A STUDY ON MANAGEMENT COORDINATION IN SCHEDULE PERFORMANCE OF CONSTRUCTION PROJECTS

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Abstract

Construction schedule overrun is in rising trend among the small and medium level construction projects. In this the participatory role of management in controlling the schedule over run is crucial. Hence a pilot study has been carried out and presented in this paper based on thirty six companies on various parameters like the coordination among the levels of management and their effect is being studied and presented. It is being concluded that the top managements initiative and drive as well as periodical review is of primary role in checking the schedule performance and all other support functions of management is to be coordinated efficiently driven to be on the schedule.

Keywords:-- Construction Management, Questionnaire Survey, Planning and scheduling.

INTRODUCTION

Construction at large is a complex and yet controllable by systematic approaches through the modern philosophy of managing the project through project management approach. Planning and scheduling is a crucial and very much important to place the project on schedule. However, there were number of factors which were contributing and affecting the planned schedule and often which might be lagging behind and contributing to a larger extent of schedule overrun particularly in small and medium level enterprises due to lack of proper support to execute and implement professional project management through systems. A large number of studies has been carried out about the factors contributing to the schedule over run and reported in the literatures. However, the contribution of management levels has very limited reporting and hence a pilot study is being made and discussed.

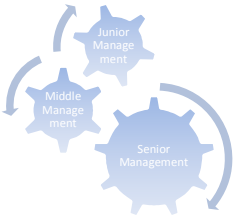

Fig. Interaction of Construction Project Management Levels

From formulation of the project to till it's commissioning at various levels a number of functions has to be coordinated for achieving the project success. In this, it is conventionally categorised to be at Top level management or senior management who are primarily concerned with

policy approvals and enabling the other levels to function. The middle management levels have to make the decisions and recommendations to the top management and direct the junior management in carrying out the day to day task as scheduled. Monitoring and control and procurement is the primary function at middle management level.

However, the junior management is the one taking the task of completing the scheduled activities. The interaction and coordination among these levels of management is crucial irrespective of other factors in carrying out the schedule. To what extent these coordination is existing and the significance of different functions is studied by way of this pilot study.

LITERATURE REVIEW (OR) BACKGROUND STUDY

Ever since the introduction of construction management, it was an interesting topic for the researchers, academicians and practicing engineers to know about the various factors governing the schedule performance of the construction project. Many pioneering research has been carried out by several researchers over the years to understand the phenomena of schedule performance. From the literatures it was evident that different perspectives have been considered for the various types of constructions like road works, buildings, commercial complexes, townships, airports, rail and road networks, sea ports, water supply and sewerage systems, telecommunications systems, etc where by certain key factors were found to be dominance over the other factors.

The consolidated summary of their findings and the factors they had considered have been scrutinised for the relevant pilot study and presented here as abstract summary

Uchenna Ugochi Moneke (2012) examined the factors affecting work schedule effectiveness with the aim of providing a framework that will help managers to develop a reliable and cost effective schedule necessary for successful implementation and control of projects in Nigeria. The results of the analysis indicated that *time, material and manpower* were the significant factors. She recommended in-depth time forecasting and scenario analysis as well as apt management of materials and human capital development.

Iyer and Jha (2006) paper identified 55 attributes impacting performance of projects. After the analysis of the responses from the two staged questionnaire survey, they concluded that two success factors and one failure factor: *commitment of project participants; owner's competence; and conflict among project participants* contributed significantly in enhancement of current performance level of the project.

Yaw Frimpong & Jacob Oluwoye(2003) observed that in groundwater construction projects, many variables affects construction schedule and cost overruns. The data was analyzed and ranked, based on the profession of the respondents and their role in the industry (i.e. owners, contractors and consultants). The questioner survey concludes that all the three groups felt that project financing, micro-economics, natural conditions and materials factor categories play a predominant role in causing delay to groundwater construction.

Nkado (1995) examined time – influencing factors in the Uk. Through a questionnaire survey and statistical analysis the research managed to prioritize 28 factors, which affect duration of construction projects. A significant degree of consistency in ranking the factors was found.

Kaming, et.al.(1997) examined by factors influencing construction time and cost overruns on high-rise projects in Indonesia .project managers were consulted to assess the different variables.

Using factor analysis techniques, the variables affecting delay and cost overrun were successfully grouped into main categories.

Kumaraswamy & chan (1998) studied time delays on Hong kong projects and found that unforeseen ground conditions, poor site management and slow speed of decision- making were the most prominent causes of time delays.

SIGNIFICANCE OF THE STUDY

The success of the project is depends on completing the project on schedule. This depends on the efficiency of the executing team and management at junior level, the coordination of the middle management and the drive of the top level management and its overall interaction with which they build up the team sprit leading to success.

In this paper, studies were carried out from the data collected from different companies to find what extent that this interaction is contributing to keep the project on schedule by conducting a questionnaire survey on a pilot basis. This study is very much significant since the different roles by appropriate managing levels will make the project to be on schedule.

Any slips at each level lead to accumulation of the problem and consequently affects the schedule making it out of bounds. The effectiveness of the monitoring and controlling methods also plays a significant role.

4. QUESTIONAIRE DESIGN AND SURVEY

At every levels of the management the controlling parameters are identified and compiled in the questionnaire. The questionnaire is designed in such a way that the respondent is able to understand clearly and could respond it appropriately.

