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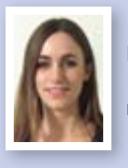
PUBLISHING DIRECTOR:
Bryan Collings
bryancollings@specialistprinting.com

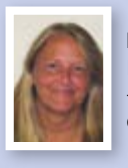


EDITORIAL CONSULTANT:
Rebecca Gibbs
rebeccagibbs@specialistprinting.com

DESIGNER:
Alison Smith for
Blue Daze Design Ltd
copy@specialistprinting.com

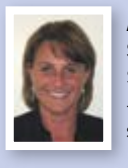
SENIOR SALES & MARKETING MANAGER:
Graham Lovell
+44 (0) 1342 321198
grahamlovell@specialistprinting.com

PUBLISHER (NORTH AMERICA):
Frazer Campbell
+44 (0)1342 322278
frazercampbell@specialistprinting.com



PUBLISHER:
Debbie Drewery
+44 (0)1342 322392
debbiedrewery@specialistprinting.com

PUBLISHER:
Dave Fordham
+44 (0)1342 315032
davefordham@specialistprinting.com



ADMINISTRATION/ SUBSCRIPTIONS MANAGER:
Sam Dunmore
+44 (0)1342 322133
samdunmore@specialistprinting.com

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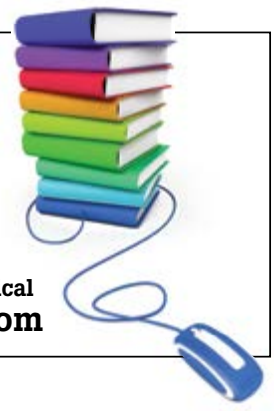

HARNESSING THE TRUE POWER OF YOUR UV PRINTER

Don Copeland compares 'off-the-shelf' design and RIP software to specialised design and RIP software

There are many claims made about the capabilities of UV printers: 'We can print on this or that'; 'Our ink lasts this long in these conditions'; 'No dry time'; 'No added labour'; 'Full colour with no set-up,' etc.

However, it's the software that creates the output files and drives the printers. The reality is that the printer can only do what we as operators tell it to do, and that is where the software comes in.

YOUR SOFTWARE IS KEY

When we talk about software for small to mid-format UV printing, there are two primary functions. First is creating or manipulating the artwork for your prints and second is managing the output to the printer.

In more simple terms, there is software which is excellent at creating graphics, and then there's a RIP (Raster Image Processor) software which controls the ink output.

We will address these one at a time. We'll also look at how these two software programs can work together to streamline your UV printing productivity.

LIMITATIONS OF 'OFF-THE-SHELF' SOFTWARE

Virtually all graphics houses have in-house graphic design software. If you consider the big three: Adobe Photoshop, Adobe Illustrator and CorelDRAW you will cover 90%+ of the software used. These packages, while extremely popular are not explicitly targeted towards professional printers. They are all-inclusive design software packages that have strengths and weaknesses. The question is: what do they bring to the table in regards to UV printing?

If you are merely generating one-colour designs on a limited number of items which you are printing one at a time, then these design software packages will suit you fine.

But if you intend to create specific targeting or multiple item printing, then you'll need specialised design software that allows you to move from graphic design to production seamlessly. The same goes if you need to use variable data, serialisation, bar coding and the like.

Printed ID card with carriable data, including photo

BATTLING BOTTLENECKS

With a good design software, a designer can set up a custom template for a specific item. For instance, when printing ID cards, you would need to spool in variable data from a database file, Excel file, etc. You then merge it with graphics data like photos to develop a series of ID cards that have a standard format with different pictures, names, titles, dates, etc. all perfectly matched to create unique ID cards.

Can this be done with 'off-the-shelf' design software packages? Sure. But, is it graceful and efficient? Not likely! Without specialised design software, it becomes a tedious process of cutting and pasting data and images into every ID card file. (We call this a 'bottleneck' in production.)

Continued over

Printer producing finished ID cards with variable data and photos

ID card populated with variable data

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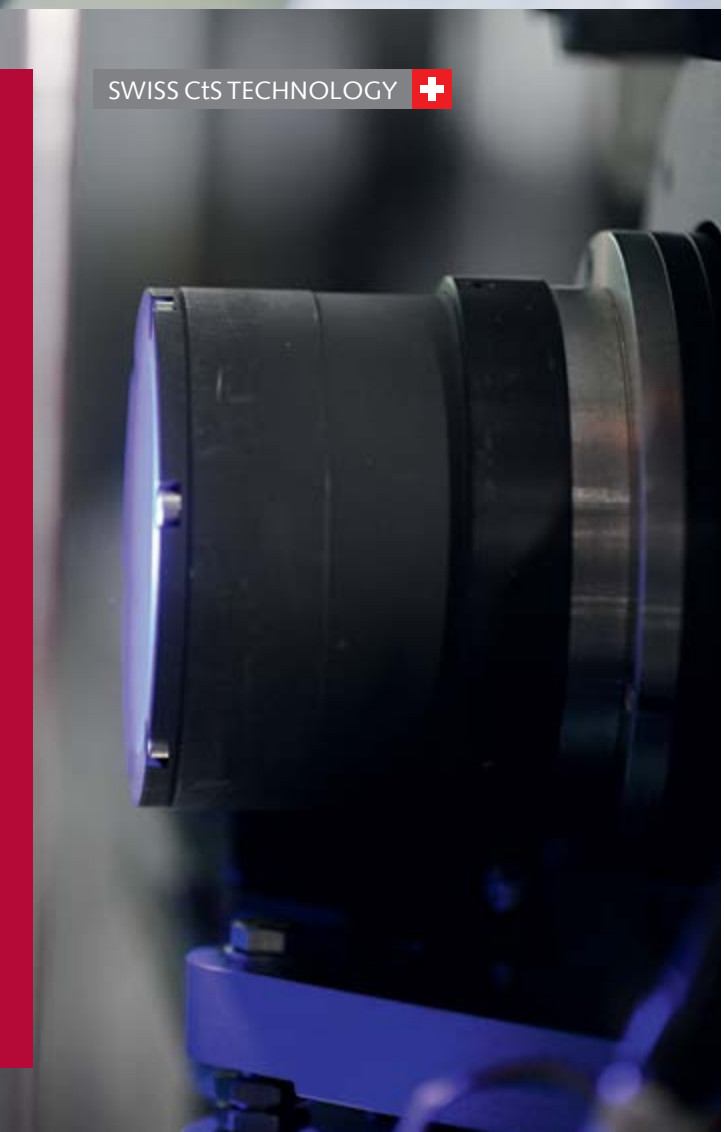

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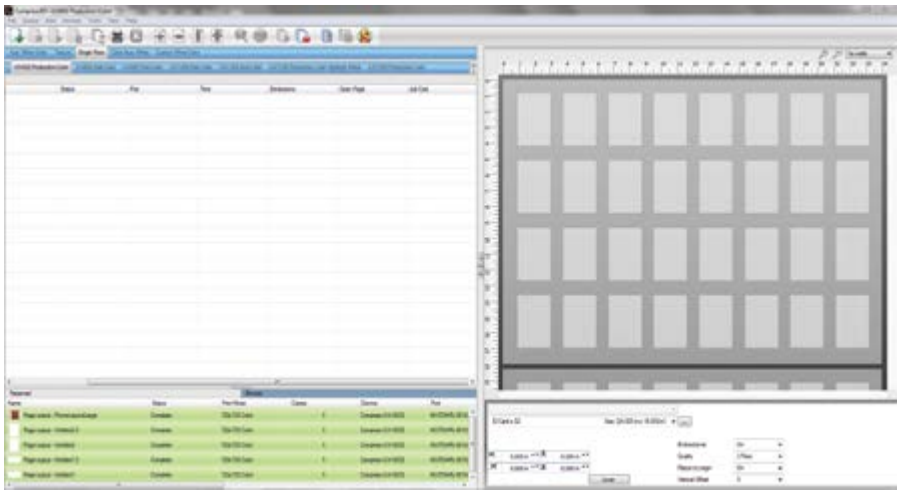


RIP software setup with templates for ID cards

RIP queue with 31 unique variable data ID cards

On a small to mid-format production line, it's clear that specialised design software can significantly increase your throughput. The software also quickly incorporates serialisation in both alpha and numeric formats, in standard fonts or even bar codes or CR codes.

A powerful and well-targeted design software can be a game changer!

RIP SOFTWARE TO CONTROL OUTPUT

More powerful and user-friendly RIP software packages will also allow for template creation. Templates will increase RIP efficiency as well as precisely manage print-targeting on multiple objects.

UV printing RIP software should at least do the following:

- Precision colour management through profiling.
- Generate Underbases (white undercoat of ink to allow for printing on non-white substrates).
- Control ink laydown (variable size droplets and varying resolutions).
- Manage both uni-directional and bi-directional printing.
- Head scan counts.
- Positioning relative to the print area.

When partnered with specialised design software (as mentioned earlier) the RIP can accept various files. It will place them into a template without the need for the user to individually position each one.

EXAMPLES: ID CARDS AND GOLF SIGNS

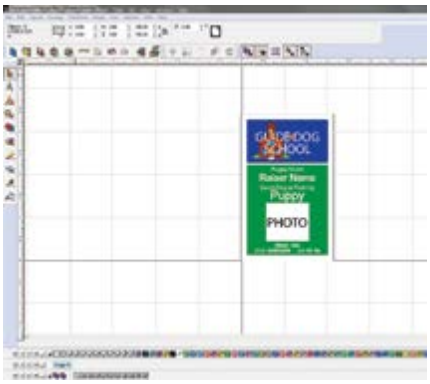
In the case we have been using, the ID cards, imagine we have a jig that holds 32 ID cards. And we have 40 unique ID card files which we intend to print. The RIP software will automatically fill one page with 32 images and generate a second page of eight images ready to go once the first page is complete.

Larger items can work the same way where only one piece at a time is printed. A perfect example of this would be sponsor signs for holes at charity golf tournaments. Imagine we were to generate the signs using the variable data of Sponsor Name, which is incorporated with the sequential numbering of 1–18 for the hole.

The RIP will set up 18 pages of output 'stacked up' waiting for the operator to load the printer and print each one. The software makes the process efficient while staying productive.

CONTROLLING THE UNDERBASE

Other features of a robust UV printer design package would be the ability to generate



Software template for ID cards in design software

customised underbase data, highlight layers and controlled textures for printing. While all of these can be done with standard design software like mentioned above, they are not intuitive, nor easy.

Having a specialised palette for underbase generation (based on the density of underbase), spot colour selections for controlled highlight white and varnish/clear application and a wizard to quickly generate texture prints from any graphic are other powerful features not found in off the shelf design software packages. Following these suggestions will make your design process more efficient. And it will reduce the necessary skill level of your designer, saving you money and time.

BEST SOFTWARE FOR UV PRINTING

I could go on forever about the importance of layer management, spot colour matching, real output data previews and the like in your RIP software. But the bottom line is your RIP software needs to be designed or explicitly customised for UV printing, or you may find yourself having to develop ways to 'trick the [off-the-shelf] software' into doing what you want it to do. You can certainly find a way to drive a nail with a wrench, but it's far more productive to use a hammer – because it is the right tool for the job! ■

Don Copeland is Digital Products Manager at ColDesi

Software template for variable data ID cards

Further information:
ColDesi Inc., Florida, USA
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A LESSON IN TYPOGRAPHY

Laura Franco shares her knowledge of typography and its importance in screen print design

When screen print design is image focused with typography taking the periphery role, opportunities can be missed. With a multitude of sources for downloadable images, including subscription services with perfectly prepared files, artists for screen-print shops with little training can compete with those with honed skills and more experience in text handling.

While the untrained consumer may not be aware of poor text treatment, or a font selection that doesn't work well with an image, for example, there are many that will recognise and appreciate an artist that expertly employs the principles of good type design.

As an artist with a degree in graphic design I was fortunate to have extensive instruction in type design. To save you time and the tuition, here are my four rules and ten topics.

RULES

Knowing that artists tend to be sensitive to criticism about their own work, make a promise NOT to fall in love with your first idea; that's rule #1. By doing so you miss out on flexing your design muscle. You may come back to the original idea because of its merits, but I'll bet you'll have an adjustment or addition that improves it.

Rule #2 is to remember your role as a designer when you have a customer. You're guiding them, but ultimately working to please them. Designer frustration is painful, but an unpopular designer has a fatal condition.

Rule #3 is to be aware of design tension. A sense of tension can happen when elements are improperly positioned. It's similar to how you feel when standing too close to the edge of a cliff. Stepping back a bit eases your tension. This same rule applies with typography and design in general. If you are creating tension in your design, be certain you want that result. On the other hand, it can be used to your advantage. Start looking for it in other designs. It is one of the harder concepts to master.

Rule #4 is to look at other work and ask yourself why you like it and what you don't like about it. You'll grow as a designer by following this easy exercise. It's why I was regularly sent to museums during college. Exposure to art and design is a fantastic education in itself.

TOPICS

1. Message Clarity

Delivering a clear message is a responsibility taken on by a professional artist. An image alone can be enough, but often in screen-printing typography plays a regular and powerful role in message communication. Assuming your customer wants their finished design to promote something, such as their business or event, then the image, font and layout will help or hurt the messaging.

Effective communication art involves thoughtful designing. What will set you or your company apart from others is the handling of ideas while in the art department. When you feel that your customer's idea will negatively affect communication, bring it to their attention. Show them the difference an alternate font, or larger point size will have. Rethink the copy. People view t-shirts from a few feet back. Ten-point type is asking the viewer to enter someone's personal space in order to read the copy. Save the small point sizes for copyright and trademarks.

If your role includes the writing of the copy, then design first with a simple sans serif font in black. Stylised fonts can be distracting while evaluating the effectiveness of written words. Is the message clear? Is what you have written clever, interesting, timely and properly targeted while using a basic font? When you and your client are in agreement to the copy, it's time to move on to proper font selection.

A font in itself can be a great design element. Where some designs are about the 'look', others have a message to communicate and font readability is important

2. Font Selection: Fit or Fail

Continuing down the path of good communication, select several fonts that are a fit for the project. I define 'font fit' as a great marriage of image, topic and the mood or period a font projects. Social and cultural trends are expressed in font design, as are periods and styles. You wouldn't select the font Broadway for a *Game of Thrones*-like event. Font selection is often a developed sensibility. If you're still working on that sensibility, show your choices to different people, then ask them why they like or don't like the font. Font naming helps in some cases, but not in all. Broadway, for example, accurately reflects the font as a New York Broadway theatre font, although overly used in the 1980s and 1990s. Use the Internet to find examples of designs related to your project. Especially for designs that need to reflect a place or time, examples will inspire you.

3. Font Variety

The selection of fonts requires an understanding of their similarities and differences. I start by categorising fonts into serif, sans serif, and script (cursive). My first thought for a project is the category or categories of fonts that will work best for a design. Perhaps a piece calls for a serif and a script font. I then look into my font library to select some options. Don't fall in love with your first choice; remember rule #1. It's simple enough to type out the words in various fonts.

Continued over

Mixing fonts can have impact, especially when placed well with or within an image

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See how they relate to each other and fit together. You'll spot a natural fit. Compare the letters of one typeface to another. It can come down to a letter that is hard to read, and you eliminate that font. In addition, you have boldness (thickness) to consider and the use of italics. You're getting the idea why typography courses in college are extensive.

4. The Space Between: Kerning and Tracking
Spacing is how you separate the novice from the pro. I studied design just before computer graphics emerged. It was the mid 1980s. When we produced a line of copy, headline, or logotype, each letter was carefully placed next to each other. I won't get into how slow that process was, and how we set type, but it certainly made me understand the design value of well-spaced letters, numbers and symbols. Kerning refers to the space between neighbours. Since letters each have their own shape and occupy space uniquely, how they look next to each other changes depending on the letters and the fonts, and that changes as well with capital and lower-case characters. Tracking, like a railroad track, is the spacing control of a word or line of copy. A design style with a formal feel has extra space uniformly added between characters.

Kerning and tracking typography absolutely play a key role in font readability, overall communication, and the aesthetic of the art. Graphics applications will NOT give you a properly kerned line of copy, while tracking will sometimes be sufficient without your editing. Don't get involved with insane kerning when dealing with body copy, but you should adjust a glaring issue because you're a pro. When you wrap text around an object, letter spacing can be tricky. Tip: use the squint test. Squint your eyes while looking at the copy so it blurs. Does it appear as a fairly balanced blur, or is something grabbing more attention? Adjust as needed.

5. Upper and Lower
Take a look at a line of copy in all caps, upper- and lower-case, and all lower-case. Each takes on a unique look. When you will be arcing (arching) text, this selection is even more critical. Poorly arced (arched) text is a sure sign of an untrained artist. The assumption that all caps will grab the user's attention over upper and lower is a bad one. The only way to know the result is to see the result. It's just too easy to work with graphics applications today to make excuses for not reviewing options.

6. A Case for Cursive
Cursive (script) writing is no longer a skill taught with any regularity to students. Have you wondered whether the use of the cursive font will fade away in design, as more and more young people cannot read it? Logic would suggest that in the field of

The spacing between letters and words is under the control of the artist. Proper letter spacing will elevate the quality of the design

communication design, one of the most beautiful and expressive fonts will not be selected and could potentially go the way of the dinosaur. All fonts are designs in their own right, and a script font can be an impressive design element. Readability should be considered, as some cursive fonts are difficult to read. Try using a cursive font as the first letter, followed by serif or san serif type.

7. Alignment and Arching
Alignment is the positioning of the copy in relation to other copy and images. Typically it is discussed with body copy. Is it flush left, flush right, centered or justified? Alignment also refers to font positioning above or below the baseline of type. Many times a screen print design has a main headline or word positioned above or below the image. Therefore a good assumption is that most copy in a garment design is centered. No need to be predictable in your placement; check readability and communication. Remember rule #4 and take a look at others' work. See how successful designs use unpredictable alignment. Arching can be a difficult task to create a good flow. Capital As, for example, present more white space (negative space) than a capital M. And because each font has a base, making the arched type look nice can be a greater struggle with serif fonts. Arching all cap script fonts rarely works. It's a good challenge to take on.

8. Rank and Order
Text placement and what attention is given to the font is an important decision for you and/or your client. The more copy you have, the more competition for the viewer's attention. Varying font sizes as well as placement will suggest how you want your design to be viewed (the order of things). We typically read top to bottom, and left to right. You can draw attention to a bottom word through scale. Colour can assist in the ranking, along with other design layout options.

9. Should It Stay or Should It Go?
Do you know those people that make a great point then continue to talk, only to weaken communication? The same happens within

With a simple design, a simple font style and uncomplicated layout make sense

designs. When a client commissions a designer to create an ad, they invariably will have a lot they want to get across to the viewer. They may not understand your concern about squeezing it all in.

Less is often more in communication design [but] I approach the design with wide arms. I include all the elements on the wish list. I then move my arms in, eliminating copy and elements that when removed, do not weaken the messaging, until I'm hugging. A winning design can be considered a good hug.

10. Adding Colour: Grey Rules
Colouring the copy will depend on many factors. Just like the 'should it stay or should it go' approach, I colour the type in various ways, using my design sensibility to see if the colour works for the piece, especially for rank and order.

