

SAP Extended Warehouse Management

# **Harness Global, End-to-End Logistics** Optimize Warehouse and Distribution Center Operations



The Best-Run Businesses Run SAP®



# Table of Contents

- 3** Building on a Platform Strategy for Supply Chain Execution
- 5** Streamlining Warehouse Operations
- 11** Taking Advantage of Cross-Functional Features
- 17** Taking the Long View



# Building on a Platform Strategy for Supply Chain Execution

Both shippers and logistics service providers must streamline material flow by [tightening warehouse and distribution center operations](#). The SAP® Extended Warehouse Management application can help enhance your inventory and storage management processes and support goods movement by all modes of transportation. And it fits neatly into a comprehensive platform strategy for supply chain execution.

## GOING BEYOND A SOLUTION INTEGRATION STRATEGY

There's a lot of talk in industry today about the need for convergence in supply chain execution. Rather than simply joining other vendors in moving to integrate disparate existing solutions, SAP has responded to the push for convergence with a comprehensive platform strategy. We've integrated the SAP Transportation Management, SAP Extended Warehouse Management, and SAP Event Management applications and the entire SAP Connected Logistics package specifically to help you orchestrate warehousing and logistics as part of this elegant and compelling vision for end-to-end execution. Warehousing operations can no longer succeed as a functional silo,

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in which the focus is solely on internal procedures. Only by integrating all aspects of material flow can companies accelerate order fulfillment cycles and reduce total cost of operations.

To achieve this integration, your business must move beyond the fine-tuning of warehouse processes to optimize the use of transportation resources, ensure

multinational compliance, and respond to supply chain events in real time. Our supply chain execution strategy at SAP helps you develop a single-technology solution to address all these challenges. By quickly alerting planners to any disruptions in the flow and supporting what-if analytics to speed resolution, integrated supply chain execution helps you raise risk management to a fine art all along the supply chain.

There's a lot of talk about the need for convergence in supply chain execution. Other vendors are integrating disparate solutions, but SAP has responded with a comprehensive platform strategy.



# Streamlining Warehouse Operations

Keeping a warehouse running smoothly clearly depends on transparent and accurate inventory – and wise and flexible resource management. To contribute effectively to the corporate bottom line, you must automate and optimize traditional warehouse operations – from goods receipt, through storage, to packing and shipping. You also need to make the most of human resources and equipment assets, with such techniques as interleaving tasks and implementing controls for space and equipment usage. SAP Extended Warehouse Management helps you meet these objectives.

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## WHY SAP

SAP has 44 years of experience creating and implementing enterprise software. Today, we have 320,000 clients in 190 countries and employ nearly 80,000 people across the globe.

Here's the SAP® Extended Warehouse Management application by the numbers:

- More than 1,300 clients
- More than 3,000 live warehouses in 40 countries
- 22 languages

SAP Extended Warehouse Management delivers business benefits that include deep visibility into inventory and powerful functionality for modeling warehouses and material flow processes. Your IT group enjoys robust functionality for flexible and scalable system and process configuration. And the application integrates into a unique enterprise-wide ecosystem of SAP software. SAP services organizations and a variety of excellent partner companies can lead you smoothly through implementation – and onward toward continuing innovation and reinvention.





## ORCHESTRATING GOODS MOVEMENT AND STORAGE PROCESSES

As [Figure 1](#) illustrates, with SAP Extended Warehouse Management you can orchestrate inbound and outbound processing and all storage and retrieval operations in between. The application helps you automate goods movement and manage inventory flexibly, addressing the key requirements of even complex processes and high-volume warehouses. By integrating warehouse management with the production management and delivery processing power of SAP enterprise software, you can keep planning and execution tightly meshed. You can consistently organize and monitor goods movement triggered by processes for procurement, shipping,

production supply and receipt, quality management, transportation management, and foreign trade compliance. You always have full visibility into inventory and logistics, with advanced support for special services like the creation of kits and modules and comprehensive analytics for strategic reporting and operational optimization.

SAP Extended Warehouse Management also includes functions for transportation cross-docking, import and export quality management, picking from goods receipt, and pushing deployment. And you can also integrate the application readily with the latest technologies for pick-by-voice, augmented reality, and radio-frequency identification (RFID).

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The application also offers an array of capabilities specific to complex warehouses and large freight-forwarding operations, including multilevel kitting, labor demand planning, advanced yard logistics, and environment, health, and safety management. SAP continues to respond to emerging industry demands in this arena, periodically introducing such modern features as production staging and labor planning through the SAP Smart Business cockpits.

