

## Preactor APS Meets Expectations in Sklostroj by Improving Production Planning



Sklostroj Turnov CZ is an industrial equipment company specializing in the delivery of glasswork solutions, production lines, machinery and moulds for the container glass manufacturing industry. Established in 1950, the company has a long-standing tradition in the industry. The dedicated work of its 300 employees is evident in the company's complex yet reliable products. The creativity of the 40 designers ensures the outstanding technical design and fine features of all the products. In addition to the manufacture and sales of machinery for the production of container glass, Sklostroj also provides a comprehensive range of services connected with building and upgrading container glass factories, including all key and auxiliary equipment, staff training, maintenance, technical assistance and the complete construction of new plants.

Naturally, the company is fully responsible for all such activities. The company's annual turnover is over EUR 75 million. The majority of Sklostroj production is exported to countries such as Russia, the Ukraine, Germany, China, Poland, Italy, and others. Sklostroj customers include Vetropack Moravia Glass, Toyota Tsucho Praha, Solnechnogorsk Glass Plant, Ekran Novosibirsk and several Saint Gobain plants in Germany, to name a few.

Sklostroj mainly makes machinery to customer specifications. The product range includes container glass moulding machines, moulds, packaging lines, bench-top hydraulic presses, stirrers for molten glass, annealing ovens, cold-end handling and inspection systems, mould pre-heat chamber ovens, and others. Custom material is ordered on the basis of customer demands, and purchase requests are generated by the MRP calculation in the QAD Enterprise Applications (QAD EA) ERP system.

Final assembly requests and those concerning, to a certain extent, semi-finished products are generated by the "Custom Manufacturing" module, with the work orders bearing the identification of the job order for which they have been generated. Other requests, mainly lower-level ones, are generated by the MRP calculation in QAD EA.

Detailed production planning is performed in APS Preactor, which, among other functionalities, alerts the user to the demand for critical material such as cast parts. This query is forwarded to the Purchasing Department to allow manufacturing to start on time. Material is supplied to production on the basis of a work order in the QAD EA system. Final shipping is carried out after full assembly and operational testing of the machine.



The make-to-order manufacturing strategy is used with regard to the industry in question. The limited resource capacity is often resolved using external co-operation. In the past, there were problems with the deliveries of critical components, mainly cast parts. The complex manufacturing (dozens of subassemblies per final product) and technology make the order planning and capacity distribution processes and the completion date estimate a serious challenge.

Improved planning functionality was a key requirement in selecting an enterprise information system. The solution offered by Minerva involved the QAD Enterprise Applications ERP system, including APS Preactor, and was chosen for meeting the required functionality.

The pre-ERP and pre-APS planning process in Sklostroj was based on the line manufacturing software programmed by the company's in-house personnel. It was designed as a purely custom manufacturing system. This was also the root of its shortcomings: before being issued into production, the same items had to be manually matched across all the orders, and monthly plans took days to prepare.

In the separate container glass mould manufacturing shop, individual operations were planned manually using pieces of paper of various colours on a planning board to gradually fill in the free capacity of the individual machines. This manual system was difficult in terms of being kept up to date and making any changes. Consequently, the planning board had to be completely rearranged several times per month in order to determine the actual situation and the capacity to meet a new order. Although the system was functional, the time intensity of keeping the production plan updated and current was a major drawback. If the priority of orders was altered, the planner could only make a manual written change in the work orders found in the printed documents of the issued orders.

Preactor was implemented as part of a comprehensive solution built on the QAD Enterprise Applications system aimed at this type of industry. First, the QAD EA system with the custom manufacturing module was implemented. The module works with orders generated directly for the work order as well as with non-addressed orders generated by the MRP. Preactor takes all the data required for its operation from QAD EA.

The new functions necessary for smooth manufacturing operations had to be fine-tuned. This mainly concerned functions such as the new planning policy, the clarity of material queries and outputs regarding the capacity utilization of the individual resources. "Sklostroj's highly specific method of production management had to be matched with a standard system and the Minerva team handled the process with flying colours," said Petr Vild, Production Manager of Sklostroj.

"The greatest benefit of the implementation of the Preactor advanced planning system in our company is mainly the time savings achieved in the planning process. As this planning can take as little as twenty minutes, we are able to have an up-to-date plan every day, including all the changes that the company faces in its everyday operations," confirmed Vild, adding: "It is now very quick to change the priority between orders or include newly received manufacturing orders in the plan. Before we confirm the work order completion date and include it in the plan, we can put it in a model to determine what impact it will have on the capacity and workload."

The capacity planning implemented in Sklostroj accommodates the company's enterprise processes. The company has obtained a clearer idea of the estimated completion date of the entire order as well as the individual subassemblies. The planner can identify bottlenecks in time and

respond by adjusting the plan for the necessary parameters. The system generates critical material queries, which are crucial for the entire manufacturing process. Operation queries are supplied by an external co-operating party. The applied "Loan" module enables part of an order in progress to be loaned to another order that has received a higher priority status. The module also enables a timely evaluation of the effect of such a loan and a simulation of its impact on the completion dates of the orders involved. It is also easier for staff to understand work orders and workers have a better overview of where materials are going and what is covered. There has been a pronounced optimization of the work queue on the manufacturing resources.

"Preactor has provided us a tool to work quickly with the capacities of individual resources and also enables us to detect deficiencies in the input data, mainly in the technological procedures and design bills of material," said Vild to summarize the benefits.

Another step in the increasing co-operation with Minerva is the implementation of barcode support, which will be launched in the manufacturing process. The use of barcodes for the on-line sign-off of work executed will result in more streamlined administration, lower use of paper, and real-time tracking. In addition, the system will be faster and more accurate than it currently is.

