

## EXTENDED WAREHOUSE MANAGEMENT WITH SAP® SCM

CREATE EFFICIENT WAREHOUSES TO  
SUPPORT SMOOTH SUPPLY CHAINS

With supply chains being adversely affected by market uncertainties, companies are facing greater challenges in managing their logistics environments. With SAP® software, you can plan, source, procure, store, transport, and deliver products all on a single, unified platform. The SAP Extended Warehouse Management application, an integral part of the SAP Supply Chain Management application, addresses advanced warehouse management functions and processes. It helps you achieve higher process and stock visibility, better warehouse planning, and more efficient distribution and storage processes.





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# EXECUTIVE SUMMARY

## IMPROVED SUPPLY CHAIN THROUGH EFFICIENT WAREHOUSE MANAGEMENT

Managing the logistics environment is now more challenging than ever, as supply chains are increasingly affected by market uncertainties caused by, among other things, fluctuating fuel prices and greater customer expectations.

Therefore, integrating end-to-end logistics and fulfillment operations is crucial to profitably managing the movement of inventory, to execute on the promise of the perfect order – the right product, in the right place, at the right time. Visibility across all nodes in the network is key to anticipating supply chain disruptions and facilitating the best way to respond in a proactive, timely, and profitable manner across the global logistics network.

SAP® software allows companies of all sizes and industries to effectively and profitably plan, source, procure, store, transport, and deliver products through an integrated, end-to-end logistics and fulfillment process on a single, unified platform.

Core to that mission and supply chain enablement is the SAP Extended Warehouse Management (SAP EWM) application. SAP EWM is an integral part of the SAP Supply Chain Management (SAP SCM) application, addressing advanced warehouse management functions and processes. It supports:

- Higher process and stock visibility
- Better planning of warehouse operations
- Highly efficient operation of distribution and storage processes

These capabilities, in turn, allow for flexible and adaptive planning and coordination, in addition to the execution of inbound and outbound processing, thereby integrating the process flow across the entire supply network. SAP EWM features address the unique requirements of fulfillment operations across all warehousing environments:

- Very fast and very slow moving items competing for the same warehouse space
- Customer demand for order accuracy and the perfect order timing
- Vast product differences – size, weight, model year, serial number, country of origin, batch, and valuation
- Complex cross-docking and order fulfillment processes

- Integration of third-party logistics services for packaging (inbound) and packing (outbound) of products
- Detailed packaging and shipping logistics by supporting master bill of lading and a variety of packing options
- Control of work processes inside and outside the warehouse, such as bundling, waves, spreading, resource management, work order, kitting, labeling, outside dock, and yard management
- Third-party logistics and outsourcing support for consolidators and carriers using portal capabilities

Additional warehouse management features support work processes that earlier were supported only by nonintegrated, niche solutions. The distribution techniques are aimed at dramatically improving service levels while reducing capital investments in inventories.

# ADVANTAGES OF EXTENDED WAREHOUSE MANAGEMENT

## BRINGING TOGETHER PLANNING AND EXECUTION

SAP EWM provides flexible, automated support for processing goods movements and managing stock in your distribution facilities. It is designed to work specifically in high-volume warehouses that require support for complex processes. The application brings planning and execution functions closer together, as it is completely integrated into inventory management and delivery processing. Business processes, which you trigger in other application components, lead to physical goods movements in your warehouse. You can organize, control, and monitor these goods movements using SAP EWM.

With SAP EWM, you have the option of mapping all your facilities in detail, down to the storage-bin level. This not only gives you an overview of the entire quantity of material in the warehouse, but it also lets you determine in exactly which bin a certain material is located. You can define these storage bins according to your own requirements. Every storage bin in your warehouse is mapped in the system, allowing you to constantly track all stock movements in detail. You can also use SAP EWM to optimize storage-bin management with slotting and rearrangement functionalities that help ensure that products are assigned to the correct storage bin, depending on their size and frequency of access.

To further help ensure the optimal orchestration of planning and execution activities, SAP EWM includes goods receipt optimization functionality. Expected goods

receipts based on purchase orders and production orders from the SAP ERP application are written over to SAP EWM. Planned inbound deliveries in SAP EWM are then directly created from the expected goods receipt, allowing deliveries to be processed in the warehouse and even assigned to transport units before delivery creation in SAP ERP.