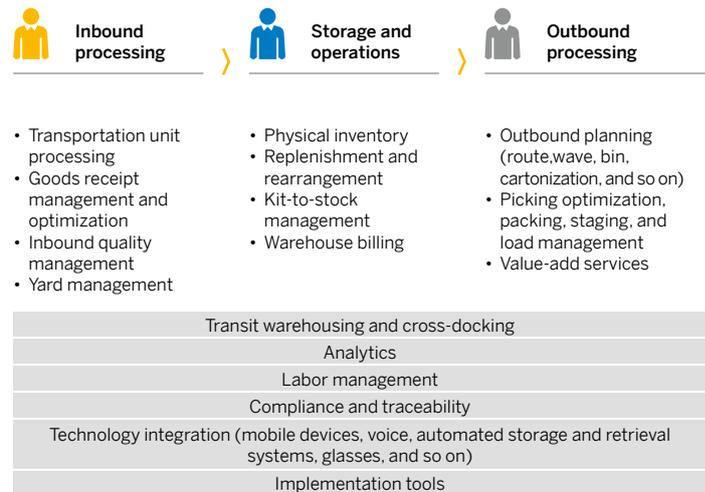


Figure 1: Overview of the SAP® Extended Warehouse Management Application





## MANAGING INBOUND PROCESSING

SAP Extended Warehouse Management makes short work of a wide array of core inbound processes:

- Data receiving and validation for advanced shipping notifications (ASNs)
- Goods receipt and receipt optimization
- Direct receipt from production
- Put away and put-away bin determination
- Internal routing
- Deconsolidation
- Returns management, also for e-commerce
- Transportation unit management

## CONTROLLING STORAGE AND INTERNAL PROCESSES

With SAP Extended Warehouse Management, you can also optimize all the activities that help manage goods in inventory and move them within the warehouse:

- Rearrangement
- Slotting
- Inventory counts
- Verification of record accuracy
- Replenishment
- Freight order management
- Scrapping
- Kitting to stock
- Warehouse billing



## FINE-TUNING OUTBOUND PROCESSES

Core processes for outbound delivery orchestration in SAP Extended Warehouse Management include:

- Order deployment
- Route determination
- Transportation unit management
- Wave management
- Picking bin determination
- Warehouse order creation
- Work assignment
- Picking, packing, and staging
- Loading and goods issue
- Kitting to order
- Direct outbound delivery
- Production supply
- Production staging and consumption
- Shipping

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We help you optimize the use of transportation resources, ensure multinational compliance, and respond to supply chain events in real time – all through a single-technology solution.



SAP Extended Warehouse Management also has the industry's first role-specific screen for shippers, illustrated in Figure 2. This innovative shipping cockpit helps users plan shipping processes, monitor supply chain execution, and make adjustments as needed. For production warehouses, the application offers screens specific to roles in receiving, staging, and consumption. In manufacturing and process industries, you can harness solid processes for production integration as well.

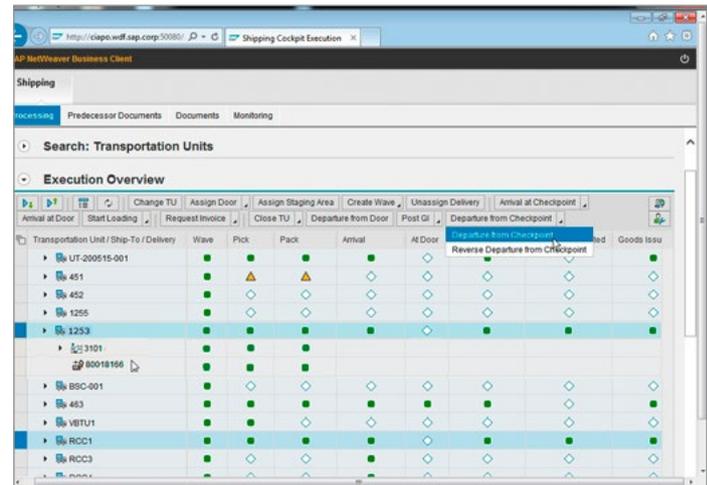


Figure 2: The Shipping Cockpit in SAP® Extended Warehouse Management



# Taking Advantage of Cross-Functional Features

Also integrated within SAP Extended Warehouse Management are additional cross-functional features related to material flow, opportunistic and merchandise-distribution cross-docking, management of stock-specific units of measure, and labor management. You can harness extended functionality for packaging specification; management of batches, serial numbers, and catch weights; and dock appointment scheduling. The application further includes rich cross-functional analytics and sophisticated processes for compliance and traceability. A comprehensive set of implementation tools helps you get up and running and fine-tune your processes. You can expect sizable reductions of both total cost of operations and total cost of inventory with the efficiencies you gain across the full range of warehousing functions.

