

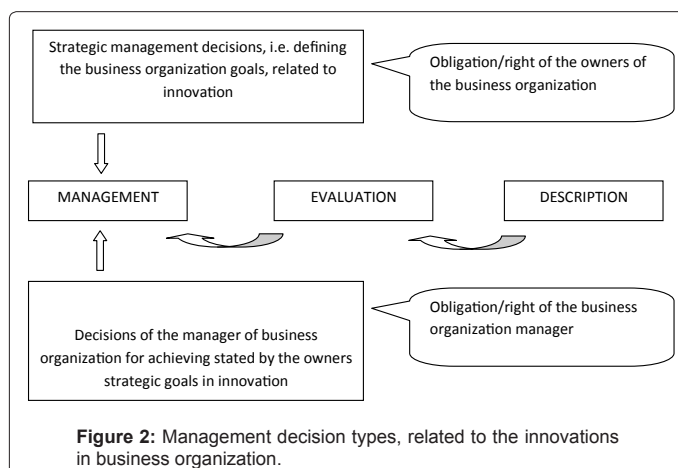
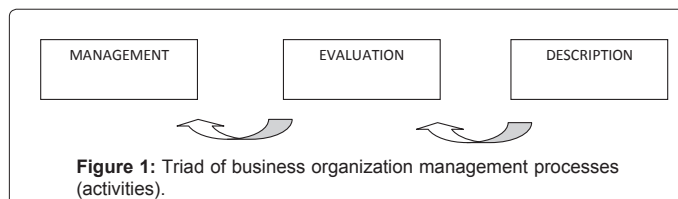
## How to Evaluate Innovations in Business Organization: Possible Approach

Venelin GEORGIEV\*

Information Technologies for Security Department, Institute on Information and Communication Technologies, Bulgarian Academy of Sciences, Bulgaria

Building, maintenance and application of effective strategies and tools for evaluating the innovations in business organization is an essential element and a parameter of the effectiveness of the business organization as a whole. Otherwise, i.e., in the absence of such tools, the inability to measure and evaluate the results of innovations no doubt hinder the management process in business organization and reduce the competitive advantages, opportunities for strengthening the marketplace and entering new markets. The process of building a mechanism for evaluating the innovations of business organization relies on the familiar classic perception: to be managed an activity (process) is required the results obtained from it to be measured, which needs the managed activity to be described in detail and in a reliable way (Figure 1).

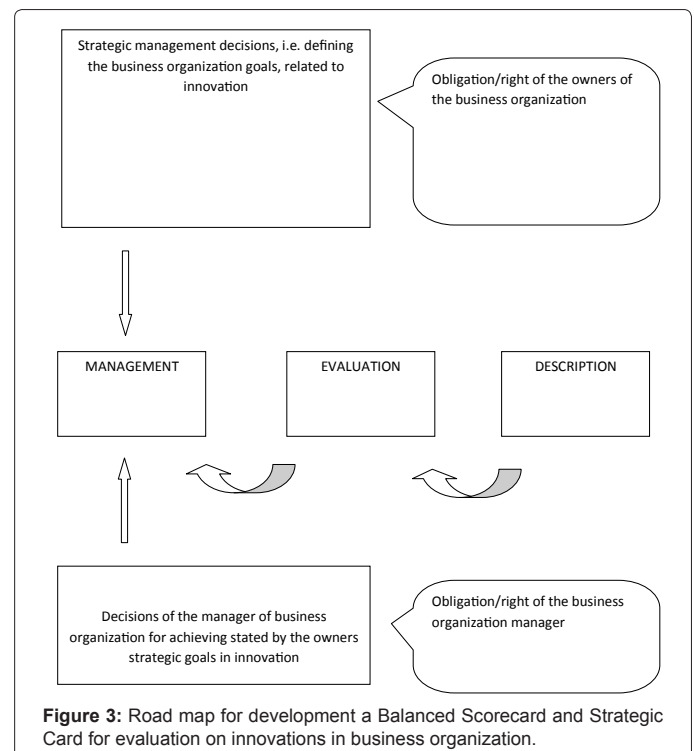
Entering in details in the content of the triad, presented in figure 1, the specificities of each of the three elements (components) could be defined in terms of evaluation of innovations in business organization. On management, there are many definitions, which differ among themselves on the subject (perspective) to define this type of human (business) activity. In an attempt the content of these definitions to be summarized in order to reach the one that adequately summarize them; we can say that management is a process of decision making. In examining the process of evaluating the innovations in business organization as a part of the overall management process, the related decisions could be divided into two main groups. The first group includes those decisions that fall within the competence of entrepreneurs (business owners), through which a framework and innovation targets are defined in extend, respective to the reasons and requirements for maintenance and development of business (Figure 2). The second group of decisions could be determined as management



