



Reducing WIP Inventory at Swagelok

With the goal of modernizing its supply chain in the wake of a leadership change, Swagelok began looking for a solutions provider to help the manufacturer reduce inventory while maintaining its high levels of service. Choosing i2 to help it overhaul its forecasting and replenishment processes, Swagelok significantly reduced inventory and personnel costs while elevating service levels.

For manufacturers, there may be no more important competitive factor than product quality. By focusing on quality, Swagelok, a manufacturing corporation that delivers thousands of types of fluid system components to a wide range of global industries, has built a strong brand for more than 50 years.

But through the years, Swagelok has defined—and measured—quality in new and different ways. While the company’s founder had always operated under an inventory-intensive strategy, today’s competitive environment dictates a leaner inventory model.

“As part of a strategic planning effort in the late 1990s, our leadership examined all of our major business processes,” said Greg Houdek, Swagelok’s Director of Supply Chain Planning. “We had an initiative at that time called ‘Supply Chain of the Future,’ which focused on how we were selling, producing, and fulfilling our orders. For the first 50 years, our business model was based on availability through intensive inventory. Most of our systems were centered around that inventory, not so much on information.”

Always interested in continuous improvement, Swagelok sought to improve forecasting and distribution planning using collaborative forecasting and replenishment while maintaining its superior customer service levels with less inventory. To optimize inventory levels, Swagelok executives recognized that they needed to synchronize their factories with their supply base. At the same time, Swagelok also looked to drive personnel efficiency through automation.



The Swagelok logo, consisting of the word 'Swagelok' in white script on a blue rectangular background.

Challenges

- Achieve collaborative forecasting and replenishment
- Maintain customer service levels with less inventory
- Drive personnel efficiency through automation

Solutions

- Conduct a strategic opportunity assessment
- Centralize decision-making in factories
- Create automated fulfillment process for distributors

Results

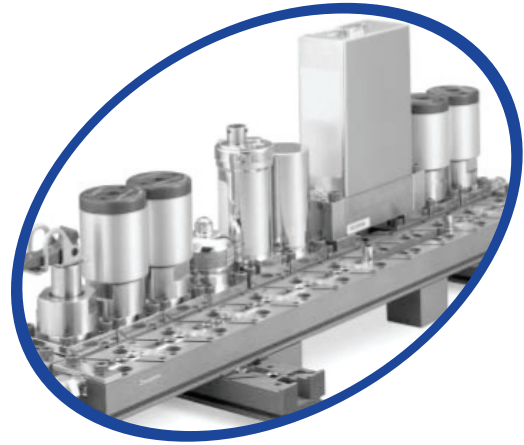
- Reduced assembly WIP by 50%
- Increased service levels from 95–96% to 98–99%
- Reduced personnel costs

Company Description

Swagelok Company, headquartered in Solon, Ohio, delivers thousands of types of fluid system components on six continents. With annual sales of approximately \$1 billion, Swagelok manufactures products for industrial processes ranging from research, instrumentation, pharmaceutical, dairy, and food and beverage production to oil and gas, power generation, petrochemical processing, and semiconductor manufacturing. About 3,000 Swagelok Company associates develop and manufacture fluid systems components and connection technologies at more than 25 research, manufacturing, and product distribution facilities in North America, Europe, and Asia.

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***—Greg Houdek
Director of Supply Chain Planning
Swagelok***



Why i2?

Because Swagelok wanted to create automated replenishment for its distributors, i2 came highly recommended.

Swagelok executives had concerns about their legacy systems, and found that i2 met their needs in that area as well.

“We were questioning whether to update to a new ERP system or to put something on top of our old one,” Houdek said. “We chose to put i2 on top of our old system after they presented us with a Strategic Opportunity Assessment.”

A Strategic Opportunity Assessment (SOA) is a bottom-up diagnostic scan conducted by i2 consultants to identify how companies can improve business performance across the board by defining a results-based plan to deliver significant improvements in a short period.

i2’s Contribution

The SOA that i2 conducted for Swagelok served as the blueprint for the company’s implementation of i2 solutions.

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Swagelok is using i2 Factory Planner™ to create a constrained and material-feasible plan. i2 Supply Chain Planner™ helps Swagelok to manage stock distribution, and i2 Inventory Planner™ enables the manufacturer to set optimal finished goods inventory levels. Swagelok employs i2 Demand Planner™ for its make-to-stock forecasting, and i2 Demand Fulfillment™ to create quotes for its distributors and to put delivery dates on customer orders.

When Swagelok began its i2 implementation, the manufacturer had 26 facilities, with one or two schedulers in each building and a plant manager running each facility. That meant that more than 50 decision-makers were operating in their own silos since none could see the full demand picture.

“They couldn’t see where all of the requirements were coming from,” Houdek said. “Pegging was a very time consuming and tedious task. We did infinite capacity planning, so our main objective with the implementation of i2 solutions was to clarify the requirements and centralize the decision-making, run them through our priority models, and have our material capacity planners pass the plan back to the plants. Today, our production managers continue to run their facilities, but their responsibilities focus on how to execute the plan as productively as possible.

As a result of implementing our i2 solution, we were able to make better production planning decisions with less scheduling and re-scheduling transactions. That was a big benefit.”

Swagelok’s Results

Almost immediately after Swagelok implemented Supply Chain Planner, the manufacturer’s work-in-process (WIP) inventories dropped.

“We eliminated about 50 percent of our assembly WIP because we eliminated the lot size,” Houdek said. “We found that the new algorithms in Supply Chain Planner did not need the lot sizes we had been using in assembly. We decided to let Supply Chain Planner determine variable requirements, which allowed for the assembly WIP reduction.”

Through its implementation of i2 solutions, Swagelok has replaced inventory with information, and has seen a significant change in the data that it can now share with its distributors.

Prior to the implementation, Swagelok had in place processes called “auto quote” and “auto order enter.” As requests for quotes came in from distributors, the systems would access Swagelok’s legacy system and provide a response based on product and component availability. These were homegrown tools with limited visibility to constraints. Because these systems did not perform prioritization, order fulfillment was occasionally problematic.

"If our fulfillment strategy for a distributor is make-to-order, the i2 system creates a quote based on availability of material and machine capacity," Houdek said. "If it is make-to-stock or configure-to-order, we have other service targets in use. We've passed that information to our distributors, thereby giving them an expectation of availability. In turn, our distributors have been able to lower their inventories."

i2 solutions have reduced costs for Swagelok in a variety of ways. Lower inventory has enabled Swagelok to reduce the amount of costly warehouse space that it needs—an unexpected benefit. The efficiency that i2 solutions has added to Swagelok's operations has given the manufacturer the ability to re-deploy experienced personnel.

While Swagelok's service levels were already high, its implementation of i2 solutions has enabled the manufacturer to service its customers at even higher levels.

"Our service levels were already hovering between 95 to 96 percent, but we have been able to get to 98 to 99 percent consistently with lower inventories," Houdek said. "My expectations are for us to maintain our service level commitments while continuing to lower inventories."



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