Is colour helping? A colour can hurt communication, or change the aesthetic of the piece negatively. I often start with all fonts in black, dark grey, or white, depending on the substrate colour, and determine the effectiveness. The mood of the piece, the time period, style, etc. will be reasons to use different colours. Screen printers often have a set number of colours to work with and tints/gradients to expand those colours. Take the time to get colour right, and play around a bit.

Managing to develop a design that is universally appreciated is not something I'd bet money on. Improving the number that like the design and understand the messaging is what you are tasked to do. Next time you type your copy in your Illustration program (best practice), or even in Photoshop (not recommended but doable), consider the extensive role of typography and treat it with the respect it deserves. ■

Laura Franco is Vice President, Director of Sales & Marketing at Freehand Graphics

Further information:
Freehand Graphics, Inc., New York, USA
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BEGINNING WITH THE END IN MIND

Mark Lawn explains how wide format print service providers can advance their business with automation

Océ ProCut automates production workflow between flatbed and roll-to-roll devices and a digital flatbed cutter

As demand for creative wide format print applications continues to grow, matched by high customer expectations of fast turnaround and just-in-time delivery, many print service providers (PSPs) find themselves under increasing pressure to produce more, in less time and at lower cost.

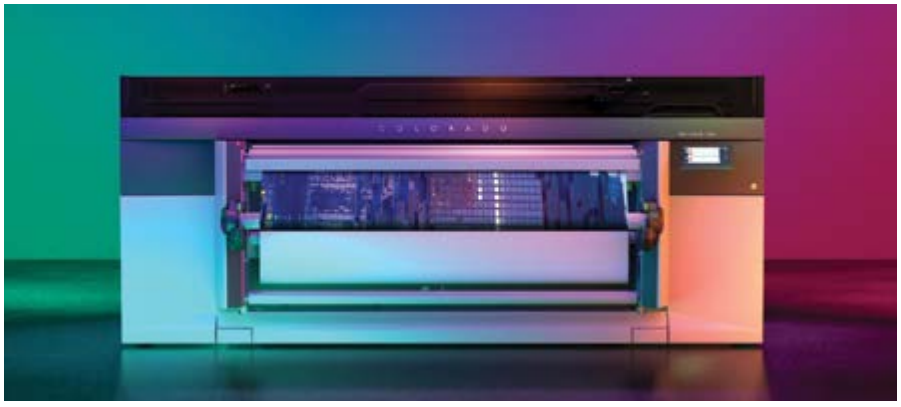
For the last decade, thanks to the continued evolution of digital wide format printing technology, sign-makers and graphics producers needing to increase production capacity have often opted to add more digital print engines to their line-up, while also relying on regular hardware upgrades which have delivered substantial increases in printing speed.

However, PSPs are increasingly recognising that this model for capacity growth has limitations and that they need to take a more holistic view of process optimisation to make their businesses efficient and profitable.

Adding output capacity alone may simply transfer the production bottleneck to another stage in the process if not supported with improved efficiency of job intake, preparation and finishing – which means adopting a more considered approach to process automation at every stage of production.

To date, the wide format signage and graphics sector has been slow to adopt automation in comparison with small format commercial PSPs. This is a natural consequence of a more diverse work mix involving a greater variety of materials and more bespoke projects for a wide range of end uses, which makes it more challenging to standardise processes.

Even taking these factors into account, there is still significant opportunity for wide format PSPs to develop automation strategies to maximise capacity, limit overheads, improve product consistency, enable diversification and product innovation, and create competitive differentiation.



The instantly cured Canon UVgel ink enables prints to come off completely dry

Océ Arizona user Van Vliet Printing uses a robotised solution from Rolan Robotics

AUTOMATING PRINT PRODUCTION

With this opportunity for customers in their sights, technology developers such as Canon are actively looking beyond 'feeds and speeds', introducing more sophisticated automation solutions into their print engines to help PSPs achieve greater production efficiency.

For example, the Océ Colorado 1640 roll-to-roll printer launched at FESPA 2017 incorporates Canon UVgel printheads, which feature patented continuous nozzle monitoring using acoustic sampling to detect and correct underperforming nozzles. This virtually eliminates white lines, allowing for unattended printing and reducing wasted prints.

In addition, the device uses an optical feedback loop that continuously monitors media advance, automatically correcting the subsequent step. Loading time for new media is also reduced by a unique dual-roll media system.

These features reduce operator handling time by up to a third compared to competitive roll-to-roll technologies, maximising production uptime while minimising maintenance and human intervention.

The instantly cured Canon UVgel ink contributes further to end-to-end process efficiency because prints come off completely dry, enabling immediate finishing or lamination.

IMPROVED MEDIA HANDLING

With customers looking to expand their capabilities by handling a more diverse range of substrates and developing new products, Canon is also channelling R&D efforts into solutions that help those PSPs who work with challenging materials.

One example is the new High Flow Vacuum option for the Océ Arizona flatbed printer series, which is designed to improve handling of rigid media such as corrugated board, plywood, MDF and fibreboard. These materials are increasingly popular for three-dimensional POS, short-run corrugated packaging applications and construction

hoardings. The downside is that they are notoriously hard to control on the printer bed, impacting negatively on productivity and requiring labour-intensive workarounds.

Porous media, such as corrugated cardboard, allows free airflow through the open flute ends into the vacuum table. This 'free' flow of air makes it very difficult to achieve sufficient vacuum to hold the media in place. In addition, stiff or warped media, such as plywood, requires a high degree of force to press it uniformly to the flatbed table.

The High Flow Vacuum solution generates 15 times the continuous airflow to the media surface compared with conventional vacuum systems, removing the need for adhesive tape or gripper mechanisms to control the substrate.

WORKING SMARTER WITH END-TO END AUTOMATION

While investing in hardware enhancements can help to increase capacity, it will only enable a limited degree of overall process automation. Wide format PSPs seeking to maximise production efficiencies should consider the potential impact of workflow automation, at both pre- and post-production stages.

Recent research by InfoTrends showed that, currently, commercial PSPs spend $30K annually on software, compared with wide format printers who only invest $2K[1]. While acknowledging the differences between these production environments, I believe there are tremendous untapped profitability gains here for graphics producers, from faster job onboarding to reduced material usage.

The new High Flow Vacuum option for the Océ Arizona flatbed printer series improves handling of rigid media

Simply put, there is an opportunity for PSPs to work smarter. Canon believes, based on its own research, that workflow management alone reduces total job delivery time by 24% on average. Further automation has the potential to cut up to 31% of waste and energy costs. PSPs need to consider how each stage in their production workflow can be automated to take advantage of these potential benefits to their bottom line.

Workflow automation is likely to begin with investment in a digital front end (DFE). According to InfoTrends, the global wide format DFE market in 2016 was €124m and is growing at a 2.5% CAGR through to 2021[2]. At Canon, we can offer our own DFE software solutions, as well as integrating with third party products and collaborating with trusted specialist partners to extend choice for our customers.

Our preferred DFE for wide format printing environments is the ONYX workflow suite. This offers customers an end-to-end PDF workflow solution, from digital file submission through printing and cutting, designed to reduce overheads, automate repetitive tasks, optimise media use and reduce waste, streamlining production and enabling future growth.

Canon wide format printers also integrate with EFI's Digital StoreFront, a complete web-to-print e-commerce suite offering seamless interaction between an online storefront for fast, accurate job submission and the PSP's production workflow. EFI Digital StoreFront supports PSPs to take on more work, produce

Continued over

it more efficiently and increase their profitability. For the end customer, Digital StoreFront adds value by enabling remote job uploading, print option selection, previewing and job tracking.

The choice of a specific pre-production solution will ultimately be defined by the customer's work mix and production parameters, but there's no doubt that, simply by streamlining job acceptance and automating the decision of where to direct the job based on available output capacity and media, wide format print shops can make production faster and more cost-effective and reap measurable bottom-line benefits.

FINISH WHAT YOU STARTED

While it's important to have a workflow solution in place to manage the end-to-end production process, it's critical that finishing is also handled with maximum efficiency.

PSPs are increasingly extending their finishing capabilities to enable the delivery of completed products as a way of adding value for customers and enhancing margins. A seamless print-and-finish operation also improves quality control and reduces overall turnaround time, a significant business advantage in today's service-led business climate.

However, finishing can easily become a production bottleneck without the right solutions to streamline the transition of wide format jobs from the print engine to the cutter or laminator. At Canon, we have developed Océ AutoPilot to automate cutting, creasing and kiss cutting of printed output from any printer, including multiple jobs and substrates using the Océ ProCut flatbed cutter. It optimises material utilisation and maximises print and finishing capacity, showing measurable productivity gains and minimising the need for operator intervention to finish printed jobs.

Complementing this, Océ ProCut software offers a single, fully-integrated digital workflow from cut data preparation to intelligent nesting to printing and cutting. It is an ideal solution for display graphics producers looking to automate production workflow between flatbed and roll-to-roll devices and a digital flatbed cutter.

CUTTING EDGE AUTOMATION

Investing in specific automation capabilities or complete end-to-end workflow software can open up an array of new growth opportunities, and many Canon customers are realising the benefits of process optimisation.

Some customers take process automation a step further; one vivid example is Océ Arizona user Van Vliet Printing in The Netherlands, a forward-thinking wide format PSP who has worked with us to implement a robotised solution to achieve the highest level of automation in its flatbed printing operation.

Owner Daniel Van Vliet understood that his customers' requirements were changing, demanding output on a variety of materials, but with shorter delivery parameters. He brought this challenge to Canon and Rolan Robotics, asking us to collaborate on the development of a robotic solution that understands how the Arizona flatbed printer works and the output it produces.

Information about the print job is transferred from the Océ Arizona printer to the Rolan robot, which acknowledges the printed output, lifts the printed material off the printer flatbed and places it directly onto the finishing bed, where finishing proceeds automatically. This cutting edge approach gives Van Vliet Printing a sophisticated end-to-end workflow solution from design to finishing, which has increased production, enabled progress to 24/7 operation, and allowed Van Vliet to divert skilled resources to grow other areas of the business.

AUTOMATE, ACCELERATE, ADVANCE

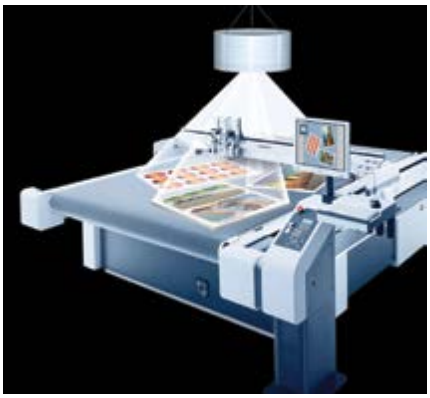
From my perspective, having spent a long time supporting commercial printers working with small format printing and finishing technology, we are only at the beginning of automation in wide format digital printing.

By reducing waste, cutting time spent on manual tasks and improving operational efficiency, PSPs will gain the confidence to take on more diverse work, and the capacity they gain will enable them to increase revenue without adding expensive overheads.

My advice to wide format PSPs looking to achieve optimal production efficiency, increase capacity and expand their applications capability, is to audit their current print environment to consider more effective ways to onboard, prepare, print, finish, deliver and install their jobs.

Essentially, it's a case of thinking through how to optimise their entire print operation. Their next step will be to identify reliable partners who can tailor a solution to their specific business needs, supported by the right level of specialist knowledge and application expertise.

Today's digital technology offers a range of opportunities to optimise productivity. Process automation should be a cornerstone of any investment strategy for those PSPs who are looking to accelerate and advance their business. ■



Océ AutoPilot automates cutting, creasing and kiss cutting of printed output from any printer

The Océ Colorado 1640 has automation features including continuous nozzle monitoring, an optical feedback loop and a unique dual-roll media system

Canon & Rolan Robotics have automated Van Vliet's flatbed printing operation

Mark Lawn is Director, Graphics and Communications Group, Canon Europe

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2. Workflow Automation in Wide Format, InfoTrends, October 2017

Further information:

Canon Europe Ltd, Uxbridge, UK
tel: +44 7813 338 785
email: Mark.Lawn@canon-europe.com
web: www.canon-europe.com

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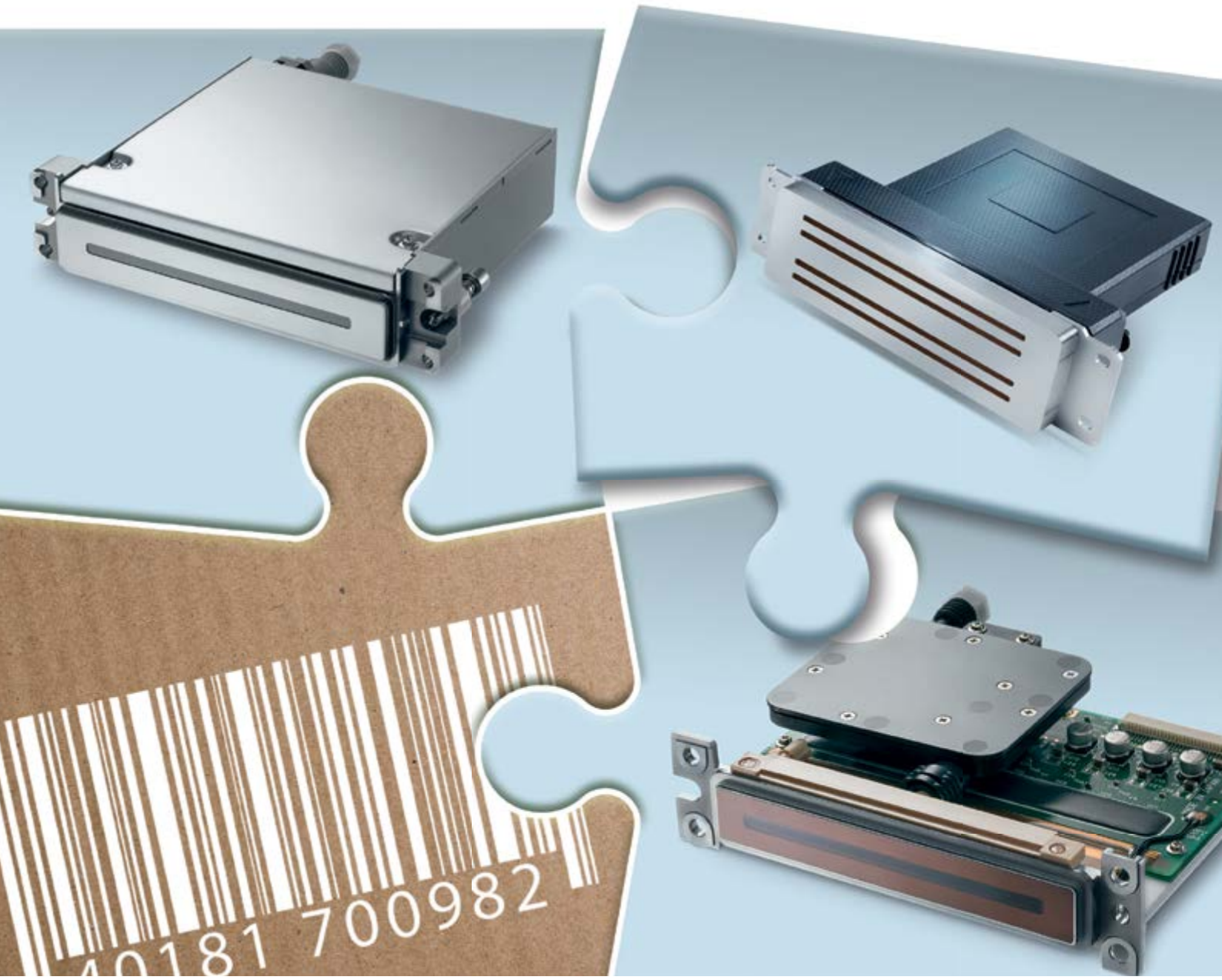

MULTI-DIRECTIONAL PRINTING

OUR THREE PRINT HEAD SERIES ARE ABLE TO OFFER A COMPREHENSIVE SOLUTION FOR A WIDE RANGE OF APPLICATIONS. EXTENSIVELY TESTED **MULTI-DIRECTIONAL PRINTING WITH VARIOUS VISCOUS FLUIDS EVEN WITH HIGH PIGMENT LOADING** COVERS THE REQUIREMENT OF THE LABELING AND PACKAGING INDUSTRY COMPLETELY.

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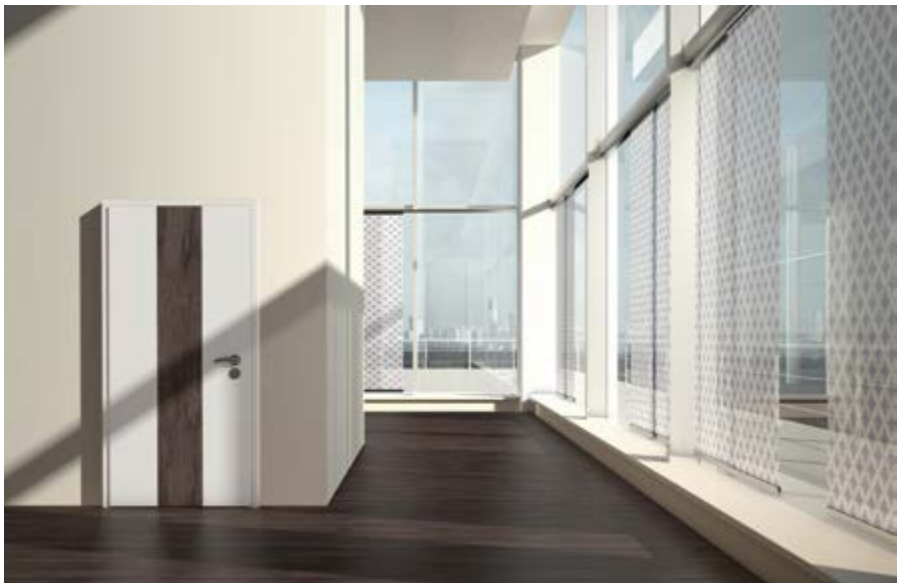
LIVING WITH PRINT

Peter Buttiens discusses the drivers and challenges of printing for interior decoration

Large format printing and industrial inkjet in general have been increasingly stimulating the trend of developing printed products for interior decoration, as well as personalisation of design items. The trend has expanded in the professional environment and found its way into shops, bars, hotels, offices and other commercial areas. It employs digital printing technology for creating series of unique designs on wood, glass, textiles and other materials.

On one hand, it is driven by economical aspects resulting in imitation of expensive materials such as exotic wood types or wall decoration techniques such as frescos and murals. On the other hand, we witness a returning demand for the use of large scale pictures as wallpaper or ceiling covers, only now they can be produced in the finest quality, meeting visual expectations, light fastness requirements and the overall end user demands.



Digital printing makes it possible to produce a high-end wood-look effect or to switch designs from project to project (Image courtesy of Marabu Inks)

Pongs' 'Helena' easy chairs and matching cubes covered with Akutex help balance room acoustics: the sound-absorbing fabric is resistant to abrasion and available with customised digital print. (Image courtesy of Pongs Textiles). Akutex is a registered trademark of Ecophon Group

DIGITAL OPTIONS

We often discuss optional personalisation, small stocks and last-minute personalisation but floors, carpets, tiles, glass, furniture or home textiles are nowadays also expected to be of perfect quality, produced in an ecological and sustainable process and fitting into the modern world of online sales. The new economic models can raise to these challenges and offer unique benefits to the larger audience when supported by digital printing.

