

# SOLVING ELVAL'S COMPLEX PRODUCT MIX PUZZLE



# The customer

The ELVAL Group is the aluminum processing and trading division of VIOHALCO.

ELVAL started its activities in 1973 and is now one of the most important aluminum rolling industries in the world. It is the only group in Greece that focuses on this activity.

The extensive manufacturing base of the ELVAL Group, which includes 12 production plants in Greece, Bulgaria and the United Kingdom, manufactures a number of different aluminum products that meet the needs of the food, shipbuilding, automotive, construction and printing industries.

Over 85% of ELVAL's output is exported to more than 80 countries worldwide.



Fast facts

<b>Business</b>	Leading producer of rolled aluminum products
<b>Location</b>	Athens, Greece
<b>Size</b>	2,090 employees
<b>Markets</b>	Local market and 80 countries worldwide
<b>Annual production</b>	320,000 tons
<b>Export</b>	Over 85% of total turnover

## The challenge

At ELVAL, a lot of complex planning and scheduling decisions are made, each influencing the company's bottom line.

Some causes of this planning complexity are:

- Numerous orders of varying sizes
- Complex product portfolio with many different alloys and dimensions
- Multiple machines in the production process within different production areas (melt cast, hot/cold rolling, painting and foil)
- Several production rules and constraints
- Difficulties in combining orders on coils in the cold area.

A significant challenge accompanying this complexity was the laborious planning revision that was required in the event of process disruptions. Much of this planning was done manually.

"The main problem we were having was production delays," said Periklis Tsahageas, Project Manager for Supply Chain Management (SCM) Projects at ELVAL (2014). "We were having big difficulties with lead times and production routes.

"Prior to implementing the DELMIA Quintiq software platform, we were using several applications," Tsahageas added. "We realized it was impossible to make an accurate plan unless we had sophisticated software."

## The choice

“We had been looking for a tool that could optimize our supply chain by maximizing our throughput, reducing inventory levels and improving delivery performance,” said Tsahageas.

“We had some failed attempts to implement production planning software, starting all the way back in 1996. Therefore, we sought a software company that had experience in handling production planning for aluminum factories.”

Of the three companies invited to submit proposals, DELMIA Quintiq stood out for its extensive experience in the aluminum industry. ELVAL representatives from various departments, such as planning, production and sales, were involved in the selection process.

“We evaluated the offers and found that although DELMIA Quintiq’s was the most expensive, it offered better value.” added Tsahageas, who coordinated the selection process. “During the evaluation of the software development process, DELMIA Quintiq scored very high compared to the rest, particularly due to the DELMIA Quintiq methodology.”

After ELVAL made visits to the plants of DELMIA Quintiq customers, DELMIA Quintiq was ultimately chosen because it outscored its competitors on understanding ELVAL’s business and needs, for its implementation plan as well as the software’s ability to integrate with SAP.

## Implementation

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– Periklis Tsahageas  
Project Manager for SCM  
Projects, ELVAL, 2014

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The first DELMIA Quintiq solution to be implemented at ELVAL was the Routing Generator, followed by the Company Planner. Subsequently, the Melt Cast Scheduler was implemented, followed by the Hot Mill, Cold Mill and Foil Scheduler.

“During all the intermediate go-lives for the various projects, there was a zero-loss of machine production time,” said Tsahageas, adding that sales at ELVAL also continued without any interruption. He said that within the industry, manufacturers have experienced as much as €19 million in losses due to go-live problems after ERP implementations.

ELVAL also saw savings with its implementation of the DELMIA Quintiq software platform. Tsahageas said the company had initially planned to extend its ERP software to fully cover areas such as the functionality required for costing. However, when it was found these areas were covered by the DELMIA Quintiq software, ELVAL shifted that budget toward the DELMIA Quintiq project.

“Our planners, engineers, production and sales all took to the DELMIA Quintiq software easily, as they found it much more user friendly than the previous solutions.”

## Implementation of DELMIA Quintiq solutions at ELVAL

**Routing Generator** (May 2008)

**Company Planner** (April 2009)

**Melt Cast Scheduler** (June 2010)

**Hot Mill, Cold Mill, and Foil Scheduler** (June 2012)

## The result

Today, the DELMIA Quintiq software manages ELVAL's budget check, material requirements planning and finite capacity planning, using cutting-edge optimization algorithms. The plans are used to direct daily scheduling at ELVAL.

