. Results from the empirical research executed for theoretical model verification are analyzed, and based on these, the created theoretical model is upgraded.

Section 3.1. is dedicated to the theoretical modeling of intellectual capital management. Process modeling, according to UML, starts with capturing main actors in the process, presented in the *subsection 3.1.1.* Three main actors are used for further modeling of ICM: knowledge subject, who may be any knowledge employee or community of practice, IC manager and manager of the company. The contribution of the author to split the ICM activities among actors and suggest main actors roles in the dissertation, adds to the novelties of the ICM area and this dissertation.

Modeling of ICM starts with the overall strategic management process of the organization, which is discussed and upgraded presented by the author in the *subsection 3.1.2.* The primary steps are taken from the traditional strategic management process, but presented in a different way, and some specifics are also introduced to the process in the dissertation (see Figure 2). Most strategic management processes, including the process suggested by Jucevičius (1998), start with the environmental analysis, scanning and evaluating main factors in external and internal environment. While examining internal environment, the traditional aspects such as organizational aspects, personnel, production aspects, marketing and financial aspects, IC aspects should also be taken into account; i.e., the main IC in the company, which status, where it lies, etc. The author suggests that during the analysis of external environment, knowledge on the IC of competitors, suppliers and other partners and in general macroeconomics aspects of IC are collected and benchmarked with organization's IC. Results of such comparison are used later for mission, vision and philosophy formulation. The third stage of the model,

“Formulate corporate and business strategies” is hardly changed in the dissertation, as there are similar practices with traditional business environment decisions in the knowledge economy settings. After the strategies are formulated, implementation stage begins with the strategic and operational management of business functional areas. When it comes to functional strategies development, besides the development of traditional functional strategy types shown in the model, ICM is added as a new integrated functional area. This step is explained in more details in the dissertation and presented in the *section 3.1.3* as the **ICM model**. The newly introduced model fits in the corporate strategies functional implementation level and is based on the same strategic management process. The last step in the strategic management process is the strategic control, which is executed, after taking into account IC aspect, in a similar manner as traditional, but also captures the information for strategic analysis and feedback provision from the areas, where main company’s IC is residing.

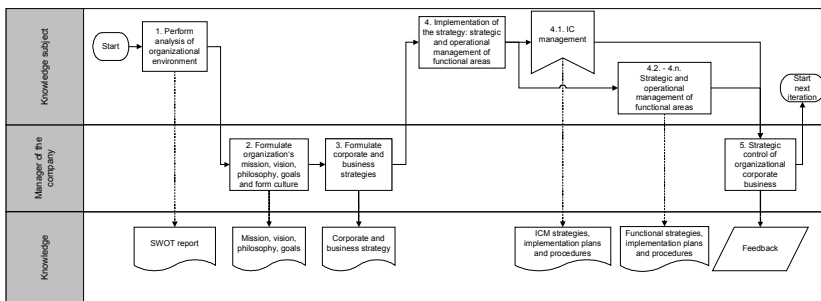


Figure 2. Organization’s strategic management model enriched with IC element

Subsection 3.1.3. presents the results and reasoning of ICM modeling. The process model that is presented in this subsection is drawn only in a general manner and there are only minute specifics in it compared to the common strategic management process. Principal steps of the model are explained in details in the *subchapters 3.1.3.1. - 3.1.3.4* of the dissertation.

As seen in the figure 3, the first step in the ICM strategy development process, as with other types of strategy development, is the environmental analysis and benchmarking. In case of knowledge organization, it means merely business intelligence and evaluation of IC elements. On the basis of data collected during environmental analysis, main IC elements and their status are identified and ICM strategy formulated. After formulating ICM strategy, its implementation stage follows. This is directly related to KM processes, but not limited to it, because IC itself is not just knowledge. Individual competences belonging to human capital can be managed in operational level with chosen human resources management techniques. For managing organizational culture many models can be offered by organizational behavior management specialists,

relationship marketing might be used for managing social capital. The last step of ICM model is the strategic control of ICM. But the model does not end there. After this stage, the process returns back to corporate strategic management process chart, where earlier mentioned strategic control of organization's corporate business is executed. The author's model developed in the dissertation and presented in figure 3 also shows that in each step of ICM model, tacit and explicit knowledge are created. This increases the value of organizational capital in total value of IC.

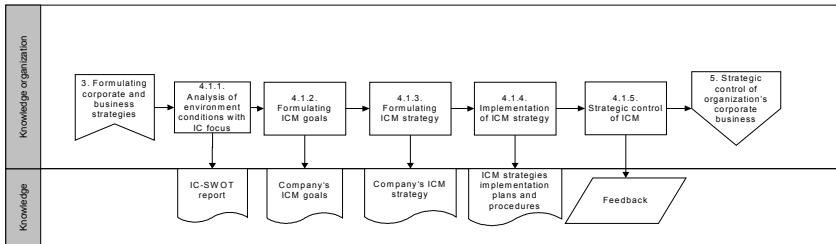


Figure 3. ICM in the strategy implementation stage of the strategic management process

Sub-chapter 3.1.3.1 explains the ICM environmental analysis stage developed by the author in detail (see figure 4). The model for intellectual assets portfolio management presented by Klaila and Hall (2000) was used as a basis for the purpose of modeling environmental analysis stage in the model, but represented and reasoned in more details and sequence of actions by the author of dissertation. The purpose of the intellectual assets portfolio management model is to perform the intellectual assets audit first and settle its value, and then manage it in the same way as other property by following the increase of its value over time. Each step of the ICM model is further modeled and reasoned by the author.

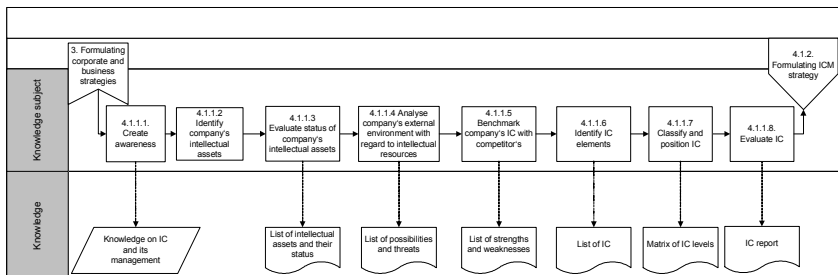


Figure 4. Environmental analysis with ICM focus stage in the ICM model

Step 4.1.1.1. As it was mentioned, environmental analysis in the ICM model begins with creation of awareness. Everyone in the organization should know, what changes are needed and what those changes will offer.