With service-oriented architecture enablement, yard and storage management services offer the opportunity to connect an external application to graphically display trucks and trailers in the yard and at warehouse doors and to execute processes such as check-in and appointment maintenance. It enables access to yard and warehouse information for visibility of stock and assets. The target market includes all industries that could benefit from connecting applications for greater visibility and optimization of yard processes, such as door and appointment scheduling.

By integrating SAP EWM with the SAP Auto-ID Infrastructure offering, you can optimize your warehouse processes by using RFID technology. RFID in SAP EWM enables contact-free identification, control, and tracking of packaged products and handling units by using RFID labels with integrated RFID tags in goods receipt, goods issue, task confirmation, packing, loading, and unloading processes.

For automated warehouses, enhancements in the material flow system (MFS) functionality provide customers with



automated warehouses with the capability of controlling their automatic storage-retrieval systems without the use of a third-party MFS solution. Deployment of stacker cranes with interleaving and warehouse task prioritizations, support for traversing vehicles, status management for various objects and their connection to exception handling, enhanced log functions, the ability to send telegrams actively to the programmable logic controller, new objects in the easy graphics framework functionality, and enhanced functions in the warehouse management monitor – combined with SAP EWM standard warehouse functionality – all serve to optimize warehouse processing within an automated environment.

# HIGHLIGHTS

## KEY FUNCTIONS AND BENEFITS

### Inbound Processes

Inbound processes include yard management, putaway and stock removal strategies, expected goods receipt, cross-docking, value-added services, and quality management.

### Yard Management

With the application's new yard management functionality, you can manage trucks and trailers in your yard, map their movements based on warehouse tasks, and monitor the yard via a warehouse monitor. You can define the yard within the warehouse structure. This definition can be unique to one warehouse or used for multiple warehouses. Or you can define multiple yards for one warehouse. Parking spaces are mapped as standard storage bins that can be grouped into yard sections. Vehicles are checked into and out of the yard using checkpoints. From a checkpoint, a vehicle might be directed to a parking space or to a door for immediate loading or unloading. An inbound trailer can be unloaded and then immediately loaded as an outbound trailer to increase asset utilization. Yard movements are performed via radio frequency (RF) or desktop transactions. The service-enabled architecture of the yard management functionality provides the additional flexibility you need to enhance scheduling and streamline vehicle or transport unit activities.

### Putaway and Stock Removal Strategies

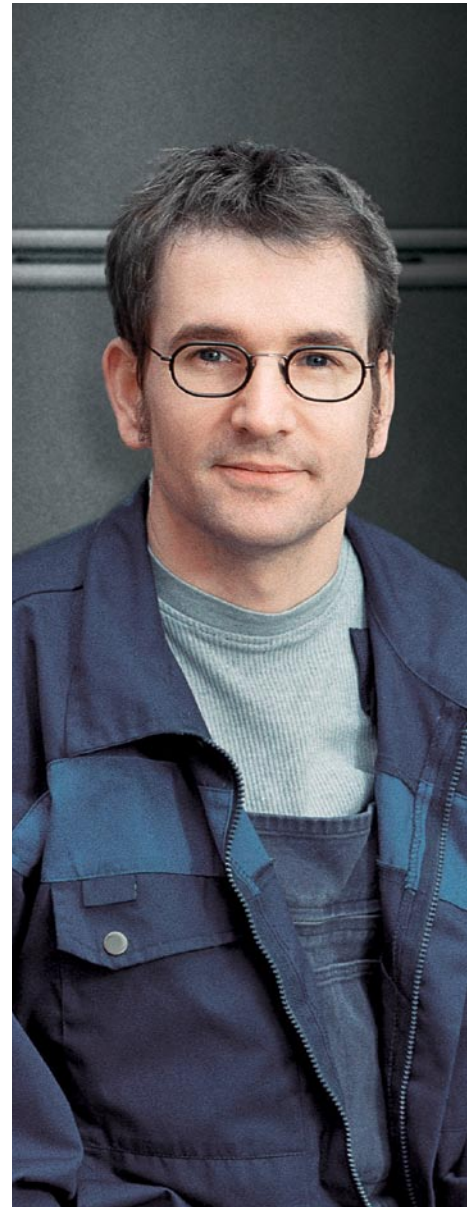
With SAP EWM, putaway and removal strategies are used to assign appropriate

bins for placement and picking. These strategies determine the correct bin each time a warehouse task is created. For goods receipt, the putaway strategy uses parameters in the product master data to maximize warehouse capacity, automatically determining suitable storage bins for incoming products. On goods issue, removal strategies are determined from product master data to find the optimal picking bin. The application also lets you process certain goods movements manually, overriding source and destination storage bins that are normally determined automatically. Putaway and removal strategies are also used to process internal movements – for example, replenishment and rearrangement.

