

## Synergies in Research - Management of Research Projects in Multidisciplinary Teams and Partnerships

Cristian Marius Toma

*"Grigore T. Popa" University of Medicine and Pharmacy Iasi, Romania*

*"Alexandru Ioan Cuza" University of Iasi, Romania*

[tomamariuscristian@yahoo.com](mailto:tomamariuscristian@yahoo.com)

Vasilica Toma

*"Grigore T. Popa" University of Medicine and Pharmacy Iasi, Romania*

[vasilicatoma40@yahoo.com](mailto:vasilicatoma40@yahoo.com)

### Abstract

*The management of research projects carried out in partnership involves the efficient coordination of resources, communication and responsibilities between different partners to achieve common objectives. Such management requires the clear establishment of roles, work plan and mechanisms for monitoring and evaluating progress, being essential risk management and adaptability to changes throughout the project. Close collaboration and transparency in decision-making contribute to the success of the project and to maximizing the impact of research results. This type of management promotes synergy between teams and optimizes the use of resources to support innovation and scientific development.*

*The paper analyzes the partnership implementation of a research project within the "Grigore T. Popa" University of Medicine and Pharmacy in Iași, the project objectives, the way the partnership developed, the challenges, risks and obstacles that arose during the project, as well as the solutions to solve them and the presentation of the conclusions.*

**Key words:** research project, project management, research partnership, multidisciplinary teams

**J.E.L. classification:** I23, O32

### 1. Introduction

A project is a temporary and unique undertaking to achieve a specific goal. Projects can be carried out at any level of an organization, can involve one person or hundreds of people, a single department or several, sometimes crossing the boundaries of the organization. Developing a new product or service, running an electoral campaign, constructing a building, designing a website, running a space or military mission, organizing an exhibition or a vacation, here are some examples of projects.

Oprea D. (p. 18) defines the project as "The intention to create a unique product, work or service through an innovative idea regarding a certain state of the components, phenomena and processes in a system, an idea defined by a clear objective, achievable through activities carried out at certain calendar dates, under well-specified quality and cost conditions." (Oprea, 2020, p. 18).

The project is actually something special by its nature and is perceived as an action outside the ordinary, therefore it is defined by T. Young (1996) as: "A set of interrelated activities, carried out in an organized manner, with clearly defined start and end times, to obtain specific results that satisfy the needs derived from the strategic plan of an organization".

According to the PMBOK Guide, 6th edition, project management is defined as "the application of knowledge, skills, tools and techniques in a wide category of activities to ensure the fulfillment of the specific requirements of a project" (PMI, 2017, p. 10).

Project management is a dynamic process that uses the most appropriate resources of an organization, in a structured, organized and controlled manner, a process committed to producing clearly defined changes, characterized by specific objectives, identified as strategic needs.

## 2. Theoretical background

A research project is a complex work, of mixed, scientific and organizational nature, which requires both professional and managerial competence, the expertise in the project field of the project coordinator and the partners being very important. (Toma *et al.*, 2012, p. 1218; Toma *et al.*, 2016, p. 413). The design and writing of the research project must follow a series of rules that ensure the necessary information for the project evaluators, as well as the basis for the project when it is financed (Toma *et al.*, 2011, p. 2131).

The quality of research projects and the results obtained from their implementation are directly proportional to the scientific and managerial competence of the project director. (Toma, 2011, p. 2127).

A project cannot be seen only as a temporary effort undertaken to create a unique product, service or result. Although the objective is the same, the elements that constitute it develop, and must be seen as a system in which inputs directly determine outputs. The evaluation of the fulfillment of quality criteria and the results obtained must be done, not only at the end of the project, but also throughout its development (Sastoque-Pinilla *et al.*, 2022, p. 16).

Project management is characterized by:

- oriented objectives - objectives without which there would be no specific results that will determine special effects in the project environment;
- oriented change - that is, achieving something that you need but do not have;
- interdisciplinarity - because it requires a wide range of professions and knowledge;
- performance oriented - establishing the most appropriate standards and quality conditions for the products produced by the project;
- oriented control - carefully establishing the quality assurance system to comply with the project schedule;
- reviewing habits and traditions - avoiding the traps specific to outdated and inefficient ways of working.

