

Continental Tire Speeds Planning Cycles and Inventory Turns

by Lauren Bossers

Continental Corporation is the fifth-largest automotive supplier in the world, with extensive know-how in tire and brake technology, vehicle dynamics control and electronic sensor systems. With targeted annual sales of more than €26.4 billion in 2008, Continental employs approximately 150,000 people in 36 countries, at nearly 200 plants, test tracks and research and development centers. As a leading technology partner to the automotive industry, Continental develops and manufactures a broad product range that includes tires, brakes, chassis, airbags, powertrains and advanced electronics components that enable sophisticated features such as electronic stability control and adaptive cruise control.

Tire division planning and inventory challenges

Continental supports two tire divisions: Passenger and Light Truck Tires, and Commercial Vehicle Tires. Like many manufacturers, the tire divisions face two major supply chain management challenges: driving economies of scale in production while maximizing inventory efficiency in the distribution network. For Continental's tire divisions this is no easy task: With 14 major worldwide production sites, over 80 warehouses, and more than 6,000 products, sophisticated software tools are necessary to cope with the huge data volumes processed by optimized production and replenishment plans.

Continental has two major tire business areas—OEM and Replacement—each with very different supply chain management requirements. On the OEM side, the order volumes are relatively high, and every order needs to be fulfilled on time. In the Replacement business, however, the situation is very different—demand and product variability are high, order volumes are lower and profits differ widely depending upon the product and sales channels. Because brand loyalty on the customer side is a continuous challenge, ensuring that product is available at point of sale is critical to profitability.

“In supply chain management you have to balance these conflicting requirements, always trying to achieve the global optimum,” says Dirk Petermann, head of the Competence Center of Supply Chain Management for the Continental Corporation's tire unit.

Continental recognized the complicated customer demand/inventory efficiency conundrum as a major opportunity to improve its supply chain management. Company executives concluded that they needed significant changes in business processes, organizational structure and planning methodology.

Why i2?

Continental established its “as-is” and “to-be” positions, and identified the providers who could support the company in its transition to the “to-be” state.

“We made a short list of three providers, one of which was i2,” Petermann says. “At the end of the day, i2 won because they were able to show us significant experience in solving problems like ours, with a very high number of installed solutions. The people from i2 proved that they could provide what we wanted, and from the very beginning they were passionate about helping us drive value with our supply chain management initiative.”

i2's contribution

To address its supply chain challenges, Continental implemented i2 Supply Chain Planner and i2 Inventory Optimization in a phased approach. First, i2 Supply Chain Planner was implemented for European master planning. The planning system prioritizes incoming orders and forecasts demand in “demand layers.” Next, it creates a production and replenishment plan, accounting for supply chain and business rules unique to Continental. A new replenishment plan is created mid-week to respond to changes in the demand pattern. A major increase in inventory turns resulted, and consequently Continental extended the new demand planning system globally to include all cross-regional (Americas, Europe and Asia) suppliers.

With demand planning in place, Continental continued to see potential for improving inventory turns further, in tandem with improving the service level for its most valuable customers and most profitable products. The company turned to i2 Inventory Optimization, developed to optimize the relationship between inventory management, customer service, and product line profitability.

“Inventory Optimization helps us to define different service levels based on the product and sales channel,” Petermann says. “This means we are now able to focus our investments in inventory exactly on the products where Sales wants to have a high service level. Overall inventory efficiency does not take a hit, and on the other side, we can reduce inventory levels for products with a lower service.” As a result, the tire divisions' distribution network is now extremely responsive and inventory is deployed according to the rules defined by the sales organization.

“After dramatically increasing speed in the distribution network we learned that production cannot keep up with-



out taking a hit on production efficiency,” Petermann says. “Consequently we started looking for possibilities to increase the agility of production without influencing productivity negatively.”

On-the-floor responsiveness

Creating a detailed production plan before the i2 implementation required entering in all demand, supply and production constraints. It took several days to create these production “campaigns,” and to support stable production, the production plan was frozen over a period of weeks. Consequently, demand changes within this frozen period had no impact on production.

Now, however, Continental’s campaign planning functionality via i2 Supply Chain Planner creates an optimized production plan within hours, cutting the shop-floor stability freeze by half with the potential to reduce it further. Demand shifts can now be quickly accommodated on the shop floor, thereby eliminating excess materials, labor and inventory costs as well as maintaining valuable customer loyalty with superior service.

“i2’s business expertise is highly welcome at Continental Corporation,” Petermann says. “We always engage i2 in our discussions of business processes, identifying weaknesses and areas for improvements, the business processes that should be implemented and the tools to support those business processes. We really appreciate the experience that i2 brings to those discussions.”

Continental’s results

Continental has succeeded in making its supply chain significantly more responsive, agile and reliable. Prior to implementing i2 solutions, planning was done on a monthly basis and as a result, plans were outdated by the time they went into effect.

“Since we implemented Supply Chain Planner, planning is done weekly and replenishment planning is done twice a week. Planning time was reduced by more than 90 percent, and the planning horizon was multiplied by 10. Inventory turns increased substantially,” Petermann says.

Through its use of Inventory Optimization, Continental is achieving significantly improved service levels, which has contributed to an increase in profit margins.

“After the Inventory Optimization implementation with i2, we recognized that we often shipped tires much too early into the regional distribution centers,” he adds.

“We learned that to increase overall service levels, we have to hold them much longer in the plant warehouses and ship them later. By keeping inventory upstream, we can respond to demand changes with much more agility.”

A mutual, long-term dedication to achieving results has made the relationship between Continental and i2 a successful one.

“Looking back through the years, i2 was really a valuable partner, helping us to permanently improve our supply

chain,” says Petermann. “The next improvement steps are already under discussion and the journey will continue.”

At a Glance

Company name: Continental AG

Headquarters: Hannover, Germany

Product/Services:

Tires, brakes, chassis, airbags, powertrains, and advanced electronics enabling sophisticated features such as electronic stability control, adaptive cruise control and advanced driver assistance systems.

Annual revenues: Targeted annual sales of more than €26.4 billion in 2008.

Employees: 150,000

Global operations:

- 200 plants, test tracks and research and development centers in 36 countries

Challenges:

- Respond more quickly to changes in demand
- Balancing customer service level and inventory
- Continuously increase inventory efficiency

Key solution components:

- i2 Supply Chain Planner
- i2 Inventory Optimization

Results:

- Nearly doubled inventory turns
- Significantly increased product availability
- Increased velocity of the planning process
- Improved agility and responsiveness of production and distribution
- Improved ability to determine target inventory levels to achieve desired service levels
- Differentiated service level by product and sales channel



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