Step 4.1.1.2. The main intellectual assets of the company should be identified. It is important to cover all main components of IC. This step is very similar to that of defining the scope of audit in the intellectual assets portfolio management model. The list of assets and its details depends upon the size of the organization and available resources for doing the job. In large organizations the list could be quite cumbersome requiring guidelines to be prepared rather than lists, with some of the assets are skipped (this is the main risk of this step). If auditors are not professionals in the area or trained properly, some of the assets could be lost during this stage. However, if they are professionals, at this stage the results would be an IC list instead of intellectual assets lists. The status of intellectual assets is defined in the next step.

Step 4.1.1.3. Lists of intellectual assets are reviewed and extended with additional qualitative information regarding the status of the assets, whether it is leveraged, where it resides, etc. This step concludes internal environmental analysis of IC and leads to external environmental analysis.

The essence of *step 4.1.1.4.* “Analyze company’s external environment with regard to intellectual resources” is very similar to traditional practices, except that much more focus is on the know-how, goodwill, and quality system used by competitors or partners, rather than analyzing their physical or financial capabilities.

Benchmarking results from external environmental analysis and intellectual assets identification is executed in the next step of the process. From benchmarking results main IC elements of the company can be identified. Previous lists of intellectual assets development in internal environmental analysis and lists of intellectual assets available in external environment is used to accomplish this. They are reviewed from the point of view of company’s mission, vision, and corporate strategies. A new list is developed using resources belonging to the company or available to it and the opposite of IC – intellectual liabilities, which carry the minus sign in the characteristics of IC. The characteristics of IC are added to the list of IC in the next *step 4.1.1.7.* “classify and position IC”. The author of the dissertation suggests using the three main characteristics, defining the net value of all active capitals, which is offered by Carrilo (2002):

- **Productivity** means the level, by which the capital increases the value of systems, i.e. it adds additional positive factors increasing the benefits. Capital can be productive only, when its exploitation costs less than the value generated by that capital.
- **Functionality** is understood as the employment of the capital and extracting value out of it. Capital can be valuable, but it can be under exploited or even dead. Only exploited capital gives its full value. All employed capitals are functional. Dead capital is the form of capital, which does not have possibility to become functional.
- Productive and functional capital can be unintentionally lost or neglected. Or it can be just not accessible (e.g. database, for which the password is forgotten). Thus,

an *availability* characteristic is not less valuable; costs to make the capital available decrease its net value.

The values of capital characteristics are expressed in scale from -1 to +1 and are laid out in the matrix of IC levels. This step culminates the IC environment analysis stage and leads to the next stage – ICM strategy formulation (see figure 5).

The author suggests that the sequence of assignments in the ICM strategy formulation stage is equivalent to the traditional strategy formulation process, and develops the sequence of actions in this stage correspondingly in the dissertation (see figure 5). Therefore the scientific analytical focus in the dissertation was the strategic alternatives generation and formulating final strategy in this ICM model stage. The most imposing scientific problem found by the author in this area was the lack of available ICM strategies.

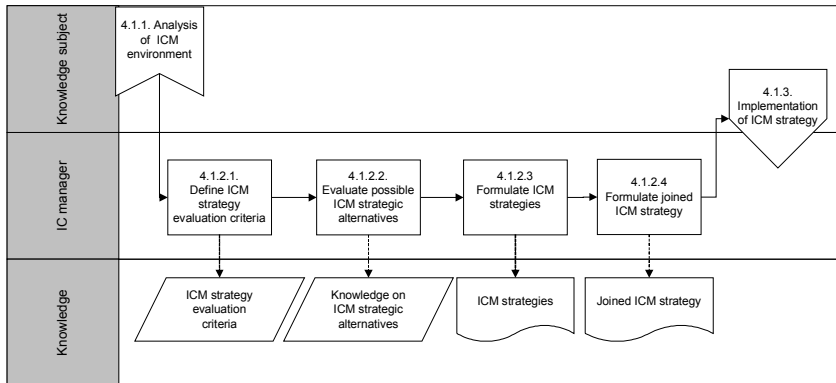


Figure 5. ICM strategy formulation stage in the ICM model

ICM strategic alternatives were suggested by the author in the dissertation based on the ICM functions listed by Sullivan (1998), intellectual assets strategies presented by Klaila and Hall (2000), and the capital development strategies matrix offered by Carrilo (2002).

The following main ICM strategic alternatives groups are offered by the author of dissertation:

- Protect intellectual capital;
- Leverage intellectual capital;
- Increase the availability of IC;
- Transfer of IC;
- Invest in IC;
- Do not invest in IC.

After the strategies for the management of most important elements of IC are defined, common ICM strategy must also be defined. The author introduces this common ICM strategy in the ICM model, in order to simplify strategic control parameters in the overall strategic management process, which is carried out after ICM model process reaches the end of its final stage. Further actions with formulated ICM strategy (or strategies) in the ICM model are related to the similarities with traditional strategic management practices. Formulated strategy is presented in written plan or other forms and has to be implemented.

Subchapter 3.1.3.3. deals with the strategy implementation stage in the ICM model. The most challenging aspect of this stage, according to the author, is to ensure the necessary pre-condition for strategy implementation. The process modeled and described in the dissertation can be seen in figure 6.

