Universitatea Politehnica din București

Școala Doctorală de Inginerie Industrială și Robotică

Domeniul de doctorat Inginerie și Management

Doctoral Thesis Abstract:

Title: Research on Improving the Quality of Project Management for Scientific Research Projects with European Funding

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Table on Contents

INTRODUCTION

The field of scientific research project management with European funding is of exceptional importance. This significance arises from both the socio-economic context and the quantification of the capability of a well-specialized human resource in this field.

Another aspect highlighting the importance of the field of scientific research projects with European funding is also reflected by the fact that specialized governmental bodies have been established (to varying degrees) for the management of this specific activity. In this work, for understandable reasons, we do not aim to analyze or comment on the "effectiveness" of the activities of these bodies, whose purpose, theoretically, is welcomed.
This work aims to bring as many contributions as possible, based on scientific foundations, to the establishment of methods and methodologies for enhancing the quality of managing the conception and implementation of scientific research projects with European funding.

It is well-known that a scientific researcher undergoes training over several years. They require solid theoretical preparation, but above all, a dedication and passion for the field of research, for the new.

Unfortunately, scientific research in Romania is a domain that doesn't receive the appropriate attention. It could be said, without a doubt, that it is even deprived of many essentials: adequate funding, the recognition of deserved importance and priority, and so forth.

The unfortunate consequence of this situation is (one of them, as there are several) the loss of skilled specialists in scientific research, whom we still have. And logically, these skilled specialists are no longer able to train young researchers.

In Chapter 1, we discussed the General Management Elements specific to scientific research projects with European funding, which play a crucial role in ensuring the success and efficiency of these projects. These elements are designed to guide the entire process of development and implementation of projects, ensuring a systematic, coherent, and well-managed approach. Here are a few key elements:

These management elements, along with others specific to the field of scientific research and European funding, contribute to ensuring that the research project is conducted efficiently, respecting objectives and deadlines, and that the results are of high quality and value to the scientific community and society as a whole.

In Chapter 2 of the doctoral thesis, we addressed the issue of specific elements in feasibility studies for scientific research projects with European funding. These include a range of essential aspects to assess whether the proposed project is feasible from a technical, financial, and strategic standpoint. These elements aid in identifying the project's benefits and risks, contributing to making the correct decision regarding its implementation.

These specific elements of feasibility studies ensure a detailed and well-grounded approach to scientific research projects, helping to make an informed decision and maximize the chances of success.

The third chapter of this work discusses research on the specific management of scientific research projects with European funding. This represents a highly important and complex field, given the unique nature of these projects and the specific requirements of European funders. This research aims to develop and apply suitable strategies, methodologies, and tools for the efficient management of research projects, ensuring that the proposed objectives are achieved in an optimal, transparent, and sustainable manner.

This research plays a crucial role in advancing knowledge and best practices in the field of managing scientific research projects with European funding. It contributes to optimizing project performance and enhancing efficiency in the utilization of available resources.

Chapter 5 of the paper addresses an extremely relevant and current topic in the context of managing scientific research projects with European funding: the utilization of the Kaizen method for enhancing quality in this field. The Kaizen method, originating in Japan and associated with continuous and efficient improvements, provides a significant perspective on how research and development processes can be enhanced and optimized, with a special emphasis on project management quality.

The Kaizen method proposes a framework in which the focus is on making small but constant improvements in all aspects of activity. In this context, the chapter analyzes relevant studies and research that have examined the application of Kaizen principles and techniques in the management of scientific research projects with European funding. This approach allows for a high level of adaptability and flexibility, essential elements in an environment of continuous change and evolution.

The contributions brought by this chapter are multiple and extremely significant. Firstly, it highlights how Kaizen principles can be adapted to the specificity of scientific research projects, with special attention to the intricacies related to European funding. Moreover, the chapter details experiences and concrete examples where the Kaizen method has been successfully applied in project management, thus providing a profound understanding of its impact and benefits.

Chapter 6 of the paper represents a crucial moment where the author presents their own personal contributions in the field of enhancing the quality of project management for scientific research with European funding. This chapter serves as a synthesis of the researcher's work and commitment to developing and applying innovative approaches and solutions to improve the management of these complex projects.

Personal contributions are the result of efforts, studies, and research conducted within this work, and they can take various forms and dimensions.

Chapter 7 highlights the General Conclusions of the paper, representing a crucial moment where all the results, contributions, and pursued directions throughout the research are synthetically emphasized. This section provides an overview of the entire academic endeavor and proposes the practical implications of the study.

Original contributions represent the unique and innovative aspects that the research has brought to the field of project management for scientific research with European funding. These contributions may involve identifying and applying new methods or approaches, developing models or frameworks tailored to the specific context, finding solutions to problems and challenges encountered in the research, and more. These contributions demonstrate the significant impact of the research and its relevance for both the practical and theoretical development of the field.

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CHAPTER. 1. GENERAL MANAGEMENT ELEMENTS SPECIFIC TO SCIENTIFIC RESEARCH PROJECTS WITH EUROPEAN FUNDING

A. The Principle of Analogy - this involves keen observation and a comprehensive and competent analysis of the modeled reality, through the use of analogies from other research fields, as well as through logical homology.

