

# SCENARIOS METHOD INSTRUMENTATION MODELING

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***Abstract:** Rapidly changing market conditions are strongly influenced by organizations development mechanism which are caused by economic, technological, social permanent changes. There is a need to investigate the strategic decision-making efficiency which determines the ability of organizations to adapt to different business situations formed by uncertain environmental changes. Flexible strategic business decisions is a prerequisite for the organizations that are seeking to successful operations and to remain competitive in the business market. Anticipation of different scenarios of the future events enables prompt provision of its adaptation to different situations in the future and at the same time it allows to prepare for possible changes in advance. Scenario method as potential future events synthesis sequence identification enables more a more flexible organization functioning and more mobile human resources management of the organization's management process. The article analyzes the scenario method conception and characterization, performed scenario method advantages and disadvantages analysis as well the scenario method is analysed as a research tool. The article ends with scenario method instrumentation modelation and its development process in stages.*

***Keywords:** Scenario method, Research instrument, Strategic decisions, The importance of scenario method, Scenario method modeling.*

***JEL Classification:** C18.*

## **Introduction**

### **The relevance and the main issues of the research**

Every entity in order to provide an image of the future and adapt to function in it has flexible response and operate in social, economic changes effected environment. It also becomes an important to be able to direct their activities in the direction that ensure the organization's social, economic well-being effect. For this reason the organization must take into complex view for many factors such as technological changes, economic internationalization internationality impact on the internal and external environment, demographic trends, public and social development prospects and so on. An integral part of the successful of the organization is its ability to identify the sequence of events dependence with each other and to provide strategic action to analyze and solve them. All this organization brings to the uncertainty and methods for its successful operation planning and development becomes important and controversial issue.

In order to influence the development of successful organizational development scenario it is important effectively to identify of socio-economic trends and contributes to the formation of strategic decisions and tools for potential operational deviations removed. Scenario method describes the changing state of the environment and makes easier to identify strategic solutions that help to choose the right direction. The scientific literature defines different but at the same time matching scenario method definitions interpretations: as strategic decision prediction method; as a tool to help assess the organization's strategic decisions and their suitability for different situations; as a situation model of defining the

possible future consequences and their variations and so on. The authors agree that the scenario development method is a planning instrument which helps to reduce uncertainty and to increase the appropriate decisions. In this way the organization in order to successful operations has to adapt and use scenario method that effects and changes existing strategic decisions taken by perceiving the possible future strategic decisions. Scenario method in the scientific literature emphasizes how different elements and processes of fusion phenomenon that allows a possible future image where the organization will function. The scenario method practical application and its significance enables more discussions about a more flexible organization's strategic decision making and thus also attract the attention of this method alternative ingredients projections variations.

**The research subject** – scenario method instrumentation.

**The research aim** – to perform scenario method as potential research instrument analysis.

**The research objectives:**

1. To perform scenario method theoretical interpretations review and analysis.
2. To perform scenario method advantages and disadvantages analysis.
3. To prepare the scenario method as a research instrument modeling.

**The research method.** The research process is planned to organize by formulated three objectives. The research methods: scientific literature review and analysis, comparison, quantitative and qualitative data analysis, interpretation, comparative analysis, generalization.

## 1 Scenario method theoretical analysis interpretations

P. Schwartz [18] scenario method perceive as an alternative tool for the future environment which leads the decisions taken by the present. Author equate this method as descriptive narration. What is more, the scenario method as a tool can be used for strategic decision-making process which helps to reduce the uncertainty in which the organization operates [22]. The author also agrees with other scientists who examined the scenario method practical application. The scenario method involve constantly changing future environment which can be predetermined and expected in advance [18]. Other authors scenario method describes as a consistent imagine of the future projections which are formed by the logical assumptions [10], [18]. The scenario method describes as consistent events layout for a specific period of stage which allows the identification of existing and desired situations [2], [5]. J. Ratcliffe [14] scenario characteristics identified by two this method development forms:

1. The future ahead. This scenario method form provides an analysis of the current situation in which are formed a number of future scenario factors.
2. The future back. This scenario method form provides the desired imagine of the future situation which the organization take various measures to achieve it.

Authors who analyzes scenario method finds that scenario method help to identify different circumstances in which organization operate in the future [2], [8], [17]. Also they agree that scenario method adaptation in strategic decision process reduces the organization in which it operates environmental and strategic decision uncertainty [7], [13]. Schwab P. [17] scenario method describes as logically consistent process of evaluation hypothesis.

