|Innovation System
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Инновационная система
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Abstract: *the key variables and the innovation strategy concepts that are important for the purposes of implementing innovations are discussed. The overall innovation system of the organisation are reviewed. A method of implementing the innovation system is proposed.*

Аннотация: *рассматриваются понятия ключевых переменных и инновационной стратегии, необходимые для целей внедрения инноваций. Рассматривается инновационная система организации в целом. Предлагается метод внедрения инновационной системы.*

Keywords: *innovation system, innovation, innovation process, innovation strategy, innovation project.*

Ключевые слова: *инновационная система, инновация, инновационный процесс, инновационная стратегия, инновационный проект.*

The first use of the meaning of innovation system was in the terms of the national innovation system that meant mutual relations of all players of this system at the national level to which state, companies, universities and research institutes relate in order to carry out innovation activity [1]. By virtue of inequality or priority of separate innovation trends there are derived concepts, sectoral innovation system and technological innovation system in the national policy [2]. National innovation system by virtue of globalization of many economic processes is also used in a form of international and regional innovation systems [3]. This meaning was used in the context of corporate innovation system, i.e. organizational mutually related processes and structure of search and creation of innovation products, their integration and promotion at the market [4]. The mutual relation of these meanings is important because the national innovation system, as external environment, contributes to opening of full potential of corporate innovation system as internal environment of a company. One of the vivid samples of the leader of national innovation system is USA. But in case of absence of such mutual relation, for example, in case of non-efficient policy of a regulator in this field it may significantly reduce the innovation capabilities of a company or complicate their implementation [3].

On Figure 1 you can see six key interacting elements of corporate innovation system. The field of our study does not require detailed examination of all elements, but we should cover the key moments. Especially, the leadership and management element should be stressed out as these are the factors which determine as an initiator the changes towards effective innovation system.
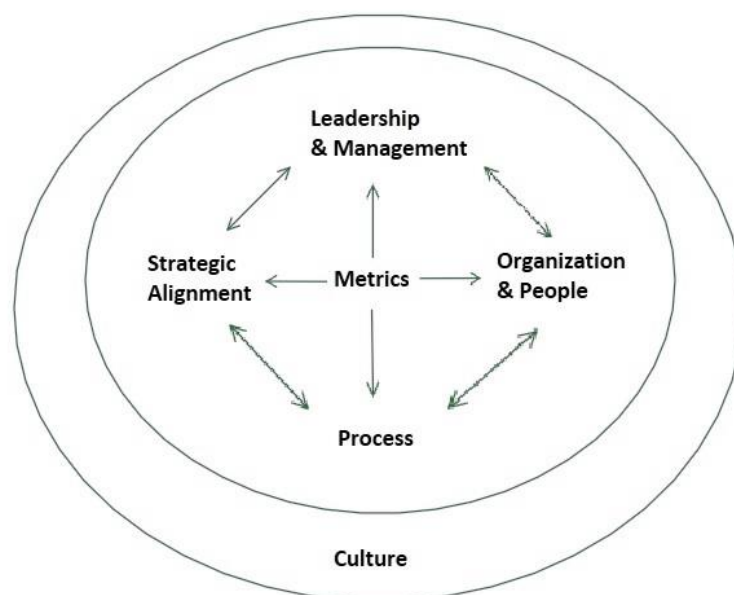

Fig. 1. Corporate Innovation System [5]

Any transformations focused on the corporate innovation system start with leadership and management. The top management team should strive for innovations and be guided not merely by the operations management principles, but emphasize, at the strategic level, the innovations as a valuable and essential element of the general strategy. It is necessary to understand innovation management features that are fundamentally different from those of operating activities. The key difference is a non-linear nature of innovative activities. For this reason, the concept of leadership is crucial for both creative and innovative activity stimulation and making strategic changes focused on the innovation system. In this regard, the effective approach is to apply the concept of loose-tight leadership, which combines both the opportunities for creative thinking and a clear selection process for development and financing projects. This process is determined by reference to the type of organization, but generally it should rely on the following principles that encourage creative thinking [5]:

