4POINTX
Simplifying Industrial Analytics of Things

Asset Health Monitoring
Transform from monitor-and-react to predict-and-act

Monitor

Vibration
Lube oil pressure
Temperature
Pump discharge pressure
Audio

AI

Predict

Lubrication defects
Bearing defects
Cavitation
Pump seal failure

Condition Monitoring

Predictive Maintenance
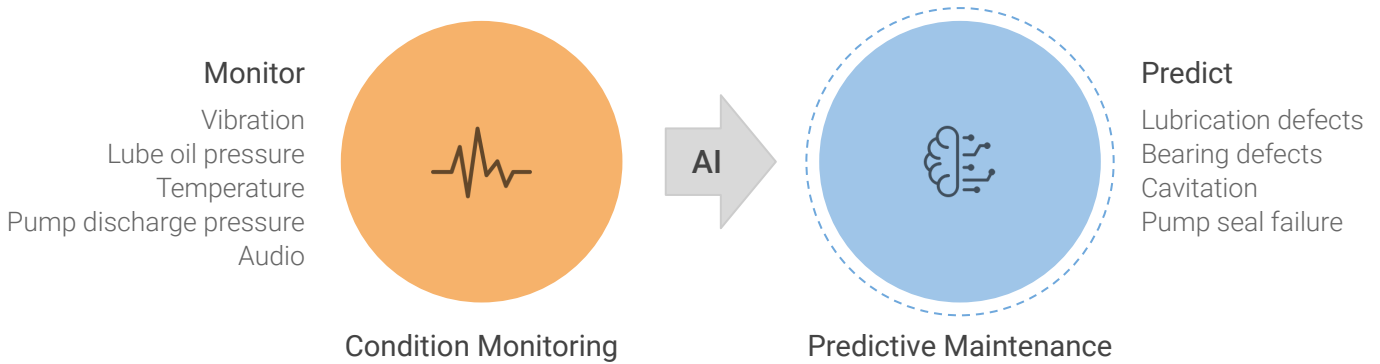
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Problem	Unforeseen asset downtime is a high operational risk to manufacturers, requiring deeper insights into equipment health that IoT sensors and real-time condition monitoring alone are not able to deliver.
Limitation	The condition indicators, although 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 Asset Health app uses AI to automate the analysis. By correlating signals from both condition & process sensors, the solution detects anomalies (aka leading indicators) that usually show up as early as 60 days prior to the actual failure.

How it works?

4PointX PdM uses predictive Machine Learning algorithms that continuously learn the normal behavior of an equipment to detect any unusual behavior that could lead to a potential breakdown.

anomaly

normal
signature

Streaming
Asset data

Predictive
algorithms

Anomalies in asset
behavior
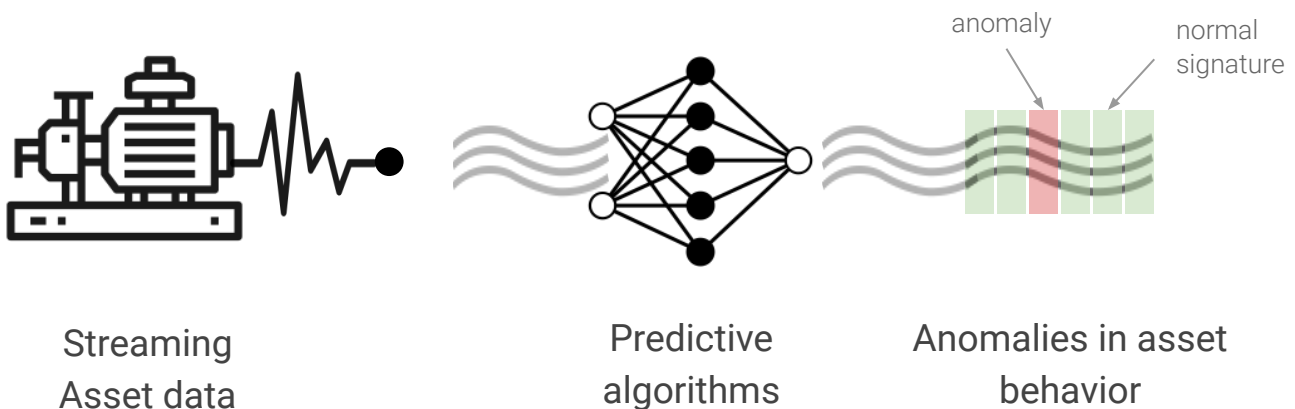
Features

Anomaly Detection

Process-aware anomalies in asset condition.

- Non-threshold-based alerts
- AI-aided diagnosis
  - Top influencing tags
  - Similar past alerts
- Reduced false alarms
  - Man teaches bot. Bot gets better.

Condition Monitoring

Real-time monitoring of vibration and other condition parameters.

