

SAP Solution in Detail
mySAP SCM



SUPPLY NETWORK COLLABORATION: ENABLED BY SAP® INVENTORY COLLABORATION HUB

© Copyright 2005 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, and Informix are trademarks or registered trademarks of IBM Corporation in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies (“SAP Group”) for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

CONTENTS

Realize the Vision of Adaptive Supply Chain Networks with SAP Inventory	
Collaboration Hub	4
Extend Supply Networks to Your Customers and Suppliers	4
Enable Supply Network Collaboration with SAP Inventory Collaboration Hub	5
Supplier Collaboration	6
How Manufacturers and Suppliers Can Build Up Innovative Supplier Collaboration	
Business Scenarios	6
– Supplier-Managed Inventory	7
– Release Processing	8
– Purchase Order Processing	8
– Dynamic Replenishment	9
Customer Collaboration	10
Manage Replenishment at Your Customers with Responsive Replenishment	10
– Benefits of Responsive Replenishment Delivered by SAP Inventory Collaboration Hub	12
The Future of Adaptive Supply Chain Networks	13
For More Information	13

REALIZE THE VISION OF ADAPTIVE SUPPLY CHAIN NETWORKS WITH SAP® INVENTORY COLLABORATION HUB

SAP® Inventory Collaboration Hub (SAP ICH) is an innovative, Web-based component that supports SAP's global vision for adaptive supply chain networks. The component, based on the mySAP™ Supply Chain Management (mySAP SCM) solution, supports a range of cutting-edge business scenarios in supplier and customer collaboration environments. SAP ICH provides a powerful and comprehensive means of enhancing cooperation, efficiency, and knowledge sharing throughout the supply chain. It delivers a consistent view of critical supply information to manufacturers, suppliers, and customers as well as assuring optimized control and efficiency. While SAP ICH integrates seamlessly with the rest of the SAP ecosystem, customers can incorporate the component into any existing enterprise resource planning (ERP) or supply chain environment thanks to its tight integration with the SAP NetWeaver™ platform.

Extend Supply Networks to Your Customers and Suppliers

The relationship between suppliers and customers is challenging within almost all supply networks. Customers push for business advantages from suppliers to reduce costs and improve replenishment lead time. Suppliers mitigate exposure by managing their own suppliers closely. As a result, the relationships between stakeholders can be confrontational rather than cooperative. This is exacerbated by limited visibility of end-customer requirements, increased variability, and delays as demand information works its way through the supply network.

Beyond cost and efficiency, there is much value in relationships based on closer stakeholder integration. In an environment that promotes collaboration rather than confrontation, customers and suppliers can benefit from increased cooperation, openness, and flexibility. This offers many practical advantages, including reduced inventory, shortened lead times, and minimized risk of stock outages. Ultimately, the promotion

of tighter collaboration improves end-customer service by ensuring that each stakeholder in the supply chain can meet its service agreements.

One of the obstacles to achieving these benefits is the heterogeneous IT environments commonplace in businesses, which can add to cost and time pressures. Few organizations share the same IT architectures, platforms, and applications as their business partners, which can generate additional layers of complexity as organizations seek to establish broader, value-based collaboration. Smaller organizations may not have the necessary IT infrastructure or support, so a solution that eliminates telephone calls and faxes without overburdening the organization is required.

Building on Success

With clients like MAHLE GmbH, Leopold Kostal GmbH & Co. KG, and SupplyOn AG, SAP is considered a center of automotive supply chain excellence. It is leading the way in the industrial machinery and components sector with its work for Festo AG & Co. KG. SAP is also at the forefront of consumer products innovation with its strategic relationship with The Procter & Gamble Company. Not only are these companies considered industry and technology leaders, they also represent the growing number of enterprises that are using the SAP® Inventory Collaboration Hub component to support their vision of an adaptive supply chain network.

With the most recent version of mySAP™ Supply Chain Management, SAP is building on its success by extending its wide-ranging expertise in supply chain collaboration into additional industries, such as pharmaceuticals, chemicals, retail, and high tech.

