

Model of Strategic Analysis Tools Typology

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With the growing number of tools to be used for strategic analysis it is getting more and more difficult to make a choice. This problem has been tackled by working out different taxonomies of tools of strategic management and planning which include number of tools used for strategic analysis. Following the review of the available taxonomies it has been found that (1) they failed to encompass all tools classification criteria necessary for strategic analysis, (2) they were not oriented to the classification of strategic analysis tools and to the highlighting specific typological features of the tools used for strategic analysis.

In this article the analysis of the available taxonomies performed enabled to select 41 tool to be used for strategic analysis which were later included into the "expert evaluation questionnaire of strategic analysis tools". All of them were theoretically divided on the framework of certain classification attitude. During the study, the classification of tools to be used for theoretical strategic analysis has been studied in detail according to 19 classification criteria / indicators. By comparing practical and theoretical tools taxonomies the classification criteria were selected and analyzed in detail which are equally important both in practical and theoretical respect. On the framework of this the "questionnaire of strategic analysis tools expert evaluation" was formed. The correspondence survey of experts using anonymous questionnaire has been chosen for the study.

As the result of this paper, it was stated that the evaluation of the tools of strategic analysis according to the 19 chosen criteria has been partly justified. By means of this study the tools can be classified according to 16 different features. Thus, the 41 tool typological model has been comprised for strategic analysis of the used tool. According to the judgment of the authors of this paper, this will give the possibility in the future not only to compare the above mentioned tools with each other, but also to include and position new tools to be used for strategic analysis. The typological model enables to form the groups of homogeneous tools of strategic analysis according to some specific criteria (sets or portfolios). Such groups can help to more fully study the tools of strategic analysis, as well as their investigation, research and modification.

The designed typological model makes it possible to form individual portfolios of the tools of strategic analysis for the managers of various organizations according to the previously stated features or characteristics. By means of the designed model, the managers would be able to choose such tools that would be more informative.

Besides, the organization executives would also be able to more easily choose the tools that would not duplicate the information of each other. This will allow the leaders to more effectively use the tools of strategic analysis.

The typology of the strategic analysis designed for the organization leaders, especially the beginners, will let them more quickly and purposefully choose the tools for strategic analysis from a great variety of tools. This is especially important for the leaders of Lithuanian organizations, who make their first steps in the field of strategic management and planning. Such leaders have to choose the tools and their combinations to satisfy their needs and identify the specific situation of the enterprise.

Keywords: *tools, strategic analysis, taxonomy, strategic management, strategic planning.*

Introduction

Strategic analysis as an independent object of scientific study has been dealt with but insufficiently (Vaitkevičius et al., 2002). It has been reviewed, however, by comparatively numerous authors. It may be stated that some authors assigned more functions to strategic analysis (Lindblom, 1959); Cyert and March, 1963; Hammeresh et al., 1978; Porter, 1980; Stoner and Fry, 1987; Johnson and Scholes, 1993; Rowe et al., 1994; Grant, 1998; Peel et al., 1996; Jucevičius, 1998; Godet, 2000; Barnes, 2002; Analoui and Karami, 2003; Eng, 2004; McNamee et al., 2004), others much fewer (Clark and Scott, 1995; Clark, 1997). All these authors, however, state that strategic analysis is a fundamental element in forming the strategy of the organization. *Strategic analysis can be defined as understanding of organization and its environment with respect to long-range perspective.* Kaye and Dyason (1998) proved that if preliminary strategic analysis is missing, the organizations start implementing their strategy without having a clear set of goals.

The framework of strategic management and planning, the essential constituent and sustaining element is specifically the tools of strategic analysis. Nevertheless, they lacked attention for a long time. As early as 1980 Eilon marked the main shortcoming why the tools failed to attract attention in the subject of strategic management. According to Eilon, "the tool is only a means to obtain the result, but it is not a result in itself." This is because the tool defines only a part of the problem, rather than all the aspects of strategic decisions. Nevertheless strategic management tools play a important role in the process of strategic management, where they perform a number of different functions, sometimes even at a time (Eilon,

1980; Day, 1986; Langley, 1988 and 1991; Dyson, 1990). These functions include information generation, structuring of the object for the analysis, facilitating the exchange of ideas, assistance in coordination and control of strategic planning processes and symbolic significance (Clark and Scott, 1995). Properly selected strategic analysis tools and strategic planning techniques can ensure enough simple application of strategic planning in the decision-making process of the organization.

Presently it can be definitely stated that strategic analysis tools play an essential role in the strategic planning process, however, the studies of this area are still behind and are of fragmentary nature. It must be noted that most empiric studies on the usage of strategic management tools included only a couple of issues on strategic analysis tools into the general study of strategic planning process (Caeldries and van Dierdonck, 1988; Ackelsberg and Harris, 1989; Bazzaz and Grinyer, 1981; Wee et al. 1989).

Often, the researchers form small sets of similar tools; e.g. Walt et al. (1989) studied the usage of only six planning tools in New Zealand according to a modified version by Hooley (1984). Several authors presented exemplary sets of strategic analysis tools specifying them as an instruction for the managers:

- 1) Webster et al. (1989) formed most frequently used 30 tools set for strategic planning.
- 2) Clark (1997) combined 33 methods of strategic analysis with the model of strategic management process.
- 3) Miles et al. (1997) revealed the usage of several analysis tools in agricultural companies, thus highlighting the contextual usage of analysis tool.
- 4) Rigby (2001 b) studied the application of 25 main management tools used for strategic analysis and revealed that strategic analysis tools play a relatively important role in the organizational process.

Upon the review of the mentioned studies, it was found that they can relatively be referred to as taxonomies. For example, Webster et al. (1989) on forming the set of 30 strategic planning tools and techniques described the tools in terms of nine features. This taxonomy encompasses tools and techniques which in a narrower context may be defined as strategic analysis tools, nevertheless, several classification criteria are meant to relate the tool with the strategic planning process. This is to show that the taxonomy formed by Webster et al. (1989) is meant to validate the relation of the tools with the strategic management process. This taxonomy, as one of the first ones, joins such things as: 1) data entry definition in terms of contents and form necessary for the tool, 2) the definition of the information obtained by means of the tool in terms of contents and form, 3) the time required for the application/adaptation of the tool, human and financial resources, as well as skills necessary to use the tool and the need to use a computer. Webster's et al. (1989) taxonomy provided a lot of theoretical information on the practical use of the tool. This taxonomy, however, according to the authors' opinion, had a couple of relative disadvantages: 1) it fails to reveal the nature and the primary purpose of the tool, and 2) it fails to deter-

