HEYE INTERNATIONAL

Glass plants of the future

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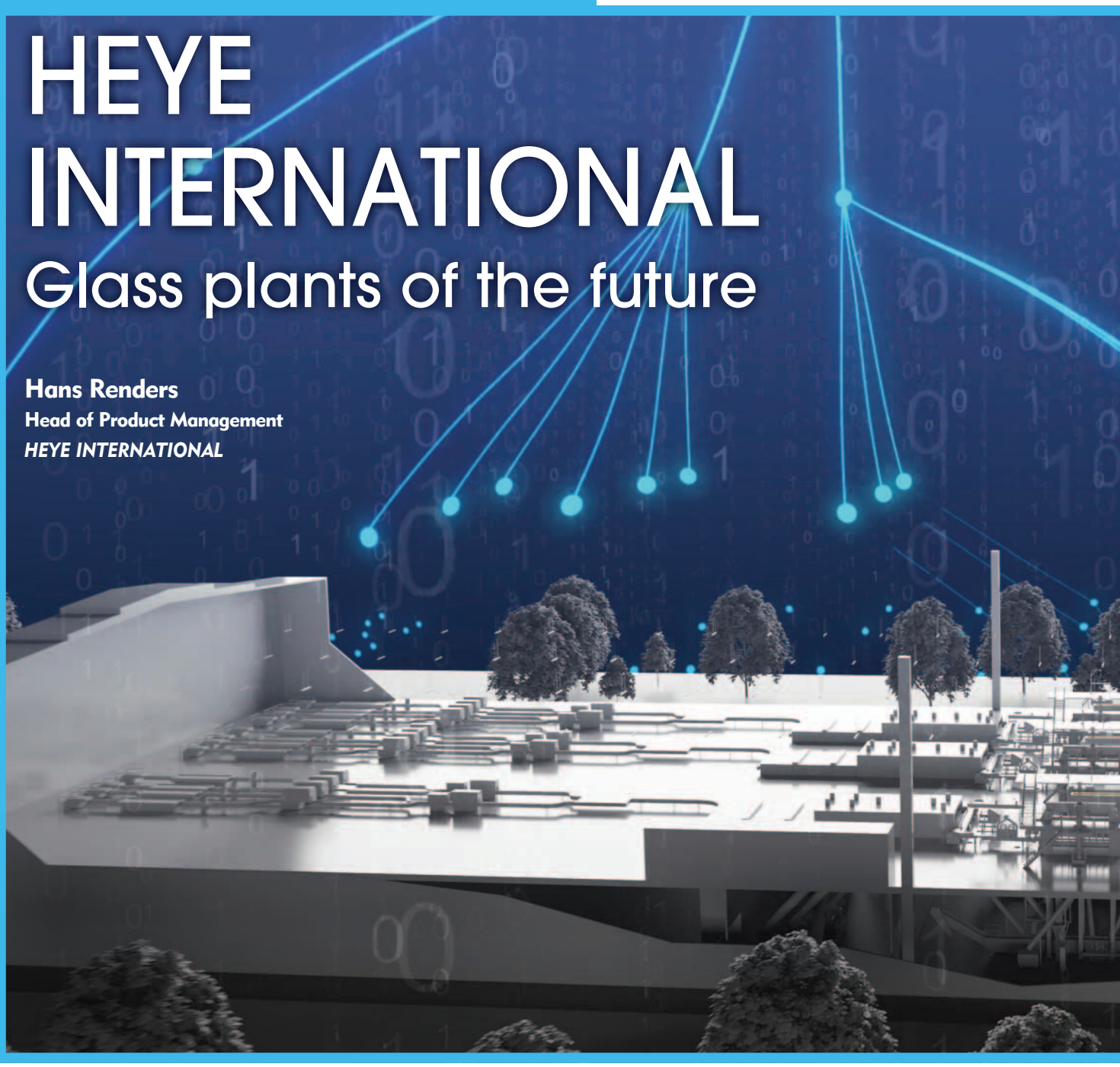

Selection is key to defining the perfect path but it's a challenging job to keep track of the Industry 4.0 jungle. The Glass People at Heye combine long-term process expertise and a passion for the material with advanced skills in the latest technology. Every possible solution is evaluated by the company's process experts based on the decision criteria of financial ROI, workplace safety and influence on product quality. Heye International is your partner to select the correct technology from Industry 4.0.

