4POINTX
Simplifying Industrial Analytics

Process Anomalies
Transform your production line from monitor-and-react to predict-and-act

Monitor
Vibration
Lube oil pressure
Temperature
Pump discharge pressure
etc.

Condition-based
Maintenance

AI

Predict
Lubrication defects
Bearing defects
Cavitation
Pump seal failure
Process health

Predictive
Maintenance
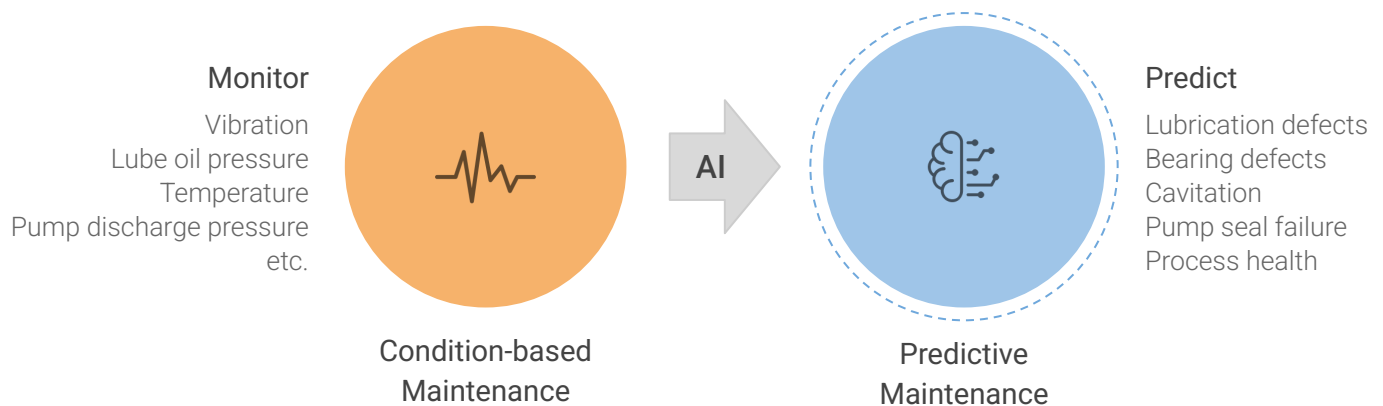
Problem

Unforeseen downtime or a quality issue is a high operational risk to manufacturers, requiring deeper insights into equipment and process health that IoT sensors and real-time monitoring alone are not able to deliver.
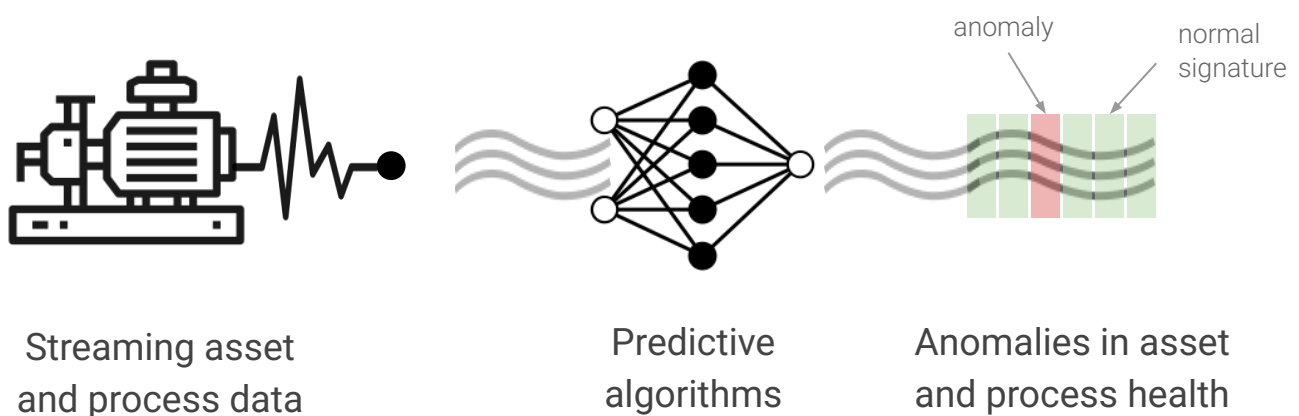

Reason

The condition indicators, although useful, do not give enough time to plan. For e.g., overall vibration is a lagging indicator, as the problem or defect already exists.

Also, setting the alert thresholds is a challenge. The varying nature of the process and product recipe leads to many false alarms.

Solution

4PointX Process Anomalies app uses AI to automate the analysis. By correlating signals from multiple sensors, the solution detects anomalies, which indicate a product defect, equipment malfunction, or a process inefficiency.