According to this principle, the following stages are followed for the formulation and development of mathematical models:

Stage of defining the modeled objective - this represents the initial stage of modeling analysis, in which it is essential to simultaneously meet both the purpose and the system's objectives, while ensuring their compatibility;

- Stage of defining efficiency criteria - another stage conditioned by a correct definition of all system objectives and which allows the optimization of modeling solutions;
- Stage of generating options - is based on accessing realistic, efficient, and original solutions;
- Stage of variant evaluation - carried out based on the established efficiency criteria;
- Stage of final solution determination - is conducted through a comparative analysis of different solutions resulting from the modeling.

The Principle of Concepts - is grounded in the concepts of systems theory, including the very concept of feedback.

The Principle of Hierarchy - entails the necessity of creating a hierarchically structured system of models, for the purpose of decision structuring and coordinating interactive subsystems.

Other general management principles applicable within scientific research projects with European funding are as follows:

Principle of Efficiency Enhancement: According to this principle, the primary goal of any management system is to enhance efficiency by minimizing costs and maximizing their effects.

Principle of Economic Management: This principle presupposes that specific management of scientific research projects with European funding should prioritize the efficient management of all resources involved in the project: human resources, financial resources, material resources, and especially informational resources.

Principle of Unified Leadership and Responsibility: According to this principle, project management will ensure that both responsibility and leadership form a unified entity throughout the entire project.

Principle of Competence: This principle aims for every project participant to possess and demonstrate competence in the specific area of activity they are responsible for.

Principle of Flexible Action: This principle implies and requires actions to be constantly adapted to environmental changes, both internal and especially external environments.

Effective management must continuously monitor market changes and act swiftly to minimize vulnerabilities and, if possible, convert them into opportunities.

Management, both as a theory and in practice, must keep pace with social transformations, constantly adjust to the specifics imposed by tradition, national culture, and customs, as well as the nature and characteristics of the organization where it is implemented.

Chapter 2. SPECIFIC ELEMENTS OF FEASIBILITY STUDIES FOR SCIENTIFIC RESEARCH PROJECTS WITH EUROPEAN FUNDING

According to the DEX (Dictionarul Explicativ al Limbii Romane), the term "feasibility" (from French "faisabilité") has several connotations:

- The quality of being feasible, of being achievable.
- The achievable nature of a thing. As a result, a feasibility study represents an analysis of a project or investment in terms of technical feasibility and profitability. It is also an essential process for evaluating the feasibility and potential success of the project.

A Feasibility Study (FS) serves as an analytical tool for a project. The feasibility study demonstrates whether the project or investment is technically feasible, meaning whether the resources, technologies, and organizational capacity allow for the successful achievement of the proposed objectives. It examines whether the proposed technical solutions are suitable, whether resources are available, and whether the necessary experience and knowledge exist to manage the project or investment.

By identifying and preemptively analyzing potential risks and issues, the feasibility study spares project participants and funders from investing time and resources into a project that wouldn't have realistic chances of success. Often, in practice, significant problems can arise during project execution, which can lead to failure and significant financial losses. Through conducting a feasibility study, these issues can be identified at an early stage, avoiding engagement in a project with little actual chance of success.

Thus, the feasibility study plays a crucial role in reducing risks and making an informed decision about project or investment implementation or abandonment. It ensures a proactive and preventive approach, safeguarding the interests of participants and funders and contributing to the creation of viable and successful projects and investments.

In general, it is advisable for the feasibility study to be conducted before the initiation of the respective business, for the following reasons:

➢ The feasibility study must provide reasoned answers to whether the project idea is viable or not. There have been cases where, as a result of a superficial feasibility study, a project was abandoned at various stages of implementation.

➢ Within the feasibility study, multiple implementation options can be identified and analyzed, and subsequently, the most suitable and viable option can be selected.

➢ Any professionally conducted feasibility study is of utmost importance for obtaining financing or for establishing collaborations. Furthermore, another important role of the feasibility study is serving as the foundation for a solid Business Plan.

Chapter 3. RESEARCH ON THE SPECIFIC MANAGEMENT OF SCIENTIFIC RESEARCH PROJECTS WITH EUROPEAN FUNDING

The management system represents the entirety of elements and methods of analysis and/or direction within an organization (company).

A management system is composed of the following categories of elements (subsystems):

- Informational elements
- Methodological elements
- Motivational elements
- Organizational elements
- Psychosociological elements
- Decisional elements

Each of the mentioned subsystems holds significant importance within a management system. Depending on the stage of the management process, the nature of the organization, the socio-economic context, etc., one subsystem may prevail over the others (e.g., the informational subsystem for companies in rapidly changing fields like computers and IT, or the decisional subsystem in times of socio-economic crisis).

Among all the subsystems of a management system, there are relationships and correlations. These relationships and correlations ensure the functionality of the management system.

Chapter. 4. SPECIFIC FINANCIAL MANAGEMENT ELEMENTS FOR RESEARCH, DEVELOPMENT, AND INNOVATION ACTIVITIES

Research, development, and innovation (RDI) activities play a significant role in the success and growth of enterprises and their strategic positioning.