## **AUTOMATING THE WAREHOUSE**

You can set up a full material flow system to facilitate automated storage and retrieval functions – for example, for high-rack storage, small parts warehousing, and shuttle warehousing – by simply connecting a programmable logic controller to SAP Extended Warehouse Management. The material flow system can help you control movement of handling units in automated systems; activate and deactivate conveyor segments; group conveyor segments; or activate and deactivate correspondence at various levels.

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The application also manages automated material-handling equipment for pallets, containers, and cartons; distribution vehicles; sorters; pick, pack, and pass technologies; and label applicators. And you have ready access to functionality for graphical warehouse layout, European article numbering (EAN), cartonization, task interleaving, execution constraint management, system-guided work, and claims and returns processing.

## MANAGING TRANSIT WAREHOUSING

The transit warehouse is an intermediate shipping location between an initial source of and a final destination for goods. SAP Extended Warehouse Management helps you manage the disposition of transit goods to store them optimally and make sure they are not subject to picking for other orders.

## INTEGRATING MOBILE DEVICES

A wealth of apps built with the attractive and intuitive interface of the SAP Fiori® user experience help stakeholders access role-related detail and complete assigned inbound- and outbound-processing tasks from smartphones. Mobile data terminals can further increase employee engagement and productivity in activities across the warehousing and logistics spectrum.

You can also integrate wearable devices such as headsets and smart glasses into SAP Extended Warehouse Management, along with equipment for picking goods or moving vehicles by voice.



## TAPPING IN TO THE POWER OF THE SAP HANA® PLATFORM

You can radically simplify your IT landscape through the use of the state-of-the-art SAP HANA® platform, which converges transactions and analytics in-memory on a single copy of data. You gain high flexibility and scalability in system and process configuration, and upgrades are

faster and easier than ever before. And you can eliminate the traditional middleware for data connectivity in material flow control, seamlessly integrating unstructured data and data from emerging technologies. You can model various follow-up activities using what-if scenarios that are lightning fast, since analytics can access data in real time. For exception handling, the application automatically initiates the resolution workflow.



To contribute effectively to the corporate bottom line, you must automate and optimize traditional warehouse operations – from goods receipt, through storage, to packing and shipping.



## USING THE SAP SMART BUSINESS COCKPIT FOR EXTENDED WAREHOUSE MANAGEMENT

Working with the in-memory computing power offered by SAP HANA, the SAP Smart Business cockpit shown in Figure 3 gives a warehouse shift supervisor an overview of key performance indicators to support monitoring and decision making. The cockpit keeps key information on workloads, task execution performance, and incoming and outgoing delivery schedules available at a glance.

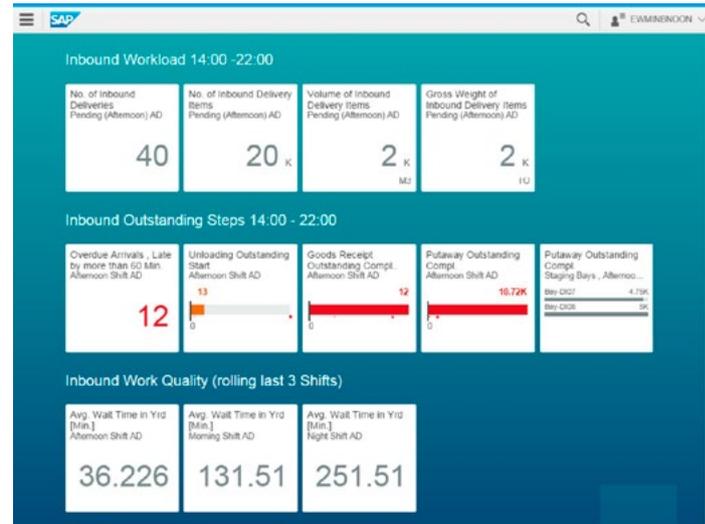
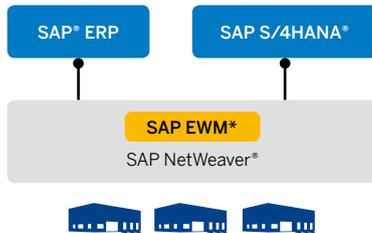


Figure 3: The SAP® Smart Business Cockpit for Extended Warehouse Management



## EXPLOITING THE END-TO-END VISION OF SAP S/4HANA®

There are two choices for connecting SAP Extended Warehouse Management to the power of SAP S/4HANA®. You can integrate SAP Extended Warehouse Management



\*SAP Extended Warehouse Management

Figure 4: Decentralized Warehouse Management

with SAP ERP and the SAP S/4HANA Enterprise Management solution using asynchronous data transfer by means of queued remote function calls, as illustrated in Figure 4. Or you can embed warehouse management functionality directly into SAP S/4HANA, as shown in Figure 5.

