



HEGLA

Industry 4.0, digital transformation and automation

With Industry 4.0 not just an idea anymore, and now well on the way to becoming the future for the glassmaking industry, Bernhard Hötger, Managing Director of HEGLA, speaks about how the company is innovating using this technology to provide its customers with advantages, flexibility and improvements, while reducing costs.

Specialist mechanical engineering company, HEGLA, is convinced that the future for the glass manufacturing industry is in further automation and streamlining of operational processes. An authoritative expert team, located in Beverungen, is driving the continuous development of production



facilities based on the overriding goals outlined in Industry 4.0.

CONTINUING COMPANY STRATEGY

Bernhard Hötger, managing director of HEGLA,

Bernhard Hötger - Managing Director, HEGLA

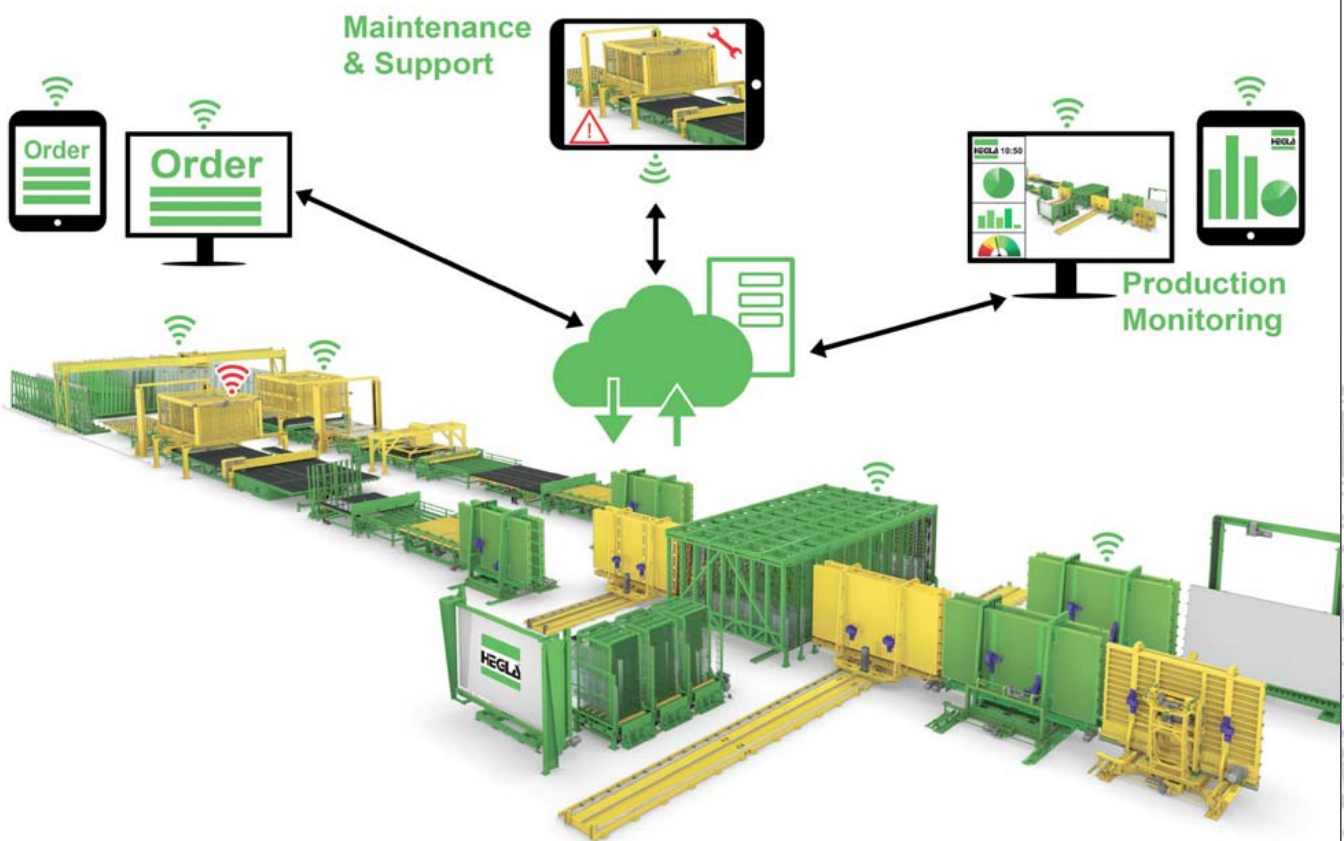
sees this as the ensuing continuation of the company's existing strategy. "Historically, both competition and costs have put big pressure on the glass industry and increased the demand, with a need to constantly find new solutions that exceed the optimised capacity of single facilities or production processes," Hötger explains. "Our innovation project will offer our customers additional advantages over competitors, reduce the costs on their production lines, enable more flexibility and further improve the cycle times." An additional aim is to reduce and continu-

