MANAGING PROJECTS

P C Sogani and S K Gupta

Holtec Consulting Private Limited, India

SUMMARY

Through this paper, the authors have tried to emphasise the importance of managing the projects by a separate and specific group of specialists called Consultant, experienced enough to achieve the set targets, using modern tools of project management.

Invariably, planning, scheduling and monitoring of project is carried out by persons who are directly involved in the day to day work for the project. As a result, the real management of project activities takes a back-seat and fails to get its due importance. It is therefore, desirable that an independent body, acting as an interface between the individuals/various teams of the project and the Customer, is made responsible for Managing the Project.

This paper analyses pros and cons of having a separate group for management of the project - The Consultant vis-à-vis the old practice where project management was being done by the working members or group itself. The paper covers the experience of the organisation, having operated under both the scenarios.

1. INTRODUCTION

A project is a 'A GROUP OF TASKS PERFORMED IN A DEFINABLE TIME PERIOD IN ORDER TO MEET A SPECIFIC SET OF OBJECTIVES'.

It comprises of a large number of inter-related activities, which have to be performed by one or several agencies, in least possible time, cost and resources, while adhering to the laid down quality practices.

PROJECT MANAGEMENT is to manage the total 'project', entailing co-ordination and monitoring of the activities carried out by various agencies, involved in execution of the project, to achieve desired objects.

2. ROLE OF A CONSULTANT

There are several agencies involved in a project such as suppliers, erectors and fabricators, contractors, statutory bodies, financiers and most important of all - the CUSTOMER.

The Consultant plays a vital role of co-ordinating the work of various agencies. The Consultant not only informs the Customer about the status of project but also gives red signals regarding impending bottlenecks/ constraints and advising the ways to overcome the same. Consultant is the only agency who has the complete vision of the project and can act as a focal point to correlate actions of the various agencies.

A typical Cement Project may have 50-75 external agencies involved in the project execution as indicated below:

- Sub –consultants 1-2
- Statutory Organisations 3-5
- Suppliers- Main Machinery 3-5
- Suppliers- Aux. Equipment 40-50
- Execution Agencies at Site 10-20

Traditionally, project management was done by functional or line manager who basically looks after day to day working of the project activities.

The functional manager or Line manager was not able to see the project in its full perspective as normally he is busy with sorting out problems of:

How the task will be done
Where, the task will be done
Who, will do the work

However, if an independent body such as Consultant handles the project management, he is responsible for:

What tasks are to be done
When the tasks are to be done
what will be the cost of task

The need of a Consultant for effective project management has become even more important in present times, due to

- Rapid growth of technology and specialisation, resulting in more no. of agencies for same amount of work
- Availability of Funds
- Time Value for Money