In evaluating RDI activities, we distinguish four essential elements:

1. Evaluation of scientific research activity;
2. Evaluation of the involved personnel;
3. Evaluation of tangible assets;
4. Evaluation of intangible assets.

and two approaches:

➢ Macroeconomic approach that considers to what extent the State Administration Authorities at the national or local level manage RDI activities and direct the allocated funds, either from the national budget or from international collaboration programs (such as European programs or programs established with the USA, Japan, Canada, Russia, China, etc.).

➢ Microeconomic approach referring to the role of management in institutions with responsibilities in the RDI field in managing the allocated financial resources or those obtained from their own activities.

The comparative analysis is based on results-based management and objective-based management in the RDI field and represents the researchers' perspective, a system of procedures, and principles for resource allocation and rewards.

Among the requirements of the comparative analysis, the following aspects are highlighted:

➢ The significance of the RDI field as well as the research topic at both macro and microeconomic levels;

➢ The enterprise's capability to complete the project;

➢ Collateral effects of program implementation;

➢ Results of RDI activities and technological progress, development of scientific infrastructure;

➢ The requested financial support and the own contribution.

An investment can be generally defined as the process of purchasing something with the aim of obtaining a profit or interest.

In a financial context, an investment represents the alteration of an existing and available sum of money with the hope of attaining higher but probable future income.

In an accounting sense, an investment signifies the allocation of available capital to procure an asset, which will lead to future financial cycles of revenues and expenses.

Investments can be classified into two categories:

➢ Internal investments – involve allocating capital to acquire machinery, equipment, constructions, licenses, patents, etc. Their purpose can be cost reduction, production growth, quality improvement, market share expansion, etc.

➢ External investments – involve capital placements in shares or ownership interests in other companies. They are also called financial investments and aim to enhance the company's value and diversify income sources.

Chapter 5. STUDIES, RESEARCH, AND CONTRIBUTIONS REGARDING THE USE OF THE KAIZEN METHOD FOR ENHANCING THE QUALITY OF PROJECT MANAGEMENT IN SCIENTIFIC RESEARCH PROJECTS WITH EUROPEAN FUNDING

The Kaizen management method originates from Japan. It can be successfully applied in various fields (technology, education, economy, etc.). In this chapter, we will focus on adapting this method and using it to enhance the efficiency of project management in scientific research projects with European funding.

The name of the method comes from "kai," which translates to "change," and "zen," which means "better." Some specialists translate Kaizen as "making progress with small but rapid steps." In the business context, Kaizen signifies, in short, continuous small improvements that lead to increased productivity, quality, and, last but not least, profitability.

For the first time, the method was used in Japanese companies after World War II, and over time, an increasing number of businesspeople turned to its fundamental principles to enhance employee productivity. One of the most notable examples is Toyota, a company that consistently grows and develops using the Kaizen method.

The Kaizen method is founded on the general principle of increasing productivity and eliminating losses through competitive management. Regardless of a company's economic situation, every manager aims to enhance the efficiency of the existing team and achieve better future outcomes.

However, challenges arise when there are no budgets allocated for team development or projects, or to support the implementation of successful ideas.

However, there are effective management methods that address budget issues, and one of the most efficient and well-regarded ones is the Kaizen method, which has started to be adopted by entrepreneurs and managers in Romania.

The mentor of this method is Japanese professor Masaaki Imai, who took the first steps in this philosophy at the age of 26 in 1950. Together with several businesspeople in Japan, Masaaki was monitoring American companies at that time to uncover methods that could enhance competitiveness and performance within a society.

To be effective, the Kaizen method needs to be applied as a daily activity. Among the most important rules of the method, we enumerate:

- Quantifying the number of changes made
- Monitoring the results
- Controlling and adjusting them.

All these steps are based on small-scale and low-effort experiments, which are quickly adapted.

It's very important that these small changes start from the departments that design products or work on service development. This is because solutions can change drastically with just a small alteration, and the costs of modifications will prove to be reduced in value if everything starts from the company's initial steps.

In other words, the Kaizen method takes into account 2 fundamental principles:

- Everything starts from the foundation
- Small and steady steps

The Kaizen method is a dynamic one, rejecting static periods in which companies don't go through changes, and it supports innovation in any form and size.

In this way, the Kaizen concept imposes practical approaches, small but frequent changes, and a continuous process that will yield results in the medium and long term. This will result in reduced costs as well as risks.

The principles of Kaizen are based on the "5S" method, which refers to the five stages:

- Seiri or Sort, which involves clear separation of useful actions and products from those that are not usable.
- Seiton or Systematization / Ordering, which entails arranging data, information, or tools in a logical order.
- Seisou or Shine / Cleanliness, signifying the elimination of sources of waste and the simplification of work processes.
- Seiketsu, Standardization, the stage in which procedures are developed and new ideas are initiated for solutions discovered in the previous steps as successful ones.
- Shitsuke or Sustain / Self-discipline, which precisely involves adhering to the other four points above in any daily activity, at the workplace, and in personal life.

All these stages lead to cost reduction by eliminating activities that didn't yield results, constant innovation, high quality of products and services offered, and productivity to eliminate unproductive work.