Putaway strategies include manual entry, fixed-bin storage, general storage, addition to existing stock, empty storage bin, near-fixed picking bin, pallet storage, and bulk storage. Strategies for stock removal include first in, first out; last in, first out; first expiration, first out; partial quantities first; removal according to quantity; shelf-life expiration; and fixed bin.

### Expected Goods Receipt

Normally, an advanced shipping notification (ASN) or inbound delivery is created in the enterprise resource planning (ERP) system to start the goods receipt process in the warehouse. With SAP EWM, the ERP purchasing document is represented as a planned goods receipt, enabling goods receipt processes to begin in the warehouse. The goods



receipt is then streamlined within SAP EWM, allowing you to create and verify inbound deliveries based on the arrival of the truck. Tolerance checks are processed on the incoming receipts. The warehouse supervisor can check the workload and plan future receipts based on the number of ASN and purchase-order items scheduled for the day. Goods receipt functions incorporate internal receipts from production orders and stock transports from other facilities as well as receipts from external suppliers.

### Cross-Docking

With SAP EWM you can reduce warehouse costs by minimizing product handling. Cross-docking lets you transport products directly from goods receipt to

goods issue, thereby increasing the number of handling units processed and expediting the fulfillment of urgent orders while reducing processing and storage costs. Either SAP EWM gets the information, if cross-docking is to be executed from another system such as SAP ERP, or it makes this decision itself, such as in opportunistic cross-docking that SAP EWM triggers itself. SAP EWM offers a number of cross-docking functionalities, including:

- Pick from goods receipt and push deployment
- Transportation cross-docking
- Retail merchandise distribution
- SAP EWM-triggered opportunistic cross-docking

#### **Pick from Goods Receipt and Push Deployment**

Pick from goods receipt (PFGR) and push deployment (PD) functions are opportunistic or unplanned cross-docking activities. For unplanned cross-docking, you work with standard inbound deliveries and start by using the standard goods receipt process. At the time of goods receipt, the warehouse process type and stock type are checked to determine whether the product is relevant for putaway delay. If relevant, the putaway delay is started and the generation of putaway warehouse tasks is delayed. If a back-order situation exists, an outbound delivery document is created and the product is cross-docked to the shipping area. If the warehouse process type and stock type are not relevant, the warehouse tasks are generated for putaway without delay, which means that PD and PFGR functions are not performed.

The SAP Advanced Planning & Optimization (SAP APO) component defines whether an inbound delivery is PD-relevant or PFGR-relevant. This means that SAP APO defines the cross-docking relevance **after** posting goods receipt.

In PFGR-relevant deliveries, SAP APO determines whether stock is to be moved directly after receipt to a customer or to a different warehouse. The decision is based on one or several back orders held in the SAP Customer Relationship Management (SAP CRM) application. For PD-relevant deliveries, SAP APO decides whether goods are to be moved from one location to another. This decision is triggered by goods receipt and is based on a sales forecast.

#### **Transportation Cross-Docking**

Transportation cross-docking (TCD) is a form of planned cross-docking that allows you to optimize transportation costs. TCD supports the transport of handling units across different distribution centers or hubs on to the final destination. It allows you to consolidate multiple deliveries to new transports, change the means of transport, or process export activities centrally. If the final destination is a distribution center or warehouse at the customer site, a sales order in SAP CRM forms the basis for TCD. However, you can also use TCD to transport handling units to your own final warehouse. In this case, a stock transfer order forms the basis for TCD.

#### **Retail Merchandise Distribution**

With SAP EWM, you can use merchandise distribution functionality to plan and control your flow of goods flexibly,

enabling you to move the goods through a warehouse in an optimal way. You use the warehouse internal-processing types “merchandise distribution cross-docking” or “flow.” Retail functionality in SAP ERP plans the merchandise distribution. As soon as the inbound and outbound delivery documents are available in SAP EWM, the application can perform the merchandise distribution, including recipient- and product-driven flow-through.

