



Driving Planning and Inventory Efficiencies at Continental Tire Division

Like many manufacturers, tire companies face two major challenges in supply chain management: driving economies of scale in production while maximizing inventory efficiency in the distribution network. In the case of Continental's Tire divisions, this is no easy task: With 14 major production sites worldwide, more than 80 warehouses, and more than 6,000 products, sophisticated software tools are needed to handle this huge data volume when creating a globally optimized production and replenishment plan.

Continental Tires has two major business areas with very different requirements from a supply chain management perspective: original equipment manufacturing (OEM) and replacement.

In the OEM business, Continental strives to satisfy every demand on time, and order volumes are relatively high. In the replacement business, the situation is very different. Demand variability is high and the profitability is very different depending on the product and sales channels. The availability of the product at the point of sale is key, as the brand loyalty from customers is a continuous challenge. Furthermore, this segment is characterized by high product variability and lower order volumes.

"In supply chain management, you have to balance these conflicting requirements, always trying to achieve the optimum result globally," said Dirk Petermann, Head of the Competence Center of Supply Chain Management for the Continental Corporation's tire units.

Continental recognized major opportunities to improve its supply chain management. Company executives concluded that they needed significant changes in their business processes, organizational structure, and planning methodology.



Challenges

- Improve response to demand changes
- Increase focus on customer service level and inventory turns
- Continuously increase inventory efficiency

Solutions

- Increase velocity of the planning process
- Improve agility and responsiveness of production and distribution
- Differentiate service level by product and sales channel
- Determine target inventory levels as a result of the desired service level

Results

- Nearly doubled inventory turns
- Increased product availability significantly

Company Description

The Continental Corporation is one of the top automotive suppliers worldwide. As a supplier of brake systems, systems and components for powertrain and chassis, instrumentation, infotainment solutions, vehicle electronics, tires, and elastomer products, the company contributes to enhanced driving safety and the protection of the global climate. Continental is also a competent partner in networked automobile communication. Today, the corporation employs approximately 150,000 people at nearly 200 locations in 36 countries.

*“Over the last couple of years, we have continuously improved supply chain management, making it a powerful means of sustainability in a very competitive environment. **i2 Supply Chain Planner and i2 Inventory Optimizer are the core solutions laying the foundation for the substantial improvements we have achieved. We are much more responsive to demand changes than ever before.**”*

*— Dr. Dirk Petermann
Head of the Competence Center
Supply Chain & Logistics
Continental Corporation*



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 said. “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 to 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 Optimizer™ in a phased approach.

First, i2 Supply Chain Planner was implemented for European master planning. Incoming orders and forecasted demand are prioritized in “demand layers.” In the next step, a production and replenishment plan is created, considering the constraints in the supply chain and the business rules unique to Continental. To consider changes in the

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demand pattern more often, a new replenishment plan is also created during the week. This resulted in a major increase in inventory turns. Subsequently, the successful concepts were enhanced to a global scope including all cross-regional (Americas–Europe–Asia) suppliers.

Over time, the focus on inventory turns proved to be insufficient. The next question was: How can we keep inventory turns on the level they are while ensuring that the service level for our most valuable customers and most profitable products are high? i2 Inventory Optimizer was deployed for this purpose.

“Inventory Optimizer helps us to define different service levels depending on the product and sales channel,” Petermann said. “This means we are now able to focus our investments in inventory exactly on the products where the sales organization wants to have a high service level. Overall inventory efficiency does not take a hit, because on the other side, inventory levels for products with a lower service level are going down.”

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

Creating a detailed production plan, which considered all the constraints when building so-called “campaigns,” took several days. To enable stability, the production plan was “frozen” over a period of multiple weeks. Demand changes within this frozen period had no impact on the production plan.

The campaign planning functionality available with i2 Supply Chain Planner enables users to create an optimized production within hours. While a frozen period makes sense to ensure stability on the shop floor, Continental was able to cut the frozen period by half, with the potential to reduce it further in the future. As a result, shifts in demand are quickly considered on the shop floor.

Within the scheduling period, no demand changes are considered on the shop floor. By using Supply Chain Planner’s campaign planning functionality, the scheduling period could be reduced by more than 50 percent.

Continental also relies on i2 to provide guidance when starting new projects or discussing ideas for business process improvements.

"The business expertise of i2 is highly welcome at Continental Corporation," Petermann said. "We always engage i2 in our discussions of business processes. The major focus in those discussions is 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 into those discussions."

Continental's Results

Continental has succeeded in making its supply chain much more responsive, agile, and reliable. Prior to implementing i2 solutions, Continental planned 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 on a weekly basis, and replenishment planning is done twice a week," Petermann said. "Planning time was reduced by more than 90 percent, and the planning horizon was multiplied by 10. Inventory turns increased substantially."

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

"After the Inventory Optimizer implementation with i2, we recognized that we often shipped tires much too early into the regional distribution centers," Petermann said. "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."

Introducing the campaign planning functionality of Supply Chain Planner improved service levels further, because changes in demand are considered much earlier in the production planning process.

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

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