The Kaizen stages can be carried out both individually and in larger or smaller teams. The efficiency of the system doesn't depend on the number of people involved, but short meetings for teams or moments of reflection for an individual are necessary to establish the changes.

CHAPTER 6. PERSONAL CONTRIBUTIONS IN THE FIELD OF QUALITY IMPROVEMENT OF SCIENTIFIC RESEARCH PROJECT MANAGEMENT WITH EUROPEAN FUNDING

In this chapter, the main results of personal achievements within the framework of doctoral research activities (articles, projects, etc.) are presented. The first article, "Tufeanu, D., Semenescu, A., Ioana, A., Management Criteria and Principles Applicable in Education and Scientific Research, Advanced Engineering Forum Vol. 33, doi: https://doi.org/10.4028/www.scientific.net/AEF.33, '5th Conference of ADVANCES in ENGINEERING & MANAGEMENT', Drobeta Turnu Severin, 2018," addressed the management criteria and principles applicable in education and scientific research. In this article, we researched and presented certain management criteria and principles applicable in education and scientific research, aiming to optimize these two important domains.

I have presented and detailed management criteria such as:

- methodological criterion
- economic criterion
- social criterion
- informational criterion
- organizational criterion
- functional criterion.

Among the management principles, I have presented:

● the principle of unity of command

● the principle of unity of decision

● the principle of balance between centralization and decentralization..

I highlighted the importance of the correlation between education and scientific research, including through the concept of the "Deming cycle," as an added value in education and research. I have also objectively analyzed the advantages and disadvantages of centralized and decentralized management.

The significance of management, both for education and research projects, is evident and no longer needs to be proven. We could simply paraphrase a well-known saying by stating, "If there is no management, there is nothing!"

A skilled, professional manager must be knowledgeable about and effectively apply the specific criteria and principles of management in both fields: education and research. The connection between these two domains is very close, not only because a good researcher needs a solid educational foundation.

CHAPTER. 7. PROJECT MANAGEMENT USING ARTIFICIAL INTELLIGENCE

Global projects involve team members from diverse cultures and organizations, spread across locations in different countries and time zones, and speaking different native languages (Figure 7.1). Each of these dimensions can contribute to the team's success and the quality of project outcomes, while also adding challenges for project and program managers, and team members.

Team members from different organizations may have access to a richer set of tools, knowledge, facilities, raw materials, intellectual properties, and equipment. Additionally, they may bring their own processes, standards, procedures, and corporate objectives, which need to be perfectly aligned or synchronized for the execution of project work packages within the boundaries of time, scope, cost, and quality.

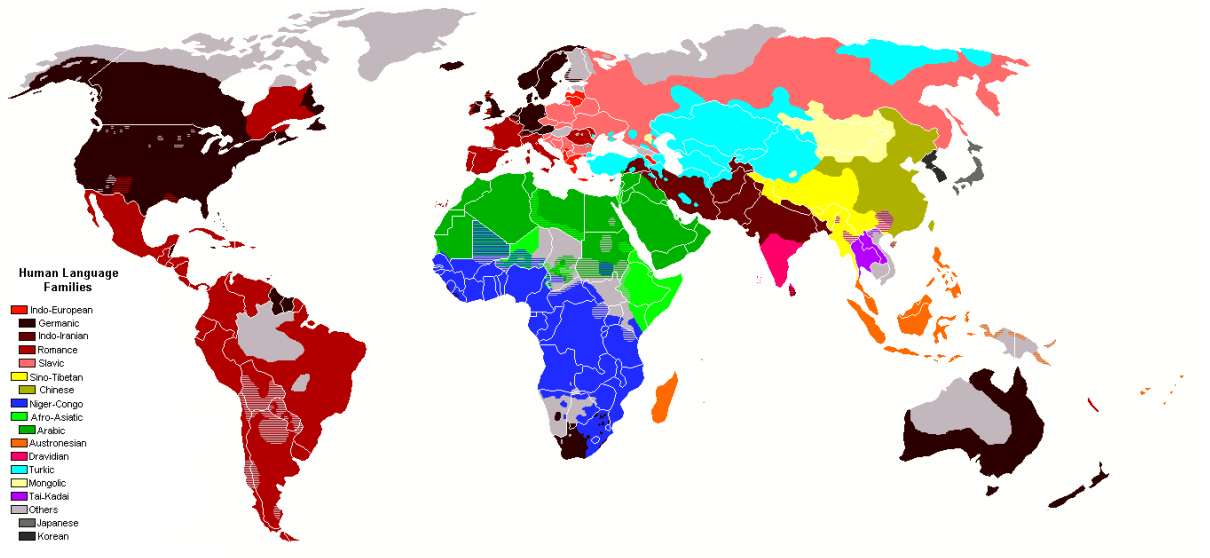


Fig. 7.1. 1. Languages spoken all over the world

To be successful, global project management entails changes within organizations (to understand the various characteristics and requirements of global projects), the attitudes of program and project managers, the practices and services of operational project managers, and how team members collaborate and communicate across distances. To facilitate this process, framework practices are grouped into five main categories, each representing an element from organizational change theories:

- Global Team Management
- Global Communication
- Global Organizations
- Collaborative Tools
- Collaborative Techniques.