mine the role of the tool in the decision-making process

Next taxonomy of strategic management tools was developed only in 1997. It was presented by Clark (1997). The set of tools formed by the author can be identified as taxonomy, though Clark does not formally relate the results of his study to the concept of taxonomy. Clark and Scott (1995), Clark (1997) studied actual applicability of 66 strategic management tools in the New Zealand and UK – based companies. The researchers stated that the organizations commonly used 33 tools for strategic management. The author described them referring to 32 steps of strategic management process. Clark devotes five tools for each stage in the organizations investigated and used for this purpose. In the formed taxonomy of strategic management tools the tools are positioned according to their practical application in specific steps of strategic management. According to Clark and Webster et al. (1989), the taxonomies are partially similar: they both have a definite relative with the strategic management (or planning) process when relevant tools are ascribed to each particular stage. The taxonomies mentioned have several differences: Clark's strategic management process is more detailed than Webster's et al. Therefore, in effect, Clark has expanded the definition limits of Webster's et al. taxonomy. Nevertheless, both taxonomies, according to the authors, have at least several identical disadvantages: 1) they fail to reveal the nature and primary purpose of the tool and 2) they fail to define the place of the tool in the decision-making process rather than in the process of strategic management or planning.

Miles et al. (1997) performed the research which dealt with the application of seven strategic planning techniques in the USA agricultural sector. Compared to the taxonomies discussed above, this set of strategic planning techniques was specific in that the application of the tools mentioned in agricultural companies was compared to that in other corporations. The established differences between the analyzed tools enable to state that the tools can be divided with regard to their place in the strategic management or planning process.

Rigby (2001 a, 2001 b) formed another rather significant taxonomy. This author studies the usage of 25 main management tools by Top Managers of North American organizations, which included several tools used for strategic management. Since the latter taxonomy, equally to Clark's (1997) was derived from practical application of tools, it uses the rating principle in dividing the tools. Rigby divided 25 above mentioned principles according to three criteria: 1) the frequency of usage of specific tools in the organizations studied, 2) satisfaction form using a particular tool, 3) efforts necessary to use a tool. Rigby's taxonomy differed from others in that he selected such relatively "sophistic" criteria as satisfaction and efforts. According to the authors of this article, the efforts can partially be identified as the category generalizing Webster's et al. (1989) criteria: time necessary to apply the tool, human and financial resources and skills necessary for using the tool as well as the need for the computer. The actual application taxonomy of management tools formed by Rigby as well as those formed by the authors mentioned can be characterized by the same disadvantages. Rigby's taxonomy fails to disclose the nature

of particular tools, their primary purpose; also, it lacks the definition of the role of the tool in a decision-making (rather than strategic management) process.

In summing up the results of the literature review, it can be stated that up to now much has been done in the area of systemizing tools. It has to be noted, however, that the taxonomies discussed lack clear identification of the identity of tools. The latter reason restricts the decision of the organization as to when and which strategic analysis tools should be used. The cases when the organizations try to avoid selecting certain tools are also frequent, because they are not certain whether or not their application will ensure the solution of the problems. The formation of the typology of strategic analysis tools will provide the possibility for the organizations to compare their strategic analysis tools based on uniform criteria and decide more objectively on the selection of tools for settlement of the problem.

The objective of the research is to form a typological model of strategic analysis tools with reference to theoretical analysis and expert's evaluation and to establish criteria for selection of strategic analysis tools.

The expert evaluation methods for particular strategic analysis tools

Definition of expert evaluation objects

In analyzing the studies reviewed, it has been established that for the most cases the taxonomies dealt with

the same tools, only, they are named differently. Such situation brings about confusion. For example, one of the most commonly used tool "Mission statement" was named as "Mission", "The formal statement of mission and objectives" and "Mission and vision statements". Another example is "Portfolio analysis" identified as "Portfolio analysis", "Portfolios", "Boston consulting group matrix". Discrepancies like these were numerous. They were all analyzed and evaluated and given in the article under the unified names.

In the taxonomies discussed for the most part six strategic analysis tools, e.g. SWOT, Portfolio, Models, Benchmarking, Core competences, Scenarios and Mission were analyzed. They were included in three of the four taxonomies reviewed. Ten tools were included in at least two sets, e.g. Critical success factors, Delphi, Financial ratios, McKinsey 7S, Market opportunity analysis, Process mapping, Focus groups, Competitor analysis, Porter's 5F, Stakeholder analysis, Budgeting and Value chain.

The taxonomies analyzed contained 18 tools mentioned from 2 to 3 times. The biggest number of mentioned tools (20) was used by Clark (1997). Seventeen tools of them were reviewed by Webster et al. (1989). In studying the application of strategic planning techniques in the USA agricultural sector, Miles et al. (1997) analyzed only seven out of 20 tools mentioned. Among all taxonomies within the scope of those under consideration the least number of tools (only four) were studied by Rigby (2001 a, 2001 b).

Table 1

General-science Tools Used for Strategic Analysis by Organization

IDEOLOGICAL NATURE OF THE TOOL	NAME OF THE TOOL	TOOL'S ROLE IN DECISION MAKING PROCESS		NATURE OF RELATIONSHIP BETWEEN THE TOOL AND THE ENVIRONMENT				THE NECESSARY FACTUAL AND LOGICAL JUSTIFICATION	
		Decision-making tools	Data collection tools	Tools designed for internal environment analysis	Tools designed for the operating environment analysis	Tools designed for the analysis of uncontrolled of remote environment of the company	Indifferent with respect to environment and/or universal tools	Rationalistic	Sophistic
Multidisciplinary strategic analysis tools	Brainstorming	+					+		+
	Dialectic inquiry	+					+		+
	Nominal group technique	+					+		+
	Factor analysis		+				+	+	
	Trend analysis		+				+	+	
	Multidimensional scaling (MDS)		+				+	+	
	Cluster analysis		+				+	+	
	Discriminant analysis		+				+	+	
	Conjoint analysis		+				+	+	
	Delphi	+					+		+
Focus groups	+					+		+	
Economics and management theory methods as tools of strategic analysis	Market opportunity analysis		+		+				+
	Mkt. segmentation		+		+			+	
	Financial ratios		+	+				+	
	Process mapping		+				+	+	
	Product/ market mapping		+		+			+	
	PIMS		+	+				+	

The analysis of the taxonomies performed enabled us to select 41 tool to be used for strategic analysis which were later included into the “expert evaluation questionnaire of strategic analysis tools” (Tables 1 and 2). All of them were theoretically divided on the framework of certain classification attitude and on the attitude that the tools to be used for strategic analysis according to their role in the decision making process might be divided into: 1) decision-making tools; and 2) data collection tools. According to nature of relationship between the tool and the environment they may be divided into: 1) tools designed for internal environment analysis;

2) tools designed for the operating environment analysis; 3) tools designed for the analysis of uncontrolled remote environment of the company; and 4) indifferent with respect to environment and/or universal tools.

