ROLE OF A PROJECT MANAGEMENT CONSULTANT (PMC)

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ABSTRACT

Uptill now, Project Management Consultancy (PMC) services were being provided mostly to major industrial and infrastructure projects. On the face of it, to the smaller project owners, it appeared to be a superfluous work. Customers used to think that their project team itself, can play this role. However, slowly and steadily, PMC has made in-roads in cement industry also.

Typically, in a project, several thousand activities, need to be tracked and monitored, for successful implementation of the project, in timely and cost-effective manner. Project Management Consultant is a body, which monitors activities of each and every stake-holder of a project.

Apparently, it may sound as if PMC is not doing any value addition to the project. However, the benefits are in-tangible. It is needless to mention that PMC has to be empowered by the project owners adequately. Then only, PMC services can provide positive results.

In recent past, Holtec has been involved in a few PMC assignments. The project owners have reaped consideration benefit, in forms of implementation time, in execution of such projects.

1. Introduction

A Project : A set of inter-related activities, performed by various agencies involved in a project, carried-out to achieve a defined **objective**.

Objective : Activities to be performed by various agencies, in the least possible cost and time, adhering to quality and safety standards.

Project Management :Co-ordination and monitoring of activities of various agencies, to achieve the defined **objective**.

2. Magnitude of Project Activities

A project can be implemented in three ways:

- Turn-key contract.
- Package based contracts.
- Shopping mode contracts.

Typically, number of agencies involved in a cement project are likely to be:

Agencies	**No. of Agencies**		
	Turn-key Contract	**Package based Contracts**	**Shopping mode Contracts**
Consultants	1 – 2	5 – 6	5 – 6
Statutory organizations	4 – 5	4 – 5	4 – 5
Main machinery suppliers	1	5 – 7	8 – 9
Auxiliary equipment suppliers	4 – 5	10 – 12	40 – 50
Site Contractors	2 – 3	8 – 10	8 - 10
TOTAL	**12 - 16**	**32 – 40**	**65 - 80**

Hence, whomsoever is managing the project, has to monitor and control the activities of the number of agencies mentioned above, depending upon the mode of execution adopted.

3. Project Management Styles

A project can be managed in two ways:

- Project Management by **Project Execution Team** themselves (old practice).
- Project Management by **Project Management Consultants** (PMC), an independent body.

Pros & Cons of 'Project Management' by 'Project Execution Team' are:

- It is an additional responsibility for Line Manager, who also has to manage his own, day to day work of the project.
- Line Manager is already busy in sorting out his own problems:
  - How task shall be done.
  - Who will do the task.
  - Monitoring activities of his team members.
  - Day to day technical correspondence with suppliers/Contractors.
  - Day to day reporting to his management
- Though, there may be a cost saving in this option, Line Manager can not see/monitor/manage project in its full perspective.
- Time saving may be difficult to achieve.

Pros & Cons of 'Project Management' by 'Project Management Consultant (PMC)' are:

- PMC can take care of:
  - What tasks are to be done.
  - When tasks are to be done, as per the time-line.
  - Project cost control.
  - Quality (additional role, if assigned).
  - Safety (additional role, if assigned).
  - Close monitoring of progress on all fronts, and to detect early warning signals, requiring remedial action, to meet objectives.
  - Suggesting remedial measures for delays/issues/conflicts.
- Though, engagement of PMC means additional expenses to the tune of 20 mio INR to 50 mio INR, depending upon the role & responsibilities assigned to him, PMC is able to give un-biased feed-back, and covers progress of all the concerned agencies.
- PMC may also be able to save upto 4 months project execution time, if he is empowered and supported adequately by the project owner.

4. Role & Responsibilities of PMC

Following activities, may be performed by PMC, depending upon the responsibilities assigned to him:

- Project planning.
- Time scheduling.
- Resource planning.
- Modification in execution methodologies.
- Budgeting & cost control.
- Quality assurance.
- Scope management
- Progress monitoring
- Communication.

4.1 Project Planning

Project planning would include:

- Each agency is advised to appoint a Project Coordinator, who should be able to provide 'Single Window Service', and based on the scope of work, does his resource planning.
- Project Coordinator of each agency submits Design Brief, List of Deliverables & its Schedule, Quality Assurance Plan and his Resource Planning to PMC.
- Based on the above inputs, Project Plans are developed by PMC, discussed with concerned agencies, and modified where required, to arrive at final agreed plan.

4.2 Time Scheduling

Project Time Scheduling would cover:

- First of all, a broad-based time-schedule is prepared for all the major activities, based on the best industry practices.
- Detailed schedules prepared by each agency are then, integrated, to prepare a Master Network.
  Schedules are prepared using modern Project Management Softwares, like MS Project, Prima-vera etc.
- If deviations are observed between broad-based schedule and Master Network, activities showing deviations, are compressed (to the extent possible), or relaxed (relaxed to save cost), as the case may be.
- After adjustment of activities, it becomes a **Master Schedule** for monitoring the activities during project execution.
- Finalised master schedule is further broken-down to detailed **Departmental Working Schedules**, to monitor departmental activities.
- All activities on critical path of master schedule are monitored very closely, to avoid any slippage, which may result in a cascading effect.

4.3 Resource Planning

Activities forming part of resource planning for the project are:

- Resource planning is done for manpower, machines, tools & tackles, infrastructural requirements etc., and their timing, for carrying-out Engineering, Construction, Fabrication and Erection activities.
- Monitoring the receipt of deliverables of various agencies, and in case of default, review deployment of resources.
  Aconex, McLaren etc. platforms are used for document control.
- To avoid delays in dependent activities of various agencies, PMC ensures timely receipt of inter-dependent inputs.
- Skill & competence of manpower is continuously assessed by PMC, at various stages of the project.
- Deployment of supervisory, quality control and safety staff is also monitored by PMC.

