

# Some Aspects of Development of Management Mechanisms of Innovative Technoparks

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**Abstract** - This paper describes the management features of innovative technoparks. It specifies the main management levels of technoparks. The tasks and functions of governing bodies of technoparks are given. Various management mechanisms of innovative technoparks are analyzed.

**Keywords:** *innovation system, technoparks, high technology, management mechanisms, management of technopark, technopark management companies.*

**Introduction.** The shift to an economy of innovative type and the normal functioning of the national innovation system requires systematic management process, reasonable and long-term relationships between participants in the innovation process. The researches show that innovation is activated with the use of modern forms of organization of high technology industry and the integration of science, education, manufacturing and government [1]. Such innovative structures are technoparks, technopolises, technology centers, and so on.

**1. The purpose and content of innovative technoparks.** A technopark implies an organization, i.e. a legal entity, which has close ties with one or more higher education institutions and/or research centers, industries, regional and local authorities of management realizing formation of the modern innovation environment in the territory of its jurisdiction in order to support innovative entrepreneurship through the construction of material-technical, socio-cultural, service, financial and other foundations for the effective formation, development, support and training for independent functioning of small and medium innovative enterprises, commercial development of research knowledge, inventions, know-how and high technologies and their transfer to the market of scientific and technical products [2].

Technoparks in high-tech combine the companies of high-tech industries, including nano-, bio- sectors, information and other technologies, research organizations, educational institutions providing scientific and human resources of such enterprises, as well as other companies and organizations activities of which are technologically associated with organizations of mentioned industries or directed at their service [3]. Technopark is defined as a form of innovation research institutions, design offices, educational institutions, organizations of innovation infrastructure, manufacturing companies or their divisions, compactly settling down in an isolated area.

Innovative technoparks as social and economic systems have the following interactive elements [4]: 1) government organizations and enterprises; 2) private organizations and enterprises; 3) universities and academic institutions.

The potentials of these elements include the followings:

1. Government organizations and enterprises:
  - significant financial resources;
  - establishment of the legal framework;
  - administrative resources, in particular, the formation of a technological platform.
2. Universities and academic institutions:
  - a large bank of scientific ideas;
  - highly qualified human resources.
3. Private organizations and enterprises:
  - financial assets;
  - the ability to replicate high-tech products.

Integration of these elements is possible only if they tend toward a common goal.

**2. Management mechanism of a technopark.** The content of technopark management includes the process of planning, organization, motivation and control, which are necessary to achieve the goal of technopark. Property management of technoparks, as well as the implementation of its organizational activities in accordance with the aims and objectives of technoparks are usually entrusted to the authorized entity - the management company. Technopark Management Companies (MC) concentrate the functions of the current and future technopark management; promote business residents' development, and deliver them business services. It attracts and places research and technical enterprises in the territory of the technopark, provides them with services and manages technopark.

A mechanism or a tool for technopark management is a set of rules and procedures of decision-making of the MC, that affect the performance of the managed entities, in particular, the information they provide and the actions they choose. In addition to the management problem, there is another problem of the management subject, i.e. the development of management mechanism and selection of the actions in accordance with this mechanism [5].

Analysis of experience in managing innovative technoparks shows [4]: 1) such complex systems do not have a complete analogue of performance; 2) each of them has its own conditions and they depend on various factors (socio-economic status, administrative and political system, etc.); 3) the management of such complex systems can be considered from the management standpoint in the socio-economic systems (SES).

Regarding the management of innovative technoparks as a complex socio-economic system, it should be noted, that as a set of interacting socio-economic elements, which make up a holistic education, any SES has new features that are lacking in the elements themselves.

Generally speaking, a system element is inherent in one or more properties that define its place within the system organization. Thus, an element can only perform its function when it interacts with other system elements.

Such systems have a special system property, which does not exist in subjects in case of any decomposition method [4]. The objectives of technopark management consist of the following stages: 1) monitoring and analysis of the current state of the managed system; 2) forecast of its development; 3) goal-setting; 4) planning; 5) distribution of responsibilities and resources; 6) stimulation; 7) control and operational management; 8) analysis of the changes [5].

Note that for the effective management of any system, as well as of technopark, a set of management mechanisms is necessary. Take into consideration, that today, a management theory has a considerable experience in design, research and implementations in the management practice that comply with all of the management cycle, that is, allowing to realize the functions of planning, organization, motivation and controlling [3].

