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Management of Risk in Construction Projects in Maharashtra

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ABSTRACT: *Construction industry in India is rapidly increasing day by day with lots of innovative techniques being added for the rapid construction of the projects. This Industry contributes largely to India's GDP with daily new innovations and techniques in this field rising up to improve and reduce the time spend for it in which share of Maharashtra is also to much extent. But at the same time construction industry is highly risk prone, with complex and dynamic project environments creating an atmosphere of high uncertainty and risk. Management of risk is an important step in project success. It is the process of identifying, classifying, analyzing and assessing of risks in a project. Risk management is an activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources various technical, sociopolitical and business risks affect the industry at various stages. The track record to cope with these risks has not been very good in construction industry. As a result, the people working in the industry bear various failures, such as, failure of abiding by quality and operational requirements, cost overruns and uncertain delays in project completion. In light of this, it can be said that an effective systems of risk assessment and management for construction industry remains a challenging task for the industry practitioners. The aim of my work is to identify and evaluate current risks and uncertainties in the construction industry through extensive literature survey and aims to make a basis for future studies for development of a risk management framework to be adopted.*

KEYWORDS: *Construction Industry, Risk, Risk identification, classification, assessment.*

I. INTRODUCTION

Any construction projects involves various risk factors which have various impacts on projects right from the start of the project till its completion. Construction Industry in Maharshtra is one of the most important sector involving with various stages involved right from the starting phase till the completion phase and even after successful completion of the project. Numbers of various projects at various scales are being implemented in Maharshtra with involvement of various experts team for proper execution so that the progress of work at various stages should be executed as per the planned line of action so as to avoid the risk and the uncertainty in the working phase of the projects. All the above can be done only if the project management team along with other works together on a common platform, and hence project management is said to be the science which applies skills, tools and techniques to fulfill the project activities in a way that the expectations and requirements can be fulfilled without any risk and uncertainty. Risk management is an integral part of the various process and stages for identifying the different risk associated with a project. In its broader manner it can be said to look for more positive events in the project thus by reducing or minimizing the impact of negative or unwanted events so as to reduce the probable risk. No project or industry is risk free, all of them bears risk at various stages at different amount and varies from one activity to other. Objective of risk management is to reduce different risks in the project at the different stages so as to minimize loss.

II. RISK MANAGEMENT

The scope of any project is very large: which carries with it important economic, political and social consequences. Throughout the world, the construction industry has changed rapidly over the past decade; companies are now faced with more risk and uncertainty than before. As the project starts taking up speed and progresses further many points, misunderstanding, conflicts starts to rise up which leads to probable risk in the projects. Risk in construction has been the subject of attention because of time and cost overruns associated with projects. And hence risk can be defined as an uncertain event or condition that, if it occurs, has a positive or negative effect on a project objective. It includes both the prevention of potential problems and the early detection of actual problems when they occur. Risk is unavoidable and present in every human situation. It is present in daily lives, public and private sector organizations. Risk management nowadays a critical factor for successful project management, as projects are tending to be more complex and day by day competition is increasingly tougher. It can be said that their exist direct relationship between effective risk management and project success since risks are assessed by their potential effect on the objectives of the project.

In order to achieve a successful and desirable construction outcome, early provision of risk has become a crucial step in project management. Risks arise from uncertainty and are generally said as to be the factors which have an adverse effect on the achievement of the project objectives. Risks in construction project arise from a variety of sources and are of several types: The risks for any projects have a wide range of sources which can be classified into the following broad categories,

2.1 Technical risks:
- Improper & inadequate site Survey & investigation
- Incomplete & faulty design
- Appropriateness of specifications
- Uncertainty over the source and availability of materials

2.2 Logistical risks:
- Non availability of sufficient transportation facilities
- Non availability of construction equipment spare parts, fuel and labor

2.3 Management related risks:
- Uncertain productivity of resources
- Industrial relations problems

2.4 Environmental risks:
- Weather and seasonal Changes
- Natural disasters

2.5 Financial risks:
- Availability and fluctuation in foreign exchange
- Delays in Payment
- Inflation
- Local taxes

2.6 Socio-political risks:
- Customs and import restrictions and procedures
- Difficulties in disposing of plant and equipment
- Insistence on use of local firms and agents

