



# Project preparation stage as an element of undertaking management system, illustrated with the Intelligent Traffic Management System in the KZK GOP area of activity

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## ABSTRACT

“Project management” is understood as implementing correlated activities to achieve defined goal. In 2014, KZK GOP undertook steps aimed at starting the project preparation for „Intelligent Traffic Management System in the area covered by KZK GOP”. The paper will discuss the steps taken by KZK GOP in order to prepare the project on intelligent transportation system for implementation and to obtain external (EU) financing.

**KEYWORDS:** project management, preparation of the investment project, European Regional Development Fund, municipal association

## 1. Management of projects – general remarks

The notion of *project* is derived from the Latin *proiectus*, which entails “leaning forward”, interpreted also as an idea, intention, or plan, referring its essence to achieving the desired future state. By a “project” we refer to an undertaking, which has the aim of achieving a specific, previously defined product. Projects concern various fields of activity and may be of different types – for example they may refer to organizational issues, management process, capital, manufacturing, or infrastructure [4]. Literature is full of definitions of the notion of “project”, it seems – however – that its sense may boil down to saying that it is a sequence of unique, complex, and interrelated activities, the execution of which aims at achieving a specific, transparent, unique, and measurable aim [1].

The notion of *project*, understood as a process, is linked with the function of management. Project management is defined as a set of

logically arranged activities connected with planning, organization, motivating, and control. It is an activity conducted across many platforms, requiring a broad view, as it concerns such areas as aim, time, budget, quality, risk, human resources, knowledge [2].

Projects are characterized by a specific organizational structure, which enables separating them from the basic activity of the organization. Experience shows that such “pushing outside” of project execution often makes the achievement of desired effects impossible. Project management requires a soup-to-nuts attitude to the subject and its environment. Such tasks are most efficiently executed by teams, which contain employees who are knowledgeable about the organization and the reality of its functioning, strengthened by adding external entities that possess particular knowledge of a specific range of topics [3]. Project management is the art of skillful use of available resources, in order to achieve the results required, in compliance with the agreed standard, in determined time frame, and in specific environment. That process must take into account the issues concerning organization, legal matters, communication,

technical aspects, at the same time it should proceed smoothly in different fields of management [2].

Project management in its classical form contains 4 phases:

1. initiation of the project (concept),
2. planning (organization) of the project,
3. implementation (execution) of the undertaking,
4. closing of project (maintenance of products and assessment of results achieved).

The scope of each phase depends upon the kind and size of project. It may happen that the initiation and planning phases will be carried out jointly.

## 2. Project preparation phase in theory

In classical project management theories, the characteristic thing is that pre-implementation activities comprise two stages:

1. project initiation – focusing on the impulse that begins the work on project preparation;
2. project planning – aiming at development the framework for undertaking execution, which are results of multi-aspect analyses of implementation conditions [4].

Project preparation consists of defining the need and availability of resources that allow its execution, as well as making the decision concerning commencement of work upon its implementation. That is the stage for analysing such issues as defining quantifiable project implementation goals, resulting from the performed analysis of problems, indication of budget, time frame, as well as eligible human resources, definition of project stakeholders, way of management, solution of optimal project implementation, definition and analysis of project implementation risks, assessment of project implementation consequences, for both the subject and its environment [5].

In accordance with PRINCE2 methodology [3], being among the leading ones, as regards governance of projects, launching of project preparation work depends on the occurrence of a substantial business need, while taking the decision on permitting to start project execution requires obtaining basic information. Project preparation is the first process, while launching Project execution may be referred to only after getting permission for project initiation. The project preparation process assumes the existence of information that explains the reasons why the project is to be executed, and describing the expected result of the project. At that stage, the main issues that ensure further procedures are decided – the project team starts to be formed, its work gets organized, project targets, project implementation formula, also further stages of execution are planned. An important issue is the preparation of project targets, which will be transformed into formal requirements concerning the project. Those, in turn, will be reflected in the decision to initiate the project, its business justification, and project plans, among others [3].

## 3. Preparation of the project entitled "Intelligent Traffic Management System in the KZK GOP area of activity"

Municipal Transport Union of the Upper Silesian Industrial District (Komunikacyjny Związek Komunalny Górnośląskiego Okręgu Przemysłowego – KZK GOP) is an entity responsible for organization and management of public transport in 29 municipalities, located in the central part of the Province of Silesia. In accordance with the articles of association, one of the tasks of the union is to initiate and coordinate undertakings related to traffic management and parking in cities. [10]