Technopark management can be carried out on two major levels [6]: 1) government regulation, 2) collegial technopark management, i.e. at the level of executive direction. Government regulation requires a special state body, which is responsible for the development and functioning of technoparks, authorized to initiate and provide measures of government regulation and privileges for technoparks and its members for the benefit of society and the state (Fig.1). The collegial technopark management is also significant. Establishment of Association member firms of a technopark is most preferred, which will be managed by the association board, representing the interests of all technopark members. In this case, the association will be a tool for ensuring the quality of interaction and communication within the three major groups: 1) technopark and its members; 2) the level of government regulation (the special government body); 3) external entities (foreign investors and customers).

The combination of government regulation and forms of collective management enables [5]:

- to contribute to the solution of existing problems in the sector of information technology, in particular to develop information technology industry towards export-oriented services and technopark-based work;
- to create a normal foundation for information technology industry on the world market and to attract foreign investments and orders;
- to provide high-quality cooperation of the government and successful domestic business in the field of information technology in the public interest.

3. *Imperfection of management system of innovative organizations.* Different decisions are made in each level for the organization of technopark performance. At the same time, management decision is the most important and crucial issue for any manager, especially for senior management. Modern market trends and the features of

innovative structures require him primarily the effectiveness of the management process and its outcome.

In recent years, many organizations, including innovative structures are free and independent in decision-making. However, the management process reveals a number of imperfection problems of the organization management. They can conventionally be divided into two groups [7, 8]: 1) obvious problems, i.e. the lack of flexibility in the management system, immediate response to changes in external and internal environment of the organization; 2) hidden problems, i.e. inadequate information supply about the state of external and internal environment of the organization, incomplete analysis of the advanced scientific developments, which are of great practical importance, the lack of their own knowledge for the effective performance, etc. Such problems are solved by improving existing management systems.

4. *Necessity to develop a set of management system of technoparks.* In practice, various technoparks created different management systems. For example, a common management structure of a technopark can be in the form of [6]: 1) directorate, i.e. the Board of Directors of the technopark; 2) scientific and technical council; 3) financial and economic unit; 4) intellectual property service; 5) projecting center; 6) production and innovative enterprises and firms; 7) scientific and information educational complex; 8) business incubator; 9) technopark departments.

Note that despite the different names of management bodies, they have similar functioning goals and objectives. The main objective of their work is an organizational management of technopark, the interaction with the external environment, management of internal environment. In this case, the various bodies, which are set up in the management structure of technopark, have different names, but the difference between the management bodies of one technopark from another manifests itself in what functions a specific body takes on, the scope of its activity and power. It may even be so, the Center for ideas' realization, the service for intellectual property, and scientific and information complex exist in one technopark as three different bodies with its separate functions, while in another technopark, a separate unit body may exist, which carries out the functions of all three bodies.

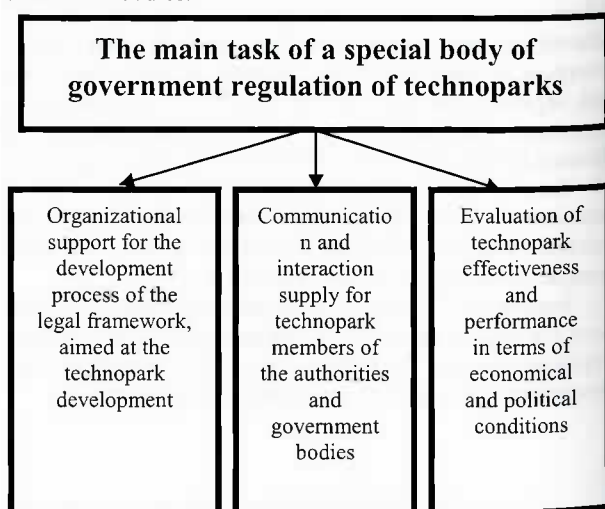


Fig.1. The main task of a special body of government regulation of technoparks

Very important point is the creation of the regulatory framework that defines a clear set of management bodies of technopark. However, the system of controls is able to be determined only with the practice of the application of these bodies as a successful and efficient performance of the associated technopark. For productive functioning of technopark a proper administration is vital, which is intended to organize a complex management mechanism of the performance of all technopark components. The efficiency of technopark performance primarily depends on the organizational management structure. This includes the mechanisms and performance of administration of the technopark and state bodies of management, directed to ensure their cooperation, organization and development of material and virtual infrastructures, achievements of the industry of information technology, its goals and objectives. The organizational structure is a model for managing a technopark in accordance with the purpose and objectives of the constitution, as well as a set of conditions of its members' activity, communication with external structures and procedures of using their own technopark infrastructure.