We will analyze now the main challenges and take a brief look at each of the best practices within the framework.

Computer technology tends to make life easier for all individuals; it also adds more convenience to all kinds of processes that may require human effort and time. Through artificial intelligence (AI) involving decision-making and machine learning capabilities generally attributed to humans, this is especially the next step in ongoing evolution. [93]

The use of AI has been implemented to transform boring and repetitive tasks, especially in various assembly line processes. The development of AI has been carried out for various purposes, such as managing cybersecurity concerns, diagnosing medical conditions, and monitoring wildlife.

AI and Project Management AI can be involved in all phases of international project execution with multiple collaborators. The potential success of research and development projects is an area of intensive research (fig.7.2). Initially, approaches were based on statistical models that did not meet the needs of project management. In the field of AI, researchers have identified algorithms and tools that can best handle various project variables and complex environments, with specific algorithms designed to address project-specific issues. The main conclusions drawn from the analyzed works include that AI tools are more accurate than traditional tools, while currently, they remain somewhat complementary to traditional approaches. AI tools are highly useful for project managers in terms of project control and monitoring; however, many of the reviewed models have weaknesses and limitations, indicating that project managers should continue to rely on their experience when making assessments based on outcomes.

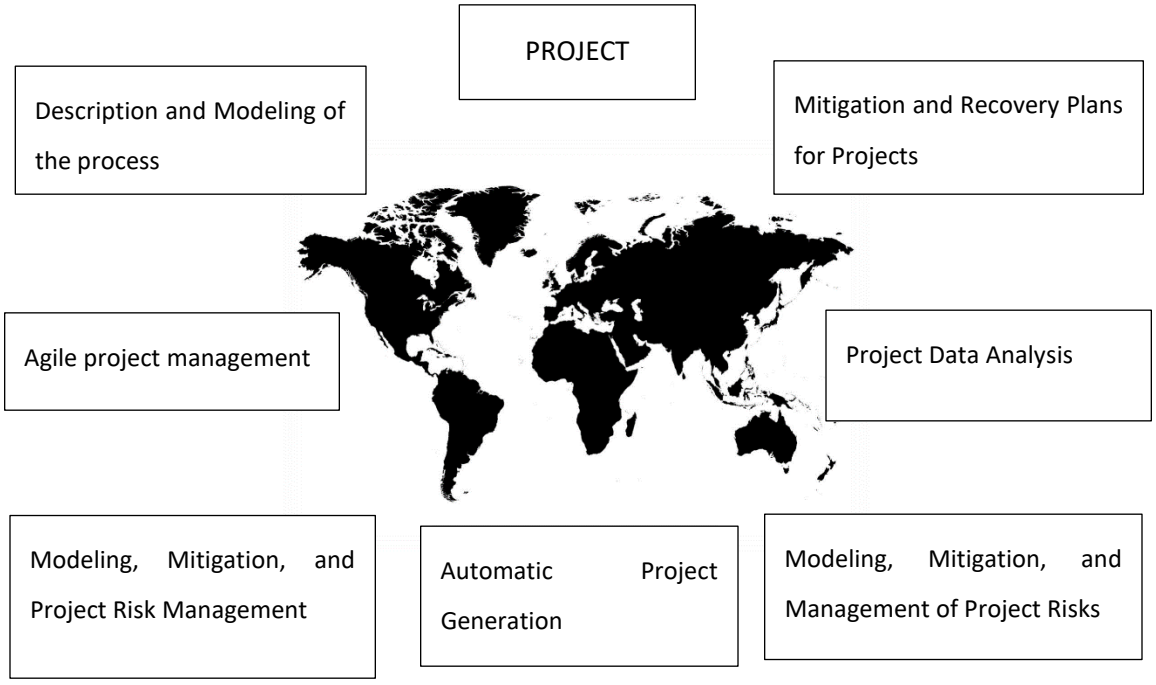


Fig.7.2 – Project Management and IA

Bidding for international projects represents a market that generates thousands of business opportunities every year for all types of industries worldwide. AI can daily select the relevant bids and display them in the order specified by the project manager (fig.7.3).

