International Journal of Scientific Research in Civil Engineering
© 2019 IJSRCE | Volume 3 | Issue 4 | ISSN : 2456-6667

Utilization of Management Tool Microsoft Project in Highway Project

Munendra Gubrele[1*], Rajesh Joshi[2]
[1] P.G. Scholar, Department of Civil Engineering, R.G.P.M. Bhopal, Madhya Pradesh, India
[2]Assistant Professor, Department of Civil Engineering, R.G.P.M. Bhopal, Madhya Pradesh, India

ABSTRACT

Project management is the act of starting, arranging, executing, controlling, and shutting crafted by a group to accomplish explicit objectives and meet explicit achievement criteria at the predefined time. The essential test of project management is to accomplish the majority of the project objectives inside the given requirements. This data is normally depicted in project documentation, made toward the start of the improvement procedure. The essential imperatives are extension, time, quality and spending plan.In this study we are considering a case study of highway project i.e. devas Indore corridor 75 km long road of 4 lanes. Here we are comparing as per site working scheduling to a proposed scheduling in which we are preparing planning, lagging of activities and risk analysis using management tool Microsoft project 2013. Here we concluded that with the help of project management software like Microsoft project we can prepare a proper planning, can provide lagging, risk analysis and cost cutting of a construction project in a linear and simple way.

Keywords : Highway Project, Analysis, Planning, Scheduling, Risk Analysis, Microsoft Project, Resource Allocation.

I. INTRODUCTION

The improvement business accept significant part in the economy of making countries. For example, in various making countries, critical advancement practices speak to around 80% of the total capital assets, 10 % of their GDP, and over portion of the wealth place assets into settled assets. In addition, the industry gives high business opportunity, undoubtedly next after agribusiness. Regardless of the improvement business' enormous responsibility to the economy of making countries and the fundamental part it plays in those countries progression, the execution of the business still stays all things considered low. As noticed, various endeavors in making countries encounter broad time and cost attacks, disregard to comprehend their normal favorable position or even totally finished and surrendered already or after their wrap up. Additionally, the change of the advancement business in making countries all things considered falls far behind from various endeavors in those countries and their accomplices in made nations. The advancement business in making countries fail to meet wants for governments, clients and society generally speaking.

The system of assignment organization is an integrative one—a move (or failure to make a move) in one region will generally impact diverse zones. For example, an expansion change will frequently impact cost and timetable evaluations, yet it may in like manner influence distinctive factors as various as brotherhood and thing quality. These collaborations routinely require trade-offs among endeavor goals—execution in one region may be enhanced just by yielding execution in another. Productive endeavor

organization requires right now managing these associations. In this examination, I am gathering data of an endeavor which is executing under Indian railroad association.

In this examination my standard manner of thinking is to result the issue looked in view of nonappearance of undertaking organization and resource conveyance and keep it with the use of organization programme "Microsoft Project (M.S.P.)"

II. Literature Review

Singh et. al. (2019) Illustrated that the Ministry of Statistics and Programme Implementation as many as nearly 245 Central Sector Infrastructure Projects out of the 1315 projects have shown time overrun and nearly 350 of them have shown cost escalation. There are cases where the projects have shown both time and cost overrun and the number goes up to 98 to be exact. Managing the time, Cost and quality in a construction project has become a tough challenge for a project manager in our country. In our project, we are representing a clear difference between Microsoft Project and Ant Colony optimization which makes it cost effective and in turn helps to reduce the duration of work to be done. Nearly 85% of construction companies still use the traditional MS Excel to schedule their activities and duration and among all of them many felt the need to adopt Modern Software.

Ragavi and Numa (2016) Explained that Planning and scheduling is important role in construction projects because of the increasing complexities in this field. Construction Planning is the necessary warning to Scheduling and determining general sequence, defining labor tasks, construction methods and assigning responsibilities. In appropriate planning can lead to major delays in the project work.For the planning and scheduling work huge amount of paperwork, which makes the management very burdensome These problems can be solved using a project management software which helps to give a planned approach to planning. In this study, a case of a apartment building has been taken to demonstrate how proper planning and scheduling is done using primavera and MS project.