2.7 The Importance of Risk Management:
Any Construction project related risk management delivers the following importance
- Helps and Contributes to project success
- Recognizes uncertainty in the project stages and provides forecasts of possible outcomes
- Produces better business outcomes through more informed decision-making
- Positive influence on creative thinking and innovating project future
- Offers better control on less overhead and less time wasted, greater focus on benefits
- Helps senior management and project team to understand what is happening with the project and the challenges the project has to overcome.
- To safeguard resources from surprising losses
- To be prepared to seize surprising opportunities
- To limit uncertainty, both in their minds and in the world

2.8 Advantages of risk management:
Following are advantages of risk management:
a) To achieve the desired objectives
b) Reduction of capital cost of the project by minimizing risk in time
c) Less uncertainty
d) Creation of value.

III. RISK MANAGEMENT PROCESS

The identification, assessment and management of risk across an organization help to reveal the importance of the whole project. The overall risk management process can be summarized into the following four points,

3.1 Risk Identification:

Risk identification is the first step of risk management process, in which potential risks associated with a construction projects are, identified. Determination of most likely risks affecting the project and documentation of characteristics of each risk is the main task in risk identification. As per my knowledge risk identification is nothing but to accept the risk which would occur at any phase of the project. It helps to understand the risk, its consequences and probability of occurrence. The project team or the risk manager will react to the risk in case of occurrence.

3.2 Risk quantification:

Assessment of risks and the possible interactions of risks with project activities to evaluate the possible outcomes of the project. Actually risk can be avoided by not doing part of the project which contains risk or otherwise changing the strategy so as to minimize the risk which would likely to come into the project phase.

3.3 Risk response:

It can be defined as response steps for opportunities and threats associated with risks. Risk can be monitored by employing a predictive indicator to watch the project as it approaches a risky point. The risk strategy is to monitor the risk by being part of the test team.

3.4 Risk response control:

Response to the changes implemented to remove risks throughout the project duration by transferring the risk by means of insurance.

The risk management steps are:

1. Establishing goals and context (i.e. the risk environment),
2. Identifying risks,
3. Analyzing the identified risks,
4. Assessing or evaluating the risks,
5. Treating or managing the risks,
6. Monitoring and reviewing the risks and the risk environment regularly, and
7. Continuously communicating, consulting with stakeholders and reporting.

IV. OBJECTIVES OF THESIS

The objectives of this study are:

1. To identify key risk factors that could stand in front of construction processes
2. Investigating the severity and the allocation of each identified risk factor
3. Examining the risk management actions efficiency that is applied in the industry
4. Providing practical suggestions and recommendations pointing toward upgrading the risk management process in construction and improve the performance with a designed questionnaire

V. THESIS METHODOLOGY

Data is being collected by doing questionnaire survey with Construction companies in parts of Maharashtra. Following work of order is being followed,

- Data surveying,
- Evaluating & solving related problems using risk Management definition,
- Dividing risks into different categories,
- Questioning risks,
- Analyzing risks using by using a excel based program,
- Ranking risks,
- If possible finding appropriate solutions,
- taking views, suggestions from different companies on the excel based program,
- Presenting conclusions.

VI. FUTURE WORK

After the response from the different companies to whom questionnaire has be sent a response rate would be taken out so as to know does companies practice risk management, does they make use of any software's, what type of risk they think is important and would affect the risk And most important does it affect the project time and the finance that has been estimated for completion of project. Along with these different risk factors will rank most important, important, moderate important, less important and not at all important with the help of an excel based program which will automatically give the results with the parameter that has been defined for..

VII. CONCLUSION

Risk management is important in any construction project, and should be implemented in large as well as small and medium sized industries. Risk analysis and management techniques are rarely used by the Construction Industry in Maharashtra due to the lack of knowledge and expertise which leads to risk in the projects. A variety of risk have been studied, four of which identified to be most probable in the Maharshtra construction industry which are Financial, Technical, Procurement and Management. As far as Maharshtra is concerned risk management is still not practiced in large scale in construction sector and this should be changed as soon as possible. The main reason of this study is the evaluation of different risk level using the risk matrix approach in construction sectors in various parts of Maharashtra. Depending upon the questionnaire survey results further analysis will be done using different parameters to find out and register the risk at different levels, also along with this a excel based program will be done so as to identify the risk at different level which will be based on 5 point likert scale .

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