Scenario method helps to shape the organization's future performance projections which it can prepare in advance [23], [1], [11], [9]. Also the authors agree that this method of practical application allows the organization better to understand the environment in which it operates as a possible future consequences of present strategic decision [20]. Scenario typology divides into four dimensions:

1. „Status qua“ - the current situation transfer to the future;
2. „Collapse“ - when the system will no longer be able to maintain steady growth that causes fragmentation.
3. „Steady status“ - the moment when it is noted that the future situation repeated in the past.
4. „Transformation“ - different factors conditioned the situation changes [6].

Scenario method as possible future events stories that can be predict and seek feedback [19]. The author argues that the scenarios creating participants are experts who shape the scenarios by recourse to the available quantitative information. It can be argued that the scenario method approach to the organization's strategic decisions as a methodological tool can help to display organization's future. What is more, the scenario method is as thoughts, thinking visual experiment of organization position in the future which helps to identify future projections formed and influenced by the present decision taken by the organization [14]. P. R. Walsh [23] asserts that scenario method as a tool helps to assess the organization adopted strategic decisions and shape the opportunities to check the effectiveness and efficiency of that strategy. The scenario method can be described as a model of situation in other words the position of organization as a whole description [12], [20]. By T. Karp [8] opinion the scenario method technique helps to provide a simplified flow of information about the organization and operation of the unidentified environment. The author agrees that scenarios contributes to the organization's environmental future model.

To sum up, the scenario method application possibilities is broad and this method can be used in different fields of organizational management which is faced with uncertainty. Method application flexibility enables to identify different factors combinations that influence organization environment.

## **2 Scenario method advantages and disadvantages analysis**

Analysing the scenario method concept and characteristics L. Fahey [5] identifies four main elements that describes scenario method structure: it is the period; the organization's goals; impact factors; action plan and layout of the situation; a story. Meanwhile, J. Ratcliffe [14] at scenario method process notes that:

*First* – the scenarios arrangement must be based on the organization's goals, decisions and planning.

*Second* – the scenarios arrangement must be based on logic and strategic decisions mutual compability.

*Thirdly* - the scenarios development process needs to be flexible to different organizations influencing situations.

*Fourth* – final scenarios must stand out of their unique individuality [15].

The author also notes that the scenario development participants has to be creative people and the experts in their fields resulting for high and qualitative results. Two scenario

types according their formation of style:

- According to intuitive style formed scenarios are based on the story, creative thinking and are based on informal methodology.
- According to analytical style formed scenarios are based on expert judgment and trends of cross-impact analysis [21].

However, many scientists agree that scenario building on the intuitive and analytical style or by other named mixed style is unique and characterized by an exceptional role model effect on the organization. It is also important to identify the scenario method advantages and disadvantages. Research authors scenario method advantages are presented in Tab. 1.

**Tab. 1: The variety of interpretations of scenario method advantages**

AUTHOR	INTERPRETATION
H. R. Hamilton [4]	<ul style="list-style-type: none"> <li>– Scenario method provides several different factors development options;</li> <li>– scenario method makes it easier to identify undesirable future situations in which the organization must be avoided;</li> <li>– scenario method application in organization activity planning, strategic decision-making promotes better organization preparation and operation on constantly changing environmental conditions;</li> <li>– scenario method increases the members of the organization involvement into strategic decision-making process that promotes a stronger mutual communication and forms organizational value system.</li> </ul>
D. Mietzner [10]	<ul style="list-style-type: none"> <li>– At scenario development stage most of the members of the organization are involved who together increase organization strategic decision-making process;</li> <li>– scenario methodology flexibility enables integrated variety of solutions;</li> <li>– scenario method is characterized by flexibility and adaptation to constantly changing environment conditions.</li> </ul>
A. Molis [12]	<ul style="list-style-type: none"> <li>– Scenario creation helps to release complex alternatives that effects in real situations;</li> <li>– scenario method added value is focused on the strategic planning and strategic decision-making process which enables a more flexible strategic planning mechanism;</li> <li>– scenario method increases the effectiveness of strategic decisions and facilitates future events trends investigation;</li> <li>– scenario method reveals the individual environmental factors union and influence to the organization at constantly changing environmental conditions.</li> </ul>

*Source: Author.*

To sum up, the scenario method advantages interpretations diversity revealed a common symptom which showed that the scenario method practical application in the strategic decision-making process allows to identify the potential future events and predict their development. Research authors scenario method disadvantages are presented in Tab. 2.

