

CRISIS MANAGEMENT IN CONSTRUCTION PROJECTS

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Abstract:- A crisis is a sudden and an unexpected event that threatens to disrupt an organization's operations and poses both a financial and a reputational threat. The accelerated globalization required the companies to differentiate themselves in order to compete with those situations and this reflected on introducing different management strategies. Within this context, the terms "crisis" and "change" are now what the companies are to be dealt with. Both situations bring about uncertainty that led the companies to search for new strategies in order to sustain those uncertainties. The construction companies, who grasp the importance of crisis, have felt the need to incorporate crisis management towards the aim of passing through such crisis situations with the least possible loss and gaining competitive advantage. The main objective of this paper is to study the importance of crisis management in construction projects and analyzing the factors influencing crisis management in construction projects.

Index Terms:- Crisis, construction, globalization, reputational threat.

I. INTRODUCTION

Crisis is a situation faced by a group or an organization, which they are unable to cope with, by the use of normal routine procedures. It can occur as a result of unpredictable events and unforeseeable consequences. Both are common feature of construction companies because of the long-term nature of projects. Therefore it demands for their effective management in preventing crisis and resolving them if such situation occurs. The elements of crisis include a threat to the organization, elements of surprise, short decision time and need for change.

Crisis management is a continuous process that includes both proactive and reactive actions with the aim of identifying the crisis, planning a response to the crisis, confronting the crisis, and resolving the crisis. Crisis

management process constitutes three main periods that are before, during and after the crisis. They are

- 1) Precrisis includes crisis preparation and planning, where the organization remains uninformed until a crisis is triggered;
- 2) Crisis includes the trigger event and ensuing damage; and
- 3) Postcrisis includes learning from the past experiences, which then informs the precrisis stage.

The crisis management can be well explained on the basis of a conceptual framework that perceives crisis management as a cyclic phenomenon that includes different phases. The phases of the crisis management cycle are

- 1) Prevention phase that involves detecting warning signals and taking actions to mitigate the crisis,
- 2) Preparation phase that involves diagnosing vulnerabilities and developing the crisis plan,
- 3) Response phase that covers the work during an actual incident, with the purpose to get control of the situation and to mitigate its negative consequences and finally,
- 4) Recovery phase covers measures taken in order to rebuild and restore what has been ruined or damaged during the crisis.

II. LITERATURE REVIEW

Crisis management as a theoretical study field has evolved over the last 'three decades' from the relatively long tradition of research into disaster management (Shrivastava, 1994). Driving forces for the evolution of crisis management research into its own field were "first provided by

international political instability, then by rapid technological advances and more recently, by an increasingly hostile business environment" (Loosemore, 1998, p.139). Because crises are unique laboratories of human life processes which lie at the very core of management, crisis management's value in other contexts is already becoming obvious though its research is in its infancy (Rosenthal and Kouzmin, 1993). In actuality, throughout a crisis, configurations, interests, values, perceptions, bargaining and decision-making progressions come into sharp focus. Moreover, because a large number of forces interact during a crisis, crisis management "provides an excellent context for the integration of theory" (Loosemore, 1998, p.139).

A "construction project" is a high value, time bound, special construction mission of creating a construction facility or service, with predetermined performance objectives defined in terms of quality specification, completion time, budgeted cost and other specified constraints (Chitkara, 2011). Cost is one of the five main parameters that can sufficiently define a construction project. Other parameters are scope, quality, resources and completion time. The five parameters are interactive, that is, each parameter is a function of other. The evaluation and balancing of interrelationship among the five project parameters is a complicated process. However, in a given project, the scope and quality of work in terms of quantity and specifications are specified and these parameters are not subjected to change (unless scope changes substantially). Resources and costs are co-related. Therefore, for a given quality, in such situation, time, cost and scope are core parameters. These parameters are interlinked and must be kept in balance to achieve project objective efficiently and effectively within changing environments (Chitkara, 2011). Nowadays, even a marginal cost overrun can sweep away the profit of a job, and continuous cost overburdens in most of the projects of a firm can lead to bankruptcy (Akinci & Fischer, 1998). Organizations face a major challenge in controlling project budgets over the time span between project initiation and the completion of construction. The development of cost estimates that accurately reflect project scope, economic conditions, and are attuned to community interest and the macroeconomic conditions provide a baseline cost that management can use to impart discipline into the design process. Projects can be delivered on budget but that requires a good starting estimate, project management discipline and an awareness of factors that can cause cost escalation (Shane et al., 2009). This

necessitates finding the relevant factors and causes that lead to cost overrun.

