

Specialty paper producer achieves cost savings in just six months with ABB Ability™ Manufacturing Execution System



Owned by Nippon Paper Industries, one of the world's largest and most experienced paper manufacturing companies, Jujo Thermal conducted an extensive evaluation process to determine the best supplier for their production management upgrade project. After selecting ABB, the mill was able to see improvements that resulted in cost savings from improved use of over-production in just six months.

The need for a modern, uniform system

Jujo Thermal, located in Kauttua, Finland, produces specialty thermal papers for labels, tickets and tags, and point-of-sale use. They also manufacture one-side coated self-adhesive label stock and fiber-based barrier material SHIELPDUS® for flexible packaging.

With a production volume reaching 70,000 tons/year, the team wanted to replace the site's old, fractured manufacturing execution system (MES), which was making production planning, recipe management and batch process particularly challenging.

The mill wanted to leverage the update to improve operations and processes by having consolidated data and better information sharing with a more end-to-end solution than their legacy system. This upgrade was also seen as something that could complement their 5S lean manufacturing project and help make both the R&D and Supply and Delivery processes more efficient.

Rising to the top

Jujo Thermal used an evaluation matrix that allowed them to carefully assess the suitability of different MES options across 10 different criteria, including industry knowledge, UX experience, capabilities and more.

ABB worked to understand Jujo Thermal's complex production process that included coating machines, supercalenders and different routes from one machine to another depending on the recipe being used. As a result, ABB Ability™ MES for pulp and paper came out as the winner, with a final cumulative point total that was significantly higher than the 'second best' competitor.

"We created an 'xy' matrix that leveraged our knowledge and features we desired to reward points," said Sami Hesso, R&D Manager for Jujo Thermal. "We had three similar offers, but ABB had the best points; their expertise as a supplier was one that stood out."



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01 Machine reels

02 The mill's coating machine needs to apply many different types of coatings, which makes the recipe management function of ABB's MES crucial.

Well-prepped implementation

The rollout happened during the COVID-19 pandemic when travel was restricted; the mill was prepared to support the implementation because in-person visits were limited.

"We had pre-existing knowledge and did our homework well before starting with ABB. We studied how these type of projects should be done and cleaned the old system to create a plan going into implementation," said Hesso. "It's a very important phase and there was a lot of work and time pressure. You can always do it better. In our case, it wasn't perfect, but we worked quite efficiently to move us forward."

ABB had a well-defined path for MES implementation and the mill found it helpful to know what steps were upcoming. For instance, it's extremely important that the master data is healthy, and there is a data plan before any configuration is done.

The ability to have global support and local presence also helped in these efforts. "I have to give points to the ABB project team. Even if our company decided to use English for the system, it was very helpful we could collaborate in our own language. We gained so much efficiency," added Hesso.



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Incremental operational improvements in just six months

The mill's goal was to have a modern system that could be the catalyst to further improve processes and overall operations.

One important area was recipe management. This had been very challenging in the old system particularly because the mill has so many different types of coatings and base papers, making the volume hard to manage. Now recipes are integrated with the production planning module, so they have the right recipe for the right schedule.

"With ABB, there is much more than our old system could give us," said Hesso. "When we did this investment, we had a payback calculation, and we have been able to achieve at least partly those paybacks in six months. We can now better utilize our over production. The level of savings that we can achieve with this current system is impressive."

Another area that has improved is within the sales department, which can now save time and effort in putting orders. The new system implementation enabled the mill to streamline documentation, which has reduced sales effort, and the mill sees even more potential when they roll out more of the automatic features that are included in the Order Management module.

Even bigger future potential

As the team gets more familiar with the system, they see potential to unlock additional existing features and even implement new ones.

Examples of this include integration with the mill's ERP system and further honing recipe management. Plus the mill now has a malleable environment that they can explore developing on their own or collaborating with ABB on how to further improve it for their needs – something they could not have done with the legacy system.

“We are happy with the system at the moment,” said Hesso. “We have a live system environment now; the previous one was not so live. But I think the biggest paybacks are still in the future.”

Project scope

- Full order-to-invoice modules of ABB MES for Pulp and Paper: Order management, Production planning, Production management, Quality data management
- Interfaces: ERP, Customers via third-party services, DCS, QCS, WIS, PLCs, ABB L&W Autoline, and other devices

About Jujo Thermal

Jujo Thermal Ltd., established in 1992, is one of the world's leading suppliers of direct thermal and coated-one-side papers. They also provide fiber-based material SHIELDPLUS® for flexible packaging. The production and R&D are located in Kauttua, Finland. With its 200 employees, the company makes a turnover of about 100 million euros. The extensive sales network takes care of global customer service. Known for its consistent product quality, innovation, and excellent service, Jujo Thermal is accredited by the ISO 9001, ISO 14001, ISO 22000 and OHSAS 18001 certificates, and holds the FSC and PEFC chain of custody licenses. Jujo Thermal is fully owned by Nippon Paper Industries.



The winder at Jujo Thermal converts the parent reels coming from the paper machine into smaller rolls.