3. SUCCESSFUL PROJECT MANAGEMENT

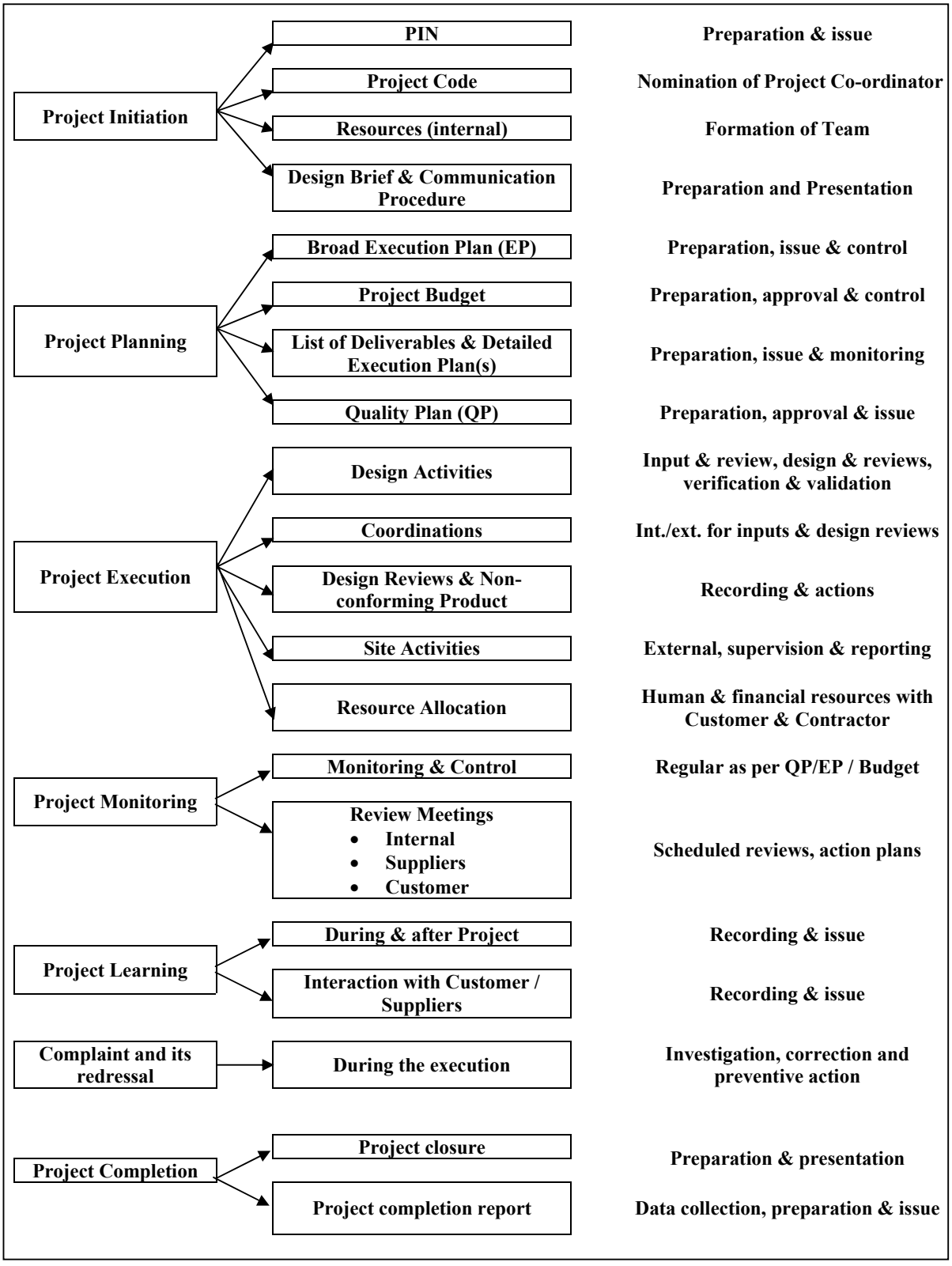
For successful achievement of project completion, the person/agency entrusted with the responsibility of carrying out project management aspects, shall have to look after the following:

1. PLANNING
2. COMMUNICATION
3. QUALITY CONTROL
4. BUDGETING/ COST CONTROL
5. TIME SCHEDULES
6. RESOURCE ALLOCATION
7. COORDINATIONS/ REPORTING
8. SCOPE MANAGEMENT
9. DECISION MAKING
10. FEED BACK

A chart showing the flow of key activities in a project is shown on the next page.

The activities covered in each of above listed elements and their intended benefits are discussed in subsequent paragraphs.

FLOW CHART OF KEY PROJECT ACTIVITIES



4. PLANNING

Consultant takes up the work immediately after his nomination as co-ordinator of total project activities. Consultant's first task is to form the project team by appointing a Project Co-ordinator (PC), who prepares a project brief and conducts the kick-off meeting. During the meeting, all concerned are appraised about key issues of the project, i.e. about customer and his expectations, scope of work, targets and are provided with general guidelines. An outline of the future action plans in key areas are discussed and formalised immediately after the kick off meeting.

A list of inputs required and a list of deliverables is prepared. Manpower requirements are worked-out.

The benefit is that the project takes off smoothly and catches the momentum faster in the initial stages of the project.

An overall planning to execute project activities are carried out, this is separately discussed under paragraph titled 'Time Schedules'.

5. COMMUNICATION

The effective communication is the key for success for any project. It is very important that communication is fast, crisp and conveys the message it is meant for. The PC becomes the focal point for all communications. A procedure is made channelling all communication systems and identifying all key persons in the project along with their contact details. The system also specifies the number of copies of the drawings /documents to be submitted and also inter-links the various correspondences complete with the names to whom copies are to be forwarded.

