

Use of Risk Management in Accordance to Select Proper System for Supplies of Civil Projects

Meysam Zekavat¹ Arezoo Momenian²

¹Department of Architecture, Faculty of Art and Architecture, University of Zabol, Iran

²Department of Urban Design, Faculty of Art and Architecture, University of Zabol, Iran

*Corresponding author's Email: M.Zekavat@uoz.ac.ir, A.Momenian@uoz.ac.ir

ABSTRACT: The risk management is more important in the field of supply. So in this study, the risk management is explained for selecting proper system for supply of civil projects. In this research the challenges and the problems of this research that was named as risk management, are determined and they can be avoided by considering maneuvers thus the civil projects are developed with lower costs and more quality.

Key words: Project Supplies, Risk, Civil Projects, Cost, Quality

ORIGINAL ARTICLE
Received 23 Sep. 2014
Accepted 27 Oct. 2014

INTRODUCTION

The civil projects contain strategic, technical economic and national components and they are face with threats and opportunities that are effective in key elements of projects such as time, cost and quality. These threats and opportunities can be searched in the set of risks and uncertain conditions that are routed from different issues such as technical, management, commercial and internal and external issues. In this way, the risk management is gaining a specific stage against these conditions (Asadi, 2004).

The successful managers are trying to select the strategic goals in accordance with opportunities and the environmental threats and the considered projects, thus some of competitors were exited from scenes one by one and finally the proper approaches are selected against risks that project is face with them and it keeps its appearance in the scenes for a long-term (Ahmed et al. 2005). So the risk management is more important in the field of supply. So in this study the use of risk management is evaluated for selecting proper system for supplies for civil projects.

The proper system of project supplies is a comprehensive and systematic solution that is lead to integration of relation with sellers and contractors. The importance of a proper system selection of supplies is detected for managers of civil projects especially by considering risks in these projects by considering the inquiry, tender, selling processes and the exact control of selling process and the final goal of proper management system of supplies (ChopraS, and supplychainm, 2003).

Risk management

The risk management is a systematic process for detecting, evaluating and reacting against project risks and it is for maximization of results and positive

occurrences and decrease of possibility. Whatever the uncertainty of a project will be evaluated more exactly, its management will be more efficient, easier and of course more scientific, and it can lead to dangerous results against non-evaluation of uncertainty occurrences that it can loss its effectiveness and it provides predefined goals after wasting time and massive costs (Abdi, 2009). The risk management is detection, evaluation and selection of approaches for keeping uncertainty on the acceptable level for staffs that it had an ability for maximize rate of return on investment (Mazloomi, 1986).

Furthermore the project risk is defined in the Project Management Body of Knowledge (PMBOK) as followed: An occurrence with the uncertainty conditions has positive and negative effects on at least one of the project goals such as time, cost and quality in the event of happening (Khamene, 2009). The risk occurrence can be resulted from one or some reasons and its effects can contain on ore some effects. The risk is known as effect of uncertainty on projects and organizational goals by organizations, but each organization have a different rate of risk acceptance. The risk management means the systematic execution of policies, approaches and the management experiments for activities such as evaluation and risk control (Mousavi et al., 2008).

The risk management is a key element in project management. A systematic approach at first is for detection and then it is for evaluation and finally responsible for risks of projects (Faregh, 2006). In this case, some standards are suggested that the suggested structure in the Project Management Body of Knowledge is the more acceptable one that the risk management contains 6 levels such as risk management planning, risk detection, quantitative evaluation of risks, qualitative evaluation of risk, risk responding and risk control (AsemiPoor, 2011).

In some resources, two scales of occurrence possibility and effect rate has been used in accordance with risk evaluation. In other resources, some scales are considered such as uncertainty of estimation and ability of organizing in risk reaction (Fleming Oxycontin, 2007). The scale of effect rate shows the positive and negative effects that creates a risk for projects. This scale can be estimated in accordance with cost or time amounts. The uncertainty of estimation shows the rate of evaluator's trust about estimation results of risk evaluation. Finally the ability of organization in risk reaction indicates the ability of organization in occurrence estimation of risk and the ability of responding to it (Lee and Whang, 2011).

