DRIVEN-4

March 2021 Newsletter

Delivering a Predictive and Preventive Solution for your Manufacturing Floor Transformation

The current technology trend in industry for improving an organization's operational efficiencies is to enhance their manufacturing environment with real-time data; and applying machine learning capability to drive technology solutions that can predict potential failures and then drive to a preventive capability. Machine Learning when applied correctly enables a differentiated capability that utilizes learning algorithms to change the manner organizations manage their factory floors by improving uptime; and managing unforeseen outages from the equation. To be able to make these capabilities a reality, the organization need to build the following foundation to create the needed solution set:

- Communication capability from your Machine/Assets – This liberates information from the machine/asset and provides the ability to deliver this information to the cloud/platform for learning and interpretation
- Edge Computing within the Manufacturing Environment needed to provide the needed response and reaction timing needed to support real-time decision making where needed
- Data Acquisition Strategy – Define what is needed to acquire, its frequency and the data strategy for readily utilizing the information
- Cloud Platform—For hosting the needed data, algorithm and connected manufacturing platform
- Machine Learning algorithm technology with Predictive and Preventive capabilities

To be able to deliver the solution, your company needs to put in place the overall solution concept from:

1. Understanding the use case and all its elements the organization needs to model
    - Understanding the Machine /Asset Performance Expectations
    - "Key" parameters that drive the manufacturing environment's machine/asset performance
2. Incorporating Machine Monitoring to measure "Performance" for the Machine(s)/Asset(s)
    - This will be based on the "Expected" performance and results of the key drivers for optimal performance, broken down into:
        - Key Parameter data acquisition
        - Parameter performance trending
        - Definition of parameter acceptance criteria
3. Utilizing Machine Learning technology to assess and learn the use case and Machine(s)/Asset(s) usage and relate their performance to the predicted/expected performance
    - To either predict degradation/failure or preventive measures to eliminate failure by:
        - Understand performance data to establish machine performance trends
        - Deliver performance criteria acceptance bands based on machine usage
        - Establish "Predictive" bands/values to provide "Preventive" measures for the machine/work environment

The typical benefits that are achieved in a relatively short duration (8-12 weeks) are:

- Improved Product Quality Manufacturing
- Limit to Zero Manufacturing downtime

At DRIVEN-4 we have the expertise and experience to deliver all of the capabilities needed to deliver a predictive and preventive solution for your manufacturing environment. If you'd like to discuss this further give us a call.

Next Month: Developing an Enterprise Architecture that enhances the Benefits of PLM and ERP