Role of Project Management Consultancy (PMC) and its Effectiveness in Construction Industry

Mr. Prashant D. Kumbhar 1, Prof. D.B.Desai 2 & Dr. A. K. Gupta 3

1 PG Student, Civil Engineering Department, Dr.J.J.Magdum College of Engineering, Jaysingpur, Maharashtra, India.
2 Asso. Professor, Dr.J.J.Magdum College of Engineering, Jaysingpur, Maharashtra, India.
3 Principal & Prof, Dr.J.J.Magdum College of Engineering, Jaysingpur, Maharashtra, India.

ARTICLE INFO
Received 20 November 2017
Accepted 16 December 2017
Published 22 December 2017

ABSTRACT
The Role of Project Management Consultancy in Construction. Management is the most important part in any construction project then the project may be small or large and therefore Project Management Consultancy comes into the picture. Project Management Consultants make sure that every activity is taking place smoothly at every stage of project and this helps in proper execution of work for any construction project. Project Management Consultancies provide effective measures to improve the efficiency of the project. Principles of project management are very important for successful completion of project within time and with minimum number of errors. Project Management establishes equilibrium in the project. In this paper we will be also taking into considerations the need for Project Management Consultancy, role of Project Management Consultancy and also some of the problems faced by these consultancies for successful implementation of the project. It is also very important for us to understand the responsibilities of Project Management Consultancy for the betterment of the construction of the project. In this paper we are going to identify the effectiveness, roles and responsibilities of Project Management Consultancy. Unfortunately, some projects were completed successfully but some were not completed on time, over budget or being cancelled. Some of the reasons of this project failure are: lack of user involvement, lack of planning, incomplete requirements, lack of resources, incorrect cost estimation, just to name a few. There are many project planning and scheduling techniques to manage and help to ensure project success. Some of these techniques, however, may not be suitable for specific types of projects and thus, cause projects to fail.

1. INTRODUCTION
Project management is the application of skills and knowledge that allows a company to be competitive in its market. It is broken into five different categories: initiation, planning, execution, controlling and closing. Specific software might be used to help manage various projects, with each project having unique requirements. A project manager is typically paid a lot of money to oversee a project. They run every aspect of a project, from scheduling to new innovations, to helping a project reach its completion date on time. They know how to run a project by spending the least amount of money possible, saving the company money and allowing the company to pass the savings on to the customer. Project managers develop a strategy that allows them to organize and lead employees, meet deadlines and see a project through to its conclusion. They are
expected to deal with any problems that arise during the course of a project, leaving the executives to deal with other aspects of the business. In the field of civil engineering construction of various projects is very important or we can say is a essential factor. Project may vary from small scale to large scale, in small scale project things can be managed very easily but in case of large scale project multitasking is needed. So in large scale projects it is very important to have Project Management Consultants. Project Management Consultancy has huge variety of tasks to be performed during various construction activities. Usually the various activities are managed by project manager and these activities are being supervised by the construction manager. Project Management Consultancies also provide design engineer, construction engineer, project architect along with project and construction manager. Project Management Consultancy is the best option to improve and increase the efficiency of the project in construction. The use of these consultancies has increased construction industry around the world. Efficiency in construction is needed to achieve the higher heights of standard. Project Management Consultancy plan, monitor, schedule, manage the different activities which are involved in the construction process. Project Management Consultancy deals with various factors such as Scheduling, Cost Budgeting, Risk Identifying, and Monitoring & Controlling. In all they make sure that everything is being done according to the planning which will help to finish the project in time and in the given budget. Management in the project work is essential for the economic growth as well as prosperity of society and to have best management skill we need to hire engineers, managers from Project Management Consultancy. Project Management Consultants handles the project by the application of their skills, knowledge and experience and they overcome every possible error in the project. A well organized Project Management Consultancy also includes various types of tools for better completion of the construction project. Project Management Book of Knowledge is a kind of reference to people in the profession of Project Management Consultancy. The terms described in this book of guide are essential within profession of Project Management Consultancy.

2. CONCEPT OF PMC IN CONSTRUCTION INDUSTRY

2.1. Introduction

Project management is the application of knowledge, skills, tools & techniques to project activities in order to meet or exceed stakeholder needs and expectations from project. Meeting or exceeding stakeholder needs and expectation invariably involves balancing competing demands among:
2. Stakeholders with differing needs and expectations.
3. Identified requirements (needs) and unidentified requirements (Expectations).