The ceramic tiles market was taken over by inkjet solutions within a couple of years. It took advantage of the endless creativity offered by digital, including not only colour but also texture effects (haptic feeling of the surface). Obviously, logistic and thus economic considerations were fundamental for the conversion to digital. Next to low volume manufacturing, inkjet – as a non-contact process – enabled decoration of thinner tiles with fewer breakages. One must admit however, that by now printed ceramics has become a specialised replacement market, largely concentrated in China with limited transfer opportunities to other applications.

EVER-CHANGING

The race for originality, where the more variety the better, does not target only individual consumers who are looking for 'something

This printed glass was pre-treated using the pyrosil process and a silane-based primer to guarantee adhesion also under humid conditions. The UV ink printed on top provides excellent chemical and mechanical stability. (Image courtesy of Tiger Coatings)

special' for their living room, bedroom or kitchen. Commercial premises, leisure centres, conference rooms change their interiors more often than ever. Frequent visitors expect new experiences and this is what will make them stay longer and spend more money on-site. The usual suspects, chains such as Starbucks or McDonalds have been experimenting with frequent redecoration and it proved successful, resulting in regaining customers and their higher satisfaction levels. Brick-and-mortar shops have their own battle to fight in order to justify their existence against e-commerce. A modern interior design will not only appeal to our sense of aesthetics and create an atmosphere which is (still) unachievable during an online ordering process, but it will also convey a marketing message, sometimes a hidden one.

Sending alternating commercial messages through interior design remains more acceptable than hard marketing and straightforward advertisement. From the perspective of a brand or shop owner, it stimulates the use of a network of local digital printers which can decorate the right substrates with minimal turnaround times. Contemporary flatbed and roll-to-roll inkjet printers ensure acceptable production speeds while meeting the desired colour and texture specifications.

The printed interior decoration market extends dynamically, reaching from the traditional home and office interiors, through commercial establishments, up to niche applications, such as exclusive leisure mobility. Mobile homes, caravans and yachts call for extremely customer-specific design where digital printing can play its role as shown during the last Boot fair in Düsseldorf in January 2018.

CUSTOMER CONSIDERATIONS

As quality delivered by inkjet printing increases, an essential criterion for the customer is and will be the health and environmental safety of all solutions for the interior decoration. Skin contact and (slow) release of volatile organic compounds are subject to complex and frequently updated legislation which obliges both technology suppliers and users to staying informed. Currently, the GREENGUARD Environmental Institute (GEI) has established performance-based standards to define products and processes with low chemical and particle emissions for use indoors. The standards are primarily for building materials, interior furnishings, furniture, cleaning and maintenance products, electronic equipment and personal care products. The standard establishes certification procedures including test methods, allowable emissions levels, product sample collection and handling, testing type and frequency as well as program application processes and acceptance.

CONFERENCE DETAILS

The Printed Interior Decoration conference (5–6 June 2018 in Düsseldorf) will discuss the topics outlined above in an in-depth way: from substrates, workflow and pre-press, through printing systems, inks and finishing, to regulations and case studies, not only from suppliers but all involved in the creative process, including designers and print service providers. Featuring 20 presentations from industry experts and a networking arena of 30 tabletop stands, PID will inform printers, decorators, designers and brand owners about innovation and application possibilities enabled by digital inkjet, screen and other printing processes. ■

Peter Buttiens is CEO of ESMA

Further information:
ESMA, Sint-Joris-Winge, Belgium
tel: +32 16 894 353
email: info@esma.com
web: www.printedinteriordecoration.org

GET VOLUME AND VARIETY WITH MARKETING CAMPAIGN PRINTING

Jay Roberts discusses the many benefits of adding on-demand flatbed printers to your production model

Diversifying print output across different machines and resources is a natural evolution for many print providers. The term 'marketing campaign printing' aptly describes this need for flexible production in a digital print age where shops that previously utilised gang-run only production models are increasingly adding on-demand UV flatbed machines to their workflow to meet demand for specialty printing.

Just like a marketing campaign is more than just one element and is an amalgamation of publishing, broadcasting, product promotions, and other platforms, many print shops utilise this same philosophy in their large format production models with UV flatbed machines filling in the gaps in production; not only to share the print load, but also to print one-off items and fulfil orders that are more than just one product type or size. Employing marketing campaign production meets a growing need for clients who are searching for choice and variety, as well as volume.

Users can print directly onto hundreds of tools in one print-run with the VersaUV LEJ-640FT

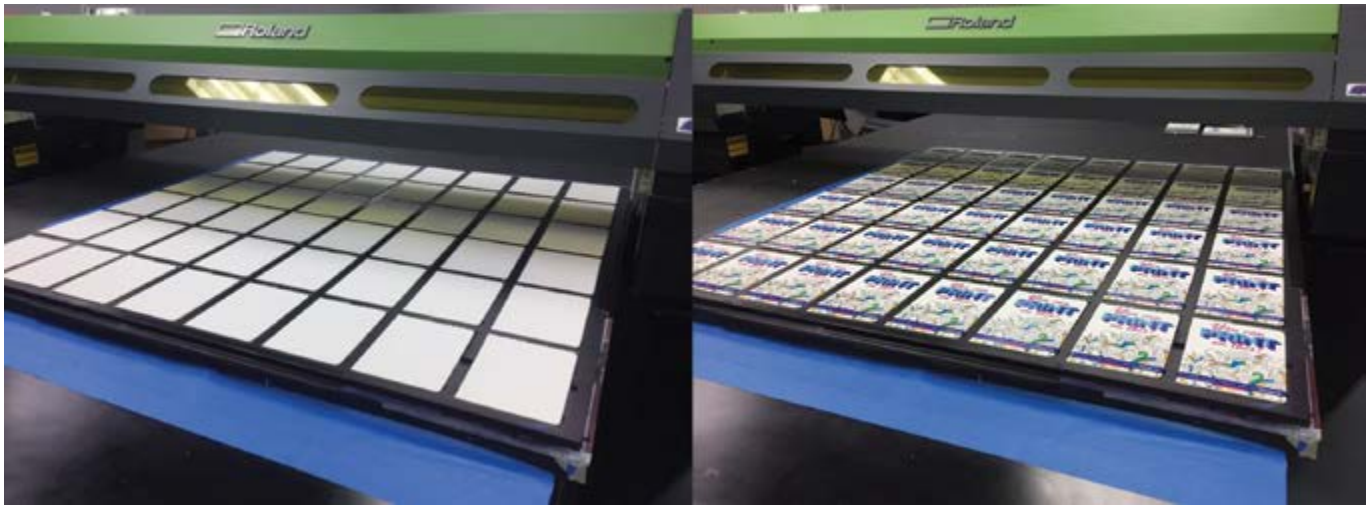
ACCURACY ACROSS MULTIPLE MACHINES

The ability to print long runs on multiple printers is traditionally a tricky process. It's difficult to create job consistency and colour accuracy across multiple machines, i.e., it's challenging to get three different printers to produce the same job with consistent colour. This is where Roland VersaUV machines have an advantage over many other UV printer technologies. The consistency of Roland's quality and colour fidelity on multiple devices enables users to not only share jobs, but also print 'same' or 'like' jobs at any given moment.

In addition to supporting gang-run print jobs, with Roland VersaUV flatbeds, users are able to break from volume production and print one-off jobs before returning to a 'shared' production model.

NON-CONFORMITY PRINTING

Companies are successfully integrating flatbed production into their marketing campaign printing by running multiple Roland flatbed machines in conjunction with other machinery. For instance, US manufacturer of safety kits and supplies, Certified Safety Manufacturing, INC, owns three Roland LEJ-640FT flatbeds that commonly share print runs between the three machines. Each printer utilises print fixtures (jigs) that were



Before and after images of notebook printing – using a print fixture, print jobs can be easily switched-out for maximum efficiency

created specifically for safety kit printing and feature uniformed spaces within the fixture to add hundreds of their safety kit products.

From an outsider's perspective, it would appear that they are volume-printing the same job. However, upon closer inspection, the safety kits are being uniquely printed. Each kit is branded the same but includes selected items that are being personalised for local markets with the name of a specific school. This is why these machines suit Certified Safety Manufacturing, INC, so well. Production doesn't have to stop to print a handful of unique items.

Variable data printing (VDP) features in Roland VersaWorks RIP software is the key to serial printing on the LEJ-640FT flatbed. In their marketing campaign print process, users can print similar messages across multiple products, such as posters, banners, confectionary tins, etc.

FROM COOKIE TINS TO NOTEBOOKS AND BACK AGAIN

Each printer can print the same job, but each can print completely different jobs at any given time. This is a major advantage to users who want to expand and diversify their production. Take the scenario of a large, national organisation for young women that needed to print cookie tins:

A Marketing Campaign Printing Workflow on Three LEJ-640FT Flatbeds

All Printers on Cookie Tin Production

- All printers begin printing cookie tins – thousands are printed with company graphics on printer #1, printer #2 and printer #3.
- The cookie tins are all branded the same but require personalisation of different names on each box.

Switch Printer #1 to Notebook Printing

- During print production, the client asks to also print individually customised notebooks as a special giveaway – which they need ASAP.
- One of the three printers switches production to print notebooks.
- The cookie tin and notebooks all share the same brand identities and require the same colour consistency and quality.

Switch Printer #2 to Poster Printing

- While the cookie tins and notebooks are being produced on printer #1 and printer #3, printer #2 begins production on campaign posters.

Switch Printer #3 to Poster Printing

- The print cycle continues with printer #3 now starting to print posters to offset the load of prints required on Printer #2.

As illustrated in the workflow above, it's the ability to volume print while printing unique items at the same time that makes marketing campaign printing on the LEJ-640FT so effective.

EASY SWITCH-OUT WITH FIXTURE (JIG) PRINTING

Production is made easy on the LEJ-640FT with the use of fixtures. By creating a custom fixture, users can immediately prep and position multiple print items into predefined print locations – combining with pre-prepared rip templates to make the whole set-up and print process incredibly quick and instinctive. When a fixture is switched out, they are already ready-to-go, without the need for complicated positioning and file preparation. It can take a matter of minutes to adjust print files in VersaWorks Dual RIP and add variable data elements to the print jobs. This consistency is key to the flatbed printing success. ■

Jay Roberts is Roland DGA Product Manager, UV Printers

Further information:
Roland DGA Corporation, California, USA
tel: +1 800 542 2307
web: www.rolanddga.com/versaUV

ALL WHITE NOW

Applications for white inkjet ink are endless – with the right printhead, believes Aliasgar Eranpurwala

EAN code on cardboard printed with white ink

Inkjet printing has gone a long way since its inception. From solvent based inks for continuous inkjet to oil/UV/aqueous inks for the drop on demand inkjet technology. As inkjet moves towards becoming more industrially acceptable, there are a number of different fluids that need to be printed. Although their physical properties present a challenge, these fluids are necessary for the future of the technology.

One such fluid that is becoming more and more popular is a white coloured ink. The titanium dioxide particles which give these inks its colour are heavy and can easily sediment. Chemists have tried many different approaches to formulate a white ink which is stable and does not sediment over time. The results have been satisfactory only for lab batches but for bigger batches the requirement of continuous agitation is a must.

Drop on demand printheads with a re-circulation technology can guarantee the required agitation to keep the inks from sedimentation. Apart from the continuous flow, a well-designed ink flow path directly behind the nozzles is also required so that all the ink will be effectively agitated and kept stable.

SEIKO RC1536 PRINTHEADS

The RC1536 series of printheads from the Seiko portfolio has been designed after discussions with multiple end-users and ink manufacturers. The requirements were carefully considered and our Engineering team in Japan came up with a design that can not only fulfil all the requirements but also ensure that the flow is not restricted in any way.

Today these printheads have found a big market in the ceramic tiles segment of digital printing where the particle sizes are bigger and the physical properties are more challenging than other markets. Using this technology the RC1536 series of printheads have now ventured into other markets of the inkjet world, one of the most popular being the jetting of white inks.

USES FOR WHITE INKS

- To create a homogeneous undercoat – pre CMYK
- To create a high contrast with spot effects – post CMYK
- To create a bigger gamut of colours by widening the range of shades of the existing colours – using white to lighten CMYK
- To create a base layer for printing on transparent substrates – backing on packaging foils
- To create a double side readable print – CMYK – White – CMYK
- To create a thick layer of print – Braille script

The possibilities are endless and the right printhead which does not put any limitations to our imaginations is absolutely necessary. The possible particle sizes, the workable viscosity range and the available drop volumes allow innovators to think out of the box and still be able to use this printhead effectively.

PUT TO THE TEST

Over the past few months, our engineers in Japan as well as in the new laboratory in Paris, have worked together with some integrators to explore the limits of the printhead with the available white inks. A recent test with the standard version of the printhead demonstrated a layer thickness of 60 microns at 20m/min and 22 microns at 60m/min. This ink had a particle size of 2 microns at D90 and still was able to print without any issues along the entire 108.3mm of the printhead.

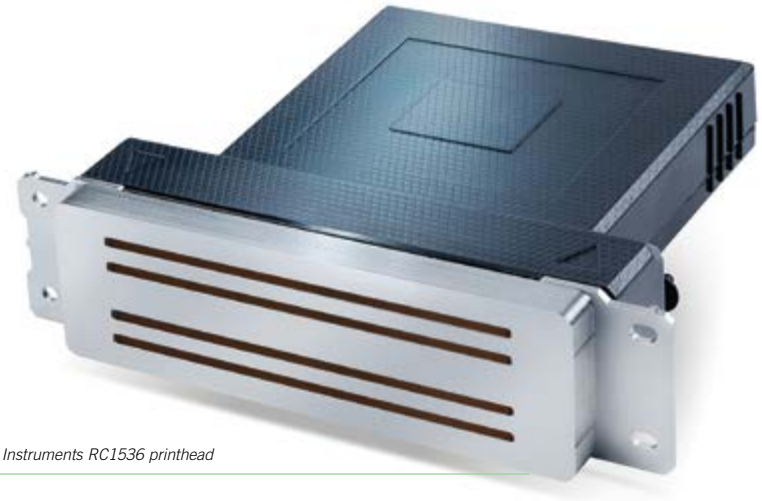
The latest addition to this series of printheads is the Version L, which stands for Large Drop. This printhead can jet up to 225 picolitres but it can also use special waveforms achieve smaller drops such as 25pL, allowing the end user the possibility of using an entire range of drop volumes without any changes.

Currently the inkjet market demands that inks are manufactured according to the specifications of the printhead manufacturers but with the RC1536 series, the printheads have now put forward an open challenge to the ink manufacturers to come up with a best possible ink which can not only achieve the highest layer thickness but also the optimum opacity or even the best shade.

The RC1536 series of printheads have been successfully tested for printing white inks and Seiko Instruments is now working closely with many ink manufacturers to come up with even more industrially acceptable inks that can be used in existing markets. ■

Mr Aliasgar Eranpurwala is Sales Manager D/A/CH & Benelux – Printek EMEA

Braille alphabet



Seiko Instruments RC1536 printhead

Further information:
Seiko Instruments GmbH,
Neu-Isenburg, Germany
tel: +49 6102 297 191
email: stephanie.rohn@seiko-instruments.de
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LOVE FOR LAMINATES

Jeff Stadelman explains why laminating UV inkjet prints is on the rise

Since the development of UV (ultraviolet) inkjet printing for the wide-format graphics industry nearly 10 years ago, print service providers (PSPs) have been creatively uncovering ways to make finished UV inkjet prints better than they once were. As the technology has evolved, of course, print quality has improved, images have better definition, and a wider colour gamut is now available. However, another game-changing way PSPs are enhancing and improving UV inkjet prints is by laminating them.

In the short time UV inkjet printing has been around, it has claimed a significant share of the overall digital printing market. As reported by Graphic Arts, combined UV-curable inkjet printer ownership increased by 35% from 2014 to 2016. Similarly, a 2017 graphics and sign community industry survey by the Specialty Graphic Imaging Association (SGIA) reported that approximately 34.3% of print service providers (PSPs) currently use UV-curable roll-to-roll inkjet printing systems. The survey also noted that in terms of hybrid inkjet systems, UV-curable inkjets were the most commonly purchased in 2017.

WHY LAMINATE UV INKJET PRINTS?

When UV inkjet print technology first launched, most PSPs didn't use overlaminates. UV-curable inks are traditionally said to offer high print quality, good adhesion and colour density, and adequate durability, as well as scratch, abrasion, light, chemical and weather resistance. Thus, many PSPs have historically viewed lamination as unnecessary, equating to extra work and more expense.

Today, however, many are finding the addition of an overlaminate to UV inkjet prints delivers several notable and advantageous benefits – from making the print job look significantly better and last longer to boosting profit margins at minimal cost. And, with the right product, lamination adds less than 10 minutes to overall production time.

PSPs especially appreciate the following key benefits laminating UV inkjet prints delivers:

1. Added Durability

Although UV inkjet prints have a reputation for durability, adding an overlaminate extends durability even more. Outdoor durability ratings for UV inkjet are not as widely published as other print technologies, but durability is often considered comparable to solvent or eco-solvent processes. Yet finishing a UV inkjet print with a quality, compatible overlaminate can easily take the average 2–3 year outdoor application and turn it into a 5–7 year application.

2. Image Protection

Lamination also provides added image protection. Although UV-cured inks are known to be stronger and do have built-in resistance, the question remains: How durable are the inks really? Without an overlaminate, inks are directly exposed to an application's environmental factors and have a greater chance of scratching, chipping or peeling. For short-term indoor applications, the added protection likely isn't warranted unless the graphic is in an area that requires it to be protected, but for anything outdoors or longer-term, it's highly recommended.

3. Image Enhancement: Enhancement of printed images is another advantage lamination delivers. Even though high-quality printability is a perk of UV inkjet printing, due to the way light refracts, UV inkjet prints can only be produced in one primary finish – matte. With the addition of an overlaminate, PSPs can easily obtain other finishes, such as stunning high-gloss or unique lustre finishes.

4. Value Upsell

Finally, adding an overlaminate to a UV inkjet print delivers purpose and value that is easily recognisable by both the PSP and their customer. If a PSP shows a customer a panel of a UV inkjet printed graphic in which half of the image is laminated with a quality overlaminate and half isn't laminated, the choice is immediately clear. For a slightly higher purchase price, the customer gets numerous legitimate added benefits. And, for minimal time and cost, the PSP is able to boost their bottom line. It's a win-win.

Continued over

Mactac customer Central Graphics uses Mactac's PERMACOLOR ColorGard LUV overlaminates to protect, enhance and add durability to graphic images

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USA
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Mactac's ColorGard LUV (Laminate over UV inkjet) high performance 3.2-mil clear acrylic PSA films are known for their industry-leading adhesion and complete wet-out of UV inkjet prints. They eliminate silvering and enhance printed images by adding depth. Additionally, they deliver complete wet-out on all other digital prints as well (no separate SKU needed).

ColorGard LUV performs exceptionally well on direct-to-board applications. And, with 5–7 years outdoor durability, these overlaminates are used throughout the graphics industry to protect inks and finished graphics from UV degradation and physical harm.

Recently, Mactac customer Central Graphics used ColorGard LUV to add durability and protection to more than 30 wall-mounted and free-standing artwork installations in six Akron, Ohio neighbourhoods. The enrichment project was part of an effort by Akron Art Museum to bring high quality art reproductions from the museum's collections to local neighbourhoods. The artworks ranged in size from 30"x30" to 96"x144" and ColorGard LUV was the perfect laminate for the job – providing the adhesion, image enhancement, image protection and durability needed for the application and the changing Northeast Ohio seasons.