decisions (decisions of the manager of the business organization), which create conditions for achieving the goals set by the decisions and requirements of business owners (entrepreneurs). The main difference between the two groups of decisions is that while the first defines the overall strategic objectives of the business organization in terms of innovations, the second determine the steps (sequence) and means (tools) to consistently achieve set goals.

The second component of the triad on figure 1 is related to the creation of appropriate conditions for measuring the results from innovations in business organization. For this purpose, classical instruments such as the Balanced Scorecard are used. Building such a system goes through several steps as it is shown schematically on figure 3.

The implementation of the third component of the triad on figure 1,



\*Corresponding author: Venelin GEORGIEV, Information Technologies for Security Department, Institute on Information and Communication Technologies, Bulgarian Academy of Sciences, Bulgaria, E-mail: [georgiev@defencemanagement.org](mailto:georgiev@defencemanagement.org)

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i.e., description of the innovations in business organization is possible by using well-known in the science and practice means as a strategic map or a strategic card (Figure 3). The technology of development a strategic map of innovations in business organization is discussed in detail later in the content of the article.

Using the strategic map as a tool for evaluation of innovations in business organization provides the following significant advantages:

- Achieving the desired degree of details in the presentation and understanding of the innovation process in business organization for the employees and the subjects from the external environment (partners, customers, suppliers, etc.);
- Illustrate the dynamics of innovations over time;
- Introduction of modularity and focus oriented content of innovation in terms of individual corporate policies and management directions (or functions);
- Ensuring a uniform and consistent way for description the innovations in business organization that guarantees the innovations to be not only defined, but also managed.

The strategic card of innovations in business organization is developed in compliance with several important principles. First stands the principle of balancing the conflicting forces. For example: investment in intangible assets of innovation in order to achieve long-term results often conflict with the objectives of reducing costs to achieve short-term performance of the business organization. Achieving business goals in their complexity requires finding a balance between the amount of investment needed and the rate of saving resources.

The second principle relates to the fact that sustainable value in innovations is created through internal processes and intangible assets of the innovation system in business organization. The strategic card of innovation describes the vital internal processes (strategic issues or themes). The application of this approach allows evaluation of innovations in business organization to be built on the basis of complementary and synchronously developing strategic themes.

The third principle refers to the strategic accordance that determines the value of intangible assets of the innovation system in business organization. The process of creating value from intangible assets in the field of innovations is characterized by the following features:

- *Creating value from intangible assets have an indirect character.* Intangible assets such as knowledge, motivation, technology, organizational culture, etc. rarely have a direct impact on indicators describing the financial results in the field of innovations. This happens through a chain of causal relationships, defined and presented by the strategic card.

- *The value created by intangible assets, is contextual in nature and is determined by the consistency of the innovation strategy of the business organization.* The existence of differences between the quality of intangible assets and strategic innovation system requirements is an indicator of the expected low value generated from these intangible assets.

- *The value created by intangible assets, has a potential character.* Intangible investment in innovations is characterized by potential, rather than market value and only the internal processes of the innovation system in business organization can transform this potential to market value. Obviously, the presence in the innovation

process of intangible resources with huge potential alone is not sufficient to guarantee achieving sustainable value in the event that internal processes applied in the innovation system are inefficient and not conducive to the realization of this potential.

- *There is a correlation between the assets of the innovation system.* The intangible assets rarely can alone create value because they do not have one, isolated from the organization (system) and its innovation strategy. Sustainable value is created when the intangible and tangible assets of the innovation system in business organization are synchronized.

