

RISK MANAGEMENT IN LOGISTIC PROJECTS

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Abstract

Projects implemented in the area of logistics are more and more often distinguished within the activity of modern enterprises and supply chains. They represent the practical aspect of solutions that should be implemented to avoid or mitigate problems connected with the flow of materials, knowledge, information and finances. The project approach in logistics is becoming more and more important in recent days. However, planning and implementation of a logistic project of any type entails some degree of risk. Taking decisions in the area of the selection of a logistic project requires ability to predict future actions, as focus on the future makes risk and uncertainty an important problem in decision-making. Significant level of risk is one of the main characteristics of logistic projects, which means that too many undesired factors may impact the implementation of a given logistic project. A relatively high risk occurs in logistic processes, which are characterised with a high level of innovativeness and uniqueness. However, practically all decisions entail certain consequences for the activities and results of a logistic project. For a logistic project to be successful it is necessary to be able to control risky events - threats and conditions of action, which may have a negative impact on the objectives of a logistic project. The implementation of a logistic project may fail due to a range of threats, therefore their identification and implementation of a process of their management is a key element of risk management in a logistic project. The main objective is thus to evaluate the risk of a logistic project to measure the impact of identified threats connected with the implementation of the project. Risk management in the aspect of logistic projects basically refers to the process of prioritisation of identified risks and is aimed at their further analysis, evaluation and aggregation as well as determining the probability of the possibility of their occurrence.

Keywords: Management, risk, logistic projects

1. INTRODUCTION

Logistics is one of the key success factors on the market of goods and services. It is perceived as a vehicle of change in an enterprise, which is important for the achievement of competitive advantage both in a single enterprise and the whole supply chain. The resulting new functions of logistic processes are fulfilled in dynamically changing conditions. [1]

Determinants of the modern market include: consequences of the accelerating process of globalisation, development of new technologies, implementation of new concepts of management strategies and increased intensiveness of disturbances caused by unpredicted external factors. [2] This directly impacts the increase in threats within implemented logistic projects and leads to the increased risk level of such projects. Management of logistic projects and resulting project approach is applied in management of both an enterprise and a supply chain. [3] In order to improve the level of customer services, increase the effectiveness of management in the area of procurement, transportation, warehousing, production and distribution, new complex sets of tasks, called logistic projects, are introduced and implemented. A logistic project is a one-off or incidental, time- and budget-bound undertaking aimed at improving the efficiency and effectiveness of the movement of products and accompanying information, financial resources and transfer of knowledge in a single enterprise, supply chain or spatial systems. [4] Examples of logistic projects implemented in logistics and management of a supply include: location of production facilities, building of warehouses, implementation of a WMS, selection of a warehousing system, selection of the means of transport, optimisation of transport routes, change of a

logistic operator, change of logistic processes, deployment or extension of an IT system designed to support logistics, deployment or extension of an ERP system, selection of a new supplier. [5]

2. SUCCESS FACTORS AND ANALYSIS OF THREATS RESULTING FROM UNDERTAKING LOGISTIC PROJECTS

For management of projects to be successful it is necessary to be able to control risky events - threats and conditions of action, which may have a negative or positive impact on the objectives of a specific logistic project. Rationalisation of every logistic project entails various chances and threats, for which a given enterprise or supply chain should be prepared as well as being able to appropriately use or eliminate them, which has been presented in Fig. 1.