According to the necessary factual and logical justification, it is reasonable to divide them into 1) rationalistic tools; and 2) sophistic tools. According to ideological nature of the tool they may be divided into: 1) multidisciplinary strategic analysis tools; 2) economics and management theory methods as tools of strategic analysis; and 3) strategic management tools.

Table 2

Strategic Management Tools Used for Strategic Analysis by Organization

IDEOLOGICAL NATURE OF THE TOOL	NAME OF THE TOOL	TOOL'S ROLE IN DECISION MAKING PROCESS		NATURE OF RELATIONSHIP BETWEEN THE TOOL AND THE ENVIRONMENT				THE NECESSARY FACTUAL AND LOGICAL JUSTIFICATION	
		Decision-making tools	Data collection tools	Tools designed for internal environment analysis	Tools designed for the operating environment analysis	Tools designed for the analysis of uncontrolled remote environment of the company	Indifferent with respect to environment and/or universal tools	Rationalistic	Sophistic
Strategic management tools	Balanced scorecard		+	+				+	
	Benchmarking		+				+	+	
	Core competences		+	+					+
	Critical success factors		+		+				+
	Driving force		+		+				+
	Experience curves		+	+				+	
	Future study		+				+	+	
	Life cycle analysis		+				+	+	
	McKinsey 7-8		+	+					+
	Multiple scenarios	+			+				+
	Outsourcing	+		+				+	
	PEST		+			+		+	
	Porter's 5F		+		+				+
	Portfolio classification analysis		+		+			+	
	Reengineering	+		+				+	
	Simulation technique	+			+				+
	SPACE		+		+			+	
	SPIRE		+		+			+	
	Strategic gap analysis	+		+					+
	Value chain analysis		+	+				+	
SWOT		+				+		+	
Technology assessment analysis		+				+	+		
Vulnerability analysis		+		+				+	

Design of the study

The classification of tools to be used for theoretical strategic analysis has been studied in detail according to 19 classification criteria / indicators (Table 3). By comparing practical and theoretical tools taxonomies the classification criteria were selected and analyzed in detail which are equally important both in practical and theo-

retical respect. Thus, four criteria / indicators groups were formed:

- 1) The character of analyzed objects.
- 2) The sources of analytical information required for using the tool and collection of data.
- 3) The character of the tool-obtained information.
- 4) The tool-usage cost and sources.

The formed four criteria / indicator groups divided into 19 independent classification criteria on the framework of which the “questionnaire of strategic analysis tools expert evaluation” was formed.

The formed specification of indicators can be characterized by several features of strategic analysis. It has to be noted that often (especially in strategic management and planning textbooks) strategic analysis is identified as the set of cognition actions of internal activity and remote environment of the organization (Jucevičius, 1998). Therefore, strategic analysis tools classification models include criteria indicating the character of tool-analyzed objects. Other group of criteria is related to the completeness of the information produced, workability and practical application. The purpose of strategic analysis tools is to accumulate, systemize and prepare the information required for decision-making strategic management. The character of strategic analy-

sis, also together with the character of strategic management was highlighted by several indicators of human resources costs and their utilization, such as, the involvement degree of highest-level leaders, external experts and consultants, lower- and medium – level managers, specialists and ordinary employees. Typically to strategic analysis is the fact that in the process of information accumulation, staff of all levels is involved according to their competence. Some are more active in performing the organization’s internal activity analysis; others assist the organization to get to know the operational and remote environments.

To design strategic analysis typology several more universal tools assessment criteria have been used: sufficiency of the standard information collected in a routine way in a certain organization; sufficiency of informal information available at the organization and necessity of collection and aggregation of extra data.

Table 3

Specification of Study Criteria (Indicators) of the Tools to be used for Strategic Analysis

Criteria/ indicators	Specification of indicators		
Nature of objects analyzed by the tool	Tool analyses (is designed to analyze) internal environment of an organization		
	Tool analyses (is designed to analyze) operational environment of an organization		
	Tool analyses (is designed to analyze) remote environment of an organization		
Sources of analytical information required for the tool and data collection	Already collected data in the organization is sufficient for successful application of the tool. Simply, this information only needs analysis and generalization in the relevant aspect	Collected standard information is for the most part sufficient for successful application of the tool in an organization	
		Informal information which is available at the organization is enough for successful application of a tool	
	Successful application of the tool requires collection of extra data and aggregation. Reliable information sources have to be found, indicators have to be described and information unavailable up to now has to be collected and processed		
Nature of the information obtained by the tool	The tool produces “mono-field” versus “total” knowledge		
	Completeness of the information produced, workability and practical application	The tool-obtained information can be readily used to make a strategic management decision	
		The obtained result is a ‘ready to cook’ information which cannot be readily used or implemented, i.e. analytical processing should be continued	
Heuristics of information			
Costs and resources related to using the tool	Time-consumption		
	Material and financial costs		
	Human resources costs and modes of their use	Senior executives’ degree of involvement	
		External experts and consultants’ degree of involvement	
		Junior and medium-level executives’ degree of involvement	
		Organization specialists’ degree of involvement	
		Ordinary employees’ degree of involvement	
		Receptivity to knowledge, specialized competencies and technologies	Sophistic knowledge and specialized competencies
Sophistic technologies			

Table 4

The Harmony of Expert Evaluation (Internal Consistence), N=4

Expert	Factor	Corrected Item-Total Correlation (Item-total-correlation)	Cronbach’s Alpha Based on Standardized Items	Inter-Item Correlation, mean	Inter-Item Correlation, minimum	Inter-Item Correlation, maximum	Extraction Sums of Squared Loadings % of Variance	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
	L	i/tt	α	r_{mean}	r_{min}	r_{max}	%	KMO
Fourth	0.827	0.620	0.713	0.383	0.289	0.469	53.973	0.731
Third	0.718	0.482						
First	0.699	0.462						
Second	0.686	0.447						

Calculating Tool: The principal analysis of components

Another two indicators, relatively more universal, provide the assessment of totality of tool-produced cognizance and heuristics of the tool-obtained information. The rest four indicators serve to reveal the usage cost of the selected tool (not only of strategic analysis) and the indispensable resources, such as time, material and financial costs, sophistic knowledge and special competencies and elaborate techniques. The criteria discussed enable the identification of distinguishing features of any (not only of strategic analysis) tools; therefore, they can be used in future to form tool taxonomies for other disciplines or typological models.

