

Project Management using Primavera P6

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Abstract: An analysis of the results of survey and comparison of conventional method and using PRIMAVERA, a management tool was undertaken. PRIMAVERA software has been used because of its use for large projects and gives comparable and optimum project plans to stimulate the adjustments. The wide acceptance of this software, especially in industries of developing cities has made the project managers to easily handle the large projects effectively and also resulted in low cost as when compared to conventional methods of management of project. The results indicate that this management tool has many features and benefits to lead to a successful project completion. It has been studied that professional project schedulers use PRIMAVERA to plan and analyse multiple projects to ensure the timely completions and within budget. It must be noted that this study is based on comparison of relatively small projects and that the results on larger, more complex projects might be different. Project activities are directed towards the achievement of project objectives with respect to scope, time and quality. Construction projects or industries are time bound and all. In a complex project where large number of activities are performed at different places and different agencies and sub organizations, with each having its own scheduled targets, a small delay in the critical activity can affect many schedules. Delays in contracted projects or construction projects can result in penalties and adversely affect the reputation of the company. Construction projects shall employ the latest and the best available project planning and management software. Primavera project management, one of the most usable software packages employed by a large group of industries. The planning process for a building construction with some alternative schemes such as execution schedule, activities relationship, resource allocation etc. has been attempted to examine the consequence of overall implementation in terms of scope and time to the project. Effective time planning is very important in determining a success of any project, poor planning and controlling of project will cause delay. To overcome this time running problem analysis can be done by using the Primavera P6 software. In this project, Primavera P6 software helps the planning, scheduling, resource allocation and time management. This software gives better quality of construction management process and easily understandable results.

Keywords: Planning, Scheduling, Primavera, Monitoring, Tracking.

1. INTRODUCTION

Project consumes several resources in its lifetime to achieve the desired goal. The resources have time dependent, direct or indirect costs related to them. For large construction projects with huge budget; it becomes very difficult for the project team to handle the tasks. So, it becomes very necessary to provide a tool in the hand of project team that helps keep a track of activities in the project. Primavera

Project Planner P6, a product from Oracle is a very powerful tool present in the hands of project team. The software helps in planning, scheduling and controlling of projects very efficiently. Contractors in India are reluctant to use project planning and scheduling techniques, which are being used world over and already proved as benchmark for in time completion of projects. The study includes with discussion/introduction on Primavera P6 a project planning and scheduling tool available. The quality of schedule generated from the software often lacks detail and the purpose of the software in adding value to the project is generally not met by the users in India.

In addition to provide insight on various project tasks, their inter relationship, dependencies to predict total project duration during planning phase. The schedule should be comprehensive enough to let the user understand in detail the purpose of various activities in the schedule. In today's world construction industry is one of the most widely used and rapidly booming industry of our nation and across the world. Hence there is requirement of certain tools and techniques for the improvement of national economic upliftment, and their environment planning to manage with the level of improvement in town and urban areas and the time required to overcome this goal can be shortened. There is necessity for effective Project Management.

