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Prescient presses

Cloud-based communication app gives operators and managers instant access to press performance data

Approximately 23.2 million people are counting steps, monitoring calories and recording sleep patterns with "arm candy" that comes in nearly as many colors as crayons. Launched in 2007, the slim profile wristband device has captured 19.2 percent of the wearable technology market.

Stampers want to be able to track their activities, too. And now they can with Nidec Minster Corp.'s FieldHawk. The cloud-based communication tool was introduced at Fabtech 2017 and is helping manufacturers "bring the Internet of Things (IoT) into the industrial world."

"If your FitBit doesn't give you the data you want, it's no big deal," says Kevin Evers, director of engineering for Nidec Minster. "If your press shuts down, that's critical."

Looking ahead

Forward-thinking Nidec Minster has been monitoring changes to the stamping industry's landscape for more than 100 years. Experience has helped the full-service press and automation supplier stay ahead of technology curves like Industry 4.0. In 2001, Nidec Minster equipped manufacturers with the ability to aggregate data from multiple machines to monitor production with its PMConnect control. By 2004, the machinery builder

Nidec Minster's FieldHawk app allows authorized personnel to use their mobile devices to communicate with mission-critical stamping presses for real-time updates.

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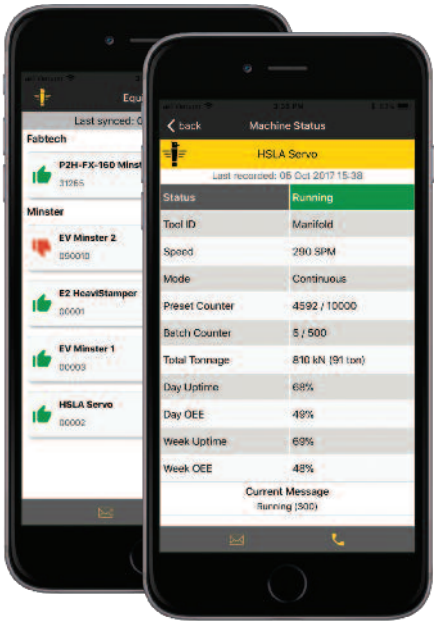
veloped remote access for customer support and, in 2011, remote access via the Ethernet was a standard trouble shooting feature on its equipment.

With smart factories and cloud computing looming, companies in 2015 began adding more software, sensors and wireless integration. IP connectivity quickly began to reshape supply chains and product strategies yet, for manufacturers, industry standards and best practices for the implementation of IIoT on shop floors was lacking.

The Industrial Internet of Things (IIoT) uses IoT technologies—which support the transfer of data over a network without requiring human-to-human or human-to-computer interaction—to give manufacturers the mechanisms for enhanced quality control, green practices that are sustainable, supply chain traceability and efficiency.

“Two years ago, people were talking about being IIoT-ready and evaluating how to make use of it in their plants,” says Evers. “But it’s only been in the last two years that tools have become robust enough and gateways [software/hardware combinations] smart enough to collect data securely from multiple sources, analyze it, sort it, and route it for proper interpretation.

“Now,” he continues, “the architecture exists to move data reliably from machines to the cloud and make it globally available by pushing it out to smart devices. Plant managers want to use these tools, but sourcing and integrating the right components has proved challenging. With



FieldHawk allows authorized personnel to use their mobile devices to access press performance metrics from anywhere in the world.

FieldHawk, we’ve taken the guess work out of it and provided a turnkey solution,” says Evers.

Bird’s eye view

FieldHawk allows authorized personnel to use their mobile devices to communicate with mission-critical stamping presses for real-time updates on machine status, operating conditions and production activity. Data can be collected from the Nidec Minster PMC press control and plugged into a company’s ERP system to measure press use percentages and operational efficiency metrics.

The cloud-based communication technology can provide a birds-eye view of operations, but it also allows individuals to drill down to the details. Criteria such as tool type, press processing mode, batch count, press tonnage, and whether or not a parts bin needs replenishment all contribute to a manufacturer’s ability to meet its production goals.

“Personnel can also see a record of the last time the press stopped and why,” says Evers. “If I’m a maintenance supervisor for a particular line and I see a notification that the line stopped and the reason for it, I can begin lining up resources to fix the problem while I’m walking to the machine. Reaction time is much quicker.”