**Tab. 2: The variety of interpretations of scenario method disadvantages**

AUTHOR	INTERPRETATION
P. Goodwin, G. Wright [3]	<ul style="list-style-type: none"> <li>– At scenario method decision-making stage it requires highly skilled members engagement and specific knowledge of certain data;</li> <li>– scenario method requires large time-consuming;</li> <li>– scenario method gives a large amount of information which requires his deep-processing and detail;</li> <li>– the organization that apply scenario method in their activities must be a learning organization and promote managerial thinking.</li> </ul>
A. Barbanente, A. Khakee [1]	<ul style="list-style-type: none"> <li>– The scenario usability are focus on the long term organization activities perspectives while the near-future plans for evaluation can not be elaborated;</li> <li>– practical scenario method application forms different business models in different situations in the future perspectives;</li> <li>– scenario method consistency teaching is based on the story what credibility can be regarded as sufficiently reasoned what could impair the quality of strategic decision-making.</li> </ul>

*Source: Author.*

According to scenario method advantages and disadvantages interpretation analysis results show that the method use in organization activities is based on two directions: 1<sup>st</sup> direction based on strategic decision-making and 2<sup>nd</sup> direction based on strategic decision evaluation and selection process. In both of these directions authors finds scenario advantages and disadvantages bus most of them agree that the scenario method prerequisite for the application remains unpredictable, constantly exposed to a changing environment. In this way the authors agree that scenario method application of the strategic decision shape a wide range of flexible and future-changing factors formed organization's image.

### **3 Scenario method as a research instrument modeling**

Scenario method in scientific sources is treated as a long term business planning tool for long term planning process which helps to formulate the current period of complex events on the organization in the near future. In this way the scenario method use consequence becomes present decision-making that forms and impacts future events to preferred organization direction. Scenario method practical application can be categorized according to different levels:

- 1<sup>st</sup> level → global scenarios include long-term strategic investment decisions;
- 2<sup>nd</sup> level → industry scenarios include the organization's industry development trend of changes in the specific time;
- 3<sup>rd</sup> level → competitor scenarios allow to identify their strategic decision-making and beha actions;
- 4<sup>th</sup> level → technological scenarios include strategic decision important for the organization that operates continuously unidentified environment [5].

The scenario method elements interact with each other and contribute to business innovation solutions [16]. It also states that the purpose of creating scenarios is based on the most efficient preparation for each possibly scenario variations in the future. According

to the author the scenario development process starts with the key factors affecting the organization identification. Other authors distinguishes three scenarios development principles:

1. The long term approach. The organization must establish the long term goals.
2. External factors evaluation. Organization is important to identify the external factors importance for long term goals.
3. Multiple perspectives. The organization while prepares scenarios must be based on the expected performance assumptions [4].

The authors notes that the scenario method use of the organization helps it to form the expected future performance trends and discern possible future development directions of events. Tab. 3 provides different authors scenario method development process stages.

**Tab. 3: Scenario method development stages**

AUTHOR	SCENARIO METHOD STAGES OF CREATION
M. Godet [2]	<ol style="list-style-type: none"> <li>1.It is built up a detailed current situation picture in which are highlights the forces acting on it.</li> <li>2. Defined concrete analysis system.</li> <li>3. According to structural analyzes are identified system determinants (internal and external).</li> <li>4. Identify system influencing, controlling and managing people.</li> <li>5. Forming the desired organization performance scenarios.</li> </ol>
A. Paul Dragos [13]	<ol style="list-style-type: none"> <li>1. All of the current situation assessment elements are combined into a consistent and comprehensive system.</li> <li>2. Identified these factors change trends in the perspective of time and identified the links between them.</li> <li>3. Formed potential future image that is based on past trends projections.</li> <li>4. Development of various future scenarios combinations.</li> </ol>
J. Ratcliffe [15]	<p>The scenario method formation divides into categories:</p> <ol style="list-style-type: none"> <li>1. Optimistic;</li> <li>2. Pessimistic;</li> <li>3. Compromise.</li> </ol>
L. Fahey [5] P. R. Walsh [23], Hamilton H. R. [4], T. Karp [8], M. Kajanus [7]	<p>Scenario formation process stages:</p> <ol style="list-style-type: none"> <li>1. Scenario goals and strategic objectives formulation;</li> <li>2. Impact factors and interaction of participants identification;</li> <li>3. Determined organizational performance trends and external environment opportunities and threats;</li> <li>4. Analyzed impact factors combinations;</li> <li>5. Creating and detailed primary scenarios;</li> <li>6. Checking and considered primary scenarios logicity and plausibility;</li> <li>7. Verifying scenarios matching the goals and objectives;</li> <li>8. Final scenario development and analysis.</li> </ol>

