FAILURE FORECASTING - WHAT AND WHY

Failure forecasting is a type of predictive analytics that aims to identify and prevent potential failures or malfunctions in systems, machines, or processes. It can help reduce downtime, maintenance costs, and risks, as well as improve reliability, quality, and safety.

Pain Areas:
- Costly Downtime: Unplanned equipment failures disrupt production, impacting deadlines, costs, and customer trust.
- Inefficient Maintenance: Scheduled maintenance can be excessive, wasting resources and delaying production.

Failure forecasting can be applied to various domains, such as manufacturing, energy, transportation, healthcare, and more.

OUR SOLUTION - PREDACT SM4.0
AUTOMATED DEFECT RECOGNITION AND CLASSIFICATION

PredAct SM4.0 leverages IoT sensors to continuously monitor the health of motors in real-time.

It analyzes both vibration and electrical signatures to identify potential issues. This combination helps eliminate false alarms and improve the accuracy of failure predictions.

When a motor develops a problem, its vibration and electrical signature deviate from normal operating patterns. PredAct SM4.0's advanced algorithms detect these unique signatures, enabling early identification and isolation of the specific fault.
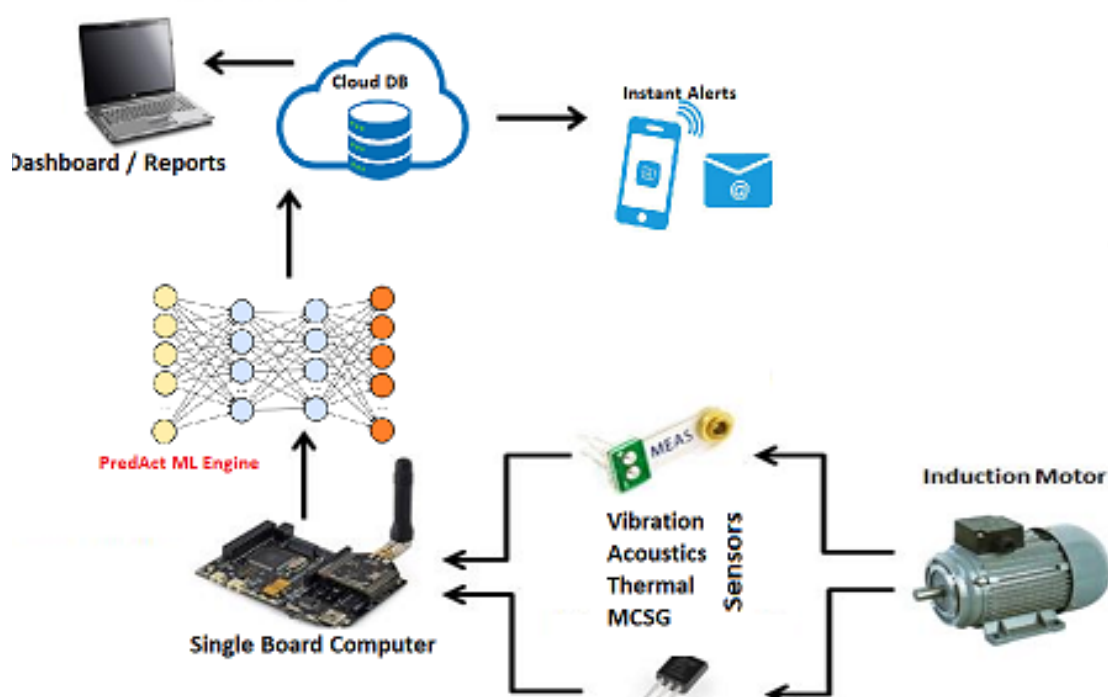
VALUE PROPOSITION

- **Proactively Plan Production**: Reschedule tasks around predicted failures to maintain production flow.
- **Transform your Maintenance**: Maintenance can be scheduled based on actual equipment needs rather than on a fixed schedule, which can reduce unnecessary maintenance activities and associated costs.
- **Supports Decision-Making**: Real-time data and trend analysis provide valuable insights that can inform strategic decisions regarding asset management and operations.
- **Improved Equipment Lifespan**: Early detection of issues prevents major breakdowns and extends equipment life.
- **Enhances Safety**: Detecting faults before they lead to failure can prevent accidents and improve the overall safety of the work environment3.

WHY PREDACT SM4.0

- Identify Specific Defects:
  - Weakening stator insulation
  - Broken rotor bars
  - Static and Dynamic Eccentricity
  - Inefficient coupling
  - Bearing problems
- Reduce false positives and improved accuracy by monitoring both Vibration and Current Signature

PROOF OF CONCEPT

The POC has been delivered and currently monitoring the condition of the paint shop of an automotive major located near Chennai, India.