Success Story

UPM Reduces Costs and Minimizes Downtime with Honeywell Optimization Solutions

“With Honeywell’s help and direct hands-on knowledge of our business we were able to improve our sludge treatment process and by doing so increased our optimization for each line efficiency control and line load, maximizing the overall efficiency of our entire operation.”

UPM Kaipola Mill

Benefits
The UPM paper mill in Kaipola, Finland was having issues with control and optimization and wanted to find a way to help improve specific processes. With several Honeywell systems already installed in all parts of the mill, the company once again turned to its key partner to help provide solutions for its latest sludge treatment project. Honeywell was tasked with helping solve control, integration and optimization problems on sludge treatment screw press at Kaipola.

Honeywell provided Profit® Controller solutions for each line, Profit Optimizer for overall optimization and coordination, and a common platform for controlling all machines and drives through Honeywell’s PMD solution. The improved processes provided information to users as they needed it, while reducing costs and chemical usage mill-wide. Other benefits included:

- 10 percent improvement in the sludge drying process resulting in less energy consumption and reuse and treatment of water used in its own water treatment plant
- Decreased polymer usage by 20 percent resulting in huge operational cost savings
- Minimized downtime and service costs due to prevention of process upsets
- Increased capacity of mill by removing the bottlenecks and optimizing the number of running sludge press liners

Background
UPM is one of the world’s leading forest industry groups. The company’s vision is to be the frontrunner in the new forest industry and to create value by offering competitive products and services to customers worldwide. Its competitiveness is based on cost leadership, change readiness and innovation. UPM’s products are manufactured from renewable and recyclable materials. UPM’s origins date back to late 19th century Finland.

UPM has production facilities in 14 countries and employs some 24,000 people worldwide. Sales in 2008 were EUR 9.5 billion. UPM’s shares are listed on the NASDAQ OMX Helsinki stock exchange.
The UPM Kaipola mill produces coated magazine paper, telephone directory paper and newsprint. The annual production capacity totals 700,000 tons running three machines. On site is a power plant that produces process steam and electricity for the mill, as well as a de-inking plant used for recycling paper and a water treatment plant.

**Challenge**

With three paper machines running at its Kaipola mill, UPM was looking for a way to optimize all parts of the mill including the actual machines, sludge handling, power plant and more. The company sought a solution to various issues including poor controllability of its presses, strong cross connections and lack of coordinated control of the polymer dosage and press functions. In addition, there were minimum requirements expected of the chosen solution:

- Buffering control of incoming sludge load
- Control of mechanical power of screw presses
- Control of chemical power of wire thickener
- Prevention of back circulation of organic content of sludge

“We had a lot of moving parts at our mill and treatment facilities, and needed to find a way to improve both line control and optimization at our mill, but had to do so in a way that showed demonstrable savings across the board pointing to a clear return on investment,” said Kimmo Tukiainen, automation engineer, UPM Kaipola.

**Solution**

UPM Kaipola has a variety of Honeywell systems installed in all parts of the mill so it was a natural selection to have them help work on the latest optimization project. With the use of Honeywell’s Profit Controller and Profit Optimizer, the mill was able to complete a very successful project resulting in large cost savings and improved processes with an easy to use, easy to maintain solution.

“We were able to optimize the sludge treatment and improve our sludge drying process by 10 percent,” said Tukiainen.

“The solutions employed led to less energy consumption of the power plant where the sludge was burned, the water out of the drying process was also treated and reused in our own water treatment plant.”

Honeywell’s Profit Controller is a multivariable control and optimization application for complex and highly interactive industrial processes that enables predictive, model-based control, process model retuning functions, optimization control needed to balance, and multivariable coordinated control needed for controlling several interacting process functions.

Profit Optimizer is a software solution that integrates with Profit Controller applications to deliver cost-effective and user-friendly solutions to real-time optimization problems, and provides coordination between parallel lines.

Honeywell also provides a common platform for all control applications (machines and drives) where sludge handling operations may also be partly controlled by logic controllers from process equipment vendors.

“In addition to our quantitative benefits and cost savings, we were able to provide the right information to our people at the right time,” said Tukiainen. “We are so satisfied with Honeywell and its knowledgeable people that we look forward to further developments down the road.”

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**More Information**

For more information on Honeywell’s optimization solutions, visit www.honeywell.com/ps or contact your Honeywell account manager.

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