Research project management refers to the process of planning, organizing, coordinating and controlling the activities involved in carrying out a research project. It includes managing funding sources, preparing the project proposal, managing the associated budget, contracting the project and ensuring its proper administration (UPB-HR Research). Research project management also involves identifying and efficiently using the infrastructures necessary for carrying out research activities (UPB-HR Research).

Research project management is essential for several reasons:

1. Ensures the achievement of project objectives within agreed time, cost and quality conditions. Project management includes planning, organizing, monitoring, controlling and reporting all processes to achieve objectives (Wikipedia);
2. Allows for the efficient management of resources (human, financial, material) allocated to the project. Project management applies knowledge, skills, tools and techniques to project activities (Wikipedia);
3. Facilitates the creation of an effective project team and its coordination (Muntean, 2010, p. 2). Project management includes team-building and leadership for all those involved;
4. Helps identify and manage risks associated with the project. Project management monitors and controls risks to ensure the success of the project;
5. Contributes to innovation and development by applying management knowledge and techniques to research projects. Research projects have a unique character and require specific management.

Depending on the structure of the research teams involved and the resources made available to achieve the goal established by the research projects, they are divided into: a. Scientific research projects carried out by a single researcher or by research teams from a research entity or from

several entities; b. Scientific research projects carried out in institutional consortia, at regional, national or international level (Galea, 2021, p. 46, 20).

Research projects in partnership have emerged as a particular form of interaction between academia and industry. In the last ten to fifteen years, they have received increasing attention in the project portfolio of public and private organizations, as well as in the specialized literature on project management. They present specific challenges, requiring adaptations and adjustments to existing project management approaches (Vom Brocke *et al.*, 2015, p. 1025).

A partnership in the context of research projects is a formal collaboration between two or more entities, such as universities, research institutions or enterprises, to work together on a research project. This partnership involves the establishment of a collaboration contract between the parties, which specifies the responsibilities, objectives, activities, resources involved and contributions of each partner to the project (POS-CCE Applicant Guide, 2010, p. 6).

The principle of "partnership" is essential in collaborative research projects. Research partners should be identified from the early stage of preparing the project proposal, and partners should be able to actively contribute to the preparation of the project application. The research partnership should be equal, for example by ensuring that the project builds on joint activities such as joint fieldwork, joint publications, joint supervision of PhD students, knowledge exchange, etc. A successful research partnership is based on reciprocity, trust, mutual respect and sharing of results.

Participants involved in these partnerships share knowledge, collaborate on project activities, and make joint decisions to achieve the complex project objectives (Vaez-Alaei *et al.*, 2024, p. 10). Partners build and maintain relationships based on trust, credibility, respect, dignity, and transparency (Hoekstra *et al.*, 2020, p. 14).

The management of research projects carried out in partnership involves certain particularities that are essential for their success. Among these we can mention the following:

- collaboration and coordination - the management of research projects in partnership requires close collaboration between all parties involved to ensure effective coordination of activities and the achievement of common objectives;
- detailed planning - detailed project planning is crucial, including clear deadlines, well-defined tasks and appropriately allocated resources for each stage of the research;
- human resource management - building a well-trained and motivated team is essential in the management of research projects in partnership. The efficient allocation of human resources and their management are key aspects;
- effective communication - another crucial aspect is effective communication between all parties involved in the project. Clear and open communication helps to avoid misunderstandings and promptly resolve problems;
- optimal risk management - identifying and managing risks is also essential in the management of research projects in partnership. It is important to anticipate possible obstacles and develop strategies to overcome them.

### 3. Research methodology

The purpose of the research was to analyze the development in partnership of a research project within the University of Medicine and Pharmacy "Grigore T. Popa" Iași, entitled "Multifunctional platform for optimizing diagnostic and decision-making methods in medical services" - PROMED.

The partners who developed the PROMED project were the following:

- ❖ The coordinator of the PROMED project was IPA SA (CO-P1), a research and development institute in the field of automation, information technology and communications that participated in the implementation of a significant number of research projects within national and international research programs;
- ❖ Partner 2 (P2) - ITC SA has as its main activity research and development in the field of computer technology, information technology and communications, having a very large portfolio of works within national and international research programs;
- ❖ Partner 3 (P3) - Clinical Hospital of Obstetrics and Gynecology "Cuza Voda" Iași is the oldest and largest maternity hospital in Moldova, renowned for the quality of services provided to patients and the specialists working within the hospital, mostly academics.

