

An innovative agreement model to push glass profitability

It was on 17 May 2018 that Bottero and Tiama officially signed a partnership agreement, introducing a joint co-operation between the two companies for the future. The agreement results from discussions conducted by managers from both companies from a technical and sales perspective. Strong synergies between the strategic visions of Bottero and Tiama were immediately established and the potential value of this technical co-operation in the glass container market is evident.

"I am personally convinced that the future of the glass industry, ensuring real productivity and quality gains will require on one side growing correlations between sensors and on the other production process automation... and this is precisely the unique goal of our partnership" says Max Hodeau, CEO of Tiama, one of the people leading the project that resulted in the signing of the final agreement.

"The agreement is totally in line with the medium term strategic plan of our company" Marco Tecchio, CEO of Bottero adds. "We are confident that we will develop solutions to enhance the production efficiency of our customers and increase the operative safety of the glass container forming process."

The Bottero-Tiama co-operation will be devoted mainly to the development of a platform for data integration, in order to build an information base to characterise the glass forming process and identify correlations between hot end process variables and cold end measurements. The final goal of this approach will be to identify the key enabling parameters to manage, to stabilise, control and optimise the production process, from the perspective of improving its overall efficiency and profitability.

Project steps

The first step of this project is dedicated to the definition of a common data interface to acquire data and measurements coming from sensors, IS machine, process variables and cold end inspection systems, with the objective of storing them in an integrated database, organised according to a coherent and statistically meaningful data structure.

Starting with a defined and populated information base, a large data analysis methodology is developed to correlate hot end and cold end data and measurements (with the support of a container tracking system), with the target of identifying the key process parameters able to describe:

- Correlation between HE measurements.
- Geometrical characteristics of containers.

- Glass thickness distribution.
- Main container defects.

Finally, based on the results achieved, a smart process control system is designed to optimise the forming process, controlling and regulating production parameters according to a closed-loop logic. A machine learning approach adjusts and fine-tunes this control system using measurements coming from different areas of a typical production line.

"Industry 4.0 has become part of our daily language, in all business activities, including glassmaking" says Fabio Galliano, Technical Director of the Bottero Hollow Glass BU "but we think the challenge should not be limited to data collection and to a relevant centralised visualisation, as some market players try to offer. We have a much greater opportunity to bring value to the market using this data to have the production process under an increasingly sophisticated control. Bottero rose to this challenge several years ago and we have been happy to find a perfect partner to continue the development of our programmes, in which Industry 4.0 is just a mean and not the final target."

"The correlations between cold end and hot end are at the heart of Tiama R&D activity" adds Michel Ollivier, head of Tiama R&D. "All of our investments are dedicated to this ultimate goal."

Developing solutions

The commercial implementation of the agreement between Bottero and Tiama is also interesting and is described by the following words from Davide Lucca, General Manager of Bottero Hollow Glass BU: "Agreement baselines have been set since the very beginning of our discussion to bring specialised competences and value to the entire market. Bottero and Tiama will develop new solutions together, each one playing and keeping its own competences: IS machines and the production process for Bottero and measurement sensors for Tiama. Nevertheless, any development is based on an open communication protocol and platform to give both companies the possibility to go to the market independently and leave to end users the final choice about the suppliers they prefer. At the end, a fair co-operation between specialists to generate value for glassmakers."

Joint working programmes are already in progress: The prototypes of some solutions are already installed in production to qualify and validate their technical characterisation; some ideas are on the desks of the two R&D teams, while more activities are in the pipeline. Bottero and Tiama are confident that this model of two companies, each specialised in its own competences, co-operating to develop value to the market but keeping their own commercial independence, will be appreciated by glassmakers. ●



November 5 - 8, 2018 | Greater Columbus Convention Center | Columbus, Ohio USA

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