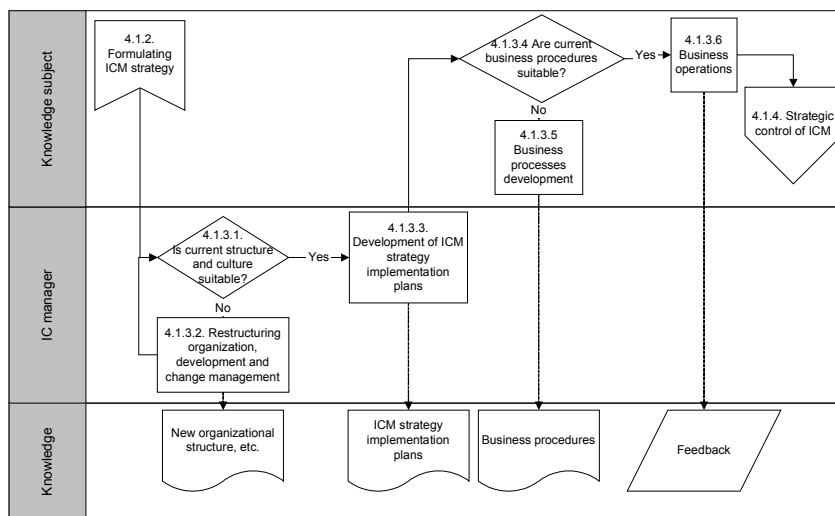


Figure 6. ICM strategy implementation stage in the ICM model

Ensuring pre-conditions means possessing the necessary structure, culture and procedures fit with formulated strategy. Procedures in this case mean all strategy implementation activities related to human resources management, knowledge management, relationship marketing, organizational behavior, etc. Decisions on the structure, culture and procedures fit are the main in this stage and based upon their results, decisions for further actions are made. The IC manager determines whether the organizational structure is suitable for implementation of ICM strategy, while knowledge subject decides, whether current business procedures should be changed. Criteria for making such decisions are not clear from available scientific literature

sources. Since there is no single source of these criteria, they have been developed during research based upon the combination of literature analysis and empirical observation.

Making implementation plans and doing business according to strategy, are not overly important factors; nevertheless, at times they surmount the strategy. In the case of turbulent environment, which is one of the main characteristics of knowledge-based economy, it is not possible to foresee and evaluate everything. Therefore, strategy may be adjusted during its implementation process.

The last stage in the ICM process is the strategic control of ICM implementation. The systems used for strategic control are two: direct and recurring. Direct allows management to foresee the possible changes in the external and internal environment. Recurring provides information on the productivity and efficiency of operational actions. The process of strategic control covers three main stages (Jucevičius, 1998), on which the ICM strategy implementation strategic control stage was built. The specifics of monitoring will depend on the organization, but as in the case of audit, it will also be oriented towards the same elements: human capital, organizational capital and social capital. The monitoring models that are used for enlightening the results of intellectual assets portfolio management, and can be also used successfully for the strategic control of chosen and implemented ICM strategies.

This stage completes the ICM process; however, the total process does not end there because ICM is an inseparable part of organization's strategic management process, as previously concluded by the author. Thus, next activity is strategic control of corporate strategic management, where conclusions from IC area are analyzed along with conclusions from other functional areas management. From these, common decisions for the entire company are made, and the corporate or business strategies adjusted, if needed.

Section 3.2. of the dissertation is devoted for the analysis of results of empirical verification of the ICM model. Facts were gathered from the case study of two related knowledge organizations and discussed in the dissertation according to each stage in the ICM model, starting with the discussions of the overall strategic management processes found in the organizations.

Subsection 3.2.1. provides an assessment of the overall strategic management process in the researched knowledge organizations. Primary findings show that strategic management process in the knowledge organizations is not formalized and does not provide tangible documented results. The most frequently expressed stage of the strategic management process is environmental analysis. Information from the environment was collected and shared on the daily basis; during the observation it was systematized in the SWOT matrix several times. However, strategy formulation and goal setting were not apparent in the organization even in management positions. What was definite was the niche in which companies were operating. A goal setting was mainly expressed in yearly budgets. Nevertheless, analysis on how those goals are reached implied weaknesses in the strategy implementation activities. The dominant finding in

the analysis of organization's overall strategic management process is that in reality it is not as linear as presented in the management books, but instead is iterative and informal. Identification with the organization is mainly based upon the stable values and the belief of the members in the future of the organization.

Subsection 3.2.2. reveals, that ICM environment analysis stage in the ICM model is understood as a very useful activity in the organization. But the focus in this activity is very subjective depending upon the individual knowledge level of the organization's member. Knowledge residing in the organization is not inventoried, measured, benchmarked to the one existing outside the organization. Nevertheless, to do so was positively accepted by all respondents.

Subsections 3.2.3 and 3.2.4 represent the results from the ICM areas which were quite weak in over-all strategic management process of the researched organizations – strategy formulation and implementation. However, researched pre-conditions needed for implementation stage were very positive in both organizations where case study was performed. Similar results were captured during the interview of experts from analogous organizations.

Subsection 3.2.5. deals with the ICM strategic control stage empirical verification. Collected findings revealed that this stage needed most of the descriptive adjustments. Criteria for IC control and measurements needed were the most difficult aspect for conceptual understanding of the model. More measurement criteria, ratios and measurement techniques were introduced to the model, but presented in this subsection. IC accounting system suggested by Mouritsen, et al (2001) was supported for the generalization of the criteria for control selected by the company.

Subsection 3.2.6. discussed the possibilities for application of ICM model. They were researched according to the pre-conditions needed for knowledge management activities. 36 main pre-conditions are discussed, out of which managerial and cultural preconditions can be treated as favorable for model implementation. Concerning organizational preconditions, those which are directly related with the training on knowledge management and ICM or time allocating for knowledge management activities should be strengthen in the researched organizations. The other main aspect of researching possibilities for application of the ICM model was the emotional, communicative and cognitive convergence among the members making strategic decisions in the organization. In the researched organizations it was very positive towards the implementation of ICM.

The third part of the dissertation finalizes with the general recommendations for the application of the ICM model on a broader scale. On a macro level such recommendations focus to the informative and training activities of the ICM - its usefulness, specifics, importance, evaluation and reporting, in addition to monitoring of IC on the regional and country level. On the micro level the recommendation is to start implementing the model with one of the three main IC components depending upon the greatest importance for the specific organization. Much effort should be concentrated on

creating awareness and explaining IC concept in clear wording readily understandable by member of the organization.

In conclusion, the author of the dissertation suggests additional research directions to include the following: 1.) Further improvements of the ICM area focusing on the validation of developed strategic alternatives and a broader scale of researched organization and on the new techniques and methods supporting the enhanced ICM process model. 2.) Much effort should be placed on IC measurement direction development by applying qualitative research methods. 3.) Information systems suitable for ICM should be analysed, modeled and developed. 4.) Functional areas of ICM strategy implementation should be researched and suggestions presented on how they can be further developed to deliver needed tools and techniques for supporting ICM strategy implementation activities.

