



ARTICLE

Maximize the value of your PI System™ data using Predictive Analytics

With the latest advancements in technology – increased computing power, and the reduction in sensor and data storage costs – nearly every aspect of the industrial enterprise can be monitored and historized into vast volumes of Big Data. But how does an enterprise transform that data into value?

What is Predictive Analytics?

Predictive Analytics is a type of Artificial Intelligence (AI) that enables empirical multi-variate modeling of equipment performance. It is one of the most promising technologies to derive tangible business value from existing PI System data and understand an asset's known – good operational behavior. Advanced pattern recognition and machine learning are then deployed to monitor the asset in real-time and identify anomalies in how the asset is performing. Potential operating issues are then identified, diagnosed and remediated days or weeks before failures can occur.

PI System – the foundation layer of Predictive Analytics

Before implementing Predictive Analytics, it's critical to first address the foundational layer of data required to generate predictive asset models. Machine learning and artificial intelligence are only as good as the data under analysis. Underlying the ability to execute a successful analytics strategy is the ability to manage and curate data to ensure quality, integration, accessibility and security.

In plants and operational environments, PI System serves as a data source for Predictive Analytics. It harmonizes and integrates multiple sources of data, making sure that the data is cleansed, accurate and structured for Predictive Analytics to perform effectively.

PI System provides native integration with AVEVA™ Predictive Analytics, accelerating time-to-value and reducing complexities in the implementation of Predictive Analytics in your organization.

Quick wins

Predictive Analytics is an integral piece of any Digital Transformation strategy. Integrating PI System and AVEVA Predictive Analytics can accelerate your digital journey and deliver reductions in operating and maintenance costs. For example, in a recent Food and Beverage application, AVEVA Predictive Analytics was installed at a plant connected to PI System software. During a three-month pilot project, three significant asset failures were identified and prevented before they could occur:

By monitoring multi-variate sensor changes, AVEVA Predictive Analytics identified a conveyor motor drawing more current than expected during routine operation. Once identified, operators were alerted and able to resolve the issue before a bearing, roller and motor were compromised. Catching this issue before it occurred saved the company significant downtime and repair costs.

Predictive Analytics also identified a steady increase in amps drawn by a dough return conveyor belt. This correlated with a motor gearbox which was found to be running above recommended operating temperatures. The company was able to continue running while a replacement part was ordered to avoid unexpected downtime.

In another catch, AVEVA Predictive Analytics identified a higher than expected differential pressure in the oxidizer – which is responsible for reducing environmentally harmful emissions created during the baking process – indicating a clog which can disrupt the oxidation process. This catch actioned maintenance personnel to correct the failure and avert undesired environmental impacts.

Recommendations

Start small with measurable initiatives and lay out a pilot project with specific and measurable objectives.

For more information about Predictive Analytics, please visit: aveva.com/en/products/predictive-analytics

[Request a demo](#)



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