



Study of innovative approach for Crisis Management

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Abstract— It is well known that projects rarely run according to plans and estimates. As frequently noted by researchers, delays and over costing are common phenomena in the construction industry worldwide. Due to several internal and external reasons, projects fall behind original schedules and run above the allocated budgets. In engineering and construction projects, plans and cost estimates are usually drawn to ensure that the work is carried out to the desired quality, in the allowed time, and within budget. However, we often hear about projects with delays and where the costs tend to be higher than depicted by budget. This problem of cost overruns and schedule delays is commonly facing the projects managed by the government authorities. This particular problem is being tackled as a crisis in the project lifecycle that might result in cancelling the project after initial execution or in finishing the project without delivering its goals and objectives.

Therefore, in this study, key points such as the concept, properties, objectives, approaches, and the process of crisis management were explained in a detailed manner from the perspective of the construction industry to increase performances of construction companies during crises. Thus, the current study can contribute to construction companies to catch early warning signals of a crisis, to motivate the personnel against the crisis, to perform an effective struggle during the crisis, and to turn to the former position in a short time after the crisis.

Keywords—crisis management, delay analysis, sap etc.

I. INTRODUCTION

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) pre crisis 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) post crisis includes learning from the past experiences, which then informs the pre crisis 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 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.

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II. LITERATURE REVIEW

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A. Crisis Management

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). According to Ocal, Oral and Erdis (2006, p.1499), Crisis management is a dynamic and 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. 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 can not 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 analyze the current situation. New directions taken by the organization should be decided by analyzing 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).

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 model. 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.

III. RESEARCH METHODOLOGY

A. Problem Statement

Negative Events are affecting construction industry e.g. demonetization, GST, RERA etc. There are drawbacks in current Process Mapping Flow of the organization to face these crises. There is a need to introduce a method which can catch Early Warning Signals & easily accessible to top management for facing crises. According to RERA act organizations are bound to use 70% of their earning from particular project for the completion of the same project only. They cannot use money for other projects. Hence organizations need to manage these financial crises as best as possible in order to smoothen the business. The top management has to face these crises. For this they should have a proper control over the activities related to finance. But for big organizations it is not possible to top management to access easily for each & every project at micro level. Failing to manage this crisis may lead to uncontrollable damage to organization's growth.

Hence there is a need to find out the activities where cost can be saved. In addition there is need to find out the easy tool for the top management so that they may have proper control over all the projects easily. So, in this study the attempt has been made to find out the areas of improvement for the construction organizations by which the financial activities get hampered. Because the construction organizations are mainly depend upon the huge working capital. Hence there should be a proper control over where to invest & at what time.

The main area of improvement in the construction organizations which may lead to financial crisis is improper inventory control. The construction organizations required lots of material which costs high for the project completion. They need to invest most of the money in purchasing of required material. The organizations have to invest mostly in two areas

1. Material Purchasing
2. Payment of service providers

The above mentioned activities are continuous one. Hence there should be a proper planning for these activities. Failing in the same results in cost overruns & project delay. Because if material is purchase in less than the requirement , it affects the progress of project. Due to the same the project delay occurs as well as indirect cost associated with delay gets increased. Hence it results in the cost overruns. Also if the material is purchased more than the requirement, it remains idle due to unused. The organizations money gets wasted due to the same. Also due to the same they may face financial problems. Because the same money can be used elsewhere for genuine purpose. Also it may result in late payment of vendors. If vendors are not paid as per terms and conditions, they may deliberately slow down the work. Also there may be chances that vendors may compromise in quality of the work. Also the vendors are likely to terminate the work if the things become worst. This results in the delay in project completion. Due to all above mentioned problems the organizations business gets hampered. The only reason behind this the improper financial management. But the problem is that the top management remains unaware about these things unless and until some major issue occurs. Hence there should be an early warning system for this crises.

A. Objectives

Objectives of this study are to

- Study the concepts of project crisis in general in regards to budget delays and schedule overruns.
- Investigate the main drawbacks of project management practices and examine the main project uncertainties that lead crisis.
- Explore better planning, monitoring and control practice

B. Scope

The scope of this study is confined to medium to large scale construction companies. The information is collected by having discussion with different departments in the organization.

C. Methodology

In this study the drawbacks in the current process mapping flow of the organization are found out by having thorough discussion with the different department personnel. Then the new improvement plan is proposed alongwith some guidelines & checklists. The process is controlled by SAP wherever applicable to have keen control.



D. Data Collection

The data collection includes getting information about current process mapping flow of the organization by having discussion with different department personnel.

IV. ANALYSIS

During the study it is analysed that the crises can arise due to drawbacks in the system of the organization. Hence the attempt is made in this study to find out some of these drawbacks. For the same the common process mapping flow of all organization is analysed thoroughly by having discussions and feedbacks from the personnel of the different departments of different organizations.

After discussion with the industry persons it is observed that the organisation should have a proper predetermined system in order to mitigate crises that may arise at any stage of process. After interaction it is also observed that the mostly crises arises during the execution stage starting from release of drawings. Every organisation have their co ordination process mapping flow. But during study it is analysed that the process is not well synchronised. It has many loopholes which leads to project delay.

So, current co-ordination process of well renowned organisation is analysed thoroughly. And such loop holes are found out after brainstorming discussion with all the concerned department personnel i.e. estimation, contracts, purchase, planning, store etc. The work is done for overcoming these drawbacks. The standards as well as checklists are designed for smoothening the co-ordination process. And using the same new improvement plan is designed. By referring this plan every department can understand their roles and responsibility at every stage of process.

