TECHNOLOGICAL PARKS AND ZONES, BUSINESS INCUBATORS AND CLUSTERS IN BULGARIA AT THE BASE OF INDUSTRIAL COMPETITIVENESS

ТЕХНОЛОГИЧНИТЕ ПАРКОВЕ И ЗОНИ, БИЗНЕС ИНКУБАТОРИ И КЛЮСТЕРИ В БЪЛГАРИЯ В ОСНОВАТА НА КОНКУРЕНТОСПОСОБНОСТТА НА ИНДУСТРИЯТА

Assoc. Prof. dr. eng. Petrova D.  
Faculty of Economics, Technical University of Gabrovo, Bulgaria

Abstract: This paper examines the current organizational structures of business in Bulgaria - industrial zones, technology parks, business incubators and clusters with their products, which are based on innovative projects. Made a description of the design analysis of investment projects. The descriptions follow a common structure to facilitate the work of the user, but also to promote the standardization of procedures for analysis and reporting and to facilitate communication between those who propose projects for evaluation and their evaluators. Attached are the results of experimental verification and are statistically lip service given in graphical form.

KEYWORDS: INNOVATION, INVESTMENT PROJECT, METODOLOGY, ORGANIZATIONAL STRUCTURES

1. Introduction

Successful development forms of innovation organizations are technology parks and Technopolis. Technology parks (technoparks) are a key tool to stimulate technological innovation in existing enterprises, start-ups or research institutes. Technological parks in the process of its creation in different countries have their own characteristics. Therefore simultaneously with Technology Park meet Science Park, Innovation Centre. All they incorporate core as a university designated area with specific infrastructure that provides the necessary conditions for the transfer of new technologies in the industry, each of these terms has a specific feature [1].

Despite the differences, all structures bearing the name technology parks are typical of a number of common traits that allow them to speak as a special phenomenon. Technological Park is a place where newly created technology-oriented companies can find appropriate intellectual environment and support in starting and developing their business, access to markets, technology, etc.

Innovation clusters depend on global growth markets and are based on intensive use of knowledge. Cluster is a geographical and economic concentration of interconnected organizations, specialized suppliers of products and services associated institutions. This is a set of companies with similar proceedings (in a geographic area or nationwide), but it involves more local governments, business organizations, educational institutions, financial institutions, etc., which cooperate in a common goal. The objective is to achieve higher efficiency in manufacturing, borrowing a sustainable market niche or a new market (local or international), create and launch a new product or new service.

Financing of projects is generally the investment of funds needed for their realization. These funds may have the most diverse source: own resources of the enterprise (depreciation, retained earnings, etc.) borrowings (bank and other loans), international organizations and institutions, the state, etc. co-financing. This is financing, which involves a partnership of two or more institutions, corporations, financial institutions and others in the financial provision of the realization of a project [4, 5].

Usually traditional project investor is the company itself or a corporation that realizes it. In the second half of the last century, however, a lasting trend industrialized countries, strengthen the practice in the financing of an investment project to use a wide range of sources, including government. Last rarely provided as direct funding - grants, loans and in the form of state guarantees and the like Financing of large investment projects usually implemented by large financial groups (permanent or created specifically for the realization of a project - consortia) or by international institutions and economic entities.

The descriptions in this study follow a common structure to facilitate the work of the user and also to encourage standardization of procedures for analysis and reporting, as well as to ease communication between those who propose projects, and those who appreciate them. Object of study in this paper are industrial zones and technology parks using innovative projects to improve their competitiveness - a description of the project analysis.

2. Exposure

Project financing differs from traditional lending. It can be achieved not only by Commercial Banks (CBs). As participants in the schemes for project funding can participate more Investment Banks (IB), Investment Funds (IF) and companies, Pension Funds, specialized funds of international and regional organizations, leasing companies and others. [2].

Lending by definition be implemented by CB. Only in certain cases, however, where the financing of a project is implemented for the most part by a bank loan, it can talk to a bank (credits) project financing. Moreover, bank loans as a way of investing funds for implementation of projects shall be granted under strict conditions. From the perspective of the banks loans to finance investment projects (IP) are too risky, which is why they are entitled to a higher interest rate and risk premium. This risk is borne by the banks only at sufficiently reliable guarantees for its effectiveness. In many cases they act as entrepreneurs and actively intervene in the development and implementation of the project, not rare and management already in operation site. Often, especially large Commercial Banks, still in contracts for lending to the construction of a particular investment object, reserve the right to convert into shares of the company managing the project, in whole or large part of the amount of loans. This was the reason the project lending to be defined as one of the tools for merging of industrial and banking capital [3].

2.1. Setting goals

It is necessary to consider the local nature of the objectives, as well as the more general significance and impact. For this purpose can be grouped:

- Construction of basic infrastructure for the creation of industrial zones, trade zones and services using innovative projects to improve their competitiveness;
- Construction of basic infrastructure for the planned relocation of productive plants from excessively congested or polluted areas using innovative projects to improve their competitiveness;
- Construction of centers offering services to enterprises and companies of a certain territory (accounting services, financial information, marketing, training ...);
- Creation of centers promoting the creation of new companies and supporting existing ones using innovative projects to enhance the competitiveness (technological parks, business innovation centers, etc.);
- Combination of the above, often in order to provide support to companies and enterprises in a particular segment of the industry and to increase their competitiveness. Functional and physical links of the project with the existing infrastructure system should always be clearly described and defined project [5].