Part of a community enrichment project by Akron Art Museum, this exterior wall print has been laminated with Mactac's PERMACOLOR ColorGard LUV

FINDING THE PERFECT FIT

The biggest challenge for PSPs who want to take advantage of the benefits offered by laminating UV inkjet prints is finding an overlaminate that will deliver in all areas.

For PSA manufacturers, developing overlaminates that are designed for UV inkjet prints is a challenge. Compared to other print processes, which can take 24 hours or more for inks to dry, UV inks are cured immediately via exposure to UV light. When the light hits the surface of the media, the ink doesn't have a chance to spread or flow like it does with solvent, eco-solvent, latex and other print methods.

However, while this immediately cured UV ink delivers numerous advantages like improved colouration, sharper images, low to no VOCs and more, it presents a low-surface energy (LSE) surface, which is one of the most difficult for PSAs to adhere to.

Icon Digital Productions chose PERMACOLOR ColorGard LUV overlaminate to draw attention to a new blue whale exhibition in Canada. Photo courtesy of Icon Digital Productions

It forms tiny droplets on the media, resulting in micro-gaps between ink droplets. These micro-gaps can cause an overlaminate to bridge, leading to image silvering.

To successfully laminate UV inkjet prints, PSPs need to choose a laminate with an adhesive that is specially formulated to overcome these challenges.

MATCH MADE WITH CARE

When seeking the ideal solution, PSPs should inquire about adhesive wet-out. Wet-out relates to how well the laminate's adhesive flows and covers the UV inkjet print – which can either create a successful or unsuccessful bond.

LSE materials typically do not allow adhesives to wet-out and stick as well as an adhesive would to a high-energy surface. However, some PSA manufacturers like Mactac have been able to create adhesive formulations utilising time- and cost-saving cold roll lamination techniques to produce durable overlaminates with complete wet-out of challenging UV inkjet prints.

Weather resistant wall mural of 1970s rock band, Devo featuring Mactac's REBEL Multi-Print Media and PERMACOLOR ColorGard LUV overlaminate

This print on Akron Ohio's famous towpath trail is protected from environmental conditions by Mactac's PERMACOLOR ColorGard LUV

INDUSTRY FIRST

Mactac's highly durable PERMACOLOR ColorGard overlaminates were the first of any industry overlaminates to ensure adhesive flow into UV inkjet droplets.

By achieving adhesive wet-out, or complete surface contact, the adhesive is able to actually fill the aforementioned micro-gaps between the ink droplets.

When complete surface contact isn't achieved and the adhesive only bridges or connects the micro-gaps, entrapped air bubbles form between the print surface and the overlaminate. The entrapped air bubbles refract light differently and produce a silvery sheen. This effect is commonly known as 'silvering.'

To create superior finished graphics, PSPs should choose overlaminates that are engineered to deliver complete wet-out over UV inkjet prints and have high-quality adhesion properties. This will ensure a more secure bond is formed between print and overlaminate, image silvering is eliminated, and finished prints have a deeper, truer representation of colour. ■

Jeff Stadelman is Marketing Manager for Mactac Distributor Products

Further information:
Mactac, Ohio, USA
tel: +1 866 622 8223
email: mactac.americas@mactac.com
web: www.mactac.com

THE HEAT IS ON

Stephan Eller offers his opinion on what to consider when choosing an industrial dryer

The investment in an industrial conveyor dryer often leads to the question, 'Which aspects are to be considered when buying such a machine?' In this article I will explain what you should look for prior to investment.

Industrial drying equipment is a fundamental component of professional printing. Without a dryer, colours will never reach the necessary brilliance; and without a suitable, secure solution further processing is impossible. Quality and efficiency are crucial: the dryer is not simply the 'rear light' of production, in fact it is an essential part of the printing process.

Basically it is all about output, quality of production and fail-safe durability.

QUALITY IS IN THE DETAILS

All conveyor dryers on the market work on the same principle and are constructed in fundamentally the same way: inlet, heating chamber and outlet. From that you cannot define differences in quality, but it gets interesting when we talk about quality of drying results – that is when you sort the wheat from the chaff.

So, what makes a good dryer? Stable and even temperature within the heating chamber. No matter where the goods are on the belt, a stable drying temperature is essential. Low-budget machines often have problems with this, which negatively effects the drying process. A well-engineered construction ensures the required quality, high air volume and stable/even temperature throughout the whole heating zone.

Another often occurring problem is that the temperature inside the heating chamber differs from the one shown on the control panel. This can be hugely problematic if the goods have a low tolerance for overheating. A good dryer will have a precise temperature inside, which you set on the controls.

Always remember: Trust, but verify! You could for example test before you buy a machine. A trustworthy manufacturer will not refuse.

HOW FLEXIBLE SHOULD THE DRYER BE?

While the belt width of your dryer mainly depends on the size of your goods, the length of the heating chamber depends on the output requested and the ink system you use. Check carefully what suits your needs. High quality drying systems have a compact heating zone and therefore save space in your facility.

A split belt version, separately controllable – also in reverse directions

When we talk about industrial drying solutions, often you can choose between a single belt and a split belt. The single belt enables the user to put several different pieces next to each other, depending on their size, and therefore increase output rates. A split belt is useful if you are processing different types of goods in one dryer, e.g. light and dark t-shirts. The light shirts generally need less time to cure, so this belt can be set to a faster speed.

If there is scope to change the running direction of the belts, you could use your machine in an even more flexible manner. For example: you could place a pre-treatment machine on one end of the dryer and cure the pre-treated pieces on the first belt. On the other end of the dryer, you place your DTG-machine and apply the actual print and cure it on the second belt running in the opposite direction. This concept saves space and increases flexibility.

Flexibility is also provided by a modular construction, with which you can adjust, depending on the application, the length of the heating chamber and the belt speed for a certain application.

Hood opening with gas spring support for fast maintenance access

The option of using additional components like cooling bridges over the outlet, passive and active cooling modules and heat recovery systems should also be investigated before buying. Good manufacturers provide the full range of possible solutions for every application.

RUNNING COSTS

So far we have talked about quality, now let us have a look at costs. Beside the initial costs for purchasing the machine itself, the running costs are also an essential factor. What should you look for? Most of all, energy costs! – meaning: costs for actually using the dryer. High quality dryers use gas fuelling systems with high-end components, which assure an efficient use of energy without losses. The efficiency of how the dryer processes this energy is also important. Good insulation speaks well for quality as it ensures the heat stays where it is needed – inside the dryer. The lower the heat loss, the more cost-effective (and environmentally-friendly) the machine.

OPERATION AND MAINTENANCE

Only dryers that are constantly running for production are cost-effective for their owners; maintenance expenditure should therefore be minimised. In order to keep costs low and make maintaining the dryer as comfortable as possible, you should check the access to the dryer's different sections for cleaning and repairing. Modern dryers are accessible through spring-supported hoods, which allow fast and easy access to the interiors.

If repair service should be necessary, the manufacturer will show its qualities through reaction time to your request and the availability of spare parts.

Ease of control is also important. Mastering complicated control panels and systems will eat into an operator's time. Operating a good dryer needs to be fast, comfortable and self-explanatory. The option to create and save settings for standard procedures should also be available.

DIGITAL CONNECTION

Do you require your future dryer to be 'intelligent' in communicating with other software as an aspect of digital production? If yes, then opt for a smart control over the classic hardware control systems.

SUMMARY

Look for the following things when you consider buying an industrial dryer:

- Stable and even temperature inside the heating chamber
- Good insulation, low energy loss
- Fast and easy access to inner sections of the dryer for cleaning and maintenance
- Single belt or split belt, depending on application
- Quick reaction of manufacturer for service and spare parts
- Possibility of network connection (digitisation) ■

Innovative smart control facilitates digital production

Stephan Eller is Key Account Manager of Textiles at Tesoma

Further information:
Tesoma GmbH,
Lichtenau, Germany
tel: +49 37208 887880
email: info@tesoma.de
web: www.tesoma.de

MINIMISING MIGRATION

David Turner explains how safer inks are being developed for food packaging

We drink out of plastic bottles, eat with plastic cutlery, and buy food in plastic packaging. This is not just an ecological issue – to what extent are we consuming potentially harmful substances?

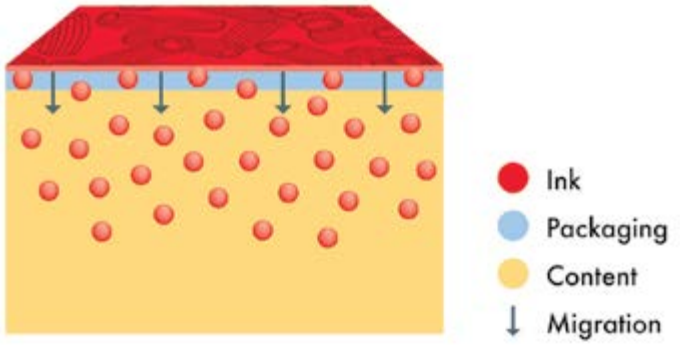
Printing food packaging plays a key role in this context. German ink manufacturer Marabu now offers consumers peace of mind, with the market's first proven low-migration UV screen printing ink for PE/PP plastics.

STRINGENT DEMANDS

Food packaging has to fulfil a range of functions: it is designed to catch the eye with its beautiful presentation of the product, to encourage consumers to make a purchase, and – above all – to protect its contents. Food contact materials (FCMs) come into direct or indirect contact with foodstuffs during manufacturing, packaging or use. To ensure food safety and ultimately human health, FCMs must meet extremely strict statutory requirements. These include minimising migration (transfer) of substances in the material to the packaged foodstuff. FCMs must not transfer any components in quantities that could be hazardous to human health, change the composition of the contents, or impact their organoleptic properties.

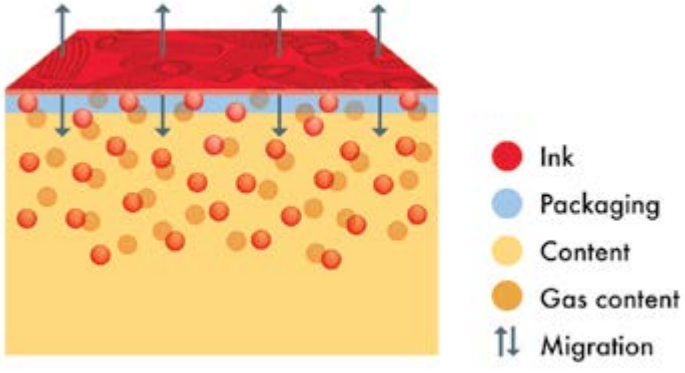
Inks printed on packaging come into indirect contact with food, and it is therefore possible for substances contained in the ink to migrate to the contents (e.g. via diffusion, set-off or gas phase migration; see charts 1-3). Migration is greatly influenced by the functional barrier of the substrate. The better this barrier, the lower any potential migration.

Polyethylene (PE) and polypropylene (PP) are two of the most popular plastics used in food and personal-care product packaging, and are employed for films, tubes, bottles and carton linings. In contrast to glass and metal, these plastics pose no functional barrier to ink migration. For this reason, inks for food and personal-care packaging are subject to strict quality audits to verify that they are not susceptible to migration, and will not endanger consumer health when used for corresponding products.



Diffusion migration: migration through the substrate to the reverse side of the print

Set-off migration: set-off from the print to the reverse side while being stored or rolled



Gas phase migration: volatilisation or condensation of compounds by heating (cooking, baking, sterilisation)

Food contact materials (FCMs) come into direct or indirect contact with foodstuffs during manufacturing, packaging or use

The low-migration process

INK AS PART OF A LOW-MIGRATION PROCESS

There is no single ink on the market that is universally suitable for all food packaging. Compliance must always be assessed using the finished, printed food contact material as migration is influenced by the substrate itself, the ink and process conditions (see chart 4). Market participants have long talked about low-migration inks, but the term is sometimes misleading.

First, it is possible to employ ingredients with high molecular weights, such as highly functional monomers, to significantly reduce the number and volume of migratory substances in inks compared to conventional products – but that does not qualify them for a universally applicable low-migration seal of approval. It is necessary to take into account the interaction between substrate, ink and process conditions. Second, not every ink with a low-migration label has been proven to be so.

NEW DEVELOPMENT

Marabu has developed Ultra Pack UVFP to fulfil the strict statutory requirements defined for food packaging. This UV-curable screen printing product is the first to have received official confirmation as a low-migration ink for PE/PP plastics. It has therefore been proven to be suitable for printing food and personal-care product packaging made of polyethylene and polypropylene. It was tested and approved by the certified institute Swiss Quality Testing Services (SQTS): 'Based on the assumed surface-to-volume ratio, the results of analysis comply with the requirements of EU Regulation No. 10/2011 and equivalent Swiss legislation.' The products designated by other manufacturers as low-migration are based on the Nestlé Guidance Note on Packaging Inks and the EuPIA Suitability List of Photoinitiators for Low Migration UV Printing Inks and Varnishes. However, they generally only meet the strict migration testing thresholds in conjunction with packaging materials with a high functional barrier, such as polyethylene terephthalate (PET).

Marabu's UVFP is the only ink range that has been proven suitable in tests and officially approved for printing migration-sensitive PE/PP plastics – the materials most widely used for packaging foodstuffs. However, the same principle applies to Ultra Pack UVFP as it does to all inks: its suitability for a particular application should be verified by means of thorough migration testing before it is used to print the food contact material.

ULTRA PACK UVFP PROPERTIES

Ultra Pack UVFP's low-migration formulation offers maximum process stability and food safety for containers made of pre-treated polyethylene (HDPE/LDPE) and pre-treated polypropylene (PP). The very high reactiveness of UVFP inks ensures rapid drying and printing speeds of up to 4,000 containers an hour. UVFP achieves its final cured state after 24 hours. The better the ink film is cured, the lower the potential volume of migratory substances, such as solvents and monomers. The colours are brilliant and high-gloss, and offer excellent opacity, and outstanding resistance to water, packaging contents, wear, solvents, alcohol and perspiration. The single-component ink is a print-ready product, ensuring rapid, efficient production processes. Moreover, there is no need for auxiliary agents; the proven low-migration properties of UVFP inks can be negatively impacted by the improper use of auxiliaries. ■

David Turner is Product Manager at Marabu

Further information:
Marabu GmbH & Co KG, Tamm, Germany
tel: +49 7141 691 116
email: tu@marabu.com
web: www.marabu-inks.com

LASER QUEST

Ross Balfour reveals what's next for computer to screen technology

Computer to screen technology (CtS) has enabled huge improvements in screen printing productivity, due to several factors working in concert. The digital workflow, and elimination of film positives, has simultaneously reduced the associated costs and improved the efficiency of stencil making. Working without film positives also reduces touch-up time, through bypassing the contact exposure process that generally results in pinholes.

However, the single biggest advantage of adopting computer to screen making technology is only revealed during the actual printing process itself. The precise, repeatable image placement and registration inherent to digital screen imaging dramatically simplifies press set up. Investing in CtS technology is one of the best ways to expand, by freeing up extra printing capacity that is otherwise squandered on prolonged and non-productive press set-up.

To take advantage of these benefits, printers have rapidly adopted the CtS process, and several types of technology have already been either developed or adapted to be able to place an image onto a coated screen.

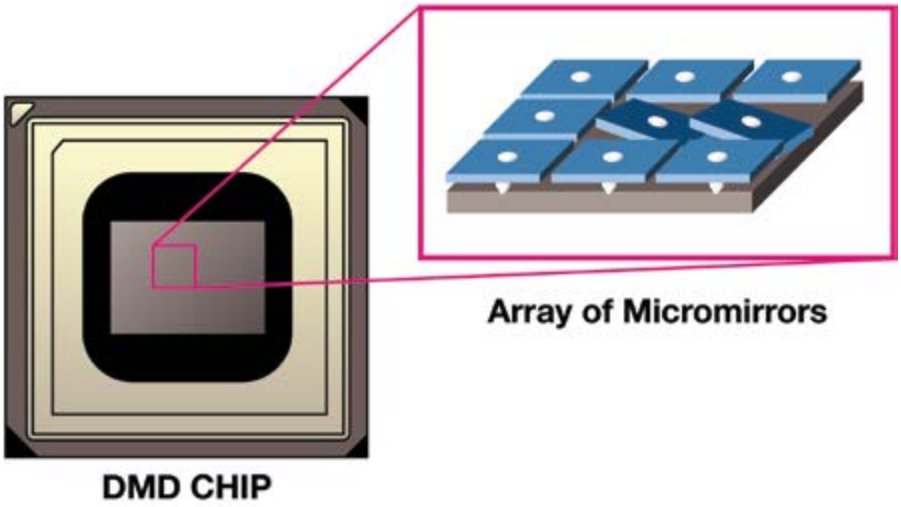


Figure1: DMD chip – micro mirrors

HOW CTS WORKS

Entry-level CtS systems rely on inkjet technology to print an opaque mask that defines the image. Subsequent exposure and curing is then required, to crosslink the stencil, prior to developing the image on the screen. Equipment that automates an in-line exposure process after mask printing is also available and is able to provide a seamless CtS experience.

Direct exposure CtS systems use light to simultaneously define the image, and at the same time cure the emulsion. These CtS systems function as image-setters, because they project pixels that define the image directly onto the coated screen. In theory, direct image technology is capable of producing higher quality images than CtS systems that rely on the use of an intermediate mask.

The pixels in these direct imaging systems can be produced one of two ways. By bouncing light from a curing lamp off micro-mirrors, and focusing them through a lens, or through direct illumination from modulated & focused laser beams. A brief outline of each technology follows below.

