

Application of MS Project Software for Time and Cost Management in Real Estate Construction

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ABSTRACT

Real Estate construction projects refer to the construction of habitable spaces like Residential, Commercial buildings. These projects have Sponsors who invest money while the rest other teams to manage the project & its construction. Time Management and Cost Management are the key processes of Project & Construction Management. The best possible practices for the same are must be followed for the successful completion of the projects.

Gantt chart or Bar chart is one of the earlier methods to calculate the critical path network (CPM) and to derive the project duration. The CPM now can be easily calculated using modern day computer software. Oracle Primavera and Microsoft Project are two of the major software developed to prepare bar charts and to determine the critical path network. Since Primavera is more intense and used for multiple or large scale projects, currently Microsoft Project is preferred in India for Real Estate Construction.

The author seeks to discuss the application of Planning software currently being made by Real Estate Construction industry in India. A survey of Pune based Real Estate industry players is made to understand the extent of application of MS Project Software. The author aims to understand the application of MS Project for various stakeholders like Builders, Project Management Consultants & the Contractors. The need of application differs for all 3 stakeholders and yet the software offers flexibility to the various users to increase their productivity. This paper aims to give an insight to Builders, PMCs & Contractors about the planning software, MS Project.

Keywords: *Real Estate, Planning Software, MS Project, Time & Cost Management*

1. INTRODUCTION

Time management is one of the key project & construction management process. One important tool for time management is use of Gantt chart or Bar Chart to determine the individual activities against the timeline. Now-a-days software like Microsoft Project & Oracle Primavera is used to prepare the Gantt chart. Microsoft Project is used invariably used for various fields though

Primavera is specifically used for construction projects. In construction projects, the purpose of using planning software varies from the Client Company to a construction company.

The Real Estate construction industry can be categorized into namely 3 classes;

1. Clients – These could be builders, developer, promoters, sponsors
2. Project Management Consultancies – These are representatives to the Clients. They may or may not be part of the projects, as at times, the Client himself plays the role of a project management consultancies
3. Construction Companies – These are majorly contractors.

1.2 Survey

Considering the case of Pune where the real estate construction is growing at a very fast rate. The problem identified is that awareness of use and application of planning & scheduling software is lacking.

Basic survey regarding use of scheduling software in various firms encompassing real estate construction industry in Pune was done.