- Asset health score
- Automated fault diagnostics (FFT)
- Cross-correlation with process tags
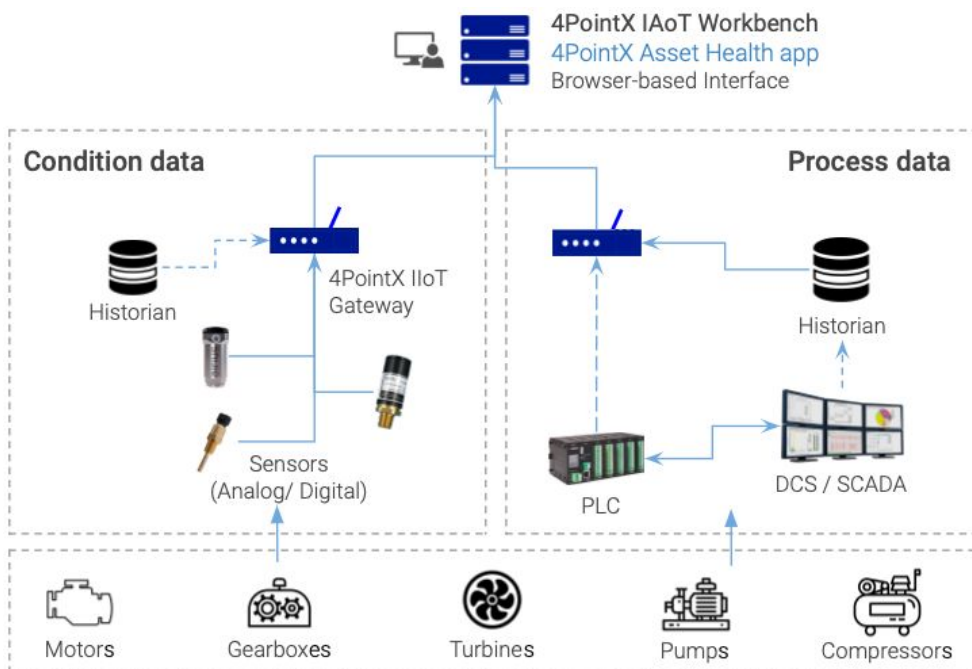
Adapts & Scales

The solution adapts to the unique behavior of asset vis-a-vis the process.

Scales easily for 1000's of assets.

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

- Gartner Recommended Reading, 04 December 2018

PdM Maturity Levels

Level 4 — Predictive Maintenance

Level 3 — Real-time Condition Monitoring

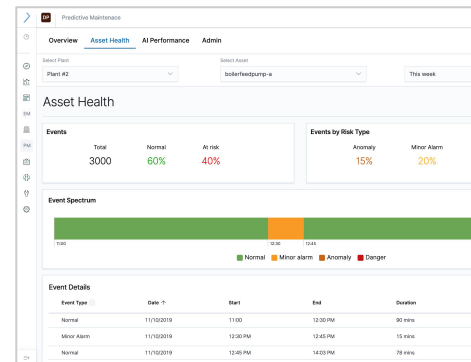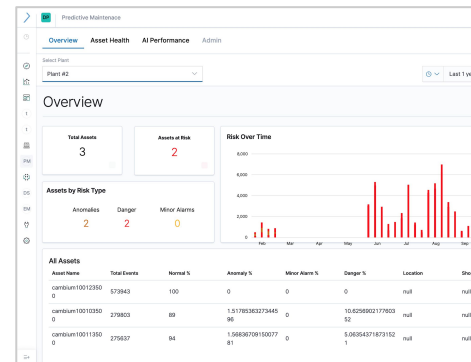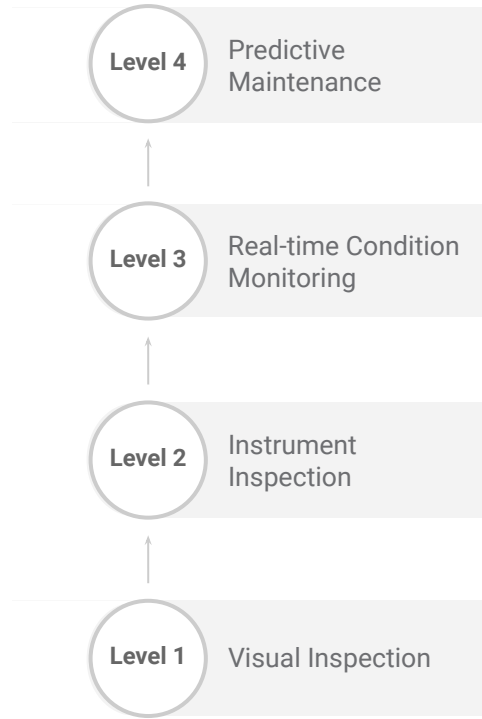**Level 2** — Instrument Inspection

Level 1 — Visual Inspection

Deployment and Integration

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

4PointX IAoT Workbench
4PointX Asset Health app
Browser-based Interface

Condition data

Historian
4PointX IIoT Gateway
Sensors (Analog/ Digital)

Process data

Historian
PLC
DCS / SCADA

Motors Gearboxes Turbines Pumps Compressors

CONTACT US

Visit: **www.4pointx.com**
LinkedIn: **linkedin.com/company/4pointx**

Email: **info@4pointx.com**
Phone: **(+91) 98860 16564**