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CASE STUDY: NORDIC PAPER, NORWAY

Abstract

Nordic Paper in Greåker, Norway is the world's largest producer of greaseproof paper. Since the late 1990s, the company has been using the computer-based tracking system "Semtracker" to have a complete overview of logistic information about their products and orders. In 2004, Nordic Paper linked the lab analysis-tool Mikon LIMS with Semtracker in order to further increase the information transparency across production and logistics processes: the new system provides the company with real-time electronic information about the quality of the paper and the levels of chemicals in it.

Case study fact sheet

■ Full name of the company:	Nordic Paper, Norway
■ Location (HQ / main branches):	Greåker, Norway
■ Sector (main business activity):	Manufacturing of greasepaper
■ Year of foundation:	1905
■ Number of employees:	130
■ Turnover in last financial year:	Approx. € 80 million
■ Primary customers:	Retail and wholesalers
■ Most significant market area:	Americas, Europe
■ Main e-business applications studied:	Semtracker, Mikon LIMS, ChemSource

Background and objectives

Nordic Paper (NP) is a Scandinavian paper group operating in Norway and Sweden. It is the world's largest manufacturer of greaseproof paper, which is used, for example, for baking paper, baking cups and barrier paper (that is used as isolation in containers and packages). NP manufactures the paper and customers convert it into a variation of products. The company's market share of grease paper is estimated to more than 20% worldwide. The intra-market competition is quite stable with a slight decrease in competitors over the past few years. Nevertheless, NP products are facing tough competition from other materials that can be used for the same purposes, such as aluminium and plastic.

The NP paper mill in Greåker has 130 employees that operate two paper machines with a yearly capacity of 30,000 tons. It is an on demand production, with paper rolls going directly to shipment. No larger storing facilities are used.

Until eight years ago, NP processed incoming orders manually, using a system of Microsoft Excel spreadsheets to keep track of these orders. In the late 1990s, when more sophisticated ICT systems started to become widespread in the industry, Nordic Paper decided to implement a new system in order to automate the processing of orders and to increase the internal transparency of business processes. NP decided to deploy the Semtracker production management system, provided by ABB. The system was intended to give each roll an electronic identity so that operators and administration would be able to track it through all stages of the distribution chain. Later on, the lab-analysis tool Mikon was integrated with Semtracker.

e-Business activities

Semtracker

Semtracker is a Windows NT-based production management system (PMS) from ABB, an earlier version of the software that is now called "Industrial IT Production Tracking". Orders are fed into the computer and Semtracker schedules the production in time and in quantity. The Semtracker system also keeps track of the paper rolls. A barcode is automatically attached to the core and to the side of the recently produced roll. The same code then follows the individual parts of the "mother-roll" until the end of the distribution chain. Before leaving the mill, the barcode is manually registered with a scanner gun, sending a confirmation to Semtracker that the paper is on its way to the customer.

Semtracker thus allows the operators to see where in the distribution chain a roll of paper is. The barcode is linked to information about who the customer is and to a specification of the order. Using this information, Semtracker also guides the invoicing procedure.

Another advantage of the computerised system is that the relevant information can be sent to the customs' administration and to shippers. This reduces considerably administrative efforts for NP and its partners. Shippers, for example, are informed about dimensions and weights of the paper in order to plan the loading into containers.

Mikon LIMS, Laboratory Information Management System

Although generally satisfied with Semtracker, NP felt that it would be of great advantage if the system could not only handle administrative procedures electronically, but also provide information about the quality of the paper. To achieve this goal, NP linked in 2004 the Mikon LIMS system with Semtracker. Mikon LIMS, provided by Norwegian Mikon AS, automatically measures the chemical composition of the paper immediately after its production. It is a software and analytical tool which can be interfaced with other software and production management systems such as Semtracker.

Mikon LIMS links the quality analysis with the code in Semtracker enabling the operators to see if the paper on a specific roll is of the required quality. If the quality does not comply with requirements, the paper can be either redirected to be used for another type of end-product (requiring a lower quality) or be pulped and recycled into the beginning of the production. As a consequence, bad paper almost never reaches the customer, but is detected before it leaves the mill. In addition, Mikon has helped NP to optimise the quantities of chemicals in production. It gives operators real-time information about the relation between input levels of chemicals and the output paper quality. If a paper roll of

bad quality slips through the system and reaches the customer, it can be traced back, and the reason for the flaw can be detected and analysed. *“Before deploying Mikon we used varied quantities of chemicals. We can now run much closer to the input threshold values. Over the last years we have seen a significant decrease in the use of chemicals so the investment has paid off rather quickly”*, says Finn Solgård, Quality Manager of the Greåker paper mill.

Outlook to future development

NP is in continuous contact with the Mikon software provider and there are plans on implementing their CEMS system (Continuous Emission Management Solution). This tool keeps track of emissions in order to help the industry meet quotas and minimise pollution. Another potential development is to link Mikon LIMS to the feeding mechanism of the paper machines in order to automatically update the input levels of chemicals.

ChemSource

Another e-business tool that supports production processes is ChemSource, provided by Swedish STFI. NP uses it to have a constant overview of the chemicals that are stored in the mill. The suppliers of chemicals pre-report their NP-deliveries to STFI, in order to have it checked against chemical legislation and health requirements. Nordic Paper then has immediate online access to information about the chemicals used in the plant, which is important in case of an accident or a fire. *“For example, ChemSource proved useful when one of our co-workers had accidentally ingested chemicals of unknown nature. Thanks to the online system we could acquire instant information about these chemicals and he could be given swift and accurate treatment”*, says Finn Solgård.

Impact and ‘lessons learned’

The implementation of Semtracker and Mikon has helped NP to substantially improve ordering, production and distribution processes, which are running smoother compared to the time when manual systems were used. Furthermore, these ICT systems have helped NP to fulfil the ISO 9000 quality standards. The main positive effects experienced from using these systems are the following:

- **Reduced administrative costs** by using Semtracker for logistics, invoicing and customer service;
- The chemical control built into Mikon has contributed to an approximate **decrease in the use of silicone** by 10 %
- **Increased customer satisfaction**, as the ratio of bad quality paper reaching the customer has diminished. Most of the times the Mikon system helps NP to detect flaws in production already in the mill, and paper can be recycled into the production chain before being delivered to the customer;
- The use of the two systems for quality control has led to a **better use of resources**.

Finn Solgård, Quality Manager at NP, describes the process of installing the ICT systems at the NP mill in Greåker as relatively painless. He stresses the benefit of keeping in close contact with the supplier (Mikon) not only during the implementation, but also afterwards. This enables NP to improve and update the use of the quality system and to discuss the implementation of additional components and systems.

References

Research for this case study was conducted by Ola Medelberg, Rambøll Management AB, on behalf of e-Business W@tch. Sources and references used:

- Interview with Finn Solgård, Quality Manager, Nordic Paper
 - Homepage: www.nordic-paper.com
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