#### **SAP EWM-Triggered Opportunistic Cross-Docking**

Opportunistic cross-docking takes place entirely in SAP EWM. When SAP EWM generates putaway or pick-warehouse tasks, it defines whether opportunistic cross-docking is to take place – that is, whether the inbound delivery or outbound delivery order item is relevant for cross-docking. You can activate this cross-docking procedure for the inbound and outbound delivery process separately at either warehouse or product level.

#### **Value-Added Services**

With SAP EWM, value-added services (VAS) can be executed in the warehouse using orders. Typical VAS activities are assembling product, labeling, packing, or kitting. The VAS order instructs the warehouse worker about what activity needs to be performed for which products. The order links the delivery item with the packaging specification containing the details for the service that is to be executed. The packaging specification tells what VAS activities need to be performed, and the delivery item tells the exact amount of work to be done. Auxiliary products

used for particular services are also recorded in the VAS order. You can use the data collected in the VAS order as a basis for calculating external billing and internal service providers. The VAS order also serves as documentation of the activity.

### Quality Management

Quality management (QM) functions in SAP EWM are enabled through a quality inspection engine (QIE) that maps inspection processes. The QM functions let you check whether delivered products satisfy your quality criteria. Upon goods receipt, you can inspect the entire delivery, inspect delivered handling units, count the delivered products, and inspect the delivered products for a customer return. Within the warehouse, you can trigger a quality inspection manually for a product that has been put away. Using SAP CRM, you can define parameters that influence the goods receipt and quality inspection process of customer returns. The results of an inspection are evaluated and can then trigger logistical follow-up actions such as stock transfer or scrapping.

### Outbound Processes

Outbound processes include wave processing, replenishment processing, and production supply.

### Wave Processing

A wave groups warehouse request items to control warehouse processes such as picking activities or posting changes. These groupings are then processed together. Warehouse request

and split items can be grouped into waves based on activity area, route, or product. Waves can be generated automatically or manually using templates. The wave template defines the attributes of the wave and serves as the infrastructure for automatic wave assignment. Templates enable the same wave attributes to be reused for different warehouse request items that comply with the same conditions. They can also be used in manual wave creation. In the case of automatic wave creation, templates must be used to assign or split items to existing waves.

The outbound process starts by grouping delivery line items into waves that can model a constraint-based calculation that takes material handling equipment into consideration. With the number of pallet assembly positions known, an appropriate amount of work can be identified and released to the floor. Certain picks, such as full pallets, are identified to bypass the conveyor system and instead be picked from reserve and directly staged for shipping. This results in significant labor savings. Other items are picked to a conveyor, where they are routed to either a pallet-building station or a parcel-shipping station. After being placed on a pallet or manifested, products are loaded and a goods issue is posted.

### Replenishment Processing

Replenishment processes ensure that forward pick areas are stocked in appropriate quantities to support picking requirements. There are multiple possibilities for managing replenishment,

including minimum and maximum stock levels, demand-based stock requirements, and exception-based replenishment. In a replenishment system based on minimum and maximum levels, when the minimum level is reached, a replenishment task is created to refill the bin in pallet quantities up to the maximum level. Demand-based replenishment plans are based on open warehouse requests. Direct or exception-based replenishment processes react to shortfalls that become apparent during warehouse task confirmation.

### Production Supply

In order to use a product (component) for a manufacturing order, it has to be brought to the production supply area. When SAP EWM is used, the products have to be picked in the warehouse and moved to the production supply area.

There are several ways to provide components that are required for a manufacturing order:

- Pick parts or release order parts: The products that are needed as components for an individual order (pick parts) or for multiple orders (release order parts) have to be staged in the production supply area in time and in the required quantity.
- Crate parts and kanban: Products that are often used in the production area are provided independently from the existing orders. The warehouse is responsible for filling containers as requested by production. Kanban is a specialized way to handle crate parts.



## Storage-Bin Management and Optimization

Your facility is described and mapped based on the different storage areas within SAP EWM. For example, high-rack storage areas, bulk stock, and fixed-bin areas are mapped as storage types within the warehouse structure. Stocks can be managed as a combination of products and packaging materials defined as **handling units**. Handling units provide flexibility of movement as well as visibility into the contents of a pallet or container.

Product stocks are managed at a storage-bin level. Storage bins are defined according to your requirements, using templates. Every storage bin is mapped in your warehouse, enabling you to constantly track all movements in detail. You have complete visibility of your warehouse products at all times.

