

## SAP Solution Brief

SAP Supply Chain Management

SAP Enterprise Inventory Optimization  
by SmartOps

# OPTIMIZED INVENTORY MANAGEMENT FOR CHEMICALS

## THE RIGHT FORMULA FOR CHEMICALS SUPPLY CHAIN OPTIMIZATION

The SAP® Enterprise Inventory Optimization application by SmartOps is improving customer service and lowering inventory levels and costs for numerous global chemicals manufacturers. It works with deployed SAP enterprise software to help achieve reliable service levels at the lowest risk to your business.

In the chemicals manufacturing business, complex supply chains are par for the course. Take the typical supply chain for a single finished goods item, for example. Most likely, that supply chain involves dozens of linkages across numerous segments, creating a complex web of critical interdependencies that makes inventory planning incredibly challenging.

As a chemicals manufacturer, you face all kinds of supply chain challenges: increasing global supply with in-transit inventory, multiple toll manufacturing locations operating outside your facilities, and demand uncertainty that must be factored in to your inventory-planning processes. You also have to provide multiple packaging options and intermediates to sell directly to your customers at various stages of the production cycle.

It's not enough simply to manage these challenges. If you want to remain competitive, you need to make sure that your global supply chain operation maintains the highest levels of customer service possible.

### Control Excessive Inventory and Expediting Costs

The traditional approach to maintaining high levels of customer service and mitigating the risks of supply uncertainty is to carry excessive inventory throughout your supply chain on an ongoing basis. And because you have inherent uncertainties in demand and little visibility into the multiple supply chains that feed your product lines, you also face excessive expediting costs to ensure that products get to customers when and where they are needed.

The fact is that without a comprehensive view of your entire supply chain, your inventory planners cannot significantly optimize inventory targets and levels without exposing your business to undue risk. Your planners must instead rely on manual inventory-planning and positioning processes, like using spreadsheets and crisis management, to ensure continuous product availability.

### Reduce Working Capital and Improve Customer Service Levels

If this sounds familiar, take a look at the SAP® Enterprise Inventory Optimization application by SmartOps. The software can be leveraged for finished goods, intermediates, and raw materials, and it has a proven record of delivering tangible savings to many chemicals companies that use SAP software. That's because it works with the SAP Business Suite software you're already using to help you reliably determine optimal demand-driven, time-phased inventory targets for every item at every location throughout your supply chain. By leveraging the integration potential that SAP software can deliver, you can safely and sustainably lower your inventory requirements and improve product delivery to your customers.

### Built to Optimize Your Supply Chain Complexity

As an enterprise-level inventory optimization application that can manage true multistage supply chains, SAP Enterprise Inventory Optimization enables you to address the challenges unique to chemicals manufacturing. It provides the real-world, time-varying details about your



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most complex supply chains. Its stochastic process engine rapidly calculates millions of time-varying inventory targets while also accounting for the changes that occur across multiple stages for bills of materials, different periods between reviews (PBRs), and lot sizes. The software also takes into account lead-time uncertainty, time-varying demand, and time-varying manufacturing capacities.

By enabling a complete, comprehensive view of your supply chain, the application helps your planners achieve continuous insight into the drivers of inventory. It can help you efficiently and precisely adapt to fluctuations such as changing transportation and storage constraints, new product lines, or changes within supply chain variables. You can analyze what-if scenarios to identify the costs and potential benefits of various projects and options – helping you make your global supply chain far more efficient.

Using integration with the SAP NetWeaver® Business Warehouse component and the SAP ERP and SAP Supply Chain Management applications, you can automatically synchronize supply chain operational targets for most of your items to significantly reduce your management burden and free up critical staff.

### **Link Inventory to Service-Level and Product Requirements**

Given the tremendous expense involved in manufacturing capacity, keeping excess inventory has been the traditional buffer against supply chain uncertainties and periods of high demand. But simply adding additional inventory into the supply

chain does not always guarantee that the right products are available whenever and wherever they are needed. In order to determine and execute the optimum target inventory positions for your products, you need highly detailed, real-time information about your multistage global supply chain.

SAP Enterprise Inventory Optimization helps you calculate the “what, why, where, and when” of inventory placement. The software considers all the reasons inventory is needed in the supply chain – safety stock, cycle stock, prebuild stock, and in-transit inventories – to help you determine optimal inventory targets as part of your normal materials requirement planning (MRP) run. It analyzes and optimizes the interdependent relationships among inventories, service levels, capacity, and costs across all stocking locations and stages, from suppliers to manufacturing to customers.

The software incorporates all of your product supply chains and relationships to coordinate inventory plans across all nodes, from your primary manufacturing, packaging, and warehousing locations through all market distribution stages. These comprehensive inventory plans are constantly updated to incorporate any changes in conditions across your operation.

