

Consumer products and retail

Heimon Kala

Finnish fish producer optimizes production with Siemens MindSphere IoT operating system

Product

MindSphere

Business challenges

Monitor and control the internal temperature of fish being smoked

Collect supply air temperature data, percentage of moisture data

Analyze control parameters of previously smoked fish to optimize future results

Keys to success

Optimize production and improve product safety

Develop processes to increase competitiveness

Introduce MindSphere as part of a control modernization

Results

Improved measurement and control technology

Increased amount of fish smoked by 25 percent

Reduced cycle time to 75 percent

Heimon Kala uses MindSphere to increase production by 25 percent

Modernizing production processes

Heimon Kala, based in Hämeenlinna, Finland, is one of the country's five largest smoked fish companies and has been a leader in the fish processing industry for over three decades. In order to stay ahead of the competition, the company realized the importance of digitalization in meeting customer demand. To that end, Heimon Kala is utilizing cloud services, data analytics and reporting to improve its competitiveness. Heimon Kala did this through a modernization project for three smoke ovens using MindSphere, the internet of things (IoT) operating system from Siemens. This project showed the company how it could more easily measure results, reduce cycle time and dramatically decrease assembly time.

"In our previous process, we manually monitored the internal temperature of fish being smoked, and we wrote the data down on a piece of paper," says Risto Mälkönen, plant manager, Heimon Kala. "Process control and reporting values were done manually in a spreadsheet. Now, we are using eight different measurements in our ovens, from which the data is automatically and securely collected in the cloud service of the MindSphere IoT



operating system. From there, we receive batch-specific reports after each smoking operation directly in our email."

Mälkönen was surprised by how much valuable, production-related data can be obtained from the smoke ovens through measurements. The company's ability to monitor all aspects of the process improved considerably.

"In addition to the internal temperature of the fish, the report includes data such as the temperature of the supply air, the percentage of moisture, the settings and program used, as well as the name of the product and the oven user," says Mälkönen. "With this data, we can further optimize our production and improve product safety."

“Thanks to digital reporting, the control parameters of the previous batch of rainbow trout can be immediately used to optimize the smoking process of the next batch.”

Risto Mälkönen
Plant Manager
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Modernizing processes for competitive advantage

Competitive pricing in the fish processing industry forces Heimon Kala to ensure their processes are fine-tuned to preserve their place in the market. As such, embracing digitalization is a requirement for success, not an option.

Finnish machining manufacturer Lehtech modernized processing by using MindSphere digital reporting apps. In addition to MindSphere, Heimon Kala is also using Siemens' Simatec S7-1500 series logic controllers, a comfort panel and a SINAMICS G120P frequency converter, which can be installed directly on the side of a smoke oven.

“The diagnostics visualized in the panel accelerated troubleshooting,” says Mälkönen. “We can now see all moving parts of the oven, from doors to valves, on the display. And thanks to digital reporting, the control parameters of the previous batch of rainbow trout can be immediately used to optimize the smoking process of the next batch.”

Production increases by 25 percent

Heimon Kala is currently undertaking a heat recovery project in which heat escaping from the oven is recovered and used for heating wash water. This process decreases the carbon footprint of production, as the washing water of the smoking plant is heated with oil. More heat is escaping from the ovens than is needed for heating the washing water.

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Risto Mälkönen
Plant Manager
Heimon Kala

Solutions/Services

Fleet Manager
Asset Manager
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Customer's primary business

Heimon Kala Oy manages the fish production process from its fish farms in Finland and Sweden to the final product that appears on plates throughout the Baltic countries. The chain of production for the company's processed, fresh and frozen fish products includes manufacturing facilities that comply with the highest modern hygiene requirements to bring the finest products to Finland's dining and banqueting tables. The company is part of AS PRFoods and operates in Finland, Sweden and the Baltic countries.
www.heimonkala.fi

Customer location

Hämeenlinna
Finland

"We will use the rest of the heat to balance the supply air of the ovens with a refrigerating machine; the supply air will be cooled in the summer and heated in the winter. This way, we can smoke the fish consistently under ideal conditions throughout the year," says Mälkönen.

The benefits of process optimization through MindSphere are directly visible in the production quantities. Mälkönen says that with Heimon Kala's improved measurement and control technology, the company now smokes 25 percent more fish than was previously possible. Using MindSphere, Heimon Kala can now produce one batch of fish in three hours where previously it took four hours to complete the process.

MindSphere implementation in one day

It took just one day to define the report, set-up the ovens as assets with all the sensor parameters in MindSphere and connect all sensors to the cloud through MindConnect Nano. MindConnect Nano is a preconfigured device that collects data from different protocols and quickly and securely connects to MindSphere to transfer the data. Heimon Kala uses a MindSphere IoT value plan to begin the process.

"With the MindSphere IoT value plan, we store data, configure assets, users and rules," says Mälkönen. "We also like the ability to use applications from the MindSphere Store to provide all necessary services to our customers."

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Risto Mälkönen
Plant Manager
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