1. Selim Sahina et.al, 2009 viewed crisis management as a process that includes catching and evaluating crisis signals and needs to take and implement necessary precautions in order to overcome a crisis with a minimal damage. Detecting the early warning signals of a crisis contributes firms to hinder the occurrence of the crisis and to survive without huge financial losses. Factors that contribute construction firms to survive with zero defects can be listed as follows:

1. Catching indirect signals before a crisis.
2. Developing proactive methods to defend themselves against the crisis.
3. Taking the crisis under control.
4. Taking required measures after the crisis for the recovery of the firm.
5. Recording the lessons learned from the crisis.

2. Maria Giannacourou et. Al, 2010 ascertained crises as unusual events that threaten basic structures, introduce high uncertainty and impose time pressures in decision making. A sample of Greek companies was focused to present a preliminary investigation on the impact of crisis on the choice of managerial practices, innovation and formalization. The managers' perceptions regarding uncertainty and expectations about the future of the crisis will be presented since they have been found to influence understanding and shape courses of action. The financial strength and competitive advantage of companies as well as manager's perceptions regarding environmental uncertainty and expectations about the future of the crisis will be presented since they have been found to influence understanding and shape courses of action.

3. Sandeep R Sahu and Shreekumar Menon, (2011) observed that, how the global crisis in 2007 affected the whole world including India and its real estate business. The real estate business saw a decline in revenues, net profit and eventually property prices in India. This was all part of an economic cycle which was experiencing a recession. Consumers all over the India started losing confidence. Economic downturn proves to be a litmus test and companies with stronger fundamentals and ability to make quick strategic decisions continued to operate. Projects of

the real estate developers in the time of recession have been stalled due to the lack of funds. Various companies were forced to sell their properties at lower value. Different strategies to cope up with such situations have been discussed in the paper. Developers were reluctant to take financial decisions in order to revive demand but eventually gradual slash down in prices was introduced.

III. METHODOLOGY

This section presents the results of the questionnaire survey which was used to get the opinion of major stakeholders in the construction industry. This subchapter will present the results on the causes of cost overrun on the basis of their opinion. The causes are ranked and arranged on the basis of probability of occurrence, severity of impact and overall importance. The results of the questionnaires are presented and analysed in the subsequent sections.

As state before, for the purpose of getting information on the perception on causes of cost overrun, questionnaires were distributed to clients, consultants and contractors. A total of 35 questionnaires were distributed to representatives of client, consultant and contracting organizations in the construction sector and 30 questionnaires were filled and returned. The valid response rate was 85.71%, which is a high percentage

Many causes of cost overrun have been listed from the literature review in chapter 2. But the causes of cost overrun in those previous studies were from the view of a particular stakeholder or focusing on a particular area or country. This makes it necessary to know the view of construction stakeholders in our region, in India. Knowing the causes allows us to prioritize action to mitigate cost overrun. The basis of results in this thesis is the questionnaire survey conducted among the stakeholders in construction industry. The causes of cost overrun were first examined on the basis of responses from clients, consultants and contractors separately. The causes were ranked on the basis of occurrence, impact and importance as responded by the different stakeholders.

IV. RESEARCH METHODOLOGY

Research methodology is designed in three stages:

A. Data Collection

A structured questionnaire is floated with 350 numbers

of respondents working in Indian construction sector and 140 valid responses were received out of 350 with a response rate of 40%. The respondents were asked to rate their responses over the Likert scale rating from 1 to 5 for the factor affecting construction productivity. The questionnaire header part contains useful information about the study and then contains some basic information to the respondent about the study and the questionnaire and space at the last of the questionnaire is provided to write some comments if they have any about the study or the questionnaire. The questions were designed in such a way that they were simple and can easily understand by the respondents.