Enable Supply Network Collaboration with SAP Inventory Collaboration Hub

To meet the challenges, traditional linear supply chains and their sequential processes must be transformed into adaptive supply chain networks. These networks allow all participants (customers, suppliers, logistics providers, and so on) to sense changes in demand and supply conditions as they occur and share the critical knowledge required to respond intelligently. Supply network collaboration is one of the core capabilities of adaptive supply chain networks. Through supply network collaboration, buyers and sellers can simultaneously eliminate inefficiencies in their supply chains by synchronizing the information flow with suppliers and customers. Network participants can reach this goal in the following ways:

- Capturing supply and demand opportunities simultaneously
- Shifting supply chains from a push focus to a consumer pull focus
- Enhancing demand and supply visibility through real-time information sharing
- Sharing the supply chain management burden with business partners

- Planning and executing supply chain activities jointly as early as possible
- Reacting simultaneously and immediately to supply chain disruptions
- Seizing the benefits of data integration

Supply chain collaboration processes can take place upstream between suppliers and a manufacturer, and downstream between a manufacturer and its customers. According to the direction of collaboration, SAP distinguishes between supplier collaboration scenarios and customer collaboration scenarios. The term “supplier collaboration” is a collective name for collaborative business processes where one of the companies is the manufacturer, or customer, in a typical buy-sell relationship. Hence, the collaborative processes and capabilities offered here take place between the manufacturer and its suppliers. On the other hand, the term “customer collaboration” refers to all business processes where the manufacturer is in the selling position, and a distributor, wholesaler, or retailer is its customer.

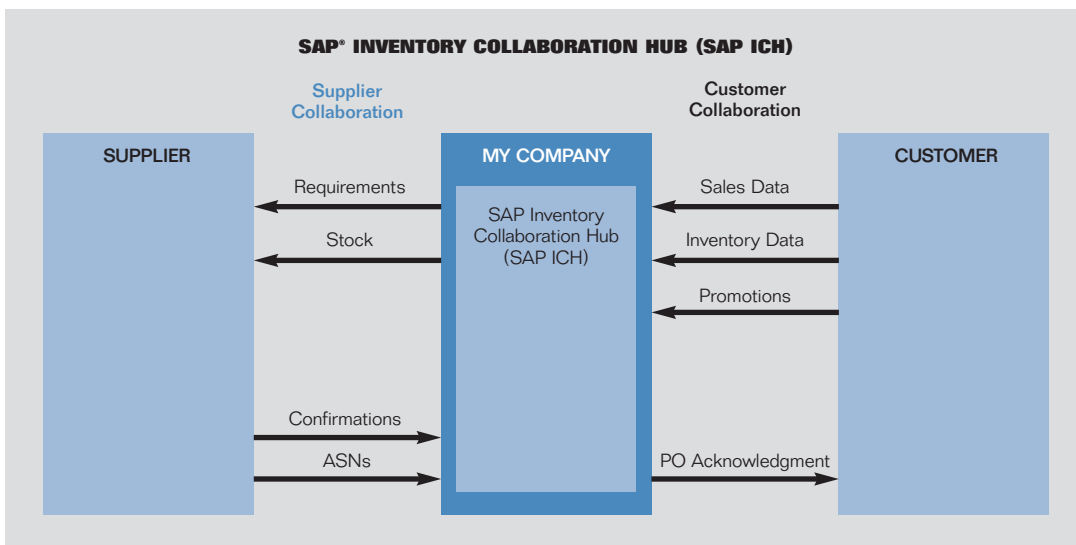


Figure 1

The supply chain management processes of supply network collaboration are executed on the SAP Inventory Collaboration Hub (SAP ICH) component, which integrates suppliers and customers regardless of whether they use SAP or non-SAP systems. On the supplier collaboration side, SAP ICH includes upstream business scenarios like supplier-managed inventory, release processing, and purchase order processing. On the customer collaboration side, downstream business scenarios like responsive replenishment are managed by SAP ICH.

Using the mySAP Business Suite family of business solutions, the mySAP Supply Chain Management (mySAP SCM) solution offers powerful abilities to integrate SAP ICH with the mySAP Product Lifecycle Management solution and the mySAP Supplier Relationship Management solution. Such integration enables value-added capabilities, such as more efficient design, strategic sourcing, and service procurement, as well as the ability to manage bid invitations and invoicing.

How Does SAP Differentiate SMI and VMI?

The SAP® Inventory Collaboration Hub component supports both supplier-managed inventory (SMI) and vendor-managed inventory (VMI) – two common practices for inventory collaboration. SAP differentiates these two practices in the following way: SMI is a scenario for inventory collaboration between your company and various suppliers, whereas VMI, in the form of responsive replenishment, is a customer collaboration scenario.