Collecting data supports advanced analytics on supply chains. But Nidec Minster didn’t develop FieldHawk’s performance parameters without input. It queried its customers about what they need to help solve production problems, embrace IIoT and stay a step ahead of competitors.

Measure twice

“To improve something, you have to be able to measure it,” says Steve Richardson, general manager of marketing and sales for the services division at Nidec Minster. “The data we are able to collect now is much more precise.” For example, FieldHawk can tell an operator exactly when to perform maintenance. “This allows the operations team to avoid the costs of executing maintenance too soon or face repercussions from carrying out maintenance practices too late,” he explains.

The FieldHawk app also delivers maintenance reminder alerts. Preventive procedures are programmed into the Nidec Minster control and on the maintenance supervisor’s phone. “He doesn’t have to pull out manuals to create a schedule,” Richardson says. “He can see at a glance that the press oil on a specific machine needs to be changed in 50 hours. This allows him to order the supplies he will need—like an oil filter—ahead of time.”

Remote troubleshooting services and software upgrades are part of the FieldHawk package. Nidec Minster service engineers can remotely diagnose and fix a large number of problems without the cost and downtime associated with a field service call. Optional subscription services will allow a user to purchase additional software modules for up-to-date analysis

capabilities as they become available.

Accessibility

Anyone authorized to have the FieldHawk app on their mobile device can access press performance metrics despite their geographic location.

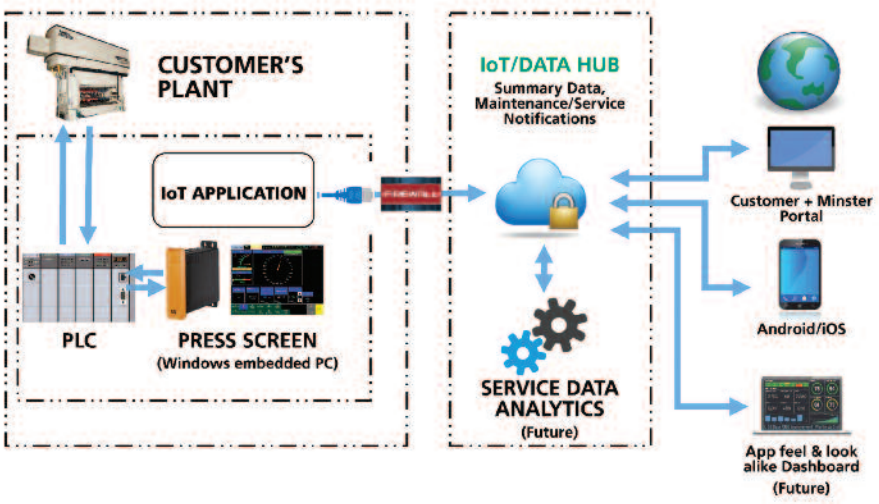
"If a plant manager can access the Internet, he can see the data on a particular machine or on multiple machines at different plant locations," Richardson says. "If a press owner needs to contact us regarding service for an alert they received, they simply press the icon on their mobile device which then populates an email to the right support team. They don't need to look up a phone number or have the machine's serial number. That information is automatically generated by the app."

In this information age, business managers want to stay abreast of what is happening in crucial areas of the plant, Evers adds. "FieldHawk gives them that instant access right on their phone."In the era of Industry 4.0, machines are talking with each other and with human operators. The gap between press data and ERP systems has been bridged. So what's next?

"Predictive analytics," replies Evers. FieldHawk Presscient is under development as part of Nidec Minster's Phase II rollout. The app will gather input from vibration, temperature, tonnage, oil, motor current, pressure and sensors embedded in the press and its feed line. The information will be analyzed using proprietary algorithms that have been created based on industry best practices and Nidec Minster's 100-plus years of knowledge about pressroom products.

"We expect to be able to solve problems before the customer is even aware of it," says Evers. "Once you predict a problem, we can initiate a call to action," notes Richardson. "It's all about efficiency and avoiding downtime."

Nidec Minster expects to launch FieldHawk Presscient in 2018 along with retrofit connectivity for existing press lines. Predicting problems is "the hardest thing to do," according to Evers. "A customer can develop rules-based protocol but without a deep knowledge of the machine and how it functions, it's very difficult to build a predictive system." FFJ



FieldHawk supports IIoT readiness by supporting secure, reliable collection and transfer of crucial performance data without the need for human-to-human or human-to-computer interaction.

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