



Machine Health & Anomaly Detection

Enabling predictive maintenance as a precautionary solution.

Company: Multinational Beverage & Brewing Company | **Division/Role:** Plant Manager

Background

From the manufacturing process of their product, to packaging and shipping, this multinational beverage & brewing company has a high demand for their products. Any malfunctions, resulting in delays in their to-market system, quickly become a costly situation.

Problem

Production line anomalies caused by old machine systems often require long-term and costly maintenance. It was common that the brewing process would be down for several hours when malfunctions would occur in their old machines.

Solution

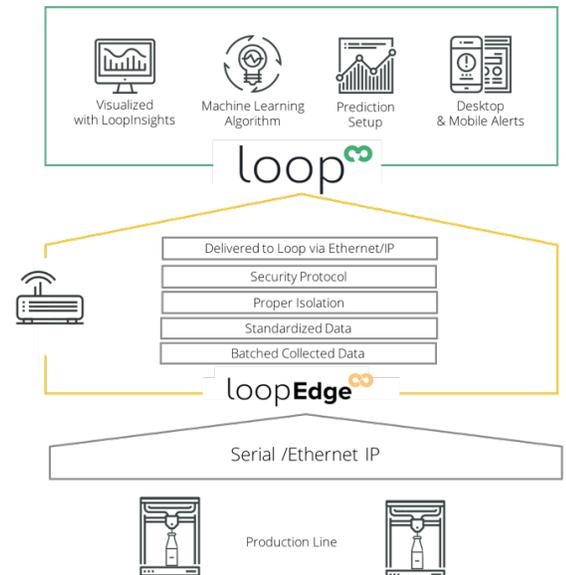
Litmus Automation's Loop and LoopEdge platforms enabled predictive maintenance as a precautionary solution, eliminating the instantaneous cost of failure on old machine systems. Before a solution was implemented, Litmus Automation identified the single point of failure in the whole plant system with the client, which were the damper and damper driveshaft.

Litmus Automation used a Historian database interface to collect the data, as it was the client's only method of extracting data from its machines. LoopEdge pulled data from the Historian database interface using a time-series based algorithm that also standardized the data. The data was then pushed to the Loop platform using standard web protocols.

A machine learning algorithm ran on the top of the data to discover anomalies that indicated failures in the system. LoopInsights visualized the results of the data from the machine learning algorithm and anomaly detection. Normalized and processed data was also provided back to the client's database for them to conduct further custom analysis. In conclusion, the Loop platform enabled a predictive maintenance system that would alert the plant Floor Manager up to 9 hours before an anomaly would occur in the system.

Solution Journey

- LoopEdge was installed at the Gateway level via a Historian system and batched data was collected in real-time.
- The data was standardized and pushed to Litmus Automation's Loop platform.
- A machine learning algorithm and anomaly detection system ran on top of the Loop platform, and LoopInsights displayed the data and results.



- Alerts were generated to notify the plant Floor Manager of any upcoming anomalies, up to 9 hours in advance.

End Benefit to Company

The company was able to reduce and eliminate the instantaneous cost of failure using Loop and LoopEdge, saving time and money in the production process and optimizing maintenance schedules on their older machines.

Is This Solution Replicable?

Yes. A prospective client can replicate the same solution as long as data points are available to assess the failures of the client's manufacturing system. If so, the Loop platform can perform the same anomaly detection and visualization as outlined in this use case.