# A STUDY OF SAP ERP SYSTEM IN MANUFACTURING INDUSTRIES WITH REFERENCE TO SAP -MM

**S. Bachhav[1] and J Pawar[2]**
[1]ASM's IBMR, Chinchwad, Pune
[2]Sinhgad Institute of Business Administration and Research, Kondhwa, Pune
sham.bachhav@asmedu.org, jyothipawar18@gmail.com

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## ABSTRACT

In this fast-changing world and customer needs, it's imperative for organizations to transform and re-engineer themselves to adapt to the business dynamics. Customer demands are changing continuously. Any organization's efficiency is measured primarily by its ability to cater to the market demands in the shortest time possible. For this to happen, the business has to have stock of the required raw materials at the right time and must be able to use it efficiently. A proper Material Management process ensures that there is never a shortage of materials or any gaps in the supply chain process of the organization. The SAP MM automates the procurement and material management activities to make the processes smoother and effective.

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## Review of Literature

1. **Arvind Kumar Sharma, DP Sharma (2010)**conclude that Companies worldwide have made substantial investments in installing & implementing SAP ERP systems. Some of the unique challenges in managing enterprise-wide projects which were highlighted through the findings included the challenge of re-engineering business processes to 'fit' the process which the SAP ERP software supports, investment in recruiting and reskilling technology professionals, the challenge of using external consultants and integrating their application-specific knowledge and technical expertise with existing teams.

2. **Rohit Kenge and Zafar Khan (2020)**conclude that RP system integrates all the functions in an organization like finance, marketing, manufacturing, and human resource with an advance real-time data collection, processing, and communication with very fast speed and allowing the organization for a quick decision on the real-time issues to control the complete business process day today.

3. **Kees Boersma (2005)** discussed In this paper, we present a case study of the restructuring of an ERP system within a manufacturing company, in particular the combination of Material Requirement Planning (MRP) with a Just In Time (JIT) material management procedure at the assembly lines.

4. **Chandan Deep Singh, Rajdeep Singh and Manpreet Singh (2013)** explain that an ERP supports a process-oriented view of the business as well as business processes standardized across the enterprise. Among the most important attributes of ERP are its abilities to: automate and integrate an organization's business processes; share common data and practices across the entire enterprise; and produce and access information in a real-time environment.

## Objectives of the study

The main objective of the Paper is to study the SAP ERP system in Manufacturing Industry with reference to SAP -MM

## Introduction

SAP is one of the world's leading producers of software for the management of business processes, developing solutions that facilitate effective data processing and information flow across organizations.

Founded in 1972, the company was initially called System Analysis Program Development, later abbreviated to SAP(System, application and Product in Data Processing). Since then, it has grown from a small, five-person endeavor to a multinational enterprise headquartered in

Walldorf, Germany, with more than 101,000 employees worldwide.

With the introduction of its original SAP R/2 and SAP R/3 software, SAP established the global standard for enterprise resource planning (ERP) software. Now, SAP S/4HANA takes ERP to the next level by using the power of in-memory computing to process vast amounts of data, and to support advanced technologies such as artificial intelligence (AI) and machine learning.

The company's integrated applications connect all parts of a business into an intelligent suite on a fully digital platform, thereby replacing the process-driven, legacy platform. Today, SAP has more than 230 million cloud users, more than 100 solutions covering all business functions, and the largest cloud portfolio of any provider.

SAP offers manufacturing ERP software solutions that cover the automation of every aspect of your industrial manufacturing business including R&D/engineering, sales,sourcing/procurement, supply chain, manufacturing, production scheduling, quality, aftermarket service and finance.

## Introduction to SAP MM (Materials Management)

**It** is a module of the SAP ERP software package from SAP AG that is used for Procurement Handling and Inventory Management.

SAP Materials management covers all tasks within the supply chain, including consumption-based planning, planning, vendor evaluation and invoice verification. It also includes inventory and warehouse management to manage stock until usage dictates the cycle should begin again. Concepts such as Electronic Kanban / Just-in-Time delivery are supported within MM.

Materials management is integrated with other modules such as SAP SD, SAP PP and SAP QM. SAP MM is used for procurement and inventory management. The module has two important master data – material and vendor. Broadly, the various levels that can be defined for a SAP MM (Material management) implementation are: Client, Company Code, Plant, Storage Location and Purchase Organization.

SAP MM can be divided into five major components. These are: materials management, plant maintenance, quality management, production planning and control, and a project management system. Each is divided into number of sub-components.

