GlassFORM.ai has BOTTERO joining forces with TIAMA for AI

In a winning innovation partnership, GlassFORM.ai has seen BOTTERO teaming up with TIAMA, world leader in quality sensors. GMP&A recently spoke to them both about the project, which will have advanced machine learning and artificial technology solutions controlling and optimising the process of forming glass containers.

GLASS MACHINERY PLANTS & ACCESSORIES (GMP&A):

Fabio, you're Technical Manager at the Italian multinational Bottero. Why is automation so important within the glass industry at this time?

Fabio Galliano: Since the outset hollow glass production has relied a lot upon human intervention. That's because managing molten glass whilst turning it into final containers is a somewhat complicated and unstable process by nature - all of which depends upon many influencing factors that are mainly related to temperature and glass composition.

Many glass plants installed a lot of sensors over recent decades in order to closely monitor the hot end process, albeit in a standalone manner. Those sensors then started getting connected over the years - delivering data, and sometimes even comparing and correlating information. With that culture of real data getting established, it stands to reason that the next level of solutions is now strongly anticipated.

Within this context, process automation has become a great need. This is already demonstrated in other industrial segments where the usage of modern technology related to AI and ML are being perfectly adopted thanks to the availability of much data and measurements from a variety of sensors and inspection systems. Indeed these form the very basis of 'big-data' theory.

Today the challenges are to increase productivity, to contain environmental impact by reducing the carbon footprint and to increase operator safety whilst coping with the lack of available expertise. So, to continue sustaining glass as a material of the future, the industry needs to change that earlier approach by equipping itself to fully control and automate its production processes.

Here, of course, considerable investment in research and development is expected to reinforce the market position of the glass manufacturing industry. That's the reason automation fosters Industry 4.0 principles in its aim to optimise the production process, which is why we predict that stakeholders in the hollow glass industry will reap the rewards of advanced automation techniques and machine learning-based approaches.

GMP&A: Bottero is a leading supplier of technologically advanced glass making machinery. Why has your company decided to take on GlassFORM.ai?

Fabio Galliano: Today the glass industry is investing significant resources in R&D programmes. It's developing fresh ways to produce and use glass as it makes new products avail-

Fabio Galliano

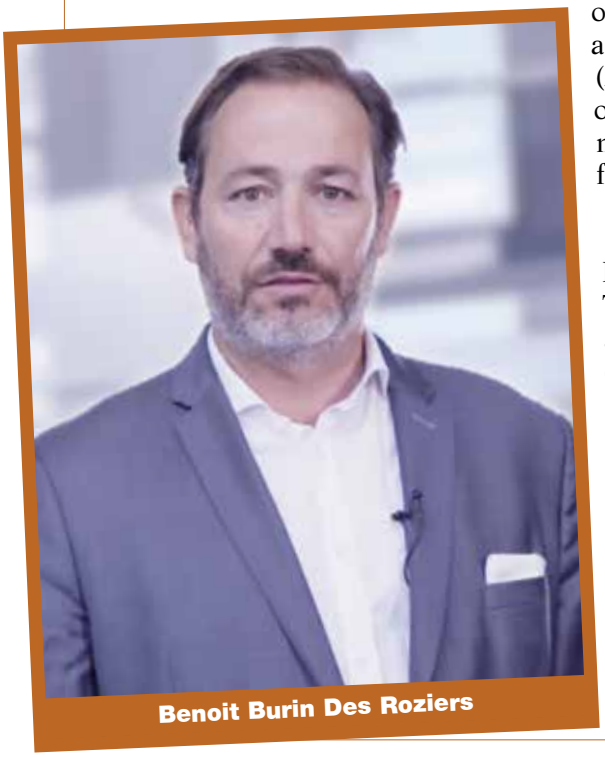
able and enhances productivity. It's also improving the efficiency of energy at manufacturing sites while raising the environmental performance of glass products over their full life span.

Within this context, a drastic reduction of specific skills owing to working conditions is creating a lack of expertise, which represents a clear trend that needs to be addressed.

Production machines in a glass factory manipulate molten glass at a temperature over 1000°C with systems in motion, which creates a potentially dangerous environment. It's therefore imperative that we mobilise our efforts to protect operators by minimising the risk of accidents and injuries.

In sum, the glass industry is facing several challenges to productivity increases, operator safety, environmental impact and an increasing lack of specific skills - all of which converge towards a unique and essential key element, which is the capability to better control and automate the production process in order to render it stable, replicable and, ultimately, optimised.

For all these reasons, and after several years of collaboration, Bottero and Tiama have decided to create a dedicated company, GlassFORM.ai, that will be fully focused upon developing and selling plug-in solutions (made of hardware, software and sensors) that are based on Machine Learning (ML) and Artificial Intelligence (AI) - all with the purpose of optimally controlling and managing the glass manufacturing process.



Benoit Burin Des Roziers

GMP&A: Benoit Burin Des Roziers, you're CEO of Tiama. I see GLASSFORM.ai has a young team. It's clear the project is determined to drive new talent with all the latest technical expertise. Your comment.

Benoit Burin Des Roziers: Ours is a young team, true, but each engineer is well-experienced in his field of expertise. Besides, they've all been trained in the glass-making process and they're backed up by the Bottero team with its own know-how and experience of IS machines as well as the Tiama team with its own know-how and experience in terms of sensors within a glass environment.

GMP&A: In developing winning software solutions for the glass industry, all know-how in which your company has a rich experience, GLASSFORM.ai is pointing to a better relationship between operator and machines. How would the project improve glass production going forward?

Benoit Burin Des Roziers: Today there's tons of data available in our sensors, even if it's from other machines involved in the process. Albeit displayed, such data remains unexploited where it could instead be put to good use. To quote Bottero Sales & Marketing Director Paolo Mazzone: 'Potentially, we could make this data rich.'

Making capable correlations between hot end data and cold end data would first allow us to successfully determine key parameters by which to act on the process, then identify rules to act on the process. Here our joint goal is to develop a digital platform that will automate such rules - thus acting on the process to prevent defects. Here the idea is to transform a process that's currently in fire-fighting mode into one that's stabilised and mastered.