2.1.1 Recent Trends In Project Management.

The 21st century seems to be begun with a new style of management concept, the project management concept. The traditional line relationship charts are things of the past in many organizations and role of various members of any organizations are changing fast. And he is working in more complex form of structure where he is team member of various project management teams. This trend leads to conversation of functional management teams to project oriented teams of future. The concept of project management lies in the development of cross functional teams instead of rigid organizational structure. The teams are temporary not because the members of the team have limited tenure with the organization but their tenure with team is temporary. Once the objective are attained, the project is over and so is the life span of the project team. PMC is selected mainly through previous work performed in past projects, reputation of firms, and calling for tenders. The problems faced by the PMC are ambiguous project statement by Clients, slow decisions by owner, unclear work procedure, and unrealistic imposed duration. The level of stakeholder’s satisfaction regarding PMC services are contract & Legal considerations, Planning & Scheduling (Time Management), managing the meetings shows satisfied. Project Management Consultancy (PMC) is one of the Management Solutions to develop the effectiveness of a project in construction. The use of these services has increased construction industry around the world. This consultancy plays a comprehensive and cohesive part in the construction project, and is usually involved in the project from the project’s beginning to its end. Project Management Consultancy plan, monitor, and schedule, manage the different activities which are involved in the construction process. Project Management Consultancy deals with various factors such as Scheduling, Cost Budgeting, Risk Identifying, and Monitoring & Controlling. In all they make sure that everything is being done according to the planning which will help to finish the project in time and in the given budget. Management in the project work is essential for the economic growth as well as prosperity of society and to have best management skill we need to hire engineers, managers from Project Management Consultancy. Project Management is an art of managing new challenges coming frequently and breaking the whole challenge into smaller, comfortable activities to accomplish.
them is an effective & efficient way. Project management is gaining much importance in recent time due to globalization increased customer focus, rapid change in technology and expectation, squeezed life cycle product, formation of large organization, etc. This aspect has led the organization for continues development and hence they are depend on project management rather than routine operation management.

2.1.2 Major Causes of Project Failure.

1. Customer requirements not properly identified or negotiated & documented
2. PM does not maintain, manage or update the Project Plan
3. Change management was not addressed appropriately
4. Project status not monitored & regularly
5. Inadequate / improper resources
6. Unrealistic schedule / estimates
7. Lack of focused Leadership
8. Changes in priority ( Org./ Top mgmt policy decisions/ customer )
9. Technical problems
10. The team loses sight of original project goals
11. Lack of formal communication plan.
12. Lack of cross functional support.

2.1.3 Project Management Process Groups.

The Project Management Process Groups are a logical grouping of project management inputs, tools and techniques and outputs. There are five Project Management Process Groups:

1. Initiating
2. Planning
3. Executing
4. Monitoring and Controlling
5. Closing

Since one of the purposes of change management is to provide greater visibility into the human, political and organizational change factors that can facilitate project success and the realization of project value, it is important to recognize that within each of the five process groups there exist numerous change management concepts that should be fully leveraged.

2.1.4 How to PMC Manage Plan, Implement Control & Solve the Problems.

There is no any specific definition for Project Management Consultancy. The Project Management Consultancies are defined by their roles and the services provided by them in order to accomplish the project. These consultants are appointed by the client or by the owner of the construction project. Consultants and contractors are almost similar to each other. Many of the contractors do the consulting on the other hand many consultants act as contractors. This connectivity between the contractors and consultants occur because the roles and responsibilities of consultants are very wide and which depend on the skill, knowledge and experience of the consultants. Whenever construction of any project is going on the clients may feel that they need some expert knowledge in such cases there is need of Project Management Consultancy. Opinion of consultants on various problems may reduce the problem or errors to a large extent and hence clients or owner of the project feel that there is a need of Project Management Consultancy. Project Management Consultancy is a service provided to the different construction projects by trained and qualified persons in order to make the project successful. Project Management is a very useful application for different construction processes. Project Management Consultancies manage, plan, implement, control, solve problems, and take decisions using the principles of project management. While any construction work is going on it is very important for that particular company or firm to achieve the goals and objectives set by the authorities.

