

Material Management for Construction Site with Using ERP

Kulkarni Swaranjali

¹Pursuing ME Construction Management, D.Y.Patil College of Engineering, Akurdi, Pune, Pune. India,

Sudhanshu Pathak

²Assistant Professor, D.Y.Patil College of Engineering, Akurdi, Pune- Pune. India

Abstract–Material management is concerned with the input process of manufacturing and includes the flow of raw materials, piece parts, components and finished goods to supply the sales/marketing functions with the product. It covers all aspects of material costs, material supply and utilization. An enterprise resource planning system is an information system. Now a day's enterprise resource planning system offers many benefits to the manufacturing and construction industries. ERP is the integrated management of core business processes, often in real time and mediated by software and technology. The successful model of ERP system is to help senior managers to make better decisions when considering their organization.

Key Words- Material management, Enterprise resource planning, Construction management, Project life cycle, Inventory.

I. INTRODUCTION

A. Material Management

Generally material management is concerned with the planning, identification, procuring, storage, receiving and distribution of materials. Material management covers a much wider field and deals with all aspects of material supply, utilisation as well as costs. It is a body of the knowledge which helps the managers to improve the productivity of capital by reducing material costs preventing large amount of capital being locked up for larger periods and improving the capital turnover ratio. Material management is therefore a total concept involving the overall organizational structure. It can also be defined as the procurement of right quantity of materials, at the right quality from the right source, at the right time, for the right price.

B. Enterprise Resource Planning

An enterprise resource planning system is a fully integrated business management system covering functional areas of an enterprise like planning, design, logistics, production, finance, accounting and human resources. ERP systems track business resource cash, raw materials, production capacity and the status of commitments like orders, purchase orders and payroll. This system shares the data across the various departments that provide the data. It is very helpful to project managers to make better decisions in project

management. It has the effective communications between all management functions in a single common database.

C. Benefits of ERP

Following are the benefits of ERP:

1. Efficiency- An ERP solution eliminates repetitive processes and greatly reduces the need to manually enter information. The system will also streamline business processes and make it easier and more efficient for companies to collect data, no matter what department they are working in.
2. Forecasting- Enterprise resource planning software gives your users and especially managers, the tools they need to create more accurate forecasts. Since the information within ERP is as accurate as possible, businesses can make realistic estimates and more effective forecasts.
3. Collaboration- Nobody wants to run a siloed business with each department functioning separate from each other. Collaboration between departments is a crucial and often necessary part of the business. With the data entered into ERP system being centralized and consistent, there is no reason why departments can't work together.
4. Scalability- Structured ERP system allow the addition of new users and functions to grow the initially implemented solution over time.
5. Integrated information- instead of having data distributed throughout several separate databases, all information will be housed in a single location. Data is also kept consistent.
6. Cost savings- With one source of accurate, real time information, ERP software reduces administrative and operation costs. It allows manufacturers to proactively manage operations, prevents disruptions and delays and help users make decisions more quickly.
7. Streamlined processes- As manufacturers grow, their operations become more and more complex. ERP increases efficiency and productivity by helping users navigate complex processes, preventing data re-entry and improving functions such as production, order completion and delivery.
8. Mobility- With an enterprise resource planning solution such as work wise ERP software you will

get access to your centralized database from anywhere you work.

9. Reporting- ERP software helps make reporting easier and more customizable.
10. Productivity- Save time and increase productivity.
11. Regulatory compliance- Powerful ERP solutions will keep track of regulations within the industry and monitor changes in compliance.
12. Flexibility- Modern ERP software systems are robust, flexible, and configurable.
13. Customer service- It is easier to provide high quality customer service using an enterprise solution, especially when you are using one as well-equipped as work wise ERP.
14. Security- Data security is maintained. A new system will improve the accuracy consistency and security of data, all through built-in resources and firewalls.

II. METHODOLOGY

A. Process of Material Management

Material management process initiates from need generated from site then this information conveyed to store department and material is ordered in the store, indent is generated. Vendor selection is to be carried out for the least value and best times. Materials are received at store department and inspection is carried out.

B. Working of Modules of ERP for Inventory in Construction Industry

The process starts from calculating quantities and preparation of estimate of the project with preparing resources, work item specification and rate analysis. Measurement planning is done with LBD measurements formula and direct quantity. Estimation is imported in project. In the project planning bar chart preparation, material quantity planning is carried out.

In the process of project execution work is completed related with inventory. The process such as requisition of material, price request, and comparison, purchase order material inward entries on daily basis, issue slip entries and register of site bills this all process is carried out. After project billing with supplier, subcontractor and client billing, reconciliation reports are made.

III. CONCLUSION

The main purpose of the study is to show how the ERP is more convenient for the organization. The paper provides a review of the inventory management in construction projects. It is important to manage all materials and inventory throughout construction activity and processes.

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