In the strategic card, objectives and goals of business organization in the field of innovations are modeled in four directions (Figure 4). The direction „Business organization activities conditions” answers the question how to invest in staff, technology, infrastructure and organizational culture in order to transform innovative strategy into reality. The direction “Business organization processes” presents the question what processes should be implemented or improved in order to implement the innovation strategy of the business organization. The direction “Business organization resources” answers the question if the available resources are managed correctly and in accordance with the strategic goals and in the interest of innovations. The direction “Business organization performance” answers the question if in the area of innovation the goals and expectations of entrepreneurs, strategic management, partners and customers are achieved. Each of these four directions in the strategic card includes thematic areas or themes, which aims to define and detail the subjects in the corresponding direction.

The strategic card of innovations in business organization visualizes the causal links between goals, directions and thematic areas of innovation strategy. It describes the logic of the strategy by defining

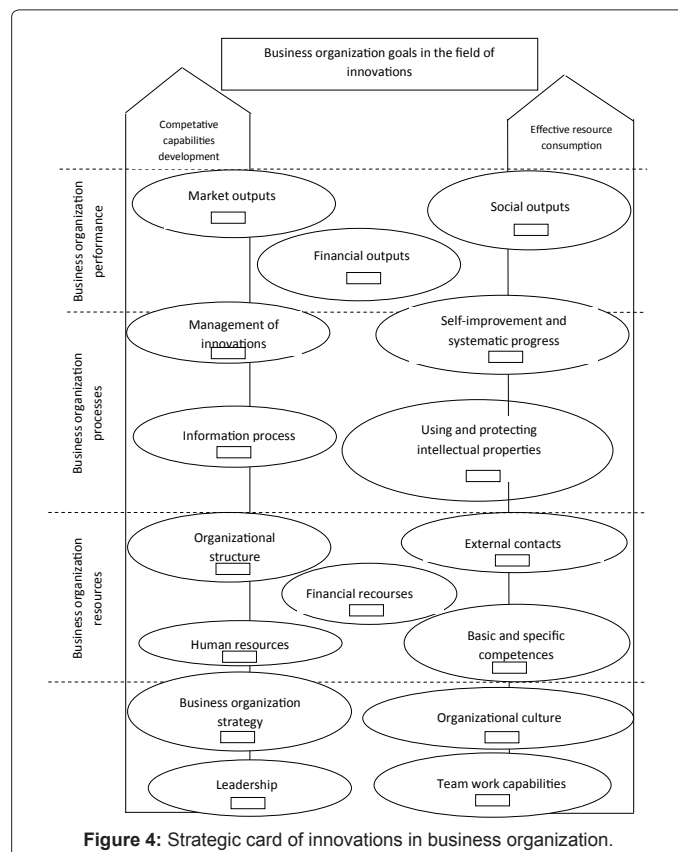


Figure 4: Strategic card of innovations in business organization.

the vital and value-creating internal processes and the necessary intangible and non-intangible assets for achieving innovation goals and objectives.

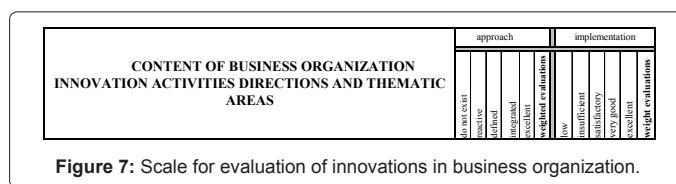
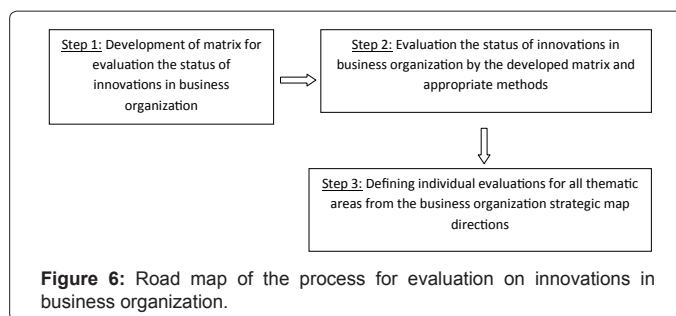
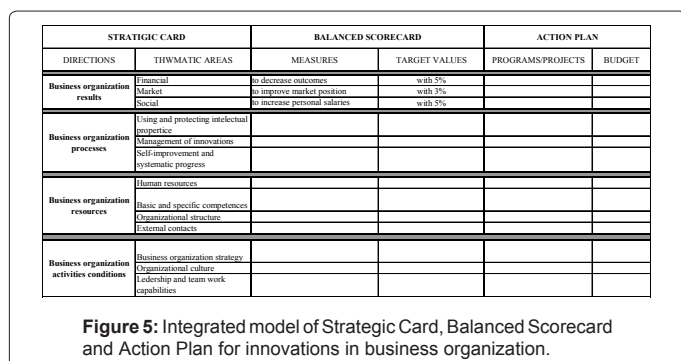
How the strategic card of innovation in business organization work could be described by the following example (Figure 4): if the business organization has sufficiently effective innovation strategy and organizational culture, they will enable it to build specific competencies and the necessary and useful external contacts. No doubt, the last will assist for improving the management of innovation and the self-development of business organization and as a final result it could be expected that the business organization will achieve better market and financial results.

