



Case Study

Industry:
Paper and
Packaging Board

Stora Enso
virtually eliminated
production line
downtime due to
lack of supplies.

Moved all
replenishment
responsibility to
supplier.

Stora Enso, Berghuizer Mill

Shutting down a fine paper production line can be really expensive; a paper mill line normally runs 24/7 and is quite complex. Liquid pulp is spread on a continuous moving wire or screen. The wet web of paper is transferred onto a "felt" where it is pressed and water removed. The web then goes into multiple dryers and on to the calendar section where it is smoothed and a finish imparted. Then it is wound on a master machine roll (shown in the photograph below).

Since this is all a continuous web operation, shutting down a line, and then restarting it is time-consuming and very expensive. Production losses can easily be in the tens of thousands of Euros or Dollars.

When one chemical or component to make the paper runs out, the consequences can be extremely expensive for the company and a real black-eye for the supplier. This could happen as many as two times a year at the Stora Enso - Berghuizer Mill.

Stora Enso is a global market leader in the production of publication and fine papers, packaging boards and wood products. Stora Enso's sales totaled EUR 12.5 billion in 2004 and they have more than 45,000 employees in 40 countries, on 5 continents.

The **Berghuizer Mill**, located in Wapenfeld, The Netherlands, is part of the Fine Paper Division. The Mill's history goes back to 1711. Two paper machines working around-the-clock produce more than 235,000 tons of high quality paper annually.

As stated on their web page www.storaenso.com, "The 430 employees of the Berghuizer work in teams aiming for constant improvements...In 2004 this resulted in receiving the Dutch Quality Award."

One of the improvements initiated at the Berghuizer Mill was automating their VMI (Vendor Managed Inventory) system.



Jumbo rolls, Stora Enso, Oulu Mill Sweden





The Problem was a that they used a manual, time consuming method of inventorying, ordering and receiving their chemical supplies.

Silo levels were monitored manually. If this was not done in a timely manner, the amount of product could easily fall below it's critical reorder point and a rush order had to be entered. Also, if the measuring device malfunctioned, it would not show the correct amount of product left in the silo, with the same results. In some cases this actually resulted in the entire papermaking line having to be shut down, until the chemical supplies arrived.

Monitoring isn't the only area where problems occurred. A manual order-entry system has many steps where a glitch can occur. Someone has to initiate an order request. This then goes to the Purchasing Department where it's entered into the ordering system. Then the order must be faxed or e-mailed to the supplier. Involving this many people and processes is an invitation for problems.

Even on the suppliers end, problems can arise if the e-mail or fax isn't received, and without an automated follow-up, discrepancies aren't noticed.

The Solution was first initiated by **Bayer** in another Stora Enso facility, and then by **Omya** in the Berghuizer Mill. Omya supplies Berghuizer between 3 and 5 truckloads of Calcium Carbonate a day, every day. One problem with delivery could shut the mill and its lines down. To eliminate this problem, Omya installed

an Orbit Logistics System on the silos that they were responsible for filling.

This technology, automatically requests measurements on each silo, and even compares one measurement to the next to determine how much Calcium Carbonate is being used and to insure that the measurement devices are working properly.

This data is compiled at an Orbit Logistics "outstation" and is transmitted to the **Orbit Logistics Technology Center** www.orbit-log.com utilizing telecommunications, Ethernet, or LAN. It can also be exchanged with the Mills ERP system and made available to production and management personnel.

At the Technology Center the data is "time-stamped", analyzed and stored. The new data is compared with the preset replenishment threshold, and when needed, an order request is automatically generated and sent to the supplier. It is interfaced with the supplier's ERP system and the supplier automatically initiates a replenishment order. Even deliveries are confirmed via silo levels readings.

Since installing the Orbit Logistics System, the Berghuizer Mill has not had to shut a production line down once because of lack of Calcium Carbonate.

The Next Step - The results have been so beneficial that the Berghuizer Mill is now in the process of installing Orbit Logistics Technology on all of its 20 silos. This way they own the equipment (versus the supplier) and can more easily move between suppliers when required.



- The major benefits that Stora Enso realized were:
- **Reducing the possibility of running out of supplies almost to zero.**
 - **Lowering management costs**
 - **Decreasing paperwork**
 - **Passing on the replenishment responsibility to their suppliers**

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