

Machine Builders Unlock IIoT Sensor Data

Published Date: JULY 21, 2021

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Predictive maintenance and real-time quality control are the holy grail for any manufacturer. But many organizations can't achieve this goal because they lack visibility into the inner workings of their complex machines. IIoT solutions—including AI, machine learning, and edge computing—enable factory operations to be proactive instead of reactive, solving problems before they lead to costly, unplanned shutdowns.

By helping manufacturers make sense of sensor data, machine builders can transform their customers' operations, while also creating new business opportunities for themselves.

AI and ML Unlock a “Black Box”

A factory machine can contain dozens of sensors or more, which helps it operate at the right temperatures, detect excessive vibrations, and move in concert with other machines or robots. But much of the information these sensors contain remains locked inside the machines.

“Manufacturers may perhaps get data for five of a machine's performance indicators. But without data from all the sensors, they never really gain transparency into operations,” says Markus Fabritz, digital solution sales manager at [CANCOM GmbH, a provider of digital transformation software](#). The data that manufacturers do receive is often segregated on separate platforms and doesn't arrive in time to prevent problems.

For technicians, the situation is even worse. Because factory floors often lack internet access, they must rely on their eyes, ears, and experience to detect brewing problems in a busy, noisy setting.

CANCOM helps manufacturers solve these problems with its [Smart Product Solution](#)—a preconfigured Intel® processor-based edge computing device. “We offer a blueprint, an IoT architecture to make an individual solution using standardized modules,” Fabritz says. “The machine builder gets the service from us, so they only

need to install this device in their machine. As soon as the machine is started, the end customer just has to plug it into the internet, and then everything is set up.”

The CANCOM platform collects sensor data where manufacturers can view it at the edge and in the cloud through a single interface. AI and ML algorithms can provide operational status in real time. Glancing at the screen, machine operators can fix incorrect settings or tweak them to optimize performance.

By producing better, more reliable machines, #machine builders can offer customers reliable uptime, #PredictiveMaintenance, and other services. @CANCOM_SE via @insightdottech

Sensor Data Eases Predictive Maintenance

The experience of Austrian plastics recycler EREMA shows how the CANCOM Smart Product Solution helps the company better serve its manufacturing customers.

The company, which has been producing recycling machines since the 1980s, wanted to improve its products, but wasn’t sure where to start. The large, complex machines it builds are outfitted with close to a hundred sensors, which, for example, monitor the temperature of plastic heating, sense vibrations, and measure the speed, direction, and power needs of rotating parts. But because customers couldn’t easily collect and analyze this accumulation of information, they couldn’t use it to improve operations.

EREMA worked with CANCOM to connect sensor data from customer machines to the cloud and the edge. Today, on-site customer technicians can view and analyze this data, monitoring the condition of machines along every step of their multi-stage journey.

Alerts about failing parts and other emerging problems are sent to service technicians at the customer’s site and to the recycling machine builder. “If there’s a problem, EREMA can send spare parts right away, which can be installed before a breakdown,” Fabritz says. “This saves them considerable time and money.”

Sensors Track Tool Alignment

Not all factory machines contain sensors. Marbach is an industrial toolmaker. When a customer started to experience plastic cap production issues, it was challenging to track down the source of the problem. The tool itself was contained in a larger machine, and it was not possible to see that it was out of alignment.

Based on this experience, Marbach determined that its tools should help the customer align its tool faster and monitor the alignment even during the production process.

Working with CANCOM, the company installed a handful of sensors on the customer's tools, connecting them to edge devices that automatically detect when the system is out of alignment. The smart system has both improved product quality and extended the life of the equipment. And by connecting sensor data to the cloud, technicians can monitor the machines remotely, performing fast troubleshooting and reducing downtime without having to go on-site.

Providing a Wealth of New Services

Manufacturers aren't the only ones who gain valuable insights from sensor data. Machine builders analyze information from customer machines in bulk to help them improve future designs.

"Having sensor data from just one machine is like getting an operator with 15 years' experience," Fabritz says. "Imagine what you can do with data from 100 machines. Maybe you can build a machine that doesn't break down anymore."

By producing better, more reliable machines, machine builders can offer customers reliable uptime, predictive maintenance, and other services, providing the builders with new sources of income. Eventually, some may transition from selling their machines to leasing them—a model that is more profitable for them and also appeals to customers, who don't have to tie up their capital in machine purchases.

"It's a win-win," Fabritz says. "And this is the vision of all machine builders."

About the Author

Teresa Meek is an independent writer and editor with a background in journalism (Miami Herald, Newsday) who now specializes in content marketing. She writes blog posts, case studies, white papers, video scripts, and ghosted thought leadership pieces for major

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