

CHANGING THE APPEAL OF PRINTING

Dieter Finna, founder of pack.consult, investigates the shortage of young employees in the printing industry and introduces the automated Gallus One as part of the solution

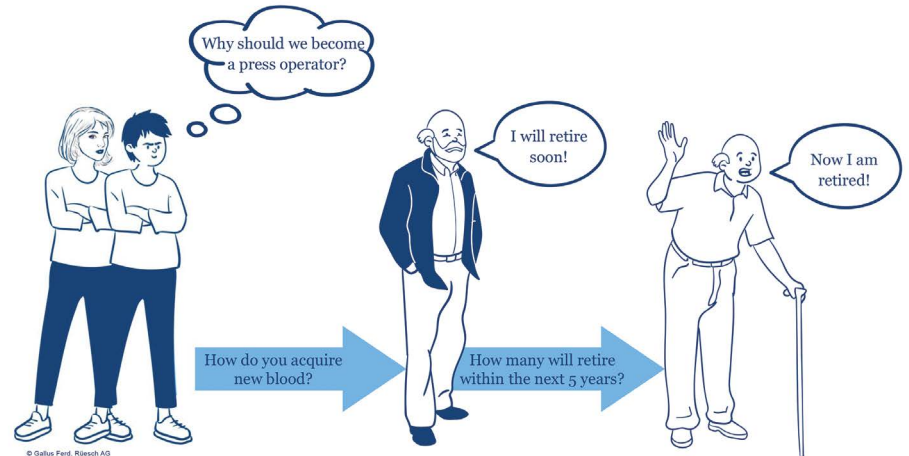
In 2022, as the industry was beginning to recover from the economic and social effects of the pandemic, HR managers in numerous industries asked themselves why there is a shortage of young employees. This situation revealed a labour shortage that began well before the pandemic. The reasons in the printing industry come down mainly to a misunderstanding in perception.

Numerous company closures in the commercial sector, in addition to environmental packaging problems, have shaped the image of the industry. Yet label and packaging printing has a lot to offer. According to one study*, bottlenecks in skilled workers are mainly to be found in gender-specific professions. For the printing industry, this means emphasising the attractive employment prospects for all. In addition, steady and assured employment can increase its appeal.

Label and packaging printing is an industry in which fundamental parameters are being rethought. The shift towards environmental awareness, sustainable materials and print designs is in full swing. An industry that is dominated by media technology and where presses are increasingly controlled via an HMI (Human Machine Interface), helps to make this employment field more appealing.

DRIVING AUTOMATION FORWARD

The print industry has learned that there is a growing shortage of operators for machines with little or no automation. The pandemic showed that if skilled workers are absent, printing presses can no longer operate. This is one of the reasons that mechanical



In order to attract young people, the printing industry must become more attractive (Source: Gallus Ferd. Ruesch AG)

“Label and packaging printing is an industry in which fundamental parameters are being rethought”

engineering companies, such as Gallus Ferd. Ruesch AG, are breaking new ground. Its developments support the converter's efforts to counter the shortage of skilled workers through automation.

Recently, the introduction of the Gallus One took the industry by surprise. With this model, Gallus has brought an independent, digital-printing machine into the market. Pure digital printing is a practical operating option, since high-end hybrid machines are out of the question for many converters due to expense.

APPEAL OF DIGITAL PRINTING

The Gallus One offers extensive standardisation. Its defined process parameters are designed for consistent automation, enabling the operator to confidently complete demanding tasks in

day-to-day business.

The high level of automation of the Gallus One changes the field of activity at the press. Self-monitoring of basic functions on the digital press, frees the operator from time-consuming, routine tasks. Digital printing eliminates the need for manual mixing of inks, colour changes and ink adjustments.

“Recently, the introduction of the Gallus One surprised the industry”

Automation allows the operator to carry out the order change predominantly with IT-related activities. Operators take the print data from the pre-press stage with integrated colour management and load it into the front end that controls the digital-printing machine. It is then possible to select the appropriate substrate profile for printing. This processed data assures high production reliability and productivity. Finally, orders are completed with a data backup. In digital printing – apart from material handling – process steps carried out by the control console characterise and automate the job description of the machine operator.

EASE OF USE

Thanks to its extensive level of automation, the Gallus One offers operating convenience that is well above standard. The operator – controlling the machine via the HMI – receives all the essential information from the display.

During operation, a proprietary image processing system (Vision System) takes over several functions, serving as the heart

Continued over



The newly-developed Gallus One digital printing machine (Source: Gallus Ferd. Ruesch AG)

Hey, printer is a cool job after all



© Gallus Ferd. Ruesch AG

Digital printing's ease of use makes it an attractive career choice (Source: Gallus Ferd. Ruesch AG)

- Machine concept that is based on **standardization**
- High Level of **automatization**:
 - Automatic **Cleaning** process
 - Wizard for **Missing Nozzle Compensation**
 - Wizard for **Density Unevenness Compensation**
 - Auto **register** (deviation $\pm 40 \mu\text{m}$)
 - Automatic **splice detection** and handling (at full speed & w/o stop)
 - **Workflow Automation** (Prinect)
 - ...

of the central machine. This is the basis for the high level of automation. Time-saving functions include the user-friendly adjustment of register settings at the push of a button. This ensures that the individual colours are precisely superimposed. The Vision System, with its high-resolution camera, outperforms comparable solutions by automating essential quality-assurance measures. It is able to detect missing nozzles, as well as density variations in solids. Compensating for these two sources of error, prevents both white lines in the print image and the formation of rainbow effects that would cause colour drift in solids.

