Case study

Aluminum giant Hydro improves performance and saves time with Quintiq
Hydro is the third largest integrated aluminum supplier in the world. Based in Norway, the company employs 23,000 people in 40 countries. Specifically, Hydro is the leader in rolled aluminum products, manufacturing 1 million tons per year.

Over the years, Quintiq has been chosen many times to supply Hydro with planning solutions for its manufacturing facilities. This case study scans the successful implementation of three Quintiq products in Hydro’s aluminum plants: Quintiq Macro Planner (covering strategic network optimization and sales and operations planning), Quintiq Company Planner and Quintiq Scheduler (short-term planning and event management).

“The Quintiq project has been quite beneficial in terms of reducing lead times and controlling inventories.”

– Michael Wimmer, Head of Capacity and Metal Planning, the Business Unit for Sourcing and Planning Raw Products, Hydro Aluminum Rolled Products
Quintiq Macro Planner – smart supply chain scenario planning

**Quintiq: A trusted name at Hydro**

In 2008, the Business Unit for Sourcing and Planning decided to replace its planning software. There were doubts in regard to the accuracy of the software’s business logic, and its limited user friendliness presented hurdles every day. Hydro was looking for software that could improve its long-term strategic capacity planning as well as the planning of its raw materials sourcing.

Quintiq was already a familiar and trusted name at Hydro, with other plants and business units successfully using Quintiq solutions. Macro Planner was chosen for its proven business logic and user-friendly interface. Michael Wimmer, Head of Capacity and Metal Planning for the Business Unit for Sourcing and Planning explained: “If the software is to be put into productive use, the planners have to like to do the job, and the business logic must be modeled properly into the software. Quintiq offered a good proposal.”

Macro Planner is a strategic multi-scenario and supply chain performance management tool. It is used for a variety of planning applications. First, since it is a high level planning tool, Macro Planner creates capacity allocation and raw materials purchasing plans for the monthly planning cycle. Taking into account sales forecasts and margin data from business units, Macro Planner performs capacity planning for the whole supply chain using capacity and stock positions.

Second, Macro Planner generates a plan for raw materials sourcing, including the internal recycling of process scraps. “We have better foresight into what is reused – now, not only do we know how much recycled materials will be coming but we also know when we will be getting the materials,” commented Wimmer. “The first part, calculating how much raw materials will be recycled, is easy; knowing when you will get the material is much harder. From Macro Planner we are getting a good answer and this has allowed us to reduce external sourcing and avoid building up large stocks.”

Additionally, Macro Planner is used annually to create a five-year raw materials sourcing strategy for the supplier network. This plan supports Hydro’s managers in making investment decisions on future capacity requirements for each plant. Significant benefits in terms of cost savings and time savings have already been documented.
Improving communication between people and departments

Quintiq, like Hydro, understands that a company reaps the most benefits from accessible and easy-to-use software. As a result, the Quintiq interface is exceptionally user friendly. “You don’t need to be an expert to use the software or understand the results,” commented Wimmer. “As compared to our previous system, there has been a substantial increase in ease of use. The planning process is very smooth and very fast; and operational planning can be done with less time input. This means you spend your time on things that are really important.”

Moreover, because people with varying functions from different departments come into contact with the plans, having easily understandable, transparent data ensures better communication. “With Macro Planner, you can communicate the plans to people who aren’t directly involved in the planning process and easily show data to people who aren’t into the details,” commented Wimmer. “This increased transparency means you are much more confident when taking the plans to people.”

In addition, Macro Planner has improved the flow of information between the different planning departments. “Before, we had no common platform for planning,” Wimmer continued. “Now, our internal processes are more aligned. For example, people who are operational in the order processing, including those who do the capacity planning, and those who do the raw materials ordering are all using the same model. This is much more convenient and things go much smoother.”

A solution for turbulent times

Accurate planning is always vital to the financial well-being of an organization, but it becomes even more critical when the economy is unstable. “Like all industries, aluminum has been experiencing turbulent times and we have had to make major adjustments in our supply chain,” said Wimmer. “Quintiq Macro Planner is supporting us in analyzing future options and sourcing strategies – we have already benefited from this quite a bit. The software is good at saying what you should or should not do; you can very easily explore different scenarios for capacity adjustments.”
Quintiq Company Planner: On-time delivery, smaller inventories

Optimizing delivery times and performance

Hydro’s Lithography Business Unit, responsible for making aluminum coils for offset printing plates, began a project in 2007 to optimize its planning and sales processes, specifically to improve both delivery times and delivery performance. However, the existing planning system could not capitalize on the unit’s capacities, partly because the planning was performed on what were essentially three parallel systems. This resulted in large amounts of manual work. Hydro realized it needed a unified planning system to reach its project goals.