The process of risk management has generally different levels. At first, some main threats and opportunities are detected by one of risk detection tools that they can be effective in plan output or considered process. At second step, an exact evaluation was carried out about occurrence frequency and their results after detection of main risks, then different risks are classified in accordance with earned values. So the possibility of risk comparison is considered and in next phases of risk management process the proper methods of risk planning and risk control are considered (Lind Niels, 2002).

Risks in the civil projects

The important risks that are existed in the civil projects of supplies management contain some instances followed as (PMBOK, 2004):

1- The event risk contains two groups: the first event group is resulted from natural events such as earthquake, torrent and etc. and the second event group is resulted from human force like accidents, strike and etc.

2- Risk of supplies: one of the important risks in this field is the loss of on time delivery of materials, plans, equipment and etc. to executive contractors and suppliers. The results of this risk are the delay of major activities.

3- The risk of economic conditions change: the change for rate of exchange, inflation, and etc. is one of the detection factors of correct formation and estimation of project costs. Each change in these variables can create disturbance in the cost estimation.

4- Risk in political condition: the political conditions have a significant effect on the field of project supplies such as: financial supply, delivery of materials, plans, equipments and using foreign contractors.

5- Risk in the expert human force: the expert human force is one of the important factors in the

execution of projects in the predicted time and cost in accordance with designing, construction, and operation. These expert human forces minimize the repetitive works and they provide better solutions for correct accomplishment of activities.

The effective factors in the risk rate of civil projects

The accomplished projects indicate that the rate of main risks is divided into some groups:

1- The smaller factor of uncertainty can create financial dangerous and delay. The development of work domain leads to increase of work kinds number and finally it leads to increase of risk, that its control will be more difficult than small domain one.

2- Whatever the used technology in the project is complicated, the needs of more experts will be felt, then finding of forces that can finish the work with lower problems, is one of the other factors of uncertainty and risk. The complexity of work can lead to increase of mistakes and finally it leads to cost and delay that they can be minimized by correct estimation and risk management.

3- Freshness and technology: the projects that were carried out for the first time will have dark points and more similarity. This similarity will be lower in the repetitive projects and proper limitations are considered for their estimation. In repetitive projects, some sections that were practiced and experimented before, they contain saving cost and time. On other word whatever the rate of project repeatability is more, the rate of its risk will be decreased.

4- Sensitivity: the more important projects need more attention. The national, cultural and historical planes are in this group. In some cases, the velocity of designing and execution are noted that the mistake possibility and additional costs should be considered.

5- The geographical position: the execution of works can be added to project cost as hardness coefficient due to traffic conditions, the intensity of weather changes and etc., but some unpredicted instances like inaccessibility to materials and human forces can be existed in the workplace that cannot insert in that coefficient. These projects have possible instances that are predictable.

The risks are classified in projects in accordance with their potential interference in the projects. The use of possibility matrix and its effects is a common method for prioritizing risks. The specific combination of possibility and effect are codified by related organization that lead to rating of risks into high importance, medium and low importance (Project Management Institute, 2000).

In this case, the definition of tolerance threshold for risks is necessary as a scale for measuring rate of

reactions effectiveness. Tolerance threshold for risks depend on different factors such as: accessibility of resources, experience of past damages, the practical solutions and decisions (Baker and Zeng, 2009).

The loss of this scale, can leads to more efforts for decreasing risk that is acceptable or the reactions are not effective enough for decreasing risk effects. The supplies management contains selling process, or earning productions and services of project that it also contains the process of project management and the control of changes for managing contracts or buying orders by authorized members. The management of each contracts with foreign organizations that buy project from executive organizations and also the management of contract laws for project team, are carried out by supplies management of projects (Ashtiani, 2008).

The supplies management and the effects of risk on it:

The supplies management system can have a great share in the finance of company in projects when it acts more effectively and efficiently. The companies felt needs of better relationships by suppliers before. These relationships lead to decrease of project time, project development and its delivery (Ashtiani and Hosseini, 2006).