AUTOMATED CLEANING

The Gallus One has other user-friendly functions. With this machine, the printheads are not moved – even for cleaning – minimising service calls and increasing machine availability. The newly-designed cleaning system moves the entire substrate table down, giving access to the printheads as a whole, including web tension control. When cleaning is triggered by the operator, the unit is then brought to the printheads. In addition, ultrasonic cleaning can be activated to support the process as needed. This makes the entire process extremely simple and replaces the need for manual cleaning completely.

The cleaning of the pinning module's glass covers is also simple. This is because it takes place outside the press, without any contortions during the printing process.

SIMPLICITY OF OPERATION

Refilling ink is also straightforward. For improved ink handling, the ink containers are easily accessible from the operator side. This design allows the containers to be changed without the operator coming into contact with ink, while the machine continues to run. This means that there is no need to schedule down time or to correct the web.

“Each of the steps are processed systematically, making them easy to learn”

Additionally, the operator does not have to worry about splices in the parent roll. The Gallus One has an automatic detection system that works via sensors. These can detect splices and allow them to pass all print bars without any loss of registration or speed. This function protects the printheads from damage without affecting production.

WORKFLOW MANAGEMENT

As part of production management, the operator must be able to master workflow. With the Gallus One, set-up assistants

(wizards) guide the operator step-by-step through upcoming tasks and support. Each of the steps are processed systematically, making them easy to learn. Using a client-server architecture, tasks such as step and repeat, can be taken over by either the operator or the pre-press department. The latter allows the operator to concentrate on downstream processes.

AUTOMATED MAINTENANCE

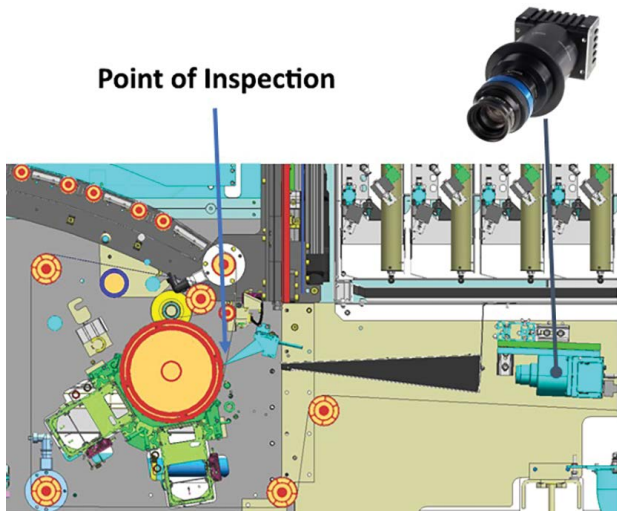
Automation also simplifies maintenance. In ongoing predictive service monitoring, sensors record the condition of the machine and transmit the data online to a cloud service set up by the parent company, Heidelberg. Strict compliance with the European General Data Protection Regulation, protects both personal and job-related data. The machine condition information is analysed and, if any irregularities become apparent, the customer's maintenance department is informed. In this way, faults can be rectified before they occur. This approach has proven its worth in the sheet-fed sector over many years.

CONCLUSION

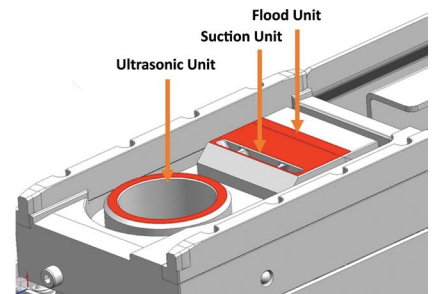
Digital printing with the Gallus One is one example of automation, affecting press technology and operations in the printing of labels and packaging. Digital printing offers possibilities in embedding presses in a workflow that links to the factory-management system. Despite extensive automation, the industry continues to rely on the technical expertise of its employees. As a result, qualified employees will continue to be indispensable. ■

* https://www.kofa.de/daten-und-fakten/studien/fachkraefteengpaesse-in-unternehmen/?mtm_campaign=search&gclid=EAlaIqobChM14f2kjrHW-wlVGM13Ch3z_gc3EAAAYBCAAEgJqNPD_BwE

Dieter Finna is founder of pack.consult



Defects caused by missing nozzles and density differences are monitored by a camera and compensated for by algorithms (Source: Gallus Ferd. Ruesch AG)



In addition to the flood-cleaning unit, the cleaning system has an ultrasonic cleaning unit (Source: Gallus Ferd. Ruesch AG)

Further information:
 pack.consult, Pforzheim, Germany
 tel: +49 159 0250 9339
 email: d.finna@pack-consult.org
 web: www.pack-consult.org