Throughout the production process, the DELMIA Quintiq system gives a forecast for the expected completion date, which is used to inform ELVAL's customers. Similarly, ELVAL's network of representatives are informed of the expected delivery dates via the corporate SAP ERP system. With the DELMIA Quintiq integrated suite of planning solutions, ELVAL is now able to quote realistic dates to customers and deliver the goods as promised.

The DELMIA Quintiq system incorporates a routing library that acts as a large database to manage information such as standard production routes, production times, scrap returns, etc. This information is exported to the SAP system to be used for costing.

The DELMIA Quintiq platform is also used by ELVAL's subsidiary, SYMETAL, which produces finished foil products.

When the Melt Cast Scheduler went live, George Koimtzoglou, Cast House Manager, remarked how the requests for production became more logical and feasible.

The schedulers who have become familiar with the scheduling applications, note how the system allows them to "schedule air", meaning schedule coils which are not yet physically available to them.

Since implementation of the DELMIA Quintiq system, ELVAL has seen significant benefits:

- Backlog has decreased by more than 50% and has flatlined
- Based on the reduced backlog, OTIF (Delivery On Time, In Full) has improved
- Manufacturing cycles have gone down by almost 30% for some products
- Delivery lead times have gone down by up to 50%
- Inventory and WIP have seen significant improvements.

"Lately, we've been seeing record production every year," Tsahageas said. "We have also seen the lowest-ever recorded backlog."

Among the other benefits ELVAL has seen with the use of the DELMIA Quintiq solutions is the ease in making amendments to the plan. Capacity planning enables the possibility of interventions (modifications to production routes, resource shifts, etc.) in order to maximize productivity and reduce delays.

The DELMIA Quintiq system gives ELVAL's production planners the ability to measure consequences of their decisions and evaluate alternative scenarios. Furthermore, the quality of production planning decisions is measured with KPIs.

The system also offers the ability to interchange production planning personnel between most functions. The majority of reports are created by the users themselves, without the need for intervention by the IT department.

As Petros Lambropoulos, Supply Chain and Production Planning Manager, pointed out, the scheduling applications have significantly improved the compliance to the Company Planner plan, improving goals like delivery performance and backlog.

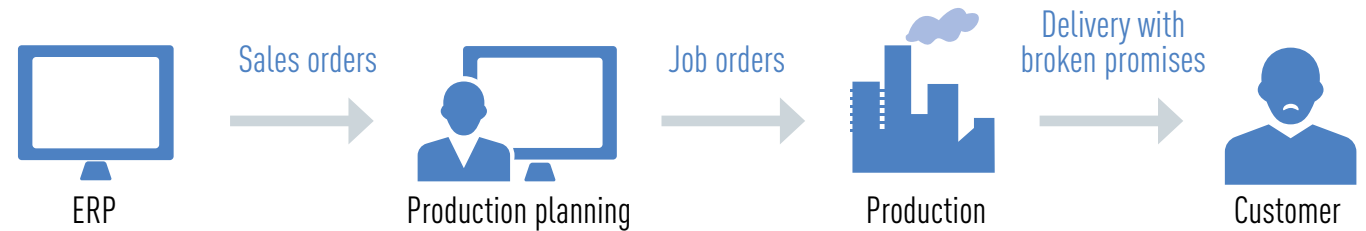
Tsahageas said that DELMIA Quintiq's introduction of the concept of order combination resolved a "nightmare" for ELVAL. The concept allows one coil to serve many order lines or for several coils combined to serve one order line.

"We had tried many times to produce finished products using semi-finished stock to reduce lead times – with little success. But we found a solution by using DELMIA Quintiq. It also reduced manufacturing lead times that were up to 12 weeks for some products, down to roughly four weeks."