Pradeep and Rajendra (2015) project management has developed various techniques based on network techniques in order to plan the projects processes in time, their costs and resources. Critical Path Method (CPM) is one of the best procedures for the planning, scheduling and optimizing the resource usage. CPM scheduling is a basic project control tool hence it is using in the all type of project. Completing a project on time and within the budget is not an easy task. The project scheduling plays an important role in the time and cost aspects of a project. Each project managers have different systems in planning and scheduling, which is usually consists of Gantt chart or Bar chart. The development of Critical Path Method provides a basic and systematic approach to project managers. This results in the use of software's like Microsoft Project and Primavera.

Objectives:

To conduct the study successfully, clear objectives of the study should be placed. Therefore, the following objectives those has been chosen for the production of these thesis topic, project management using primavera software. A case study of project "planning & scheduling of construction project using Microsoft project software." Following objectives are:

1. To Develop scheduling and planning of a highway project using Microsoft project.
2. To prepare activity sequence for live project.
3. To prepare machinery working and diesel consumption in resources graph in M.S.P.
4. To Identify Risk analysis at different activities.
5. To prepare resource allocation for individual activities as per I.S. 7272-part-I.

6. To assign proper sequence and links between different activities for early finish.

Conclusion:

As shown in past researches and works related to project management software, it can be said that need of such programming is necessary for following benefits:

- To have proper scheduling.
- To have individual activity focus and planning with respect to linked activities.
- To have complete schedule as per calendar and duration to be assign.
- To determine free float and total float as per activity duration.
- To have sequential database and tasks as assigned.

The proposed case study selected is a project of NHAI. Site is starting from devas section to 75 km towards Indore. This project is governed by NHAI and construction work is allotted to Oriental Construction Pvt. Ltd. And its consulting and supervision work is awarded to Arvee consultant Gujrat.

In this project we are understanding the various requirement of skills, machinery, labours and equipment. Than we will prepare a scheduling as per the project duration allotted with consideration of certain risk factors which may affect the project.

The following sub W.B.S. are:

1. Preconstruction work
2. Sub layers and levelling
3. Coatings and bitumen layers
4. Finishing work

Table 1: Project details:

Name of work	**NHAI 4 lane Flexible Road**
Salient Features	Road alignment, carriageway, levelling, soil test.
Name of Agency	Arvee Associate (Gujrat)
Land in Km	32 km
Amount of contract	61.87 Crores
Date of start	13-08-2018
Date of completion	22/10/2019

