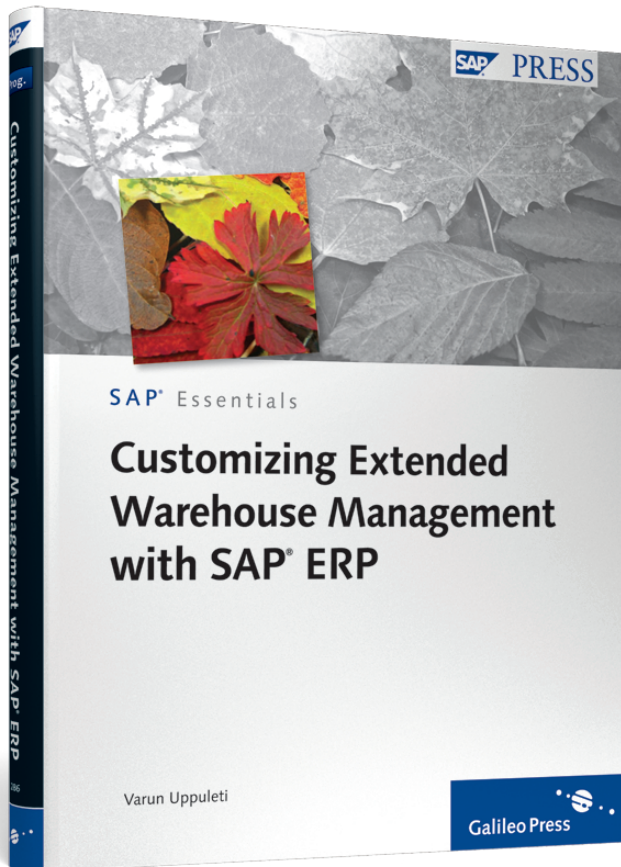


Varun Uppuleti

# Customizing Extended Warehouse Management with SAP® ERP



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*SAP ERP Extended Warehouse Management (EWM) provides additional warehouse and logistics functionality, including Task and Resource Management (TRM) and Yard Management sites, which are attached to a warehouse and can be implemented individually. In addition, Cross Docking and Value Added Services provide additional functionality for managing these special processes in the warehouse.*

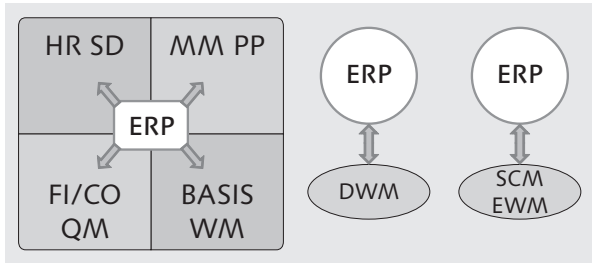
## **2 Organizational Structure**

In SAP ERP, Extended Warehouse Management is part of the Logistics Execution and Warehouse Management components and addresses complex warehouse processes. The advantages of EWM include better storage processes, efficient operation of distribution, optimized planning of warehouse activities, higher stock visibility, and better resource management.

Extended Warehouse Management functionality can be installed together with SAP Warehouse Management (WM) functionality when you are implementing release 4.7 Enterprise Extension 2.0 or later (or 1.1 for TRM), and it can be activated through configuration. In this chapter, we discuss the organizational structure of warehouse that includes Task and Resource Management (TRM) and Yard Management (YM) sites. We also discuss the various options available during the deployment of SAP Warehouse Management.

### **2.1 SAP Warehouse Management Deployment Options**

SAP Warehouse Management can be implemented in three different scenarios: integrated, decentralized, and SAP Supply Chain Management (SCM) (Figure 2.1).



**Figure 2.1** Warehouse Management Deployment Options

► **Centrally Integrated WMS**

With this architecture, you have a higher degree of integration. The cost of administration is low, and you have direct visibility of material valuation.

► **Decentralized Integrated WMS**

Decentralized systems are independent from central systems. You have the scalability to create unlimited warehouses. The connection to third-party logistics providers is easier and is recommended for installation of TRM and YM. The load on the processor server is low, and performance is higher compared to central integrated WMS.

► **SAP EWM**

SAP SCM also comes with EWM functionality that has additional features such as kitting, slotting, and so on. It extends the real-time visibility of SAP ERP.

## 2.2 Choosing the Right Application

Deciding which application is right for you can be a difficult decision. You need to evaluate everything from level of distribution and the volume your warehouse sees to operational complexity and slotting options. Table 2.1 lists the deployment options and shows how efficiently the systems can support the EWM functionality. X means the functionality is supported by the system. XX means the performance is higher with Decentralized Warehouse Management (DWM), and XXX means is best supported by the system.