With SAP EWM you can optimize the storage of your warehouse stocks so that each product is stored in the most optimum bin according to size and frequency of access. First you use **slotting** functions to suggest the best fit for a product within the warehouse; then you reorganize the warehouse, relocating products that are not currently stored in optimum positions. The slotting function enables SAP EWM to update master data to help ensure proper placement and picking of products in the future.

Inventory management and extended warehouse management are fully integrated. By enabling you to use **physical inventory** procedures and enter stock

differences, SAP EWM helps ensure that the book inventory balance in inventory management always matches the actual warehouse stock.

### Managing Handling Units

A handling unit is a physical unit comprising the packaging material and the product. You can access all the information contained in the product from the handling unit. The items comprising a handling unit can consist of the material items, auxiliary packaging materials, or other handling units, which can be displayed in an overview. Each handling unit is uniquely identified.

General status management enables you to document the physical status of the handling unit (such as planned or realized) and other attributes (such as weighed, loaded, blocked, or posted goods issue). Additionally, you can define a user schema to create your own status for a packaging material type.

### Slotting

Slotting determines the product master data that directs putaway and removal strategies. Using the slotting function in SAP EWM, you can prevent storage-bin determination for products that have not yet been slotted. At the warehouse level, you can control whether storage-bin determination of a product is to be permitted when slotting has not yet been performed.

The slotting software takes into account product data, requirement data, and packaging data to determine the most optimum storage bin in the warehouse. These parameters describe the area in



which the product is to be stored, the properties required for the storage bin, and the putaway strategy to be used. Slotting software also looks at master data that is dependent on the execution process. If a putaway process is dependent on execution data, this information is included during the storage-bin determination process but does not have an effect on the slotting results. You can simulate slotting results by running the slotting function without updating the product master. When you are satisfied with the result, you can save and activate it.

### Taking Physical Inventory

With SAP EWM, physical inventory is performed at the warehouse level. Regular cycle counting helps ensure you have the right amount of the right

product in the right bin. You are free to define the frequency for counting A, B, and C items. An analyzer, available with configurable tolerance groups, lets you manage stock differences and then evaluate and post the differences back to the ERP system. You can also define the maximum monetary or percentage limit allowable to specific users for posting differences. And you can manage counts at a product or bin level by cycle counting, verifying that the product is in the right location, verifying the balance at the time of putaway or pick, conducting zero- or low-stock checks, and conducting annual wall-to-wall physical inventory procedures.

### Distribution Center Processes

Distribution center processes include planning and monitoring, radio frequency support, serial number support, resource management, labor management, and automation and support for material flow systems.

#### Planning and Monitoring

A central warehouse monitor in SAP EWM gives warehouse personnel complete and up-to-date visibility into all warehouse activity. The warehouse monitor displays information on picking, putaway, physical inventory, resource management, warehouse stocks, or any warehouse activity. Users can set up the monitor to show only the business processes that interest them. They can also use the monitor as an interactive tool for assigning, initiating, and controlling work.

The warehouse cockpit improves user productivity with real-time or auto-refresh graphical displays, enabling instant access to the big picture on how a single process or many processes are running within predefined areas.

A graphical warehouse layout allows you to define the structure of the warehouse and yard using a 2D graphical tool and can display resources and status information. Additionally, this enables navigation from graphics to related information.

#### Radio Frequency Support

SAP EWM supports radio frequency technology for faster, more accurate data entry. RF devices interact directly, ensuring accurate data validation. They let you enter and verify data using bar codes or tags, which helps ensure a high-quality standard in your warehouse. SAP software is device agnostic and provides tools to translate messages and information from the RF device as necessary. You can use radio frequency identification throughout your warehouse processes for task confirmation, packing, loading, and unloading.

#### Serial Number Support

Serial numbers are also supported in SAP EWM and can be managed at the document level or at the bin level. If serial numbers are tracked at the document level, you record the serial number only at the time of inbound or outbound delivery. If tracked at the bin level, the numbers are not only recorded at the time of receipt and issue but are also captured for each task confirmation.



#### Resource Management

Through its resource management functionality, SAP EWM maximizes the efficiency of warehouse processes by facilitating the management and distribution of work via queues. The resource can be in either an RF or non-RF environment. The queues help you optimize selection of warehouse orders for the resource requesting work, while the warehouse monitor helps you monitor and control resources effectively.