4.4 Modification in Execution Methodologies

This may include:

- Modifying type of structure to meet time schedule (RCC vs Steel).
- Division of work between more contractors.
- Pre assembly of certain items.

- Use of more mechanized systems for construction/ erection.

4.5 Budgeting & Cost Control

Budgeting & Cost Control aspects include:

- Estimates of Investments, projected in the feasibility report of the project, become the reference point.
- Based on various contracts getting finalized from time to time, project cost is continuously updated.
- Cash outflow requirements are worked-out for arranging the funds, timely.
- Ensuring timely availability of inter-dependent inputs to the dependent agencies, so that designs with margins, are avoided.
- Avoiding delays is decision making, which may otherwise result in idle time, and consequently, the cost.
- Avoiding changes in project concepts, which may result in extra claims.
- Despite PMC's best efforts, if there is a cost over-run, same to be informed to the project owner, in time, to avoid shortage of funds.

4.6 Quality Assurance

Quality and pace of work go hand-in hand. Quality Assurance encompasses:

- QAP of all suppliers and contractors are to be reviewed and workmanship to be ensured accordingly.
- For trouble-free and smooth operation of the plant (post commissioning), work quality has to be ensured at all stages of the project.
- All statutory & regulatory requirements have to be complied-with, to avoid any work hold-ups/penalties.
- At every critical stage of the construction, fabrication and erection, protocols should be signed, to ensure quality.

4.7 Scope Management

Scope Management in any project is very crucial for ensuring completeness, which often gets neglected. There are many instances, where over-lapping of Scope, or missing of some of the Requirements have taken place. This activity involves:

- Preparation of master equipment list, based on the technical documents, and continuous monitoring of the same to ensure completeness.
- Monitoring the scope of minor items like bolts, flexible connection, base-frame etc. which at times, get missed.
- Preparation of list of other infrastructural requirements & services, to ensure completeness of the project.
- If during project execution, some item is found to be missing, due to mis-understanding of the scope, a quick corrective action needs to be taken, to avoid delays.

4.8 Progress Monitoring

This is the most important role of PMC. Activities monitored are:

- Timely approval from all statutory and regulatory bodies.
- Monitoring of machinery supplier's following activities, which are very crucial for start of most of the other project activities:

- Inputs required by the Supplier.
- Ordering of equipment on sub-venders.
- Engineering outputs, required by others.
- Manufacturing status and stage inspections.
- Machinery dispatches.
- Supplier's supervision for erection and commissioning.

- Monitoring of site activities:
  - Mobilization of contractors at site and adequacy of man and machines.
  - Ensuring availability of free supply materials viz. steel, cement etc.
  - Infrastructural facilities viz. water, power, power, road, guest-house, stores, workshop, emergency DG power etc.
  - Daily co-ordination meeting with the site contractors, to resolve their day to day issues.
- Preparation of the monthly progress report covering:
  - Status of design and engineering activities.
  - Progress achieved during the month by various contractors.
  - Work plan for the next month.
  - Availability of machinery, man & material at site, for the next month's work.
  - Constraints at site, if any and its remedial measures.
  - Expenditure in the month, and the requirement for the next month.
  - Deviations if any, in design/concept of the project.
- Regular review and co-ordination meetings with the customer, and to take pre-emptive action on the critical issues. Mutual trust, back-up support and sharing of the information between PMC and the project owners is key to the success of the project.

4.9 Communication

Effective and quick communication is of paramount importance for successful execution of a project. Right in the beginning of a project, communication channel needs to be established, by appointing of a coordinator by various agencies, working on the project.

A channel for registering a complaint, or a grievance, and re-dressal thereof, should also be established for quick settlement of the issues.

5. A Case Study

In 2016, Holtec were assigned the role of Project Management Consultant, for a 2.2 mio tpa, split located, cement grinding plant. Apart from a standard cement mill, the project included installation of a stacker-reclaimer for additives, a coal mill, coal fired hot air generator, coal stockpile, a cement blender, five cement silos and railway siding. Under normal circumstances, such a project would have taken 18 – 20 months time, from ground breaking. However, a target of 12 m was given to PMC, to start the cement production.

As the completion of full plant was difficult to achieve in 12 months, a detailed analysis was done to decide the bare minimum areas, which would need to be completed, to the start production, without compromising on the operational reliability, product quality, statutory & regulatory requirements and the safety aspects.

After finalising the bare-minimum areas, required to start the production, it was observed that it would take about 15 months to complete them. As it was still beyond the given target, an exhaustive exercise, in consultation with suppliers and contractors, was carried-out to plan the sequence of work flow in detail, and requirement of the corresponding man & machine requirement.

Thereafter, all the activities on critical path were very rigorously monitored, and all the possible efforts were made, to strictly adhere to the schedule. Customer on his part, extended all the required facilities, help and funds, to keep the moral of the work-force, high.

The integrated team approach, coupled with the common shared goal, led to higher than the average productivity, and it resulted finally in completion of the work of defined areas, in 13 months.

6. Conclusion

Though PMC is not a rocket science, cement plant domain knowledge and awareness about the work-flow is the key requirement, for successful implementation of a project. Ensuring timely execution of an activity and quick decision making/re-dressal of issues are the other vital attributes, of paramount importance.

Though, benefits of engaging a PMC may not be visible on day to day basis, overall savings of 1 to 4 months in implementation time, quality of the work output and the cost control, would easily off-set the expenses of 20 to 50 mio INR on a PMC (depending on role & responsibilities assigned to him).