

## SMART MANUFACTURING CASE STUDY

# Automotive OEM Reduces Downtime Significantly by Effective Tracking of Conveyor Status

### Business Challenge

A global automotive OEM wished to embrace smart manufacturing and replace certain traditional methods that were impeding their efficiency, throughput and quality.

The manufacturer wanted to eliminate the loss of productivity caused due to unplanned stoppages of the conveyors which constituted 20% of their overall unplanned downtime of the plant.

The conveyors were stopped multiple times in a day for a number of reasons. The reason for the stoppages were recorded and collated by the production personnel at the end of the day. The OEM faced the following challenges:

- Since the reason, as well as the duration of stoppages, were entered only by the end of the day, these were not accurate.
- Because of the inaccuracy of the data, it was not possible to take any proactive actions to prevent such occurrences.
- Plant Managers did not have the visibility to such stoppages thereby limiting their ability to take immediate remedial actions.

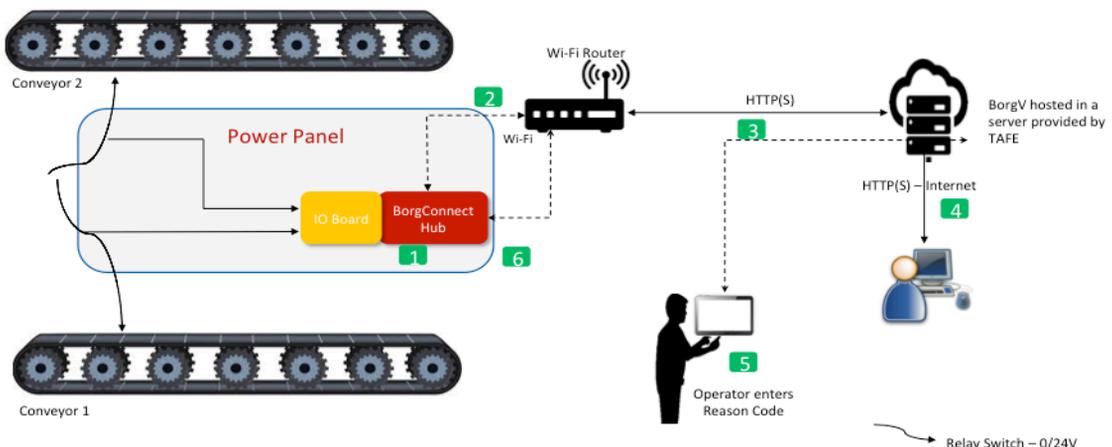
### The Solution

The customer purchased the BorgConnect® solution to track and generate actionable intelligence on the unplanned stoppages of the conveyor line.

The BorgConnect® IoT device monitored five conveyors in the plant. The devices recorded the symptoms of failure and sent out alerts. If the symptoms were not related to electrical failures, the platform allowed for the reason capture to be done manually in a smart phone or a tablet, instantaneously, at the time of failure.

The collection of the right information about the failure constituted the first step towards proactive reduction of unplanned downtime. By classifying the failures into groups and assigning appropriate symptoms for such failures to happen, the BorgConnect® platform had established the foundation for machine learning of emerging failures and to affect predictive maintenance to prevent conveyor stoppages due to equipment failures.

Furthermore, the platform eliminated unnecessary idle time within a shift (up to 5% of shift time) due to unauthorized stoppages by operators – these stoppages reduced due to the “Hawthorne Effect” resulting from the real-time visibility of conveyor operation for the plant supervisor.





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## The Value

- Single Version of the Truth:** By capturing the data directly using the platform, as opposed to relying on manual inputs for equipment failures, an objective single source of truth was established.
- Better Understanding of Failures:** By capturing the downtime reasons and the symptoms of failure, the right classification of failures and the right association for such failures with the corresponding symptoms were possible.
- Objective Measurement of Stoppage Duration:** The duration of the stoppage was objectively calculated by the platform, thus eliminating subjectivity in the estimation of the duration.
- Machine Learning:** The trends that emerged before a failure are being learnt by the platform during the occurrence of each failure. This is expected to result in the prevention of failures via predictive maintenance strategies.

## The Result

The conveyor failures constituted a significant 20% of the total failures of the plant. With the introduction of the BorgConnect® platform the plant was able to:

- Eliminate unnecessary idle time by 30%;
- Reduce Mean Time to Repair (MTTR) when a conveyor failed by 50%.
- Classify failures according to severity and understand the early symptoms of severe failures.

The estimated cumulative reduction in unplanned downtime of the conveyor due to the BorgConnect® platform is expected to be 30%.

As a next step, the platform is applying machine learning techniques to predict and prevent failures, and thereby, achieve a reduction in the unplanned downtime by at least 80%.



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