METHODS FOR VALUE ANALYSIS INTEGRATED IN A NETWORK FOR TECHNOLOGICAL TRANSFER

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În lucrarea de față autorii au căutat să prezinte noile metode de analiză a valorii care au stat la baza realizării unei rețele informatice dezvoltată în cadrul proiectului IN – TECH – TRANSFER şi folosită în cadrul Programului „Competitivitate şi Inovare". Această unealtă permite orientarea resurselor din unele institute de cercetare şi din universități cu scopul sprijinirii inovării, transferului tehnologic şi accesării fondurilor naționale şi europene.

In this paper the authors have sought to present the value analysis methods which were the basis for creating a computer network developed under the IN – TECH – TRANSFER and used within the program "Competitiveness and Innovation". This software tool allows targeting of resources in some research institutes and universities to support innovation, technology transfer and access to national and European funds.

1. Introduction –The project IN-TECH-TRANSFER

European Commission launched the 2010 initiative which specified the universal role of Information and Communication Technologies (ICT) as key pillars in the creation of basic infrastructure for innovation and economics. They allow the development of new applications and new services. Also, they offer possibilities of expression and provide means to enable enterprise productivity growth, based on the new implemented procedures. Project IN-TECH-TRANSFER allows a widespread dissemination of research results obtained in the National Programs for Research - Development and particularly the Program "Relansare Economică prin Cercetare şi Inovare" (RELANSIN), which was coordinated by (Agenția Managerială de Cercetare Ştiințifică, Inovare şi Transfer Tehnologic AMCSIT – Politehnica), conducted during 1999 to 2006. In this way,

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with the accord of the units they have developed, a series of projects, which are of interest to various internal and external customers, can be used. Also, projects coordinated by the partners who are part of the project consortium may be used. At the same time, taking into account the importance of increasing innovation given issue, the full importance reflected in the National Research-Development Programs (2007-2013), it is necessary to create mechanisms for supporting innovation. Mainly within the framework of National Research-Development Programs, it is important to support projects in the INOVARE Program and especially projects in the PARTENERIATE Program, as an issue oriented on technology transfer. If more and more mechanisms to facilitate the technology transfer are created, than the objective to create products, technologies or services can be achieved.

2. Principles of value analysis integrated in the software tool

Implementing a software tool to support analysis and exploitation of research results in an economic environment is a worldwide current issue. In this direction, in the academic environment, efforts have been made at different levels of development of complex research projects, such as: system modeling to obtain a complex which can be integrated into fabrication process modeling [1], quality [2], performance analysis of systems [3]. A great importance is given to the development of such software tools for analyzing quality projects based on predefined criteria at the strategic level [4], value analysis of R&D projects results which leading to decisions on next actions for the promotion, implementation and use [5]. The decision making is an decisive step of the technology transfer in achieving any degree of success of R&D activities [6].

This paper presents new methods for the value analysis of projects implemented in a collaborative network [7]. This type of projects is common in the IT industry [8] but we proposed the development of specific modules dedicated to value analysis for project management and evaluation based on the above mention new principles.

In the hereinafter, we will present the general vision for technology transfer promoted by RELANSIN Program that is mirrored in some principles for value analysis leading to the development of new methods for project evaluation implemented in the IN-TECH-TRANSFER collaborative network.

3 Technology transfer – promoted strategy by RELANSIN Program

The essential changes in the economic area, the need for economic relaunch of these economic units, groups or categories of economic units, with the Romanian majority shareholder, led to the launch of various National Research-Development Programs and for stimulation of innovation. Among them,

RELANSIN program was the leading program, which made possible the implementation of integrated projects that have targeted both the research and development process and the making process of the necessary investment to achieve envisaged economic results. Sustainable economic development was always determined by innovation and technology transfer. To be used successfully, technological transfer must target the market need with new or upgraded products, technologies and services.

The complete process of innovation involves the creation of "new" and its implementation. Technological innovation involves creative technical valuation, established as integrated part into the overall process of research - development. Regardless of form, technological innovation should give to the new product added value and technological progress sufficient to ensure commercial success. It refers to all activities technical, financial, manufacturing, market, involved in:

- Introduction into the marketing circuit of a new product, technology or service;
- Initial use of a process or production equipment;
- Opening new markets;
- Identification of new sources of raw materials;
- Economic restructuring at the micro or macro level.

Technological innovations refer to both new products and new processes and significant managerial methods for their development. Therefore, innovations involve a series of scientific research - development, technological, organizational, financial and commercial. An innovation is considered implemented if it was placed on the market (product innovation) or if it was used in a production process (process innovation or technology). Innovation implementation can be done either directly or through technology transfer market. But, a project whose results are required by the market will be more successful than another whose impact is not found on the market even all activities has been completed [4].

In literature [8], [9], [10] technology transfer is defined as the introduction into exploitation of a new technology in the majority of economic units characterized by the same type of industrial production. Accelerating technology transfer from one level to another higher development presupposes the existence of the following three key elements:

- Potential users of technology transfer to be aware of the development of science and technology;
- To be a social order for the transfer technology;
- There are entrepreneurs to take the risk inherent in technological development.

As seen in Fig. 1, technology transfer is included in the chain of research – development activities.