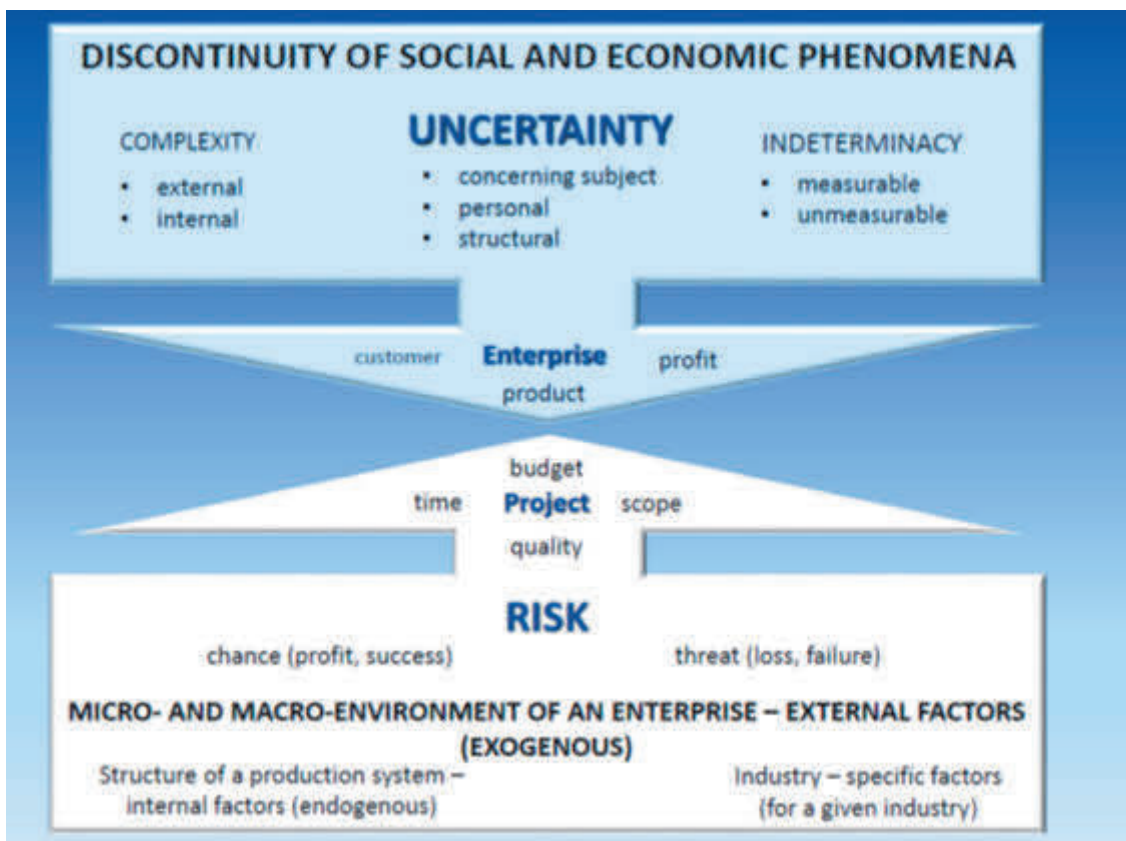


Fig. 1 Chances and threats arising from a logistic project

Successful implementation of logistic projects requires integration and coordination of movements and smooth communication between the different stakeholders of logistic projects. [6] Success of the implementation of a logistic project is closely connected with choosing the right management style [7] for a specific project. Based on studies, three dimensions of a project have been distinguished: uncertainty, complexity and pace. Complexity of a logistic project refers mainly to the size of a project, the number and variety of the elements of a project and relationships between various projects implemented in an enterprise or supply chain. [8] With reference to a given project, this means following certain guidelines. First, it is necessary to evaluate the environment of a given project; second, the project should be assessed in terms of uncertainty and complexity of expected results. An analysis of the factors above enables the choice of the right management style and determines estimation of the project risk.

The implementation of a logistic project can fail due to various threats occurring in the near and far environments of a logistic project. Causes of the occurrence of threats in projects are sometimes difficult to define, as they result from numerous factors and are different in nature. Risk causes can be classified in two categories: external and internal causes. Identification of all potential threats and implementation of a process of management of such threats is a necessary and key element of managing [9] a logistic project risk. Figure 2 presents examples of threats to the implementation of a given logistic project.