See **figure 1** for an illustration of a typical DMD (digital micro-mirror device) chip used in the first type of image-setter CtS, in conjunction with an exposure lamp and focusing lens. Only a small fraction of the overall image is exposed at any one time by

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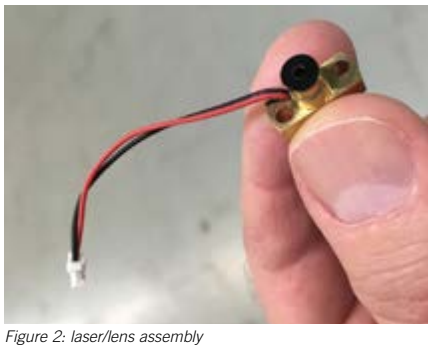

Figure 2: laser/lens assembly

Figure 4: inkjet film positive

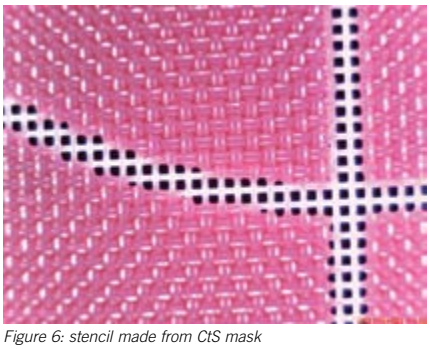

Figure 6: stencil made from CtS mask

Figure 3: silver film positive

Figure 5: CtS mask on screen

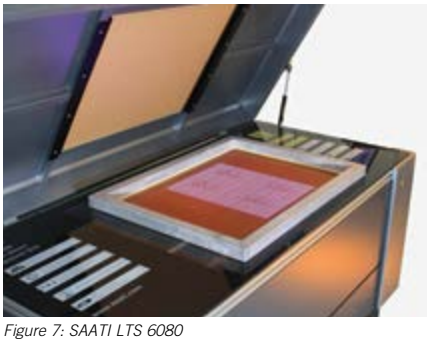

Figure 7: SAATI LTS 6080

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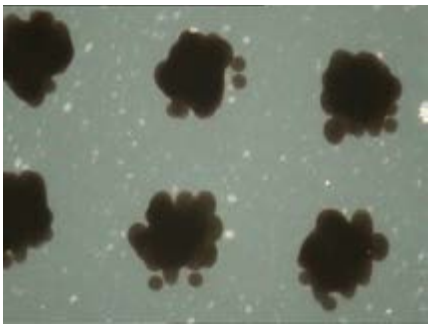
Figure 8a: inkjet mask dots

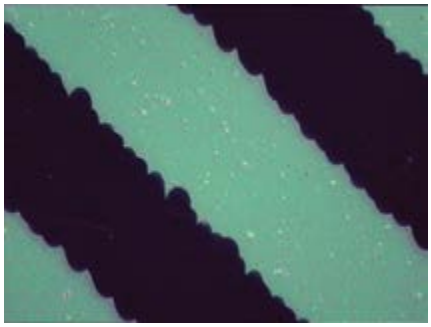
Figure 8b: inkjet mask lines/spaces

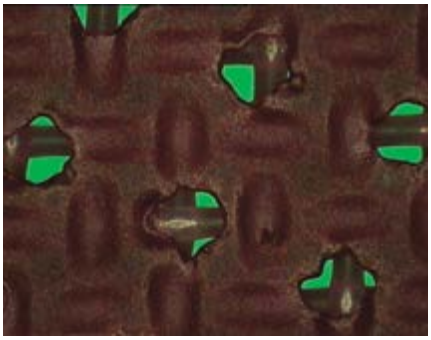
Figure 8c: inkjet stencil dots

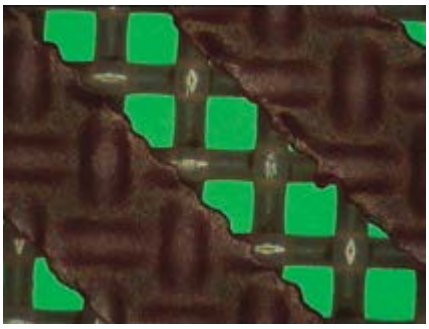
Figure 8d: inkjet stencil lines/spaces

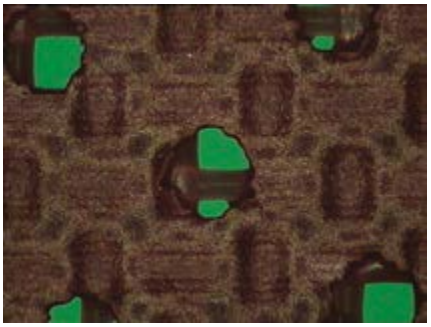
Figure 8e: 847dpi LTS dots

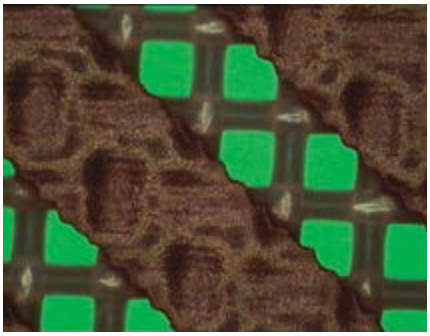
Figure 8f: 847dpi LTS lines/spaces

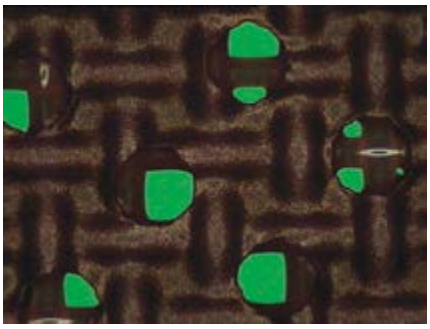
Figure 8g: 1,270dpi LTS dots

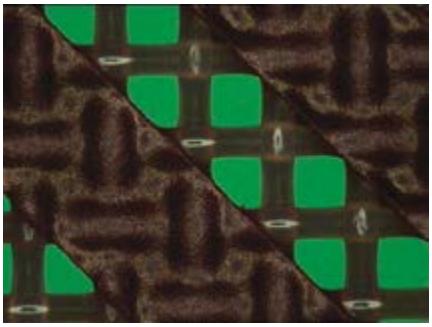
Figure 8h: 1,270dpi LTS lines/spaces

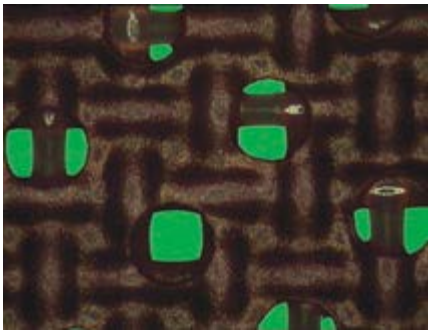
Figure 8i: 2,540dpi LTS dots

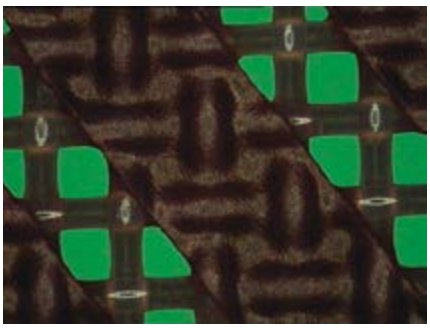
Figure 8j: 2,540dpi LTS lines/spaces

the chip, and this is constantly refreshed and scanned by scrolling over the screen surface until the entire image is reproduced.

Figure 2 shows a laser/lens assembly used in a different type of image-setter CtS. In this case multiple lasers are used, and by modulating their beams to create pixels, the entire image can eventually be stitched together.

The price point for image-setter CtS systems has traditionally been two to five times higher than that of mask type CtS systems, so the relatively high cost has prevented their adoption as a mass-market technology. The vast majority of CtS systems in use today depend on the use of an ink or wax based mask as an intermediate step.

IMAGE QUALITY

After the initial euphoria over the productivity benefits of CtS wears off, the increased productivity becomes the new normal and is taken for granted. The focus then usually shifts to quality. At this point any shortcomings or limitations of the image quality from the CtS technology are thrown into sharp relief.

Some printers have a requirement to print halftones with high line-counts, or require fine printed lines with very sharp definition, and this is when the difference in quality offered by masking systems, compared to image-setting systems becomes readily apparent for most end users.

There is a close relationship between the DPI (dots per inch) output of the CtS, and the image quality of the stencil regarding resolution and definition. This relationship is further reflected in the final screen-printed images.

As an added complication for masking type CtS systems, stencil quality can be compromised by process-dependent factors. These complications include overspray, a lack of mask density, or dot gain that can all occur during the creation of the mask. Jetting ink to form an image usually causes some spread of the image details to occur. In halftone printing, this effect can darken and muddy image details, unless steps are taken to correct for this. Through careful compensation of tonal values in the image file during colour separation, most of the original density can be restored after printing.

In fact, this type of halftone curve compensation, or fingerprinting, is routine and even a mandatory step for graphics printers performing four-colour process printing, in order to maintain control of the grey balance and colour accuracy when building new colours from overlapping transparent inks.

In the case of fine line reproduction, a primary requirement for most industrial screen printing applications, the degradation that occurs with line-edge definition normally disqualifies the use of masking type CtS systems. For most of these applications,

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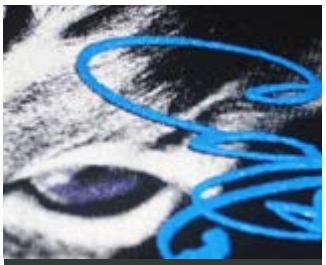
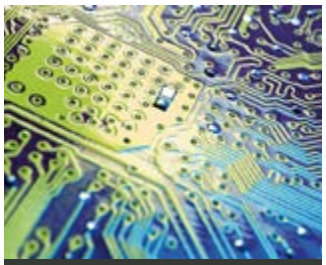

FASHION


HABITAT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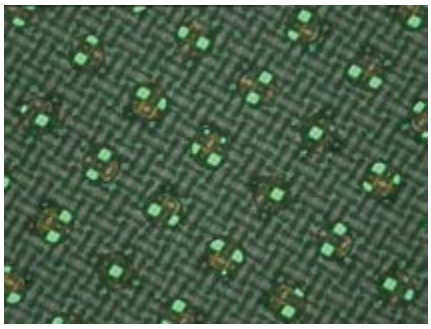

Figure 9a: 20% halftone dots at 120lpi on 150pw31 (380/in)

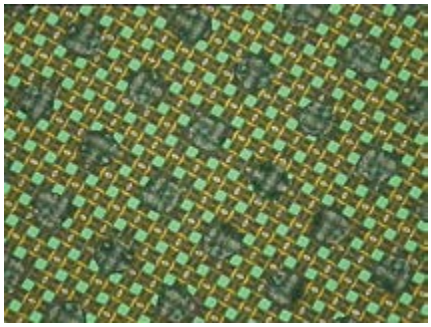

Figure 9b: 80% halftone dots at 120lpi on 150pw31 (380/in)

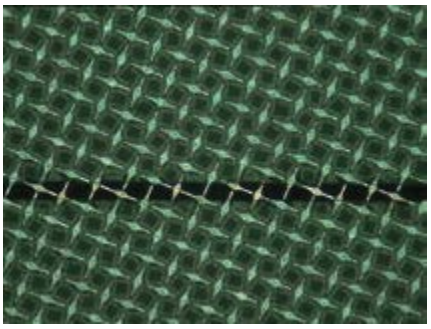

Figure 10a: 50-micron aperture on 360 .0006 wire mesh

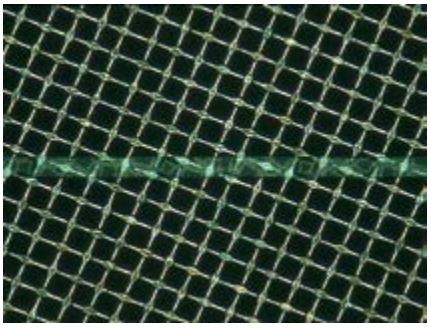

Figure 10b: 50-micron negative line on 360 .0006 wire mesh

screens are still commonly made with silver-based positives that are produced on film image-setters.

DEALING WITH DPI

The main reason for this is resolution, as defined by DPI. To illustrate the effect of DPI and other factors on stencil quality, as a first step we can compare the quality of a silver film positive, **figure 3**, with an inkjet film positive, **figure 4**.

Some pixilation of the edge detail is visible in the silver film image, in this case made at 1,270dpi. The inkjet film image has lower resolution, in this case 720dpi that is typically used in production environments. However, the inkjet image also shows some overspray, line thickening, and even some variation in density that occurs during the layering of the ink drops. It should be apparent that the silver film, made on an image-setter, represents a better quality mask with which to expose a stencil, even if the inkjet printed version may have some in-house benefits for productivity and workflow.

MASKING

Masking type CtS systems that use ink or wax to print the intermediate mask directly onto a pre-coated screen are quite suitable for some types of screen printing applications. They are in widespread use and are especially popular with garment and apparel printers, because of the aforementioned benefits in accuracy of image placement on the screen. This has enabled huge productivity benefits during multicolour printing applications typically used in garment decoration today.

The suitability of masking-type CtS for very fine detail, or industrial and electronic printing applications is another matter. Unfortunately, these CtS systems can only exhibit quality similar to inkjet-printed film positives. This is illustrated in **figure 5**, which shows a printed CtS mask, and **figure 6**, which shows the subsequent stencil. The quality of line-edge definition is generally not reliable enough for more demanding screen printing applications, for instance halftones 85lpi and above, or well defined lines of 200 microns (8 mil) or less, especially where functional materials such as conductive inks are being patterned.

IMAGE SETTING

Recently image-setter type CtS have started to make some in-roads into industrial screen-making segments, by virtue of their better image quality. They are even becoming the dominant technology used for some applications, such as screen making for PCB printing in China.

In the case of image-setter CtS there is no intermediate step we can review, and an assessment of quality is evident only from the stencil itself.

Image-setter CtS systems have traditionally been available with one fixed resolution. However, recent advances in technology have allowed variable resolution machines to enter the market. These variable resolution CtS are normally laser-based systems, as opposed to the fixed resolution normally available with DMD chip-based micro-mirror CtS systems.

One example of this variable resolution technology is SAATI's LTS6080 laser-to-screen system, shown in **figure 7**.

LASER TO SCREEN

This particular CtS operates with 96 lasers and offers multiple levels of resolution, from 847dpi up to 2,540dpi, and this makes it possible to select the level of quality required for a wider range of stencil making applications.

Illustrated on the previous page, in **figure 8**, is a selection of stencils made at 847, 1,270 & 2,450dpi on a laser-to-screen (LTS) machine. Dot and line-edge definition can be compared to the same image made on a masking type CtS, as well as the intermediate inkjet mask itself for reference.

At higher DPI resolutions, direct exposure CtS systems are able to match the stencil performance achievable with the silver film positives that have always represented the gold-standard for image quality. This versatility lends itself to use in most screen-making applications, even those with highly demanding requirements for line-edge definition, such as the printing of functional materials for industrial and electronic applications.

See left examples of stencils produced on the LTS6080 for demanding print applications. **Figures 9a & b** show 120lpi halftone for use in ceramic decal printing. **Figures 10a & b** show 50-micron lines reproduced on stainless steel wire-mesh for an electronics printing application.

PROGRESS CONTINUES

Advances in CtS technology will no doubt continue, with consequent improvement to stencil quality and lower cost of equipment. In no small measure, the benefits of digital screen making that have been conferred to process improvement have allowed screen printing to maintain a competitive edge. This applies both as a method of decoration, as well as an additive manufacturing process used by multiple industries to produce a wide range of everyday items that deliver conveniences that we now take for granted. We live in a digital world, so there's no better time than now to embrace technology change and jump into the world of digital screen making.

There will be readers with the seniority to remember the old photomechanical days, with process cameras, halftone screens and contact film, etc. required to make film positives for screen exposure. It's fair to say that within a generation, technology has advanced CtS screen making to the point where it now fits the description of science fiction writer Arthur C. Clarke's famous third law: 'Any sufficiently advanced technology is indistinguishable from magic.' ■

Ross Balfour is Global Technical and R&D Director – Chemicals at SAATI

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KEEPING CURRENT

There will be no screen printing without up-to-date CtS technology, cautions Andreas Ferndriger

Although some readers may consider the above a surprising statement, no one can deny that during the past few years, the market and as a result the screen printing sector has undergone a significant change at break neck speed.

All users of the high quality and flexible screen printing process are required to stay abreast of the increased challenges facing the sector. It is not enough that printing quality is expected to be steadily improved – at the same time, costs must be reduced and flexibility enhanced.

A significant cost factor and major cause of daily headaches is screen preparation. Are readers still using the classic and conventional process for printing screen making? If so, it can probably be assumed that sooner or later, such businesses will be too expensive and not highly competitive!

FRUSTRATING SCENARIOS:

- Litho films are becoming increasingly expensive and the number of suppliers on the market is rapidly decreasing.
- Once again, the film printer is defective; spare parts are unavailable and there is no chance to contact a maintenance technician.
- Fluctuations in temperature and air humidity have an influence on film dimensions, which results in registration problems.
- The manual fastening of films on the screens requires a lot of time. In addition, this procedure lacks precision.
- The surface of the glass panel of the copying frame is very dirty and scratched.
- Once again, the vacuum pump of the copying frame is extremely slow and the covering mat is not tight.
- The UV metal halogen bulb lamp is old and the precise exposure times for an optimal copy/curing are unknown.
- Process-related undercutting and a restricted reproduction quality (half-tones, defined lines) have a negative influence on printing quality.
- Day in day out, hundreds of kilograms of weight must be moved in order to forward the screens from one process to the next (extremely high handling expenses).
- At the end of the screen preparation process, several hours/day will have been spent retouching the screens or, in the worst case, reproducing some of them again.
- There is no simple and fast way to reproduce identical printing screens.
- The desired printing quality cannot be achieved.
- Setting-up times in the printing shop are too long and important production time is lost.

This list is indefinitely expandable but it is not necessary to put up with this sad state of affairs. Instead, there are a number of well-proven technical and professional solutions that enable customers to eliminate these problems.

SOLUTIONS

The advice from SignTronic is to simplify the process and consider whether state-of-the-art CtS direct exposure technology could work. Modular CtS technology can be precisely adapted to particular needs and enables the user to retrofit equipment, depending on investment planning.

SignTronic now offers a third generation CtS direct exposure product. The modular CtS technology concept ensures that customers can choose from a wide range of solutions in order to find the perfect one for their special application. The most important components of this modular technology are described below.

UV LIGHT SOURCE

Various UV light sources are available. Customers can choose from high performance UV lamps (330W) and a large bandwidth or between UV-LED solutions (UNO or DUO for particular applications). SignTronic believes the light source must not make it necessary to use special CtS high speed direct emulsions.

DMD DLP TECHNOLOGY FROM TEXAS INSTRUMENTS

This is the centrepiece of SignTronic CtS technology that the company has been using for 15 years, since the first generation of StencilMasters was put on the market. Customers have the choice of various models and sizes to ensure that particular requirements with regard to exposure speed and resolution are fulfilled.

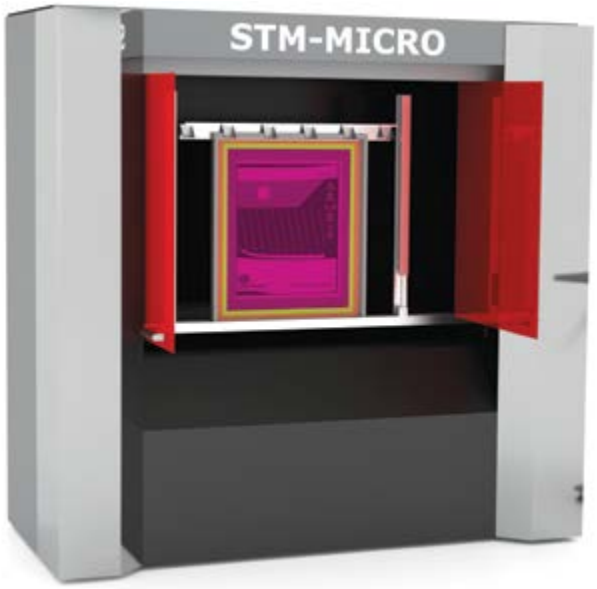
OPTICS FROM ZEISS

This is the decisive construction module of the StencilMaster. The precision optics ensure that hundreds of thousands of UV light points impinge on the light-sensitive printing screen with a high UV light output, with utmost sharpness and without the slightest distortion, and also provide a correct and reliable curing of the direct emulsion/capillary film/PCF. Four different resolutions are available: 1270/1609/2400/3040 dpi.

The compact StencilMaster STM-MICRO is a systematic implementation of the modular CtS concept.