- Provide freedom to fall
- Include experiment and improve
- Reward idea generation
- Provide cross-pollinate ideas, brainstorm frequently
- Build cross-functional team and expertise
- Make relentless innovation as a priority
- Stimulate organisational learning

With the effective process structuring (considering the above principles and elaboration of the process phases), this may have an effect on the entire corporate culture of the organization, making it innovative. Herewith, it is a must to involve as many people as possible at all levels of the organization in the process. To this effect, the innovative process should be commonly available for all employees. The role of the organization leaders is to align corporate strategic objectives with those of the innovation process and personal goals of employees (through the incentive system). It is important for the leaders, by their personal example, to involve employees in the process and encourage them. In order to ensure efficiency of innovative projects and a fair remuneration of the project participants it is also necessary to provide for the progress measurement and evaluation system for this process, which should be applicable to all projects of the process [5].

Corporate culture, being an element of the innovation system, forms an integral part thereof. The quintessence of the corporate culture is a paradigm which, according to the Cultural Web model, is the essence and synthesis of all the corporate culture variables [6]. The number of variables may vary from author to author, for example, as per Johnson et al. [6], Meyer [5], Rick [7], but the basic variables remain unchanged (only the wording may vary). Herewith, another model of corporate culture should be noted as well, i.e. the Iceberg model [8] which, according to its metaphoric name, divides the variables into visible (formally established) and invisible variables (more complex to determine). Below are the main variables according to this model.

Visible variables:
- Stated values
- Vision and strategy (including goals)
- Organizational structure
- Processes (including policies and procedures)

Invisible variables:
- Symbols and stories
- Rituals and routines (norms and unwritten rules)
- Value
- Power structure
- Control system
- Perception

An innovative paradigm of corporate culture should ideally reflect the relentless innovation, which means continuous aspiration for innovations in all aspects of the organization [5].

Corporate innovation system is not only limited to the internal environment, but requires building of relationships, in regard to innovations, with the external environment as well, which corresponds to the concept of extended enterprise. For example, building of relationships with the national innovation system, or technology vendors. The primary goal of corporate innovation system (as well as the overall strategic management) is to create a sustainable competitive advantage, i.e. a continuous market dominance over competitors, which, for the retention purposes, is constantly improved and transformed by reference to the internal and external environment [8]. This goal requires an adequate and effective business model, that is sustainable business model. Building of such a business model in terms of leadership and management requires the role of Business Architect.

The Business Architect role involves working with business architecture, which implies development and support of business capabilities of the enterprise at the strategic level in order to create a sustainable business model [9]. For the purposes of a corporate innovation system, the Business Architect role may be crucial, since