The correspondence survey of experts using anonymous questionnaire has been chosen for the study. The empirical data obtained in this manner could later be processed by means of statistical-classification tools. The adequacy of experts' answers (Table 4) was tested by using the tools of "factorial analysis" and "Reliability". Having processed the data, it was determined that evaluations of experts and those of the author are homogeneous. The obtained high descriptive power of the factor ($L_{min}=0.686$; $L_{max}=0.827$) shows that the experts' opinions may be combined by forming the index of expert opinion. This statement is confirmed by high internal consistence of the factor ($\alpha=0.713$). It shows that expert assessment was characteristic of high internal consistence.

On that basis, a uniform index of expert evaluation of tools was developed which enabled to search for universal and more generalized classification of tools used for strategic analysis. As the third dimension of data presentation was avoided, there emerged an opportunity to ana-

lyze all the tools according to the number of n-criteria simultaneously (*in corpore*). For this purpose the Multi-dimensional scaling (MDS) was used (Merkys et al., 2001). The classification results are reflected in Figures 1, 2, 3 and 4.

All the tools presented in the survey were described by giving their English name, Lithuanian equivalent, the application characteristics (what is carried out) of the tool and the result of the application of the tool (what is produced). The description is followed by 19 classification criteria (indicators) presented for the evaluation in the three-stage Likert scale.

Four experts took part in the evaluation of particular tools. Three of four were directly connected with the subject of strategic management. Two of the experts were Habilitated Doctors, other two are Doctors. Out of four three experts represented strategic management and one was a representative of methodology of social sciences. The latter was included because relatively a considerable number of tools used for strategic analysis were taken from social sciences methodology.

The correspondence technique was chosen to avoid direct contact with the expert leading to the possible direct influence on the expert's decision, while survey by using anonymous questionnaire was chosen to achieve the experts' honesty. Its application proved to be correct because the experts identified the objective reasons absolutely openly why they had not evaluated one or another tool by particular criteria. The objective empirical data obtained this way not only provided the possibility to classify the tools to be used for strategic analysis according to the 19 criteria, but also determine their validity.

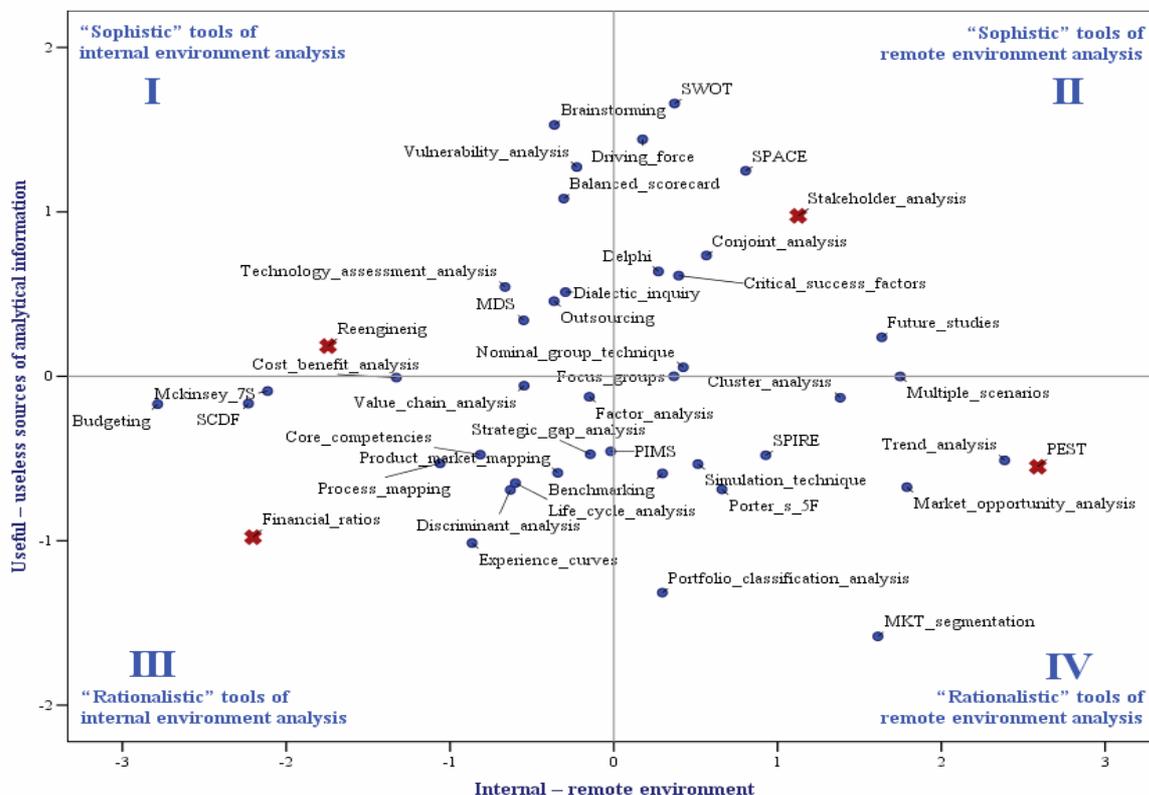


Figure 1. The tool classification according to the nature of the analyzed object and the need for the sources of analytical information