The risk management provides facilities for each element in the field of supplies of projects such as:

- Successful execution of plans in accordance with codified executive plans
- Decrease of operational and management costs
- Decrease of risk effectiveness costs
- Decrease of constant and continuous stress in accordance with improvement of efficiency of supply chain
- Saving of time and use of lowest accessible resources in accordance with accomplishment of each member duty in chain.
- Increase of reliability in comparison with successful accomplishment of roles in chain
- Minimizing the crisis management that creates the place of risk management in the field of evident supplies. The control approaches are detected and they are achieved to final project goal by detecting and evaluating risks and strategies for answering to them.

So it is necessary that the risk management of supplies should know each sort of risks and different levels of projects that it can note them in the risk creation time as a potential risk that the risk won't get to effectiveness level. They detect approaches that should be used in the crisis conditions and in the appropriate time, it covers the loss materials (Fleming

Oxycontin, 2010).

CONCLUSION

In accordance with civil plans supplies system, all instances based of selling and production supply and necessary services for each project accomplishment, the present of comprehensive plan leads to integration of relation among sellers and contractors. The main aim of proper system selection of supplies management for civil projects is to provide project needs efficiently that the project finishes with high quality. On the other hand the managers of project supplies have an important role due to their stable relation with other sections. Furthermore they are considered as a relation among internal sections with other external centers.

The aim of planning is to determining necessary materials. This stage needs to a close relation among selling manager and supplies with all the executive factors. So detection of mistakes and problems in the projects is more important for selecting proper system of project supplies. if these challenges won't be detected correctly in the project, it should be avoided by some methods and the civil projects should be grew in the proper way and by lower costs and more quality.

REFERENCES

- Asadi S.H. (2004). *Transnational Organized Crimes*; first edition, Mizan publications, Tehran.
- Ahmed, S.M., Azhar, S. (2005), *Risk management in the Florida construction industry*, Second LACCEI
- Chopra S.M. and supplychainm, P. (2003). *Management & strategy, planning & operation*, ears on Prentic E Hall, f.V.
- Abdi M. (2009), *Project Risk breakdown structure in project-based organizations, civil engineering*, master's thesis, orientation MBA, Sharif University of Technology, Faculty of Management and Economics
- Mazloomi N. (1986). *Quantitative Methods of Risk Management*, Insurance Journal Central Iran, issue 4
- Khamene Ah. (2009). *practical implementation of risk management in an international tender for the project Powerplant*, Fifth International Conference on Project Management, Tehran
- Mousavi M. Ghorbani KIA. Safavi A. Shantia (2008). *risk management, logistics, strategic to the success of development projects*, the first International Conference on Strategic Management of Projects.

- Faregh F. (2006). Identification and assessment of environmental aspects and risks in the workplace) risk management (10)
- AsemiPoor MJ. (2011). project management, research and formulation of science books, Centre for Humanities Research and Development
- Fleming Oxycont W. (2007). Trans- Mir Saeed Qazi Z. management, project logistics, Tehran, Publication NPC
- Gharachorloo N. (2005). Risk assessment and management, printing, Tehran, Science and Technology Press
- Lee H. and Whang S. (2011). Information Sharing in a Supply Chain. *International Journal of Manufacturing Technology and Management*, 1(1), 2000-79.
- Lind Niels. (2002). Time effects in criteria for acceptable risk, *Reliability Engineering and System Safety* 78, 27-31
- PMBOK A. (2004). Guide to the project management Body of Knowledge, Project management Institute, Standards committee.
- Project Management Institute, (2000). A guide to the project management body of knowledge (PMBok guide), draft for comments, Pennsylvania, USA.
- Baker C.A. Zeng J. (2009). A fuzzy logic-based approach for qualitative risk modeling in the construction process, *World Journal of Engineering*.
- Ashtiani Z.M. (2008), Project Management Institute, glossary standards, PMI, First published in Tehran, Friday Publications.
- Ashtiani Z.M. Hosseini H. (2006), Project Management Institute, A Guide to the scope of knowledge Project Management(PMBOK)Third Edition, First Printing, Tehran, Friday Publications.
- Fleming Oxycontin W. (2010), Trans. Mir Saeed Qazi Z, Project Procurement Management, Second Edition, Tehran, NPC Press Relea.