

## BORGWARNER EMISSIONS – GERMANY

### STRATEGIES FOR DRAMATIC INVENTORY TURN IMPROVEMENT AT A NEWLY ACQUIRED PLANT

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BorgWarner is a global automotive parts supplier with \$8.3B of sales in 2014. The Emissions business unit, which manufactures highly engineered emissions-reducing components for original equipment manufacturers and aftermarket customers worldwide, added four plants to its portfolio in 2014 including the Oberboihingen, Germany plant. Oberboihingen had been plagued with inefficiencies and its inventory turn metric of 7 was less than half that of other Emissions plants in Europe. This signaled major opportunities for improvement. The Tauber team was engaged to develop actionable recommendations to improve plant logistics, evaluate the need for an expensive off-site warehouse, and ultimately improve inventory turns.

With a project scope encompassing purchasing, inventory management, material movement, and production, the Tauber team approached the project by analyzing plant operations at three levels of increasing detail: Plant-level, batch-level, and part-level. At the plant level, the team improved the accuracy of inventory reports so resources could be appropriately allocated to solve problems. The team also demonstrated that the materials necessary for production could be held on-site, eliminating the need for a costly off-site warehouse. At the batch level, the team employed scientific inventory ordering policies to reduce raw material inventory. At the part level, the team applied economics to the decision of whether to rework or scrap parts that failed initial inspections. The team also developed a strategy, pilot, and action plan for a signal-authorizing raw material replenishment system (kanban) including internal transport by train and quantified its financial potential.

The Tauber team was able to successfully deliver a broad and dynamic logistics strategy to the Oberboihingen plant. Implementing this strategy is projected to yield a 51% increase in inventory turns (from 7 to 11). Its financial impact includes future avoidance of current costs (such as rent paid for the off-site warehouse), potential profit (by clearing space on the production floor to be used for additional production), and freed working capital (by releasing cash tied up in unnecessary inventory to be invested elsewhere). The combined financial impact, after all actions have been implemented, sums to a net present value of \$20,595k (€18,485k) annualized for the first year. This translates to a \$12,784k (€11,475k) reduction in inventory in the first year (savings in the first year are going to be sustained in over the five year horizon) and a favorable impact to the profit and loss of \$28,963k (€25,998k) over the next five years.

*All currency conversions are based on the Aug 12, 2015 exchange rate of €1.00000 = \$1.11406 per [www.xe.com](http://www.xe.com).*