*Source: Author.*

According the scenario method development process stages analysis in order to elaborate scenario method development logic it is possible to formulate questions that help to achieve the expected results. In this way it is persuated scenarios creation expediency

and effectiveness of the results. Those formulated steps with questions can be generalized scenario method development stages:

1. Scenario goal and strategic objectives formulation. Question: what is the purpose of scenario creation?
2. Impact factors and participants interaction identification can be carried out on the Pestel analyzes in order to identify the influence of external factors while the internal factors may be determined by the rating or selective method.
3. It is determined factors, external environment opportunities and threats that are affecting organization activities. Question: What would be required decisions if a certain factor would appear and begin to interact in reality? How does this affect the organization's strategic decisions? How do the current tasks must be shape? What is more, it is also important at this stage to identify positive, negative or unknown impact factors of influence on the organization. Possible signs adjustment as a possitive impact +, negative impact or effect -, neutral or unknown impact or effects +/-.
4. Analyzing the impact of factors combinations. It applies expert evaluation, using cross-impact analysis, morphological analysis.
5. Creating and detailed primary scenarios. Developed and described primary scenarios compositions.
6. Checking and considering primary scenarios logic and probability. According to authors [14]; [23] here are presented evaluation criterias:
  - valued scenario matching consistency criteria;
  - valued scenario matching probability criteria;
  - valued scenario matching difference criteria [15], [22].
7. Checking scenarios matching set goal and objectives implementation.
8. Final scenario development and analysis.

Analyzing the scenario development process factors and stages according different foreign authors and their research results it was found that scenario modeling presents successful and unsuccessful cases affected by external factors. To sum up the authors research result Tab. 4 shows organization scenario formation content.

**Tab. 4: Organizations scenario forming content**

	<b>Successful organization activity</b>	<b>Unsuccessful organization activity</b>
<b>Strong external / internal factors influence</b>	Organizations operating balance scenario	Organizations operating addiction scenario
<b>Weak external / internal factors influence</b>	Organizations operating potential downward scenario	Organizations independent operating scenario

*Source: Author.*

According the analysis of the information provided in Table 4 it should be noted that the strong external or internal factors influence of successful organization development forme organization's balance scenarios. Meanwhile by operating weak external or internal factors

influence of successful organization development forms organization's performance potential downward scenario. In assessing the unsuccessful organization's activities which are influenced by strong external environment is drawn up the organization's activities reliance scenario and reverse, under the weak external influence is drawn up independent organizations operating scenario.

The authors note that the scenario method is descriptive and according to the nature of presentation it is dealt with different situations in the future factors. The scenario method distinctive feature is the method flexibility in the combination of different factors to the overall prospects for the future a whole [3], [6]. What is more, the author emphasizes that this method helps to design different strategic decisions in a single methodological instrument that help to face future situations and prepare for them in advance which is exposed by permanent environmental factors of uncertainty. Also this research notes that scenario method approach to the company's strategic decision-making process leads to the complexity of these decisions.

## Conclusions

Future events that form environment changes and the ability to adapt and flexibly to receive, respond to changes becomes a prerequisite to an organization's business success. It is revealed that scenario method practical application allows operatively to react to different situations changes and prepare for them in advance. It was found that this reduces the vulnerability of uncertainty organization thereby improving the flexibility of adaptation.

Most of the scientific authors agree that the scenario method analyse the changing business environment indicators that helps to generate more likely prospects for the future. Practical method application in the organization reveal valuable information about the impact of external factors and it allow them to prepare for it and thereby to reduce their impact. In this way the organization is expanding the knowledge of the environment behavior system factors which facilitates business strategic management and strategic decision-making.

It was found that the scenario method application possibilities is broad but also it is emphasized that this methodology reveals strategic business decisions individuality in different circumstances. It is also revealed that the scenario method practical application must be continuously monitored, reported and controlled. What is more, the scenario method allows to ensure the effectiveness of strategic decisions and also to reduce probability that the proper operation of the organization to develop and improve decision will remain obscured.

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