The customer gets advantage to have proper and timely communication with various agencies for any aspect of the project, at any time.

6. QUALITY CONTROL

PC's next task is to ensure that all quality control measures are taken care of while work is in progress and outputs are produced according to the scope requirements. For this purpose Quality Plans (QP) are prepared enlisting procedures to be followed, statutory requirements to be considered, fixing procedures for sample checks and identifying responsibilities of the work and outputs. The QP's also specify the frequency of project reviews, authority of review and design validations, wherever required.

A Design Brief and an Execution Plan also is prepared to enable all team members to be at the same platform as far as project awareness is concerned.

The biggest advantage of above system is observed to be fewer chances of errors, requisite quality assurance and uniformity of out-puts.

The Consultants also look after quality control aspect of machinery manufactured by the suppliers. The manufacturers submit the Quality Assurance Plans for Consultant's approvals. Based on these approved plans, equipment inspections are carried out.

7. BUDGETING /COST CONTROL

Once the quality control aspects are taken care of, PC prepares budgets for completing the activities covered under scope of work as per the contract. The budget is used solely for the cost monitoring and control of in house activities.

Depending on customer's requirement and scope of work, PC also prepares a Project Cost Control and Monitoring system for the customer. **This system enables customer to have a complete plan for project expenses and funds requirement**. The cost is regularly reviewed and customer is made aware with reasoning of expenses and over-runs, if any and savings as the case may be. Customer is also kept informed about budgeted figures whenever expenses are impending for the particular item.

8. TIME SCHEDULES

These are the schedules prepared by using any of the standard computerised project management tools such as Timeline, MS Project etc. These schedules may be in the form of Bar Charts, Milestone Charts, PERT/ CPM as per project requirements.

Normally, first a Master Network is prepared identifying all major disciplines and departments of the project. This is based on standard time duration to complete the project within the targeted time frame. This master network is used to monitor over all progress of the project.

For the major disciplines such as Manufacturing and Delivery of equipment, Design and Drawings, Civil Construction and Machinery Erection, network is further broken down to detailed departmental schedules/ networks. The inputs are taken from the concerned agencies. Once such detailed schedules are prepared, these are fit into the Master Network and compared for its acceptability to complete the project in time. Concerned agencies responsible for the activities affecting the targets are then advised suitably to expedite/compress those activities.

The sub schedules as discussed above, are further broken, if required and detail-working schedules are prepared. These schedules may be selected based on the criticality of the structure, equipment or any other section of the project.

Our experience with the system has been mixed. **The system has certainly helped in controlling and scheduling the designs, equipment procurement activities and to certain extent site activities also**. However, if the funds flow is not as per the requirement or correct inputs are not provided by all, such schedules go hay-wise needing repeated revisions and does not serve much purpose.

9. RESOURCE ALLOCATION

Here, resource allocation means Human Resources required completing various works, such as Engineering, Construction and Erection in time.

Resource planning helps in smooth and timely deliveries of documents and drawings to the site for execution. PC keeps an eye to the project requirement, assesses the availability of manpower in order not to allow any slippage in implementation of the project.

Customer reaps the ultimate benefits of all efforts when he receives timely submissions of project inputs.

Consultant's personnel posted at site normally tackle the issue of human resources required for civil construction and equipment erection with the contractors and erectors.

Funds Allocation for the project is always with the Customer, however Consultant provides needful assistance in compiling expenses and assessing future fund requirements. Periodic reviews are made to inform customer about deviations in project costs, its implications and ways of savings, wherever possible .

The ultimate gain goes to customer in completing the project within budgeted cost estimates.

10. COORDINATIONS/REPORTING

One of the important jobs to carry out by Consultant is the co-ordination of the total project activities. If this work is done efficiently at a regular interval, then half of battle to execute project is won. Consultant assures that work does not suffer for want of any information, drawings and details, delivery of equipment. The co-ordination work of the Consultants can be sub divided as follows:

Internal Co-ordination

The PC co-ordinates within its own organisation for inter-departmental activities between all concerned disciplines such as mechanical, electrical, civil, process and raw materials. He is not only responsible to provide timely inputs to all concerned but also maintains quality standards of the outputs and ensure timely delivery to the customer.