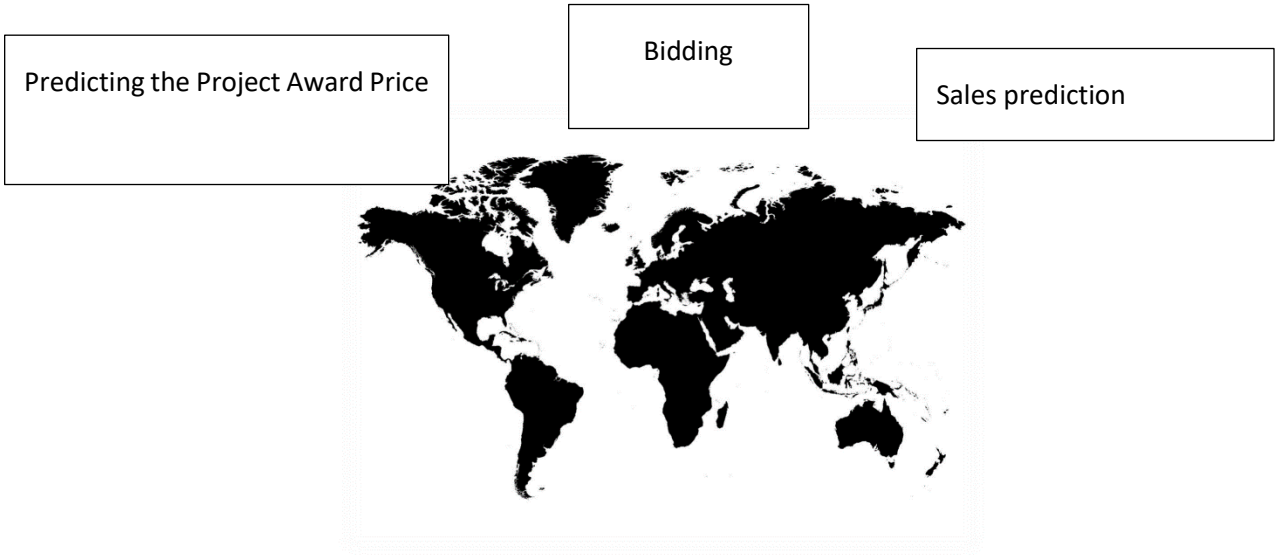


Fig 7.3 - *Project Management, AI, and Their Connection to Project Bidding*

Project Management in the "Health" Field

There are several studies that focus on project management in relation to healthcare. The studies are quite diverse and include research [97] on achieving strategic control over project cash flows to develop appropriate strategies that consider factors such as task execution time, construction rate, and resource demand for cash flow control.

Human Resources Management

In the field of project management, human resources management is crucial, as projects rely on having the best possible human capital (fig. 4). A study [101] has provided a new approach to candidate assessment and classification during the recruitment process, involving the estimation of their emotional intelligence using data from social networks

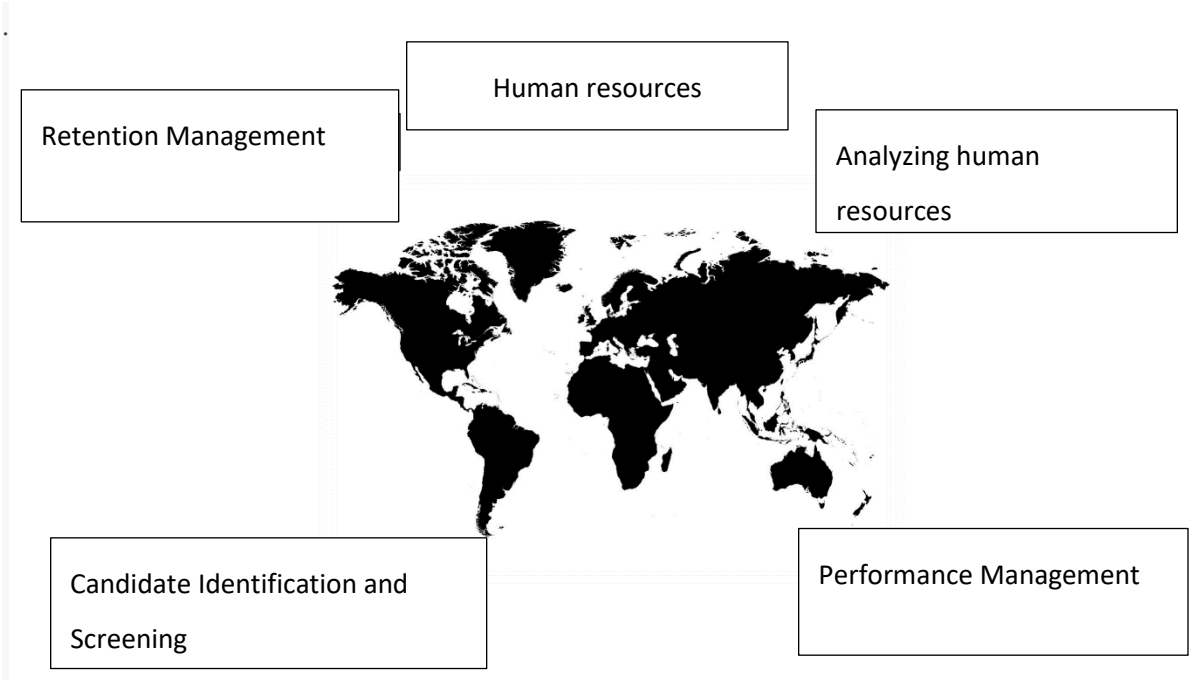


Fig7.4 – Project Management, AI, and Human Resources

Information Technology

Information technology is a relatively new field in project management, but it is equally important as all other processes (fig.5). A study [103] was conducted regarding an implementation model for computer and network security purposes. Here, the goal was to use the model to counteract the activities of malicious users.Figura

Metodele IA au fost utilizate pentru optimizarea sistemelor energetice [105] și modele tip SVM (difuze evolutive) pentru estimarea costurilor de construcție (fig. 6). Este esențial să se monitorizeze costurile proiectului și să se identifice eventualele probleme.