Flexibility was an important criterion for the new software, so an inflexible system was out of the question. Another important criterion was support for a multi-level sales budget. Along with its general sales quota, Hydro also has quotas for customer related inventories. Quintiq’s Company Planner software was chosen because it was flexible and could meet all of Hydro’s complex inventory requirements.

Streamlining the planning process

In the Business Unit Lithography, Company Planner is used primarily by the Planning and Scheduling department as well as Sales. When an order comes in, it is first placed in the SAP® system, which is interfaced with Company Planner. The Quintiq Company Planner checks the order information against capacity, inventories and multiple sales budgets and confirms if the order can be produced on time. Throughout the production process, Company Planner provides notifications if a whole order or part of an order will be late. In addition, it creates a reordering proposal for raw materials.

The first benefit of the Company Planner implementation was streamlining the planning process. According to Werner Rohde, Head of Quality Assurance and Management Systems at Hydro Aluminum, Business Unit Lithography: “Before Quintiq, there was a lot of manual work and the system was not so reliable. Now, we have a much more modern system with better information on all levels. The Sales department has the actual status of where each order is in production and when it will be finished. The Planning department receives very precise reordering proposals and inventory levels. On all levels there has been an improvement.”
Improved delivery times and performance; increased flexibility

Company Planner is helping the Lithography Unit meet its goals for improved delivery times and delivery performance. “We manage and control inventory better,” commented Rohde. “And due to Quintiq’s algorithms, we can provide our customers with shorter and more accurate delivery times. Because we have more exact knowledge of materials inventory and machine capacity availability, our delivery performance is better and so is our customer service.”

Hydro has also benefited from increased flexibility. “If a customer comes with a quick order, we know what inventory is available and how to help the customer. This makes us much more flexible,” explained Rohde.

Additional Hydro plants to use company planner

With a long track record of successful cooperation, Hydro and Quintiq are currently implementing the Company Planner in an additional four European plants. Quintiq will continue to support Hydro in the future by optimizing the planning of its production facilities so Hydro can continue to be the world’s leading supplier of rolled aluminum.

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Quintiq Scheduler – optimal capacity utilization and daily event management

Addressing bottlenecks in the busiest line

Hydro’s production line for its thinnest gauge of foil (6 to 9 micron) is also its busiest, running seven days a week, 24 hours a day, to produce around 30,000 tons of aluminum foil a year. With production orders demanding full capacity, balancing bottlenecks is crucial. “In 2006, we were experiencing a bottleneck at the annealing furnaces. We needed a planning solution that could provide optimal capacity in loading the furnaces so products don’t have to wait,” explained Markus Offermann, Head of Sales and Planning at the Business Unit Foil.

As a trusted name throughout the organization, Quintiq was again chosen to provide Hydro with planning software, this time to help address bottlenecks and other scheduling challenges. “With the good experience in previous implementations, Quintiq was the front runner,” said Offermann. “Everyone in the organization is convinced that Quintiq offers the best solutions.”
Transparency and flexibility in production

Quintiq Scheduler is used for short-term production sequencing and daily event management – matching customer orders to raw materials and then sequencing the orders on the line. “Quintiq has given us much more transparency. Schedulers enter proposals and Quintiq supports them in determining which orders to pre-roll,” explained Offermann. “Also, when there are outages on a machine, Quintiq Scheduler makes it easier to reschedule the orders depending on timing and other constraints.”

Time savings and flexibility are just two of the benefits Hydro has experienced since implementing the Scheduler. “Our schedulers have found it easier to match customer orders to raw materials and then sequence these orders – this saves time,” said Offermann. “They also have more flexibility in making these combinations. With KPIs, schedulers can see the effects their decisions have on the plan. We are harvesting the initial positive results.”

Optimization and additional lines on the horizon

Hydro’s production process is highly complex, making implementation of the planning software equally so. In the near future, the project will reach its final stage to include automatic optimization of the scheduling and implementation in two more production lines.

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