3. IDENTIFYING ROLES & RESPONSIBILITIES OF PMC

A project management consultant is responsible for scheduling and managing for each project. The PMC manager needs to decide the budget, assign employees and their duties to complete the job, oversee the safety of workers. They need to make sure the construction work can be well completed according to the contract. In general, project management consultants are responsible for the planning of the construction project. This includes conducting surveys, engaging in research, analyzing results, planning the construction and supporting all technical issues during the project. The project management consultants should possess basic knowledge about the practical construction procedures in site, along with the details of how they are planned. This idea of planning and coordination will help him to have proper execution of the activities in the site with desired performance. Project management consultants are very essential for a construction project. The responsibilities of a site engineer are wide as he must provide sufficient advice and supervision when there are any technical issues, or for proper management and for the preparation of day to day reports of the construction works. Managers might begin their jobs by determining the scheduling of different phases of a project based on established deadlines. They often negotiate contracts with architects, vendors, contractors and other
workers. The securing of building permits and licenses and delivery of materials and equipment to construction sites also might be issues that must be addressed initially. As a project continues, construction managers typically confer with supervisors or other managers to monitor construction progress, including worker productivity and compliance with building and safety codes. Because they must ensure that a project is completed according to schedule, managers must resolve problems that arise due to inclement weather, emergencies or other issues that may cause delays.

**Fig 3.1: Responsibilities Flow Chart**

3.1 Primary Roles & Responsibilities

A construction project consultant sets up the estimates, the budgets and the construction timetable for the client and develops the construction strategy. He selects the subcontractors and workers, and provides required explanations for the builders and other professionals associated with the project, coordinating and collaborating with the architects, engineers and specialists.

3.1.1 Planning Engineer

Working out with the quantities required to cover the total scope of project for preparing the Project completion schedule using Project Management tools like MS Project/Primavera and get them approved by the Project Manager for preparing the Budget Work plan for the year under consideration.

3.1.2 Estimation Engineer

A quantity surveyor should be called upon in the early stages of consultation by the client because of his expertise in construction costs. He should prepare first of all, a cost plan as soon as the brief is settled, an approximate cost from sketch drawings, elemental cost checks during design, so that, should the client’s sum be exceeded, the designers can consider each element of the building project in reasonable isolation, enabling him to pair costs as necessary, within the total cost limit of the

3.1.3 Design Engineer

Drawing is checked by design engineer, Affix the approval stamp, enter in the Register and issue to respective Site for execution. It is ensured that design outputs include statutory and regulatory requirements and the same are fulfilled. Whenever the changes on Design and Development of product are necessary they are identified and Records changes are maintained.

3.1.4 Billing Engineer

Responsible for working with team of PMC Billing /Site Engineers on parallel day to day basis for bill verification on site /from drawings Coordination with concerned Client/PMC/Architects/Contractors for all the needs& requirement pertaining to the billing for the project.

3.1.4 Quality Engineer

Inspection and testing during construction processes Responsible for the quality and workmanship of every activity, thorough knowledge of all phases of engineering construction relating to Civil, Architectural and Structural discipline interfacing the multidisciplinary operations. Report to the QA/QC Manager, control, and monitor all activities related quality Management System, QMS Cary out inspection and checking for all quality related procedures in the site and ensures activity at the site are as per approved method statement and inspection test plan

4. PROJECT PROCESS GROUPS

Projects are composed of processes. A process is “a series of actions bringing about a result. Project processes are performed by people and generally fall into one of two major categories:

- Project management processes are concerned with describing and organizing the work of the project. The project management processes that are applicable to most projects, most of the time.
- Product-oriented processes are concerned with specifying and creating the project product. Product-oriented processes are typically defined by the project life cycle

**Fig 4.1: Overlap of Process Groups in a Phase**
Project management processes can be organized into five groups of one or more processes each:

4.1 Initiating processes

Recognizing that a project or phase should begin and committing to do so.

4.2 Planning processes

Devising and maintaining a workable scheme to accomplish the business need that the project was undertaken to address.

4.3 Executing processes

Coordinating people and other resources to carry out the plan.

4.4 Controlling processes

Ensuring that project objectives are met by monitoring and measuring progress and taking corrective action when necessary.

4.5 Closing processes

Formalizing acceptance of the project or phase and bringing it to an orderly end. The process groups are linked by the results they produce the result or outcome of one becomes an input to another. Among the central process groups, the links are iterated planning provides executing with a documented project plan early on, and then provides documented updates to the plan as the project progresses.

5. THE APPLICATIONS & FRAMEWORK OF PMC

Project management framework is very vital to the success of any project team; an organization or project team that is structured gives support to the work that’s being done. Misaligned project management teams or organizations create a negative impact on the outcome of a project.

5.1 Project Scope Management

The process of developing a detailed description of the Project and product. Project Scope contains all information what will be done and how activities will be performed. The narrative description of the project scope includes major deliverables, project assumptions, project constraints and a description of work that provides a documented basis for making future project decisions and for confirming or developing a common understanding of project scope among the stakeholders.

