Data-driven textile printing

Italian Stamperia Olonia relies on Mahlo's mLog Software

Company	Stamperia Olonia https://www.olonia.it/
Task	Useful data and reports from all devices in a production line to optimize subsequent processing.
Solution	Mahlo's data analysis and management software mLog Enhanced
Benefits	Secure & continuous recording of the entire production line Interactive data analysis on the PC and logs of historical data Protocol generation based on historical data for further processing Interface to customer systems (ERP, MES, SCADA) possible
Success	Process standardisation minimizes manual workload, esp. of digital printing Reduction of energy consumption Cost optimisation of production lines

Italy's Lombardy region is well known for its lakes, mountains, cities, and the typical northern Italian kitchen. It's also home to many important textile industry companies. Halfway between the idyllic Lago Maggiore and Milan one of them is located: the textile printing specialist "Stamperia Olonia".

Founded in 1969, now part of the Liberty Group, the company immediately established itself as a leading contract manufacturer of printed natural fabrics for home and apparel. Stamperia Olonia prints on all natural textile fibres up to 320 cm width, digitally and traditionally with pigment and reactive dyes.

"Thanks to a complete production cycle we can follow the customer from the first bleaching phases to the final quality control. All while we maintain exclusivity and maximum confidentiality towards our customers," says Fabio Pirino, Finishing department manager of Olonia.
Offering high quality standards at low costs, both on large commissions and smaller production runs, is the company's mission. Working for the biggest names is for Stamperia Olonia the confirmation of its own expectations and the drive towards continuous growth.

"We are not just a textile print shop! We are an industry that has made research and innovation its philosophy. A partner that combines experience, innovation, and high technology to achieve the highest quality with low costs," so Fabio.

Over the years, thanks to a policy that is always focused on the future, there has been continuous investment in improving work technology, environmental protection, and safety.

Task definition

One of these investments was the new software mLog enhanced by Mahlo. Olonia produces its goods on many lines with multiple integrated Mahlo systems.

On the newer stenter line an Orthomax RFMB was installed at the inlet. The fusion of pin wheel and roller straightening removes the distortions at the beginning of the line and can also take care of wavy

Olonia's production line with the integrated Mahlo device.

or s-shaped distortions.

The drying / fixing process of the stenter is controlled by an Optipac VMC, the textile process control system from Mahlo. It controls the dwell time, exhaust air moisture and residual moisture during the drying process. Also, the web width is monitored and linked to an alarm, if out of tolerance.
At the stenter outlet, a distortion detection Orthopac FMC monitors the residual distortion.

Orthomax RFMB at the inlet.

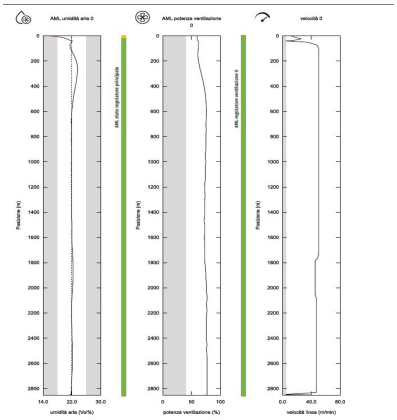
The challenge was to create configurable, length-related protocols for the individual fabric batches, which include all relevant fabric parameters such as residual distortion values in %, temperatures and dwell times during time related curing or heat setting processes, residual moisture in %, fabric width in mm, linear density in cpi or p/cm and fabric weight in g/m2. At the same time other important machine parameters like recipe number, alarm messages, exhaust humidity, speeds, etc. should be integrated in the configurable protocols as well.

The protocols help those responsible to easily assess the quality of the goods produced and thus form the basis for deciding how to proceed. At the same time, a historical database is created which helps to continuously optimize the processes and production parameters."

Solution

As solution, Mahlo suggested the – at that time – brand-new data analysis and management tool mLog enhanced.

The mLog software is a desktop application for data logging and interactive analysis of historical data for Mahlo equipment. All Mahlo devices of the line could be connected and monitored. With the continuous recording, logs from any desired period could be individually created by Olonia itself.


The selected log can be displayed in the log viewer.

All data can be viewed and analysed on an interactive user interface (GUI). Scrolling, zooming, fine comparison, data picker and other functions are available to allow the user a thorough and comfortable analysis of his process. Clear PDF reports can be created at any time from the desired sections for documentation purposes. An interface to ERP or other EDP systems for further processing of the data is also possible. The mLog enhanced at Olonia stores the collected data in a database on the so-called Edge Server in the Mahlo device network. The Mahlo GUI is connected to this via the customer network. Recording continues even in the event of malfunctions. This means that logs can always be called up from any point in time. If, for example, quality defects occur, the user can check retrospectively whether an alarm may have been present at the time.


Recordings of a test run at the distortion outlet.

Initially mLog was part of a project where a new machine had to be adapted to Olonia's management system. But it turned out to be more effective to fetch data of all Mahlo systems in the new stenter line with mLog and feed the data to a host computer via an interface with OPC UA.

Success

mLog enhanced is running now on the Olonia lines since January 2020 Olonia's project team collaborated intensively with the Mahlo development department.
So, a lot of their useful ideas and requests, coming directly from a working production line, have been implemented by Mahlo as software features. Still, they are constantly improving their processes as Mahlo provides new functions and updates on the software.

Since the installation, the printing specialist has seen some significant improvements, as Fabio explains, "Through the control of the system, a standardisation of the process was achieved, especially regarding digital preparation. Additionally – particularly in terms of energy – the costs could be optimised." With the new data management, Olonia could streamline their processes substantially. When a new batch is fed into the stenter, the operator simply scans a code. That code starts the report in mLog enhanced for the batch automatically.

When the end of the roll is reached, the operator scans a stop code. This stops the mLog recording and saves the report to the database. Thus, with only 2 scans, the data of the entire batch is available for further processing in Olonia's management system.

While saving, a PDF version of the report is automatically stored on the customer's server – of course with the correct name, in the correct directory, as set by Olonia. In addition, different report variants are created. On the one hand an internal, very detailed report, and on the other hand a version for the customer, which is shorter and summarises the important points.

Future

The solution is very sustainable because it allows production to be monitored and energy wastage to be avoided depending on processing. Seeing the success, Olonia plans to optimise their processes even further.