

CASE STUDY

Intelligent Manufacturing Solutions for BorgWarner

Acerta  RIVERON

The Challenge

BorgWarner is a global, billion-dollar tier-one automotive supplier. As leaders in transforming the world's transition to eMobility, the company was looking to modernize and automate their data strategy in order to optimize their overall operational and manufacturing performance. BorgWarner wanted the ability to collect data from legacy equipment and pull data from incumbent software and databases within a plant. They also sought real-time visibility into production to enable higher degrees of process and quality control that their customers require of them.

BorgWarner engaged Acerta and Riveron to design a strategy for acquiring and analyzing their production data in a way that would enhance their current manufacturing operations. The overarching appeal was to implement a data-centric technology solution geared toward predictive analysis of production data so they could use their data to make better day-to-day decisions and become proactive about part quality.

In other words, BorgWarner was looking to automate the transfer of data from the shop floor up to the executive floor.

How We Helped

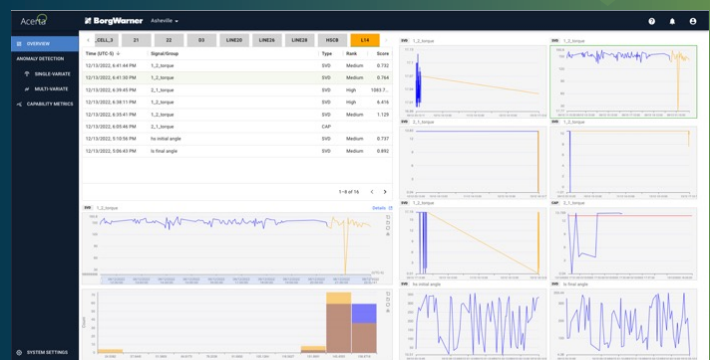
With a sponsorship from Microsoft, Acerta and Riveron set out to build and implement an automated workflow from end to end at the BorgWarner Turbo Systems facility in Arden, NC.

- The Arden plant assembles turbochargers for diesel engines so the team's first priority was to create a system for pulling and storing continuous data from assembly lines. To achieve this, Riveron deployed Ignition to on-premise servers at BorgWarner that connect to local equipment and infrastructure.
- The solution publishes information through a firewall into Microsoft's IoT Central Platform then to an Azure SQL database for processing by Acerta's Artificial Intelligence (AI) analytics engine, LinePulse.

- Once data is in Acerta's AI engine, it is analyzed continuously and displayed in the **LinePulse** dashboard for real-time monitoring.
- LinePulse acts as a proactive warning system, detecting anomalies in production data and notifying BorgWarner of potential quality issues. It offers the flexibility to pull up any sensor – or group of sensors – on the assembly line and assess performance continuously and on demand.
- By operationalizing their manufacturing data in this way, BorgWarner can now adjust their production processes when the system detects quality issues, instead of relying on traditional tools that only allowed for reactive, post-processing of the data, and manual data access and analysis.

We built an integrated technology solution for BorgWarner that results in customized, contextualized, and continuous analysis of all production within a plant.

Once the solution was deployed, Riveron and Acerta worked together to train BorgWarner's process and quality engineers how to use the new dashboards and better understand the relationships between their data and sensors. Online solution training was also released so users can take dynamic tours of various aspects of the application, as needed.



Screenshot of LinePulse dashboard

The Solution

To generate the best results from the client's technology investment, Riveron, Acerta, and Microsoft worked together to create and implement a uniquely tailored solution for BorgWarner. The solution:

- Connects islands of data within a plant for a complete part-centric view of manufacturing,
- Improves BorgWarner's ability to analyze data from manufacturing lines,
- Automates the collection and display of quality capability metrics,
- Provides critical information (e.g., anomaly insights) to engineers so they can make better decisions in real time.

The key benefits that BorgWarner realizes include the ability to:

- Monitor manufacturing continuously;
- Identify and avoid quality issues that would otherwise impact production;
- Increase the speed of root cause analysis and testing.

The Results

The expected values for these data-centric achievements are:



Avoiding Quality Spills

Realizing annual savings through predictive avoidance



Saving Time

Added ability to gather required capability metrics quickly



Meeting Customer Expectations

Increased transparency through data and real-time availability of the right insights and reports.