As you can see, Centrally Integrated Warehouse Management has good functionality support, but the system load caused by WM transactions can impact the other activities of the system and vice versa. Decentralized Warehouse Management provides higher optimization and performance levels, but careful and experienced consulting support has to be provided during its implementation.



	ERP WM	DWM	SAP EWM
Complexity of installation	X	XX	XXX
High volume	X	XX	XXX
Task and Resource Management	X	XX	XXX
Yard Management	X	XX	XXX
Operational complexity	X	X	XXX
Value Added Services	X	X	XXX
Cross Docking	X	X	XXX
Integration to automated systems	X	X	XXX
Slotting			XXX
Deconsolidation			XXX
Pick from receiving/Push deployment			XXX
Kitting			XXX
Transportation Cross Docking	X	X	XXX
Integration to QM, EHS, GTS	X	X	XXX
Mobile transactions	X	X	XXX
RFID	X	X	XXX

**Table 2.1** EWM Functionality and System Support

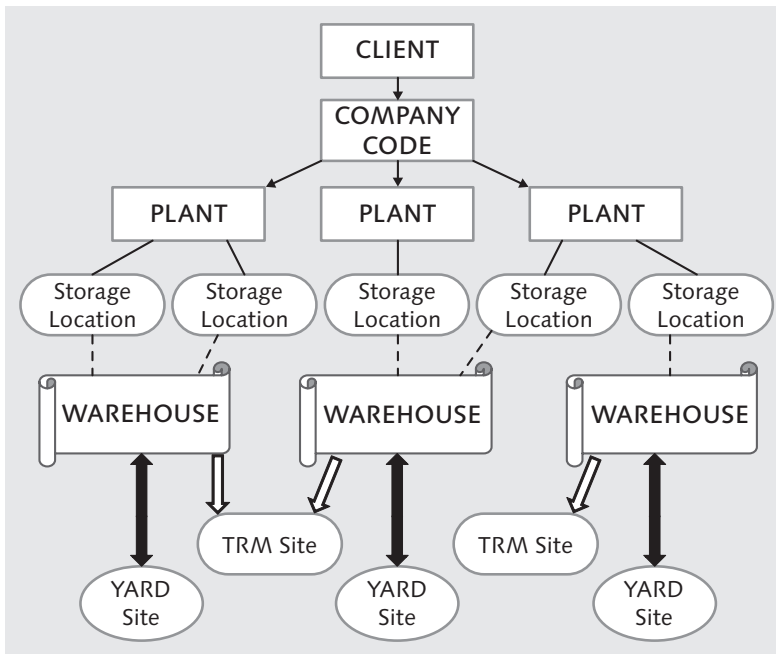
SAP EWM has extensive functionality and high performance. It has to be integrated to SAP ERP (or another ERP system to handle the integration of order management). In both DWM and SAP EWM, some of the master data has to be created individually in the target system (though it is based on master data originating in the source ERP system and integrated via IDocs or queued Remote Function Call [qRFC]), and transactional data has to be sent from the ERP system to these systems.

## 2.3 Warehouse Structure

Warehouses are defined and assigned to single or multiple storage locations of one or more plants.

You create a warehouse individually or copy it from an existing warehouse by using the IMG menu path ENTERPRISE STRUCTURE • DEFINITION • LOGISTICS EXECUTION • DEFINE, COPY WAREHOUSE NUMBER or by using Transaction EC09. After you create a warehouse, you have to assign it to a plant and a storage location. Then you should also define the substructure, which includes storage types, storage sections, and storage bins.

After the substructure of a warehouse is defined, you can add the TRM site and Yard site to a warehouse. You can also define Cross Docking and Value Added Services relevancy for the warehouse in configuration. Figure 2.2 shows the organizational structure of a warehouse with relevance to TRM and Yard sites and how they can be assigned to a warehouse.



**Figure 2.2** Organizational Structure of a Warehouse with TRM and YM

A warehouse can be assigned to storage locations from different plants. One TRM site can be assigned to multiple warehouses. In general, one TRM site is recommended for one warehouse where there is minimum complexity in defining TRM master data. One warehouse can contain only one Yard site.

Cross Docking and Value Added Services (VAS) are activated at warehouse level. VAS and TRM can be integrated together where VAS orders are confirmed using TRM operation tasks. Cross Docking and YM can be integrated where Cross Docking decision time information is taken into consideration for scheduling a vehicle at a door.

**Note**

SAP Yard Management cannot be a standalone module and has to be integrated to SAP Warehouse Management. The minimum architecture required for YM is a Lean Warehouse.

## 2.4 Summary

Now that you understand the organizational structure of the warehouse, including TRM and YM, and the various options available during deployment of Warehouse Management in SAP ERP, we can move on to a more detailed discussion of Yard Management.

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