**5. Technopark management peculiarities.** The main objective of the management body of the technopark is to provide cutting-edge position of the industry of information technology on the global market through the establishment and improvement of high-tech and competitive production basing on favorable economical, social, legal and other conditions.

The main objectives of the management body of technoparks are as follows:

1. Implementation of a single marketing complex of the technopark;
2. Assistance in developing attractive conditions for the market of information technologies;
3. Stimulating domestic financial institutions and companies of other sectors of the national economy for the target investments;
4. Attracting the latest information technologies to various sectors of the national economy;
5. Providing enlargement of existing domestic producers and service providers in the field of information technology;
6. Promoting the expansion of the list of produced products. Coordination of development strategies of all participants of the technopark.

Aimed at this Executive Board is developed in the technopark in the form of state scientific-technical and innovative institution, which functions through government support.

Directions of the Executive Board of technoparks include [6]: 1) Integrating and strengthening the intellectual, information, material, technical and financial resources of local subjects. 2) Participating in the formation of economic market mechanism that stimulates the innovation. 3) Creation of scientific and technical prerequisites for the

development of high-tech industries. 4) Assisting the development of new technologies and companies short-run production of competitive and importing products. 5) Promoting the competitiveness of the applied scientific results, design developments. 6) Developing conditions for the preservation, training and retraining of the personnel. 7) Attracting investment to facilitate the development of high technology and the satiation of the market with high-tech products. 8) Adjusting new approaches, measures and tools for the rational and efficient use of integrated capacity of the scientific and educational complex.

To achieve the objectives of the technopark, executive board should have a full set of services provided with favorable terms, including [6]: 1) dataware; 2) consulting; 3) marketing; 4) assistance in attracting domestic and foreign investment; 5) management in the sphere of developments and implementation of high technologies; 6) organization of risk capital insurance; 7) patent and license services; 8) protection of intellectual property; 9) legalization of technical and financial documents; 10) leasing of industrial and experimental equipments; 11) logistics; 12) personnel training; 13) consultation.

**Conclusion.** Conducted analysis enables to point out, that the abovementioned factors and aspects take into account the key moments in development process of the system of management mechanisms of innovative technoparks. These management mechanisms will be enhanced according to the changing economical conditions. Therefore, the given management aspects are recommended to be taken into account and used in the development of the systems of various management mechanisms of innovative structures in the sphere of high technology.

#### BIBLIOGRAPHY

- [1] A.A.Maltseva, G.A.Marzak, A.S.Nekrasova. Analysis of the legal framework for the performance of technopark management companies in the modern conditions. Journal: Problem analysis and state governance projection. № 2, 2011. pp. 109-116.
- [2] A.G.Aliyev, R.O.Shahverdiyeva. Management issues of ICT technopark performance. 5th International Conference on Application of Information and Communication Technologies. Qafqaz University. Baku, 12-14 October 2011.
- [3] A.G.Aliyev, R.O.Shahverdiyeva. Theoretical basics of managing innovative structures in the field of high technology. 5th International Conference on Application of Information and Communication Technologies. Qafqaz University. Baku, 12-14 October 2011.
- [4] S.V.Krasnov, D.Y.Nikulin. Management of IT-parks as a complex socio-economic system. Journal. Bulletin of Volga State University. № 18, 2011. pp. 30-36.
- [5] D.A.Novikov. Management methodology. -M: Libro-Kom. Moscow 2011. pp. 128.
- [6] V.N.Frolov. Management bodies of technoparks and their role in the management organization. Bulletin of the University of the Volga. № 72, 2010. Pp. 16-22.
- [7] A.A.Bitlev. Enhancement of management system of innovative infrastructure at the micro level. Journal. Terra Economicus. № 4-3, 2011. pp. 16-19.
- [8] E.G.Russkova. Managing the changes in the system of infrastructural support for innovations. Journal. Terra Economicus. № 1, 2012. pp. 34-37.