- ❖ Partner 4 (P4) - University of Medicine and Pharmacy "Grigore T. Popa" Iași is the oldest university in Moldova, renowned nationally and internationally for the quality of university education and research activities in the field of medicine;
- ❖ Partner 5 (P5) - National Institute for Research in Informatics ICI is the largest institute with research and development activity in the field of information technology and has been designated an IT center of excellence in Romania.

The research methods used were as follows:

- ✚ Documentation: we studied the project documents: the applicant's guide, the funding application, the project implementation plan, the collaboration agreement between the partners, the project framework estimate, the progress reports of each stage and the final project report;
- ✚ Interview survey: the interview was in-depth, being conducted with the project director carried out in partnership.

To achieve the purpose of the research, we focused on the following main aspects formulated as specific objectives:

- 1) Objective 1 – O1 – *Highlighting the role of each partner within the research project carried out in partnership;*
- 2) Objective 2 – O2 – *Determining the main difficulties encountered in carrying out the partnership;*
- 3) Objective 3 – O3 – *Formulating recommendations and good practices in carrying out research projects carried out in partnership.*

#### 4. Findings and discussion

The interview is one of the most important qualitative research methods that is used to explore in depth the attitudes, behaviors and experiences of the participants.

A semi-structured interview was conducted with the director of the partnership project in which we wanted to find out details about the project objectives, how the partnership went, the challenges, risks and obstacles he faced during the project implementation, as well as the positive things, the beautiful memories he left with after carrying out this project.

The first question in the interview was: "What was the main objective of the project entitled "Multifunctional platform for optimizing diagnostic and decision-making methods in medical services" PROMED?. The project director answered that the main objective was to use information technologies in order to increase the quality and efficiency of medical services in the context of creating the information space of society.

The second question in the interview was "How did the partnership that implemented the PROMED project go?".

Before answering this question, the project director mentioned that he did not know all the partners responsible. He had collaborated with some of them before, but with others it was the first collaboration in such a research project in partnership. Even though at the beginning of the project things were more difficult to connect, each of the partners coming with their own experiences and ideas regarding what should be done within the project, as the project progressed and the activities were carried out, the predicted results began to appear. Thanks to the numerous meetings that took place and thanks to good communication between the partner teams, a very good collaboration was achieved at the consortium level. Thus, even if the partnership started a little more difficult at the beginning, as the project progressed, the collaboration between partners became very good and thus the objectives and predicted results of the research project carried out in partnership could be achieved.

The next question in the interview was: "What were the main challenges related to the management of the research project carried out in the PROMED partnership?".

The project director mentioned three challenges related to the management of the research project. One of the main challenges was respecting the initial planning of the project activities. Even though sometimes the period of carrying out the activities was longer than that foreseen in the

implementation plan, through good collaboration all the foreseen activities were carried out and at the end of each stage the objectives were met and the forecasted results were delivered. An important role in this direction was played by the project management team, which was made up of people with experience in the management of research projects carried out in partnership.

Another important challenge was related to the acquisitions that took place in the project. This was a major headache in the development of research projects, because, in addition to the fact that very lengthy and time-consuming procedures had to be followed, there were also cases in which the one who won the purchase could no longer honor the order. In these cases, a new purchase procedure was necessary, which delayed the development of some activities provided for in the project implementation plan. By initiating the purchase procedures early, we were able to avoid all the unpleasant things that would have been caused by the administrative impossibility of carrying out the purchases so necessary for the smooth development of the research project carried out in partnership.

A third challenge was related to the changes that occurred in the project implementation teams, the coordinator and the project partners. During the development of the project, there were team members who left the project for various reasons. It was necessary to co-opt new members who had at least the same skills and experience as those who left, in order to carry out the project activities and achieve the expected results.

The third question in the interview was: "How was the communication between the PROMED project partners?"