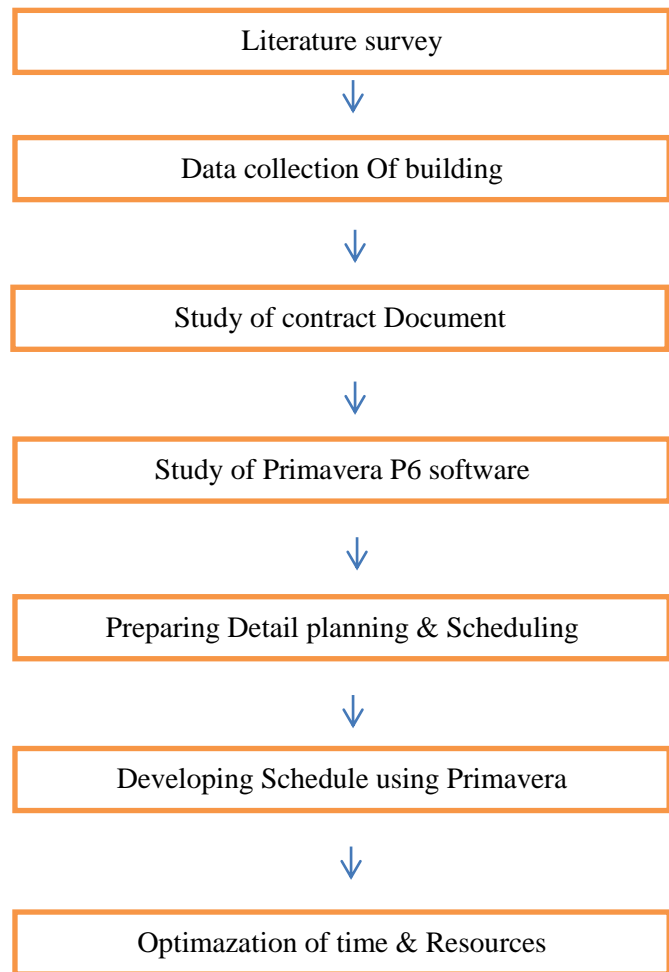
2. LITERATURE REVIEW

1. Satinder Chopra: concluded that the Activity ID and Activity Description both the most unused part can greatly enhance the quality of the schedule if used properly. It is the duty of the planning team to carefully decide the Activity ID structure in advance so, that schedule preparation flows smoothly without any conflicts. Further research on how other fields like Original duration, Remaining Duration, Task bars in the Gantt chart, Start and Finish dates can be presented to give maximum understanding to the user for efficient schedule development.
2. V.dhanalakshmi (2016): Study deals with the project monitoring process of the economical method of transporting a pipeline construction was completed in Ennore-Trichy-Madurai. Construction work and actual progress is a comparison between the planned progress of performed in this study using project management software Primavera P6.
3. P. Esaki Thaana: found time management system is considered to perform a key role in organization, which is responsible to complete the project in a specific time,

budget cost within a certain period of time. Poor time and cost performance are major problems faced by construction industry. The main objective of this research is to prepare the proper planning and scheduling for the 6 lanes road work construction at VOC PORT TRUST, Tuticorin. Time management and time control are done by primavera P6 software. The main advantage of project was timely execution and completion of the project using primavera P6 software. The road construction project has completed prior to the contract duration.

4. Y.Umesh(2015): Proper planning and scheduling is very essential in projects for sinking and scheming delays of the project. Extensive amounts of time, money, resources are wasted each year in a construction industry due to improper planning and scheduling. With globalization the construction projects have become infinite and complex. Planning of such projects requires huge amount of documentation work, which can be reduced with the help of project planning software. These study are to plan, schedule, and track a residential project with help of primavera software, study the results generated, it is possible to propose which method is suitable for the chosen residential project.
5. B.S.K.Reddy (2015): they did resource optimization exercises on two on-going projects in Dubai, UAE. They individually leveled and then combined option with aggregated and then leveled clearly indicates reduction in demand of resources by 5.65% in later option, which could be best considered for economy. They concluded Resource leveling at project job site and forwarding demand leads a possible sharing of resources among projects.
6. E. Suresh kumar (2015), Scheduling using Primavera Software is a development which involves estimation, sequencing the activities, resources allocation and timing. The construction scheduling is to complete the project in time and equal the resources with the allocated time. Scheduling using primavera Software gives good controlling.
7. Ismail Abdul Rahman : study identified time management together with their effectiveness level in large construction projects. From the construction organization that deals with huge projects data was collected. Relative Importance Index calculation was employed to assess the level of effectiveness which is helpful for time management techniques and software adopted in the construction project.

3. METHODOLOGY



A. Steps Involved in Scheduling

1. Creating EPS :

To create an ideal schedule for any project, first step is to collect data available for the project. The following steps can be followed in Primavera P6 software. Create the complete structure of the company with its branches, which is executing the project using primavera P6. This is known as Enterprise project structure (EPS).

2. Creating new project

The project constitutes a plan for creating a product or service contains a set of different activities and associated information. The project is governed under respective divisions in EPS. That can be given planned start and finish dates. Global, resource or project calendar is assigned by the project .

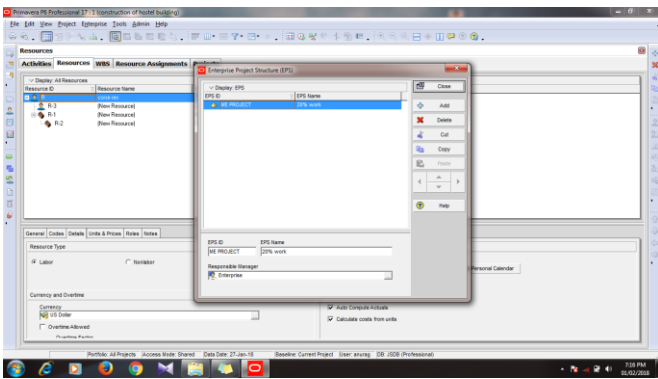


Fig.1 EPS

3. Work breakdown structure

WBS elements have defined and organize the project elements. It helps to clearly identify the deliverables, report and summarize project schedule and estimated cost data at different levels of detail. WBS is a hierarchy of any project work that must be accomplished to complete a construction project. Each project has its own project WBS hierarchy structure with top level WBS element being equal to that of each EPS node of the project. Each WBS element contains more detailed in WBS levels, activities, or both resources constrains.