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\*Extended warehouse management

Figure 5: Embedded Warehouse Management



When you embed SAP Extended Warehouse Management in SAP S/4HANA, you can choose to deploy only basic warehouse management or advanced functionality as well. Basic warehouse management focuses on stock transparency and control and offers features for inventory management, inbound and outbound processing, movement of goods within the warehouse, physical inventory, and reporting. Advanced warehouse management helps you optimize all the processes of basic warehouse management and adds functionality for material flow control, yard management, labor management, value-added services, kitting, cross-docking, and warehouse billing. And the two levels serve as stepping stones to full supply chain convergence in SAP S/4HANA. See Figure 6.

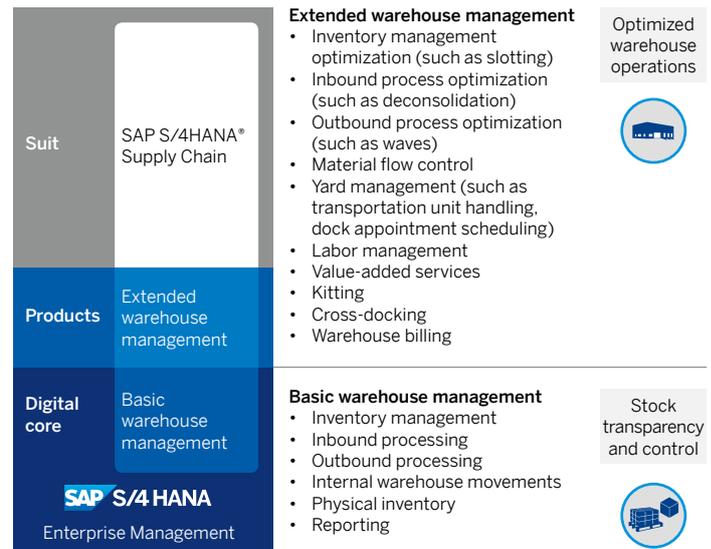


Figure 6: Levels of Warehouse Management in SAP S/4HANA



# Taking the Long View

## TALLYING THE BENEFITS OF SAP EXTENDED WAREHOUSE MANAGEMENT

With SAP Extended Warehouse Management, you put a global warehousing and logistics powerhouse to work for you, helping you orchestrate processes from planning and storage to picking, packing, and shipping, and boosting your readiness, throughput, and agility. The application is a key element in our platform strategy for supply chain execution, empowering you to operate, monitor, and improve processes continuously across the material flow. You benefit from seamless integration with procurement processes, shipping processes, production supply and receipt, quality management, transport management, and foreign trade processing.

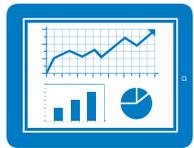
SAP Extended Warehouse Management brings you a wealth of significant business benefits. You can count on maximum flexibility for modeling warehouse layout and processing, along with high visibility at all times into stocks and operations. You can optimize storage planning, for example, through automatic creation and release of pick waves. You can tighten process execution as well – for example, through sophisticated warehouse order management and work package creation. And you can design and repeat such value-added services as creating kits and modules and directly controlling automated warehouses.

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You also have comprehensive analysis and monitoring functions at your fingertips, including strategic reporting, operational reporting, and warehouse monitoring – without the need for IT intervention. Your IT group stays happy because upgrades are radically simpler, extensibility options abound, and reusable templates help staff standardize and harmonize your software landscape.

You can reduce logistics costs through tight integration with supporting sales order and financial processes. And you can meet the challenges of multinational regulatory compliance with best-of-breed functionality that accommodates international trade processing and sustainability requirements.



SAP Extended Warehouse Management delivers deep visibility into inventory, along with robust functionality for modeling warehouses and material flow processes – and configuring processes and systems.

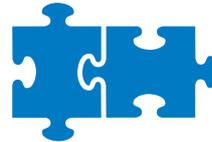




## LEARN MORE

For more on orchestrating logistics as part of a platform strategy for supply chain execution, see your SAP representative or visit us [online](#).

By integrating warehouse management with the production management and delivery processing power of SAP enterprise software, you can keep planning and execution tightly meshed.



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