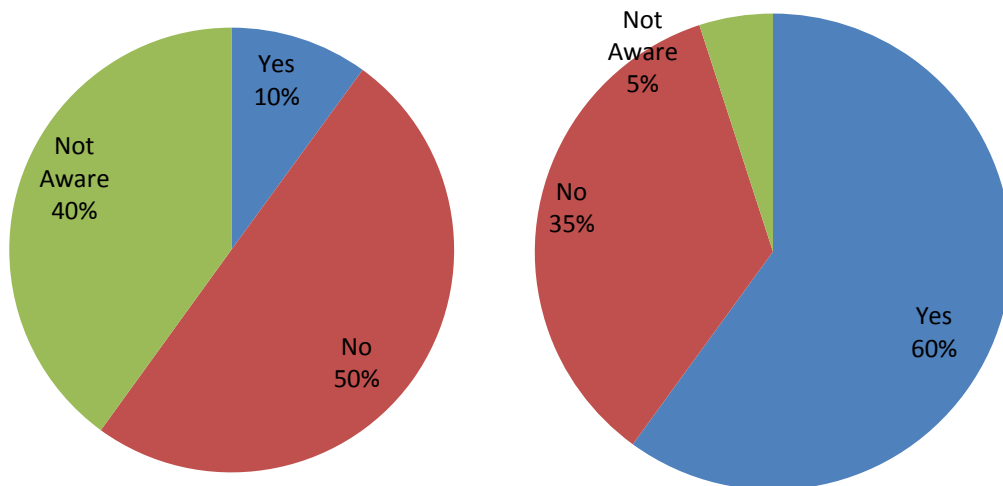


Figure 1.2.1 Use of Planning Software at Client Companies

Figure 1.2.2 Use of Planning Software at PMCs

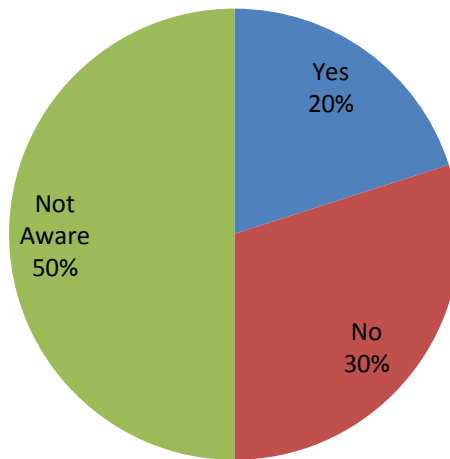


Figure 1.2.3 Use of Planning Software at Contractors

The following are the findings of the Survey

1. The Project Management Consultancies are the maximum who use the software.
2. There is lack of awareness within the Client Companies and Contractors regarding the Planning & Scheduling Software.

The following is the extent up to which the Software is explored and used by firms in Real Estate Construction or the application for which the software is used.

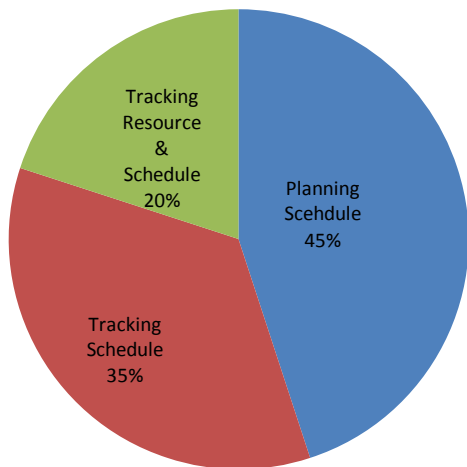


Figure 1.2.4 Application of Planning Software by Clients

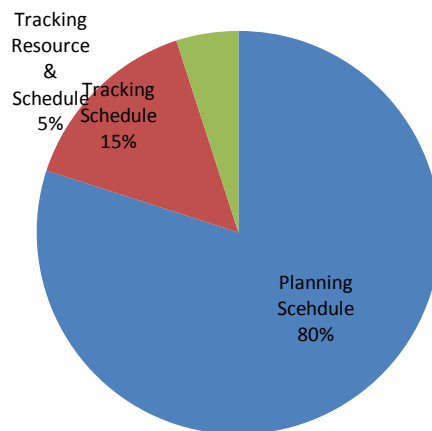
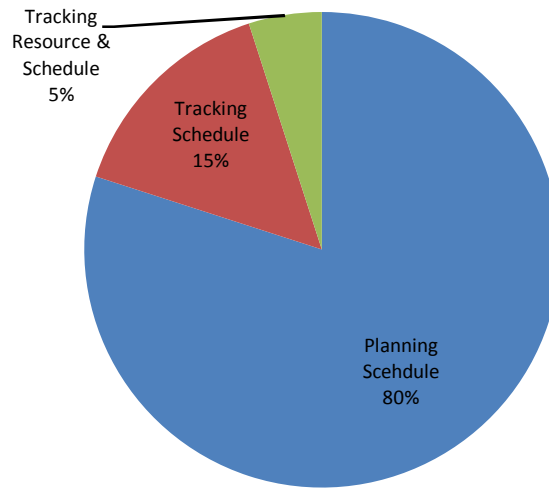


Figure 1.2.5 Application of Planning Software by PMCs



2 Findings from Survey

The following are the findings of the Survey,

1. Amongst all, the Project Management Consultancies explore the software up to tracking of schedule and resources.
2. Client Companies and Contractors have more or less a limited use up to scheduling only.

The overall findings of the survey indicate that the use of planning software like MS Project is very limited within the Real Estate Construction Companies in Pune.

2. ADVANTAGES OF MS PROJECT SOFTWARE

3.1 To Clients

- To Finalize the Project Phasing or to finalize the Milestone schedule.
- The tentative budgets for the project phasing are available on the basis of which the project schedule can be phased out. This can give a financial viability analysis.
- E.g. A building has 5 Nos. of G+10 buildings and the tentative cost for the buildings is 50 Crores each building the tentative Milestone schedule can be understood as shown in Figure No. 7 & the tentative project cash flow as per Figure no. 8

3.2 The advantages of MS Project Software to Project Management Consultants

- Project Management Consultants are representatives to Client & they are answerable to Client at any given point of time. PMCs need to provide an updated tracked schedule to the Client. The role of PMC is to update the schedule regularly and give a look-ahead schedule to the Client for every week, fortnight, month or quarter. The PMC also needs to provide the cash flow for the same.

