

Inplac bags the Benefits of Preactor by reducing setups and increasing on-time Deliveries



The Inplac - Plastic Industry SA produces high quality flexible plastic packages, giving special attention to products with high technological content and, therefore, greater added value. The main type of packaging produced is the low density polyethylene to the markets of fertilizers, lime, limestone, thin mass and mortar. Founded in 1974, and located at Biguaçu, Brazil, the company is distinguished by the constant search for innovation. Several products and processes were developed in a pioneering way, with great technical and commercial success.

The production system is make-to-order, thus, all production is performed according to the characteristics required by their customers. The customization of products is high, which results in very diverse routes and times of processing. Moreover, the setup times of the machines are significant, as determined in accordance with the sequence of operations.

The Problem

The complexities involved in the process of production planning of Inplac are related to the wide variety of items that must be produced to meet the specifications required by their customers. Working with a production orientation make-to-order, Inplac's challenge is to meet increasing demand, offering differentiated products, with lower delivery times than the competition. Inplac has several specialised machines that meet the specific needs of their customers, such as the production of valved bags, bags with open mouth, bags with continuous welding, among others.

The challenge to production, in this case, is to use the available capacity on these resources and to determine the optimal number of operators assigned to them, as well as a buffer needed for a good sequencing, ensuring that these resources will not become bottlenecks in production. Additionally, the time for the processing and the setup of various items produced are not fixed, given that it depends on the sequence of operations covered by the products.

In the midst of these particularities of the process, Inplac's planning was suffering many manual interventions and was highly dependent on people. The program used by them required a lot of time to use, offered little advantage, and it had a low systemic visibility, preventing effective monitoring of what was being produced over time. This led to delays occurring due to lack of visibility of production progress and only reactive actions being taken.

Due to low level of automation involved in the process, the system did not have the dynamism to keep pace with production, nor to assess the differences between what was planned and what was actually done. Furthermore, the future visibility, the identification of bottlenecks, and the responses necessary for the production were being affected.

For these reasons, Inplac started to study alternative systems on the market that could help it in its increasing challenge of production programming. Even a customization of the existing ERP system was considered, but was abandoned in favour of Preactor which offered better modelling of the processes and ready to offer significant returns in less time for the company. Therefore, Inplac hired ACCERA Supply Chain Solutions, a Preactor Solution Provider in Brazil, to deploy Preactor. Inplac knew their problems and was willing to modify its working practices why using Preactor as the tool for planning and production scheduling.

The main expectations with this project were:

- to automate the process;
- to simulate alternative scenarios;
- to evaluate the impact of changes in production;
- to provide reliable delivery dates to customers and
- to visualize the potential gain in each reporting period.

The Solution

In order to line up the expectations with the project, to present teams, and to draw possible approaches to be used, a Starter Pack involving teams of ACCERA and Inplac was set up. In this period, Inplac presented their process of production planning and programming, and ACCERA presented the features and potential benefits that would be achieved on a Preactor project deployment.

In addition, trainings were conducted related to this tool and alternatives were offered, until the final solution for Inplac was arrived at. According to the analysis specified in the Starter Pack, it was identified that the version Preactor 300 FCS met all the technical requirements needed by Inplac to perform their production programming. Once defined the Preactor solution, Inplac started the process of deployment.

First, a survey was made of all available resources and their specificities. Then, a breakdown of constraints was done involving attributes passive of parameterization, resulting in matrices. The allocation of products was based on the validation of parameters in order to balance the available resources and relieve human interference in programming. Furthermore, integration was performed with the existing ERP Protheus provided by Microsiga.

Results



With Preactor, Inplac started to have a production programming much more agile, with a dynamic system that is able to respond to changes in production conditions that might happen at any time, and even to anticipate them. Simulations of programming scenarios, and monitoring of production in the factory-floor became a reality at Inplac. All the complexities, involving the product parameters and constraints of the resources that formerly had to be dealt with by experience people are now sequenced in an intelligent manner by Preactor. Therefore, it was possible to minimize the time of setup and to balance resource use, improving the use of the productive capacity of the company as a whole.

Added to this, we have the automation of programming that was of primary importance to increase the reliability of the process, to reduce delays and to improve the delivery performance. The time spent prior to Preactor, with manual programming, can now be used in activities involving decision making from management reviews.

A survey conducted after the conclusion of the project revealed 100% of satisfaction within Inplac's team that was involved in the project. This team knew how to conduct in a positive way the cultural changes that accompanied technological changes, and they have now, with Preactor, the reference tool for all planning and production programming.

Roberto Marcondes de Matos is President Director at Inplac. "When we initiated the project with ACCERA, we knew that our biggest challenge would be to shape a tool to our production system and also address so many features. This was only possible thanks to the efficiency, expertise in production engineering, and primarily by the professionalism of ACCERA's team."