Other means (instrument), with application in the evaluation of innovations in business organization is the Balanced Scorecard, which is designed to provide a systematic approach in determining indicators, measure and target values for the performance in the four directions and the different thematic areas outlined in the strategic card of innovations. It translates the strategic goals from the card into specific tasks, implementation of which is measured using indicators (measures) for which targets are set and which are more easily perceived by the performers. Moreover, indicators for measuring the degree of implementation of innovative tasks allow contractors to define their place and contribution to the implementation of the innovation strategy of the business organization, which increases their adherence (commitment) to the objectives and brings them satisfaction.

By developing a balanced scorecard for performance the business organization innovation objectives are covered the following requirements:

- With the help of performance, realized degree of suitability of various innovative processes to achieve the strategy objectives can be measured, i.e., effectiveness of innovations;
- By performance indicators all the results from innovations of business organization could be measured in a systematic manner;
- Target values of performance for different directions to be balanced, i.e., indicators by which the related objectives achieved in the participation of different actors of the innovation system are measured, have interrelated and eligible target.

Evaluation of the effectiveness of innovations in business organization largely depends on successfully integration and synchronization of the strategic card and balanced scorecard with the respective and effective programs, projects and budgets for innovations in the business organization (or an action plan). An example of such integrated model of strategic card, balanced scorecard and action plan is presented in figure 5.



The process of directly evaluating the innovations in business organization goes through several steps, sequence and content of which is shown in figure 6.

One of the dimensions of the matrix for evaluation the innovations in business organization includes directions and thematic areas of strategic map. For each of these themes appropriate questions are formulated. The second dimension of the matrix includes a scale for evaluating the innovations of business organization as a managerial approach and implementation (Figure 7).

The scale from the matrix is characterized by the following features:

- The scale makes it possible to evaluate the innovations in business organization as intent (or approach), i.e., as the quality of the managerial decisions and performance, i.e., as the results achieved by innovations. Such separation allows to assess what is possible due to weaknesses in innovations - whether of the low quality of managerial decisions (ie, inefficient managerial intentions of business organization) or a low potential executive, which failed to implement innovative solutions to the required quality level. Obviously, it is understandable that such evaluation approach is acceptable and only possible in three directions from the strategic card of innovations in business organization and is not applicable to the direction "Business organization results", which is measured only as endpoints.

- Scale allows determination of qualitative evaluations for each of the questions included in the content of the matrix. In order to transform the qualitative evaluations into quantitative ones an appropriate model such as that shown in table 1 could be used.

The practical implementation of evaluation of innovations requires construction in an appropriate way a tool for logical transformation (interpretation) of qualitative evaluations to quantitative ones. One possible way (or logic) to move from qualitative to quantitative evaluations of the innovations in business organization is presented in table 2.

- Scale allows differentiation with weight factors of evaluations for each of the matters based on their importance for innovations in business organization. In such case, the final score for each of the questions in the matrix is obtained by multiplying the absolute value of the evaluation and the value of the weighting. The amount of weight factors within a specific area (theme) of strategic card should be equal to the unit.

Qualitative evaluation-approach	Quantitative evaluation	Qualitative evaluation-implementation
Do not exist	2	Low
Reactive	3	Insufficient
Defined	4	Satisfactory
Integrated	5	Very good
Excellent	6	Excellent

**Table 1:** An example of a model that could be used for transformation the qualitative evaluations into quantitative ones.

