



SCHEDULING AND MONITORING OF RANI KAMLAPATI ARCH BRIDGE PROJECT USING PRIMAVERA P6

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Abstract

The objective behind the work is to identify the role of monitoring and controlling the project progress of construction and resource allocation using management tools such as primavera P6. This was accomplished through revising the literature and procedures used in monitoring and control. The study served as a roadmap for analyzing construction progress and identifying specific issues that arose during the process. The findings of the study revealed the shortcomings of the current project management system in project execution. A new project management plan has also been worked which is both efficient and cost-effective. By allocating more resources to project activities, the time cost trade of the project duration can be lowered. However, doing so raises the project's cost. For scheduling a set of project tasks, the critical route method is employed. Primavera software was also used for resource analysis. This work presents the planning and scheduling of a project situated in Bhopal, Madhya Pradesh.

Keywords: monitoring, controlling, resources, allocating, scheduling, primavera p6

Introduction

General

The construction industry is an important part of a country's infrastructure and economic development. Despite the fact that the construction industry is India's second largest, its growth has been uneven throughout the country.

To cope with the state of development in metropolitan and rural areas the tools for economic development, land use planning, and environmental planning is required. The amount of time to accomplish this goal is dwindling. As a result, good project management is required. The construction projects have to deal with a number of difficulties that must be addressed. They include time and expense overruns as a result of poor project formulation, poor implementation planning, poor contract planning and management, and poor execution management.

A. Project Management

Primavera Systems, Inc. was a privately held company that developed Project Portfolio Management (PPM) software to assist project-intensive organizations in identifying, prioritizing, and selecting project investments as well as planning, managing, and controlling projects and project portfolios of all sizes. Oracle Corporation became the legal owner of Primavera on January 1, 2009. Joel Koppelman and Dick Faris launched Primavera Systems, Inc. on May 1, 1983. It was a private corporation situated in Pennsylvania (USA) that developed Project Portfolio Management software. Primavera purchased Eagle Ray Software Systems in 1999, Evolve Technologies (a professional services automation provider) in 2003, Pro Sight (an IT portfolio management software vendor) in 2006, and Pert master in the same year to help expand its product capabilities (a project risk management software vendor).

b. Project Management Stages

There are four stages in a project management which can be used to get the maximum output from authorizing a project to closing a project which are arranged in figure no 1.



Figure no 1: Project Management Stages

c. Primavera Risk Analysis

Primavera Risk Analysis (previously Pert master) is indeed a risk assessment tool for Primavera P6, P3, and MS Project.

- Schedule Check
- Templated Quick Risk
- Risk Register Wizard
- Risk Register
- Risk Analysis

d. Primavera P6

Primavera is a project management software program. It is used for developing plans, controlling project delays, and determining the most efficient use of resources. It supports to execute the project as per schedule and on budget. It refers to the application of talents, tools, and procedures to project operations in order to meet the owner's needs. The Primavera project management software is used to plan, manage, and estimate various types of projects.

e. Features

- Timelines: a traditional Gantt Chart to schedule tasks on bar graph.
- Risk Management: Identify, track and resolve risk before they become an issue.
- Information Dashboard: A dashboard to track key project matrix.
- Reporting and Analytics: Ability to generate the status reports for stakeholders.
- Calendar and Activity View: View project tasks set over a calendar view.
- Portfolio and Program Management: Able to manage multiple projects in a [program](#) or [portfolio](#) at once.
- Contract Management: Manage multiple projects, get info from the database fast.
- Scheduling Alerts: Keep the project on track by always knowing what's due when.



Literature Review

Literature reviews are described with remark in tabular form in table no. 1

Table no. 1: Literature Reviews

| Sno. | Name of the Researcher | Findings | Remarks |
|------|--|---|--|
| 1 | Balakrishna (2023) | The research examined timetable delays in the development of a multistory residential complex and identified the elements and people responsible for the delays. | Reasons behind delay of project were studied. |
| 2 | Gunjan Kartikeyan (2022) | The goal of the study was to save time and cost by balancing resources, which was accomplished by comparing the optimal results in three scenarios. | Resources were optimised to save time and cost. |
| 3 | Nidhi Raghuvanshi and M. C. Paliwal (2021) | The research report compared the two different blocks, Block A and Block B, in the Awas Yojna project in New Market Bhopal. | Two different blocks were compared. |
| 4 | Sudarshan. S and Geena George (2021) | The purpose of this study was to compare the efficiency of two different software program, Primavera P6 and MSP, in building projects. Primavera P6 software was used to manage the project's planning, scheduling, and tracking. | Efficiency of two different software were compared. |
| 5 | A Lakade (2020) | The objective of the research was to investigate ERP (which is a Systematic Application Product) and its implementation in different phases and understand their benefits in civil industry. | Enterprise resource planning was investigated. |
| 6 | Divya V S and C Gayathri (2020) | The study's main goal was to use the different approaches "Resource allocation, Resource levelling, and time cost trade off" to maximize resources. | Different approach on resources was applied to maximise outcomes. |
| 7 | Selva Kumar M and Manishankar S (2020) | The Primavera Software was used to make judgments of cost and time while executing a project. Individual work costs were estimated and possible completion time was estimated. | Individual costs of activities were estimated accurately using primavera software. |
| 8 | K. Priya (2019) | The goal of the study was to use STAAD PRO and Primavera P6 software to examine and schedule the construction of an apartment complex (G+13). | STAAD PRO was used along with primavera for apartment construction. |

a. Outcomes from the literature review

- Researchers have considered reasons behind delay, optimization of resources, comparison of two different activities, efficiency of different software, enterprise resource planning was investigated, different approaches on resources were applied, individual costs of activities were estimated, STAAD PRO was used for design.



- It was decided to use project management tool Primavera P6 for scheduling and monitoring the work of existing Rani Kamlapati arch bridge project for comparing the actual time and cost consumed with respect to the plan.

III. Conclusion

The project duration is defined as per proposed and as per the scheduled data set. The time duration was compared for the actual data and the data set as per Primavera P6. As per the chart it seems that the human resources are not used efficiently and not assigned tasks in an effective manner. That's why cost of the project increased.

- Allocation of labor and assets with venture planning.
- Proper strategy for plant and machinery.
- Along with planner, schedule of Earth work gradation using Primavera P6
- Individual costs of activities were estimated accurately using Primavera software.
- Different approach on resources was applied to maximise outcomes.
- The goal of the study was to save time and cost by balancing resources, which was accomplished by comparing the optimal results in three scenarios

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