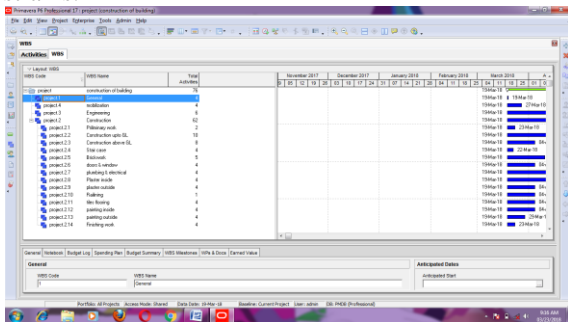


Fig.2 WBS

4. Defining activity

The smallest subdivision of a project activities are the fundamental and key work elements of a project and form the top to lowest level of a WBS. The characteristics Activity like ID, activity name, start and finish dates, activity calendar, activity codes, activity type, constraints, expenses, predecessor and successor relationships, resources, roles etc .

5. Relationship between activity

By assigning succeeding, preceding activities with significant relationship to the overall project activities , form a network, scheduling the activities should be connected to each other.

- Finish to start (FS) relationship
- Start to start (SS) relationship
- Finish to finish (FF) relationship
- Start to finish (SF) relationship

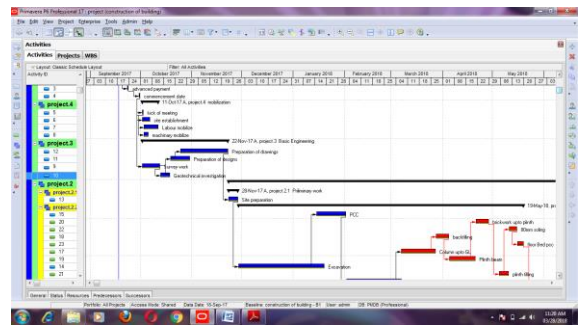


Fig.3 Relationship gantt chart

6. Creating a calendar

The calendar can create and assign it to each activity. These calendars define the available work hours in each calendar days. Also specify national holidays, organizations, and project- specific work/non a workdays and resource vacation days.

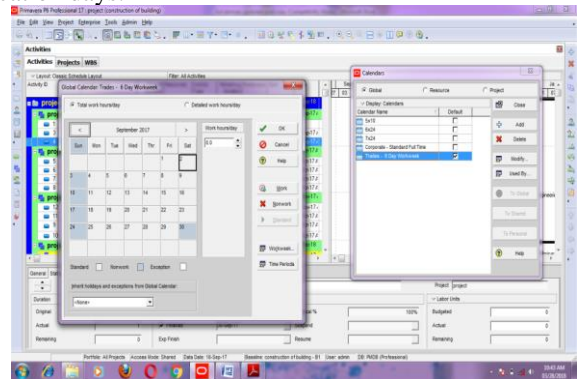


Fig.4 Calendar

7. Activity Duration

When planning the work, the project duration is entered in the original duration field. The actual duration can only be entered for the project activities, which are completed.

8. Activity Dates

The following types of project activity dates available in the primavera; actual start, planned start, actual finish, planned finish.

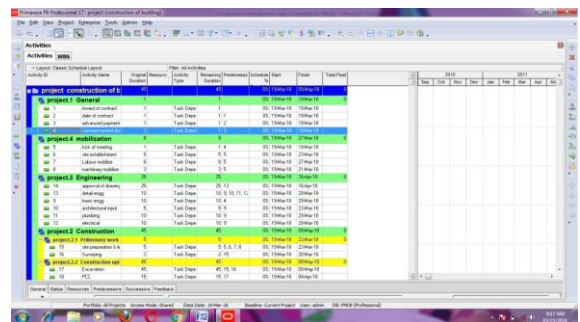


Fig.5 Activity duration & Dates

9. Creating baseline

A complete copy of the original schedule is a simple baseline plan which provides a target against which a project's performance is tracked. Choose project. Maintain

baseline. Then add and save a copy of current project as a new baseline B1. Then choose project baseline as B1 and assign primary baseline as B1. Daily updates to be made. firstly Start date and end date Choose the activity to be updated. Then in the activity details window, select status tab. Then tick mark started if the activity has been started and select the date. Tick mark finished if the activity has been finished and select the finish date.

4. CONTRACT DOCUMENT:

The following project Data are furnished from the contract agreement, project report and tender documents.