Regular Project Meeting (PRM) is held with the management to inform about project status, to discuss constraints and to take remedial actions, required if any.

Customer Co-ordination

A two-way flow of information with complete faith between Consultant and Customer is the key to success for any project. Therefore, a regular co-ordination between Consultant and Customer becomes very important.

The reporting of project progress to customer is critical. **All aspects of project are examined and Customer is kept informed about critical activities, solutions of the problems, updated expense accounts, action points for future activities.** Apart from various communications with the Customer, the reporting is done in a consolidated form of a Monthly Progress Report.

Co-ordination with Manufacturers

A system is made to carry-out regular follow-ups with the machinery manufacturers, first to initiate the work at their workshops and afterwards to monitor the manufacturing activities. Regular visits are made to the manufacturer's works to review the work progress to avoid delays in the deliveries.

Site Co-ordination

Consultants site representative co-ordinates between various contractors for construction and erection activities. Weekly meetings are held between site representatives of various agencies to review the project progress and chalk out future action plans. Regular meetings are organised at site where representatives of all contractors, suppliers and Consultants attend to sort out problems of larger issues.

Co-ordination with miscellaneous authorities/organisations

Apart from agencies actually involved with day to day project activities, there are various authorities/organisations, with whom close ordination is required to obtain various approvals/sanctions. Some of these agencies are as follows:

- State/Central Pollution Control Boards
- Railways
- Explosive Authority of India
- Factory Inspectorate
- Electricity Boards
- Geology and Mining Authorities
- Financial Institutions

Consultant works closely with Customer to obtain approvals and sanctions from these organisations. **Timely approvals from these agencies are very vital for implementation of the projects as per targetted schedule**. Therefore this aspect needs very careful and judicious handling.

11. SCOPE MANAGEMENT

It has been a common experience that scope management often gets neglected. There are instances of overlapping of scope or a requirement left uncovered. This leads to lengthy exchange of correspondences, delays and avoidable expenses and misunderstandings.

Review of contract on regular basis is a must, not only to see the completeness of scope but also to help in planning the activities in advance and to have a complete grip on the project.

The customer benefits the most as all of project interests are tracked and covered fully

12. DECISION MAKING

Timely decisions are absolutely essential for any project, for a smooth progress of the project, without hicc-ups and delays.

As a Consultant, it has been our experience that persons at key positions lack in responsibility to take decisions at appropriate times. Many a times, hasty decisions or delayed decisions have put projects in 'holds' and cost over runs. Decisions taken in enthusiasm or in haste also, often lead to stoppages of work at a later date.

Decision-maker has to be visionary and Customer and Consultant have to play this role. **Therefore key members of project teams of Consultant and Customer have to be experienced enough to take right decisions at the right time.**

13. FEED BACK

The feedback on the experience gained during project execution is covered in a Project Completion Report (PCR), prepared after completion of the project. This report is a compilation of all data regarding project, constraints encountered during execution, learning from the project, feedback from concerned agencies including customer.

14. CASE STUDY

In the following paragraphs the end results of expenses incurred internally for the engineering done in the office for two similar projects are discussed. The Line manager of a major department co-ordinated the project 'A' where as project 'B' was co-ordinated by an independent Project Manager.

	Project A	**Project B**
Cost Over Run over budget	163 %	2 %
Time Over Run	Nil	Nil

The figures given were presented in the internal closing meeting of respective projects and reasons for over-expenditures were analysed in detail. It may be seen that these figures vindicate the stand that projects handled by specialised group are managed in a better and cost effective way.

The interesting aspect of above figures is that though there has been a massive internal cost over run in project A, the time schedule was maintained.

An analysis of reasons for internal cost over run in project 'Á' revealed the following:

- Budget prepared at the time of business acquisition was low
- Scope management was inadequate
- Loss of man-power in initial work due to non clarity of Customer expectations
- Low attention to quality control aspect leading to revisions
- Lack of planning and co-ordination

No doubt there has been some advantages for Project 'B' where the learnings from the experience of project 'A' were used, still the efforts of an exclusive group working for the activities of Project Management, resulted in further cost savings.