in the world of innovation revolutions the innovations form an integral part of the sustainable business model. In this case, the Business Architect role may be made more specific depending on the levels of architecture (activities may be carried out at all levels) [10]. Figure 2 shows the levels of business architecture, where the Business Architect is planning and implementing changes.
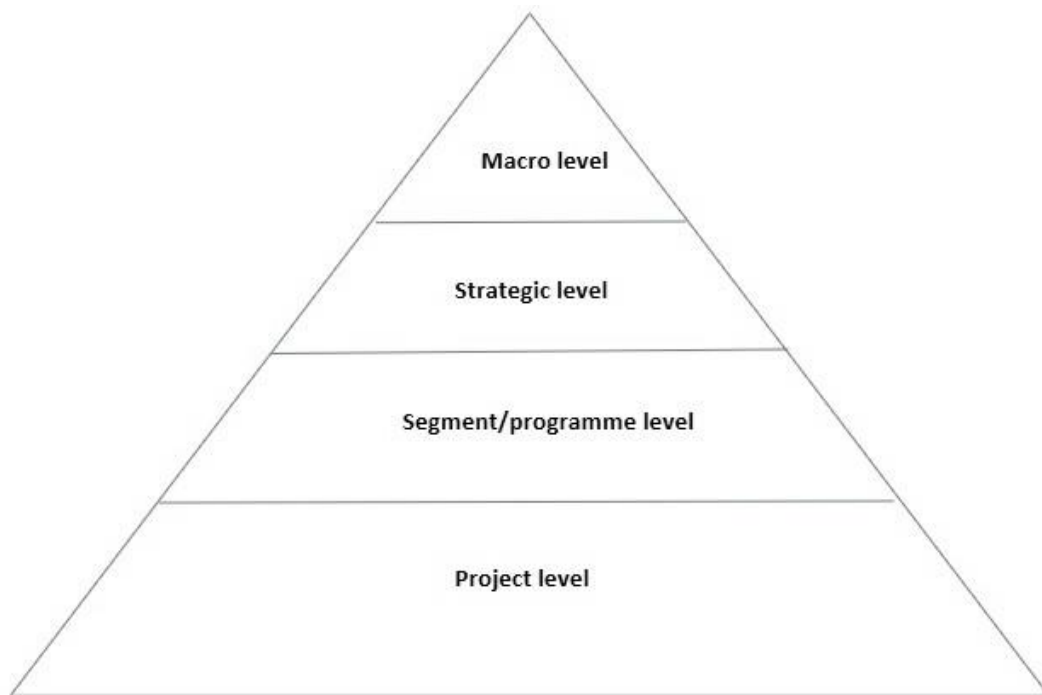
Fig. 2. Business architecture levels [10]

The Macro Level is the most generalized and covers such aspects of architecture as the purpose and vision of business, how business will generate value, and how business will benefit stakeholders. The information covering the above is primarily intended for owners, investors and executive management [10].

The Strategic Level of architecture is designed to describe the specific objectives within the Macro Level goal, describe the current and final states of the business architecture. This level also includes the strategies adopted by reference to the key internal and external factors. The principles and policies used in the current operations and in the process of transformation and changes targeted at the final state of the architecture are also important. The information on this level is primarily used by the senior management and those responsible for transformation and changes [10].

The Segment/Programme Level includes a roadmap to reach the final state of the architecture, which has been determined at the previous level. The roadmap is worked out by each segment of the organization separately (business architecture aspects), and is then reflected in the programme, which is also being designed at this level. The programme contains work schedules, and the projects within the programme include detailed plans, which are developed at the next levels. A clear focus is important for the programme, which is determined by the previous level context, and it is essential to coordinate all projects within the programme as well [10].

The Project Level includes specific business change projects. This level is also called business solution architecture, since it describes a specific solution to achieve the strategic goals of the business architecture [10].

In planning and implementing the corporate innovation system architecture, Business Architect may both use the business architecture itself, and combine it with the international project management standards at the Segment/Programme Level and the Project Level. The most proven and appropriate standards are those of PMI (Project Management Institute) and MSP (Managing Successful Programmes) [10]. But the most important is the competencies of the Business Architect. In addition to the leadership features described above, the management competences such as knowledge of the innovation system at all levels of the organisation and in different contexts (local, regional and global markets), strategic and systematic approach to innovations, design thinking in the context of the innovation system (business processes, business capabilities, business model), change management techniques competencies, are required as well [10]. But the competences, that are important in the corporate innovation system context, should be specifically highlighted, those are competences in the area of organisational learning [11] and management of the cross-functional team [5]. The organisational learning and the cross-functional team are the key innovations promoting factors. The Business Architect role may perform a variety of management positions at various levels within the organisation.

Thus, we have discussed the key variables and the innovation strategy concepts that are important for the purposes of implementing innovations. We also reviewed the overall innovation system of the organisation,

which is essential to create the sustainable competitive advantage. We proposed a method of implementing the innovation system.

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