



## Industrial Analytics

In the new age of manufacturing and production, Industry 4.0 or the Industrial Internet of Things (IIoT), there will be gigabytes and gigabytes of data collected by companies. Companies will need to do something with all of this collected data. They'll need to analyze it in order to reap the benefits and positively impact their production to increase efficiency in the short and long terms.

As companies begin to implement IIoT in their industries, more and more data will be collected. The collected data could sit in a server or hard drive somewhere and would be useless if it wasn't analyzed. Companies must analyze this data in order to get quantifiable feedback on their processes. This feedback can reduce downtime, increase efficiency, and prevent unexpected failures; all three of these things are very costly for the bottom line of a company. By using industrial analytics, companies can leverage their own machines and processes in order to be more efficient and productive. Everything about IIoT and Industrial

Analytics focuses on increasing efficiency even more than what a company may think is possible.

Industrial Analytics can lead to positive critical changes to a process. Companies can make concise and selective queries on their collected data in order to possibly understand where peak electricity consumption occurs, where productivity falls off, or what causes an unexpected failure in production. These consistent queries help develop machine learning practices, where a system can make consistent, informed, and robust decisions based on the learned algorithms and understanding. Intelligent systems will reduce the amount of human interaction required to complete tasks and monitor processes. But before machine learning can make all the decisions, companies need to run their own queries and analytics to make better decisions for their production. These queries are unique to each company and are entirely dependent upon the goals they wish to achieve.

The Industrial Internet Consortium states that "Industrial analytics are used to identify and recognize machine operational and behavioral patterns, make fast and accurate predictions and aid in optimal decision making with greater confidence." They continue to break down the three categories that analytics typically fall into: descriptive, predictive, and prescriptive. Descriptive analysis applies to data that can provide understanding as to the current and past state of the process and for reporting. These analysis's help companies make immediate changes to their processes. Predictive analysis, just like the name, predicts future events that could occur like unexpected downtime or encountering high energy costs that could make production more

expensive in the somewhat immediate term. Prescriptive analysis uses the analysis data from predictive analysis to make adaptations that will increase productivity, down the road to some extent, so that companies are working as efficiently as possible. These three categories of analysis cover the different ways in which companies can leverage their collected data.

The analytical analysis that is run on the collected data will show where business can improve, can help make critical decisions, and can be leveraged to make a company more competitive in its market. IIoT and Industrial Analytics in this new age of manufacturing will help companies glean information that they never thought was possible.

## WE ARE MAKING THE **UNKNOWN KNOWN** THROUGH ADVANCEMENTS IN DATA.

Results Engineering is an IIoT/Industry 4.0 systems integrator that has been working in plants for the last 30 years. Our role is to guide our clients on the path to IIoT implementations, achieving **ultimate plant control**.

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