CONCLUSIONS

1. Nevertheless, the concepts of intellectual capital, intellectual assets and knowledge are interrelated, and in the intellectual capital management literature often used as synonyms; based on the theoretical analysis of the literature on the subject it might be stated that intellectual capital, intellectual assets and knowledge are different concepts.

Intellectual capital might contain both intellectual assets and knowledge, knowledge is one type of intellectual assets, and some intellectual assets and knowledge might not belong to intellectual capital.

The description of intellectual capital out of the three types mentioned is the broadest one; however, it is restricted by the criteria of potentiality to generate value, which distinguishes assets from capital. Furthermore, current IC definitions do not take into account the criteria of potentiality to generate value, which would distinguish intellectual assets and intellectual capital management activities. Taking that into account, the intellectual capital concept is revised in the dissertation:

Intellectual capital should be defined as intellectual assets having potential to generate value and belonging or by identified means available to the organization.

Here intellectual assets are perceived as valuable objects, related to intellect or its usage and belonging to some subject. Potential for generating value is understood as the ability of the assets to productively participate in the current or future value creation process, depending upon the strategic decision made by the subject using the asset. In other words, potential to generate value for specific subject is related to possible usage of those assets, while achieving the subject's goals.

2. The most frequently used scientific approach to the primary components of the intellectual capital structural model is too narrow and does not reflect the criteria of potentiality to generate value. In addition, the structural model itself is not detailed enough. The dominating structural model with three main components is further developed in the dissertation with regard to concepts and structure. Main parts of the IC structural model and their upgraded concepts are the following:

a) **Human capital** – intellectual assets belonging to people or the organization individually or collectively and having potential to generate value for the organization.

b) **Organizational capital** – tangible and intangible intellectual assets belonging to the organization and having potential to generate value. The scope of organizational capital components is broadest; therefore, it needs to be structured further downwards. According to the essence of its knowledge, it needs to be structured into three groups, defined as follows:

- **Proprietary capital** – organization's intellectual property having the potential to generate value. Intellectual property here is treated as legally protected intellectual assets.

- **Infrastructural capital – knowledge** that have potential for generating value and can be captured in the organization's systems, mechanisms, structures, processes, methods or technologies.

- **Innovational capital** – organization's **intangible** knowledge and abilities, which have potential to foster innovations development in the organization.

c) **Social capital** – intellectual assets with a potential for generating value which reside in the organizations relationships with the external stakeholders and within the organization's reputation.

3. Theoretical analysis of intellectual assets management, ICM and KM allows allows further development of the ICM concept and distinguishes this activity from other related processes.

3.1. **Intellectual capital management is a process**, where a subject strives to reach organizational goals by coordinating, organizing and controlling business processes. These processes are related to inventory, evaluation of the organization's intellectual assets potential, and ensuring the possibility of efficient exploitation of identified intellectual capital in addition to executing leverage.

3.2. The **ICM management object** is intellectual assets. Once the assets are identified and their potential for generating value is evaluated, the management object becomes IC.

3.3. **KM is a process for executing ICM strategies**: ICM is considered at the strategic management level. It focuses on value creation and extraction, and its goals are to create and leverage intellectual assets and to improve a firm's value creating capabilities from a strategic perspective. On the other hand, KM focuses on tactical and operational implementations of knowledge related activities. KM is concerned with detailed knowledge-related activities to facilitate knowledge creation, capture,

transformation and use. Its ultimate goal is to pursue a more intelligent organization through creating and maximising IC. KM may have its own operational level strategies.

4. Intellectual capital management represents the strategic management level of the organization, and the ICM strategy itself is to be assigned to the functional strategies level.

The purpose of ICM function is to show main ICM goals and directions, during formulation of ICM strategy, and various operational knowledge management, organizational behavior management, human resources management and other modern management theories and methods, while ensuring its successful realization.

In that regard, intellectual capital management object is the entire or part of intellectual assets composition (intellectual capital), which can be addressed as organizational resources in the value creation chain, and the maximization and development of those resources. The resources, often mentioned while discussing the essence of ICM, can be neither corporate nor business level strategic goals, because the scope of mentioned strategies is different. Maximization of resources productivity striving to support organization with core competencies and looked for by intellectual capital management specialists, is actually nothing but the scope of the organizations functional management level; and while intellectual capital is addressed at the strategic level, it is strategic functional level activity. This strategy is very closely interrelated to other functional strategies of the organization and in some places overlaps; therefore, it is to be treated as integral functional area. Its realization ensures the success of the organization corporate and business strategies implementation.

5. Qualitative methodology and constructivistic paradigm fit researching ICM phenomena better than application of quantitative research methods and positivistic paradigm. Intellectual capital Qualitative interpretations of the findings and their reasoning are needed in order to understand and explain the phenomena, and to construct artifacts needed for improvement of the area.

6. Based upon theoretical analysis of traditional strategic management models, which reveals that current models do not incorporate the IC aspect, organization's strategic management process is revised to include intellectual capital, considered a critical resource for the organization operating under the conditions of changed business environment and management paradigm.

Intellectual capital and its management is to be included in the three out of five organization's strategic management process stages, which revises the strategic management process model as follows:

a) In the stage of environmental analysis while evaluating the internal organization's environment and identifying organization's advantages and disadvantages, the elements describing internal environment should be extended by the IC, and the analyzed resources extended by knowledge and other intellectual assets.

b) In the strategy implementation stage, while formulating functional strategies and realizing them, current functional areas should be extended by the ICM area.

c) In the stage of strategic control stage, additional parameters, which represent ICM effectiveness in the ICM strategy implementation stage, should appear.

7. The analysis of available ICM models and ICM activities allows modeling ICM process on the basis of strategic management process and integrating it into the strategies implementation stage of overall organization's strategic management process model.

Scientific literature lacks models, that represent the ICM process and reflect its strategic aspect. Most ICM models formulated up to now are structural, i.e. they represent IC structure, and relationships of the elements, but not the ICM process. There are only a few models that represent the process, but they are closer to intellectual assets - not intellectual capital concept - and they clearly lack strategic aspect. Therefore, ICM can be best modeled on the basis of strategic management process, excluding mission, vision and goals formation stage, as it is not the prerogative of the functional area.