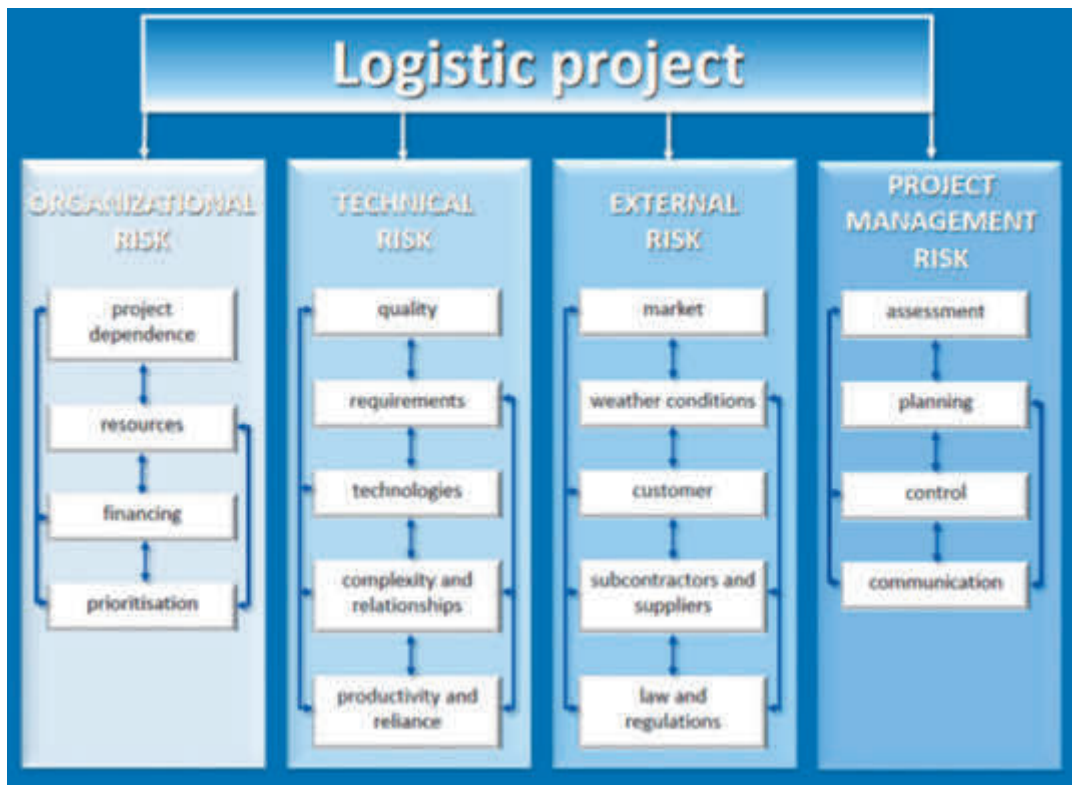


Fig. 2 Examples of threats to the implementation of a given logistic project

Knowledge of the risk connected with the implementation of a given logistic project is the key success factor of a project. Ability to predict a threat and possession of a scenario for a threat situation is a key process connected with management of logistic projects.

3. MANAGEMENT OF LOGISTIC PROJECT RISK IN THE LIGHT OF STUDIES

One of the aspects of management of logistic projects is risk management. This is due to the fact that the implementation of projects to improve logistic processes in a given enterprise or within a given supply chain is subject to risk. Risk management is one of the key elements of management of projects. [10] It includes activities connected with the identification of threats and chances resulting from the implementation of a logistic project - with defining the effects impacting a given project, planned objectives and results - and development of action plans and procedures for dealing with a threat situation.

The aim of the study was to find out the answer to the question of what barriers connected with the occurrence of risk are encountered by project managers, preventing them from achieving the results planned in logistic projects. A method of a diagnostic survey was used to conduct the study. The technique selected for obtaining data was a questionnaire, and the research tool used was a survey questionnaire, sent to people responsible for logistics in enterprises. The questionnaire survey was conducted in the first half of 2015. The first stage concentrated on defining the subject of the study and formulating the research thesis. Further, a method,

technique and research tools were selected, and a survey questionnaire was prepared. The study was conducted by sending questionnaires and monitoring, followed by grouping the research material, analysing the results and formulating conclusions from the study. 100 questionnaires were sent, all of which were completely filled in by respondents. Conclusions were drawn based on 100 completely and correctly filled in questionnaires. 100 managers of logistic projects implemented in Poland between 2010 and 2014 participated in the studies.

Because a logistic project as a new and complex undertaking requires an appropriate, individual approach, and its complexity refers mainly to the size of a project, number and variety of the elements of a project and relationships between various projects implemented in an enterprise or supply chain [11], the first issue addressed in the study was to indicate the internal factors in the implementation of a project, among which organisational and managerial factors, connected with the manager of a project, constitute an important risk group. Figure 3 presents respondents' opinions.

