

Synchronizing Complex Assemblies at Cortiaço



With 20 years of experience in the metals and mechanical engineering sector, Cortiaço produces small, medium and large structures, including machinery and equipment for cutting, machining and heating. Their current headquarters is located in the city of Gravataí, Brazil and provides services that deal with the all aspects of a project including the equipment construction, transportation and installation on site.

For the production processes the company employs a team of approximately 150 employees, in a plant of some 5,000 square meters.

In addition to the manufacture of equipment, the oxy-cutting services, machining and heat treatment departments also provide a service to other companies.

The company produces welded, jet-treated, and painted structures based on customer designs. To meet the specific requirements in each project, Cortiaço is constantly seeking visibility in the lead times between preparation and assembly, and needed more intelligent tools to satisfy its customers in the market.

The Problem

The production line of Cortiaço consists of equipment and tools arranged in a series set up to perform machining and fabrication of precision parts. The production flow includes machining centers, rectifying centers, lathes and drills.

The difficulties involved in planning the production in the company were related to the complexity involved in the structure of their products and the resulting synchronization required in their processes. With long lead times, as much as 40 days in some cases depending on the complexity of the product, as well as the complexities involved in sequencing and synchronization of operations, Cortiaço had many orders that were delivered after the deadline. This had reached an unacceptably high level of 40% of total orders.

In addition, the company did not have a computer based production planning system that could enable a global view of the process to be provided. This resulted in low visibility of the progress of operations involving complex assemblies. Therefore, sudden and unexpected delays occurred in production, for example due to lack of parts or materials.

Because of this lack of visibility quality improvement programs designed to overcome problems did not have the impact envisaged since local improvements in for example the work centers had little impact on the overall flow because they did not know exactly where at any point in time where the bottlenecks were and therefore could not manage them effectively.

Cortiaço realized they needed a tool to sequence their production under different criteria, simulating scenarios, managing bottlenecks and complexities inherent to their processes.

They hired ACCERA Supply Chain Solutions, in August 2007, to implement PREACTOR with the main objectives:-

- To reduce production delays
- To promote better internal organization
- To Streamline processes and production synchronization



The Solution

In order to establish the expectations for the project, discuss different approaches and focus on the exact needs a Starter Pack project was carried out involving teams from ACCERA and Cortiaço. Here Cortiaço presented their current methods of process of planning and scheduling and ACCERA showed the features and potential benefits that would be achieved when Preactor was deployed.

Using well defined methodologies ACCERA identified PREACTOR 300 FCS as being able to meet all the requirements needed to achieve the scheduling goals of Cortiaço. Once the project had been defined ACCERA started the process of implementation including the integration with the Sapiens ERP system provided by Senior, as well as the data collection systems developed internally by Cortiaço.

The Results

With the introduction of Preactor, Cortiaço were soon able to automate the process of sequencing production orders more effectively resulting in a much more agile production system fully synchronized across the whole plant.

This is reflected in a 50% reduction in lead times to manufacture their orders. With the schedules generated by Preactor they could see that a tank that would normally take 40 days to be produced, today would be ready to be delivered in about 25 days.

Synchronization provided by Preactor production scheduling meant that efficient sequencing of operations was no longer a concern for Cortiaço. This has reduced inventory and work in process, reduced component shortages in assembly, and reduced the time necessary for schedule generation.

Preactor is further automated by the connection to a bar code system within the plant. The components of the final products for example, pass through the factory accompanied by a bar code that shows the start and end dates generated by PREACTOR. This provides traceability of components and shows the operators what the flow should be for each part. The use of this bar code, that accompanies each component along its flow, also facilitates the capture of the times for completed operations. This information is automatically returned to PREACTOR, updating it with the actual situation of the plant and providing a means to compare the planned and actual times. Furthermore, the planning of cutting plates now also considers the priorities of production, reducing inventory and synchronizing the process. ACCERA noticed a better organization of the work accomplished in the factory, through the systemic sequencing generated by PREACTOR and sent to the production by order labels and work-to-list reports.

Currently, Preactor is the focus for all production planning in Cortiaço. Users can consider the relevant variables in production and automate the process of schedule generation. With it Cortiaço have the ability to work in management activities that involve simulations of scenarios, analysis of scheduling possibilities and informed decision making.

Alex Kämmerer is Cortiaço Production Manager. “In providing services for cutting, machining and heat treatment, Cortiaço has a high diversity and variability of parts in the production process. We are always looking for new technologies and management tools to exceed our customers’ expectations, and Preactor has provided that. We have experience real results with this solution, benefiting our organization and especially our customers.”