2. 2. Identification of project

To identify the writing of the draft would be useful:
- To identify the serviced area, i.e. the geographical area, the size of the companies that will be attracted (e.g. craftsmen, SMEs, medium and large) and economic sectors.
- To provide basic information such as - the number, size and type of business, type of real services and scientific / technological laboratories, if any;
- Provide the following engineering data:
  - Location and area (km²) of equipped area and the breakdown of land;
  - Number and covered area (m²) of warehouses, stores, office space, exhibition areas, etc.;
  - Internal viability and mobility (roads and railways) and their links with external systems; features of possible ports, heliports, etc.;
  - Internal networks and systems, e.g. aqueducts, drainage systems, sewage systems, electricity, lighting, telecommunications systems, security, etc., attaching data and layout;
  - Number and floor area of public buildings (real services, laboratories, logistics, canteens, telecommunications centers, etc.);
  - Significant technical elements, such as specialized laboratories, multimedia services centers, etc.

2. 3. Feasibility studies and analysis capabilities

A comparison with the previous situation (without the project) and possible alternatives for satisfying the same demand.

Main question of feasibility studies and analysis of the options is:
- Assessment of demand from existing companies to relocate in the serviced territory;
- Rate of emergence of new companies;
- Demand and dynamics of real services;
- Elements of the environment;
- Innovation.

The options analysis should consider global alternatives, e.g. increased funding direct to companies for the same purpose (relocation, purchase of real services, technological innovation, new production lines or newly constituted companies, etc.)

2. 4. Financial Analysis

Financial analysis must be conducted even if the services are totally free (financial rate of return is negative). The analysis should measure the net cost of public finances and to make a thorough comparison with other similar investments.

The financial analysis includes:
- **Financial inflows**:
  - Rental costs;
  - License costs;
  - Cost of land;
  - Costs of storage;
  - Expenses selling prices of services (water, electricity, drains and purification, storage, logistics, etc.)
  - Expenses for real services.
- **Finance costs**:
  - Costs for goods and services necessary for the operation of infrastructure;
  - Costs for the production of real services.
  - Time horizon: at least 20 years.

2. 5. Economic Analysis

To the elements outlined in the financial analysis should be evaluation of the main social costs and benefits. For financial and economic analysis we can make compared between two situations - with and without investment.

The analysis must take into account:
A) Social benefits: better positions on the market - for existing companies, distribution of entrepreneurial knowledge and skills among companies - beneficiaries and externally, retraining, impacts of various production factors on employment and incomes, the emergence of new productive companies, the emergence new private companies for services, etc.

B) Determine the amount of social benefits: one of the possible approaches that can be adopted in some cases, is to divide potential companies - beneficiaries of the serviced area by size and sector of activity. Then you can assess the benefits for each class companies, using, for example, increased added value thanks to its advantageous location (e.g. savings of transport costs, greater penetration of the market, which was previously hardly attainable, the effect of possible promotional activities of the new exhibition space, lower costs for basic services, etc.), or the availability of real services (e.g. a good market position due to marketing service, better penetration and cutting costs through telemarketing, technological improvements or new production technologies, improved professional level thanks to training, etc.).

### Table: Financial Return

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure to support production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.30</td>
<td>16.87</td>
<td>10.49</td>
<td>5.28</td>
</tr>
</tbody>
</table>

*Sample data: 4 major projects out of 14 in the sector included in the sample were 400 projects [5].

### Chart: Financial Return

![Financial Return Chart](image-url)
waste, etc.), and possible overloads urban and transport congestion caused by realization of infrastructure. It should, however, take into account that since the relevant impacts will increase in the area surrounding the new infrastructure, they should decrease in the rest of the serviced area, the global effect - which precisely must be taken into account in the analysis - may be positive or negative (i.e. control systems can be more efficient, etc.).

2. 6. Other elements of assessment

Social costs can be measured by physical indicators, directly or indirectly related, and it is possible to calculate the cost-effectiveness (cost/efficiency), which are associated with social costs.

Use multi-criteria analysis and other evaluation criteria, and should discuss some indications on other evaluation criteria, particularly in relation to environmental impact, innovation and technology development.

2. 7. Sensitivity Analysis and Risk Analysis

Uncertainties and risks regarding trends in the variables are important and part of the considerations in the evaluation of investment projects.

Key factors are:
- Initial lack of flexibility;
- Difficulty in forecasting the real rate of penetration in the serviced area, both in terms of moving companies (in some cases relocation is accelerated by favorable policy of territorial planning) and development of new companies.

The sensitivity analysis and risk analysis should take into account:
- Cost of the investment;
- Application rate in the area;
- Costs for certain input factors of particular importance (labor, outsourced goods and services needed for production of real services);
- If quantified pace of development and premature closure of new businesses.

3. Conclusions

Descriptions made in this study follow the general structure for the development of investment projects for enterprises with a modern organizational structure, such as industrial zones, technology companies, business incubators and clusters. These structures use innovation to increase their competitiveness. Facilitates the work of the user and promote the standardization of procedures for analysis and reporting. Ameliorated communication between those who offer innovative projects and evaluators of these projects.

Object of study are the description of the design analysis of innovative investment projects for industry, in particular for businesses and companies aimed at:
- Increasing the competitiveness of the market;
- Increasing market niche;
- Introducing technical innovations and inventions;
- Improve the standard of living and working.

References