The key elements of the questionnaire is to distinguish the roles and responsibilities of the top management comprising of owners, general managers and policy makers. Also the middle level management with senior managers, operation heads and approving levels with the responsibility of monitoring and controlling in the enterprises.

After several rounds of discussions and consultations with junior level, middle management level and senior level executives the primary level governing factors for the interactions were identified and grouped as follows, which were used to design the questionnaire and to carry out the pilot study.

Table 1 Interaction Factors of Management Levels in Projects

Sl.No	Junior Level	Middle Management Level	Senior Management Level
1	Day to Day Operations	Procurement of Resources	Policy clearances and approvals
2	Resources Availability	Monitoring	Allocation of funds
3	Onsite Productivity	Approvals and Clearances	Control
4	Efficient Time Management	Motivation	Review and Updating
5	Skill level	Crisis and trouble shooting	Efficient Management
6	Clarity on Scope	Appraising top management	Driving the team

PILOT STUDY

The survey aims to capture the exact contribution and responsibility of different management levels in keeping the project on schedule. Such that it is being designed and initiated by the small number of respondents to assess the trending by trial run. The indication of this study leads to the broader scope of further assessments.

DATA COLLECTION AND ANALYSIS

The main agenda of this pilot study is to understand the efficiency of interaction and co-ordination among the top, middle and junior management levels of a company in keeping the project on schedule.

The survey has been carried out by distributing the questionnaire as mentioned above for all types of construction project enterprises and the responses were obtained to represent the statistical structure.

The respondents were so specifically selected to represent all the categories of the management and so diverse to accommodate all the spectrum of various staffs dealing with the planning and schedule concerned about the project.

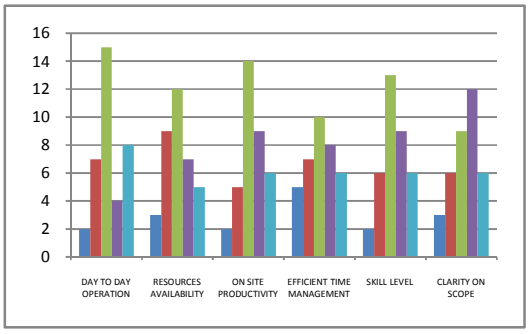

Fig .1 Interaction of Junior Management

The pilot study has been devised such that the three levels of management i.e junior, middle and senior levels to ascertain the relative coordination of the teams. Whereas at the junior level six significant parameters has been considered such as the day to day operations, the availability of resources, onsite productivity, efficient time management, skill levels, and the clarity with which they

work on the scope for the study. The frequency outcome of the study is presented in the above chart. The responses were obtained and a correlation of the weighted parameters has been established by to determine the relative levels.

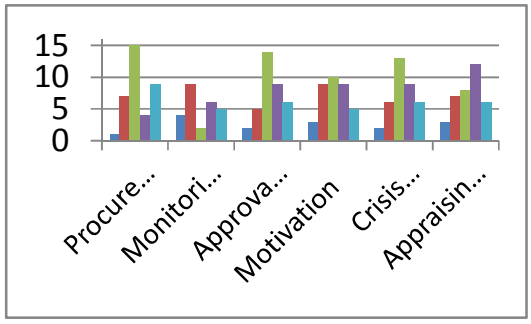

Fig 2 Interaction of Middle Management

At the middle level seven parameters has been considered for the study. These are procurement of resources , monitoring, approvals and clearances, motivating, crisis and trouble shooting and apprising top management. The outcome is presented in the chart.

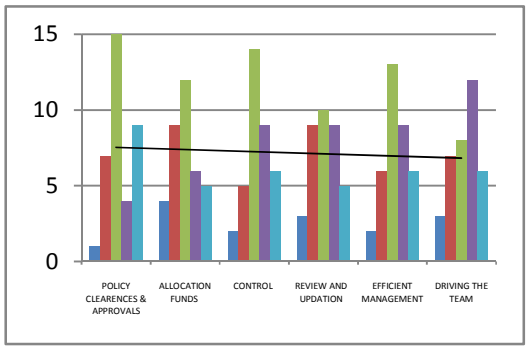

Fig .3 Interaction of Senior Management

In the senior management levels again six significant relevant parameters has been considered for the study. The parameters are policy clearances and approvals, allocation of funds, control, review and update, efficient management and driving efficiency of the team. The outcome of the response is presented in this above chart.

CONCLUSION AND RECOMMENDATIONS

From the pilot study, the following recommendations and conclusions were arrived:

1. The junior management as per the analysis were found to be more aggressive with their productivity and work commitment.

2. However, they were inadequately supported with resources and clarity on the work scope in achieving their day to day targets.

3. The middle management teams were found to be appropriate and lacks with the efficient procurement of resources due to lack of financial support and delay from the senior levels.

4. The senior management, in spite of their drive the achievements were found to be lagging due to timely decision on financial related matters and approvals.

5. The fastness of the decision making at senior levels were found to be the primary reason, which consequentially affects all follow up programs which makes the schedules to slip from their plans.

RECOMMENDATIONS

1. It would be appropriate, to get all policy matters, clearances and approvals to be granted as per schedule will not affect the bottom line of the work progress.

2. Practical and realistic finance and resource program of top management and implementation of strict and stringent finance discipline will ensure the progress and check on schedule over run.

3. The relative team sprits on the levels of management to be enhanced to bring it to the desired levels in achieving the schedule performance.

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