How it works?

Streaming asset
and process data

Predictive
algorithms

anomaly   normal
signature

Anomalies in asset
and process health

Building blocks for an AI-driven process monitoring

Defining normal operating signatures

The Build AI analyses the full spectrum of past sensor data in order to define the normal operation for an asset or process.

Detecting anomalies

The Predict AI scans new incoming data to compare and detect any deviations from normal operating signatures.

Assisted root cause analysis

Use our Explain AI to understand what tags are responsible for the anomaly, and compare with past similar anomalies.
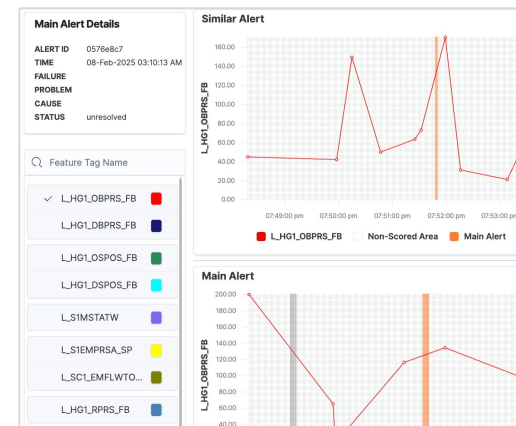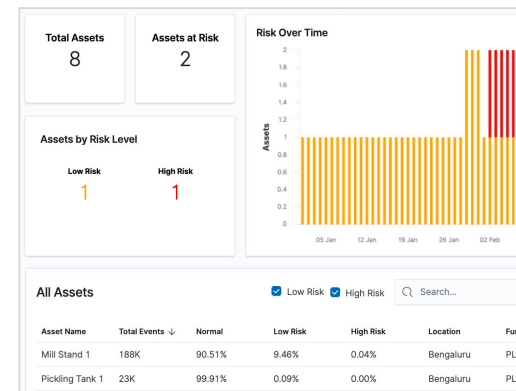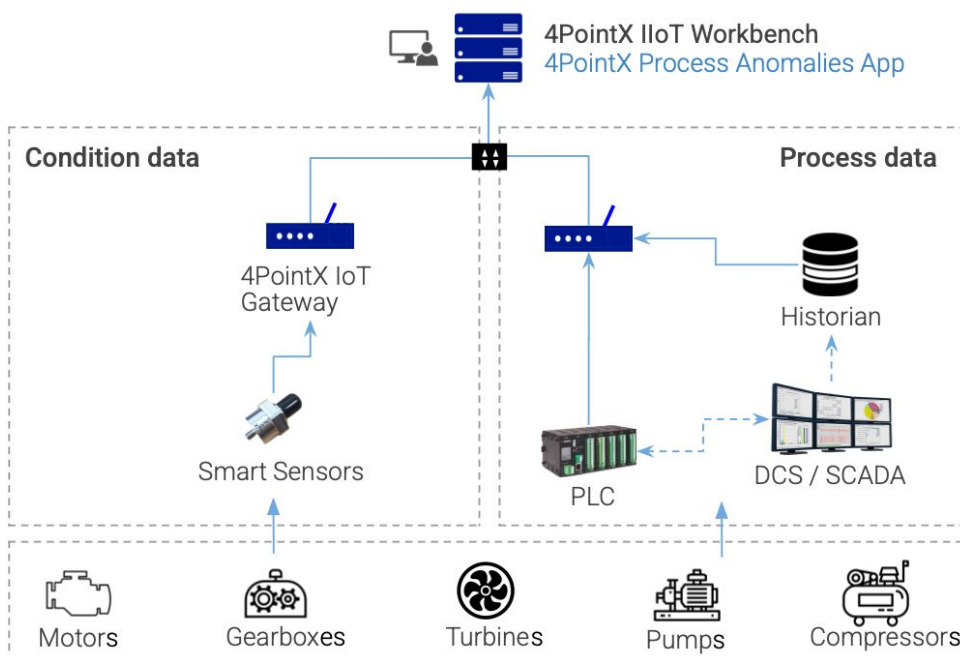
Suppress false alarms

As the SME validates each anomaly, the Learn AI uses this feedback to improve the fidelity of future anomalies.

A Comprehensive AI-Enabled Predictive Maintenance Plan Starts With Business Understanding.

- Gartner Recommended Reading, 04 December 2018

Deployment and integration

4PointX Process Anomalies is one of the three I4.0 apps on 4PointX IIoT Workbench that integrates with Plant's automation systems and IoT sensors for collecting Process and Condition data.