SUPPLIER COLLABORATION

How Manufacturers and Suppliers Can Build Up Innovative Supplier Collaboration Business Scenarios

In supplier collaboration scenarios, customers can cooperate with suppliers of all sizes. This cooperation helps reduce transactional costs because it replaces fax and e-mail as primary modes of communication. Even smaller suppliers without a specialized electronic data interchange (EDI) infrastructure can be integrated into the supply network by offering them Web access to the SAP Inventory Collaboration Hub installed in the customer's system landscape. Suppliers only need Internet access and a Web browser.

On the customer's side, SAP ICH can be deployed as a stand-alone application or integrated with an SAP or non-SAP back-end solution. The component can be operated as a marketplace application, serving as a joint-use platform for all business partners involved in this process. These could be customers and each of their individual plants, other legal entities, and any number of first, second, or *n*-tier suppliers.

SAP ICH enables exception-based processes that let suppliers see the status of materials at customers' plants, receive automatic alerts when inventory levels get low, and respond quickly over the Web. As of the most recent release of mySAP SCM, SAP ICH supports industry-standard replenishment processes, such as supplier-managed inventory that is based on gross demand and minimum or maximum levels. It also includes other net-demand processes, such as release processing and purchase order processing.

Supplier-Managed Inventory

The main characteristic of supplier-managed inventory is that a company hands the replenishment task to an external business partner, usually the supplier of a product required for production. In this way, material stock replenishment at a company's site can be simplified. The customer periodically transmits current inventory data, gross demands, and goods receipt references from its back-end systems to SAP ICH. The supplier can track the information shown on an inventory monitor on a daily or weekly basis. The supplier that is responsible for replenishment can calculate the replenishment quantities based on inventories, demands, and minimum or maximum levels. Additionally, the supplier can maintain advanced shipping notifications (ASNs) to inform customers at an early opportunity about planned deliveries (see Figure 2).

Key Benefits of Supplier-Managed Inventory

- Shifts net planning responsibility from customer to supplier
- Offers suppliers the chance to optimize production according to given minimum or maximum levels
- Enables inventory and requirements visibility
- Ensures quick and accurate replenishment
- Improves data quality and accuracy
- Supports real-time supplier commitments to requirements
- Offers shipping and packaging that is traceable and organized
- Provides ease of administration and reduces process errors
- Supports alerting for main process steps