The drawbacks found out are enlisted below:

1. Discrepancies and continuous changes in drawings.
2. Decision on RFI do not get communicated to concern departments.
3. Non issuance of detailed quantity to raise the requisition
4. Non issuance of PO to contractor in timely manner
5. Non availability of escalation matrix at site
6. Non involvement of site team in evaluation and finalization of new contract / contractor

7. Detailed study of contract document not done by site team
8. Bill certifications and payment recommendations not done in time

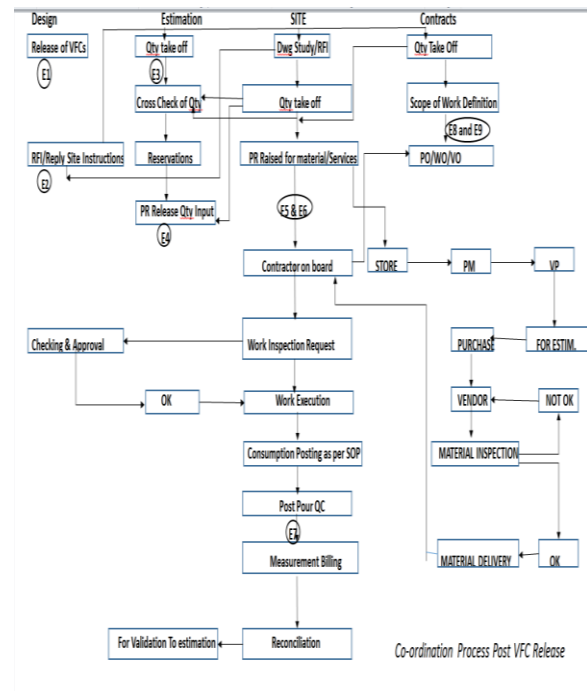


Fig 1 : Current Process Mapping Flow

To overcome these drawbacks the 8 types of checklists are prepared and highlighted in the new improvement plan which stated that when and who will refer which type of checklist.

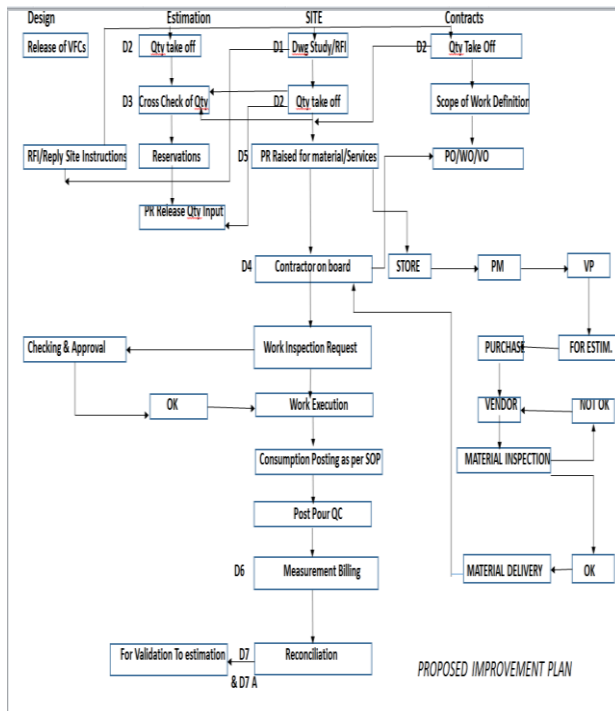


Fig 2 : Proposed Improvement Plan in Current Process Mapping Flow

The checklists are

1. Drawing checklist
2. Quantity take of checklist
3. Standard guidelines for quantity cross checking
4. Contract checkpoints
5. Checklist for raising PR
6. Checklist for contractor's / supplier's bill submission.
7. Reconciliation checklist
- 7 a Reconciliation format

The analysis made above is a type of proactive approach of crisis management. It includes the application of previous experience of different departments to overcome the crisis which may arise in future. This type of approach causes minimal financial damage to organization. But for the same this approach need to be use from early stage i.e from design stage itself. Otherwise if applies in during stage it converts into reactive or escaping approach. In this case some damage is already happened to the organization. But if above process is used from early stage it helps in avoiding crises which may help in avoiding project delay as well as cost overruns associated with the same.

The whole process mapping flow is monitored by using SAP software in order to smoothen the process. Different organizations can use different softwares to use it as monitoring tool. Some of them are ERP, HIGHRISE, and PRIMAVERA etc.

In SAP system we can have monitoring over inventory control of any project as well as current vendor outstanding. SAP helps in producing report of inventory ageing which means details of every material which is no. of days. It also helps to reflect the vendor outstanding along with the period of outstanding. Top management can easily come to know about these details by using SAP at anytime for any project. Hence it can take preventive measures to avoid any further crisis.

V. CONCLUSION

1. To face the negative events happening in the market organization should have the proper interdepartmental process mapping flow. If system itself has the drawbacks then crises may arise due to the same.
2. Hence there is a need to modify the current process mapping flow of every organization after finding out its drawbacks.
3. A proper set of guidelines is need to prepare as done here for every department to smoothen the inter department coordination process.
4. The organizations must have the system planning, monitoring and controlling tool such as SAP to reduce the chances of arising the crises.
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