It is widely acknowledged that compromising on the quality of the printing

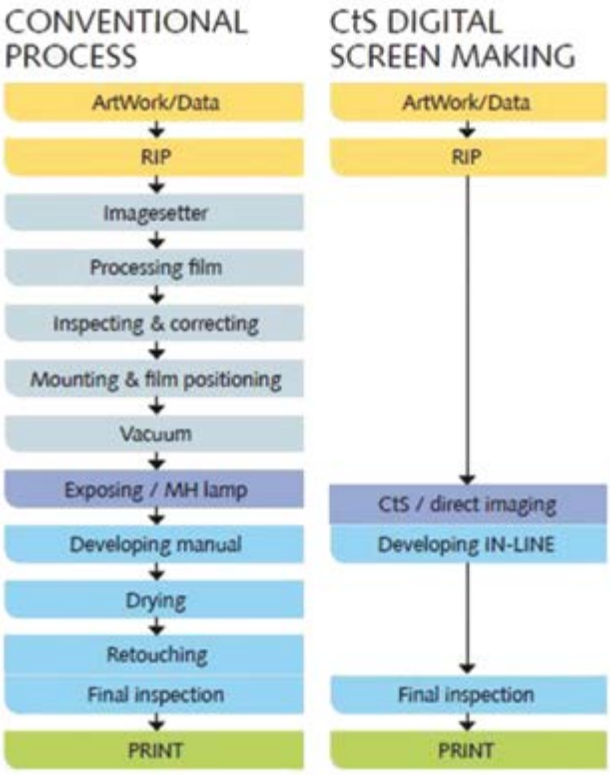
Modular CtS concept



The compact StencilMaster STM-MICRO

screen has a disastrous effect on printing quality, as well as on costs. SignTronic's objective is to offer customers affordable but still top quality solutions for their screen printing needs. ■

Andreas Ferndriger is CEO/Sales and Marketing Director at SignTronic



The CtS process versus Conventional

Further information:
SignTronic AG, Widnau, Switzerland
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web: www.signtronic.com

CONSUMER RIGHTS

Gabriele Heller examines the legal aspects of printing on food contact materials (FCM) and cosmetic packaging

ESMA
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Food contact materials must comply with the requirements of EC regulation 1935/2004. Groups of materials and articles listed in Annex I of regulation 1935/2004 must be manufactured in accordance with the requirements of good manufacturing practice laid down in EC regulation 2023/2006. For food packaging made of plastic materials, regulation 10/2011 has to be taken into account as well.

All the requirements listed above except regulation 2023/2006 apply to the food contact material itself, not to the printing ink as delivered by the ink manufacturer.

THE SMALL PRINT

Regulation 1935/2004 ('framework regulation') requires that materials and articles intended for food contact do not transfer their constituents to the food contained in quantities which could:

- endanger human health; or
- bring about an unacceptable change in the composition of the food; or
- bring about a deterioration in the organoleptic characteristics thereof.

Regulation 2023/2006 requires inks intended to be printed on the non-food contact side of a FCM to be manufactured according to the principles of good manufacturing praxis outlined in this regulation.

Regulation 10/2011 is related to plastic materials and articles intended to come into contact with foodstuffs, consisting exclusively of plastics, and contains positive lists of monomers and additives allowed to be used in manufacturing such materials and articles and specific migration limits for a part of those substances.

Printing on the non-food contact side of a FCM results in indirect contact of the ready-printed ink film with the food. Thus there is a possibility of migration of substances from the printed ink film.

DIFFERENT TYPES OF MIGRATION

Diffusion Migration: Due to their chemical characteristics and molecular size (molecular weight < 1000 daltons), some substances, known as migrants, are able to migrate from the printed side through the substrate onto the unprinted side.

Set-off Migration: Migration of substances from the printed side to the unprinted side of another sheet in a stack, roll or stacked container.

Gas Phase Migration: Migration due to the evaporation of volatile materials by heating food in its original packaging or by steam distillation during cooking, baking or sterilisation.

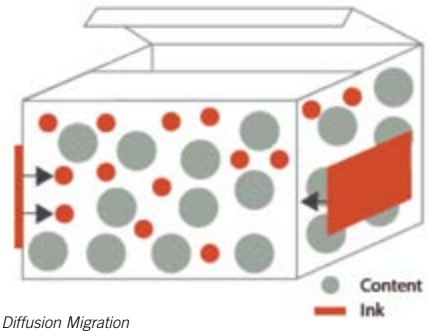
It can be seen from the diagrams below that migration mainly depends on three parameters: substrate, ink and process conditions.

Substrate: The better the substrate is acting as a barrier, the lower the migration of ink ingredients into the food. Glass and metal are so-called 'absolute barriers' not allowing any migration. On the opposite, polyethylene and polypropylene, which are often used in the manufacture of food packaging, constitute quite poor barriers, allowing for a possible migration of substances from the ink into the food.

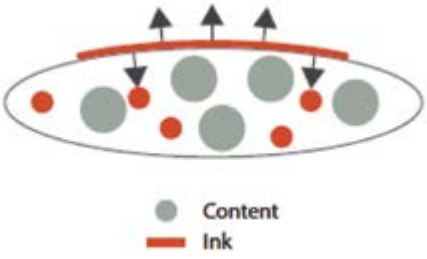
Printing ink: Migration is an issue for all kinds of printing inks. The selective use of high molecular weight substances (e.g. as higher-functional monomers in UV inks), specific selection and purity criteria of the raw materials, as well as tailored production conditions in order to avoid process-related impurities can significantly reduce the amount of migrating substances compared to conventional (not developed specifically for this application) inks.

Process conditions: Effective drying and curing of the ink film is the prerequisite to minimise the existence of potential migratable substances, like solvents and monomers. Set-off, where possible, must be avoided throughout the entire printing process. The thickness of the ink film and the ratio of printed to non-printed surface area determines the total amount of potentially migratable substances from the ink. The more printing ink is used, the greater the quantity of substances potentially able to migrate.

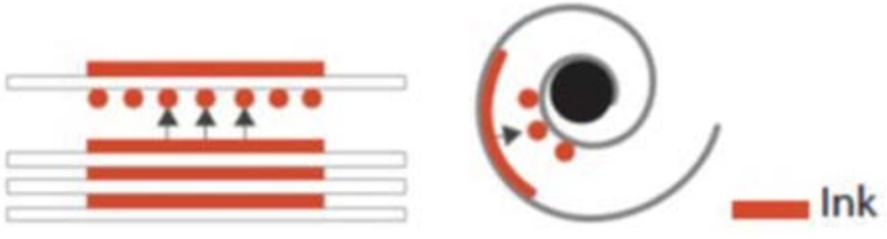
To ensure compliance of a FCM with regulation 1935/2004 and 10/2011, provisions governing the transfer of substances from the FCM into the food must be applied. Such transfer of substances (migration) is only permitted in quantities allowing the FCM to comply with the requirements of the regulations outlined above.



Diffusion Migration



Gas Phase Migration



Set-off Migration

SUMMARY

Even if the printing ink has been designed for printing on FCM and/or cosmetic packaging, a migration test with the finished product is essential because other factors in the process chain such as printing parameters, processing conditions and the choice of packaging components also affect the migration risk. Compliance must therefore always be checked with the printed material. ■

Gabriele Heller is Chairman of ESMA's Health, Safety and Environmental Protection Committee and Senior Manager Product Safety at Marabu

Further information:
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PREPARING THE PERFECT SCREEN

Andreas Ferndriger explains how Swiss perfectionists have honed the basic processes in screen printing

In 2017 Grünig, the Swiss company specialising in screen preparation technology, celebrated its 50th anniversary. Focusing on professional automatic screen preparation, Grünig's strategic orientation has paid off and it is now the market leader in this sector, offering a versatile and comprehensive product portfolio for all the processes involved in screen preparation.

ESSENTIAL PROCESSES

PREPARATION: Automatic frame preparation respectively cleaning
STRETCHING: Professional solutions for a high-grade mesh tension
GLUING: Automatic mesh gluing with UV gluing technology
COATING: Modular and top quality solutions for mesh coating
CtS: The systems for direct exposure are provided by Grünig's partner SignTronic
WASHING: Automatic solutions for screen cleaning after the printing process, mesh cleaning respectively de-greasing prior to the coating process
DEVELOPING: Standardised and automatic processes following direct exposure or film copy
DRYING: Clean and rapid drying of wet or coated printing screens

Figure 1: Grünig's G-PREP 370 machine offers an automatic solution to screen cleaning

INDUSTRIAL PRINTING CONSIDERATIONS

For industrial screen printing processes involving all kinds of processes, sizes, shapes, applications and requirements, a few particular and crucial aspects need to be taken into account, as they make all the difference, especially where printing screens are concerned.

Figure 2: Cleaned aluminium frame profiles before and after treatment

Using screen printing technology for printing high-quality materials such as glass, metal and film is an industrial process which imposes very high standards with regard to quality and reproducibility.

- Abrasive colours often prevent the screens from being correctly de-coated. This means that the screen frames need to be reconditioned time and again and covered with new meshes.
- First-class printing screens are indispensable in order to print subtle details with a high edge and printing sharpness.
- Particularly high-grade and smooth material surfaces do not forgive the slightest mistake. Each and every flaw in screen preparation or during the printing process will be immediately visible.
- Special printing colours are applied whose characteristics must answer the particular requirements in connection with the used direct emulsions, capillary films or PCF meshes.
- After the printing procedure, the colours must be washed out as rapidly as possible, with utmost safety and in an automated manner, to make sure that the printing screens are thoroughly cleaned before being put into interim storage (repeat printing).

Continued over

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Figure3: The G-STRETCH 275 UV BOND LED offers a maximum degree of automation and standardisation of the stretching and gluing processes.

Another essential market factor is the need for lower costs in spite of the considerably more stringent requirements with regard to improved printing quality. The cumbersome and time-consuming reconditioning of already used printing screens is a frequent cause of annoyance and inconvenience. The growing tendency towards smaller production runs, combined with one-job screens is another reason why the quantity of reconditioned printing screens is steadily increasing.

THE BIG CLEANING QUESTIONS

How do you remove old glue from frames without old mesh covering? And how can the frame surface be optimally prepared, while making sure that the frame profile will not be destroyed or damaged in the process? To answer this Grünig has developed the G-PREP 370 (figure1), which offers a perfect automatic solution.

ADVANTAGES OF THIS TECHNOLOGY

- Automatic frame cleaning process.
- Safe work methods thanks to a closed cleaning chamber.
- No chemical products need to be used.
- The surface of the frame profiles will be as good as new (ideally of sand-blasted aluminium).
- An optimal adherence of the mesh/glue is guaranteed.
- Several frames can be simultaneously cleaned.
- Freely selectable programming ensures a systematic processing of various frame sizes and profiles.

HOW DOES THE G-PREP 370 OPERATE?

The powerful Grünig rotation nozzle, combined with a special high-performance pump (with a maximum pressure of up to 1'800 Bar) using normal tap water moves along the frame profile. During this procedure all the old mesh and glue residues are completely removed with utmost safety and efficiency, without using any chemical products. The small amount of water flows through a mechanical filter, upon which it can be directly led into the waste water without any environmental risk.

Figure 2 shows an example of cleaned aluminium frame profiles (before/after treatment).

To be able to clean a higher number of frames obviously means that an increased number of frames need to be covered and that more meshes need to be fixed and glued. To avoid production bottlenecks, this process must be accelerated and automated.

STRETCHING AND GLUING

The recently developed G-STRETCH 275 UV BOND LED sets new standards in the automation of stretching and gluing processes.

It goes without saying that all the commonly used meshes such as polyester and stainless steel meshes as well as the pre-coated SEFAR PCF can be used.

The mesh is directly pulled in from the roll and rapidly and easily fastened in the required dimensions. Then the stretching process is started and the mesh is automatically stretched according to the previously programmed parameters, until the final value has been reached.

This solution also involves the fully automatic mesh gluing using UV glue. The frames are prepared with quick-reacting UV glue. During the next step, the UV LED exposure head moves along the screen frame in order to cure the glue. This means that the gluing process is considerably accelerated, which not only increases the output capacity but also improves the screen quality.

Another feature of this solution is the fact that the printers can also use pre-coated SEFAR PCF mesh directly from the roll. Until now, the automatic gluing of PCF meshes has been rather time-consuming and complicated.

When using the screen printing method as a printing technology, a professional implementation of the processes is indispensable. Standardisation and automation are two mandatory prerequisites in order to meet the high requirements with regard to quality increase and cost reduction. Simplification is the key! ■

Andreas Ferndriger is Sales & Marketing Director at Grünig-Interscreen

Further information:
Grünig-Interscreen AG, Schwarzenburg, Switzerland
tel: +41 31 734 2600
email: fa@grunig.ch
web: www.grunig.ch

Colour measuring to go from Barbieri

Barbieri electronic guarantees colour measurement with extremely precise results with its qb technology, which features in its new portable spectral unit, the Spectro LFP qb. To provide customers with greater flexibility, the Spectro LFP qb has a detachable measuring head for delivering instant, reliable spot measurements. The measured colours are visualised immediately in the touch display while the spectral values are forwarded to the computer via WiFi or USB for further processing.

The system comprises a spectral core, three light sources for uniform illumination of the media surface from three different angles, and seven LEDs per light source for real M1 daylight illumination pursuant to the standard. The unit conforms with the new ISO 13655-2017 M1 part 1/method a, M0, M2 and M3. It is battery operated for portability and features touch display and the ability to measure fluorescing inks.

"The detachable measuring head was one of the enhancements most frequently requested for the Spectro LFP Series 3," revealed Wolfgang Passler, Vice President International Sales & Marketing – Barbieri electronic. "We have implemented it in the Spectro LFP qb so that users can now enjoy absolute flexibility – with an automatic spectrophotometer that delivers the ultimate in precision on all materials plus a flexible manual spectrophotometer for measuring and comparing spot colours on a wide range of materials." ■

The spectral unit at work

Learn labelstock strategies from online tutorials

Ritrama's website features a new section dedicated to the application of our labelstock, where users can discover how to decorate or apply labelstock on shop windows, walls or floors. A complete handbook with videos and technical bulletins shows step by step the strategies to adopt according to the kind of surface. The new section 'Technical Bulletins' in the menu 'Tutorials' contains a first series of 12 documents to provide the user with a handbook that shows, clearly and accurately, the different steps and the application methods of Ritrama's materials. The guide is available at www.ritrama.com ■

Ritrama teaches users how to apply labelstock to shop windows, walls or floors

Xeikon blogs its way to 30

To mark 30 years since its founding, Xeikon is producing a series of educational blogs chronicling the history of digital printing. The series, dubbed Triple-X, will be authored by industry experts Laurel Brunner and Ed Boogaard and will run until November, when Xeikon will celebrate its 30th anniversary.

"The year 2018 marks an important milestone in the history of digital printing," explained Brunner. "It has been 30 years since Xeikon, one of the earliest pioneers of the direct digital colour press, was founded. And it's been 25 years since the Xeikon DCP1 and the Indigo E-Print 1000 were introduced at IPEX 1993. The Agfa Chromapress, based on the Xeikon engine with an Agfa front-end system, one of the first integrated digital production systems on the market, was also introduced at that time.

"It is a good moment in time to explore digital printing's evolution and what it can tell us about the possible future of media and communications, especially the printed variety," she continued. "We hope it will be beneficial to those who are relatively new to the industry, and a walk down memory lane for veterans who have been around for a while."

The Triple-X series begins with a discussion of the desktop publishing revolution and how that led to the birth of full-colour digital printing. "In addition to strolling down memory lane," Boogaard stated, "we also invite readers to share their stories, successes and expectations, and to join us in celebrating the present while exploring the roads to the future of print as well."

The Xeikon XXX blog series can be found at www.pastprintfuture.com. ■

Xeikon celebrates 30 years of print

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Nazdar appoints Sales Manager for EMEA

Jim Whitehead has been appointed Sales Manager, EMEA of Nazdar Ink Technologies. Based in the UK, Whitehead will be responsible for sales management of Nazdar branded and non€OEM private labelled screen, digital and narrow web products in the Europe, Middle East and Africa (EMEA) region.

Whitehead has more than 20 years' experience in the printing ink industry, starting as a formulation scientist and then as a service specialist. More recently he has been involved in business development, responsible for team management as well as developing distribution networks. In other previous roles, Jim has also taken responsibility for narrow web product lines and had experience in optical media, screen printing and digital printing technology.

"We are delighted to welcome someone of Jim Whitehead's experience and expertise to the Nazdar team," said James MacDonald/Vice President of Sales and Marketing at Nazdar. "He will be instrumental in helping us to evaluate, establish and maintain profitable channels for Nazdar products throughout EMEA. This is a very exciting appointment and we look forward to the positive contributions he will make in our organisation as we continue to develop and grow our international markets." ■

Lüscher strengthens sales team

Stefan Thulin has been appointed Sales Manager for the entire Lüscher Technologies AG product range. As a first step, Thulin has assumed sales responsibility for Scandinavia, the Russian Federation and Eastern Europe as well as for England, France, Portugal and Spain.

Thulin has long-time experience in the graphic arts industry and in selling investment goods. He worked for Lüscher years ago, selling computer to screen devices. In his new position Thulin will look after existing distribution partners and expand the distribution network.

The appointment is "a perfect complement" to the company, according to Urs Bachofner, Vice President Sales and Marketing. Thulin reportedly looks forward to his new role, convinced that his commitment in a globally operating company is going to be an exciting challenge. ■

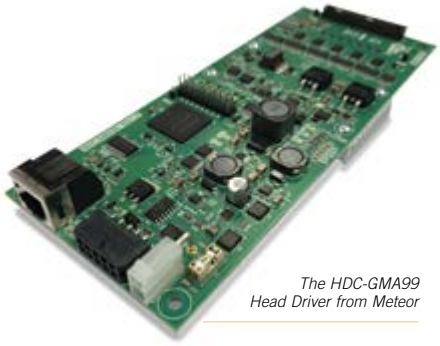
Massivit makes massive skeleton

Mexico-based print service provider, Moti Digital 3D used a Massivit 1800 3D Printing Solution to create a colossal illuminated human skeleton for the Mexican Festival of Light celebrations in Guadalajara.

Moti Digital employed its Massivit machine to create a model that would 'wow' visitors at the event and demonstrate the capabilities of large format 3D printing technology. Measuring at 8.40m long and 3.60m [wide], the skeleton was produced in just four days. The painted skeleton was positioned inside the Plaza Tapatía fountain pool and illuminated at night, where thousands of festival-goers were able to sit in its arms. The experience generated huge amounts of conversation and photos that featured prominently across social media platforms.

The lifelike skeleton will also feature at this year's Festival del Día de los Muertos [The Day of the Dead], taking place throughout Mexico from 31 October. ■

The 8m skeleton turned heads at the four-day Festival of Light in Guadalajara, Mexico



The HDC-GMA99 Head Driver from Meteor

Samba upgrade supported by Meteor

Meteor Inkjet Ltd, supplier of drive electronics and software for industrial inkjet printheads, is expanding its product portfolio by supporting the Samba GMA 99 printhead from Fujifilm. This latest product joins the Samba GMA 33, for which Meteor was the first to announce support last year following close collaboration with the company.