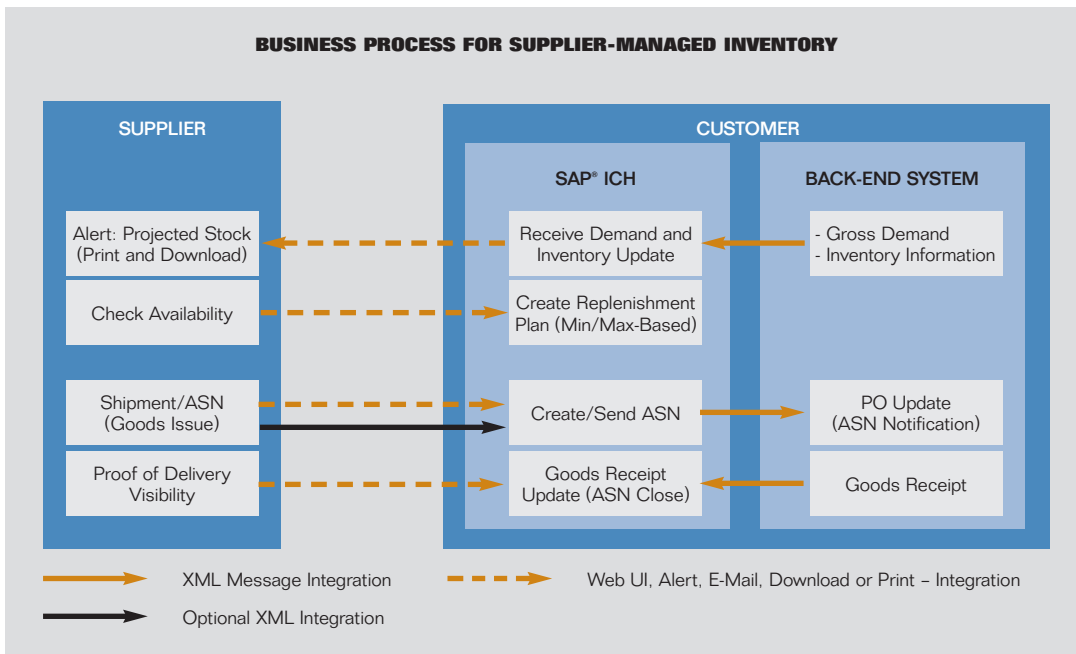


Figure 2

The Power of Advanced Shipping Notifications

Advanced shipping notifications (ASNs) can be used in SMI, purchase order processing, and release processing. ASNs enable suppliers to inform their customers about packaging and shipments they have just executed. Typically, ASNs are created by the supplier using a due list that shows all open deliveries. Additionally, ASN functionality allows suppliers to package material either manually or automatically in handling units and to print labels with bar codes for handling units according to specific standards, such as standards for the automotive industry.

By monitoring ASNs, the customer can see what deliveries are expected to arrive in the near future. On the customer side, ASN messages are sent from SAP® ICH to the back-end system and can be used there to perform a goods receipt booking.

Release Processing

Release processing in the SAP ICH component allows the communication of customer scheduling agreement releases to suppliers. Scheduling agreement releases are maintained in the customer's back-end system and displayed on the SAP ICH. Releases are net customer requirements over time, usually with both a firm-order horizon and a forecast horizon. All previous release updates are displayed on SAP ICH, with the newest release assumed to be the active one. Schedule lines have a start and an end date to represent time buckets for forecast schedule lines. In addition to the dates, schedule lines have a time that can be expressed down to seconds of granularity.

Through SAP ICH, the supplier is informed about releases and can acknowledge a release by setting a flag. The SAP ICH component issues an alert if there is no acknowledgment. A release comparison screen compares any two release updates and calculates the differences in dates and quantities. Tolerance limits are also definable.

Key Benefits of Release Processing

- Delivers real-time communication of requirements using XML and a Web-based user interface
- Provides accurate requirements data with dates and quantities
- Supports real-time supplier commitments to requirements
- Offers processes for shipping and packaging that are traceable and organized
- Provides a system that is easy to administer, leading to a reduction in errors
- Delivers alert management for the main steps in the process

Purchase Order Processing

Purchase orders (POs) are the most common procurement execution documents. SAP ICH provides a platform for managing the purchase order process as collaboration between customers and their suppliers. In that process, purchase orders are created in a customer's back-end system and displayed through a Web interface on SAP ICH. The supplier can log onto SAP ICH, select its POs, and have visibility into the dates and quantities required by customers. The supplier can then respond to the PO by entering order confirmation information (either full or partial quantities) and transmitting it back to a customer's ERP system for automatic update.

Key Benefits of Purchase Order Processing

- Delivers real-time communication of requirements using XML and a Web-based user interface
- Enables short-term and midterm planning for smaller and midsize suppliers without an EDI connection
- Provides accurate requirements data with dates and quantities
- Taps into “traditional” purchase order processing
- “Nets” material requirements planning (MRP) requirements and passes them to SAP ICH for supplier benefit
- Offers real-time supplier commitments to requirements
- Supports ease of administration and reduces process errors

Dynamic Replenishment

Dynamic replenishment is a planning comparison process within SAP ICH. It delivers a “big picture” that covers everything from midterm and long-term sales forecasts to short-term supplier production plans. In SAP ICH, two comparisons are possible with dynamic replenishment. In the first one, suppliers can compare customer forecast or planning data with their own production plan to better match supply with customer demand. In the second one, dynamic replenishment enables the supplier to compare the customer’s firm commitments or orders with the equivalent supplier’s orders. The demand monitor, which is accessible by the customer and the supplier, can show the results of both comparisons. By using dynamic replenishment in SAP ICH, the visibility of the normal MRP-driven execution processes, such as purchase order processing or release processing, is enhanced.