Assigning resources to queues ensures focused management and distribution of tasks throughout the warehouse. Work can be assigned automatically or manually to available resources. Resources requesting system-guided work are provided with the optimum tasks, based on

a range of factors, including mode, latest start date, execution priorities, assigned queues, resource qualifications, and warehouse order status.

A warehouse order represents the optimum executable work package a warehouse employee should perform at a specific time. It consists of either warehouse tasks – which are grouped into warehouse orders and available for processing – or physical inventory items. The scope and type of a warehouse order can be adjusted by using the warehouse order creation rules that are defined in customizing. Warehouse orders are assigned to warehouse workers via resource management functionality.

Task interleaving allows you to optimize the utilization of your resources by reducing the travel times in the warehouse. The aim of this function is to minimize unutilized resources through an optimized distribution of the warehouse tasks – a process by which a resource, having just completed and confirmed a task, is assigned a new task, the source of which is close to the resource's current location. Efficiency is increased in the warehouse by ensuring that resources move with a load more often.

Execution constraints enable you to control the execution of tasks in predefined zones of a site, preventing resource bottlenecks and helping to ensure the workability of the semi-

system guided mode of task selection. In addition to increased efficiency, this can also contribute to better safety in the warehouse.

Semisystem guided work allows warehouse workers to request new work after having completed tasks at hand. The system checks the available open tasks in an area and sends a user to this area without assigning a specific task.

#### Labor Management

SAP EWM offers robust labor management functionality that allows you to track employee performance against engineered labor standards or other performance metrics. With this functionality you can manage your workforce efficiently using EWM tools for planning, simulating, and measuring employee activities. SAP EWM tracks direct and indirect labor, giving you an accurate overview of all warehouse employee activities. Using authorization profiles, it keeps sensitive information secure and upholds associate anonymity.

With this labor management functionality, you are better able to manage and measure employee productivity and to plan, simulate, measure, and view warehouse activities. Reporting lets you view employee performance by individual or by group for both direct and indirect activities. Employees can have immediate feedback on their own efficiency by viewing transaction results on their RF device or in the warehouse

monitor, accessible from their desktop. Travel times are calculated for both vertical and horizontal movements. Supervisors can plan and simulate activities across various time “buckets.”

The new functionality also lets you define key performance indicators (KPIs) that support your business model and configure alerts when KPIs are not met. These KPIs can be displayed in a graphical framework that allows you to display multiple services at once, giving you a quick visual of the most important KPIs you are tracking. Because these labor management functions are integrated with human resources software,

#### Deployment Options

The SAP® Extended Warehouse Management (SAP EWM) application was originally released with the 2005 release of the SAP Supply Chain Management application. It is connected to other SAP software as follows:

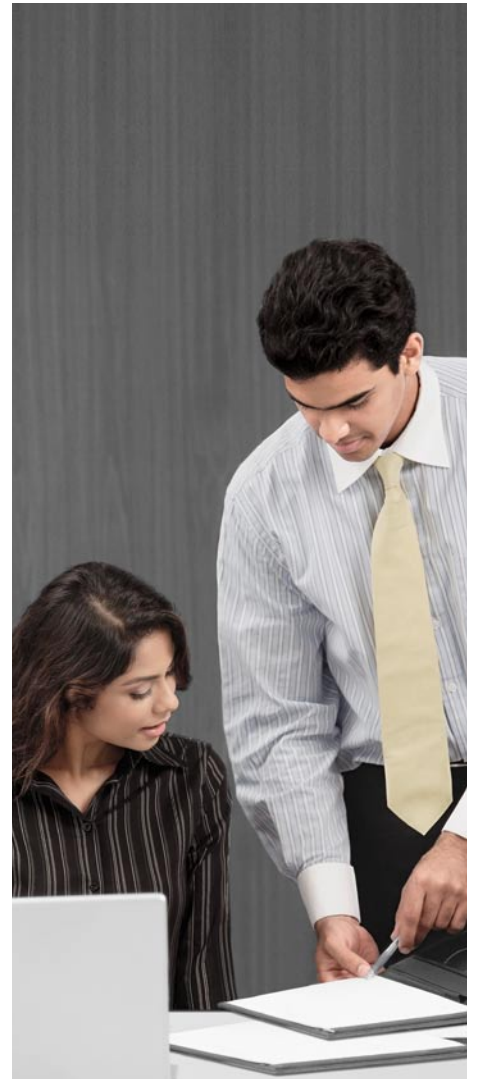
- In a full landscape, it connects to the SAP ERP 6.0 application using queued remote function call (qRFC) and core interface (CIF) technology.
- Connections to SAP ERP from release SAP ERP 4.6C through release SAP ERP 2004 use an IDoc interface with CIF for master data.
- SAP EWM 7.0 can also be deployed as an add-on to SAP ERP 6.0 using qRFC and CIF technology.