Name of the Project:

Construction of 200 Trainee hostel building in campus of Dr. Panjabrao Deshmukh prabodhini, Amravati.

- Contract period : 24 months
- Contract value : Rs. 11.96 crores
- Nature of contract : item rate contract
- Client : Public Works Department.

5. OBSERVATION

It was observed that after planning and scheduling using Primavera the time duration was reduced by nearly 3 months. Hence after careful studying this software one can control the project in terms of duration hence leading to cost optimization.

6. CONCLUSION

Planning, monitoring and controlling, as well as the need and effectiveness of project management software like Primavera P6 in a construction project of this study was to understand the role of monitoring and control in the progress and timely completion of a construction project. This objective was achieved through revision of literatures and methodologies involved in monitoring and control. The study proved to be a guideline in understanding the progress of construction work and also to identify the specific problems arising during the process. Results of this study show the drawbacks of the present project management system in running project. An efficient and cost effective new project management plan is brought to conclusion.

REFERENCE

- [1] Satinder Chopra, Arvind Dewangan, Developing an Efficient Schedule in Primavera P6: Significance of Activity ID & Descriptions, International Journal of Innovative Research in Science, Engineering and Technology (An ISO 3297: 2007 Certified Organization) Vol. 3, Issue 7, July 2014
- [2] V.dhanalakshmi, high cost infrastructure report monitoring by p6 software, international conference on engineering innovations and solutions (ICEIS – 2016)
- [3] P. Esakki Thangam, R. Magdalene Benila, Planning, Scheduling and Time Management of Six Lanes Road Construction Work at V.O.C Port Trust using Primavera P6 Software IJSTE - International Journal of Science Technology & Engineering | Volume 2 | Issue 11 | May 2016
- [4] Unmesh. Y. Polekar, Rohit. R. Salgude Planning, Scheduling and Tracking of a residential Project using Primavera Software, International Journal of Advance Research in Computer Science and Management Studies, Volume 3, Issue 5, May 2015
- [5] T. Subramani, A. Sarkunam, J. Jayalakshmi, Planning and Scheduling of High Rise Building Using Primavera, T. Subramani et al Int. Journal of Engineering Research and Applications www.ijera.com ISSN : 2248-9622, Vol. 4, Issue 6(Version 5), June 2014, pp.134-144
- [6] Vishal Annappa Nimbale, Prof. Balasaheb Jamadar, Planning, Scheduling and Allocation of Resources for multi-storied Structure using Oracle's Primavera p6 software, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 04 Issue: 07 | July -2017
- [7] Ms. Deepika Kand Mrs. Suchithra S., Study on effective scheduling and cost management of a project, International Journal of Modern Trends in Engineering and Research (IJMTER) Volume 03, Issue 03, [March – 2016]
- [8] P Raghunath Reddy, B. Harish Naik Planning and Resource Scheduling of Residential (G+7) Project Using Primavera International Journal of Innovative Research in Science, Engineering and Technology (An ISO 3297: 2007 Certified Organization) Vol. 5, Issue 10, October 2016
- [9] Vipin Kumar Dr. Shreenivasreddy Shahpur Maneeth P. D. Brijbhushan S., Analysis of Academic Building by Planning, Scheduling & Resource Allocation Using Oracle® Primavera P6, © 2017 IJSRST Volume 3 Issue 6
- [10] Mr. akash rajkumar wadhwa, mr. dattatray santram shinde, project management using primavera p6.2 international journal of innovations in engineering research and technology [ijert] novateur publications, volume 3, issue 11, nov.-2016
- [11] Chidambarakumar.M.G & Gomathi Sankar.G, Construction Scheduling Using Project Management Software, SSRG International journal of pf civil Engineering (ICRTCETM-2017)- Special issue-April 2017
- [12] Hitanshu Saini, Khushpreet Singh, Uma Malik, Project Management Using Primavera International Journal of Civil Engineering and Technology (IJCIET) Volume 8, Issue 8, August 2017
- [13] Andrew Fernans Tom, Sachin Paul, Project Monitoring and Control using Primavera, International Journal of Innovative Research in Science, Engineering and Technology Vol. 2, Issue 3, March 2013
- [14] hamed zaidoostan, hamidreza ghaneh, matin amanin, mohamad mahi gholipour, using primavera software in resource allocation and project evaluation of construction projects, interdisciplinary journal of contemporary research in business, april 2013 vol 4, no 12
- [15] T.Siva NAGARAJU, Sri Lakshmana Kumar, Schedule and Resources Optimization Using Primavera in Metro Rail Project, International Journal of Mechanical And Production Engineering, ISSN: 2320-2092, Volume- 4, Issue-7, Jul.-2016