

## Industrial<sup>IT</sup> for Papermaking ABB reduces product waste at Nordic Paper Säffle.

When Sweden's Nordic Paper Säffle decided they would have fewer discards of the expensive paper they produce by adding more control to the mill's post-production processes, they turned to ABB for a master order and planning system.

ABB provided Nordic Paper, which produces grease proof paper for customers throughout the world, with a Customer Service Management (CSM).

Nordic Paper's mill is situated along the banks of the Byälven River. It is one of Nordic Paper's four mills and along with grease proof paper it produces paper used for baking, such as parchment and disposable baking forms.

The production of this special paper begins in the mill's pulp mill, which produces finely ground and bleached sulphite pulp. Most of the pulp is used in one of the Säffle mill's two paper machines, while any surplus is sent to Nordic Paper's other grease proof paper mill in Greåker, Norway. The two paper machines have different capacities and produce slightly different paper qualities. The grease proof properties are obtained through the pulp's quality and processing, and the finishing process is integrated into the paper machines.

"The paper is coated with chemicals according to customer preferences, such as silicone for a smooth baking paper or whichever substance else is appropriate to produce the



desired finish on each side. Because this coating is applied 'inline' in the paper machine, no other processing of the paper is needed," explains Magnus Nyman, head of the post-production department at Nordic Paper Säffle.

### Comprehensive CSM system

Since the late 1990s, order and customer administration, production planning and shipping have been handled with the help of ABB's CSM system at both the Säffle mill and its sister mill in Greåker. Post-production processes, however, were not previously incorporated into the system.

"In the autumn of 2007, we began discussions with ABB about a CSM upgrade," says Nyman. "Among other things, we wanted to expand our planning capabilities with respect to trimming, joint order runs and paper widths so as to reduce waste. We also wanted a better graphic interface for the system's various modules."

The new CSM module, installed in 2008, to control post-production, quickly produced positive results. Nordic Paper had less waste of high quality paper and improved problem follow-up.

“Even one percent less waste is enough to recover the investment for both the post-production module and the other upgrades,” says Magnus Nyman who heads the post-production department at Nordic Paper Säffle.

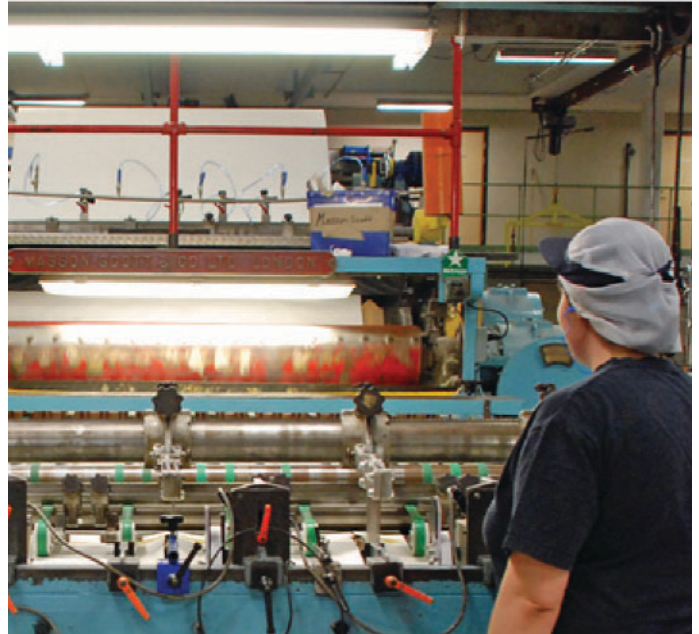
As the discussions continued, the question of including the post-production processes in CSM soon came up.

“ABB presented the benefits that this would provide and we subsequently chose to expand the upgrade project to include a module for post-production. In this way, we obtained a complete CSM system from ordering to loading,” says Nyman.

#### **Meeting even the most stringent customer requirements**

The Nordic Paper paper machines turn out finished paper on reels, three or four meters wide and weighing up to 4 tons. The next step in production is the rolling machine, which cuts the paper to width and rewinds the reel's wide paper into new, smaller rolls of various widths and diameters. Some of the rolls are immediately sized for major customers, who later cut the baking paper sheets to size or die-cut the baking forms. Other rolls are adapted to the mill's post-production processes where the rolls are cut into finished sheets based on the preferences of smaller customers.

Post-production at Nordic Paper Säffle includes cutting the baking paper into sheets, packing and shipping. Sheets are cut to order in one of the mill's two cutting machines for customers who want baking paper in a specific size or packaged in a certain way. The machines are loaded with either ten or twelve rolls of a predetermined format and simultane-



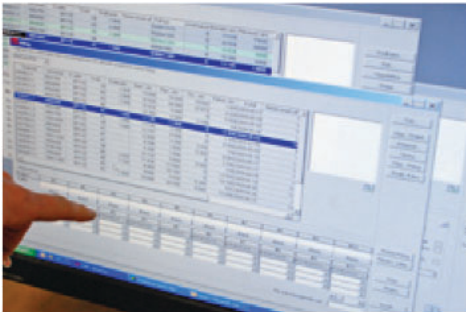
ously cut into sheets through all ten or twelve layers, respectively. Sheet stacks with ream markings for bundle after bundle quickly accumulate at the machine output.

