Earn value analysis of construction project using primavera p6

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Abstract - Most of the construction project suffer from cost and time overruns due to multiple factors. Earn value management is a project performance evaluation technique and which has been adapted for construction management. Earn value analysis gives early indication that either project is delay or not and project is either over budget or under budget at any particular day by tracking it. This study is discus main parameter involve in calculation of Earn value analysis. For earn value analysis various software are developed like Visual studio 2008, SQL server 2005,MS project 2007 and primavera p6. Therefor software is use of wide range of projects for earn value analysis calculation. So it conclude that primavera p6 is best tool for Earn value analysis in construction industry. And expected conclusion is that due to tracking and EVM will get idea about our project is going through with budgeted cost and with time or not.

Index Terms - Earn value, Primavera p6, tracking.
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I. INTRODUCTION

Earn value management is an project accomplishment approach that has been suitable for utilization in project management. Baseline plan can be calculated using EVM to check the progress of the project. EVM operation helps in giving achievement standard to the assessment of evolution report of project and to deal with budget and time. Earned Value Key Parameter :

- Planned Value (PV):- This is the cost that we planned to spend on the variou activities of the construction project. This value gives a cost of how much we planned to spend as of this date.
  Planned value = % Planned work finished * BAC
  Where,BAC = Budgeted cost at completion
- Earned Value (EV):- This is the cost that shows the worth of the work done as spent the money in the construction project.   EV is the estimation of the "value" of the work done to date or "what you physically refined".
  Earned value = % finish effort * Budget at completion
- Actual Cost (AC):- This is the cost actually incurred in performing a various activities of the construction project. Actual cost is the cost caused for executing deal with a project or "what you have spent".
  Actual cost = Hourly Rate * Total hour spent
- Cost Variance (CV):- This is the variance of cost from worth of the work done on project to actual cost accomplished in
   project. (or) The distinction between earn value and actual cost.
  Cost variance = Earn Value – Actual Cost
  If the cost variance is positive the project is underrun from planned value.
- Schedule Variance (SV):- This the variance of cost from worth of the work done on project to planned value of the project. (or) The distinction between earn value and planned value.
  Schedule variance = Earn Value – Plan Value.
  If the schedule variance is positive the project is ahead of schedule and if the schedule variance is negative the project is running behind the schedule.
- Cost Performance Index (CPI):- This is the ratio of worth of work done to actual cost accomplished in doing a endeavor.
   CPI is spoken to scientifically as,
   Cost performance index = Earn Value / Actual Cost.
   If the CPI ratio is below one it shows the activities are consuming more cost to finish the work. If the CPI is above one the
   activities consuming less cost to finish the work as from plan.
- Schedule Performance Index (SPI):- This is the ratio of worth of the work done to planned value
  Schedule performance index = Earn Value / Plan Value
  If the SPI ratio is below one it shows the activities are consuming more time to finish the work. If the SPI is above one less time to finish the work as from plan.the activities consuming

II. LITRATURE REVIEW

Chiranjeevi D S, Dr. G. Narayana, Rajeeva S J, "Analysis on cost, schedule and tracking of residential project by earn value management method using primavera p6.", International Journal of Innovative Research in Science, Engineering and Technology.Vol.4, issue 3, Aug. 2017, ISSN:2349-6002. These authors form an outline of construction project management by

using a project management software primavera p6. The main advantage of the primavera software is tracking of the project, analysis, auditing of a project can be done easily. The primavera management software package helps in making a customized report from the report wizard that extract a specific data from the data base, many projects with more number of planners can work together.

Ankur Verma1, K.K. Pathak and R K Dixit, "Earned Value Analysis Of Construction Project At Rashtriya Sanskrit Sansthan, Bhopal", International Journal of Innovative Research in Science, Engineering and Technology.Vol.3,Issue 4 April 2014, ISSN 2319-8753. Project cost is the one of the governing factor in project success. Project management is used to increase productivity in terms of human resource and materials. Earned value management (EVM) is a project performance evaluation technique which has been adapted for application in project management. The technique helps in comparison of budgeted cost of work to actual cost. The present study deals with the scheduling and project monitoring process along with it also discuss main parameter's involves in the calculation of Earned Value Analysis in cost management of civil construction projects. Primavera P6 software is used for EVM calculations. It is concluded that use of primavera P6 software for earned value analysis calculation of projects.

SHAIKH MOHAMAD MASOOD ,DEVENDAR.RHARSHA H.N ,PG student,department of civil engineering , G.E.C Hassan, Assistant professor, department of civil engineering , G.E.C Hassan, department of civil engineering , G.E.C Hassan, volume 4 issue 4 , October 2014, ISSN:2277-3754. These authors form an outline of construction project management by using a project management software primavera p6. The main advantage of the primavera software is tracking of the project, analysis, auditing of a project can be done easily. The primavera management software package helps in making a customized report from the report wizard that extract a specific data from the data base, many projects with more number of planners can work together. This paper include the purpose of earned value management, input data needed, earned value forecasting parameter, advantages & limitations of EVM, application of EVM toward project because it gives an sign to managers to correct the project early to get the project to track. These authors finally concluded that the analytical procedure and proper schedule management using primavera p6.

III. PROBLEM STATEMENT

The construction project are so vast and complex in nature and project delay is most common problem in construction industry. Project overrun due to time and cost result in delays during project execution. It results wastage of resources , delay in providing facilities , and also make construction costlier . therefore simplification of work using earn value management which is the process of measuring performance of project work with respect to time and cost using software primavera p6.

IV. METHODOLOGY
1. Inception of idea
2. Collection of data
3. Training and practicing of primavera P6 .
   • Open Primavera & Create Project.
   • Define Work Breakdown Structure.
   • Creating Calendars for Activities & Resources.
   • Define The Activities Coming in Project.
   • Appointing Activity Durations.
   • Performing Scheduling.
   • Allocating Resources/Budgeting For Activities.
   • Creating Baseline for the Project.
   • Updating schedule.
   • Tracking / Earned Value Analysis.
   • Publishing Reports for the Project .
4. Site visit
5. Comparison of study
6. Generate report
7. Conclusion

V. EXPECTED CONCLUSION
- Planning, monitoring and controlling of construction project with use of project management software Primavera P6. And   EVM analysis to consider quality and technical performance for and effective project control and issues like risk analysis.
- Benefits project manager and ultimately results in project success.
- The use of such software's helps to complete the project on schedule ,time and cost.

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