“Through automated capability metrics, anomaly reporting, and real-time alerting, the solution has allowed BorgWarner to become proactive about part quality. Engineers receive alerts as issues occur so they know where to look and can focus on solving problems instead of finding them. We've given BorgWarner a premium way of contextualizing their data into meaningful information and, by applying the analyzed reports, their leadership can manage operations proactively with unprecedented detail and precision.”

-Greta Cutulenco, cofounder and CEO at Acerta

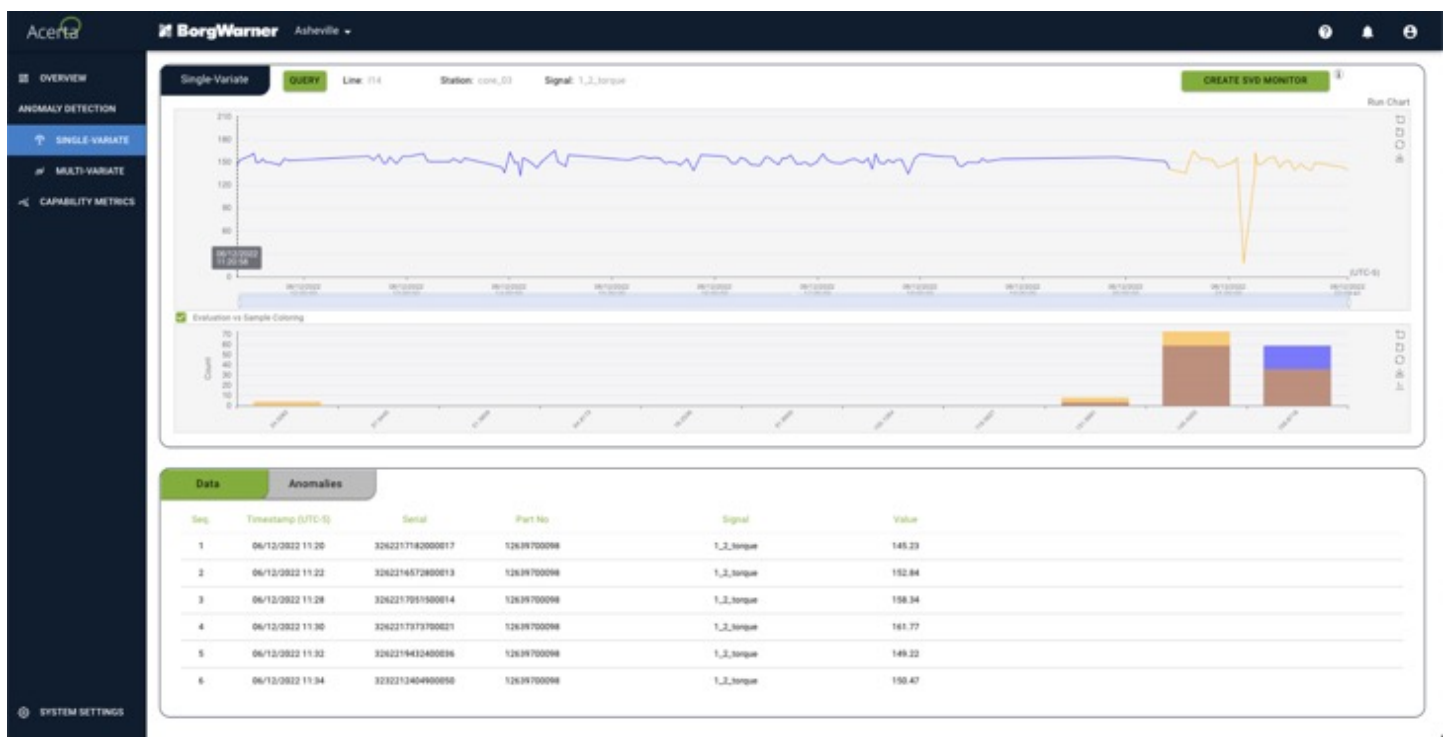
The Impact

The ability to automate and collect data across all processes also benefits executives at BorgWarner as they focus on the company's bottom line.

Powered by Microsoft's ability to consolidate information, BorgWarner can monitor and put their data to work more efficiently than ever before. The ability to address quality issues before they impact production not only boosts

connectivity across the company, but also improves the overall quality of product.

The process of designing and implementing a modern automation system can be disruptive and daunting but the success of BorgWarner's implementation is an example of the worthwhile returns on investing in this kind of digitalization.



Reach out to info@acerta.ai learn more about how we can help your manufacturing business drive value through technology—enhancing your company's daily operations in ways that cannot be matched.