5 best practices to improve OEE with condition-based monitoring

Increasing business results from machinery and equipment with data insight from the industrial internet of things

When the operation of machinery and equipment is business critical, you need to be able to measure and boost the value delivered by those industrial assets.

Overall equipment effectiveness (OEE) is a widely used metric that combines measurements of availability or uptime, throughput performance, and output quality to assess how well a machine or production line works. Many factors impact OEE, such as unplanned downtime, production rejects, or slowdowns for any reason.

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In the manufacturing industry, running at 85% OEE is considered "world-class." Some great companies run at 95% or above, but many manufacturers never get out of the 30% to 60% range, which means much of their production capacity lies fallow. However, OEE improvements can result in dramatic increases to your profitability. On average, improving OEE by 10% boosts your bottom line by 22%. Driving up OEE by 50% increases profitability by 300%.

Given those findings, how can you improve your OEE? Here are five tips to help you get started driving up OEE with condition-based monitoring and condition-based maintenance.

#1: Get real-time OEE evidence

First, you need to know your current OEE values. Condition monitoring tells you what's going on with your machines right now. Leverage low-cost sensors on your machines and connect them to the internet of things (IoT) or the industrial internet of things (IIoT), then start collecting and analyzing the data. Real-time information is the best way to assess OEE and keep people accountable for improving it.

#2: Identify and prioritize problems

When you perform condition-based monitoring, the sensors connected to the industrial internet of things might highlight any number of conditions that keep OEE down. Some of these may be issues that need attention now. For instance, if your output departs from specs and the customer will not accept those parts, a production manager should fix the problem immediately. On the other hand, if a machine slowly develops a low-intensity vibration, that is probably not quite as urgent, but your maintenance team should look into it.

#3: Perform preventive maintenance

Condition monitoring enables you to stop reacting to machine problems and become proactive instead. Preventive condition-based maintenance is one of the most effective strategies to improve the performance of your industrial assets. When your IoT sensor data highlight an emerging machine problem, you can make a correction before the equipment fails, slows, or produces unacceptable output. Preventive maintenance keeps your assets running, saves you unplanned expense, simplifies your management of technicians and their skills, and elevates OEE.

#4: Correct quality deviations immediately

With condition-based monitoring, you don't need to wait until the end of a production run to identify and resolve quality issues. That approach is likely to run up costs, delay production, and ruin the OEE. Instead, take advantage of the real-time machine data from IIoT to alert you to departures from the quality standard, no matter how minute, as soon as they occur. Prompt quality corrections ensure that customers get what they expect and bring up OEE ratings – with steadily improving results if you keep on top of quality.

#5: Optimize production speeds

Condition monitoring helps you improve the performance aspect of OEE, so you don't just accelerate production-line speeds but also find the best takt and cycle times. When IoT sensor data give you a full view of machine events at every moment, you can keep production moving smoothly and consistently, without bottlenecks. Your machine operators can receive instant alerts when they need to resolve an imminent stall or slowdown.

You can put real-time data to work and boost OEE

If you want to improve the quality, performance, and availability of your machines – the three metrics that determine OEE – taking advantage of the internet of things is an extremely efficient way to do so. What's more, when you perform condition monitoring, implement predictive maintenance, and fine-tune production rhythms, your efforts will always be reliably evidence based.

You don't have to start from scratch by building your own IoT data collection and analytics solution. Instead, you can use sound, proven solutions from vendors who understand manufacturing and what it takes to raise OEE to top levels. innius, an IoT machine management solution, includes powerful analytics and lets you verify OEE values as one of several out-of-the-box KPIs.

To learn more, go to www.innius.com or contact the innius team.

About innius

innius makes machinery, equipment, and other industrial assets fully transparent and manageable. After a fast, easy deployment, people in companies that manufacture, use, and service industrial assets can see how well they work, initiate timely, predictive maintenance, and plan performance and engineering improvements. To make this possible, innius brings big data from the internet of things (IoT) together with the cloud, mobility, and social collaboration.