Key Benefits of Dynamic Replenishment

- Improves capacity planning accuracy for supplier and customer
- Delivers the ability to adjust to shifts in customer requirements or supplier shortages
- Increases order fill rates
- Reduces raw materials and finished goods inventory
- Minimizes supply risk and reduces downtime
- Reduces expediting costs

CUSTOMER COLLABORATION

Manage Replenishment at Your Customers with Responsive Replenishment

Responsive replenishment is the first customer collaboration scenario to be supported by the SAP Inventory Collaboration Hub. This innovative component addresses the business requirements of consumer product companies and other industries that operate downstream distribution structures that extend to retailers. Responsive replenishment – one of the cornerstones of SAP’s strategy for delivering adaptive supply chain networks – is based on the following principles:

- Shift from manufacturer “push” to a consumer “pull” supply chain
- Combine forecast and demand-driven supply chain strategies
- Offer techniques for intelligent short-term demand management for baseline and promotions as well as automating the response to demand changes
- Help manufacturing companies fulfill store-level-based replenishment requirements such as cross-docking

Responsive replenishment offers new, sophisticated functionality and methods that leverage the well-known industry practice of VMI and continuous replenishment programs (CRPs). With responsive replenishment, as with VMI and CRP, the vendor manages replenishment on the basis of demand and inventory information sent by customers to vendors, rather than on the basis of purchase orders created by customers. However, in addition to classical VMI or CRP, responsive replenishment based on SAP ICH has the following innovative characteristics:

▪ Demand driven

Unlike traditional, reorder-point-driven VMI, responsive replenishment is driven primarily by actual demand information sent by customers. Importing point-of-sale (POS) data or electronic-product-code (EPC) data significantly enhances overall visibility throughout the supply chain.

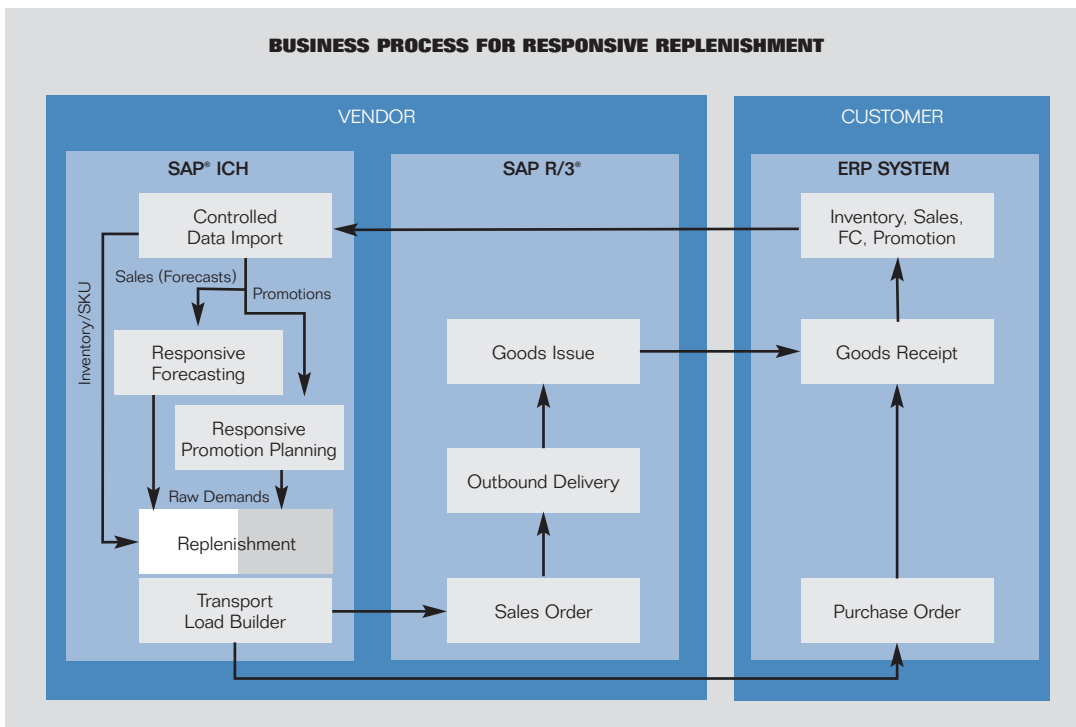


Figure 3

- **Promotion centered**

Responsive replenishment supports a new way for manufacturers and retailers to manage and execute promotions jointly. Promotions can be planned and executed separately from day-to-day business and can take into account last-minute changes in promotion activities from retailers.