Operationalization

Operation and maintenance (fig.7.7) are also important aspects of industrial projects, and numerous studies demonstrate how AI affects future predictive maintenance. Here, a study [106] discusses the impact of AI on predictive maintenance, which is a critical aspect of advanced production systems.

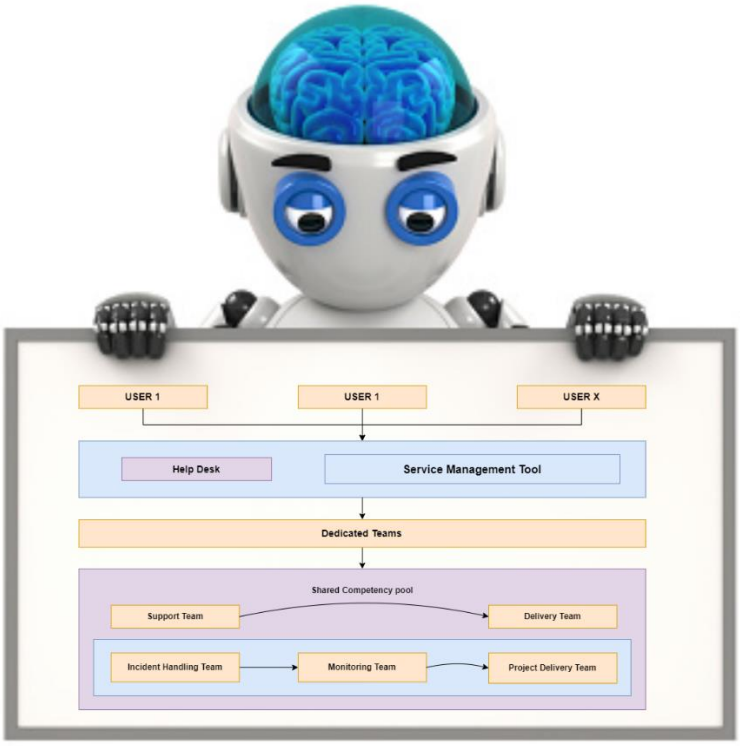
Supply Chain

A two-stage methodology was applied to an industrial survey dataset to investigate the relationships among key factors in a supply chain model [107]. The advantage of this model is that it relieves the researcher from making subjective decisions during the analysis, such as specifying the initial acceptable route models required for standard analysi

Within the project management model as a combination of dedicated delivery centers and centrally proposed shared services (fig. 7.10), the application management team is organized based on technology and expertise.[114]. There are shift leaders who manage teams addressing application support activities, while potential customers for improvements engage in enhancement and development activities. Specialized teams are highly critical to the value proposition of the shared competency center. These teams can provide high-value added services on an on-demand basis. Therefore, access to these specialists is available quickly and at a lower cost.

The model includes the following activities:

- Capturing, cataloging, evaluating, and approving product or technology ideas, project requests, and early-stage initiatives.
- Managing unplanned work by capturing incidents and service requests from the help desk and qualifying them for impact, urgency, and priority.
- The results of the demand planning process will serve as input for demand execution and capacity management.
    - The planning process will also generate a demand dashboard that provides the status of demand generated from each source.


USER 1
USER 1
USER X
Help Desk
Service Management Tool
Dedicated Teams
Shared Competency pool
Support Team
Delivery Team
Incident Handling Team
Monitoring Team
Project Delivery Team