7.1. The dedication of ICM stages and their principal results are the following:

a) The primary goal and result of the **environment analysis stage** in ICM model is to select assets, which have the potential to generate value with regard to strategic decisions from the whole organization's intellectual assets lists, and draft the IC elements list, in which each element is dedicated a position in the capital levels matrix according to its availability, functionality and productivity.

b) The result of **ICM strategies formulation** stage is: selected ICM strategies according to IC components; and, formulated common ICM strategy. Possible ICM strategies are the following: protect IC, leverage IC, increase IC availability, invest into IC, not invest into IC, and transfer IC.

c) The objective of **ICM strategies implementation stage** is, after ensuring that organizational structure, culture and business processes are suitable for the implementation of the chosen ICM strategy, to execute knowledge management, organizational behavior management, human resources management, relationship marketing and other modern management processes.

d) The objective and result of **ICM strategic review stage** is, after defining factors and their criteria for review, to collect operational activities information, based on which decision on the success of ICM strategy implementation is made or bottlenecks to be eliminated are determined.

8. The possibilities and limitations for the implementation of the model revealed by the empirical research in the knowledge organizations for the evaluation of ICM model integrating strategic management and ICM processes are the following:

8.1. ICM modeled at the strategic management level might be applied in the knowledge organizations, because:

a) Managers of organization perceive the usefulness of ICM, understand that ICM decisions should be made in the strategic level, and accept the model quickly.

b) The primary knowledge subject understands the usefulness of capturing intellectual assets, evaluation, and furthering their use by providing services to clients, and underlines the importance of knowledge and knowing exchange in the team.

c) Cultural preconditions are very strong in the knowledge organizations and most of the managerial preconditions are also expressed strongly.

8.2. Limitations to the ICM model application in the knowledge organizations are related to the lack of material resources for financing employee's time needed for ICM, acquiring of information systems and adaptation of the motivational system, and lack of knowledge about KM and ICM.

PUBLICATIONS

The main findings of the dissertation are presented in the following publications in the research journals recognized by Science Council of Lithuania:

1. Renata Mikulėnienė, Robertas Jucevičius. Intelektinis kapitalas: sampratos ir sandaros interpretacijos [Intellectual capital: concepts and contents interpretations]// Social sciences. Kaunas: Technologija, 2000, nr. 3 (24), p. 65-76.
2. Renata Mikulėnienė, Sigitas Drašutis, Robertas Jucevičius, Elita Miliauskaitė. Intellectual Capital Management Modeling: with Empirical Implications of UML Improvements in a Case from Lithuania// Engineering Economy. Kaunas: Technologija, 2003, nr. 4 (35), p. 77-84.

Other publications:

3. Renata Mikulėnienė. Žmoginio kapitalo koncepcija ir pagrindinės charakteristikos [Concept and main characteristics of human capital]// Economy and management–2000: Realities and methodology: Material of conference announcements, Kaunas: Technologija, 2000, p. 286-288.
4. Renata Mikulėnienė. Atgimstant kapitalo prasmė intelektinio kapitalo studijose [Reviving meaning of capital in the intellectual capital studies]// Scientific conference of doctoral students „Youth is seeking for progress 2001”, Kaunas: Lithuanian University of Agriculture, material of conference announcements, 2001, p. 162-168.
5. Renata Mikulėnienė. Intellectual capital management model for knowledge based organization// CD of first doctoral consortium and conference announcements of 24th McMaster World Congress, 2003, Hamilton, Canada: McMaster.

ABOUT THE AUTHOR

Education. Renata MIKULĖNIENĖ has graduated the following studies:

- Kaunas district Domeikava secondary school, 1993. Awarded with golden medal for excellent results.
- Bachelor's degree in Business Administration at Kaunas University Technology, 1997.
- Master's degree in Business Administration at Kaunas University Technology, 1999. Awarded diploma with honor. Master thesis recognized as the best in the management area that year.
- Doctoral studies in Social Sciences at Kaunas University Technology, 2003. Five courses passed with excellent evaluations, participated in conferences in Lithuania and abroad, prepared the dissertation.

Experience:

- Since 1997 managing company and main projects in IT business group "NRD".
- 2000-2001 consulted private companies on the e-commerce solutions establishment.
- Since 1999 lecturing in the Department of Strategic Management, Kaunas University of Technology ("Entrepreneurship", etc.), advising for preparation of the bachelor graduate papers.

Research interests: intellectual capital management and strategic business development, entrepreneurship, information technologies solutions development and IT projects management.

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Renata Mikulėnienė

REZIUOMĖ

Intelektinio kapitalo valdymas (toliau IKV) yra nauja vadybos sritis, atsiradusi pasikeitus verslo aplinkos sąlygoms, kai žinių ir kito intelektualinio turto valdymas tapo ypač svarbus kuriant organizacijų strateginį konkurencinį pranašumą. Naujoje „žinių eros“ (Chatzkel, 2003), „žinių ekonomikos“ (Fitz-enz, 2000, Seetharaman ir kt., 2002) ar tiesiog „naujosios ekonomikos“ (Teece, 1998) pavadinimą įgavusioje aplinkoje organizacijoms tampa ypač svarbu tinkamai panaudoti, kapitalizuoti turimus intelektualinius išteklius, taip pat sugebėti pritraukti ir į vertės kūrimo grandinę įjungti išorinius prieinamus intelekto rezultatus. Intelektinio kapitalo (*angl. Intellectual capital*) valdymo teorijos ir modeliai pristato ir nagrinėja intelektualinių išteklių klasifikavimą, įvertinimą, prieinamumo didinimą bei panaudojimą. Intelektinį kapitalą iš kitų susijusių vadybos objektų išskiria tai, kad jis yra organizacijose strategiškai svarbus vertės kūrimo grandinės veiksnys. Būtent savo potencialumu generuoti vertę jis išsiskiria iš kitų naujomis verslo sąlygomis akcentuojamų objektų: žinių, inovacijų, tinklų, intelektualinio ar nematerialaus turto. Visi minėti su intelekto rezultatu susiję objektai taip pat gali būti strategiškai svarbūs. Anot iš išteklių teorijos kilusios žiniomis grįstos organizacijos teorijos (Spender, 1996 b; Grant, 1996 b ir kt.), žinios yra pagrindinis pridėtinės vertės generavimo instrumentas, pasižymintis pagrindinėmis išteklių teorijos pabrėžiamomis charakteristikomis: yra retas, vertingas ir sunkiai imituojamas konkurentų. Tačiau intelektualinio kapitalo (toliau IK), kaip naujo vadybos objekto, atsiradimas labiausiai susijęs su poreikiu atskirti strategiškai svarbius intelektualinius resursus, įskaitant ir pagrindinę jų grupę – žinias, nuo visų kitų organizacijoje ir jos aplinkoje esančių intelektualinių išteklių, bei aprėpti ir integruotai valdyti kelioms gretutinėms „minkštojo“ valdymo sritims priklausančius objektus: žinias, kultūrą, intelektinę nuosavybę, inovacijas bei rinkos ryšius.