“The sheets are cut to the formats ordered by the customers and we offer 250 variants – there are different bakery standards in many of the over 70 countries we export to,” says Nyman. The most common formats are 40 x 60 or 57 x 78 centimeters in bundles of 500, although English customers prefer 480 sheets in each bundle.

Says Nyman: “The many variants require quite a bit of planning and we have to make many adjustments to obtain large cuts. It takes time to load the rolls and we therefore want to obtain as many tons of cut sheets per load as possible.”

#### **Easy operator access to order information**

Process planning begins with rolling machine settings. Next, a planner with an overview of the entire CSM system coordinates the post-production processes, monitoring orders and ensuring that everything is in place, paper is in stock, and boxes, plastic materials and pallets for the packing machines are ready. Via the new post-production module, job orders go to the cutting machine operators. The operators have easy access to order information concerning, for example, the customer's requirements, sheet size, which of the three packing lines will receive the order and the delivery date.



1. Magnus Nyman, who heads the post-production department at Nordic Paper Säffle, sees significant benefits with the mill's new ABB CSM., 2. There are terminals with ABB's CSM system at each sheet cutting machine and packing machine where operators can view order information and enter production data., 3. Magnus Nyman of Nordic Paper and Per-Olof Sahlin of ABB examine a packing slip with a bar code that makes each delivery of baking paper traceable via CSM all the way through production.

Operators follow the orders and report what they have done in the system. "It works really well," says Nyman.

### Traceability for problem-solving

A function in the CSM system that is very important to Nordic Paper is traceability throughout the production process. Production for paper approved for food, including kosher-approved paper, must meet stringent requirements, including strict hygienic demands and meticulous inspections conducted by several large and well-known food producers.

For example, Nordic Paper has been approved and certified by McDonald's. Traceability in CSM begins at the rolling machine, where each roll receives a unique bar code. The code is transferred to cutting where each pallet of cut sheets receives its own code, with labels for each package.

"We can trace each delivered bundle back to the rolling machine and from there, back to the paper machine to see when the paper was produced and which chemicals were used," says Nyman. "This enables customer complaints to be followed up and errors remedied."

Another benefit of the CSM system's labels is that operators' information about conducted tasks is printed out as a personal signature on each label. The signature permits processing to be followed through each stage.

"In the CSM system, you can see what was done and by whom. If there are problems, it's easier to find out exactly what happened and to make the necessary corrections," Says Nyman.

### Training proves to be invaluable

ABB installed and commissioned the post-production module, as well as the other upgrades and expansion modules, in December 2008. ABB thoroughly trained mill staff so they could make the best use of the new system.

"The installation exceeded expectations and the training was invaluable. We clearly saw what needed to be adapted in both systems and in our way of working," says Nyman, who received additional training as a "superuser" with responsibility for further training of personnel and supervision of the system.

### Investment brings payback

The CSM system at Nordic Paper Säffle is now installed and covers all order and planning processes – from receiving calls from customers to truck transport. It is a state-of-the-art system that features, among other things, a user-friendly graphic interface, a new block plan with budgeting and sales planning, and an upgraded shipping module.

“With better planning and a block plan, we can run orders concurrently and distribute capacity in time so that yield from the paper machines and rolling machine is improved. This reduces waste and consequently expenses,” says Nyman. The largest portion of the project, however, was the post-production module, which will also provide the greatest benefits.

Nyman points out that more structure and order for roll storage and pallets, and better control of production enables the mill to reduce the amount of discarded paper. “The paper is of high quality and expensive; it’s enough with even a one percent decrease in waste to recover the investment for both the post-production module and the other upgrades,” says Nyman. “Moreover, we can more easily trace problems. Both production and production problems are clearly visible in CSM and any problems can be more easily corrected, which will also be very beneficial.”

### About Nordic Paper Säffle

Nordic Paper’s mill in Säffle has 180 employees and is a part of Nordic Paper’s business unit Grease proof Paper and produces paper approved for use with food for baking paper and baking forms. The mill has a sulphite plant and two paper machines with an annual capacity of 30,000 tons and 50,000 tons of pulp. The paper is supplied to customers all over the world, and Nordic Paper’s two mills in the business unit are responsible for more than half of the global production of grease proof paper.

The group has four mills: Säffle, Greåker, Bäckhammar and Åmotfors. Besides grease proof paper, kraft paper is also produced for sacks.

### About ABB’s delivery

ABB CSM, Customer Service Management, is a group-wide order and planning system that was initially delivered to Nordic Paper in 1999.

During the autumn of 2008, the system’s planning functions were upgraded with scheduling and a graphic block plan. Additionally, the system was expanded with modules for post-production follow-up, delivery planning and sales planning functions. This made support for Nordic Paper’s order and delivery process more efficient.

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