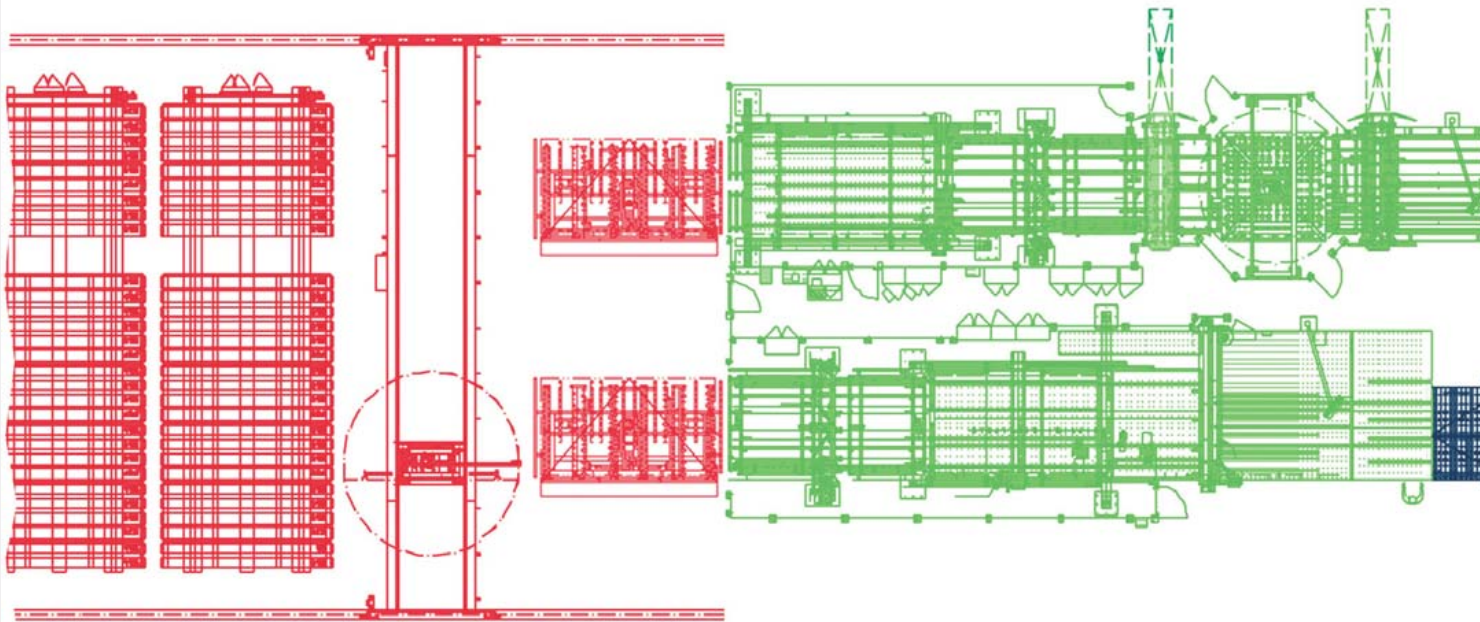
ously optimise maintenance efforts with new technical measures. Despite all his enthusiasm over the capabilities and benefits of Industry 4.0, the long-standing MD promotes a balanced and sustainable approach built on in-depth expertise and consideration. Not every customer will be able to capitalise on the advantages of fully networked solutions and, by giving special attention to the cost-benefit ratio, it might appear reasonable not to digitalise all processes, link all machines to the network or devolve completely to artificial intelligence.

NETWORK UTILISATION AND DIGITAL ADVANCEMENTS

Some aspects regarding Industry 4.0's vision for glass manufacturers have already been accomplished. Many companies, for example, are already capable of producing customised, individual cutting programs under the same conditions and costs as large-scale projects, Hötger emphasises. With the proposed higher level of network utilisation and digital advancements, as well as the increased use of available data, further cost-

reducing advantages can be identified and exploited. Thanks to the improved opportunities of communicating directly between humans and machinery, there is more available data to support decision-making or even use solutions generated by the systems autonomously. One simple and topical example Bernhard Hötger cites are the now long-established networked loading systems, which no longer provide glass on demand and only do so in line with the operator's requirements. Instead, the required type of glass is requested by the joint production control system, and





this is then removed from the warehouse by a system-selected rack, with travel and cycle times optimised.

HEGLA'S SORTJET SYSTEM

According to Hötger, the considerable potential of Standard Industry 4.0 is particularly exemplified by solutions such as the SortJet, which are already highly automated and designed to deal with large volumes. The SortJet employs a process-overlapping approach, which paves the way for fully automatic glass sorting and precise transfer between one or more cutting lines and at least one ISO and/or another processing line.

Part of the technical background incorporates among other things, the more widely used sensor technology across all relevant production areas. This

transfers the data needed for a timely optimised and linked production back to the facility network. Depending on the configuration the operator will be informed of deviations within a program. These could be caused by an error in the cutting process, such as a wrongly rotated disk, or a request to autonomously restock a shortage of glass. The comprehensive unique tracking system of all glass panels, i.e. marked with machine-readable laser marking techniques, provides flexibility and traceability at any time. Without having to interrupt the production line, time-sensitive projects can be fast-tracked and integrated within the overall cutting program. The relevant communication is made possible through continuous interconnection of production areas.