Intelektinio kapitalo valdymas, kaip nauja valdymo srities iniciatyva, kilo atsiradus poreikiui apčiuopti ir įvertinti organizacijose sukauptą intelektualinį turta, kurio neatskleidžia iki šiol egzistuojanti tradicinė dvipusio balanso sistema. Tačiau pagrindinė įvertinimo nauda atsiveria, kada po įvertinimo imamas priemonių didinti IK. Todėl natūraliai šalia intelektualinio kapitalo įvertinimo siekių atsirado poreikis valdyti strategiškai svarbius intelektualinius išteklius, galinčius duoti naudą kuriant produktus ir teikiant paslaugas.

Intelektinio kapitalo svarbos organizacijoje suvokimas sąlygojo vadybos tyrinėtojų ir vadovų, dirbančių įvairiose srityse – strateginio valdymo, organizacijų teorijos, organizacijos elgsenos, žinių valdymo ir kt. – dėmesį. Iki šiol mokslininkų pastangos šioje naujoje vadybos mokslo erdvėje pasirodžiusiuose darbuose apibrėžti ir susisteminti naujus veikimo būdus bei geriausius praktinio veikimo pavyzdžius koncentruojasi ties keliomis pagrindinėmis susijusiomis kryptimis:

- žinių ir intelektualio kapitalo identifikavimu, klasifikavimu ir lyginamąja jų valdymo teorijų ir modelių analize (Hall, 1989, Itami, 1991, Ross ir kt., 1998, Stewart, 1998, Brooking, 1996, Edvinsson ir Sullivan, 1996);
- žinių valdymo (toliau ŽV) procesų, jų prielaidų bei galimų strategijų analize ir plėtote (Winter, 1987, Nonaka, 1991, Teece, 1998, Teece, 2000, Spender ir Grant, 1996, Stankevičiūtė, 2002);
- intelektualio kapitalo vertinimo svarbos išryškiniu, vertinimo modeliais, rodikliais, technikomis, įskaitant ne tik organizacijos lygmenį, bet ir regioninį bei šalies lygmenis (Sveiby, 1997, Mouritsen ir kt., 2001, Bontis ir kt., 1999, Danijos prekybos ir pramonės agentūra, 2000,);
- atskirų intelektualio kapitalo komponentų svarbos, jų valdymo savitumo ir galimybių, komponentų sąryšių nustatymu (Norton, 2001, Josefek ir Kaufmann, 1998);
- intelektualio turto identifikavimu, įvertinimu ir įteisinimu (Itami, 1991, Klaila ir Hall, 2000, Joia, 2000, Lev, 2001, MERITUM, 2002).

Visos minėtos kryptys yra labai svarbios ir reikalingos, tačiau jos fiksuoja tik tam tikrus naujo strateginio išteklių valdymo funkcijos aspektus, o ne visumą. Dauguma kryptių – vertinimo kryptis, žinių valdymo procesus analizuojanti kryptis ar atskirų intelektualio kapitalo komponentų valdymo kryptis –laikytinos operatyvinėmis, nes jose dažniausiai orientuojamasi į operatyvinę veiklą, nors ir siekiant strategiškai svarbių tikslų.

Intelektualio kapitalo vertinimo srities tyrinėtojai koncentruojasi ties intelektualio kapitalo identifikavimu ir vertinimu, telkiasi rodiklius, indikatorius, vektorius ir dėlioja juos pagal kategorijas (Ross ir kt., 1997), perspektyvas (Kaplan, Norton, 1992) ar net sudaro daugiamaciūs intelektualio kapitalo žemėlapius (Heng, 2001). Žinių valdymo procesų krypties šalininkai (Allee, 2000, Sveiby, 1998) ginčijasi dėl intelektualio kapitalo, kaip žinių atitiktens, kodifikavimo. Atskirų IK komponentų valdymo krypties atstovai (Norton, 2001, Josefek ir Kaufmann, 1998, ir kt.) savo darbuose nagrinėja atitinkamus savo sričių komponentus ir jų valdymą. Kitos kryptys, pavyzdžiui, žinių valdymo strategijų rengimo kryptis (Schulz ir Jobe, 1998, Nonaka ir Takeuchi, 1995), taikosi aprėpti žinių strateginio valdymo lygmenį, tačiau, žiūrint iš mažos organizacijos pozicijų, siūlomi sprendimai yra sunkiai pritaikomi praktikoje, nes savo esme yra panašūs į organizacijos reiškinių apibendrinimą, bet ne į sąmoningai strateginio valdymo metu generuojamas strategines žinių valdymo alternatyvas, iš kurių pasirenkama geriausiai išorinės ir vidinės organizacijos aplinkos derinį atitinkanti galutinė žinių valdymo strategija.

Populiarėjančios IK sampratos traktuotė žvelgiant tik iš vieno komponento valdymo perspektyvos, tampa vis labiau ribota. Intelektualio kapitalo valdymas vargu ar gali būti priskirtas vienai kuriai tradicinei funkcinės veiklos sričiai. Tai valdymo reikalaujanti nauja sritis, apimanti visas ar daugelį kitų vadybinių veiklų ir labiausiai susijusi su įmonės strateginių sprendimų priėmimo lygmeniu, nes kaip tik ten yra geriausiai matomas intelektualinių išteklių sancaupų potencialumas generuoti vertę.

Mokslinėje literatūroje apie IK ir ŽV valdymą *neaptikta nė vieno šaltinio, kuriame IKV būtų nagrinėjamas kaip strateginio valdymo funkcija, neatsiejama nuo strateginio valdymo proceso*. Priežastis galbūt slypi tame, kad IKV sritis dar labai jauna ir, kaip rodo pasaulyje atliekamų tyrimų rezultatai (Moffett, McAdam ir Parkinson, 2002), dar labai nebrandi, tačiau, kita vertus, pačią intelektualinio kapitalo strategijos sąvoką galima atsistatinti aptikti kai kurių autorių straipsniuose, kur paminima, kad egzistuoja IKV strategija (Nickerson, 1998), o pagrindinės intelektualinio kapitalo valdymo kryptys yra jo matavimas ir strateginis valdymas (Ross ir kt., 1997).