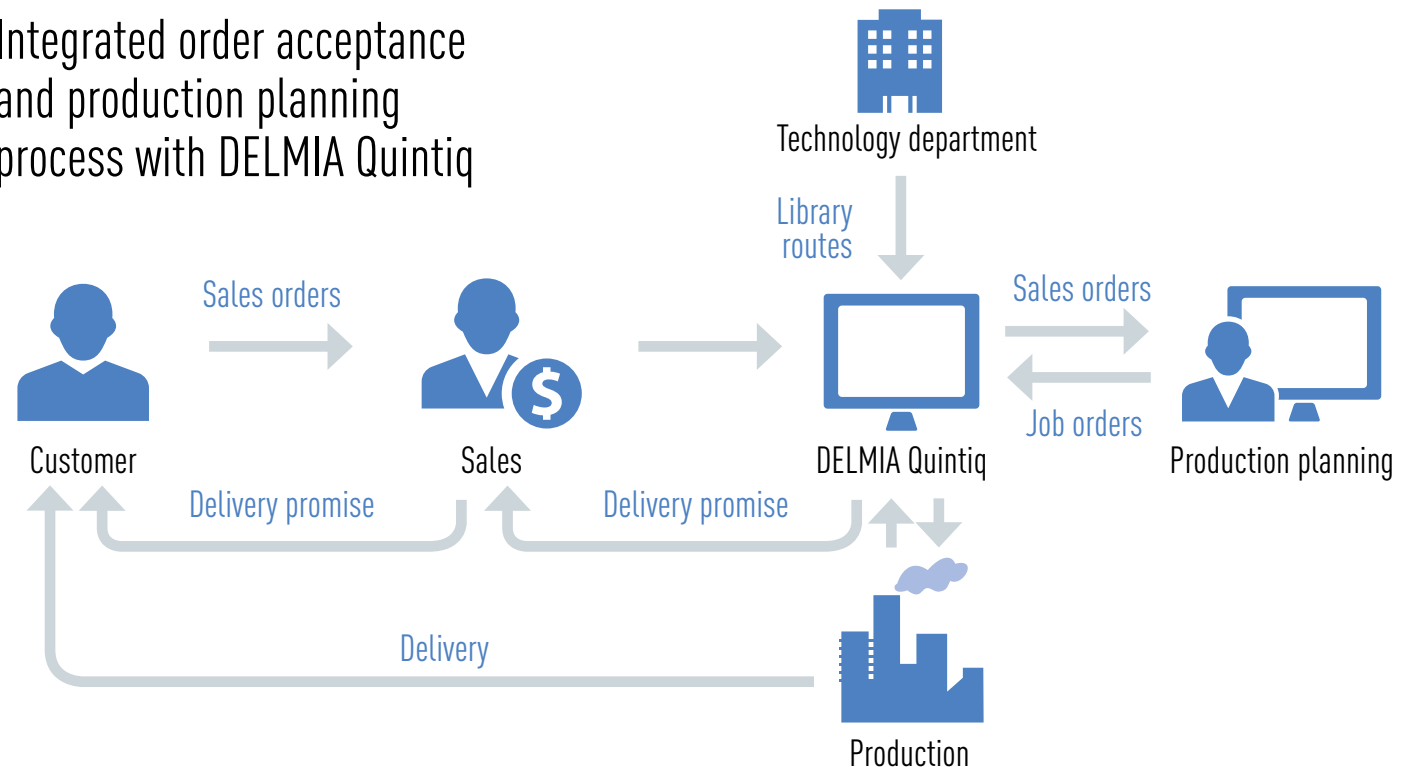
The DELMIA Quintiq software platform has offered ELVAL better visibility and the decision-support function enables quick reactions to circumstances.

"At some point, we were told there was going to be a trucker strike," Tsahageas said. "Using DELMIA Quintiq, we were able to identify the orders which required delivery by truck, and produced as many of those as possible (and sent them out) before the strike."

## Previous production planning process



## Integrated order acceptance and production planning process with DELMIA Quintiq



## Going even further

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ELVAL is among the first aluminum DELMIA Quintiq customers that have implemented the integrated planning platform to cover all their horizontal and vertical planning levels.

“I’m convinced that the successful implementation of the DELMIA Quintiq software has been due to its technology and implementation process (the DELMIA Quintiq Project Life Cycle). It allows challenges that always appear in such projects to be handled very well,” said Tsahageas.

ELVAL continues to expand the use of its DELMIA Quintiq solution over more of its operations. Currently in the pipeline is the blending optimizer for ELVAL’s melt cast operations.

ELVAL’s subsidiary SYMETAL, annually produces about 50,000 tons of foil using a very specialized and complex process. Planning of the foil annealing ovens had always been a challenge. However, the DELMIA Quintiq solution immediately gave visible accuracy in the capacity calculations for the foil annealing ovens, according to Dimitris Pokas, who is in charge of planning for SYMETAL. This added capacity, he added, has contributed to the increase of OTIF deliveries.

Foil subsidiary Symetal is implementing a project with Macro Planner.



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