- **Out-of-stock driven**

Traditional VMI programs focus on withdrawal and forecasts at the distribution-center level without consideration of stock outs at the distribution center or store level. With responsive replenishment, manufacturers can receive or calculate out-of-stock information automatically and then use this information to influence sales forecasting and promotion planning.

- **Data-quality oriented**

Forecasts, POS data, inventory data, and other information can be shared easily over the Web or exchanged automatically using the SAP NetWeaver Exchange Infrastructure component.

- **Exception driven**

A user-friendly, Web-based, task-oriented interface delivers a complete view of all current exceptions along with the corresponding data needed to resolve them.

- **Automated**

The component alerts the planner of any missing data or exception situation. Once the data is free of errors, forecasting, replenishment, and fulfillment planning steps can be executed automatically. User intervention is possible at any point, but the system can respond to disruptions in demand without intervention by a user.

- **Order-optimization focused**

Intelligent replenishment and sophisticated load building optimize the loading of trucks and minimize the number of shipments. Sourcing decisions for promotions and complex transportation situations, such as multistop and cross-docking, are also considered.

The following execution steps must be followed if organizations are to realize the benefits of responsive replenishment with SAP ICH:

1. A data import controller validates and adjusts – automatically or manually, as appropriate – all incoming messages that are transferred from the customer to the vendor. The planner is notified automatically about missing data or incorrect data.
2. The cleansed data is used in responsive forecasting, which is an unconstrained forecast of future demand based on multiple demand streams that are developed for baseline demands.
3. Promotional uplifts are then planned separately. Responsive promotion planning determines promotional uplift as accurately as possible, monitoring – and responding, if necessary – to changes in promotional demand during the replenishment period with the goal of preventing stock outs.
4. Replenishment planning establishes the optimal short-term plan that is required to fulfill the estimated demand in forecasting. This plan covers the quantities that must be transported from the vendor's distribution center (or production plant) to the customer's distribution center (or store) on an established basis, such as daily or hourly.
5. A transport load builder consolidates replenishment orders and creates feasible transport units on the basis of predefined business rules.
6. Order proposals are created and sent out to internal and customer ERP systems.

From a system integration perspective, responsive replenishment is based on mySAP SCM and SAP ICH. SAP ICH is integrated directly with internal planning processes in the SAP Advanced Planning & Optimization component or SAP R/3® software (available now in the mySAP ERP solution). The SAP ICH responsive replenishment capability is available with the most recent release of mySAP SCM.

Cross-company business processes like responsive replenishment need efficient data exchange mechanisms and process synchronization capabilities among trading partners. For this reason, responsive replenishment is supported by the SAP NetWeaver platform, which delivers powerful capabilities to integrate with customers' heterogeneous IT environments, such as retail extranets. In supporting the responsive replenishment scenario, SAP ICH provides a highly sophisticated XML-based infrastructure in which commonly used messages for demands, forecasts, promotions, and orders are predefined.

Benefits of Responsive Replenishment Delivered by SAP Inventory Collaboration Hub

Competitive advantages

- Higher responsiveness to short-term demand fluctuation in the baseline and promotion business process
- Increased sales and fewer lost sales through prevention of stock outs, especially during promotions
- Optimized use of transportation
- Increased inventory turns and order fill rates
- Supplier-optimized capacities with responsibility for customer replenishment planning

Operational benefits

- Improved overall processing speed
- Better distribution planning schedules
- Reduced errors for data entry and in customer orders due to real-time and automated communication
- Improved cooperation between supplier and customer
- Improved in-stock rate in retail stores
- Reduced lead time

THE FUTURE OF ADAPTIVE SUPPLY CHAIN NETWORKS

SAP is committed to the ongoing development and extension of SAP Inventory Collaboration Hub to support new business processes in both supplier and customer collaboration. Current developments within SAP and the supply network are focused on creating an infrastructure that accelerates the integration of enterprise applications – both SAP and non-SAP.

FOR MORE INFORMATION

Contact SAP to discover how you can realize the power of collaboration across your extended supply networks.

To learn more about supplier and customer collaboration with mySAP SCM and to view mySAP SCM solution maps, please visit www.sap.com/scm.

To learn more about supply network collaboration with mySAP Business Suite and to view solution maps of mySAP Business Suite collaborative solutions, please visit www.sap.com/solutions.

www.sap.com/contactsap