5.2 Project Time Management

Project time management involves activities that are required for completion of project on time. The processes of establishing timeframe for projects. It involves documentation for planning, developing, managing, executing, and controlling the project schedule. Document helps to complete projects on time.

5.3 Project Cost Management

Cost estimation includes identification of different types of costs related to project. Cost estimation is taken in consideration of the resource, activities.

Types of Costs:
- **Variable Cost**: Cost that change with the amount of work or production.E.g. Wages of workers
- **Fixed Cost**: Cost that remains same with the amount of work or production.E.g. Employees salary
- **Direct cost**: Costs that are direct related to projects.E.g. Material Cost, Training Cost, Travel Cost etc.
- **Indirect Cost**: Cost that are not directly related to project. Overhead Costs E.g. Taxes, Electricity etc.

5.4 Project Quality Management

Project Quality management ensures that the project is going on track and the requirement provided by customer is fulfilled. Quality helps to ensure all the triple constraints Scope-Time-Cost are properly managed to deliver project.

5.5 Project Human Resource Management

Identifies the resources, roles, responsibilities, required skills for the project.

RACI (RACI – Responsible, Accountable, Consult & Inform)-RACI helps to identify the key people and what role, responsibilities they will play in a project.
5.6 Project Communication Management

As the number of people involved in the communication increase, the number of communication channels increase mathematically. Increased number of communication channels will automatically increase the chances of different types of ‘noise’ / resistances affecting the clarity of the message. Typically large organizations with long reporting hierarchies, Projects with multiple Resources, external vendors or huge In-house teams working on same Project are more susceptible to “Communication Lapses, Grapevines which might affect smooth flow of information. What a Project manager does majority of times is “Communicating with the Stakeholders”. The more effectively he does the greater is the Project success. Methods and techniques used for communication..

5.7 Project Risk Management

Risk Management involves processes which help to identify, create response plan, control risk on projects. Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on at least one project objective – scope, schedule, cost or quality. Risk Management is about “Minimizing negative impacts and Maximizing positive impacts on the project objectives”

5.8 Project Stakeholders Management

Stakeholders are the people, groups, or organizations that are directly or indirectly associated with the projects. Stakeholder’s decision put a complete impact on the outcome of the project. Managing all stakeholders is the key to success for any project. Documenting relevant information regarding their interests, involvement, interdependencies, influence, and potential impact on project success”

5.9 Project Integration Management

Project Integration management is to combine processes and activities defined in various process groups. It involves the project management activities involved in managing project Any new changes to the project from customer or any other changes related to the project Plans, documents, resources are reviewed. All these requests are approved first approved and after approval work will be performed. New change will be incorporated in project, deliverable.

5.9 Project Procurement Management

The processes which govern “How to purchase or acquire products, services or results needed from external party other than the performing organization working on the Project. The contract management and change control processes required to administer contracts or purchase orders issued by authorized project team members. Administering the contract issued by the external organization (the buyer) which acquires the project from the performing organization (the seller) and manages contractual obligations placed on the project team by the contract.

6. CONCLUSION

Project Management Consultancy is effective and efficient only when it is involved in Total Project Life Cycle from Conception to Closeout. Awareness of various Processes involved in Project Management and detail study of multiple constraints of project like Time-Cost-Risk-Scope-Quality-Resource are an integral part of any project management consultancy. However PMC has to face various challenges like Design Issues, Constructability Issues, Long lead material Issues, Inter Contractor Coordination Issues, Engineering Issues, Safety Issues, etc these issues could be tackled by a well organized approach of the PMC. This also includes adopting the various types of tools of higher management like Reporting dashboard, Round table progress Review and conduction of brainstorming sessions, training on various field, design – construction interface, Daily quality audits, quality diligence & delivery sessions in team. Importance of services shows, only three services were considered by the respondents as very important which are Planning & scheduling, Monitor & Controlling, Quality assurance & Control. There are 5 key elements within a project – its initiation, planning, execution, monitoring and closure. These phases are picked up by most project management methods and are implemented in different manners, but keeping the same method, as each phase has its own benefits. For instance: the
Dynamic Systems Development Model describes three distinct phases – “pre-project”, “project life-cycle” and “post-project”; the Scrum development model calls for the project being split, each sprint being planned individually, monitored, and then reviewed retrospectively.

7. REFERENCES

Goff, Stacy. (2012) “Revisiting Risks: Threats and Opportunities in Complex Projects” PM World Journal. This paper published the 6th Annual Project Management Symposium, University of Texas at Dallas, PMI Chapter –Element 3.06-3.11


