

A Project Management Approach Using Erp And Primavera In Construction Industry

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ABSTRACT: Project management is a process of planning organizing and managing activities and resources to accomplish a defined objective within constraints on time resource or cost. It is very common to see project failing to achieve its mission within specified time and cost. The factors contributing to overrun are inadequate project formation , poor planning for implementation and lack project management during project execution but the main cause of failure can be attributed to cost estimation failure and management failure. As project become larger and more complex, the ability to exchange information on a timely basis is shrinking. The paper based project management system cannot meet the demands of today's projects. There is a tremendous amount of information on a project that is always changing. Construction industry sources suggest that 85% of the project managers time is spent on communication and 70% of project documentation is paper based. So there comes need of ERP (enterprise resource planning) and Primavera to overcome the failure due to lack of management.

ERP, PRIMAVERA set at the disposal of medium and large companies, all the necessary instruments that allow businesses to reach a new management level. PRIMAVERA ERP is a global management solution through which any company will be able to have the benefit of all the potentialities of an ERP used by thousands of companies and the experience of a team of experts. Project-oriented companies that want a total picture of their business are choosing to integrate their forward- looking, project management information with up-to-date financial details from their enterprise resource planning (ERP) system. Responding to this need for improved integration of the operational and financial aspects of businesses, it is necessary to provide business process integration between project management and ERP systems. The new integration solution will provide valuable insight into a company's forecasted cash and resource requirements, as well accurate performance information, for effective decision making.The resulting integration will provide these customers with a cost effective way to complement the strengths of ERP with best of breed project management from Primavera.

I. INTRODUCTION

In an increasingly demanding and changing market, to conquer and keep a leadership positioning represents a challenge only at the reach of companies that are able to follow the natural evolution of the business world and adopt innovation as their banner. The actual patterns of competitiveness, linked to the constant need for high financial performances, impose the adoption of new business models based on advanced technologies that will allow superior levels of productivity. It is not enough for the operational and transactional processes of business activities to function perfectly, it is necessary the existence of pro active mechanisms of decision support that allow the business to be stretched far beyond the physical borders of the company. A product with a high level of extensibility and a great adequacy capacity that sets at disposal of any company all the mechanisms that allow its adjustment to any business.

It is required to connect Primavera(R) project management and SAP(R) solutions for customers. The resulting integration will provide these customers with a cost-effective way to complement the strengths of SAP with best-of-breed project management from Primavera.

With integration of ERP to Primavera, companies will be able to tie project events to supporting business processes, such as procurement, materials management and service requests, to improve relationships with customers and achieve the fastest time to market. For example, when key project milestones are achieved, the ERP software can trigger the creation of purchase orders in ERP for integrated materials management. Companies that are proactively managing costs, resources and schedules no longer need to struggle to make their project management and ERP systems successfully interact.

As companies define more of their work as projects, they are recognizing the strategic value of that project information. Integrating project management with other business processes helps them respond quickly and decisively to market conditions, new opportunities and customer expectations. The integration of both primavera and ERP companies will be able to generate complete picture of their project portfolio and resource requirements, whether that information originates in project management solutions or in ERP package.

Primavera products are the project management standards for the detailed planning and precise control of short-duration, high-intensity plant shutdowns in industries such as Construction, petroleum, chemicals and utilities. The integration will enable these industries to reduce maintenance down time and shutdown costs by synchronizing project status into their business processes. It connects planning and budgeting details, progress and performance information and resource requirements from Primavera with procurement, cost control, financial reporting, accounting and payment processing from ERP. The bi-directional exchanges of project information means companies can be sure that defined processes are followed across all projects and across the enterprise.

II. OBJECTIVES OF STUDY

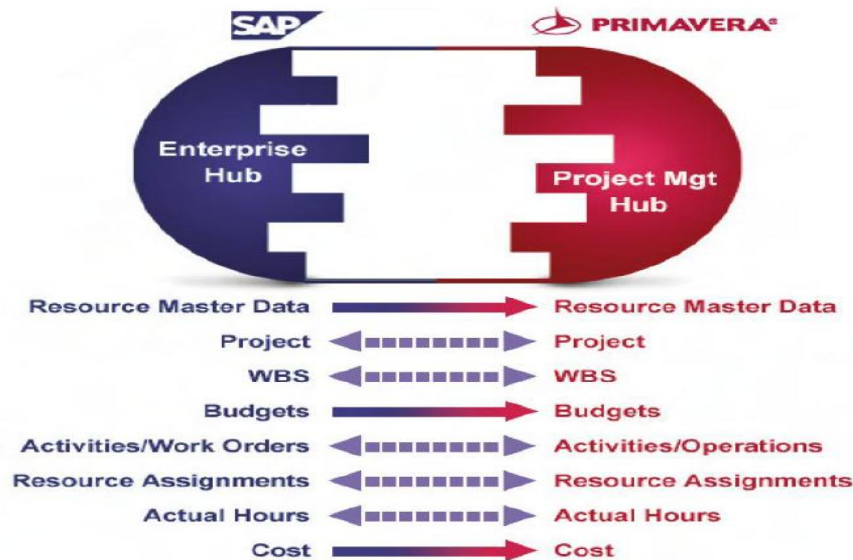
- 1) To study - ERP (SAP-systematic application product) ,various implementation phases,benefits of using ERP in construction industry,problems associated with material management in construction industry,material management modules of ERP
- 2) To study-PRIMAVERA ,various features of PRIMAVERA,benefits of using PRIMAVERA
- 3) Identify benefits of using integration of ERP (SAP) and PRIMAVERA for project management

