

## Correlation between Project Management Processes

Mr. Jagdish Deshmukh1,  
Post-Graduate Student, Civil Engg. Dept., Savitribai Phule  
Pune Univ.,  
Imperial College of Engineering & Research (ICOER),  
Pune, Maharashtra 412207, India.  
deshmukhjagdish.deshmukh@gmail.com

Prof. Dr. A. W. Dhawale2,  
HOD – Civil Engineering Dept.,  
Imperial College of Engineering & Research (ICOER),  
Pune, Maharashtra 412207, India.  
awdhawale2009@gmail.com

**Abstract**— This paper explains the correlation between all Project Management Processes i.e. Project Initiating, Planning, Executing, Monitoring, Controlling & Closing. This paper gives the introduction to the key concept in the project management field; it summarizes the processes, inputs & outputs that are considered good practices on most of the projects most of the times.

The project management is application of knowledge, skills, tools & techniques to project activities to meet the project requirements. The process is set of interrelated actions & activities performed to achieve a pre-specified product, result, or service. Project management processes are grouped in to five categories known as Project management Process Groups or Process Group.

In this paper, live case studies taken for explaining the relation between all the project management processes. Successful completion of the project depends on the successful completion of all the project management processes, and all these project management processes are interrelated to each other. In this paper all the relationships and output of each process are discussed in details.

“Everything becomes simple when it reduce to fundamentals” is basis of Project management Processes.

\*\*\*\*\*

### 1. INTRODUCTION

#### 1.1 GENERAL

A Project is a temporary endeavor undertaken to create a unique product, service or result. The temporary nature of the project indicates a definite beginning and end. Project management is application of knowledge, skills, tools and techniques to project activities to meet the project requirement. Project management processes comprising of 5 process groups.

##### 1.1.1 Initiating Process Group

##### 1.1.2 Planning & Scheduling Process Group

##### 1.1.3 Executing Process Group

##### 1.1.4 Monitoring & Controlling Process Group

##### 1.1.5 Closing Process Group

#### 1.2 Problem Statement

The small organizations and Project Managers in these organizations are not much acquainted to Project Management Processes. Project management processes defines Project as a unique Endeavor. So it implies that any Project, irrespective of size of the organization and project, Project Management Processes are applicable. We here, explained the

importance of the Study of these Project Management Processes to such small organizations like Konark Krish II, Keshavnagar, Mundhwa.

The basic purpose of this project is to guide the young project managers on their first site to monitor their projects

successfully. We got some positive results in terms of Time and Monetary savings in this case study which have discussed in details in further chapters.

#### 1.3 Objectives

The present study has following objectives:

1. To correlate the study of project management processes with actual incidents at site considered for case study.
2. To study Project Management Processes.
3. To prepare project schedule with the help of planning tool Microsoft Project and to understand the project management processes by implementing the same on live project.
4. To learn and practiced the safety standards at site for effective flow of work.

### 2. LITERATURE REVIEW

William and Simon has provided a grammar or language that represents governing factors for construction activity sequencing. And, Hanna explained that the change, defined as any event that results in a modification of the original scope, execution time, or cost of work, is inevitable on most construction projects due to the uniqueness of each project and the limited resources of time and money available for planning. Whereas Melanie, in his paper described that managing change in project schedules is a complex problem in construction management. Hajdasz stated that constant advances in construction planning and site management are crucial to improving construction productivity. Each of the authors emphasizes on having the proper approach towards the

completion of Project, which can be achieved by studying the project management processes and its Framework.

### 3. METHODOLOGY

#### 3.1 Methodology

Methodology selected for this project is based on project management processes. Every Project's success depends on its planning and its planning processes as discussed in the earlier chapter. The life cycle of a project consists of all these processes linked together. The following figure explains about the life cycle and its processes linked with each other.

It is observed that, all the project management processes are interdependent of each other. If one fails in planning process it becomes difficult in executing process and so on. We selected the live project as a case study for this project work and the details of this is as below:

##### 1. Primary Information about Project:

Initially Project Information from VP – Projects, was collected and overview of the project taken by visiting the Project site. It has been observed that Project Management Plan was not followed by the Site Engineers as it was difficult to cope with management targets, because lack of information flow.

