EFFECT OF RESOURCE CURVES IN SCHEDULING AND RESOURCE MANAGEMENT

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ABSTRACT

Resources are the main attributes for the project to estimate the cost and schedule effective resource usage is given. More priority to manpower resources as they are reused. The critical or skilled resources are more important and managing these effectively is the main objective of this project. Usually manpower resources are used With equal usage of work hours for every activity which will only give a theoretical approach and does not give the real time availability as per the site conditions Resource curves feature is applied to every activity based on the actuals at site and thus it evaluates the actual remaining availability and usage so that project manager can effectively allocate to level there source optimize the schedule. This project deals with different resource curves used in the software and when applied to a real time we capture the effects and generate reports which can be used to achieve the objective.

KEYWORDS: Resource Curves, Over Allocation

INTRODUCTION

Resource curves or Work contour is one of the methods used for partial leveling of the project. Generally the resource curves distribute the work. When we schedule and manage our resources efficiently it gives us the knowledge of when each resource is working and how much they are working at any point within the project. Totally there are eight types of resource curves. We can use these resource curves to manage the work scheduled for a certain resource. This will allow the user to control any resource workload better.

Objectives

- The critical or skilled resources are more important and managing these effectively is the main objective of this project.

- This project deals with different resource curves used in the software and when applied to a real time we capture the effects and generate reports which can be used to achieve the objective.

- This project helps us to know the detail work distribution of the resources and to apply in the real time according to the requirement.

MATERIALS AND METHODOLOGY

Microsoft project 2013 software is used for the project.

First we have to prepare detail schedule of the project and then we have to assign the resources. Finding the over allocated resources. Leveling the over allocated resources with normal method. Assigning the resources curve for leveling with respect to task type fixed work and fixed duration. Recording the changes in duration and cost with respect to both the task type. Comparison of resources with time before and after applying the resources curves.

RESULTS AND DISCUSSIONS

Table 1: Compression of Cost and Duration with Respect Different Task Type

Details	Duration	Cost
Before levelling or applying the resource curve	286	1,86,91,285
applying the resource curve with fixed duration	286	1,86,29,520
Applying the resource curve with fixed work	317	1,86,98,685

Based on the observation and evaluation it is found that after applying the resource curve with fixed duration the resources got partially leveled and there is a slight decrease in the cost of 61765rs and in the same way with respect to fixed work the project was completely leveled, the cost has increased with 7500rs and there is increase in duration of 31days.

Figure 1: Compression of duration with respect to different task type

Figure 2: Compression of cost with respect to different task type

The table shows the change in duration and cost with respect to fixed duration and fixed work. The figure 1 shows the difference in duration with respect to different task type and the figure 2 shows the difference in cost with respect to different task type.

- Based on the evaluation and observation it is found that early peak and late peaks curve are mostly used for effective usage of resources.

- Early peak is used mostly where the relationships were with finish to start with lag.

- Late peak was used to the activities where more of parallel activities exist.

- A combination of both there curves give in a range of uniform distribution.

CONCLUSIONS

- Resource curve application in the project helped to level the project to maximum extent.

- Resource curves application in the project helps us to alter the time and duration of the resource with respect to the entire project.

- It gives us a total saving of 30% to 50% in cost and duration as per the above tabulated results and graph.

- Thus resource curves are advanced feature which when used rightly can help the planning engineer to optimize the cost and time.

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