Why IIoT is Vital to Your Maintenance Strategy

PROMETHEUS GROUP

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The main goals in an Industrial Internet of Things (IIoT) deployment are usually operational efficiency and cost optimization. Maintenance organizations worldwide are responsible for ensuring company assets are running at peak performance to meet production requirements. Many of these assets are equipped with sensors that capture reams of generated data. The sheer volume of this data creates organizational challenges.

IIoT: How We Got Here

During the late 2000s, a growing trend developed in business software where organizations were looking for improved integration between various business systems/processes in order to improve the exchange of data and streamline core business process. Organizations realized that integrating these so-called best-of-breed solutions was difficult, unreliable, and very expensive to implement and maintain. Ultimately, they realized that the benefit of having these core business modules integrated far outweighed the loss of the perceived best-of-breed functionality. Many companies therefore replaced (or are in the process of replacing) these best-of-breed solutions with integrated solutions such as SAP, Oracle, Maximo, etc.

There has been a significant rise in the number of consumer products that connect to the Internet of Things. We are being bombarded in our daily lives with new IoT products. IoT is appearing on television, in our appliances and cars, in the news, on our LinkedIn page, etc. IoT is everywhere. This massive influx of IoT messaging is heightening awareness to the point

that executives are asking themselves, "If IoT is taking over my home, what should I be doing with it in my business? If my washing machine can request a service call automatically and order supplies over the internet then surely our expensive corporate equipment can do more. How are we leveraging this to the benefit of the company?"

Maintenance Strategy and How IIoT Fits In

IoT is empowering organizations to collect and act upon more information. As we move into a more connected world, we must also move towards new smart infrastructure capable of dealing with the challenges that come with connected assets.

Organizations are quickly coming to the conclusion that they need integrated technologies that they can exploit for added value when the technologies are disconnected. Trends in the maintenance industry are moving towards not only integrating various software, but also connecting physical assets to these software systems.

Organizations that have not included IIoT in their asset management strategy will be unable to extract potentially exponential value from their assets, resources, and asset management processes, and will be left lagging behind industry peers. IIoT solutions, like Prometheus IIoT, give organizations the opportunity to better utilize their sensor data. Prometheus IIoT allows companies to maximize on collected sensor data by connecting their data historian to their maintenance system.
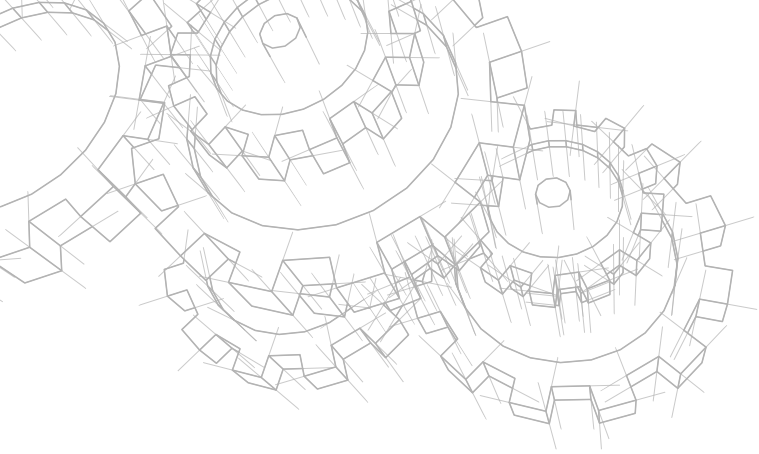
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Better Utilization of Sensor Data

The maintenance function is heavily data-driven, with each decision weighing asset and work histories against current operating and environmental conditions.

Historically, there has been a disconnect between maintenance and reliability systems, with work order information being held in one location and sensory data held in another. One side does not always have access to the other and vice versa. Solutions like Prometheus IIoT brings them together.