Accessed via Gigabit Ethernet, each Meteor PCC-E Print Controller accommodates up to eight GMA 99 printheads through the new HDC-GMA99 Head Driver. Enabling full binary and greyscale capabilities of the GMA 99 printhead, Meteor drives electronics and software are capable of producing complex, multi-pulse waveforms to control printhead drop ejection volume, velocity and timing, allowing system builders to get the best from these printheads. Meteor's ability to support ultra-high data rates, large image buffers and long cable lengths means scanning machines can accommodate any number of printheads.

"Meteor has long enjoyed a close working partnership with Fujifilm Dimatix and this allows us to release our electronics and software at the same time as Dimatix releases sample volumes of the printhead," commented Clive Ayling, Managing Director at Meteor. "This ensures customers are 'ready to go' when the head is in full production." ■

Eurolaser installs 1000th laser system

German laser system manufacturer Eurolaser has installed its 1000th large format laser cutting system at plastics and rubber processing company National Gummi AB in Sweden. In industrial use, it is not uncommon for the eurolaser systems to operate in three shifts 24 hours a day, seven days a week..

"From the first cutting tests through the order processing to the installation of the machines in production, eurolaser has always been the professional and reliable partner at our side," said Claes Rössel, Chief Executive Officer of National Gummi.

Under the motto '1,000 laser cutting systems, €10,000 jubilee bonus and 100,000 applications', eurolaser gave its customers a purchase bonus for systems ordered before the end of March which can be used as a voucher for trainings, services or optional enhancements. ■

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Who is Valiani?

Valiani is an Italian award winning manufacturer of cutting machines. Since 1974, their pioneering engineering skills have produced quality and reliable machines that are used in many high profile organizations around the world.

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Brochure

FESPA appoints head of technical support

Screen and digital printing specialist Graeme Richardson-Locke has filled the newly-formed role of Head of Technical Support at FESPA. Richardson-Locke has over 30 years' experience in the screen and digital print industry, where he has worked in design, production, sales and operational management positions.

As Head of Technical Support Richardson-Locke will provide technical expertise on all matters relating to screen and digital printing on behalf of FESPA and its stakeholders. This will include managing and developing technical content in the form of workshops, guidance documents and research to support FESPA and its national Associations and their members. Richardson-Locke will also support with the feature content for FESPA's global event portfolio.

Prior to joining FESPA, Richardson-Locke held the position of Sales and Operations Director at print and design service Vektor. He became a director of FESPA UK Association in 2015. He has also been a judge for the FESPA Awards since 2016.

"We're delighted to welcome Graeme to FESPA," said Sean Holt, Executive Director at FESPA. "His experience and industry knowledge will be invaluable both on the Association and events side of our organisation. A key benefit for our members is access to technical support in the form of guides, presentations and courses, and Graeme's expertise will be instrumental in developing this proposition and reflect our continued evolution of technology and speciality printing." ■

Graeme Richardson-Locke is Head of Technical Support at FESPA

Hexis opens new subsidiary in Australia

In line with the company's strategy to expand its worldwide distribution network, Hexis has launched a subsidiary in Brisbane (Queensland) to reinforce the distribution of its products, marketing and service on the Australian market.

Hexis sign self-adhesive vinyls, printable media and laminates, wrapping films and PPF have been available in Australia for the last 16 years, thanks to long-established Melbourne-based distributor, Stickittome Australia. A joint distribution policy will be implemented, whereby Stickittome will distribute the Hexis products in Victoria, Tasmania, South Australia, Southern NSW, Western Australia, and Hexis will cover Queensland, Northern NSW and Northern Territory

A new warehouse will hold a massive stock of the various Hexis products and customers and partners will also benefit from a dedicated sales department.

"We are convinced that the Australian market represents a substantial growth potential for our company and our local partners. Therefore we considered that it was the right moment to invest locally," explained Clément Mateu, Hexis CEO.

"The new Hexis Australian subsidiary reflects our will to keep improving the quality of our service and the assistance to our customers and distributors in this area," commented Caroline Mateu, Hexis President. "I am convinced that our presence in Queensland will help boost the local and neighbouring markets." ■

Industrial digital printing: are you ready for the future?

In the new industrial printing market customers are looking for a complete printing solution by using single pass digital print solutions, believes Bergstein Digital BV, which has identified the most important advantages of industrial digital printing:

- Printing on demand – no more huge printed stocks; only print what is needed
- Personalisation of products – every product can have its own personal detail
- Faster setup times – by only changing a file on the computer, the operator is able to print a new logo, a full colour picture or other information within seconds
- Huge cost savings in supplies – no more costs for clichés, pads, screens, cleaning fluids etc.
- No direct contact with a product – in contrast to pad printing and screen-printing, there is no direct contact with a product, which could damage or deform the product or print.
- Easy adjustment of prints – using only the software, it is possible to easy change print colours, the print quality and other print related items

All these above mentioned points have lately been noticed by big as well as small companies, reports the company. "Our Single Pass Printers, DIGI 5 and DIGI 7, will help companies to print small and big batches and personalised products, without huge investments," it notes.

Another digital print solution is the usage of a robot in combination with digital print units, and Bergstein's SPM-modules have been installed at several customers, where a robot takes a part out of the moulding machine and directly guides the part underneath the print modules, without any intervention, before unloading that part to have it ready for further packaging. ■

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EFI strengthens leadership team

Gene Zamiska has joined EFI as the company's new chief accounting officer

EFI has completed three additions to its Silicon Valley-based senior leadership team. Gene Zamiska, the former senior vice president of finance, corporate controller and chief accountant for Verifone, joined EFI in March as the company's new Chief Accounting Officer (CAO). Another veteran accounting executive, Mark Allred, has joined EFI as the company's new Vice President of Corporate Accounting. EFI has also hired Jill Norris, a long-time mobile industry tech leader, as its new Chief Information Officer (CIO).

Zamiska, who is a licensed CPA, comes to the CAO position with a long record of successful tech sector financial management and reporting. In the past two years in his executive role at Verifone, he led a team of more than 200 employees to direct the company's reporting, SEC financial filings, accounting and Sarbanes-Oxley Section 404 compliance. Prior to that position, Zamiska held senior finance positions at several tech companies, including serving as CAO for Juniper Networks. He also spent 18 years in finance and accounting roles at Hewlett-Packard. Zamiska has a Bachelor of Science degree in accounting from the University of Illinois, Champaign-Urbana.

Mark Allred is EFI's new Corporate Accounting VP. A licensed CPA, he previously worked at technology and manufacturing businesses in his native Oregon, including forestry, agriculture and construction equipment company Blount International, Inc., where he was vice president and corporate controller. Prior to that position, he was Vice President of Finance and corporate controller of microscope technology manufacturer FEI Co. Allred has Bachelor of Science degrees in business and accounting from Portland State University as well as an MBA from the University of Minnesota.

Jill Norris is an IT, services and operations executive with extensive experience helping organisations make the most effective use of their technology. She most recently served as Vice President of global IT services for semiconductor company Globalfoundries. Prior to that, Norris held engineering IT positions for Motorola and held CIO, Chief Service Officer and India expat positions for mobile start-up Good Technology. She also previously worked for Sprint as Vice President of IT service delivery. Norris has a Bachelor's degree from Ottawa (Kan.) University, and an MBA from Rockhurst University's Helzberg School of Management.

"Gene Zamiska and Mark Allred have the expertise and know-how to help guide our company on the most fiscally responsible path in our next chapter of growth," said EFI CEO Guy Gecht. "Jill Norris brings important IT leadership expertise that will allow us work even more collaboratively across our worldwide locations. These are significant, valued additions to our senior leadership team, and all of us at EFI are looking forward to the ways they will help us continue to improve." ■

Laser direct-to-screen unit launched by Saati

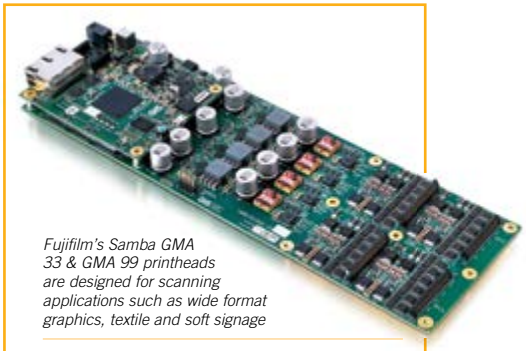
Saati's LTS 6080 is a high resolution computer-to-screen (CtS) that eliminates the consumables of ink, wax or film. An array of 96 Blu-Ray lasers defines the image and exposes the stencil in one step.

The LTS 6080 is claimed to efficiently produce higher quality stencils than any ink or wax-based system, while enabling time savings of up to 80% for those still using film.

End users can select from five different resolutions, ranging from 847 to 2,540dpi to match job requirements; from simple line art to the most demanding halftones. They can also adjust the power and speed to efficiently expose all varieties of photo emulsion and film.

"This machine offers higher end technology at a mass market price point," said Ross Balfour, Saati's Global Technical and R&D Manager. ■

Saati's LTS 6080 CtS image-setter and exposure system



Fujifilm's Samba GMA 33 & GMA 99 printheads are designed for scanning applications such as wide format graphics, textile and soft signage

GIS supports Samba GMA product line

The new Global Inkjet Systems (GIS) Head Management Board (HMB-FD-GMA) can drive up to 4x Fujifilm Dimatix Samba GMA printheads in either the 33 or 99 variants. The HMB is based on GIS's new Ethernet platform, which was first shown at drupa 2016. It integrates datapath buffering, printhead management and fire waveform generation, all accessed via Gigabit Ethernet, and enables the full binary and greyscale capabilities of the 300dpi Samba GMA printheads which are compatible with solvent, UV curable and aqueous inks.

The HMB works in conjunction with the GIS Atlas Machine Control Services software (for managing the entire printing and sub-system process) from image to swathe conversion and integration of workflow through to print queues, transport and beyond.

GIS is also offering a comprehensive range of ink delivery system components suitable for the controlled flow requirements of the Samba GMA printhead product line.

"The new Head Management Board for the GMA printheads presents another step forward in GIS' Ethernet platform, which we are now using for all new printheads that we support," said Debbie Thorp, GIS Business Development Director. "The Samba G3L printhead has been very successful in single pass systems and we expect the GMA printheads to do the same in scanning applications." ■

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IMPLEMENTING CHANGE

Bruce Ridge interviews Tim Quinn, Consultant with Nazdar Consulting Services

Conducted in February 2018 by Bruce Ridge, this interview with Tim Quinn is the latest in a series of articles intended to provide insight to the future of our industry from the perspective of members of Academy of Screen and Digital Printing Technologies.

During 2017 SGIA Expo, Tim Quinn (centre) was inducted as a new member of ASDPT along with Debbie Thorp and Bill Hood

BR: The Academy has a diverse group of members. Traditionally the members have been the writers of technical articles, or award winning printers. You do something very different. You spend a week at a printing facility and implement change. Do you know other people in our industry that do this type of work?

TQ: No, I don't see many. It seems that most out there doing consulting are theory guys. I am an implementation guy. There is a definite divide there. Don't get me wrong, we need theory guys, and I may not even understand some of the theories, but most of the theory guys cannot actually implement them.

My success in implementing change is from learning how to work with the tools you have available to create a solution or to make a theory work. There are a lot of roadblocks in a production environment in implementing theoretical ideas.

BR: What do you think is the most important characteristic a company must have in order for them to use and retain the things you teach them?

TQ: For a large percentage of the time shops that fail to implement change simply paid me to fix a problem. There are no people assigned to be with me to learn what it is I am doing. My experience indicates that the only way for a company to actually learn how to implement the work or changes I am being paid to resolve, is for them to assign a champion to the project. This way, someone has time to spend with me, and takes ownership for what happens after I leave. Most of the time there are follow up questions, remote computer access, and the exchange of printing data in order to maintain the work that was done on site, and to address new issues as they arise with different print jobs.

BR: How many years have you been doing consulting and on-site implementing?

TQ: I have been working as a consultant with Nazdar for 11 years. Twenty years prior to that, I began my career in prepress. I worked at ReyHan PGF generating large format screen-printing films, and helping screen printers print to the numbers. The consulting work at Nazdar is the first in the industry, at least in North America, where problem solving technicians were required to be able to solve problems from file to finishing. We cannot place the blame on one area outside our expertise and leave with the problems unresolved.

BR: Most of the consulting work you do now is spending three to four days on-site at a printing facility with a list of specific objectives to achieve in that time. How often do you find yourself mid-week thinking, 'There is no way I can do everything promised'?

TQ: Well, basically, every time I go in on the first day I think there is no way I can get everything done. Then I remind myself that my expertise has really morphed into explaining and managing people's expectations. I have learned that once you can define people's expectations, they are more likely to be met. There are usually many expectations from top to bottom that are not clearly defined. Such as expectations of what a piece of equipment will produce within its own drift, to what the sales staff commits to producing, and what the brand owner expects to see produced. Rarely are all of these people's expectations defined and on the same page.

It usually comes down to simply failing to have specified a printing aim and a tolerance, and then defining the capability of the shop's manufacturing variation. Sounds complicated, but picking a target and tolerance is easy. Then, considering the sum of the shops variation minus the allowed tolerance is critical but rarely considered. I use a tolerance analysis to determine tolerance and delta stacks. Basically you add the sum of all the process variations to the degree you can quantify them over time, minus the deltas you agree to produce within. In order to make money, you must be able to produce within a reasonable amount capable delta e minus your stack.

A simple scenario of this is when a print buyer expects a shop to match a colour within 2 delta, but your measurement device has 1/2 delta e variation. Then other equipment has a variation of 1, which totals 1.5 leaving only one half delta e. It is highly unlikely you can produce product within one half delta profitably, especially if you are not even aware of the stack factor.

BR: Does this make you think that many printers do not understand the concept of tolerance stacks?

TQ: Yes but it's an easy concept. If I take a calibrated spectrophotometer and read the same exact spot multiple times, the numbers will always vary to some degree. We have ways to know for sure, but in this example, if I take highest reading from several measurements, that would be the variation delta for that device. Now if you add all the variation numbers for all your processes, this would give you the delta stacks number for your process.

BR: We just saw a presentation on how X-Rite recommends using the Net Profiler software to check your X-Rite spectrophotometer to see if they are operating in calibration.

TQ: This is the kind of software that printers

need to be using to maintain any kind of a consistency in their process. Most printers rely on instruments that they have no idea if they are in calibration or are measuring accurately.

The other software that X-Rite demonstrated was the Pantone Live software. This is an example of what printers are now seeing, which is the brand owners are now driving the delta e variation concept down to the printers. This is now part of the trend that brand owners can monitor all their print providers via the cloud targeting a certain delta e tolerance. It will become very important for printers to know their shop variation in relation to the job tolerance. Print buyers aren't interested in tolerance stacks because it's not their problem. This will be forced down to printing companies by the print buyers making tolerance stacks a critical consideration.

BR: Are there accounts you have been to recently where managing expectations has been critical to the success of your work?
TQ: Yes. For example, a company I was at last month. They wanted colour profiles generated for all their medias, all their machines, in all resolutions. This all added up to 144 custom built profiles to build in three days. There was an internal debate in the company [to establish] if doing all this work was really necessary.

So my goal was to find out what their expectations were first. Were they really able to manage 144 different printing conditions? No they weren't. So we settled on enlarging their tolerances, and grouping medias into three primary categories. The result was to use three primary print conditions and the results were excellent and manageable.

BR: When it comes to the experts in the field, who do you read or rely on for inspiration or technical insight?
TQ: Well, I give a lot of credit to Ron Ellis, who passes along a lot of his knowledge to the industry and is an on-site implementer. He is someone that shares knowledge through his work with IDEAlliance.
BR: You have come up with several innovative methods and products while consulting. You have qualified more screen printers in the G7 colour control methodology than anyone else. How have you done that?
TQ: Well, G7 qualification in screen printing is very time consuming and costly. Traditionally doing a G7 qualification would require three four-colour press runs, which would take up to three days. And the final result didn't always look that great. We made a lot of corrections even on press run number three.

I went back to focusing on the mapping of the tonality of a single colour, on a single screen to target neutral print density by dispersing the tonal response equally from 1–99%, and using the solid ink densities to build the curve, which does not usually require a lot of modification. This has resulted in being able to achieve a G7 qualified print while calibrating all the substrates and all the line counts in less than a day of press time using one colour. There is additional time spent reviewing the prints in order to group and smooth the curve data into common printing curve sets.

When all of the curves are plotted on one graph, you can see how the curves can be grouped into curve families. So this results in a handful of curves which can be averaged into a few curve families. Beyond that, the curves can be monitored and adjusted as printing changes.

BR: You also apply this same technique to calibrate direct to screen systems to neutral print density in multiple line counts on one screen. Has this practice been adopted by the direct to screen manufacturers?
TQ: No. It is a similar situation in most of the equipment installations of printing presses, inkjet printers, and direct-to-screen machines. By the time the installation technicians have installed a machine that has been shipped a huge distance and got it calibrated and working properly, those technicians are done. They have achieved a huge task. Getting the machine to print or image accurate colour is a separate task. It is not easy to do, and rarely done.

Continued over

Another issue is that many of the printers that are purchasing these expensive pieces of equipment already have one or more similar machines. The printer now wants the new machine to print like the existing machine for back up and production flexibility. The installation technician has no interest in getting the new machine to print like an older machine that may be from another manufacturer. Another expectation that has not been determined on the front end.

BR: It seems that printing is becoming more complicated yet there are fewer printing programmes in the education system. Do you see this as a problem in the industry?
TQ: There is a little bit of a divide. The last place I worked at had hired a recently graduated engineer to make processing improvements. He followed me around and worked with me on the direct-to-screen machine. He brought a high level of technical understanding to the work I was doing which will benefit that company.

When it comes to printing production, there is a gap. It seems that people that enter the printing production environment are a bit scared of the noise, the smells, and the hard work. I do not see many young people getting into the print production at the businesses I go to.

BR: When you are hired to do consulting or training, how often is it that the people you are training document what you are telling them in some manner?
TQ: Rarely does anyone take notes. This is just not a common practice. It is mind boggling. If I am going through new information and notes are not being taken, there is no way you are going to retain the information.

BR: You also work in inkjet, flexo and offset printing. What are some of the new and exciting things you are doing in those print processes?
TQ: I think inkjet is the most common area for setting expectations. When printers purchased their first inkjet printer, there were few expectations for that one machine to match or even look similar to their other print devices. Printers may have had an industry common target like GRACoL or SWOP in a proof or monitor, but there was a fair amount of tolerance in colour deviation due to format, resolution, or media differences.

Once inkjet printers acquired multiple machines, the expectations changed. Now the expectation was to have all their inkjet printers print similar if not the exactly the same.

This is a great area of opportunity for consultants like myself.

I do a lot of work determining how accurate wide format inkjet printers are to established printing aims, each other and in particular how consistent they are to themselves. Without measuring and verification methods you really don't know.

BR: Do you know if any consultants like yourself are hired by printers to advise printers on which machines are best to buy to meet their expectations?
TQ: IDEAlliance released a study in 2013 with a list of attributes to consider when purchasing a new printer, which included RIP, ink consumption, speed, fade weathering and a few others. Not much has been done to help printers since then until now. I would advise anybody interested in knowing more about how to assess a potential inkjet press's capability to check out Chromachecker.com's 'Large Format Benchmarking Exercise'.

BR: Do you have confidence in the longevity in screen printing as a commercial printing process and is the SGIA show still valuable for you?
TQ: I do. I am seeing printers that are very busy. The biggest benefit I get from the SGIA show is to meet in person all the vendors we

work with to discuss existing products and to learn about new ones. I do review all the new inkjet printers which I end up seeing in many of the shops I work at.

