MAKING INDUSTRY 4.0 OPPORTUNITIES A REALITY

WHILE CONSUMERS WANT MORE CUSTOMISED PRODUCTS, THEY ALSO WANT THEM FAST AND AT THE RIGHT PRICE. THIS HAS CONTRIBUTED TO THE RISE OF THE INDUSTRY 4.0 MOVEMENT, THE ADOPTION OF INTELLIGENT CYBER-PHYSICAL SOLUTIONS AND INCREASED AUTOMATION IN PRODUCTION PLANTS. THE AGILITY 4.0™ PROGRAM FROM THE SIDEL GROUP IS DESIGNED TO HELP MANUFACTURERS SHIFT FROM MASS PRODUCTION TO MASS CUSTOMISATION, AND GAIN THE MANY BENEFITS OF INDUSTRY 4.0, TO BOOST OVERALL EQUIPMENT EFFECTIVENESS AND SUSTAINABILITY WHILE MINIMISING TCO.

The Agility 4.0 program is an award-winning, proven and pragmatic approach to manufacturing that spans initial virtual design to total mastery of the extended factory. Using smart machines, system and data intelligence, digital connectivity and powerful simulation tools, all within a philosophy of sustainable production, it enables manufacturers to adapt faster to changing trends and market needs.

This program has been developed with a view to achieving three overall benefits: improved understanding, enhanced performance, and product mass customisation together with traceability. The tools and solutions grouped around the program's five pillars provide tangible answers to liquid packaging producers' needs, ranging from faster changeovers to reduced maintenance, less storage, less waste, higher product quality and faster time to market, all of which increase performance and reduce costs

Virtual factory

The main principle of the virtual factory is to accurately simulate and test daily operations in a production plant before execution. This can be a computer model simulation of a new line to evaluate its performance, a digital twin to optimise the assets in real time, or computer training of operators using virtual reality that lets them practice on computer-generated equipment. In other words, simulation allows producers to both visualise and forecast, increasing their chances of successful implementation, minimising capital and operating expenditures and ensuring that they only invest in exactly what they need

- Line and factory modelling
- Virtual reality assessment
- Performance simulation
- Advanced virtual training
- Digital twin

Smart factory

The smart factory leverages digital technologies, such as robots, cobots and intelligent kinematics, to improve performance of equipment, packaging lines and factories. This includes assisting operators working on repetitive tasks to increase operations reliability over time and to allow human intelligence to be used for tasks that can keep line performance as high as possible. The new generation of human machine interface makes operation easier by being intuitive to use with built-in tutorials and other manuals that further improve efficiency and reduce machine downtimes. This combination of machine and human intelligence is at the heart of the smart factory solutions.

- Intelli-adjust
- Alerting
- Intuitive interface
- Predicting
- Cobotics and intelligent kinematics

Connected factory

By connecting and integrating the equipment in a plant, the data generated can be used to optimise performance and predict any need for maintenance. Data can also be integrated upstream to ensure a constant stream of ingredients and downstream to keep distribution smooth and avoid overstocking or unnecessary storage. Advanced analytics can be run on the data generated to sustain the highest performance over time and assist in decision-making at all levels of the organisation. Furthermore, remote assistance and augmented reality secure increased asset utilisation and improved maintainability.

- Smart monitoring
- Machine-to-machine learning
- Advanced analytics
- Remote assistance
- Online services

Sustainable factory

Eco-friendliness is one of Agility 4.0's core pillars. By making it possible to produce smaller batches closer to consumer centres, manufacturers reduce their need to distribute over long distances, contributing to a more sustainable approach. Also, by reducing energy and water consumption, using new lightweight materials, as well as 3D printed components, this framework helps customers minimise operating expenditures.

- 3D printed lightweight parts
- Eco-packaging
- Simulation of utilities consumption
- Resource management
- Water reduction

Extended factory

The extended factory represents the Sidel Group vision when it comes to answering customers' needs in the Industry 4.0 era. Focusing on intralogistics and deployed through the dematerialised layout, this portfolio of solutions offers manufacturers access to enhanced flexibility and asset utilisation, increasing their capability to introduce new products. For instance, shuttles or automated guided vehicles can digitally connect all machines in a production environment. Instead of using a conveyor to take the product from A to B in a linear production process, mobile handling can be used to move the semi-finished or finished items through production – from any filler to any labeller to any packing machine. Furthermore, this flexible shop floor layout can also be used alongside dedicated lines with their physical connections. This enables the goal of mass customisation instead of mass production.

- Flexible supply chain
- On-demand production
- Late personalisation
- End-to-end traceability
- Intralogistics systems

The future-proof Agility 4.0 program from the Sidel Group is the result of the group's strong partnerships with industry-leading players in robotics, automation and smart systems. It is designed to help producers and brand owners face the fourth industrial revolution by creating a digital factory that can increase performance in a fast-changing environment while reducing non-productive sequences and keeping costs to a minimum