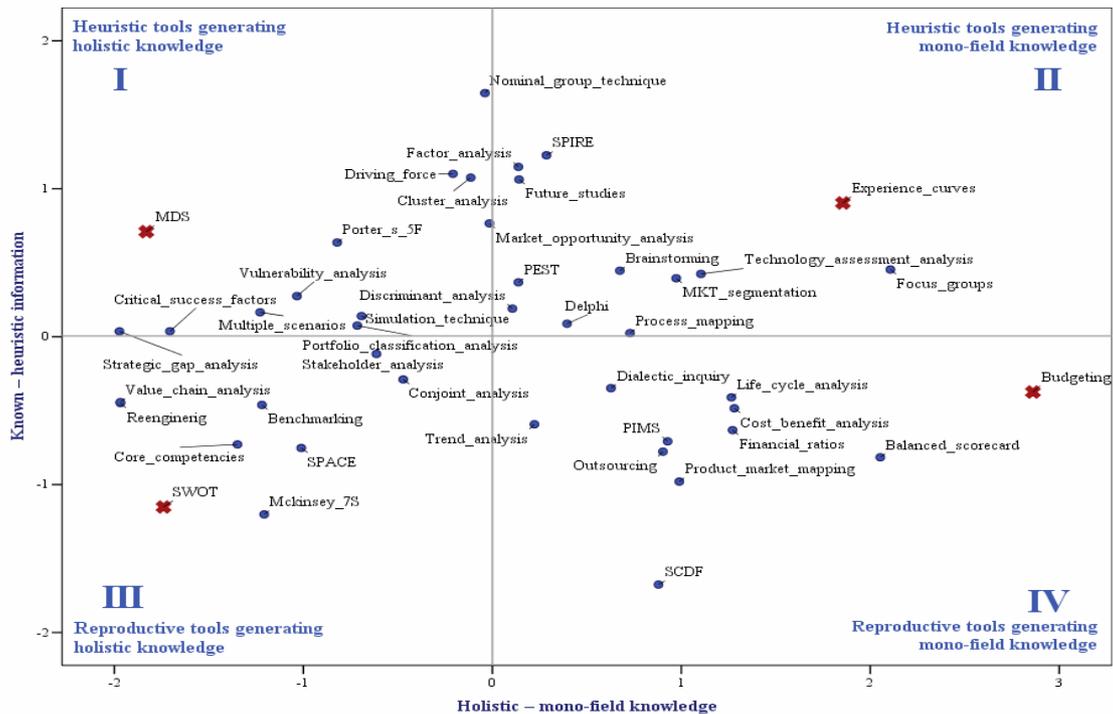


Figure 2. The classification of tools in accordance to the nature of the information received (MDS – model)

The Expert Evaluation Results of Particular Tools of Strategic Analysis

The experimental tool evaluation enabled their classification according to the character of the analyzed object and the sources of analytical information indispensable for their utilization. Figure 1 shows the classification results. These results show the meaningful distribution of the tools according to the mentioned dimensions. The tools are clearly classified in accordance to the nature of objects analyzed by the tool (horizontal axis) and in accordance with sources of analytical information required for the tool and data collection (vertical axis). Two critical points are defined in classifying in the horizontal level: “*Reengineering*”, meaning the obvious tool orientation into the investigation of the internal environment and “*PEST*”, which demonstrates the tool orientation into the investigation of the uncontrolled environment of the remote organization. The extreme points are also determined in the vertical level, but here they characterize the impact of the sources of analytical information.

The “*Financial ratios*” characterize the tool group for which the sources of analytical information are indispensable. Meanwhile, the “*Stakeholder analysis*” highlights the need of the non-analytical information of the tools. According to the extreme points the tools are classified into four groups:

- 1) “Sophistic” tools of internal environment analysis.
- 2) “Sophistic” tools of remote environment¹ analysis.
- 3) “Rationalistic” tools of internal environment analysis.
- 4) “Rationalistic” tools of remote environment analysis.

¹ In MDS classification model remote environment includes uncontrolled environment of the enterprise and its operating environment

The classification in accordance with the nature of information received enabled to define four tools accentuating classification extremes (see Figure 2). In the horizontal level of “the holistic – mono-field knowledge” the tool of the “*experience curves*” could be named as the benchmark of the mono-field knowledge. Meanwhile, the tool “*PTGG (SWOT)*” can be reasonably mentioned as the analysis tool generating the complete knowledge. In the vertical level of “the known – heuristic information” the extremes are best characterized by the “*Multidimensional scale (MDS)*” tool and “*Budgeting*”. The “*Multidimensional scale*” tool in the discussed classification distinguishes itself for the heuristic character of its information, while the “*Budgeting*” is characterized by the recasting of the information. The analysis of MDS results “disclosed” the theoretically meaningful complex structure of the analyzed characters. This enabled to define four groups of the estimated tools:

- 1) Heuristic tools generating holistic knowledge.
- 2) Heuristic tools generating mono-field knowledge.
- 3) Reproductive tools generating holistic knowledge.
- 4) Reproductive tools generating mono-field knowledge.

The tool classification in accordance to the utilization costs and required resources has been fulfilled. It enabled to differentiate the tools used for the strategic analysis into two main dimensions: 1) time-consuming and 2) material expenditure and cost (see Figure3). High – low expenditure and the cost can be best differentiated by the three tools with extreme significance: “*Experience curves*”, “*Multiple scenarios*”, and “*Benchmarking*”.

The “*Experience curves*” characterize the low material expenditure and cost, while the “*Multiple scenarios*” and the “*Benchmarking*” are characteristic of high expen-

diture and cost. The time consuming dimension has been best defined by the tools of “PEST” and “Focus groups”.

In this case “PEST” is associated with high time expenditure, while “Focus groups” with low time expenditure.

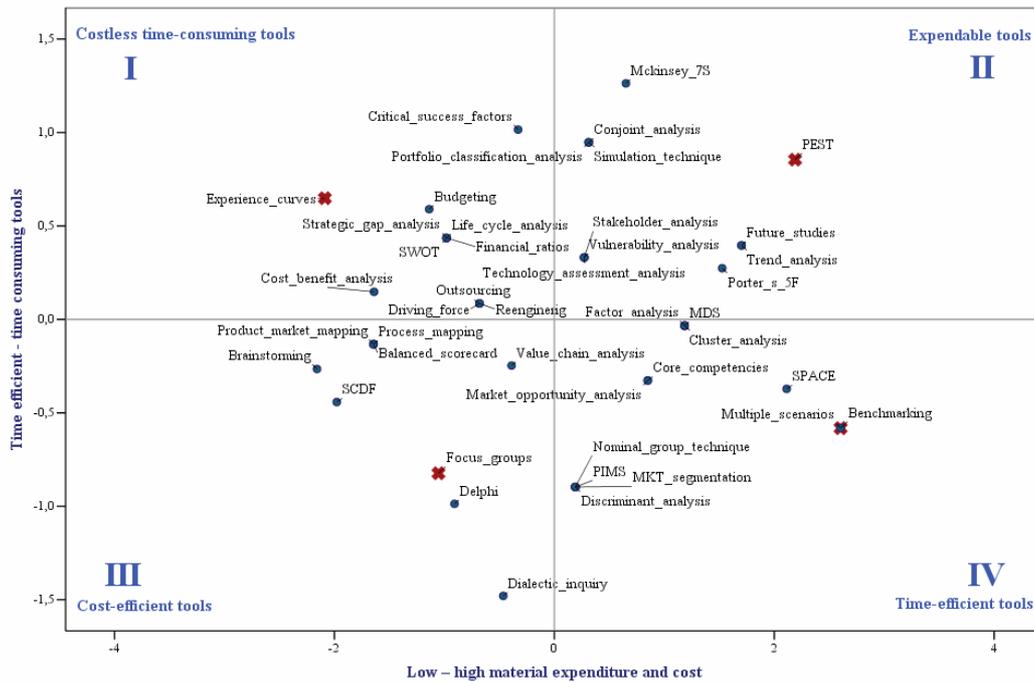


Figure 3. The tool classification according to the utilization expenditure and required resources (MDS – model)

