MITSUBISHI ELECTRIC
FACTORY AUTOMATION

e-F@ctory

AUTOMOTIVE

Predictive Analytics Solution
Automotive Industry Application

Solutions originating from the shop floor comprised of factory automation (FA) and Edge IT systems, leveraging the knowledge of shop floor and cutting-edge technologies to achieve the overall optimization of manufacturing.

e-F@ctory Promotes an "Open" Shift in order to accelerate collaboration and innovation in the manufacturing for Greater Sustainability

Air Handling Unit (AHU)

The automotive sector has witnessed a sea change over the last decade, disrupting the conventional ecosystem of automotive player. The major change has come across the manufacturing plants where every piece of information is getting tracked with all the sensors and high-tech devices placed around.

Problem Statement:

In an automotive industry, Air handling units (AHU) plays an important role in order to maintain the shop-floor environment . Key challenges on shop-floor:

- Regulate mechanical temperatures
- Minimize the risk of overheating
- Keep the environment safe and comfortable for plays

Solution:

Mitsubishi Electric Predictive Analytics Solution tracks the performance of AHU systems by utilizing vibrational data in real-time and detect anomalies / abnormalities before it happens.

Benefits:

- Reduce equipment maintenance cost by 15%
- Reduce Production losses by 10%
- Increase workforce performance by 5%

Paint Shop Pumps

The automotive sector has witnessed a sea change over the last decade, disrupting the conventional ecosystem of automotive player. In recent years, it is observed that the level of automation in paint shops has increased because of cost and quality reasons.

Problem Statement:

In order to ensure a safe paint process, painting is always carried out in a closed environment under clean room conditions. "A top-down laminar flow of fresh air at a constant flow velocity is pumped into the spraying compartments so that the overspray and solvents quickly flow downward and are removed for treatment. The air is not re-circulated so that fresh, treated, ambient air continually enters the compartments."

Benefits:

- Improve quality by 5%
- Reduce Production losses by 10%
- Reduce equipment maintenance cost by 10%

Solution:

Mitsubishi Electric Predictive Analytics solution detects anomalies and abnormalities in pump operation and helps keep paint pumps operating at full capacity.

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Overall Cost Benefits of Predictive Analytics Solution

Cost Benefit Chart

70-80% Cost Reduction

Replacement of Equipment due to Failure	Cost Involved
Bearing, shaft or motor	Yes
Labor to replace entire unit	Yes
Hot shot service	Yes
Lost Production Time	Yes

Replacement of Only Damaged Component	Cost Involved
Bearing replacement	Yes
Labor to replace bearing	Yes

Equipment Failure Cost

Component Replacement Cost (With Edge Analytics)

Reduces Equipment Cost ⬇

Reduces Labour Cost ⬇

Reduces Production Losses ⬇

Increases Revenue ⬆

Increases Safety ⬆

Increases Efficiency of Employee Time ⬆