Risks Discovered And It's Evaluation in Multi Story Building

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Abstract -- The aim of this paper is to understand the key risks in construction projects. Risks were prioritized according to their significance of influences on typical project objectives in terms of cost, time, quality, safety and environmental sustainability, and then scrutinized from a joint perspective of project stakeholders and life cycle. Risks are always in the future and when it occurs may lead to progressive or destructive influence on the project. Effective management of project is required by using the techniques of project management which involves project risk management as an important component through the various phases of the project, in order to manage risks and reduce time-cost overruns and quality and safety concerns.

Indexed Terms: Real Estate Projects, Risk Management, destructive effect

I. INTRODUCTION

The construction industry has now become one of the blooming industries of today that has considerable impact on the economy of the nation. There is a massive amount of investments made in infrastructure development activities. Several projects undertaken encounter considerable time and cost overruns. Construction projects when delayed cause upsurge in overall budget. The project has to be scheduled and organized appropriately and carefully in order to complete it within given time with proper quality.

Activities in the construction industry are subjected to various uncertainties or risks that cause adverse influence on the performance of the various activities during the project life cycle. Construction projects may have destructive consequences due to uncertainties or risks. Therefore, it is essential to include risk management planning in order to deal with various risks occurring in the project. Hence it is very significant to adopt risk management strategies.

II. RISK AND UNCERTAINTY

A Risk always arises in the future. Risk can either lead to a progressive or destructive consequence on the project. Objectives of the project like the cost, quality, time, schedule and safety will be badly affected. A risk may arise due to one or more number of reasons having one or more number of impacts positive or negative.

Risk is continually uncertain but uncertainty is not always a risk, therefore risk is uncertainty that matters. At a more comprehensive level, one can categorize uncertainty into three categories:

- The Known uncertainties: The contractual necessities or other events which are certain to occur.
- The Unknown uncertainties: How a product/service will fare in the market afterward its launch.
- The Unknowable uncertainties: The occurrences of disastrous events like natural disasters or terrorist attacks.

Three main types of reasons for projects being risky are as follows:

- Common features
- Planned design
- External environment

All projects have some common features which make them risky and some of them are as follows:

- Uniqueness
- Complicated: Technical, Profitable, Relational, etc.
- Assumptions and Restraint: Chances of being wrong, unknown or disclosed,
- People: Project team, Clients, Dealer, Contractors and Subcontractors,

- Stakeholder: Impose necessities, outlook and objectives,
- Change.

III. FACTORS AFFECTING RISKS

The factors affecting risk are as follows:

- History: A repetitive project will have lesser risks. Possibility of accomplishment with new project is high as the procedures are per-defined. While, new projects will have more risks.
- Experience and skilled team: To manage a project efficiently, the team must have thorough understanding and expertise in the area which will otherwise affect the project performance.
- Stability in Management: Vision and Mission of the organization should be followed firmly. If the organization's top level is imbalanced, then it may result in unreasonable and unproductive outcomes.
- Team size: Team size may cause positive or negative influence on the project. Number of members for a particular team depending upon the assigned work should be adequate.
- Complex nature of the project: In case of sophisticated and complicated project, the chances of risks are high. Risks increases with complexity of the project.
- Availability of resources: A project relies on the availability of resources. Inappropriate and Untimely resource mobilization will have negative impacts on the project.
- Time: The risks get multiplied in a project which has complicated and compressed schedule.

IV. TYPES OF RISKS

Risks are broadly categorized as External risks and internal risks, Risks that occur due to environmental influences are External risks and Risks that occur within the project are internal risks. Risks can either be acceptable or unacceptable depending on the influence they cause. The risks in any construction project have a large number of sources which can be categorized into following broad categories:

1) Technical risks: These risks may occur due to inappropriate implementation and execution of the technical processes. Improper planning, poor site investigation, incomplete and faulty designs, errors in drawings etc., are some of the instances of technical risks.
2) Financial risks: A set of risks such as transactions that involve loans, investments, raising of funds from the clients, changes in market rates, different standards of accounting, changes in foreign exchange etc. together constitute Financial risks.
3) Management related risks: Cooperation and Coordination among the team members, proper flow of information, presence of skilled staff etc. are significant for any project to be successful.
4) Logistic risks: Failure of equipment's, non-availability of enough transportation facilities, non-availability of spare parts, and failure of procurement of resources are considered as logistic risks.
5) Socio-political risks: Changes in the rules and guidelines, legal constraints and conditions, conflicts, corruption, changes in the bylaws, safety rules and pollution control rules etc.
6) Environmental risks: These are the risks external to the project which are unavoidable such as the natural disasters, weather and seasonal implications.
7) Construction risks: The risks that arise due inappropriate execution of activities, improper supervision, inadequate safety and protection on construction sites etc., are considered as construction risks.

V. PROJECT RISK MANAGEMENT

"Project Risk management includes the procedure of conducting risk management planning, identification, analysis, response planning, and monitoring and control on a project"13. The aim of Project Risk Management is to reduce the probability of occurrence and influence of uncertain or negative events and increase the probability of occurrence and influence of certain or positive events. The following figure represents the processes of Project Risk Management according to PMBOK.

Fig. 1: Project Risk Management Process

VI. RISK MANAGEMENT PROCESSES

1. Plan Risk management:

It is the procedure of defining the processes and activities for conducting risk management planning throughout the project life cycle. Planning aids in allocating resources and time for conducting risk management activities.

2. Risk Identification:

This procedure involves identification of the risks, may be a simple or complex and documenting the characteristics of the risks identified. This procedure involves various project participants and stakeholders. Attention should be given to the project assumptions, constraints, deliverables, Work Breakdown Structure (WBS), cost estimates, resource mobilization plans, and other project documents.

3. Qualitative Risk Analysis:

Qualitative Risk Analysis is the procedure of analyzing the probability of occurrence and influence of identified risks. It assesses the priority of the risks identified by their likelihood of occurrence, influence of those risks on the project, and the corresponding urgencies for the risks.

4. Quantitative Risk Analysis:

It is the procedure of analyzing the identified risks numerically in to know the influence of the risks on the objectives of the project i.e. to know the probability of the project reaching its planned budget or cost estimate.

5. Risk Response Planning:

It is the procedure of planning risk mitigation to reduce the effect of risk on project objectives. Preparing plans and strategies to avoid, mitigate, share, transfer or hold the risks and choosing the best response. Several responses will be planned and the best one has to be selected. Risk response planning should fulfill the following requirements:

- It should be appropriate with the consequences of risk,
- It should be reasonable within the project context,
- Cost effective in meeting the challenges,
- It should be agreed upon by all the parties involved in the project and
- It should be handled by an expertise person.

6. Risk Monitoring and Controlling:

It is the procedure of documenting risk response plans, identifying new risks, monitoring the residual risks, and controlling the risks and evaluating the risks throughout the project. The tools methods used are as follows:

- Risk Reassessment: It includes identifying new risks if any, closing the risks that are mitigated, and reassessment of the existing risks.
- Risk Audits: It checks the effectiveness of the risk responses and documents them, the causes for those risks and evaluates the efficiency of the risk management process.
- Variance and Trend Analysis: It includes comparing the actual results with the planned results.

VII. IMPORTANCE OF PROJECT RISK MANAGEMENT

Project risk management adds number of values to the project that consist of:

- Identifying uncertainties and predicting probable outcomes.
- Through systematic and logical decision making benefits in producing better business outcomes.
- Enhances returns or benefits by creating better project control and lessens over budget and time.

- Has a positive persuade on creative thinking, developments and innovations.

VIII. CONCLUSION

Evaluate project risks and risk responses periodically during the project life cycle. Develop risk mitigation plans and update them as the project progresses. Follow through with mitigation actions until risks are acceptable. Project risk management is an important and essential part of project management. With effective risk management as an integral and important component of the project, one can take appropriate actions to avoid or shift the probability for project success in good turn, by not only identifying the risks but also predicting the most possible future outcomes. Risk Management is taken as one of the hardest sector of the construction process and its application has to be encouraged in all the projects so as to avoid negative consequences in the project.

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