

ADVANCING WITH AUTOMATION

David Zamith explores the importance of automation in digital CTS screen stencil making, and discusses how to position screen printing at the forefront of the 4th Industrial Revolution



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From my e-work platform I wish all of you and your loved ones the best of health! The economy must go on and we have to be prepared for future recovery; perhaps working in different ways from those in which we operated before the COVID-19 pandemic.

Although the terms 'industry 4.0' and 'fourth industrial revolution' are often used interchangeably, 'industry 4.0' factories have

'With I4.0 opportunities will increase significantly because of the benefits the technologies offer'

machines which are augmented with wireless connectivity and sensors, connected to a system that can visualise the entire production line and make decisions on its own.

Today, at the heart of traditional screen



CTS-enabled 3D screen print mimics embroidery



The screen lab concept at Ruy de Lacerda

printing (graphic/textile/functional), it's imperative to be using innovative CTS (computer to screen) technology, with all industrial process steps standardised and based on automation to guarantee reproducibility and repeatability – and not forgetting continued training for better results.

SCREEN LAB CONCEPT

Globally, more and more companies using screen printing technology are adopting the so-called 'screen lab concept' for their prepress processes.

The prepress screen lab concept includes:

- A clear space with air conditioning and a clean environment.
- Avoidance of all kinds of contamination.
- Avoidance of excess humidity, so the water zone should be in a separate room.
- Use of only quality certified mesh types.
- Automated stretching and coating.
- Drying with good ventilation and lower temperatures.
- Using 'filmless' CTS for digital direct light UV exposing (a one step process).
- CTS models can be static, modular or fully automatic systems for stencil feeding, exposing, developing, pre-dryer and stencil discharge.
- Using dedicated RIP software for screen

printing technology.

- Keeping a select number of pre-coated stencils in stock, for fast production exposing or troubleshooting.
- Having stencils flow from the 'lab' directly to the print room.
- Internal training or at suppliers (of mesh, chemicals, ink or equipment) with Technologic Centres to improve qualifications.



Automation is being used more commonly for demanding photographic image jobs like t-shirt fashion



CTS-assisted transfer print (1270dpi)

AUTOMATION

Clear benefits of the 4th Industrial Revolution (I4.0) include software highlighting functionality, improved efficiency and productivity, better flexibility, agility and increased profitability. Industry 4.0 also improves the customer experience anchored on better team qualifications.

Today, the traditional approach to strategy requires exact predictions and ROI analysis. With I4.0 opportunities will increase significantly because of the benefits the technologies offer, including those that improve automation, machine-to-machine communication

'If you use Screen Printing Technology, use the lab concept'

(inline automation), manufacturing control, higher productivity, faster sampling or production runs and decision making.

Excellent examples were shared at last year's GlassPrint Conference in Dusseldorf, featuring leading global technology providers for the business sectors of glass decoration, flat glass and

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The prepress screen lab concept includes automated stretching

Inline automation
with CTS technology



hollowware or automotive, using screen printing, digital or decals, in printing, curing and drying of inks and varnishes. With its highest ever participation levels, GlassPrint showcased the vitality of printing in decoration and in technical and functional applications on glass, in a two-day format of presentations, focusing on screen and digital technologies, digital pre-press CTS and the 'importance of automation' from stencil making to printing.

ALIVE AND KICKING

Although some people still say that screen printing is in decline, the facts speak for themselves and the increasing number of CTS technology producers (inkjet, waxjet, diode lasers, LED or UV) worldwide confirms what we experience every day. It is important to analyse correctly where screen, digital, offset, flexo or rotogravure are the elected printing

technologies (or combined) for a certain job, as it's absolutely clear that screen printing is growing in industrial or functional applications. It should also be noted that a 'general shrinkage' of the print industry in Europe was due to the movement of industries to Asia – where there is now a growth in printing.

Automation is being used more commonly; for example, making it possible to prepare two sets of four-colour process stencils in one step; for demanding photographic image jobs like t-shirt fashion; or to ensure multiple screens have the same parameters for industrial or functional applications.

The intrinsic advantages of screen printing technology are enhanced by CTS: better brightness, more colour and density options; printing on a wider range of substrates, etc. Improved quality is easily attainable, as long as the investment is made wisely.

SHREWD INVESTMENT

It is important to consider investment in innovative technology and automation, assuming that we live in a new world, in a shrinking Europe and a super volatile global environment. To survive the new rules for international trade, it is essential to know 'what the market wants' in order to respond adequately to constant new demands.

In different print segments, from small or large graphic format, textiles, decals, transfers, labels and packaging to the growth of functional applications, it is important to consider the following in your vision strategy:

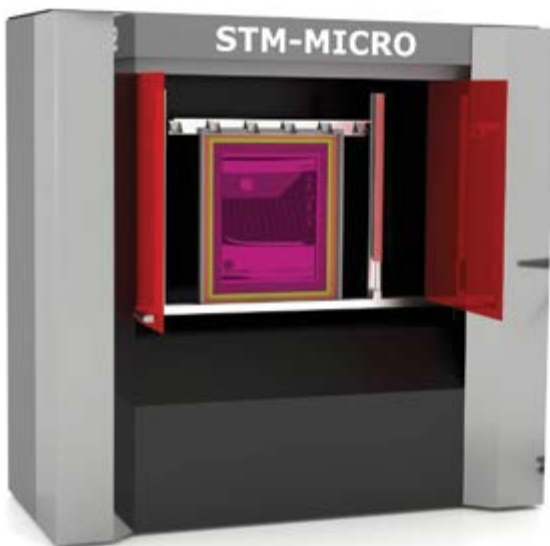
- Should you be closer to the market?
- Do you know what the market wants?
- Does your prepress include 'digital' CTS Technology and automation?
- Are you prepared for innovative technologies in automation?
- Is there diversity of activity at the company's core?
- Have you mastered various technologies 'in-house'?

If you use screen printing technology, employ the lab concept. Living in a volatile world full of threats and opportunities, the logic of Industry 4.0 and continuous training should be seen as the two most important elements of entrepreneurial business development. ■

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Film-free CTS direct exposing of stencils is offered by machines such as SignTronic's STM-MICRO