To this question, the project director said that the partners communicated very well with each other. Each partner who entered this project had their own ideas, skills, experiences and expectations related to the project. Maintaining clear and frequent communication between the project team members, sharing expertise and resources, choosing tools appropriate to the needs and preferences of the partners, recognizing the strengths of the other project participants, led to building trusting relationships between the partners.

The next question in the interview was: "What managerial risks did you identify during the project and how were they managed?"

A first managerial risk identified from the design stage of the PROMED project was the one related to the expertise and experience required by the researchers who were to be part of the project team. In order to completely eliminate this risk, very clear criteria were established that had to be met by researchers who wanted to participate in the project. Based on these criteria, a very rigorous selection of team members of all partners was carried out.

Another risk identified was the incorrect estimation of project activities, duration and costs necessary to implement such a project. To avoid these things, a project implementation plan was drawn up, with the involvement of all project partners' managers, a plan in which all activities carried out within the research project carried out in partnership were detailed.

Another managerial risk identified was that of poor management of project teams. To prevent this, the project director ensured that each team had the necessary skills and that there was good collaboration between the members of the partner teams.

A final question from the interview was: "What were the positive things and what memories and satisfactions did you have from the PROMED partnership research project?"

The project director mentioned the very good collaboration within the consortium. This partnership research project involved diverse teams of specialists from different fields: medicine, information technology, bioeconomy, etc. The collaboration allowed for mutual learning, the exchange of knowledge and new perspectives, thus enriching the experience of all participants.

The second positive thing was that involvement in this project led to the development of new skills and competencies, especially for young researchers who developed their project management skills, teamwork, communication and problem-solving skills. Involvement in such successful partnership research projects brings recognition and increased internal and international visibility for the researchers participating in the project.

Another positive thing was the creation of close professional and personal relationships between the members of the project teams. This was due to the very good collaboration between the project partners' team members.

## 5. Conclusions

The PROMED project aimed to create a multifunctional platform that would manage medical and administrative data of patients, contributing to early diagnosis, reducing the duration of hospitalization, and easy access to information.

The creation of a multifunctional platform allows collaboration between the three important components of the health system:

- ✓ Patients who will actively participate in the process of informing themselves about their own health;
- ✓ Healthcare providers who will have access to the medical information of their own patients;
- ✓ Public health authorities who will be able to view real-time reports on the health status of the population and will be able to develop prevention and warning plans for citizens in the event of epidemics.

Regarding the management of research projects carried out in partnership, we can draw the following conclusions:

1. A research project is a complex work, of mixed, scientific and organizational nature, which requires both professional and managerial competence. The design and drafting of the research project must follow a series of rules that ensure the necessary information for the project evaluators, as well as the basis for the project when it is funded.
2. A partnership in the context of research projects represents a formal collaboration between two or more entities, such as universities, research institutions or companies, to work together on a research project. This partnership involves the establishment of a collaboration contract between the parties, which specifies the responsibilities, objectives, activities, resources involved and contributions of each partner to the project.
3. Partnerships in research projects bring multiple benefits, including access to resources and diversified expertise, increasing the impact and relevance of the research, reducing costs and risks, promoting collaboration and communication, as well as increasing the credibility and recognition of the project.
4. The management of research projects carried out in partnership requires an integrated approach, which emphasizes collaboration, detailed planning, human resource management, effective communication and risk management to ensure the success of the project.
5. Maintaining clear and frequent communication between project team members, sharing expertise and resources, choosing tools appropriate to the needs and preferences of partners, recognizing the strengths of other project participants, led to the building of trusting relationships between partners.
6. In order to effectively manage the possible risks that may arise in the conduct of a research project carried out in partnership, it is important to develop a detailed risk management plan, which includes the identification, analysis, response planning and monitoring of risks throughout the project.
7. Partnerships in research projects bring multiple benefits, including access to diversified resources and expertise, increasing the impact and relevance of research, reducing costs and risks, promoting collaboration and communication, as well as increasing the credibility and recognition of the project.

For a research project carried out in partnership to be successfully completed, clearly defined objectives are needed, a team with complementary expertise and skills, a very well-prepared project implementation plan, very good communication between partners, and funding that guarantees the achievement of the forecasted results and the achievement of the project objectives.

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