In their crisis management process, Ocal, Oral and Erdis (2006) proceeded to mention three main stages to manage the crisis as follows:

- 1- Management before the crisis. Crisis management before the crisis focuses on two main issues. The first is "issue analysis" which is the recognition of the possibility of any crisis occurring as well as the recognition of any potential causes of crisis. According to Kash and Darling (1998), many organizations fail to take steps to proactively plan for crisis because they fail to recognize the possibility of any crisis occurring. Secondly, an 'Early Warning System' is required. An early warning system provides the organization a continuous review of current performance with respect to the plans. Any changes that may result in a crisis are then recognized. Moreover, threats and opportunities stemming from the potential crisis can then be assessed if the crisis cannot be prevented. Such a warning system will enable the organization to act before the crisis. As Maynard (1993) mentioned, for organizations that prepare proactive crisis plans, decisions during crisis are more balanced and crises are of shorter duration.
- 2- Management during the crisis. Management during the crisis is facilitated by a plan that guides both the management and the employees on what should be done in order to get the crisis under control with the least loss. Decisions during crisis are usually made under pressure, uncertainty and little time. Therefore, use of teamwork and decision-making techniques are essential to reach objective decisions (Ocal, Oral and Erdis, 2006). Moreover, the

management should focus on increasing productivity and raising motivation both of which are needed to mitigate the organizational loss because of the crises.

3- Management after the crisis. Activities after the crisis should analyse the current situation. New directions taken by the organization should be decided by analysing the impact of the crisis on the organization. Feedback on managerial, financial and organizational performance should be used to adopt the missions and policies of the organization (Ocal, Oral and Erdis, 2006). Consequently, strategic repositioning along with a series of changes in the structure, systems, and processes need to be undertaken in order to overcome the impact of severe crises (Hwang and Lichtenthal, 2000).

4- Similarly and in greater detail, Jaques (2007) conceptualized crisis management as a continuous discipline based on 'clusters and non-linear elements' that forms a relational. The model's non-linear structure emphasizes that the elements should be looked at as 'clusters' of interrelated and integrated disciplines rather than 'steps' to be undertaken in a sequential manner. The clusters of his model are as follows:

1. Crisis preparedness

a. Planning processes: Includes putting planning in place, assigning roles and responsibilities, and establishing process ownership.

b. Systems and manuals: Includes crisis management infrastructure, equipment, resources, and documentation.

c. Training and simulations: Includes programs familiarization, testing, and live simulations.

2. Crisis prevention

a. Early warning: Includes processes that evaluate the current performances.

b. Issue and risk management: Includes identification and prioritization of risks to develop and implement strategies.

c. Emergency response: Includes infrastructure, documentation, and training

3. Crisis incident management

a. Crisis recognition: Includes objective assessment.

b. Systems activations/response: Includes the activation process.

c. Crisis management: Includes strategy selection and implementation, damage Mitigation, stakeholder management, and media response.

4. Post-crisis management

a. Recovery and resumption: Includes operational recovery and financial retention.

b. Post-crisis issue impacts: Includes coronial inquests, judicial inquiries, prosecution, litigation, reputational damage, and media scrutiny.

c. Evaluation and modification: Includes root cause analysis and management assessment.

V. CONCLUSIONS

Crises are unusual events that threaten basic structures, introduce high uncertainty. Both abrupt and cumulative factors were observed in a project as practice of an international construction firm despite the company's approach to risk management. Crises are a common feature of construction projects because of the long-term nature of projects. As we studied above the principal component analysis will give the major factors that affect crisis management. Due to which the crisis management team or the person who is responsible for its prevention can choose adequate approach for it. Further the results of mean score analysis.

Crises that can affect construction companies occur either periodically or suddenly. Such companies in the pursuit of an innovative crisis management approach should be ready against any types of crises. Because of the fact that construction companies should deal with high investment costs, crises can adversely and significantly influence these companies. Survival of them with a minimal loss depends greatly on establishing an early warning system, struggling with the crisis effectively, and turning pre-crisis conditions

in a short period of time. Moreover, they should attach a considerable importance to advertisement activities, put the quality in the first priority, and try to decrease costs instead of the amount of production. Besides these precautions, they should make some planning efforts against crises, form a crisis management team, improve several crisis scenarios, and test them together with their solutions.

From the perspective of social relationships, personnel should be motivated and behaviours that can produce anxiety and stress should be avoided. In terms of external affairs, effects of the crisis on the construction company should clearly be shared with stakeholders to keep their trusts. Construction companies that can overcome a crisis with a minimum loss should turn to pre-crisis conditions in terms of restricted expenditures, centralized management, and low-level managers' suspended authorities. They should also record information obtained and lessons learned by crises and note mistakes done in the crisis process. In addition, high-performance personnel may be rewarded while low-performance ones may be fired.

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