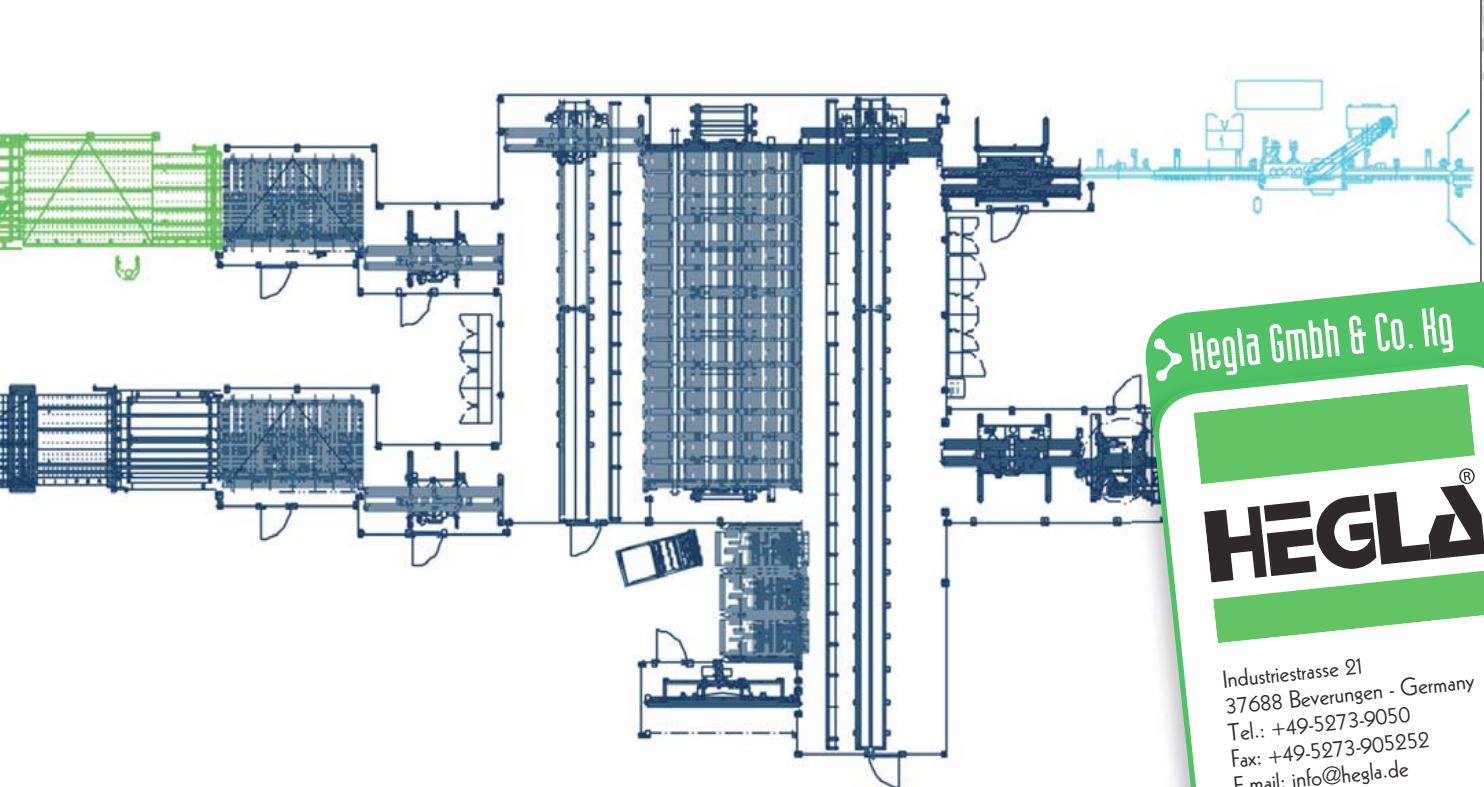
An important component is the sorting system. It delivers relevant information required to oversee the production in a timely and process related manner. This allows the user to amend the cutting plans to the current objectives or changed priorities.

Putting this into perspective, the value-added chain from the cutting programs to planning logistics can be linked, optimised, centrally organised and tracked. Immediately after digitally entering the project-relevant data on site, this can be shared with the producer. Ideally the material stock will be checked in real time, components ordered where applicable by the purchasing department and all relevant parties informed with a proposed delivery date and price structure. As soon as all cutting information has been transferred to

the system, the panels can be added to the program, which optimises usage and reduces waste by linking it with other projects.

Next to optimising resources and cycle time, HEGLA focuses on reducing maintenance costs and operational downtime. Utilising sensor technology, data evaluation and smart analytics will in time, assist where maintenance is technically required or assets need replacing. Predictive maintenance intervals should guarantee the reliability and functionality of all machinery without periods of standstill or shutdown.

For the operators themselves the process should be even easier. With technical assistance systems, advice functions and personalised interface, similar to a smart phone, the facilities of the future can be operated smoothly and intuitively.



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