##### 2. Use of Planning and Scheduling Process Group:

A Baseline Schedule was prepared with help of Microsoft Project tool. This was given to Site Engineers and they were informed to achieve the targets assigned to them. While using the Planning and Scheduling Process Group 954 no. of activities were identified and were linked with logical relationship.

##### 3. Use of Monitoring and Controlling Process Group:

After preparing the Baseline Schedule it is very important to Monitor and Control the same schedule with day to day activity. The same assignment has been performed during the project execution group by performing the project schedule updating.

##### 4. Project Management Processes & Its Integrated Nature:

In addition, since management of project is a finite effort, the initiating Process Group begins the Project & the Closing Process Group ends it.

#### Chapter 4

### CASE STUDY

#### 4.1 INTRODUCTION

We selected the KonarkKrish II Project which is situated at Keshav Nagar, Kondhawa, Pune. The project is consisting of 144 no of residential units.

The project for the case study was such selected that where Project management processes theories can be applied. When first approach to site few points were observed:

1. Project management Plan - No Project Management Plan was prepared to complete the project.
2. Guideline - There was no guideline for the junior site engineers at site, for execution, quality and safety.
3. Material Specification - There was no material specifications documented at site.
4. Change Orders - Due to frequent changes in the work by the stakeholders, lot of changes has been done while construction phase.
5. Decision - Decision taken at head office was not percolated at site properly, and vice e versa.

#### 4.2 DATA COLLECTION

Project Name: KonarkKrish II.

Location of Project: Keshavnagar, Mundhwa, Pune.

Type: Residential Project.

No of Units: 144.

Other Amenities- 2 club houses, U/G Parking, swimming pool, STP.

Project Owner: MahendraKaria.

VP – Projects – Mr. RavindraPaatil.

PM – Mr. NageshJathar.

Site Engg. – Mr. DnyaneshwarAdmane.

#### 4.3 Data Analysis and Co-relation between Theory & Actual Execution:

1. Planning and Scheduling Process - As project was already started & site construction was in progress, the immediate requirement for the project was to prepare the Project Management Plan. The baseline schedule was first prepared & circulated to site engineers. Microsoft Project tool was used to prepare the Baseline Schedule.

2. Executing Process Group –All such problems have been directed in following observation,

1. Few of the senior engineers were not co-operating to new ideas management wanted to implement.
2. It has been observed that no rate analysis has been done while awarding the contract to some of the contractors.
3. Some of contracts were terminated during the execution phase due to contractual issues by Builder.
4. Safety standards are not followed to the satisfactory level.

Chapter 5

RESULTS AND DISCUSSION

There was considerable amount of changes happened in terms of Quality of work & Amount of time saved during execution of works.

5.1 Project Management Plan -Due to this, it became very easy for site engineers to understand the volume of work & time required to complete the milestones.

5.2 Monitoring & Controlling Project – As per this process group, cost control has been done in this project. It has been seen in this particular project that some of the contractors are working with Builder since long time. There was no negotiation happened with such contractors for their rates and specification of works. There was no work order issued and no rate analysis has been done for such contractors.

1 Finalization of Lift Vendor –

There were 4 lifts requirement for total project. Initial quotation was received from all reputed vendors i.e. M/s. Thyssen Krupp, M/s. Kone, M/s. Schindler, M/s Hyundai. Average cost for the Supply and Installation of 4 lifts was quoted by these vendors is approx. Rs. 1,00,00,000.00/- .After several round of discussion and negotiation, we were able to convince M/s. ThyssenKrupp to consider their cost of the contract. And final cost of contract was Rs. 78,00,000.00/- .Thus saving 22,00,000.00/- Rs for the project.

2 Finalization of STP -

We have formulated specification required for Sewage Treatment Plant as done in the case of finalization of lift vendor. According to specifications quotation are asked to submit by reputed vendors in Pune. After studying the first round of quotations, the approximate cost of the sewage treatment plant was INR. 12,00,000/- . After several rounds of discussion and negotiation we were able to convince one of the Vendors for approximately INR. 8,45,000/- The saving in this case was approx. 3,55,000/- .