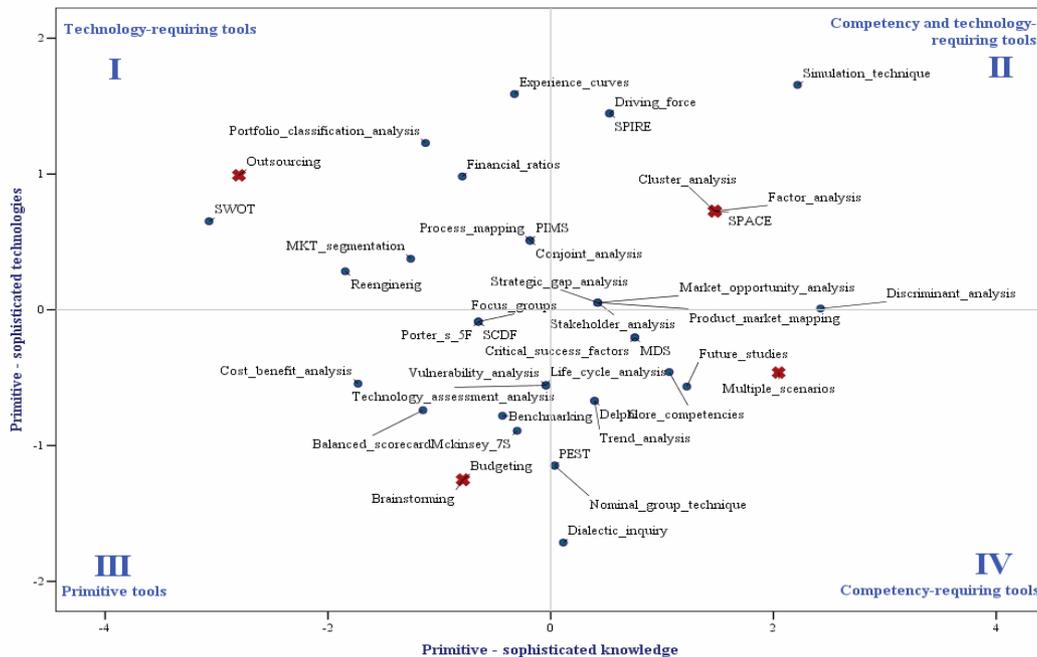


Figure 4. The tool classification according to the knowledge and complex technologies receptivity (MDS – model)

The classification carried out made it possible to define the tools into four qualified groups:

- 1) Costless time-consuming tools.
- 2) Expendable tools.
- 3) Cost-efficient tools.
- 4) Time-efficient tools.

The experimental assessment of the tools used in

strategic analysis made it possible to classify them in accordance to the obligatory technologies and know-how necessary for their use (see Figure 4). The tools in this classification are divided into ones that require sophisticated and the others that require simple technologies and knowledge. According to the knowledge, two tools are defined that accentuate classification extremes: “Outsourcing” and “Multiple Scenarios”.

In this case the “*Outsourcing*” characterizes the tools the simple knowledge for the use of which would be sufficient. Meanwhile, the “*Multiple Scenarios*” are more related to the sophisticated knowledge. It so happened that during the classification five tools in the level of the technologies necessary for their use significantly differentiate the whole set. They are as follows: “*Brainstorming*”, “*Budgeting*”, “*SPACE*”, “*Cluster analysis*”, and “*Factor analysis*”. The first two, i.e. “*Brainstorming*” and “*Budgeting*” characterize the technological simplicity of the some part of the tools. The rest three tools (“*SPACE*”, “*Cluster analysis*”, and “*Factor analysis*”) are associated with sophisticated technologies. The latter MDS analysis enabled to theoretically organize the meaningful complex structure of the discussed features and to divide these tools into four groups:

- 1) Technology-requiring tools.
- 2) Competency and technology-requiring tools.
- 3) Primitive tools.
- 4) Competency-requiring tools.

In conclusion it can be stated that the assessment of the tools of strategic analysis according to the 19 chosen criteria has been justified in part. By means of this study the tools can be classified according to 16 different features. Thus, the 41 tools typological model has been comprised for strategic analysis of the used tool. According to the assessment or the judgment of the authors of this paper, this will give the possibility in the future not only to compare the above mentioned tools with each other, but also to include and position new tools to be used for strategic analysis. The typological model enables us to form the groups of homogeneous tools of strategic analysis according to some specific criteria (sets or portfolios). The authors think that such groups can help to more fully study the tools of strategic analysis, as well as their investigation, research and modification.

The designed typological model makes it possible to form individual portfolios of the tools of strategic analysis for the managers of various organizations according to the previously stated features or characteristics. By means of the designed model, the managers would be able to choose such tools that would be more informative. Besides, the organization executives would also be able to more easily choose the tools that would not duplicate the information of each other. This will allow the leaders to more effectively use the tools of strategic analysis.

The typology of the strategic analysis designed for the organization leaders, especially the beginners, will let them to more quickly and purposefully choose the tools for strategic analysis from a great variety of tools. This, according to the authors is especially important for the leaders of Lithuanian organizations, who make their first steps in the field of strategic management and planning. Such leaders have to choose the tools and their combinations to satisfy their needs and identify the specific situation of the enterprise. The badly-chosen tools at the very beginning, especially if their use was not successful and failed to give expected results, may form negative attitudes to the whole process of strategic management.

Conclusions

The research performed enabled to make the following conclusions:

1. The taxonomy of strategic analysis tools expands the limits of the tools knowledge and enables to group them as follows:
 - a. The tool’s role in decision making process is divided into:
 - Decision-making tools.
 - Data collection tools.
 - b. Nature of relationship between the tool and the environment is divided into:
 - Tools designed for internal environment analysis.
 - Tools designed for operating environment analysis.
 - Tools designed for analysis of uncontrolled remote environment of the company.
 - Indifferent with respect to environment and/or universal tools.
 - c. The necessary factual and logical justification into:
 - “Rationalistic”.
 - “Sophistic”.
2. The results of the expert assessment of the tools showed that one can state that strategic analysis tools should be defined according to the following features:
 - a. The nature of the analyzed object and the need for the analytic information sources (the tool analysis the internal environment of the organization, its activity, external environment, and whether the enterprise has sufficient or insufficient data collected, etc.).
 - b. The nature of information received (“The holistic” of the knowledge generated by the tool, the perfection of the generated information, workability and practical application, heuristics of information, etc.).
 - c. The utilization costs and required resources (time-consumption, material and financial costs, etc.).
 - d. The knowledge and complex technologies receptivity (whether sophisticated knowledge is needed or not, as well as sophisticated technologies, etc.).