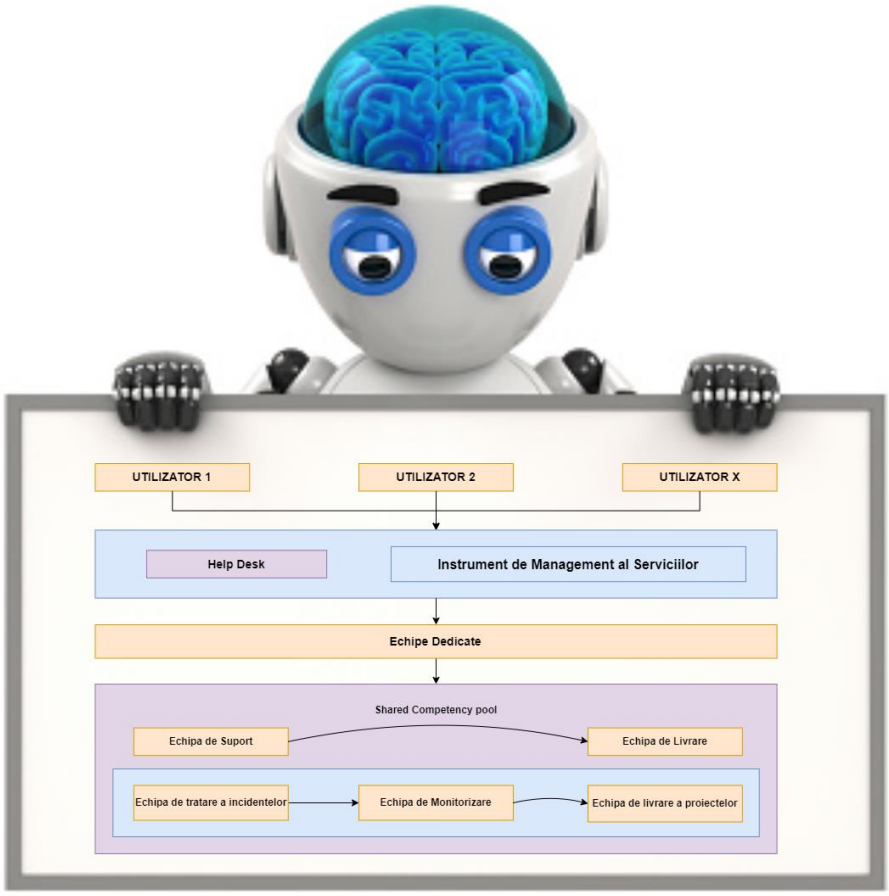


Fig 7.10. The structure of the proposed model

An autonomous project management system will also need to fully consider and control the project environment, including the status of project clients or stakeholders. Such a system can be used to apply AI algorithms for psychological and emotional analysis to evaluate both team performance and customer satisfaction. Looking to the future, over 30 years from now, there is likely to be an AI capable of managing the entire project, although with some form of human oversight..

The slow progress of artificial intelligence in project management is largely due to a lack of investment from private companies, meaning that advancements have mainly been made in universities and public research organizations. In the future, AI will make all decisions and manage resources optimally and timely, while the project manager will take on the role of a data scientist,

working as part of a team with AI to interpret data and decision-making. Overall, project managers will continue to play a crucial role when AI is fully developed.

CHAPTER 7. GENERAL CONCLUSIONS. ORIGINAL CONTRIBUTIONS AND FUTURE RESEARCH DIRECTIONS

During the doctoral research I conducted under the competent guidance of a valuable team of university professors from the Politehnica University of Bucharest, experts in the field of engineering and management, I considered the following aspirations and scientific landmarks:

➢ The starting point of my doctoral work was the study and analysis of general management principles applicable to scientific research projects funded by European grants.

Thus, I analyzed principles such as:

- the principle of analogy (with several subcomponents: defining the modeled objective; defining efficiency criteria; elaborating options – based on identifying realistic, effective, and innovative solutions; evaluating options - according to established efficiency criteria; determining the final solution);
- the principle of hierarchy;
- the principle of efficiency optimization;
- the principle of financial management; the principle of unified leadership and responsibility;
- the principle of professional competence and employee motivation; the principle of flexibility.

➢ Identifying and analyzing potential vulnerabilities related to European-funded scientific research projects and proposing managerial methods for their mitigation.

➢ Evaluating the risks of scientific research projects and suggesting managerial measures to counteract them

I have also studied and analyzed the specific elements of feasibility studies related to European-funded scientific research projects. In this segment of activity, I attached significant importance to both technical and managerial aspects, as well as financial aspects. Starting from

the current situation and the need to achieve the proposed objective/project, I suggested technical-economic options/scenarios for optimization.

Additionally, I critically studied and analyzed the main forms of management applicable within European-funded scientific research projects (scientific management, bureaucratic management, behavioral management), as well as the corresponding organizational system (procedural organization, structural organization).

In the field of specific financial management elements related to research-development-innovation activities, I studied and proposed for implementation the following methods:

- Examination of variable costs.
- Examination of the evolution and structure of variable costs.
- Factorial examination of variable costs.
- Approximation of the possible evolution of variable costs.
- Examination of the impact of variable costs at 1,000 lei on key economic and financial indicators.
- Analysis of fixed costs.

Another personal contribution is the proposal for the application of the Kaizen method in the management of scientific research projects with European funding. Building upon the principles and characteristics of the Kaizen method, I have suggested specific methods for its application in the researched domain.

Furthering the doctoral research through in-depth studies in the field of enhancing the quality of management specific to scientific research projects with European funding, I have proposed principles and criteria in this domain:

- Principle of management unity
- Principle of decision-making unity
- Principle of balance between centralization and decentralization
- Establishment of methods and tools used in the project
- Project resource management

➢ Verification and validation possibilities for project objectives

➢ Quantitative measurement of the quality of a social economy project

Among the management criteria applicable in education and scientific research projects, I have researched:

● Methodological criteria

● Economic criteria

● Social criteria

● Informational criteria

● Organizational criteria

● Functional criteria

As part of disseminating the results of my doctoral research, I participated in the development of a specialized book in the field.

In my future research directions In my postdoctoral activity, with the assistance and support of my academic supervisor, Professor Dr. Eng. Ec. Mat. Augustin Semenescu, to whom I once again express my gratitude for the unwavering assistance throughout my doctoral research, I aim to pursue the following main research directions:

- Exploring and researching new methods for enhancing the quality of specific management in scientific research projects with European funding.
- Quantifying the level of quality in the management of the design and implementation of scientific research projects with European funding.
- Adapting and implementing scientific principles throughout the entire cycle of conception and execution of a scientific research project with European funding, including principles like continuity, maximum responsibility, and scientific truth.

Lastly, establishing methods and methodologies to align the activities of governmental bodies responsible for obtaining European funding with the needs and requirements of Romanian scientific research.

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