E.g. For a residential project a fortnightly update to the Client may consist of the following.

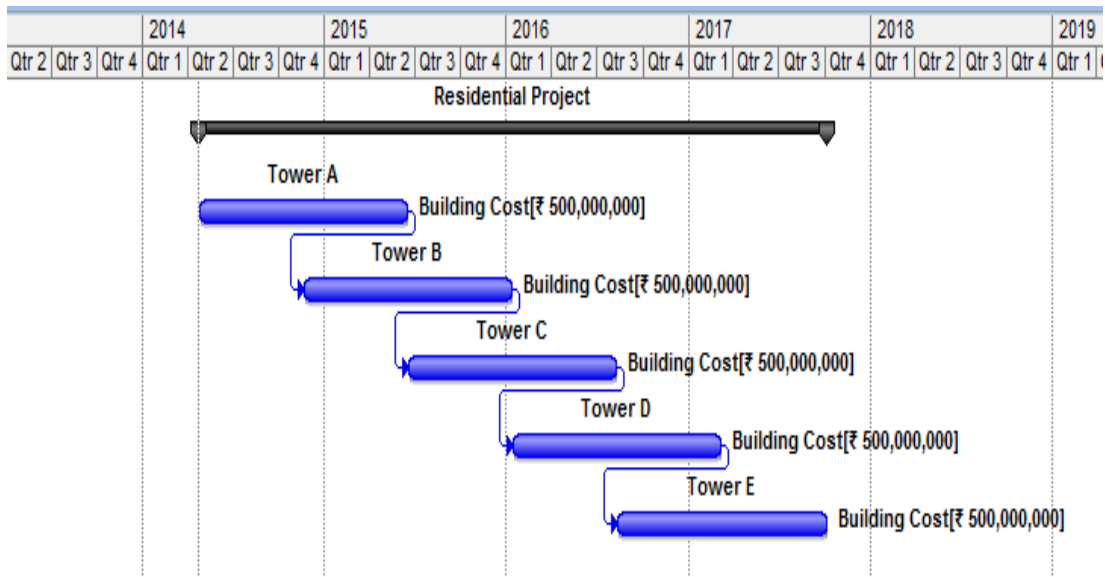


Figure 3.1.1 Project Phasing Schedule

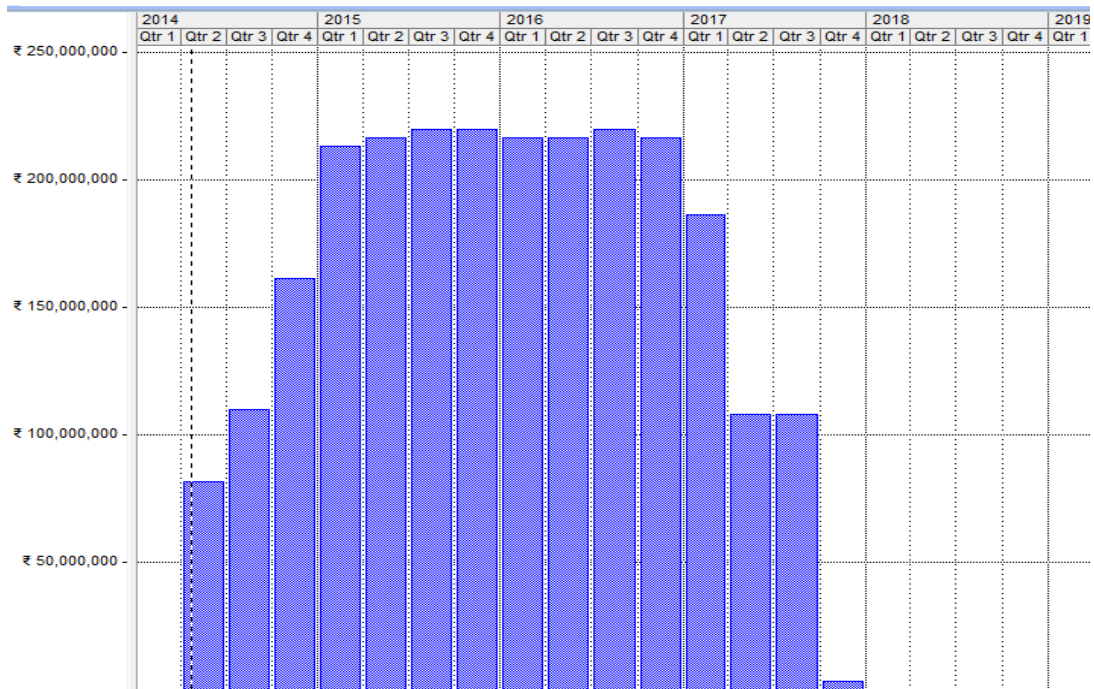


Figure 3.1.2 Project Cashflow

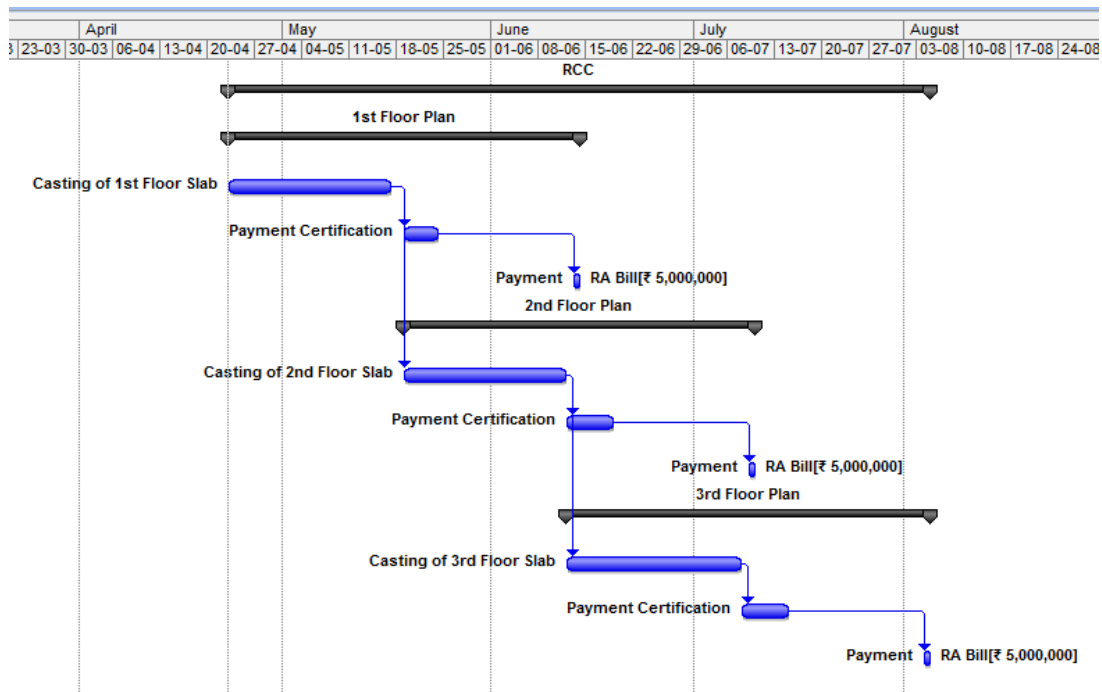


Figure 3.2.1 Slab Wise Schedule

Resource Name	Details	Jun	Jul	Aug
<input type="checkbox"/> RA Bill	Cost	₹ 5,000,000	₹ 5,000,000	₹ 5,000,000
Payment	Cost	₹ 5,000,000		
Payment	Cost		₹ 5,000,000	
Payment	Cost			₹ 5,000,000
	Cost			
	Cost			
	Cost			

Figure3.2.2 Cash Flow Statement on the basis of RA Bill Payments

3.3 The advantages of MS Project Software to Contractors

MS Project gives a complete scope to the contractors to detail schedule his construction activities and assign resources accordingly. A contractor may detail the resource allotment up to no. of cement bags, steel quantity in MT, aggregate in brass, no. of labour, carpenter, fitter etc. This can also generate the cement & steel reconciliation reports instantly.

E.g. A contractor may have a daily basis plan and daily basis report for the construction activities.