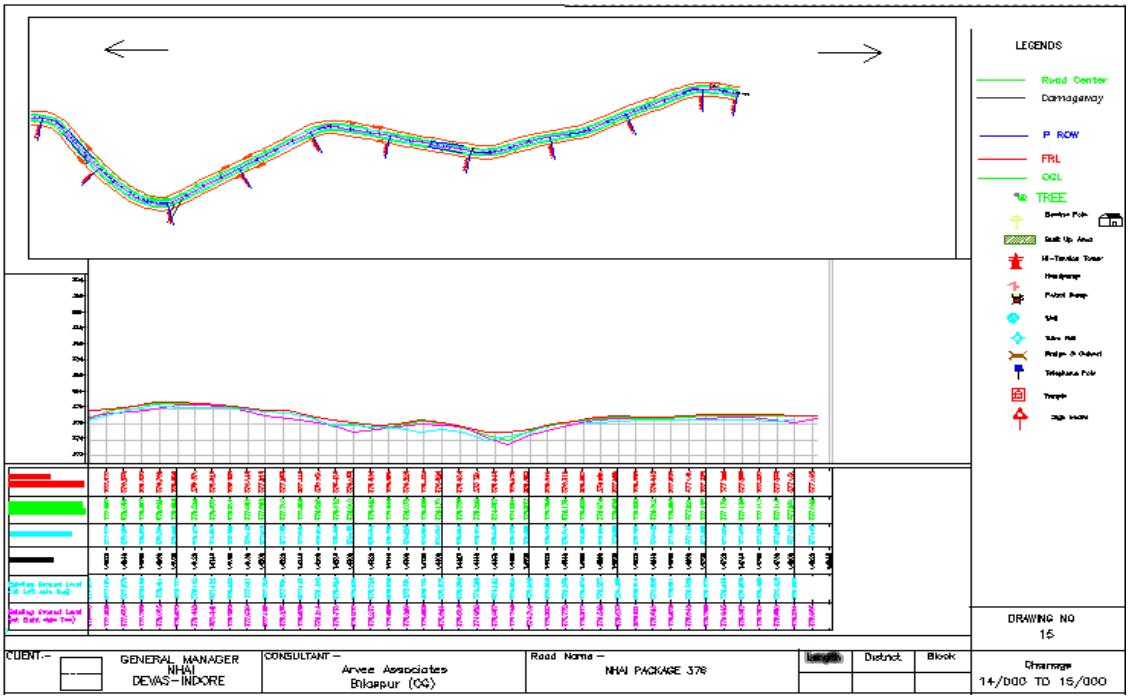

Fig 1: Road alignment

Analysis Results:

Fig 2: Duration

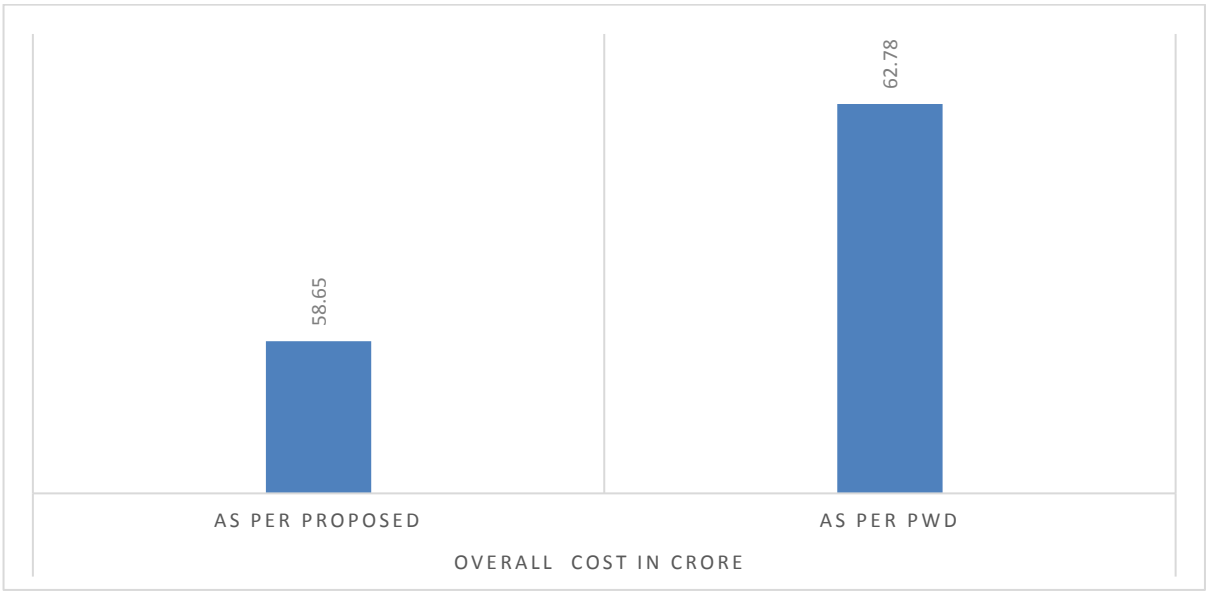

Fig 3: Overall Cost

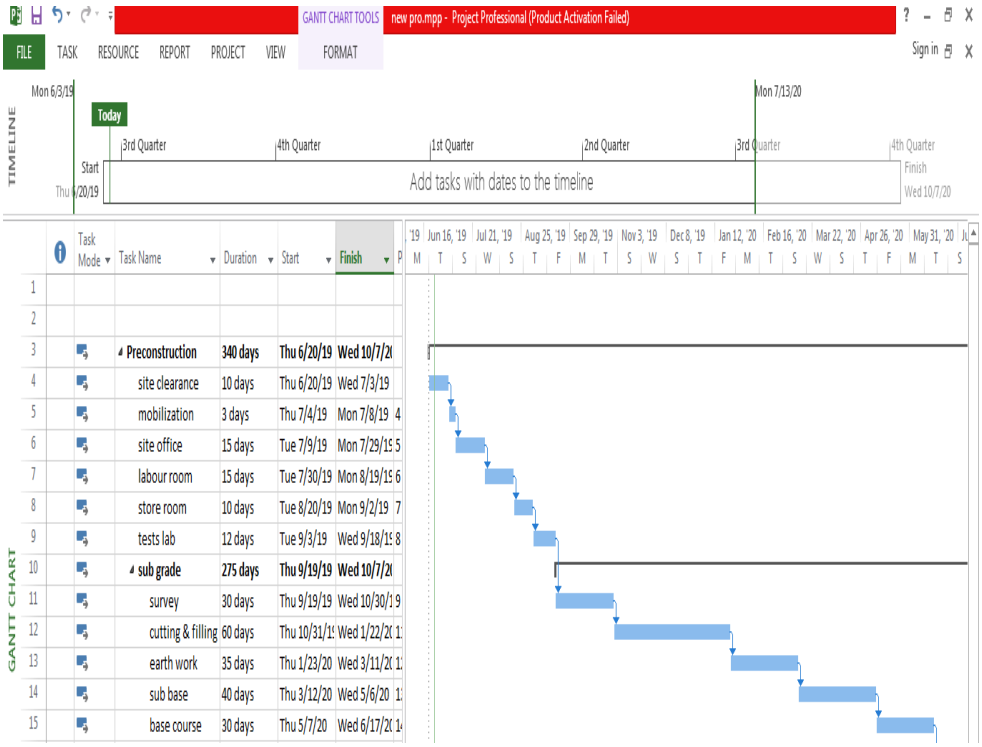

Fig 4: Project scheduling

III.CONCLUSION

In this exploration think about planning is acquired utilizing programming M.S.P and than required booking according to site is likewise arranged in same programming and than correlations are made to get contrasts.

- In this investigation we limit the danger of roundabout expense by diminishing length.
- In this investigation we limits the danger of additional work and asset task.
- Here we can reason that utilizing administration apparatus with great administration abilities can be helpful to actualize site extends more fast and appropriate asset circulation/
- In this examination a minor extension (highway road) is contemplated and assets are dispensed with manual computation according to work working.

IV. REFERENCES

[1]. International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 04 Issue: 07 | July -2017 www.irjet.net p-ISSN: 2395-0072

[2]. IOSR Journal of Mechanical and Civil Engineering (IOSRJMCE) e-ISSN: 2278-1684,p-SSN: 2320-334X, Volume 12, Issue 3 Ver. III (May. - Jun. 2015), PP 57-63 www.iosrjournals.org

[3]. International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 05 Issue: 04 | Apr-2018 www.irjet.net p-ISSN: 2395-0072

[4]. International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 05 Issue: 07 | July-2018 www.irjet.net p-ISSN: 2395-0072

[5]. International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 04 Issue: 07 | July -2017 www.irjet.net p-ISSN: 2395-0072

[6]. The CRIOCM 2006 International Symposium on "Advancement of Construction anagement and Real Estate" 384 ANT COLONY OPTIMIZATION ALGORITHM FOR RESOURCE LEVELING PROBLEM OF CONSTRUCTION PROJECT

[7]. Journal of Building Construction and Planning Research, 2015, 3, 221-232 Published Online December 2015 in http://www.scirp.org/journal/jbcprtp://dx.doi.org/10.4236/jbcpr.2015.34022

[8]. CONSTRUCTION SCHEDULING WITH ARTIFICIAL AGENTS AND THE ANT COLONY OPTIMIZATION METAHEURISTIC Symeon Christodoulou1 1 Department of Civil and Environmental Engineering, University of Cyprus, P.O. Box 20537, 1678 Nicosia, Cyprus.

Cite this article as :

Munendra Gubrele, Rajesh Joshi, "Utilization of Management Tool Microsoft Project in Highway Project", International Journal of Scientific Research in Civil Engineering (IJSRCE), ISSN : 2456-6667, Volume 3 Issue 4, pp. 09-14, July-August 2019. URL : http://ijsrce.com/IJSRCE193402