Quantitative evaluation	Qualitative evaluation	Interpretation
<b>Evaluation of innovation activities as approach</b>		
2	Do not exist	Business organization does not apply a strategic approach to the innovation activities
3	Reactive	Business organization takes care about innovation activities just as a reaction on environmental changes (market, competitors)
4	Defined	Business organization has a defined strategic approach to innovation activities, which is rather conventional (trivial, routine)
5	Integrated	Business organization has a specific strategic approach to innovation activities, which is focused on practice
6	Excellent	Business organization has completely developed and embedded in practice approach to innovation activities, which gives competitive advantages and makes it recognizable among the partners and competitors
<b>Evaluation of innovation activities as implementation (results)</b>		
2	Low	Business organization does not follow a clear innovation strategy in practice
3	Insufficient	Business organization follows some innovation strategy, which is not officially represented and meets administrative obstacles
4	Satisfactory	Business organization follows a clear innovation strategy with active participation of management from all levels
<b>Quantitative evaluation</b>	<b>Qualitative evaluation</b>	<b>Interpretation</b>
5	Very good	Business organization follows a clear innovation strategy with active participation of management from all levels, leaders and staff
6	Excellent	Business organization follows a clear innovation strategy, which contains explicitly defined and truly understand goals and activities, that create specific competences, which give competitive advantages

**Table 2:** Quantitative interpretation of qualitative evaluations of business organization innovation activities.

- Scale allows by summing the final evaluations for each of the questions to identify and evaluate each of the thematic areas within the four directions of strategic card for innovations in business organization.

- Scale allows for more dynamic evaluation of the innovations in business organization by setting the threshold levels (thresholds) of the overall evaluations of thematic areas, based on that and their own assessments thematic areas are distributed in areas designated as “well-developed”, “satisfactory”, “unsatisfactory”, “weak” etc. This approach allows evaluation of future management decisions on issues of various thematic areas, i.e. if a management decision contributes to the removal of a thematic area of the zone of “weak” ratings to the area “well developed” ratings, it can be assumed that the same decision is sufficiently effective and leads to the development of innovations in business organization. The opposite is also true.

Evaluation of the questions (factors) from the matrix takes place at two levels of generalization:

*First level:* Evaluation of individual questions (factors). Based on the results of expert evaluation (from completed questionnaires) it is possible the mean score for each subject (factor) from the matrix to be determined by using formula (1):

$$average\ score_j = \frac{\sum_{j=1}^m P_j^i}{m} \tag{1}$$

In advance, by appropriate mathematical tools, the existence of a sufficient degree of consistency between the views of experts should be proved and the assessment of the degree of coherence should be validated. It is possible to construct histograms of questions (factors) for each of the thematic areas on which basis to determine the most important (significant) problems for the business organization management in the field of innovations. For this purpose it is assumed that issues from the matrix, whose average score is over 75% of the maximum fall in the immediate management decisions and issues, respectively, whose average score is below 75% of the maximum score - within the field of urgent management decisions. Table 1 shows that the maximum quantitative assessment of the issues is 6, in which a border separating the two groups of factors is obtained:  $75\% \times 6 = 4.50$

**Second level:** Obtain a summary (total) score for each of the thematic areas included in the four directions of the strategic card for innovations in business organization. Total (summary) score of each of the thematic areas could be determined by formula (2):

$$total\ evaluation = \sum_{i=1}^n a_i \cdot P_i \tag{2}$$

Where:  $a_i$  - weight factor of the  $i$ -th factor (question) of the respective thematic area;

$P_i$  - the average score of the  $i$ -th factor (question) of the respective thematic area;  $n$  - Number of factors (issues) in the respective thematic area.

An example of a matrix for evaluation the innovations in business organization could be presented by the following contents of the thematic areas of the strategic card directions:

**Direction “Business organization activities conditions”**

*Thematic area: Business Organization Strategy*

1. Business organization has a clear and formal innovation strategy in the development of which the whole staff has been involved.
2. The innovation strategy is seen as an action plan with quantified medium and long term goals.
3. Business organization has a marketing strategy that supports innovation with appropriate models and processes.
4. Business organization has a system for monitoring changes in the environment and uses the results in developing or updating its strategy.

