

AGCO Sows Seeds for Greater Visibility, Control and Efficiency with Apriso

When AGCO, the world's largest manufacturer of tractors and third largest supplier of agricultural machinery, decided to build the world's most modern tractor factory capable of producing 20,000 tractors a year, they knew that they would need the best operations management systems to get the most out of their new facilities. Fortunately, they already had Apriso installed along with SAP's ERP at a component factory, and knew that they needed to look no further for a best in class manufacturing solution capable of delivering visibility and control to ensure their new factory be Lean and productive.

Work on the new \$300M factories in Marktobendorf (gear boxes and tractors) and Bäumenheim (cabins & hoods) began in 2010 with system implementation tasks completed in parallel, which meant they could be operational on the same opening day – September 3, 2012. Workers at the existing plants were trained on the new system using simulations, allowing them to practice what they would be using after the move. There was some anxiety at first, however, this hesitation soon disappeared once they recognized how easy the new system was to use as well as the readily available information helped them to do their jobs more efficiently and effectively.

Big Changes

Existing factories, unsurprisingly, had grown and evolved over decades of producing tractors and agricultural equipment using a mélange of equipment and facilities. AGCO make a bold move and start anew with today's technologies in their new facilities – so as to not be encumbered by past limitations. The goal was to create a state-of-the-art facility supporting a Lean and productive workplace capable of carrying AGCO into the future.

Legacy facilities had components and work-in-process that was literally “stacked to the ceiling” throughout the plant, leading to inefficiencies, long production lead-times, and high risk of loss. AGCO was determined to do better. The new facilities are bright and roomy. State-of-the-art equipment, coupled with a Lean approach to work management and production efficiency promise to not only increase productivity and throughput, but to also provide a better work environment for increased employee satisfaction and retention.

Going Lean

The new facilities are designed with a Lean manufacturing approach in mind – minimum inventory on the plant floor, instant communications to keep work and material replenishments flowing, and the latest technology for a highly flexible production environment. Workers in the new plant have ready access to the latest schedules and priorities, can order materials or report issues, and call up documentation and specifications right at their workstations through on-line displays. More importantly, as process improvements are identified, it is relatively easy to implement process improvement – with the knowledge that the change will be adopted and embraced.



Benefits Achieved

- Doubled tractor assembly capability to 16 units per line with no efficiency reduction
- Increased New Product Introductions to one “pilot” per month; tractors consist of 10,000 components; new models have up to 60% new parts
- Projected that assembly line productivity will increase by 8% in first year and by 25-30% during first three years
- Reduced Takt-time to below 10 minutes
- Improved OEE by 22% in first year on core competence machining area

A New World of Manufacturing

The new AGCO factories use Apriso to capture real-time production data (order start, stop, duration, and set-up time) to enable quick visibility to all production activity with drill-down options to the machine level. This supports finite scheduling based on restricted resources while optimizing set-up time and reducing down time. Delivery times from suppliers and sub-contractors are now synchronized to these schedules to minimize inventory yet ensure the right materials are available when needed.

The Apriso manufacturing operations solution manages and communicates machine alarms and process values (e.g. temperature) for management action, historical analysis and process / quality control. A production dashboard provides intelligence (KPIs) that is updated continuously for management review. The system automatically captures machine / production states (running, downtime, set-up) while integrating with quality management software for scrap and inspection data. Apriso downloads work orders from SAP, which are then updated with Apriso production data to form a seamless continuous improvement loop.

Throughput Up; Costs Down

AGCO had already seen measurable improvements in throughput, efficiency, productivity and margins from prior Apriso deployments – naturally expectations were high to continue to achieve these performance improvements at their new production halls. By every measure, Apriso has exceeded expectations at the new factory and is delivering the kind of Lean, efficient production that AGCO required to meet their goals of producing more tractors, more profitably in order to meet growing demand.

AGCO has documented a doubling of production volume without reducing efficiency, as measured by fixed cost KPIs (efficiency and productivity) or production time and variable cost per unit, resulting in a higher profit margin. The combined Apriso and SAP solution works very well together, helping to extract further value from their ERP investment.

With increased transparency, the company now enjoys an improved allocation and utilization of capital invested for machines. Standardized, reliable and objective process performance data such as production times, setup times, and non-productive times has allowed better management of valuable capital equipment and product quality. Monitoring, improving and accelerating the machine maintenance processes has reduced downtime leading to a lower operating costs. Consistent, automated data acquisition & KPI calculation provides greater transparency on the shop-floor in support of waste elimination and performance improvements – including comparisons across sites.

Overall, the new Apriso-enabled factories exhibit the level of process visibility and control that AGCO needs to continue their leadership position within the agricultural machinery market. Ease of process improvement ensures this leadership can continue.

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"Our Apriso solution has given AGCO perfect visibility of component availability and synchronization of material flows along our assembly lines. Our latest Pilot new product was achieved without a single missing part – a new milestone of our production capability."

Hubertus Koehne,
Vice President of
Manufacturing
AGCO Fendt GmbH