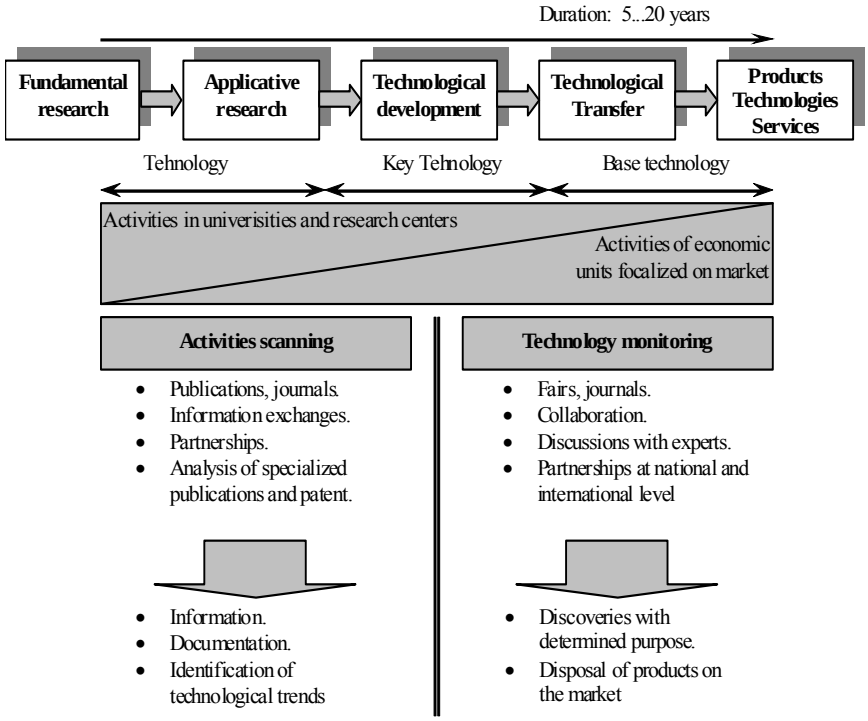

Fig. 1. From basic research to product / technology / service through technology transfer

4 Qualitative and quantitative analysis of projects conducted under the Program RELANSIN

Selection and ranking of completed projects, was made taking into account the general objectives, specific objectives, the thematic directions and results of the RELANSIN Program, as specified in the legislation plan for National Research – Development and Innovation PNCDI – I:

- Stimulating the development of especially small and medium sized enterprises and accelerating the process of implementing value creation Romanian technical;
- The objectives of technology transfer to be between the priorities arising from the reform of government and areal strategies.

The projects were analyzed after ten specific program evaluation criteria, all projects being completed. Each criterion was assigned a ranking grid which uses a scale from one to four points. As shown in Fig. 2, a project whose results are required by the market has received a score higher than another whose impact is not found on the market even all that research – development has been great. These criteria are specified in Fig. 3.

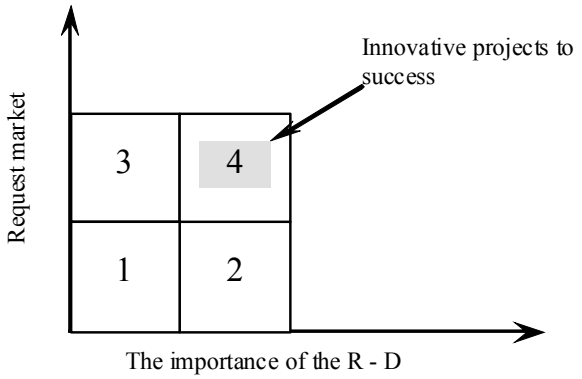

Fig. 2 Criteria for evaluating projects in the RELANSIN

Depending on the obtained score, the projects was selected and classified. The projects positioning were divided into two categories on the hierarchical ladder: innovative projects completed with technology transfer and successful projects with real possibilities of technology transfer (project transferable).

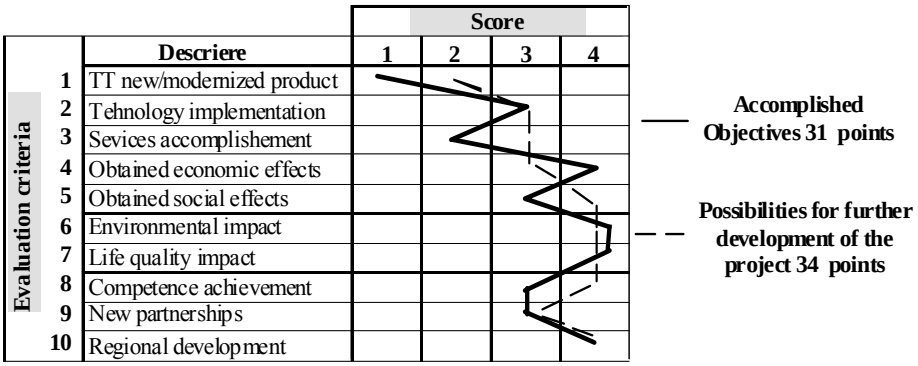

Fig. 3 Positioning projects under the RELANSIN Program according to the national legislation [7]

Each project, reviewed by the ten criteria, may be represented by a poly-line of strong / weak points after using a score from 1 to 4 as is shown in Figure 3. A complementary project evaluation, is the increasing the number of strengths by limiting the removal weaknesses. This was possible through a morphological analysis of each project. As shown in Figure 3, projects can be developed accordingly, may be set other features or functions can be improved so that, using existing criteria, the project can receive a higher score. All these are done to meet internal and external market requirements by increasing the use value of products, technologies and services.

5. Conclusions

The IT network developed in the project IN - TECH - TRANSFER [8] comes to support the market exploitation opportunities in terms of innovation and technology transfer. Because technology transfer to be successful must target to meet the market need with products, technologies and services. In support of this idea was created a system that can be easily accessed by potential users of research results - development.

In the present paper, the authors have sought to justify the importance of creating collaborative networks that will integrate the resources of some research institutes and universities to support innovation, technology transfer and access of the "Competitiveness and Innovation" Program. To achieve the proposed goals it was proposed new methods used for analysis of projects in the RELANSIN and other national programs.

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