3 Finalization of Modular Kitchen -

After having detailed study of modular kitchen, we formulated specifications for the same. Initial cost of the quotation was approx. INR 85,00,000.00/- was quoted by the contract awarded vendor. After doing detailed value engineering and study for the modular kitchen, we had several rounds of discussions and negotiations with the same vendor, and contract was awarded for the vendor at the cost of INR 56,00,000.00/- . The saving in this case was approx. INR 29, 00,000.00/-

4. Finalization of electrical Contractor - In this case approx. INR 36,00,000.00/- was saved.

5. Finalization of Plumbing Contractor – Total INR 72,000.00/- saved.

6. Finalization of Aluminum door and windows – Apprx. INR 7,00,000.00/- saved in this regards.

7. Safety Standards – It has been observed that lot of workers were not using Personal Protective equipment at site. We have shown some safety videos to workers and importance of Safety addressed to all of them. Best safety awards were issued at site to encourage workers to use PPEs (Personal Protective Equipment).

Chapter 6

CONCLUSION

6.1 Correlate the study of project management processes with actual incidents at the site– As discussed in the chapter no. 5, a lot of value engineering and cost controlling has been practiced.

Table no. 6.1 – Amount Saved

Sl. No.	Description	Amount INR
1	Lift vendor	22,00,000.00/-
2	STP	3,55,000.00/-
3	Modular Kitchen	29,00,000.00/-
4	Electrical Works	36,00,000.00/-
5	Plumbing Cont.	72,000.00/-
6	Alu. Doors & Windows	7,00,000.00/-
<b>TOTAL AMOUNT</b>		<b>98,27,000.00/-</b>

6.2 Project Management Processes Study – Project Management Processes ensure effective flow of the project throughout

its existence. As Project Management explains about all the Project Processes, it becomes very easy for the Site team to execute the project as per Project Management Plan.

#### 6.3 Preparation of Project Schedule –

The Project Schedule prepared with the help of Project Manager, Site Engineers and Planning Engineer using Microsoft Project Schedule.

#### 6.4 Safety Standards–

On the site KonarkKrish II, Proper safety insurance plan was established as given below:

- I. All the labors and employees of each Contractors were given safety equipment i.e. Safety Shoes, Safety Helmets, Safety Belts, Safety Goggles, Hand gloves etc. by the Client.
- II. The cost incurred for such safety equipment was recovered through RA Bills of the Petty Contractors.
- III. Safety Signage, Safety Tapes, Safety Notice Boards etc. were provided at the proper locations.

#### REFERENCES

- [1] Diego Echeverry, Student Member, ASCE, C. William Ibbs, and Simon Kim, Members, - “Sequencing knowledge for construction scheduling” - ASCE - 1991-117(1): 118-130
- [2] Alan D. Russel, Member, ASCE & William C. M. Wong - “New generation of planning structures”- J. Constr. Manage. 1993, 119(2)–196-214.
- [3] Awad S. Hanna, P.E; Richard Camlic; Pehr A. Peterson; and Erik V. Nordheim4- “Quantitative Definition of Projects Impacted by Change Orders” – 10.1061/~ASCE-0733-9364~2002-128:1~57.
- [4] David Arditi, M.ASCE; Ahmed Elhassan; and Y. CengizToklu- “Constructability Analysis in the Design Firm” – 0.1061/~ASCE-0733-9364~2002-128:2~117.
- [5] R. Sacks and M. Goldin - “Lean Management model for construction of High rise Apartment buildings” – 10.1061/\_ASCE\_0733-9364\_2007\_133:5\_374
- [6] MakarandHastak; SanjivGokhale; KartikGoyani; Tae Hoon Hong; and Bhavin Safi- “Project Manager’s Decision Aid for a Radical Project Cycle Reduction” – 10.1061/\_ASCE\_0733-9364-2007-133:6-437
- [7] John E.Hebert, Richard F.Deckro- “Combining contemporary and traditional project management tools to resolve a project scheduling problem”- Computers & Operations Research 38 (2011) 21–32