The technique for the tool classification (positioning) has been prepared. In the future it can be used for the comparison of the new tools (especially the ones introduced into strategic analysis) with the ones classified according to the defined criteria.
3. The typology of the methods used for strategic analysis has, actually, some indicators of strategic analysis:
 - a. The classification according to the nature of the object analyzed by means of the tool.
 - b. The classification according to the criteria of the perfection of the generated information, workability and practical application.
 - c. The classification according to some input of human reserve and the criteria of their use, such as: the degree of involvement of senior executives, the degree of the involvement of the outside experts and consultants, the degree of the involvement of junior and medium-rank

executives, the involvement degree of the organization specialists, and the involvement degree of the ordinary employees.

4. The typological model prepared for strategic analysis of the used tools enables the researchers and practitioners not only to choose the specific tools but, also, to compare them according to 16 essential features. It opens the ways to getting to know the tools better. Besides, the designed typological model will enable:
 - a. The scientists more rationally to use homogeneous tools and to analyze them in detail according to some feature or characteristic.
 - b. The leaders and specialists of the organizations to choose such specific tool portfolios that could ensure that the tools included into these portfolios should not overlap one another.
 - c. The leaders of Lithuanian organizations to be aware of the variety of strategic analysis tools and to reasonably choose specific tools or their combinations according to their needs and the situation in their company.

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Strateginės analizės instrumentų tipologinis modelis

Santrauka

Didėjant strateginei analizei naudojamų instrumentų skaičiui, vis sunkiau juos pasirinkti. Šis klausimas spęstas sudarant įvairias strateginio valdymo ir planavimo instrumentų taksonomijas, į kurias įtraukta ir keliasdešimt strateginei analizei naudojamų instrumentų. Atlikus esamų taksonomijų apžvalgą, pastebėta, kad 1) jos apėmė ne visus strateginei analizei būtinus instrumentų klasifikavimo kriterijus, 2) jos nebuvo orientuotos būtent į strateginės analizės instrumentų klasifikavimą ir į strateginei analizei naudojamų instrumentų specifinių tipologinių bruožų išryškinimą. Dėl šių priežasčių organizacijų vadovams sunku apibrėpti visus galimus instrumentus ir pasirinkti optimalius.

Apžvelgta literatūra parodė, kad strateginė analizė kaip savarankiškas mokslinio nagrinėjimo objektas vis dar ganėtinai menkai tenušviestas (Vaitkevičius ir kt., 2002). Vis dėlto ji fragmentiškai buvo apžvelgta palyginti daugelio autorių. Galima konstatuoti, kad vieni autoriai strateginei analizei priskyrė daugiau funkcijų (Lindblom, 1959; Cyert ir March, 1963; Hammeresh ir kt., 1978; Porter, 1980; Stoner ir Fry, 1987; Johnson ir Scholes, 1993; Rowe ir kt., 1994; Grant, 1998; Peel ir kt., 1996; Jucevi-

čius; 1998; Godet, 2000; Barnes, 2002; Analoui ir Karami, 2003; Eng, 2004; McNamee ir kt., 2004), o kiti kur kas mažiau (Clark ir Scott, 1995; Clark, 1997). Tačiau visi minėtieji autoriai vieningai teigia, kad strateginė analizė yra fundamentalus elementas, formuojant organizacijos strategiją. Kaye ir Dyason (1998) įrodė, kad jeigu trūksta išankstinės strateginės analizės, tada organizacijos pradeda strategiją įgyvendinti, neturėdamos aiškaus tikslų rinkinio.

Jau galima drąsiai teigti, kad strateginės analizės instrumentai strateginio planavimo procese vaidina svarbų vaidmenį, tačiau šios srities tyrimai vis dar atsilieka ir yra fragmentiški. Pažymėtina, kad dauguma atliktų empirinių studijų, apžvelgiančių strateginio valdymo instrumentų naudojimą, į bendrą strateginio planavimo proceso studiją įtraukė ne daugiau nei vieną ar du klausimus apie strateginės analizės instrumentus. (Caeldries and van Dierdonck, 1988; Ackelsberg and Harris, 1989; Bazaz and Grinyer, 1981; Wee ir kt. 1989). Be to, dažniausiai tyrėjai suformuoja mažus turinčius panašumą įrankių rinkinius, pavyzdžiui Walt ir kt. (1989) tyrinėjo tik šešių planavimo instrumentų naudojimą Naujojoje Zelandijoje pagal modifikuotą Hooley (1984) versiją. Keletas autorių pateikė pavyzdinius strateginės analizės instrumentų rinkinius, pristatydami juos kaip naudojimo instrukciją vadovams:

- 1) Webster ir kt. (1989) suformavo dažniausiai naudojamų 30-ies strateginio planavimo instrumentų rinkinį;
- 2) Clark (1997) sujungė 33 strateginės analizės metodus su strateginio valdymo proceso modeliu;
- 3) Miles ir kt. (1997) atskleidė 7-ių analizės instrumentų naudojimo ypatumus žemės ūkio bendrovėse, tuo pabrėždamas analizės instrumentų naudojimo kontekstualumą;
- 4) Rigby (2001b) ištyrė naudojimą 25 pagrindinių valdymo instrumentų, tarp kurių įtraukė kelis strateginei analizei naudojamus instrumentus ir parodė, kad strateginės analizės instrumentai atlieka palyginti svarbų vaidmenį visame organizacijos procese.

Apibendrinant apžvelgtos literatūros analizės rezultatus, galima teigti, jog iki šiol yra palyginti nemažai nuveikta sistemiant instrumentus. Vis dėlto pažymėtina, kad apžvelgtose taksonomijose pasigendama *aiškesnio instrumentų tapatumo įvardijimo*. Ši priežastis riboja organizacijų apsisprendimą, kada ir kokius strateginės analizės instrumentus rinktis. Dažnai pasitaiko ir tokių atvejų, kad organizacijos vengia rinktis tam tikrus instrumentus, nes nėra tikros, ar jų naudojimas leis išspręsti iškilusias problemas. Strateginės analizės instrumentų tipologijos sudarymas leistų organizacijoms pagal bendrus kriterijus tarpusavyje palyginti strateginės analizės instrumentus ir objektyviau apsispręsti, kokius instrumentus pasirinkti sprendžiant iškilusią problemą.

Šio tyrimo tikslas – remiantis teorine analize ir ekspertų vertinimu, sudaryti strateginės analizės instrumentų tipologinį modelį ir nustatyti strateginės analizės instrumentų atrankos kriterijus.

Atlikta jau esamų taksonomijų analizė leido išskirti iš viso 41 strateginei analizei naudotiną instrumentą, kurie vėliau buvo įtraukti į „strateginės analizės instrumentų ekspertinio vertinimo klausimyną“. Visi jie teoriškai suskirstyti laikantis tam tikro klasifikacinio požiūrio.