Šia daktaro disertacija siekiama rasti atsakymą į vieną iš dar neatsakytų šios naujos tyrimų erdvės klausimų, – *kaip intelektualinio kapitalo valdymas gali būti integruotas į organizacijos strateginio valdymo procesą?* Ieškant atsakymo svarbu sudaryti IKV, kaip strateginio valdymo proceso dalies, teorinį modelį, kuris atskleistų šios plačios, sudėtingos ir kontraversiškos veiklos esmę, atspindėtų ją IK struktūros ir valdymo proceso atžvilgiu. Modeliuojant IKV organizacijos strateginiame lygmenyje, svarbu išspręsti ne tik paties IK, kaip strateginio išteklių, valdymo klausimą, bet ir atsižvelgti į platesnį organizacijos kontekstą – visą organizacijos strateginio valdymo procesą. *Nepavyko aptikti nė vieno strateginio valdymo proceso modelio, kuris apimtų disertacijoje nagrinėjamą naują vadybos objektą – IK*. Kaip tik IK, būdamas naujomis verslo sąlygomis strategiškai svarbius išteklius, turi būti įvertintas kartu su kitais strategiškai svarbiais išteklių prieš priimant organizacijos strateginius sprendimus dėl vizijos, misijos bei strategijos ir tada valdomas siekiant šių realizavimo. Pasak Grant (1991), įmonės IK turi būti vienas iš centrinių analizės sričių kuriant strategiją ir viena iš pagrindinių konstantų, pagal kurią įmonė gali sukurti savo identitetą ir apibrėžti savo strategiją. IK yra ir vienas iš pagrindinių įmonės pelningumo šaltinių.

Mokslinės problemos buvimą iliustruoja ir patys naujausi darbai ne tik IKV, bet ir strateginio valdymo srityse: „Žmonės ir kiti intelektualiniai ištekliai paprastai priskiriami svarbiausiems ištekliams vertės kūrimo procese. Strategijos kūrimo tokiuose kontekstuose nepalaiko jokie tinkami modeliai ar strategijos priemonės” (Rylander, Peppard, 2003, p 316) arba „strateginio valdymo srityje vyrauja modeliai ir teorijos, kurios, kaip gairės, yra mažai prasmingos praktikams, veikiantiems žinių imliose organizacijose greitai besikeičiančiomis aplinkos sąlygoms... Atrodo, kad nėra nė vieno modelio, kuris apimtų visas atakuojamas sritis” (Rylander, Peppard, 2003, p 317-318).

Pagrindinis *tyrimo tikslas* sprendžiant šią vadybos mokslo problemą, yra *pasiūlyti intelektualinio kapitalo valdymo modelį, integruojantį strateginio valdymo ir intelektualinio kapitalo valdymo procesus*.

Siekiant tikslo, iškelti šie *tyrimo uždaviniai*:

1. Atlikti intelektualinio kapitalo koncepcijos ir struktūros teorinę analizę.
2. Apibrėžti intelektualinio kapitalo valdymo vietą organizacijos valdymo sistemoje.

3. Argumentuoti IK valdymo modeliavimo integruojant IKV ir strateginio valdymo procesus metodologiją.
4. Remiantis strateginio valdymo ir IK valdymo teorijomis konceptualizuoti teorinį integruotą intelektualinio kapitalo valdymo proceso modelį.
5. Parengtą modelį empiriškai patikrinti.

Tyrimo objektas – žinių organizacija, kurioje intelektualinio kapitalo valdymas paprastai yra geriau suvoktas ir labiau išreikštas negu tradicinėje organizacijoje.

Tyrimo dalykas – intelektualinio kapitalo valdymas.

Tyrimo metodologija ir metodai. Disertacinio tyrimo metodologinį pagrindą sudaro šios teorijos ir paradigmos:

- Intelektinio kapitalo valdymo ir vertinimo teorijos ir modeliai.
- Hermeneutine paradigma grindžiama kokybinių tyrimų metodologija.
- R. Jucevičiaus strateginio valdymo proceso modelis (1998).
- Organizacijų teorijos, sociologijos ir filosofijos literatūroje vyraujančios epistemologijos (ypač postmodernizmo paveiktas socialinis konstruktyvizmas), nusakančios intelektualinio kapitalo pagrindinių dedamųjų – žinių – prigimtį, esmę ir tapsmą.
- Žinių valdymo teorija, kuri yra pagrindas nagrinėti žinių valdymo ir intelektualinio kapitalo valdymo sąlyčio taškus ir skirtumus bei detalizuoti kitus intelektualinio kapitalo sandaros ir valdymo aspektus.
- J. Stankevičiūtės (2002) organizacijos žinojimo didinimo metodologija, kuria remiantis išskiriamos žinių valdymo veiklų prielaidos ir jomis pagrindžiami intelektualinio kapitalo valdymo modelio pritaikymo galimybių empirinio patikrinimo kriterijai.

Šioje disertacijoje teorinė diskusija grindžiama konstruktyvistine paradigma, o empiriniai tyrimai atliekami vadovaujantis kokybinių tyrimų metodologija, grindžiama hermeneutine paradigma. Tokia tyrimo metodologinė paradigma pasirinkta todėl, kad socialinių tyrimų metodologija teigia, jog pozityvistinė paradigma yra menkai efektyvi tuomet, kai tenka tirti sunkiai apčiuopiamus, subjektyvizmu pasižyminčius reiškinius. Organizacijos intelektualinio kapitalo, pirmiausia susijusio su intelektualinio turto potencialumu generuoti vertę, reiškiniu, būtent tokios savybės ir būdingos.