SMART USER INTERFACES

The availability of smart user interfaces for operators has become especially important. The Heye Cockpit is the central user access to the Heye SpeedMaster hot end control and process intelligence portfolio. The Heye SpeedMaster consists of three modules: E-timing, motion control (servo and pneumatic actuators) and the process intelligence solution set, combining all process control closed loops.

The approach employed is user-centric. The central collection point for all data from Heye SpeedLine is the new Communication Tower. Here, the data from all control systems of the machine are merged and

Adopting the latest Industry 4.0 technologies is now crucial for the international glass container industry, says Dirk Pörtner, CEO at Heye International. Heye offers customers a partnership on their individual path towards a smart plant, resulting in the creation of a highly automated and cost-effective glassworks.

managed in one central cabinet. Data integration between hot end and cold end especially helps to gain time. “With the technology behind Heye’s smart user interface our customers can respond quickly on changing production conditions and finally keep the overview, which is essential for effcient glass production,” underlines Dirk Pörtner. The Communication Tower has already integrated a multi-functional remote maintenance router, which enables access via a VPN tunnel, if required.

Combined with precise mechanisms, the latest servo technology helps to achieve maximum production speed at high quality levels. High production flexibility is another result of the technology. Glass plants with short production runs and many different jobs have two advantages. First, job changes can be performed in a very short time, as important parameters will be retrieved and the major parts of the machinery will be adjusted automatically in the future. Second, the operators can produce different bottles on one IS machine, by using multi-weight assortment technology. This makes the production of samples or short job runs extremely efficient.

PROCESS CONTROL AND CLOSED LOOP SOLUTION SET

As well as being the inventor of the NNPB process, Heye has set the standard in closed loop production technology. A large set of closed loop solutions gives the customer a competitive edge. Heye offers operator assistance for gob loading, closed loops for gob shape and weight for NNPB and press-blow operation with the Heye Process Control. For heavy and premium articles produced by blow-blow operation, the Heye GobMaster satisfies demand for a closed loop solution according to gob shape and weight by visual gob measurement.

Following the glass flow, on the blank mould side, closed loops for cooling and press duration/glass distribution are available. The Swabbing Robot eliminates one of the most important manual working steps, at the same time being the basis for precise, temperature measurement on the blank side.

Closed loops on the blow side allow accurate, high speed ware handling. Dead plate cooling is controlled, creating the basis for proper bottle movement by the high speed pushers, while the closed loop for ware spacing is a second speed-relevant factor. Furthermore, both loops eliminate defects generated by an incorrect ware handling set-up. Many of these solutions are already available, while others are

in the prototype phase. In some areas, operator assistance is a good first step and in other situations, full closed loop systems are already in place.

CONNECTING HOT END AND COLD END

The Heye PlantPilot is a cornerstone in the field of data integration in the glass plant. By using internet-based technology, different machines or modules can be connected to manage the plant. In addition, important analysis possibilities are offered to optimise the production process. In particular, data integration between hot end and cold end helps to gain time.

Via the Heye Cockpit, the hot end operator has a perfect overview of the defect situation on the different cavities. By a future extension of the database to an expert system, recommendations for the correction of production defects can be given. As production companies encoun-

ter increased challenges to find skilled people, these expert systems for glass forming will become an important success factor.

HEYE REMOTE SERVICES

Besides supporting machine-to-machine (M2M) communication, many of the connected devices also provide an interface that allows Heye to monitor them across the Internet from any geographic location. Depending on customer settings, this remote control capability can be used to perform such tasks as virtual maintenance checks without stopping system operation. It is also used for latest software updates, failure detecting and is giving a helping hand for any imaginable scenario. Connecting machines in this way is the first step towards creating smart factories.

CONCLUSION

In summary, the Heye smart plant concept combines different innovative solutions in major areas. All of them have become possible through a set of enabling technologies, from sensors and communication networks to robots and automation. The Heye Glass People are your correct partners to develop a common roadmap for the journey to a smart plant, a factory that will be able to produce high productivity containers at low cost, resource-efficiently and with a consistently high quality. ■

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