

A Survey on Status Tracking System

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Abstract— In modern days Tracking the Status of Projects is not an easy task. The Status Tracking includes Start date, End date, Progress, owner. So, Status Tracking can be accomplished by Critical path method, PERT charts, Gantt chart. In this Paper survey on the various methods in the steps of Tracking the Status of Projects has been proposed

Index Terms— Gantt chart, status tracking.

I. INTRODUCTION

Tracking the status of each project is not easy task. Tracking a status of multiple projects can be accomplished using Critical path method, PERT charts and Gantt chart. The three most important factors are time, cost and scope it is a triple constraint that is the project must be within cost, delivered on time, must be within scope, must meet customer quality requirements.

II. CRITICAL PATH METHOD

In order to recognize the interdependent tasks and also to find the shortest path Critical Path Method plays an important role. The one of the widely used method for the Industry rule for constructing the project schedule is Critical Path Method for Lu et al. Heizer and Render proposed Critical Path Method was used to predict the task times which are known for inevitability and time factor for each of the task is needed [1]. Kim and Jr they proposed a method A Framework For Integration Model of Resource- Constrained Scheduling Using Genetic Algorithm, broadly used CPM in construction Company. This method is very useful for the project managers to produce useful data in order to plan and control the project. This CPM method is helpful only when the deadline of the project is not fixed and resources are not controlled by either time or availability [2].

As suggested by Cheng A feasible partial train traffic simulation using diagram expressed in network that the combination of Knowledge based system can be highly employed, where an optimum rescheduling of trains was under the constraints of time and resource. During the rescheduling process, the information of completion times of trains were used as a function to delay mechanism and resolution for the conflict in relation to the current processing trains [3].

Kelley and Walker were the first to add science to the process of time control in a project Critical path planning and scheduling mathematical [4]. They developed the Critical

Path Method(CPM) for E.I du Pont de Nemours and Company, commonly referred to as DuPont. Later in 1969, Dr Martin Barnes (UK) developed “Time and Money in Contract Control”, which described “Iron Triangle” of – Time, Cost and Output. But interestingly, this course was not entitled ‘Project Control’.

III. PERT CHART

The performance of Tracking the Status of Projects is not only improved by Critical Path Method but also by PERT chart. Pert chart is a network model where each node is connected to one another. PERT network involves a set of nodes and arrows. Nodes represent the start and end of one or more activities, while arrow shows the connectivity between two nodes.

Cohen and sadeh clarified that A new approach for constructing and generating AOA networks [5]. The making of PERT network is useful for analytical method and optimization formulation. Shenhar and Dvir illuminated Reinventing Project Management that PERT is a tool to asses and symbolize the tasks that are important for finishing the project [6].

Hahn proposed Mixture densities for project management activity times: A robust approach to PERT, is a technique in which time spent on activities is stochastic [7]. Hence, to encourage the management, it is necessary to create the tasks time distributions for the activities in the project. Hendreckson and Au said that in Project management for construction, department of civil and environmental engineering, PERT is used along with Gantt chart which is used to connote in time and various tasks [8].

Banerjee and Paul calculated Path Correlation and PERT Bias, that is project completion time, it is necessary for the Management team experts to use PERT technique [9]. Due to cost of arranging and the available of resources it is better to know the project completion time. When PERT was figured, researchers have attempted to create tough theoretical base and now it is approved that the accuracy given by PERT are useful.

Howard suggested that PERT is used to rearrange the planning and scheduling of the project. It worries with the time that is needed to complete each activities, the small amount of time to complete the whole project and times of the considerable number of activities. PERT depends on network representation which involves arranging and controlling the tasks that are useful for the project structure.

Montoya-Torres *et al* proposed Project scheduling with limited resources using a genetic algorithm where PERT and CPM were appeared as network structure in which arcs denote the tasks, nodes signify actions and the system

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structure represents the relationship between the tasks [10]. Trietsch and Baker told that in PERT 21: Fitting PERT/CPM for use in the 21st century, PERT is useful in order to generate and monitor the scheduling of project [11].

IV. GANTT CHART

Gantt chart is the bar chart, in which activities are represented on the left side of the chart and top of the chart represents the time to complete the project.

Henry Gantt, to help visualize and understand data, developed and used a range of charts over the years. Traditional bar chart is used to understand the activities which are planned to be completed and the timing in future, whereas Gantt's charts were for retrospective and diagnostic purpose. To make complex data available for workers, supervisors and managers, he used a range of charts in 'Organizing for Work'. Gantt believed in breaking up of complex tasks. His ideas were mainly based on scientific management introduced by Frederic Taylor.

Luz and Masoodian suggested that in Comparing Static Gantt and Mosaic Charts for Visualization of Task Schedules, order to schedule the plans Gantt chart is used which is a graphical tool for representing the activities [12]. Gantt chart is graphical representation of schedules since it aims to outline all tasks that are necessary for the project, which was suggested by Wilson. These days one of the broadly used technique to plan and control project is Gantt Chart. As indicated by Kelley, GC is straight forward method to understand and to declare in representative level. Truscott and Cho and Wilson used GC in order to schedule the tasks through various work centers. The Wennik & Salvésbergh and Wilson proposed Towards a planning board generator Decision Support Systems to schedule and to plan GC is widely used by management supportive network [13].

Geraldi and Lechter expressed Gantt charts revisited: A critical analysis of its roots and implications to the management of projects today that GC is broadly and important method for planning and Scheduling[14]. The well known task administration programming, for example, Microsoft Office Project and Primavera has utilized GC as the prevailing stage to plan and control projects incorporating every single function of the software.

Heizer & Render it is also necessary to avoid delay or any problem that can be spotted easily. The Relationship between each activities in the project can be shown by Gantt chart, i.e if any overlap happens between the activities that can be seen in the chart [1]. The total time for project completion is also shown in the chart and suggested that the relationship among the tasks are identified and the bottleneck in the project is known so the usage of material, laborers and cost can be managed easily.

CONCLUSION

In this paper a survey on the various methods involved in the tracking the status of projects such as Critical path method, PERT chart, Gantt chart. Finally we concluded that the Status Tracking System depend upon the method that the application is used, the availability of the resources.

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