you can now offer incentive-based wages. The supervisor has an opportunity to review and approve the workload data prior to passing bonus calculations to the HR system.

#### Automation and Support for Material Flow Systems

SAP EWM also contains an interface to external systems (warehouse control units), allowing you to integrate automated putaway and storage-retrieval systems, forklift control systems, conveyor systems, and other automated equipment for all product movements using standard application linking and embedding processing.

A material flow system allows a direct connection to automatic storage and retrieval systems. You simply connect a programmable logic controller to SAP EWM. You can use this material flow system to control movement of handling units in automated systems, to activate or deactivate conveyor segments, to group conveyor segments, or to activate or deactivate correspondence at various levels. The warehouse monitor gives you visibility for monitoring communication points, current and previous flow, and the complete flow for a handling unit.



# IMPROVED WAREHOUSE CONTROL: KEY TO GREATER SUPPLY CHAIN EFFICIENCY

## FULL CONTROL OVER WAREHOUSE PROCESSES

SAP EWM gives you full control over warehouse processes, managing movements within the warehouse from the point of goods receipt to goods issue and extending to the yard from the time a trailer checks in all the way through to product checkout. It features the advanced functionality for slotting and rearrangement that keeps your products stored in optimum locations and the labor and resource management functionality that helps you manage your warehouse personnel and measure their effectiveness and efficiency.

SAP EWM also gives you the tools you need to improve your warehouse efficiency. For example, when an exception to the normal process occurs, SAP EWM provides the functionality you need to keep the exception from becoming a major issue.

The application extends your real-time visibility and control of warehouse operations. It can transform your operations into an adaptive fulfillment supply chain in which communities of customers, suppliers, and partners share knowledge and resources to adjust intelligently to market conditions. With the ability to respond faster to changes in supply and demand, you increase your competitiveness and ultimately improve your bottom line.

### For More Information

To find out how SAP SCM and SAP EWM can streamline warehouse operations at your company, please call your SAP representative today or visit us online at [www.sap.com/scm](http://www.sap.com/scm).





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## Summary

The SAP® Supply Chain Management application offers extended warehouse management functionality, supporting inbound and outbound processing, facility management and storage, physical inventory management, cross-docking, workload balancing, and labor management. Enhanced to provide broader support, this functionality is available in the SAP Extended Warehouse Management application.

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## Business Challenges

- Keep supply chains running smoothly
- Integrate the warehouse management process with other key logistics and fulfillment processes, like transportation management, global trade management, available-to-promise checks, and event management
- Continuously optimize warehouse management processes
- Extend supply chain operation capabilities beyond company boundaries, enabling inter-enterprise collaboration

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## Key Features

- **Inbound processes** – Establish support for yard management, putaway and stock removal strategies, expected goods receipt, cross-docking, pick from goods receipt and push deployment, transportation cross-docking, value-added services, and quality management
- **Outbound processes** – Perform wave processing and replenishment processing
- **Storage-bin management and optimization** – Manage handling units, use slotting functions, and take physical inventory
- **Distribution center processes** – Enable planning and monitoring, radio frequency support, serial number support, resource management, labor management, automation, and support for material flow systems

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## Business Benefits

- **Control warehouse processes** by managing movements in the warehouse (from point of goods receipt to goods issue) and in the yard (from the time a trailer checks in until product checkout)
- **Improve warehouse efficiency** with functionality that keeps exceptions from becoming major issues
- **Extend real-time visibility and control of warehouse operations** by transforming operations into an adaptive fulfillment supply chain in which customers, suppliers, and partners share knowledge and resources
- **Increase competitiveness and improve the bottom line** with the ability to respond faster to changes in supply and demand

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## For More Information

Call your SAP representative, or visit [www.sap.com/scm](http://www.sap.com/scm).

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