Tyrimo metodai. Teoriškai nagrinėjant problemą *daugiausia naudotasi mokslinės literatūros analize*. Daugumą mokslinės literatūros šaltinių sudarė užsienio literatūra, nes Lietuvoje IKV tyrimų kol kas yra tik užuomazgos ir publikuotų mokslinių straipsnių – vienetai. Mokslinės literatūros analizės metodas taikytas norint išryškinti įvairių IK interpretacijų prasminius ir struktūrinius skirtumus, detalizuoti IK pagrindinių dedamųjų struktūrą, išryškinti IK ir žinių valdymo sričių skirtumus bei nustatyti IKV vietą organizacijos valdymo lygmenyse. Toks analizės metodas pasitelktas ir tikslinant

strateginio valdymo proceso modelį integravus į jį IKV, taip pat konstruojant bei teoriškai argumentuojant pastarojo modelį strateginio valdymo pagrindu. Naudotas ir žinių organizacijos „X“ (1999 – 2003 m.) vykdytas *veiklos stebėjimas, atvejų analizė ir interviu*. Galiausiai mokslinės literatūros analizės pagrindu pagrįsta IKV modelio pritaikymo galimybių nustatymo metodika.

Norint įvertinti sudarytą IKV modelį, buvo atliktas empirinis tyrimas žinių organizacijoje, kurioje sukuriama nemažai apčiuopiamo intelektualinio turto (pvz., programinės įrangos kodo). Visas empirinis tyrimas vykdytas kaip vieno atvejo analizė, atlikta stebint pasirinktos organizacijos veiklą, apklausiant jos darbuotojus bei analizuojant šios organizacijos ankstesnės veiklos atvejus. Siekiant didesnio empirinių duomenų patikimumo, pasitelktas ir išorinių ekspertų apklausos metodas.

Detaliai teorinio tyrimo metodologijai pasirinkti tyrimo metodai bei empirinio tyrimo vietos pasirinkimo motyvai argumentuoti ir empirinio įvertinimo projektavimas bei organizavimas pagrindžiami antrojoje darbo dalyje.

Darbo struktūra. Disertacinį darbą sudaro įvadas, 7 skyriai, sudarantys 3 darbo dalis, išvados, bibliografinis sąrašas (199 šaltiniai), 3 priedai. Pagrindinę darbo dalį (su įvadu ir išvadomis) sudaro 139 psl. Pateikta 12 lentelių, 17 paveikslų.

Pirmoji disertacijos dalis skirta IKV situacijos teorinei analizei, apžvelgti ir išanalizuoti iki šiol publikuoti su tyrimo problematika susiję veikalai. IK, kaip naujo vadybos objekto, analizė pradedama IK sampratos nagrinėjimu. Atliekama IK sąvokos sudėtinių dalių analizė ir formuluojamas IK apibrėžimas. Vėliau, atlikus esamų IK apibrėžimų analizę, IK apibrėžimas patikslinamas ir parodomi šio naujo objekto ypatumai, palyginti su kitais susijusiais ir sunkiai apčiuopiamais valdymo objektais. Toliau analizuojama IK struktūra, palyginamos esamos jos klasifikacijos išryškinami koncepciniai ir struktūriniai jų skirtumai ir pagrindžiama IK pirmojo lygmens elementų struktūra, kuri vėliau analizuojama toliau ir sudaroma detali kiekvieno iš trijų pagrindinių IK elementų struktūra (struktūrinis modelis). Pasitelkus esamas IKV teorijas ir modelius, atskleidžiami IKV ypatumai, nagrinėjami esami jo valdymo modeliai.

Antrojoje disertacijos dalyje pagrindžiama tyrimo metodologija, argumentuojama tyrimo organizavimo logika, pristatomi pagrindiniai teorinio modelio kūrimo metodologiniai aspektai bei pateikiama modeliui patikrinti skirta empirinio tyrimo metodika.

Trečiojoje disertacijos dalyje IKV teoriškai modeliuojamas, integruojant jį į strateginio valdymo procesą. Modeliuojant patikslinamas ir pats strateginio valdymo procesas – papildomas IK dedamąja. Aptariami teorinio modelio empirinio patikrinimo rezultatai. Remiantis jais patikslinamas sukurtasis modelis.

Mokslinis darbo naujumas ir teorinis reikšmingumas:

1. Patikslinta IK, kaip intelektualinio turto, turinčio potencialą generuoti vertę, koncepcija.
2. Patikslinta ir detalizuota IK struktūra bei jos struktūrinių dalių mokslinė traktuotė, pažvelgus į ją iš kitokios perspektyvos. Tam atlikti šie veiksmai:
 - a) apibrėžiant IK dedamąsias atsižvelgta į patikslintą IK sampratą ir intelektualinio turto potencialumo generuoti vertę charakteristiką;
 - b) IK struktūra pateikta kaip UML klasių diagrama;
 - c) pagrindinių IK dalių įvardijimas kritiškai peržiūrėtas ir patikslintas;
 - d) esami struktūriniai IK modeliai palyginti tarpusavyje ir su susijusių sričių modeliais (McKinsey „7S“ ir pan.); pagal gautus rezultatus IK dedamosios iš naujo sugrupuotos ir pasiūlyta nauja patobulinta IK struktūra.
3. Integruotoji IKV funkcija teoriškai pagrįsta kaip strateginio valdymo lygmens funkcija organizacijoje.
4. Strateginio valdymo proceso modelis patikslintas išryškinus IKV kaip integruotą organizacijos veiklos funkciją.
5. Pasiūlytas IKV modelis, integruojantis strateginio valdymo ir IKV procesus.
6. Pirmą kartą IKV modeliuoti pasitelkta unifikuota modeliavimo kalba UML.

Praktinis darbo reikšmingumas:

1. Patikslintasis strateginio valdymo modelis leidžia organizacijoms prieš priimant strateginius sprendimus įvertinti savo IK kaip vieną pagrindinių strateginės vertės generatorių.
2. Sukurtasis IKV modelis, taikytinas visos organizacijos strateginio valdymo proceso korporacinių ir verslo strategijų įgyvendinimo etape, suteikia vadovams detalias gaires, kaip suformuluoti funkcinę IKV strategiją ir ją įgyvendinti. Pasiūlomos strateginės IKV alternatyvos.

Mokslinio darbo rezultatų paskelbimas. Jie paskelbti penkiose mokslinėse publikacijose, iš kurių dvi – Lietuvos leidiniuose, išrašytuose į Mokslo ir studijų departamento patvirtintą sąrašą.

Tyrimo rezultatų įdiegimas. Sukurtasis modelis pritaikytas tироje programinę įrangą kuriančioje žinių organizacijoje.

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