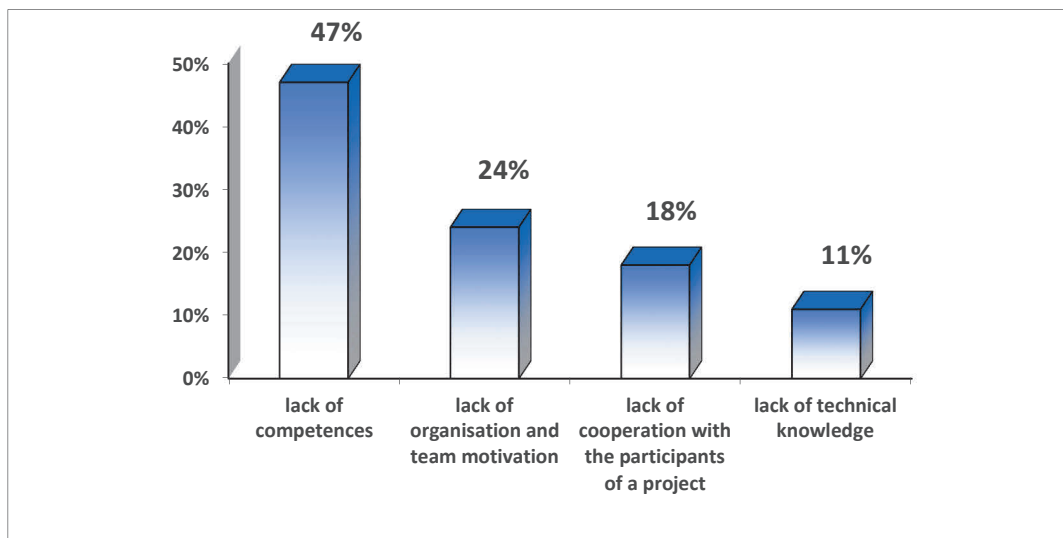


Fig. 3 Organisational and managerial factors constituting a risk group

Lack of competences, organisation and team motivation, lack of cooperation with the participants of a project and lack of technical knowledge may be sources of a project failure. The intensity of threats increases when a project is implemented in a way that is difficult to predict. The importance of coordination also increases in the case of interdependence of tasks. This is particularly important for projects in the area of management of a supply chain.

Personal risk factors refer to the project manager and members of the project team. They include, among other things: low qualifications and little experience of a team, as well as a low degree of internal integration. The success of a project may also be threatened by a wrong selection of its operators. In the case of the implementation of international logistic projects, sources of project failures also include cultural differences. [12] The results of the questionnaire are presented in Figure 4.

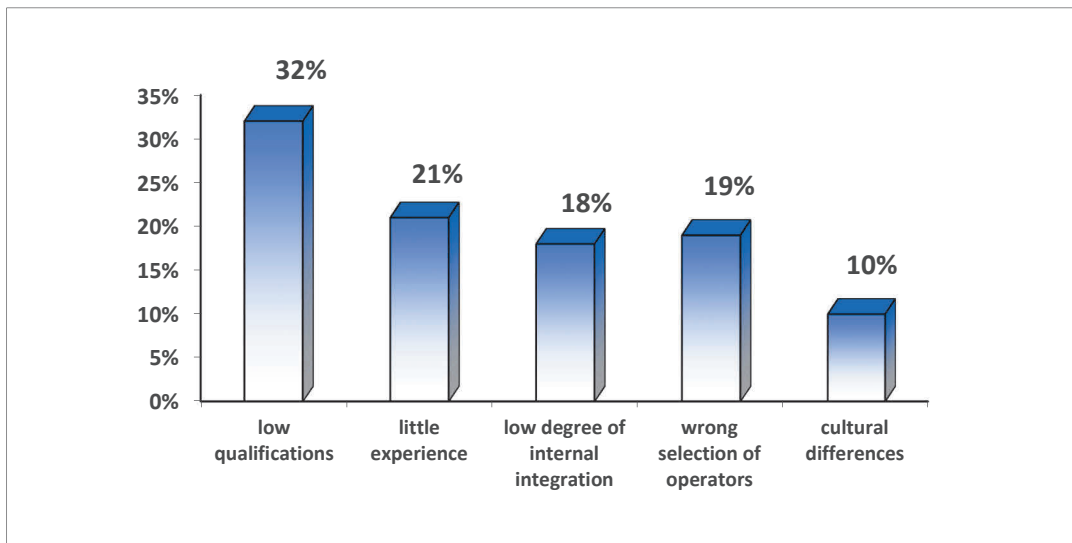


Fig. 4 Personal risk factors

The causes of the occurrence of threats in projects are often difficult to define, as they are affected by a number of factors of different nature. However, taking into account their location in a project's environment and possibility of the project manager's impact on them, risk causes can be classified into two categories: internal and external causes. Identification of all potential threats and implementation of a process of management of such threats is a necessary and key element of managing a logistic project risk.

A group of risk causes includes the following factors: economic, competition-related, legal, political, social, technical and natural [13], as presented below in Figure 5, in accordance with respondents' answers.