Teorinė strateginei analizei naudotinų instrumentų klasifikacija detaliau buvo tiriama pagal 19 apibrėžtų kriterijų (indikatorių). Palyginus praktines ir teorines instrumentų taksonomijas, atrinkti ir detalizuoti klasifikaciniai kriterijai, kurie, vienodai svarbūs praktiniu ir teoriniu požiūriu. Tokiu būdu sudarytos keturios kriterijų (indikatorių) grupės, kurios išskirstytos į 19 pavienių klasifikacinių kriterijų. Pagal šiuos kriterijus sudarytas „strateginės analizės instrumentų ekspertinio vertinimo klausimynas“.

Konkrečių instrumentų vertinime dalyvavo iš viso keturi ekspertai. Trys iš keturių dalyvavusių tiesiogiai susiję su strateginio valdymo disciplina. Du iš keturių ekspertų yra habilituoti daktarai, profesoriai, vienas daktaras, vienas – docentas. Iš keturių trys ekspertai atstovavo konkrečiai strateginiam valdymui ir vienas – bendrai socialinių mokslų metodologijai. Pastarasis ekspertas įtrauktas, kadangi palyginti nemaža dalis instrumentų, naudojamų strateginei analizei, yra perimti iš socialinių mokslų metodologijos.

Tyrimui pasirinkta neakivaizdinė individuali ekspertų apklausa – „anoniminė“ anketa, kai nenurodomi ekspertai. Taigi, gauti empiriniai duomenys vėliau galėjo būti apdorojami statistiniais–klasifikaciniais instrumentais. Neakivaizdinis būdas pasirinktas siekiant išvengti tiesioginio kontakto su ekspertu, kad tyrimo metu nebūtų daroma tiesioginė įtaka eksperto apsisprendimui. Tuo tarpu apklausa anonimine anketa

pasirinkta siekiant ekspertų atvirumo. Jo taikymas buvo naudingas, nes tyrime dalyvavę ekspertai atvirai nurodė objektyvias priežastis, kodėl nevertino vieno ar kito instrumento pagal konkrečius įvardytus kriterijus. Tokiu būdu gauti objektyvūs empiriniai duomenys ne tik leido klasifikuoti strateginei analizei naudotinus instrumentus pagal apibrėžtus devyniolika kriterijų, bet pagal tai buvo galima ir juos validuoti.

Apibendrinant tyrimo rezultatus galima teigti, kad:

1. Sudaryta strateginės analizės instrumentų taksonomija praplečia instrumentų pažinimo ribas ir leidžia juos grupuoti pagal:
 - a. *Instrumento paskirtį sprendimo priėmimo procese* į:
 - *Sprendimo – priėmimo instrumentus ir technikas;*
 - *Fakto – konstatavimo instrumentus ir technikas.*
 - b. *Instrumentų santykio su aplinka pobūdį* į:
 - *Instrumentus, orientuotus į vidinės aplinkos analizę;*
 - *Instrumentus, orientuotus į veiklos aplinkos analizę;*
 - *Instrumentus, orientuotus į nuotolinę – įmonės nevaldomos – aplinkos analizę;*
 - *Aplinkos atžvilgiu indiferentiškus ir (arba) universalius instrumentus.*
 - c. *Būtiną informacinį ir loginį pagrindimą* į:
 - *„Racionalistinius“;*
 - *„Sofistinius“.*
2. Instrumentų ekspertinio vertinimo rezultatai parodė, kad galima teigti, jog strateginės analizės instrumentus tikslinga skirstyti pagal šiuos požymius:
 - a. *Analizuojamo objekto pobūdį ir analitinės informacijos šaltinių poreikį (instrumentas analizuoja organizacijos vidinę, veiklos arba išorinę aplinką, pakanka ar nepakanka įmonėje jau surinktų duomenų etc.);*
 - b. *Gaunamos informacijos pobūdį (instrumentu produkuojamo žinėjimo „visybiškumas“, produkuojamos informacijos išbaigtumas, technologiškumas ir praktinis pritaikomumas, informacijos euristiškumas etc.);*
 - c. *Naudojimo sąnaudas ir būtinus išteklius (lmlumas laikui, materialinės sąnaudos ir finansinės išlaidos, etc.);*
 - d. *lmlumą žinioms ir sudėtingoms technologijoms (ar reikia, ar nereikia specialių mokslo žinių, specialių kompetencijų ir technologijų, etc.).*

Paragta instrumentų klasifikavimo (pozicionavimo) metodika ateityje gali būti panaudota naujiems (ypač naujai įvedamiems į strateginę analizę) instrumentams sugretinti (palyginti) pagal nustatytus kriterijus su jau klasifikuotais.

3. Sudaryta strateginei analizei naudojamų metodų tipologija turi kelis, iš esmės tik strateginei analizei būdingus indikatorius:
 - a. *Klasifikavimas pagal instrumentu analizuojamo objekto pobūdį;*
 - b. *Klasifikavimas pagal produkuojamos informacijos išbaigtumo, technologiškumo ir praktinio pritaikomumo kriterijus;*
 - c. *Klasifikavimas pagal kai kuriuos žmogiškųjų išteklių sąnaudų ir jų panaudojimo ypatumų kriterijus tokius kaip: aukščiausio lygio vadovo ištraukimo laipsnis, išorinių ekspertų ir konsultantų įtraukimo laipsnis, žemesnio ir vidutinio lygio vadovų įtraukimo laipsnis, organizacijos specialistų įtraukimo laipsnis, eilinių darbuotojų įtraukimo laipsnis.*
4. Paragtas strateginei analizei naudojamų instrumentų tipologinis modelis sudaro galimybes tyrinėtojams ir praktikams ne tik pasirinkti konkrečius instrumentus, bet ir palyginti juos pagal 16 esminių požymių. Tai atveria daugiau galimybių instrumentus toliau pažinti. Be to, sudaryto tipologinio modelio dėka:
 - a. *Mokslininkai galės racionaliau, pagal tam tikrą požymį, pasirinkti homogeniškus instrumentus ir juos detaliau išanalizuoti;*
 - b. *Organizacijų vadovai ir specialistai galės pasirinkti konkrečių instrumentų portfelius, tokius, kad į juos patenkantys instrumentai tam tikrais požymiais nedubliuotų vienas kito;*
 - c. *Lietuvos organizacijų vadovai galės kryptingiau orientuotis strateginės analizės instrumentų įvairovėje ir sąmoningai pasirinkti konkrečius instrumentus ar jų derinius pagal savo poreikius ir konkrečią įmonės situaciją.*

Raktažodžiai: *instrumentai, strateginė analizė, taksonomija, tipologija, strateginis valdymas.*

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