The diagram in Figure No. 11 below shows the detail allotment of resources for a slab cycle of 14 days. This becomes a very easy and readymade basis for generating the detail cash flow statement.

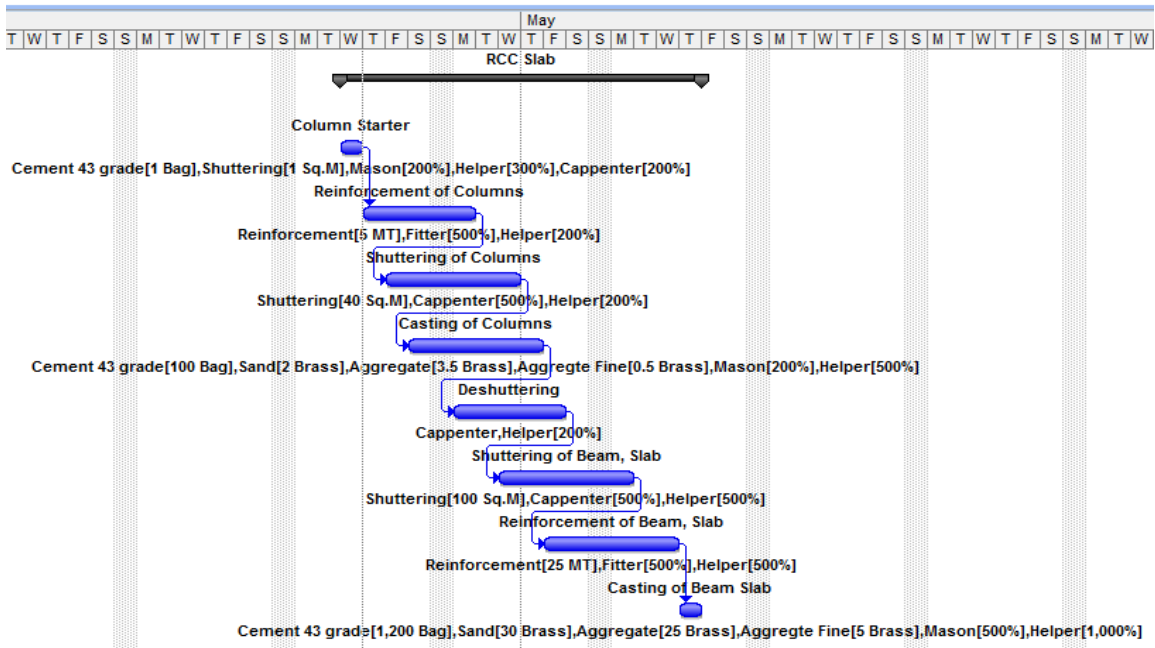


Figure 3.3.1 Slab Cycle of 14 days with detail Resource allotment

Hence the weekly cash flow for the contractor is shown below in Figure no. 12. A daily cash flow for the same may also be generated in a report

Cash Flows of 24 Apr '14
Project3

RCC Slab	20 Apr '14	27 Apr '14	04 May '14	11 May '14	Total
Column Starter	₹ 3,350.00				₹ 3,350.00
Reinforcement of Columns	₹ 188,850.00	₹ 56,250.00			₹ 225,100.00
Shuttering of Columns	₹ 13,000.00	₹ 19,500.00			₹ 32,500.00
Casting of Columns	₹ 7,852.50	₹ 30,980.00			₹ 38,812.50
Deshuttering		₹ 4,500.00			₹ 4,500.00
Shuttering of Beam, Slab		₹ 53,000.00	₹ 13,250.00		₹ 66,250.00
Reinforcement of Beam, Slab		₹ 456,500.00	₹ 684,750.00		₹ 1,141,250.00
Casting of Beam Slab			₹ 456,000.00		₹ 456,000.00
Total	₹ 193,052.50	₹ 620,710.00	₹ 1,164,000.00		₹ 1,967,762.50

Figure 3.3.2 Weekly Cashflow

3. CONCLUSION

The above given examples of software application are meant to provide insight to the software. The purpose is to make the software more approachable to all stakeholders of Real Estate Industry.

The concept of Time & Cost Management remain the as the key processes of the Project & Construction Management. Software is a mere medium to apply the concepts efficiently.