SAP MM (Material management) is all about managing the materials i.e the resources of an organization. These resources include man, manpower and materials. The main functionality within MM (Material management) includes purchasing, Inventory management, valuation and assignment, batch management and classification. In simple words, SAP Material Management is a fundamental module of the SAP ERP (Enterprise Resource Management) system that manages the complete material supply chain and inventory management processes of an organization.

SAP MM is essentially an element of Logistics. It is counted as one of the most important modules when talking about SAP ERP software. The MM application module allows the user to manage and procure the data in a very organized manner. SAP MM module has plenty of aspects such as receiving and purchasing goods, material storage, inventory and most importantly planning based on consumption.

## MM Organization Structure
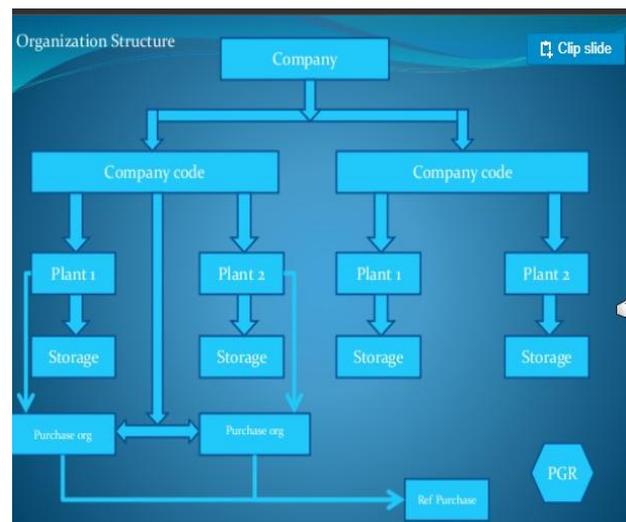


**Company:**
Company is an Organizational unit in accounting which represents a business organization for which individual financial statements can be drawn according to the

relevant commercial law. A company can consist of one or more company codes.

**Company Code:**
A company code has the following attributes –
1. Within client, a company code is an independent accounting unit.
2. It is a legal entity that has its own profit, loss and balance statement.
3. It is the smallest unit in an organization for which a complete independent account set can be replicated

**Plant:**
The basic points to be noted about a plant are as follows –
1. Plant is an organizational unit within a company where activities take place. A plant will produce goods and make goods available for the company.
2. It is a unit having manufacturing facility, warehouse distribution center, or a regional sales office within logistic. It subdivides an enterprise in different aspects.

**Storage locations :**
A storage location has the following attributes-
1. Storage location is an organizational unit, which actually differentiates between different material stocks in a plant.
2. Storage location is a place where stock is kept physically.
3. A plant can consist of multiple storage locations. All data is stored at storage location level for a particular storage location.

**Purchase Organization:**
The points to be noted about a Purchasing Organization are as follows –
1. A purchasing organization is an organizational unit under a company or a plant that is responsible for the procurement activities according to requirements. It is responsible for external procurement.
2. A purchasing organization can be at the client level, which is known as a centralized purchasing organization.
3. A purchasing organization can also be at the company or plant level, which is known as company-specific or plant-specific purchasing organization.

**Different forms of purchasing Organization**:
1. Centralized Purchasing
2. Purchasing organization is not assigned to any company code. It procures for all company codes belonging to different company.
3. Company Specific Purchasing
4. Purchasing organization is assigned to a company code only. The plant belonging to the company code can purchase through this purchasing organization.
5. Plant Specific Purchasing
6. Purchasing organization is assigned to a plant. Only this specific plant can purchase through this purchasing organization.

**Purchasing Group:**
The attributes of a purchasing group are as follows –
1. Purchasing group is an organizational unit responsible for the everyday procurement activities within an organization.
2. It is a buyer or a group of buyers responsible for the procurement activities in a purchasing organization.

**Providing Support to configure the SAP:**
Support for SAP configuration is provided with the help of Enterprise Structure and Master Data

**1. Enterprise Structure**
Every organization has some framework or structure according to which the whole business runs. An enterprise in the structure that represents an enterprise in SAP ERP system. It is subdivided into various organizational units which, for legal reasons or business-related reasons, are grouped together.
An enterprise structure defines various levels in an organization. These levels are placed accordingly to some hierarchy shown below in flow diagram, each levels has some specific functionality associated with it, which in a combined way describes the working of an organization.