### **Analytics That Help You Manage Uncertainty**

Uncertainties, disruptions, and variances in forecasts, lead times, and production undermine planners’ confidence in making inventory decisions for any



particular stocking location in the supply chain at any given time. To make informed inventory decisions, planners need constant visibility of items as they move through the supply chain. Using advanced supply-and-demand analytics and a proven, scalable, stochastic optimization model, SAP Enterprise Inventory Optimization helps manage data uncertainties by offering visibility – at the item, location, and time-period level of detail – into what causes inventory to be held. The solution’s algorithms use large-scale and complex levels of data to establish target stock levels and achieve other key objectives in carrying inventory. The result is the ability to make dynamic inventory-deployment decisions based on a clear understanding of all items, all locations, and all stages in multitier manufacturing and distribution supply chains.

### **Reduce the Working Capital Required to Run Your Supply Chain**

Now your planners can execute inventory decisions that reduce the working capital tied up in inventory while still maintaining the right levels to meet customer expectations. Using the software, they

can collaborate with everyone involved in your supply chain, from sales and production to customer service, to continuously fine-tune your supply network and respond to last-minute changes in demand. By receiving and responding to demand signals based on real-time supply chain data from your customers, production sites, and suppliers, your planners can set and manage targets such as safety stocks more frequently and at a granular level. The result: leaner processes that can lower the amount of working capital required to run your supply chain.

## Meet Today's Challenges

SAP Enterprise Inventory Optimization enables you to model the real-world constraints, uncertainties, and complexity of today's chemicals industry supply chains. By working with existing applications and components in your SAP software environment, the solution helps you:

- **Lower inventory levels for every item** including raw materials and components, intermediates, and finished goods for every location and stage and for all relevant planning periods. SAP customers have reported aggregate reduction in inventory averaging 20% to 30%.
- **Reduce operational costs** through continuous insight and mitigation of inventory cost drivers, reduction in premium freight and other expediting costs, as well as improved cost analysis of future supply chain improvement projects. In fact, according to our customers, SAP Enterprise Inventory Optimization has helped them realize a 20% to 40% reduction in total supply chain inventory costs.

- **Improve customer service** by calibrating for the inherent variability in supplier lead times, forecasts, and production capacities. Our customers have experienced increases in order fill rates and on-time deliveries averaging 5% to 10%.
- **Increase planner productivity** through systematic, dynamic inventory targeting for a majority of items. Management by exception allows planners to focus on the most strategic products.
- **Realize rapid return on investment** through integration with your current SAP software environment. You can lower your total cost of ownership and extract added value from your software investment.

## Find Out More

To learn more about how SAP Enterprise Inventory Optimization can help you reduce costs while improving customer service levels through better inventory management, contact your SAP representative or visit us online at

[www.sap.com/solutions/solutionextensions](http://www.sap.com/solutions/solutionextensions).

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## Summary

The SAP® Enterprise Inventory Optimization application by SmartOps has optimized inventory targets and lowered inventory levels and costs for numerous global chemicals manufacturers. It works with your existing SAP software to achieve reliable service levels at the lowest risk and cost to your business.

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## Business Challenges

- Reduce excess inventory levels
- Lower working-capital requirements for supply chain operations
- Improve customer service levels
- Achieve accurate inventory targeting that matches demand and changing supply chain requirements

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## Key Features

- **Inventory targeting** – Determines optimal demand-driven, time-phased inventory targets for every item and every location throughout your supply chain
- **Enterprise integration** – Integrates with the SAP NetWeaver® Business Warehouse component and the SAP ERP and SAP Supply Chain Management applications
- **Streamline supply chain relationships** – Analyzes and optimizes the interdependent relationships among inventories, service levels, capacity, and costs across all stocking locations and stages from suppliers to manufacturing to customers
- **Complete analytics** – Leverages advanced supply-and-demand analytics and a proven, scalable, stochastic optimization model to anticipate virtually any supply chain eventuality and manage uncertainty

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## Business Benefits

- **Reduce aggregate inventory** by lowering inventory levels for every item, including raw materials and components, intermediates, and finished goods
- **Reduce supply chain costs** using continuous inventory insight and mitigation of cost drivers
- **Increase order fill rates and on-time deliveries** through enhanced supply chain responsiveness
- **Increase planner productivity** using systematic, dynamic inventory targeting and management by exception
- **Realize rapid return on investment** thanks to integration with your current SAP software environment that extracts added value from your software investment

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## For More Information

Call your SAP representative, or visit us online at [www.sap.com/solutions/solutionextensions](http://www.sap.com/solutions/solutionextensions).

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