Prometheus IIoT applies user defined "what then" steps that makes the data actionable, whatever the business scenario, and then closes the loop by sharing this data with the organization's historian or data warehouse (such as OSIsoft PI). The IIoT application therefore provides real-time and actionable insight into the health of your asset.

Deploying IIoT in maintenance environments allows the condition of assets to be electronically monitored by their attached sensors. This allows for a predictive rather than reactive maintenance program. Asset failures and unplanned downtime are reduced by alerting maintenance teams immediately of issues that need attention. Analysis is simplified and decisions are better coordinated by correlating maintenance and reliability system information. Corrective actions can be applied in real time on the plant floor. Previously manual inspection and data collection processes are automated, improving timeliness and freeing up resources for other work.

Go From Reactive to Predictive

As mentioned above, maintenance teams are responsible for ensuring company assets are running at peak performance to meet production requirements.

The promise of a predictive rather than a reactive maintenance program gives IIoT the potential to change the way businesses operate every day. It is a once in a lifetime business disruption that incites new capabilities and promises new opportunities. Companies are leveraging IIoT to:

Reduce failures and downtime: When sensors are tracking your asset health for changes, they can detect when a failure is imminent, give your team time to correct the issue, and ultimately prevent a failure.

Increase savings and optimize productivity: Planned work is always less costly than unplanned work. IIoT prevents asset failures, which decreases unplanned work, and as a result, increases savings. Similarly, when assets are failing less frequently, less unplanned downtime occurs, and in turn, there is more opportunity for production.

Erase departmental and industrial boundaries: IIoT connects your maintenance and reliability teams by turning the sensor data traditionally collected for reliability analysis into actionable maintenance items. It also provides additional insights to both teams.

IIoT takes predictive maintenance to a new level. When you know the common reason an asset will fail, and you have the sensors to monitor the asset, preventing the failure becomes much easier. IIoT give maintenance teams a better way to minimize unplanned equipment downtime, which in turn reduces maintenance costs significantly, improves reliability, and extends the asset's life.

Reduce Maintenance Costs

With a solution like Prometheus IIoT, a major fertilizer company estimated it could save 12 to 15 days per year of lost production, representing millions of dollars in annual savings. The company had been experiencing four or five compactor bearing failures each year, and each failure caused roughly three days of downtime for equipment repairs.

The reliability engineers already knew from analysis that when a bearing starts to heat up, they have 12 hours to fix it before failure. The bearing will fail and

take production down if the problem is not caught and corrected within that 12-hour window.

Manual inspections of the bearing temperatures would indicate a potential failure, but it was not feasible to conduct the manual process at small enough intervals. As a result, some failures inevitably occurred.

Now, the fertilizer company is pushing its compactor bearing temperature readings into their data historian, and alerts are sent automatically to the IIoT solution as the temperature starts to rise.

Predictive maintenance work orders are automatically being generated in their EAM/CMMS and then escalated if the readings continue to rise. With more timely insight into compactor bearing conditions, failures are prevented, and downtime costs and production losses are avoided. Closed work order information is passed back to the historian, enabling continuous improvement.

Conclusion

Regardless of the industry, IIoT and its connected sensors and devices are revolutionizing asset management. In addition to driving productivity and business growth, IIoT also has the potential to fundamentally alter the work experience. Connected technologies are quickly becoming a necessity, rather than a luxury. Maintenance organizations need to map their strategies to includes these new practices.

Learn more about how Prometheus Group can help your organization today.

LEARN MORE

About Prometheus Group

Prometheus Group is a leading global provider of comprehensive and intuitive enterprise asset management software solutions that work within ERP systems and span the full work management life cycle for both maintenance and operations. Developed jointly with end users, Prometheus software enhances the customer experience for planning, scheduling, and executing work for both routine maintenance and shutdowns and turnarounds, all while protecting the workforce with safety solutions and electronic permit to work. Our straight-forward functionality, graphical visualization, and simple processes enable customers to increase productivity, reduce costs, and improve reporting. For more information, please visit www.prometheusgroup.com.