

CASE STUDY: Strategic Initiatives for Reducing Costs and Remaining Competitive in the Automotive Industry



Cooper Tire & Rubber Company is a global organization that specializes in the design, manufacture, marketing and sales of passenger car, light truck, medium truck tires and subsidiaries that specialize in motorcycle and racing tires. With headquarters in Findlay, Ohio, Cooper Tire has 67 manufacturing, sales, distribution, technical and design facilities within its family of companies located around the world.



Challenge

Along with creating cost effective operations, Cooper has sought to streamline its supply chain with low-cost, high quality raw materials that include natural rubber, synthetic rubbers, carbon black, reinforcing fabrics and steel.

Cooper's continuous improvement activities are leading the company to continue to develop innovative quality improvements. To achieve their objectives for establishing highly efficient production processes, they first had to understand and benchmark their baseline capabilities. One goal was to make better use of production data and, from an operations standpoint, use the data to help guide the decision making process. They needed a quality solution that could satisfy their scalability needs while offering insight into potential quality improvements.

"We were trying to gain a perspective about what the data is telling us. What does it point to about opportunities we have? We wanted to do less troubleshooting and work on improving processes rather than resolving production issues," said Donald S. Bruce, Director of Reliability Engineering.

Logistically, Cooper needed an enterprise-wide standard for reports in a system that would initially be implemented in North America, with the ability to go world wide. As a global entity, Cooper's implementation would take place in phases, so they needed a solution that was flexible with training, consulting and support. One of Cooper's objectives was to employ a quality expert at each location to oversee the implementation and ensure the stability of corporate standards.

Solution

To achieve their process improvement goals, Cooper standardized on InfinityQS Statistical Process Control (SPC) software. "Because quality is synonymous with the Cooper brand, we looked to InfinityQS to ensure that every process met the Cooper standard," said Bruce. "We investigated a few different options and decided that InfinityQS provided the best SPC solution to handle the complexities of our manufacturing operations." InfinityQS integrates with MES and ERP systems to provide real-time detailed quality analysis capabilities at the process level that MES and ERP products were never designed to provide. The unique capabilities of InfinityQS solutions contribute to more fluid processes and allow the quality personnel to take a proactive approach to improving the capabilities of the various processes throughout the operations.

As opposed to the other real-time SPC solutions that Cooper was initially considering, InfinityQS uses a relational database structure, a simple, flexible format that was able to give Cooper the versatility they needed for a thorough analysis of parts across various production processes. InfinityQS' unique relational databases allows users to quickly and easily manage thousands of parts in a single set-up (project) as opposed to the hundreds of thousands of data files other SPC systems force users to configure. This structure allows Cooper to conduct comparative analysis of any part running across any process with just a few clicks of a mouse.

InfinityQS International is currently helping Cooper instill a culture of innovation throughout all the manufacturing sites. Rather than a reactive approach that dedicates resources to putting out fires, Cooper is bringing about change with a data-driven culture. InfinityQS' data analysis functions give Cooper a full grasp of their process capabilities. InfinityQS control charts illustrate process control limits, and create automated alerts when a process exceeds these limits. Instituting process control across production lines helps ensure that each Cooper tire is produced to the highest quality standards.

This robust data analysis allows Cooper to shift resources away from processes within specification and control limits toward areas that can enhance the overall operations. The first phase of Cooper's corporate-wide InfinityQS implementation took place in four North American facilities. Work has also begun to install the software package at Cooper manufacturing sites in China.

Results

Cooper was able to drive and sustain continual improvement using the InfinityQS SPC system. The software gave them additional tools to help them as they head down the path to become ISO 9001 certified in 2008. With InfinityQS, Cooper effectively monitors processes to ensure effectiveness, keeps adequate records, checks output for issues and applies CAPA where necessary – all requirements of ISO 9001.

Cooper Tire & Rubber Company was able to use InfinityQS software to drive operational process improvements with significant cost savings and increased productivity. In one plant, Cooper realized \$400,000 in annual savings on the belt line by analyzing the dimensional data of components. These cost savings represent just one line in one plant. Similar savings were recognized on other production lines and throughout other facilities using InfinityQS software. Cooper also attained measurable process performance index improvements in the inner line, extrusion, and cutting processes.

Cooper's road to success is driven by a combination of lower production costs and increased productivity. The significant annual savings on the belt line alone demonstrates how Cooper is able to significantly reduce its costs of production. In addition to cost savings, Cooper also made substantial improvements in process performance index. With the InfinityQS solution, Cooper Tire is systematically driving process improvements that ensure the optimal quality levels that consumers have come to expect from the Cooper brand.

- > **Powerful tools allowed Cooper to effectively become ISO 9001 certified**
- > **With InfinityQS Proficient, operational process improvements, significant cost savings and increased productivity were achieved**
- > **Cooper was able to realize over \$400,000 in annual savings by using Proficient's data analysis tools**