**Define Organizational Units:** In material management we have scope to define following entities for organizational structure.
1) Plant 2) Purchase Organization 3) Storage Location 4) Purchase group

## 2. Master Data

In Every organization is very essential to have master data of each and every activity to be organized centrally for all modules and departments too.

Also we can say it's a data with its all specifications it stored in our system, and it can be used by the system to gather information while creating PO and service, contract, scheduling agreement etc.

From point of view of material management it includes material master and vendor master files at the core of procurement, inventory management, and invoice verification.

### A. Material Master Data:

This is the enterprise main source of material-specific data. This data will include information on the material a company can produce, store or sell.

Since there are different departments in an enterprise and each department works on some specific material, they will enter different information regarding their material. So, each user department has its own view of material maser record. The data screen that is used to cre-ate material master can be divided into two categories.

### B. Vendor Mater Data

Vendor master data is the company's main source of vendor-specific data. It includes infor-mation on vendor from which a company can produce, or sell. Vendor master data contains vendor's name, address, bank account no. etc.

### C. Information Record :

**Procure topaycycle:**
Procure-to-pay is the process of integrating purchasing and accounts payable systems to create greater efficiencies. It exists within the larger procurement management process and involves four key stages: selecting goods and services; enforcing compliance and order; receiving and reconciliation; invoicing and payment.



## Procure to Pay Cycle

**Purchase Requisition**
Procurement in every organization starts with gathering requirements. Once requirements are gathered, we need to inform the purchasing organization. A purchase requirement is a document that contains a list of requirements. A Purchase requisition is a request that is made to the purchasing organization to procure a certain list of materials.

**Path: Logistic □ □Material Management□ □Purchasing Requisition□ □create**
**Request for Quotation**
Vendor selection is an important process in the procurement cycle. Once requirements are gathered, we start looking for possible suppliers who can fulfil the requirements at the best possible price. So a request is made to the vendors to submit their quotations indicating the price of material along with their terms and conditions. This request is known as the request for quotation (RFQ).

**PATH: Logistic  Material Management Request for quotation create**

### Purchase Order

Purchase order is the formal and final confirmation of the requirement that is sent to vendor to supply material or services. A purchase order includes important information such as name of material its corresponding plant, details of purchasing organization with its company code, name of vendor, and delivery date.

A purchase order can be created by following STEPs

**Path: Logistic  Material-Management Purchasing Create  Vendor**

### Goods Receipt:

After processing the Purchase order, the vendor delivers the material to the ordering party this process is called goods receipt. It is the phase where the material is received by the ordering party and its condition and quality are verified. Once the material is verified against the predefined quality, a goods receipt is posted goods receipt can be posted by following STEPs below:

**PATH: Logistic  Material management inventory management Goods movement**

### Invoice Verification:

Invoice is received from the vendor after goods receipt, and then the invoice is verified by the ordering party. This is the phase where the vendor (seller) is paid from the company and reconciliation of invoice can be posted by following the STEPs below

**PATH: Logistic  Material management Logistic Invoice verification Document en-try Enter Invoice**.

### Conclusion

ERP systems were used first by the large manufacturing organizations on-premise to manage the raw, in process, and finish good material information communication. ERP system acceptance rate had slow in the beginning due to ERP implementation is a time consuming and high investment process to adopt for any organization; however, it is adopted by nearly all the business nowadays and changing the business legacy due to its exceptional benefits. An ERP system integrates all the functions in an organization like finance, marketing, manufacturing, and human resource with an advance real-time data collection, processing, and communication with very fast speed and allowing the organization for a quick decision on the real-time issues day today to control the complete business process."

### References

1. An-ru Fang et al. (2009), "The Process ofERP Usage in Manufacturing Firms in China:An Empirical Investigation", International Conference on Management Science &Engineering , (16th) September, pp. 14-16
2. Boersm Kees A et al. (2005), "From Means to Ends: The Transformation of ERP in a Manufacturing Company", Journal of Strategic Information Systems, Vol. 14, pp.197-219.
3. Chandan Deep Singh , Rajdeep Singh, Manpreet Singh (2013), "Critical Appraisal For Implementation of ERP In Manufacturing Industry", IJMRBS, Vol. 2, No. 1
4. Rohit Kenge, Zafar Khan (2020), "A Research Study on the ERP System Implementation and Current Trends in ERP", International Journal of Management, Vol. 8, No. 2.
5. Arvind Kumar Sharma, DP Sharma (2010), "Selection, Implementation & Support Of Sap ERP System Approach In Manufacturing Industry", Global Digital Business Review, Vol. 4, No. 1.