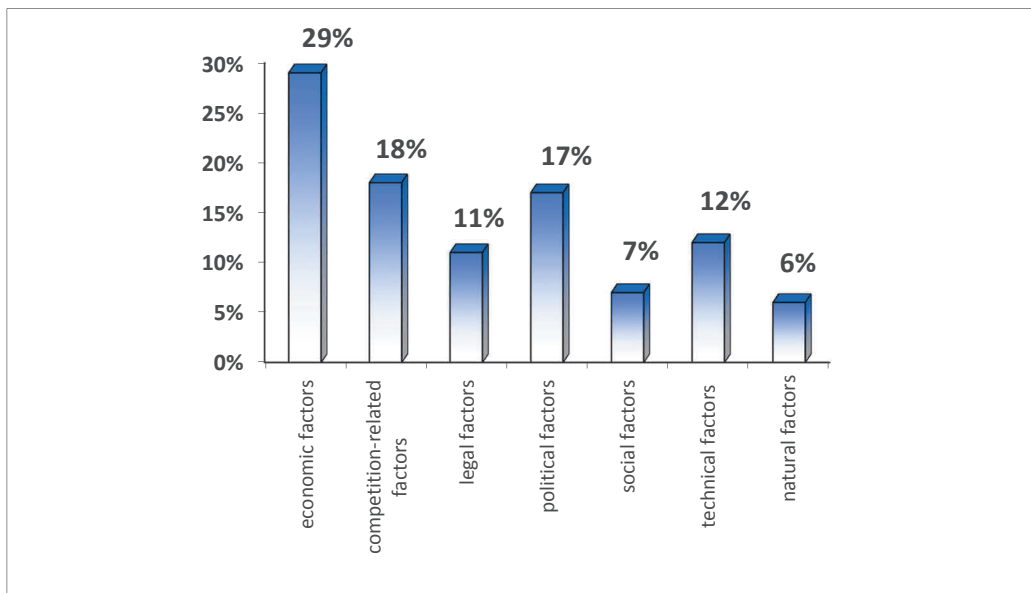


Fig. 5 Causes of the occurrence of risk in logistic projects

Economic factors are processes and phenomena that take place in a logistic project's environment and define the external conditions of its implementation. They may include development trends in the economy, inflation rate, interest rate, tax policy, or changes in exchanges rates. Economic threats are always individual in nature, closely related with a specific project. [14].

Legal regulations also significantly impact the future shape of a logistic project being implemented. Legal threats to logistic projects result from the lack of knowledge or ignorance of law. These threats also increase with a complex subject structure of a project, which is connected with a large number of signed agreements, which constitute formal instruments for risk distribution.

Political conditions are mainly a source of threats for large infrastructural logistic projects. An important success factor of undertakings of this type is political will and support from the government. This may refer to logistic projects to extend the network of national roads and motorways.

The existence of social risk factors depends on whether a project is important for the satisfaction of the needs of social groups. Resistance of the society occurs when projects that are burdensome for the nearest environment are implemented. This also refers to logistic projects in the area of road infrastructure. [15]

Technical causes of risk are connected with the technical development and the danger of failing to keep up with the changes in technology and engineering. They refer to both logistic projects and results of their implementation. Technical causes of risk often appear along with competition-related factors.

Natural factors refer to the impact of the natural environment on a specific logistic project. This impact may have a twofold character. First, natural factors may threaten the success of a given project; second, ignorance and failure to take into account natural factors may cause a negative impact of the implementation of a project on the natural environment. A source of losses may also be cataclysms, such as earthquakes, floods and hurricanes. Natural factors should be taken into account especially in logistic projects to build roads or water pipes.

Estimation of the probability of occurrence of a potential threat resulting from undertaking a logistic project and its potential effect allows appropriate preventive procedures to be developed. Alternative action plans can also be developed.

4. CONCLUSION

Management of the risk of logistic projects means taking various decisions and undertaking actions aimed at achieving an acceptable level of risk. Management of the risk of a logistic project should eliminate threats and properly use chances connected with the implementation of a given logistic project.

An important role in management of the risk of a logistic project is also played by probability, scope and way of the impact of both internal and external factors on a logistic project. Practice shows that risk cannot be completely eliminated. It can be reduced to minimum through appropriate actions that include the implementation of principles, methods and mechanisms for project risk management in an enterprise.

As the management of logistic project risk, equated with a decision-making process supporting the achievement of a planned objective, should be treated as a process rather than a one-off undertaking, it is necessary to stress that risk management should be planned and purposeful. In practice, this means that risk management is a process of planning, identifying, analysing, evaluating the type of risk, as well as monitoring and controlling threats, which may have a positive or negative impact on a project.

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