In connection with launching a new programming period for EU funds, and necessity of developing an Integrated Territorial Investment Strategy, KZK GOP – in agreement with 81 municipalities of the Central Sub-region of the Province of Silesia – in 2013 commenced to prepare documents necessary for being able to use new EU development policy tools. In the course of work performed, among the identified important tasks, whose execution is indispensable for efficient use of the existing transport infrastructure and proper organization of public passenger transport, is the implementation of integrated traffic management system in the KZK GOP area of activity. On the basis of the diagnosis made in Integrated Territorial Investment Strategy, KZK GOP came up with the proposal of executing a project entitled "Intelligent Traffic Management System in the KZK GOP area of activity (ITS KZK GOP)". Due to the value, scope, and integrating role of the undertaking, it has been decided that the project will be proposed as a project complementary to the Operational Programme Infrastructure and Environment for the years 2014-2020. By virtue of the enactment of the Management Board of Union of Communities and Counties (Związek Gmin i Powiatów) of the Central Sub-region of the Province of Silesia, No. 3/2015, of 17.02.2015 the project entitled "Intelligent Traffic Management System in the KZK GOP area of activity" has been qualified as a stand-by task. [9]

On May 6, 2014, the Management Board of KZK GOP adopted resolution No. 45/2014 on conducting work related to the implementation of Intelligent Traffic Management System in the KZK GOP area of activity. That resolution became the formal impulse to start work to prepare the project. It has been decided that preparatory work would be divided into the following tasks:

- development of a concept and architecture of intelligent traffic management system in the KZK GOP area of activity (including the public procurement procedure for task execution);
- social consultations of the system concept and architecture;
- development of methodology and detailed concept for conducting traffic measurements, and the way of developing the traffic model in the KZK GOP area of activity (including the public procurement procedure for task execution);
- conducting traffic measurements, and developing the traffic model for the project (including the public procurement procedure for task execution);

- preparation of the Functional Plan, which will be used for preparation of the Feasibility Study of the Project, as well as functional-utility program which specifies the subject of order for undertaking execution;
- preparation of the application for co-financing of the project from EU funds, in line with the conditions for call for proposals (application for co-financing, feasibility study, functional-utility program) – including the public procurement procedure for execution;
- making the application for co-financing, its verification, and conclusion of contract for financing of the project;
- execution of the public procurement procedure to select the contractor for the system.

Taking into account the expected scope and range of the project, its implementation will commence not earlier than in 2018. Thus, the project preparation stage shall take about 4 years. It is estimated that the costs of documentation indispensable for its implementation may amount to as much as 4 000 000 Polish zloty, while the most expensive item will be traffic measurements and preparation of traffic model (in the most extended variant e – 3 500 000 Polish zloty). [8]

Around the end of 2014 the public contract awarding procedure for "Development of concept and architecture of the Intelligent Traffic Management System in the KZK GOP area of activity". On 04.02.2015 the contract with Śląska Sieć Metropolitalna Sp. z o. o., in Gliwice was signed. The contractor submitted the final version of the document on September 4, 2015. In December 2015 the work concerning concept and architecture of the system was completed. The prepared documentation was referred for social consultations, and the Management Board of the Union accepted the results of consultations, together with recommendations concerning taking into account the remarks made [6].

On August 25, 2015 the contract with Silesian Technical University – Faculty of Transport was concluded, the contractor developed methodology and detailed concept for conducting traffic measurements, and the way of developing the traffic model in the KZK GOP area of activity. In last January and early February of 2016, the decision was made concerning commissioning the results of work on methodology [7].

At present, discussions are under way with the Union of Communities and Counties (Związek Gmin i Powiatów) of the Central Sub-region of the Province of Silesia; the subject matter of those discussions is granting licence for the use of methodology commissioned by KZK GOP, in order to prepare a transport study for the sub-region, which will include traffic measurements, and development of the traffic model. The activities conducted have the aim of optimizing the preparation costs of project documentation. They will also simplify the use of collected data, not only for the needs of KZK GOP project preparation, but also for other tasks prepared for execution by the municipalities of the sub-region.

## 4. Conclusion

Project preparation is a key stage, often decisive for the success of the undertaking. From the perspective of the organization it is a

process, which precedes the decision concerning project execution, modification of its scope, or giving up its implementation. This is the stage during which issues are decided, as regards the choice of the most advantageous implementation variant, organization of implementation management, assessment of the influence upon the financial condition of the organization, as well as its influence upon the environment. The project plan must contain an analysis of potential risks, so that it is possible to react effectively to obstacles that may occur during execution. Expenditures and the time devoted to project preparation should be adequate not only to the size and complexity of the task, but also to the perspective of the goal to be attained.

KZK GOP, making efforts to prepare the project entitled "Intelligent Traffic Management System in the KZK GOP area of activity" indicated that its implementation will influence the development and better use of low emission urban transport in providing services for inhabitants of municipalities that make up the Transport Union, as a result of enhanced transport effectiveness and efficiency. The project execution will be of key importance for economic development of the central sub-region of the Province of Silesia, mobility of inhabitants, as well as competitiveness of entities that function in its area. Implementation of a cohesive traffic management system in the KZK GOP area of activity is indispensable, regardless the possibilities of obtaining co-financing from external sources, while the project will – to a large extent – depend upon the quality of documents developed during the preparatory stage.

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