III. METHODOLOGY

After identifying the use of IT in civil engineering from literature review and setting the objectives considering two softwares ERP and PRIMAVERA the following methodology has carefully design to achieve these objectives.

- 1) Collection and study of literature pertaining to the dissertation work and studying need of integration
- 2) Studying ERP and its different implementation phases, modules, through which material management module is considered to tackle the problems on site related to material management
- 3) Studying PRIMAVERA and its various features, which will help to note the progress of project at any particular phase of project.
- 4)Working on ERP-material management module developed for small project, to tackle problem related to material management for same small project
- 5)Applying PRIMAVERA features for the same above small project.
- 6) To conclude from above work, benefits of integration of ERP and PRIMAVERA and then recommend for the same

It is clear that a great deal of inefficiency exist in the mainly paper based process deployed predominantly in the construction industry,centralized digital information management is used to support project management and distribution of project information and to promote co-operation in building process. Need of Integration - Many organizations utilize Primavera project management software for scheduling purposes and ERP for cost management and material management. This creates a significant need to integrate the data between these two systems so the project stays synchronized. The systems need to be integrated so that project-related data can be synchronized between the systems and to eliminate the costly and time-consuming data entry required keeping both systems consistent. Key ERP information, such as resource and material availability, needs to be provided to project managers working in Primavera to improve their effectiveness during project planning, scheduling, and execution activities. Scheduling, resources, material management and time information need to flow between the two systems to ensure that the project can be completed as planned.



Problems associated with materials management- Since the materials management system described earlier involves several departments of the company, the co-ordination and communication becomes critical to the smoothness of the whole workflow. Unfortunately, all project managers agree that such co-ordination is difficult to achieve, and mis-communications often occur. Compounded by the variation orders initiated by the developers and the technical deficiencies of the suppliers problems and mistakes are often found in the process. According to the project managers, typical problems that occurred in the materials management processes are summarized below.

- (1) Materials ordering - Abortive materials resulted from late notification of variations, Poor estimation of wastage level, Difficulty in tracing the outstanding amount of material
- (2) Delivery and distribution - Premature delivery causes damage of materials Late delivery results in progress delay ,Insufficient storage space for materials delivered to site,Insufficient delivery lead time allowed , Delivery timing and quantity does not match with progress ,Poor control of stockpile results in damaged, Poor control of materials check out ,Lack of appropriate materials handling equipment
- (3) Payment -Payment date to suppliers not controlled by quantity surveyors,Inaccurate estimation of materials on-site ,Unit rates of variation items not agreed with suppliers

The main reason for most of the problems quoted by the project managers is the lack of integration and sharing of materials information across various functional departments. For example, if progress review and reporting can be integrated into the materials ordering system, the chance of inappropriate delivery time can be avoided. Similarly, surplus materials can be reduced if there is continuous reconciliation of stockpile against work done and outstanding work. As commented by some project managers, monetary loss from damages, surplus materials and the like is almost unavoidable despite close monitoring of the project (under the current system). Therefore, allowance is made in the pricing of work items during the tender stage to cover the potential loss. If the materials management system can keep the damages and wastage of materials to the minimum, savings can be transferred to the developers.

Module of ERP

Sr.No.	Modules	Features
1	Materials Management	<ul style="list-style-type: none"> ▪ Purchasing ▪ Inventory management ▪ Warehouse management ▪ Invoice verification ▪ Inventory control

FEATURES OF PRIMAVERA-

- 1) Centralized Project Repository
- 2) Enterprise Project Structure & Codes
- 3) Cross-project Analysis and Reporting
- 4)100% Web-based

- 5) CPM Scheduling :
- 6) Float Path Analysis :
- 7) Cross-Project Dependencies
- 8) Projects Reports
- 9) Resource Assignments
- 10) ERP or Accounting Integration :
- 11) Resource Leveling :
- 12) Baseline Management

IV. CONCLUSION

- 1) In case of ERP, it is studied that it is single unified database which helps to access data from any department and by using material management module of ERP, the problem related to material management on site can be tackled.
- 2) In case of PRIMAVERA, it is studied that its features helps for doing resource leveling, scheduling and even reports can be generated .
- 3) So when the above work when integrated then there is flow of data which will help to increase efficiency and cost effective project management can be done.

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