*Thematic area: Organizational Culture*

1. Organizational values supporting adaptability, self-improvement and systemic improvements in business organization.

2. Organizational values are in support of external relations and cooperation of business organization.

3. Internal communications in business organizations integrate different perspectives through formal and informal mechanisms for collection, accumulation and processing of information and knowledge sharing.

*Thematic area: Leadership and Teamwork Capabilities*

1. Top management of the business organization has been able to transfer his vision for innovation in a way that supports other managers in setting management targets.

2. Top management of the business organization relies on leaders and leadership in addressing the challenges (barriers) to innovation.

3. The organizational structure of business organization fostering the emergence of leaders in research and innovation through delegation and decentralization.

4. Top management shows initiative, responsibility and support efforts in the management of innovation.

**Direction “Business Organization Resources”**

*Thematic area: Human Resources*

1. The policy of the business organization for human resource management is oriented to take advantage of innovation.

2. In the business organization human resource policy, the management includes staff training in the field of innovation.

3. Business organization supports and stimulates innovation activities of their employees.

4. Innovative capabilities are among the factors considered in the selection, recruitment and staff development of the business organization.

*Thematic area: Basic and Specific Competences*

1. Business organization systematically identifies and plans for building the required basic and specific competences.

2. Business organization has the necessary skills to manage their innovation activities.

4. Business organization has specific competences related to its business (product, service).

5. Business organization has the necessary marketing competences.

*Thematic area: Organizational Structure*

1. The organizational structure of business organization is built in accordance with the requirements (features) of innovation.

2. The organizational structure of business organization enables effective knowledge management.

3. Business organization has developed information and communication system that is in service of innovations.

*Thematic area: Business Organization External Contacts*

1. Business organization has developed a systematic way to manage the relationship with external partners in innovation.

2. Business organization has applied a network management approach, including in innovations.

**Direction “Business Organization Processes”**

*Thematic area: Management of Innovations*

1. Business organization has a structured process for planning, organizing, monitoring and control of their innovation activities and projects.

2. Business organization has a systematic process to identify their expectations and needs, as well as market opportunities.

3. Business organization has a structured process for selecting and generating new ideas and concepts for products, processes, organizational and marketing models and methods.

4. Business organization endeavors to build and maintain cooperation between their organizational structures.

5. Business organization has been able to define their innovative projects in a manner understandable to managers and employees.

*Thematic area: Using and Protecting Intellectual Properties*

1. Business organization has a structured process for collecting and using the results of their innovation projects.

2. Business organization has a systematic process for protection of intellectual property and the results of innovative projects, which is understood and shared by staff.

*Thematic area: Self-improvement and Systematic Progress*

1. Business organization uses “lessons learned” within the process of its development.

2. Business organization has a structured process for collecting, studying, adapting and implementing best practices in innovation.

**Direction “Business Organization Results”**

*Thematic areas: Financial Results*

1. Innovation activities have a positive contribution to financial stability and financial development of the business organization.

2. Intellectual potential of the business organization has its positive contribution to financial stability and financial development.

3. Return of the innovative projects of business organization is higher than the accepted norm for investment.

4. Business organization uses an integrated assessment of investment risk in the selection of their innovative projects.

*Thematic area: Market Results*

1. Innovations of business organization allow expanding market share (positions), entering new markets and creating new markets.

2. Creation of new products, processes, organizational and marketing models and methods have a positive effect on business of the organization.

3. Innovations give a positive effect on the reputation and image of the business organization of the market.

*Thematic area: Social Results*

1. Innovations of business organization have a positive effect on the development of new skilled jobs.

In summary, the described approach for evaluation the innovations

in business organization gives an opportunity an evaluation process to be structured in the following steps:

- Generating (creating) the matrix for the evaluation of innovation management;
- Implementing evaluation using the matrix in an appropriate manner (e.g., by conducting expert evaluation);
- Processing of the results and determining the final evaluations of the thematic areas from the strategic card;
- Reporting to managers (entrepreneurs) the results from

evaluation and recommendations for the development of innovations in business organization.

The content of the first step corresponds to the phase “a description of the innovations” (Figure 1), the second and third step - the phase “measurement of innovation”, the fourth step - the phase of “management innovation”. Of course, the results from the evaluation of innovations in business organization themselves are unable to provide entrepreneurs (managers) willing managerial decisions, but in any case help in decision making process making decisions more informed and based on knowledge.