DATA SHEET

APM Data 360

Accelerating Autonomy for every Plant in the World

As manufacturing companies ramp adoption of Smart Manufacturing (or Factory 4.0), many struggle to define what "IT/OT convergence" means for them. At its core, it is the integration of operational technology, people, and platforms with information technology, people, and platforms to create greater efficiencies and reliability. For most manufacturing companies, the combination of sensor data (such as temperature, vibration, current, pressure, etc.), application data (such as SAP, IBM Maximo, Honeywell, etc.), and operational platforms provides managers with up-to-date information on asset behavior, conditions and manufacturing processes.

The challenges

Having immediate, data-based feedback is only half the equation of Smart Manufacturing value. The other half presents a formidable challenge: where to store and what to do with the mountains of generated data. Specifically, how to secure, process, and analyze the data to gain immediate insights.

The first challenge is aggregating IoT data sets in a single place where they can be easily analyzed and correlated with other relevant data sets using big data processing capabilities. This pooling place is otherwise known as a "data lake." A data lake is a storage repository that holds a vast amount of raw data in its native format. The data structure and requirements are not defined until the data is needed. In comparison, a data warehouse only stores data that has been modeled or structured, meaning that it must be processed and organized before warehouse loading.

The second challenge is applying analytics across the data lake. Solving this issue requires understanding which data sets to focus on and knowing which tools to use to process and combine the data sets to identify discernible patterns and glean actionable insights. In an industrial "IoT- enabled" enterprise, the data lake isn't merely a repository that supports more efficient traditional business intelligence (BI), it's the heart of a digitally- transformed enterprise's ability to increase operational intelligence (OI). A data lake based on years of comprehensive asset, vibration, and fault analyses empowers manufacturers to make near-real-time optimizations and provides significant competitive advantages.

Introducing APM Data 360

APM Data 360™ is an asset benchmarking data lake for rotating machines. Based on more than 25 years of asset performance, vibration, fault, and repair data, our solution includes analytics tools to help you quickly and easily spot trends and patterns. APM Data 360 offers the flexibility to add your data streams to the data lake and allows you to use other analytic tools or code your own for custom views.

APM Data 360 provides an extensive and rich data lake that, in turn, supports precise analysis and benchmarking. Combined with deep machine learning algorithms, it goes one step further by providing solid predictions and recommended actions.

Why APM Data 360?

There are few solutions today that can provide a rich data lake in conjunction with deep machine learning to create innovative predictive models. APM Data 360 benefits manufacturing professionals building a new plant, upgrading current assets, or benchmarking asset performance. With APM Data 360, you get automatic metric calculations and comparisons without sacrificing the flexibility to incorporate your data into the lake or use your own analytics toolsets.

How does it work?

Derived from decades of data collected from:

81,000 unique assets

148,500 components such as motors, coupling, pumps, etc.

2,256,300 machine tests

27,632 component-specific faults

67 trillion individual vibration data points

APM Data 360 bridges real-world inputs and real-world outputs leveraging the speed and power of the digital world to integrate more information and evolve operations for better business outcomes. Manufacturers can tackle challenges that previously were either too complex, too costly, too time-consuming, or lacked adequate information to determine and validate a root. By adding artificial intelligence, machine learning, and deep learning, APM Data 360 can not only identify patterns and trends from historical data, but it can learn and adapt as new data comes in—all more quickly and accurately than ever before.

Fault histories

(Calculated)

- Component fault(s)
- Duration/persistence
- Time to repair
- Uptime/downtime

Diagnostic results

- Fault severity (ok, slight...serious)
- Fault types (motor bearing wear...)
- Recommended repairs

Contextual info

- Industry vertical
- Mfg. Process
- Geo location

Asset details

- Drive train
- Components (motors, couplings...)
- Process data
- Test conditions
- Asset criticality

Asset brand

- Manufacturer (make, model, serial no...)

Asset details

- Drive train
- Components (motors, couplings...)
- Process data
- Test conditions
- Asset criticality

Benefits

Reliability growth

Helps you make better strategic decisions by indicating whether data measurements are random or follow a trend. Reduce costs by improving fault rates and improving maintenance practices.

Contextual comparative equipment analysis

Enables you to identify frequency and severity for various kinds of similar equipment or processes. The analysis, based on application, operation models, make, sub-components, fault types, seasonal trends, and geo-location, allows you to estimate the total cost of ownership, OEE impact, and maintenance.

Reliability benchmarking

Compares your asset performance against industry peers. Specifically, you can gather insights from comparisons against manufacturers' claims, improve engineering design, and leverage intelligence for better transaction and warranty pricing.

About SymphonyAI Industrial

SymphonyAI Industrial, a SymphonyAI business, is an innovator in industrial insight, accelerating autonomous plant operations. The industry-leading EurekaAI/IoT platform and industrial optimization solutions connect tens of thousands of assets and workflows in manufacturing plants globally and process billions of data points daily, pushing new plateaus in operational intelligence. SymphonyAI Industrial solutions provide high value to users by driving variability out of processes and optimizing operations for throughput, yield, energy efficiency, and sustainability.

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