BR: What has been your initial impression of the Academy?
TQ: I did not know that much about the Academy until I was nominated. It was an honour to meet so many talented individuals and very impressive to listen to Michel Caza talk about his upcoming book at the meeting at SGIA and to hear him speak about his accomplishments in a long career.

BR: You travel a lot for your job. What do you think about travelling today?
TQ: I think travel can be stressful, especially with all the sickness and health issues this year. Sitting in that aeroplane with coughing people makes you worried about getting sick. I try to follow all the rules and spend a lot of time preparing for each trip. I have to repack each time as I do various types of consulting and therefore I need different tools for different trips. My biggest recommendation for flying is to carry on all my things, tools and clothes. I cannot afford to lose my luggage due layovers, weather, or connections.

BR: A great idea you have brought to the Nazdar technical support group is to introduce and establish the use of Slack communication software. Why is this so important?
TQ: My whole focus in consulting and training is about making things more efficient. As I see corporate life moving toward a team structure approach on everything, relying on emails, phone calls, and conference calls with different groups, we are losing track of lines of sight with accounts. These older mechanisms of communication are becoming insufficient. Slack is one of the ways to chronologically organise all communications with one account in a single place that is accessible to those in the office and those travelling in real time.

BR: Where are your favourite places to go to find new information on the industry?
TQ: Things are changing so fast, keeping up with our industry is like trying to keep up with technology. I think it's important to team up solutions providers like myself because that is my full time job. Considering the fact that printing companies are in business to print, there's not time to keep an eye on everything that changes. I always joke that I'm a walking trade show. I have the unique benefit of working with and selling all the available equipment and software solutions. We tailor make every solution to fit the customers' needs. Beyond that, we are lucky to have so many great organisations available to us these days. Obviously there's SGIA, but also IDEAlliance, CGATS & PIA to name a few. These organisations do a great job of bringing experts and users together to either create standards or share information for the betterment of our industry. ■

The Academy of Screen and Digital Printing Technologies (ASDPT) is composed of professionals that have dedicated a large part of their career to the education, development and innovation to the industry. This interview was conducted by Bruce Ridge, Director of Technical Service, Nazdar Ink Technologies. Bruce has been a member of the Academy of Screen and Digital Technologies since 2004.

Further information:
Nazdar Ink Technologies, Kansas, USA
tel: +1 913 422 1888 x 2377
email: bridge@nazdar.com
web: www.nazdar.com

THINKING OUTSIDE THE BOX

Choosing Elitron cutting technology to create custom-made cartons proved a 'smart' move for a forward-thinking Spanish packaging company

Thanks to successful intergenerational passages and a genuine passion for corrugated, the Font family has been converting corrugated carton in Barcelona since 1954. A forward-looking attitude has helped the company to grow, both in dimensions – up to roughly 32.000m² of productive plant – and in corporate culture: by investing in the most advanced technologies in terms of product design, production and applying lean production frameworks.

Following this positive and dynamic ethos, Martina Font, Director at Font Packaging Group, launched an innovative new startup to diversify the core business. In an increasingly fast changing world, where mass customisation became paramount, Ms Font's idea was that packaging needs to turn 'smart', and Kartox was launched in 2014.

The mission of the company is to produce highly custom-made carton boxes, tailored in every detail, from the shape to the dimensions, and with the value-adding proposition of a consulting and designing service.

The new venture was a challenge not only in terms of business but also technology. However, Kartox was able to succeed thanks to a mix of owned software solutions and, more importantly, an Elitron Kombo TAV-R which enabled the mass customisation with its full automation capabilities. The Kombo TAV-R brought Kartox workflow to another level in terms of efficiency and became the core of its production department.

Countless Kartox packaging solutions are offered

The Kartox team

Inside view of the Kartox packaging shop, where everyone gets their own custom-made box

INTERVIEW WITH MARTINA FONT OLIVÉ, DIRECTOR AT FONT PACKAGING GROUP & KARTOX CO-FOUNDER

Where does the idea of Kartox come from?
It comes from the enthusiasm of my family. We are a great team and we communicate a lot. We started off with the idea of diversifying our core business and we have been looking at new concepts and innovative business models in the corrugated industry. So, speaking with customers and partners, we understood that there was an untapped [niche] in the market: the production of customised boxes, in small quantities, online and just-in-time. In 2009 we founded NT Pack.

How did the project evolve?
It did not work! Back in 2009 consumers were not ready to buy boxes online. Still that didn't change our mind about the potential of the idea. Simply put, we started too early. When we shut down the project we updated its business model and in 2014 we launched Kartox which is working out fine.

Which are Kartox's unique selling points?
Kartox is the solution to have a box either in a single unit or few quantities in a matter of few days, with tailored dimensions, a dedicated design and the consultancy of an expert. It was something that hasn't existed in Spain or in Europe ever before. It was possible to find a standard box but not such a tailored level.

How did you manage to make Kartox co-exist with the box making facility?
Clearly we couldn't produce five or 10 boxes effectively with our case makers. After a

Elitron's fully automated digital cutting solution Kombo TAV-R with the special web-to-print configuration

A step by step process. Customers are helped by Kartox professionals throughout the whole packaging design journey

thorough assessment we understood Kartox's project had to be carried out separately as it's a pure service instead of a pure production plant. From that moment on we started investigating the most appropriate technologies.

How did you get to Elitron?
Before the Kombo TAV we had another digital cutter but it was way too slow. We needed a fast machine capable of working 24/7 on several short to medium runs and, more importantly, fully automated in terms of loading and unloading. This was because, when it comes to corrugated carton, margins are rather low and big volumes are needed to make enough money. Automation is then the keyword. Software-wise we integrated our ERP with Elitron's so that we could come up with a fully automated workflow.

But you are not the only ones with software and digital cutting technologies...
Expertise is our strength. My grandfather started converting carton in 1951 and, to me, whoever approaches carton without expertise is going to fail.

Which are the real challenges?
If you are a box maker, those boxes better be working. The challenge in manufacturing a box is to design it, assess the quality of the carton, produce it and eventually deliver it. In doing so, many variables come into play, which include also the weight of the product to pack. Shipping pills or a lamp are two different things.

Who fills your customer base?
As of today it's 60% B2B and 40% end users. There are big brands that must ship samples around the world and ask us for five boxes at a time, or small to medium companies which order around 50 to 100 units per time. Some of them are e-commerce retailers. Some others purchase them for domestic use. Because of this diverse portfolio of customers, we had to move out from the Font Packaging production plant to an external store where we can physically meet the clients, offer them our advice and consulting services.

Which are the next steps?
As of today we only produce plain boxes. However we plan on implementing digital printing from 2018 and we soon expect to introduce another Kombo TAV. The goal is to further expand our business both nationwide and internationally. ■

Further information:

Elitron IPM, Monte Urano, Italy
tel: +39 734 842 221
email: Giacomo.zoppi@elitron.com
web: www.elitron.com

Kartox, Barcelona, Spain
Tel: +34 938 997 800
email: hola@kartox.com
web: www.kartox.com

A NEW REALM OF CUT QUALITY

Serbian production facility installs Zünd G3 cutter to process POP materials more efficiently

Located in Belgrade (Serbia), BG Reklam GmbH provides high-quality, permanent POP/POS products. Founded in 2001, the company now has more than 170 employees and subsidiaries in Vienna and London.

Flexibility is a key component of the company's success and by handling its entire value chain in house, BG Reklam can respond to demands in the shortest possible amount of time. To further expand production capacity, the outfit has added a Zünd G3 XL-3200 cutting system.

OPTIMISED FOR EXPANSION

The configuration included the powerful RM-L 3.6kW router module combined with the fully automated router bit changer ARC. "By investing in cutting and routing technology from Zünd, we were able to optimise and accelerate our production processes," states Luka Stanic, BG Reklam's CEO. "At the same time, we also saw significant increases in quality."

The company has grown considerably in the past several years and has also been able to gain access to new markets. "We do work for many well-known brands all over Europe and beyond," says Stanic. "Our production facility now extends over 3000m² and employs state-of-the-art production technologies. As of recently, this also includes a Zünd G3 cutter."

The new Zünd cutter at BG Reklam's premises

Luka Stanic (left), CEO of BG Reklam GmbH, and Dean Tolp from Grafiknet, Zünd dealer in Croatia, with the Zünd G3 XL-3200 cutting system – BG Reklam's latest acquisition.

SECURITY AND FLEXIBILITY

"We need reliable industrial production systems capable of performing around the clock," explains Stanic. "The G3 cutter, known for its extraordinary reliability, offers us precisely that kind of security."

In addition, the new cutter has brought with it a degree of flexibility that is indispensable in today's production environment: "With the Zünd cutting system and the various processing methods it offers, we are able to cut so many different materials," notes Stanic. "In our evaluation process at Zünd headquarters in Altstätten, we really put the G3 cutting system through its paces, experimenting with different speeds, a wide range of diverse materials, different thicknesses, and the new RM-L router module in particular. The Zünd ended up meeting every one of our production requirements. Beyond that, there was the high degree of automation we were able to add with the fully automated router bit changer ARC. With the ARC, time-consuming bit changes have become a thing of the past. Even in terms of cut quality, we entered a new realm.

"The most significant advantages of the G3 are the large 2.27m x 3.2m working area, non-stop production in tandem mode, and the ability to route more materials at greater processing speeds with the high-performance 3.6 kW routing module RM-L," he concludes. ■

Further information:
Zünd Systemtechnik AG, Altstätten, Switzerland
tel: +41 71 757 81 00
email: info@zund.com
web: www.zund.com

INPRINT USA INDUSTRIAL INKJET CONFERENCE

InPrint USA's Industrial Inkjet Conference will be held on May 1–2, 2018 at the Palmer House Hilton in Chicago

The focus of this new conference will be to highlight trends, challenges, case studies and the latest technical innovations in industrial inkjet technology across functional, decorative and package printing applications.

Attendees will hear from industry leaders who are developing the technology or successfully implementing it in their manufacturing process. In addition, a welcome reception and tabletop exhibits will offer the opportunity for networking and community building with industry thought leaders and technical experts.

MORE OPPORTUNITIES

"Industrial inkjet technology is disrupting virtually every manufacturing industry it touches, offering a variety of benefits including more flexible production, late stage customisation, reduced inventories, design flexibility, and much more," said Donna Busse, Exhibition Manager for InPrint USA and the Industrial Inkjet Conference. "The technological advances, manufacturing needs, and consumer demands in this industry are evolving so rapidly that we wanted to offer the industrial print community another chance to connect and learn from one another before the next InPrint USA show in April 2019 in Louisville, KY."

SCHEDULE HIGHLIGHTS

While educational sessions and workshops are being added daily, here are some highlights from the schedule so far:

- Mark Hanley, President of I.T. Technologies will be discussing the 'Rebirth of Industrial Inkjet.'
- Mark Abramson, Founder/CEO at Printform Corporation will share '30 Applications in 60 Minutes.'
- Jim Lambert, Vice President of Digital Sales – Ink and Hardware at INX International is presenting on 'Direct Object Printing – A case study from the Beverage Can Market.'
- Kenneth D. Stack, President of Proximus, LLC and James Hirchak, Director, Business/Corporate Development at Dover Engineered Systems – Dover Corporation will discuss 'M&A Activity in the Industrial Inkjet Market.'

REGISTER NOW

Registration is now open at the website. Attendees will find the conference is ideal for:

- Manufacturing production professionals who are looking for ways to improve production capacity, flexibility and output within their plants.
- Industrial print production companies that produce decorative or functional print solutions for integration into a larger manufacturing process.
- OEMs, integrators, component manufacturers and developers searching for partners and technologies to integrate and create new solutions for industrial print production.
- Traditional print companies looking to adopt new technologies and techniques to generate new revenue streams.

INX International and Kao Collins are platinum sponsors of the InPrint Industrial Inkjet Conference. Other sponsors include Adphos, Alchemie, Excelitas, Fujifilm, Heidelberg, ITL, Meteor Inkjet, Metis, Plasmatreat, Ricoh, Seiko and Sensient. ■

Mark Hanley, President of I.T. Technologies will be discussing the 'Rebirth of Industrial Inkjet.'

Further information:
InPrint Industrial Inkjet Conference, Illinois, USA
tel: +1 312 809 9260
email: inprintusa@mackbrooks.com
web: www.inprintshow.com/usa/conference

pid

Printed interior decoration

5-6 JUNE 2018 Radisson Blu Scandinavia Düsseldorf

CHALLENGING THE CREATIVE DESIGNER WORLD

Printed Interior Decoration (PID) conference returns to Düsseldorf on 5-6 June 2018 to feature a mixture of technical presentations from suppliers and inspirational talks by interior designers. Participants will witness the latest printing technologies for HOME TEXTILES, WALLPAPERS, LAMINATED FLOORINGS, WOODEN PANELS, CARPETS, BUILDING and MOBILE INTERIORS.

WHO WILL PRESENT?

- PRINT SYSTEM MANUFACTURERS
- INK PRODUCERS
- SUBSTRATE AND MEDIA SUPPLIERS
- COLOUR MANAGEMENT EXPERTS
- FINISHING COMPANIES
- RESEARCH INSTITUTES

WHO SHOULD ATTEND?

- STAND BUILDERS
- SHOP FITTERS
- HOTEL AND RESTAURANT DECORATORS
- DESIGNERS OF HOME TEXTILES, DECORATION AND FURNITURE
- INTERIOR DESIGNERS AND ARCHITECTS
- ALL LARGE FORMAT PRINTERS LOOKING FOR NEW CHALLENGES

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THEIJC 2018 LAUNCHES CALL FOR PAPERS

Companies and research institutes involved in the development of inkjet technology are invited to submit papers for the 5th edition of The Inkjet Conference

Driven by research and by technology, inkjet continues to change the manufacturing process. With 62 presentations, 86 tabletop exhibitors and 525 participants in last year's edition, The Inkjet Conference (TheIJC) is by far the world's largest inkjet event and the focal point of the industry. Gathered in one venue, engineers, researchers and C-level executives follow and assess technical presentations to exploit knowledge and technology across sector boundaries.

INVITE FOR INNOVATORS

The organisers from the European Specialist Printing Manufacturers Association (ESMA) and Digital Direct Technologies welcome new innovative presentations on any topic related to inkjet engineering, inkjet chemistry or inkjet applications. Given the technical nature of the event and the target audience being equipment manufacturers, the objective of the paper should be to educate on the technologies that are in development and have potential for future commercial applications. The presentation should be understood by a competent technical person, not targeted to a specialist in a narrow field.

Topics may include all technical aspects of:

- software imaging
- image inspection
- software interface and control
- electronics
- mechatronics and robotics
- printheads and specialist fluid deposition
- ink components and coatings
- laboratory equipment
- inkjet applications (3D, biomedical, ceramics, direct-to-shape, glass, labels, laminates, packaging, pharmaceutical, printed electronics, textiles and others)

TheIJC 2017 attracted a record number of 525 participants

DEADLINE

The deadline for abstract submission is 15 May 2018. Please submit your abstract of 150 words in English to info@theijc.com. Presentations must be technical and educational in nature. TheIJC committee and Scientific Board will review all submitted abstracts to maintain the high quality of the conference. Only papers submitted on time and addressing subjects which are topical and relevant to the conference will be considered for inclusion in the conference programme.

SUPPORT AND SPONSORS

With over 500 participants, TheIJC is established as the world's largest inkjet conference, bringing together senior development staff from equipment manufacturers with leading technology providers. The event enjoys an ongoing support from drupa, the world's biggest print exhibition, and sponsorship from MS Italy, as well as media partnership with *Specialist Printing Worldwide*. From universities and research institutes, from start-ups to global corporations, from novices to veterans, TheIJC is the meeting point of the inkjet industry. ■

TheIJC 2018 takes place at the Crowne Plaza Düsseldorf in Neuss, Germany on 16–17 October 2018, with free inkjet workshop sessions scheduled for 15 October 2018.

Further information:
ESMA, Belgium, Germany
email: info@esma.com
tel: +32 16 894 353
web: www.theijc.com

FESPA 2018

More details released on this year's FESPA Global Print Expo, which takes place from 15–18 May in Berlin

The last FESPA Global Print Expo in Hamburg in 2017 attracted visitors from over 130 countries, cementing it as the foremost global event for the speciality print community.

Occupying 10 halls at Messe Berlin, which last hosted the event in 2007, the 2018 exhibition will have an entire hall dedicated to substrates, and the largest textile zone of any FESPA event to date. Visitors to FESPA 2018 will also have access to European Sign Expo, FESPA's dedicated event for non-printed signage.

The campaign strapline, 'Where Print Takes Off', signifies FESPA's role as the international platform for new technology, ideas and applications across the digital wide format, screen printing and textile printing markets.

"Through the theme for the 2018 event we want to celebrate print's rich potential to continue to evolve and develop new creative and functional capabilities," commented FESPA's Divisional Director, Roz Guarnori. "FESPA 2018 will be the place for print service providers (PSPs) and sign-makers to discover new ideas, inspiration and products to help their businesses take off."

TRENDS THEATRE

Since the last European FESPA event in May 2017, FESPA has invested in wide-ranging research to gather the latest insights into the areas offering greatest potential for its global community of print service providers and sign-makers. The Trends Theatre seminar programme addresses the themes of a series of white papers produced by FESPA together with research organisation Smithers Pira, focusing on five key areas of growth for the speciality print community: Décor; Digital Textile; Signage; Industrial; and Digital Print for Packaging.

Smithers Pira will host a daily industry trends seminar, exploring the content of the white papers in more detail, with a focus on how PSPs can benefit from these market growth areas. All Trends Theatre sessions are free to attend for visitors to FESPA 2018 Global Print Expo and European Sign Expo 2018.

Demand continues to escalate for exhibitors showcasing textile applications

FESPA 2017 in Hamburg attracted visitors from over 130 countries

DIGITAL CORRUGATED EXPERIENCE

FESPA has used its up-to-the-minute insights to inform the development of two major new experiential and educational features. Showcasing the advantages of digital print for corrugated packaging and retail display applications, The Digital Corrugated Experience will address all elements involved in printing corrugated materials, including: substrates; workflow solutions; digital printing technologies; materials handling; primers, inks, coatings and varnishes; and cutting and folding. Located in Hall 5.2, the new area will combine short educational Print Corrugated conferences with business-building discussions from the likes of HP, Lamina, Sun Automation, Inca Digital and BCS Autobox. Conference speakers will include independent industry specialists, experts and brands.

PRINT MAKE WEAR

Focused on fashion textiles, garments and printed accessories, Print Make Wear takes the form of a live production environment. Demonstrating an integrated, end-to-end production environment, the 'fast fashion factory' will feature a screen printing carousel, washing and drying equipment, digital direct-to-garment printing, cutting and sewing, and solutions for welding and embellishment. Technology and materials brands confirmed to participate include: Premier Textiles, Magna Colours, Brother, Juki and Vastex.

A live fashion catwalk will add the 'Wear' element, and daily seminar sessions will also take covering topics such as: Colour separation and image output; Screen making; Ink terminology; Speciality ink; Fabric challenges; and Advanced machine printing.

PRINTERIORS

FESPA will continue to highlight the evolving opportunities in printed décor with the Printeriors Showcase located in the atrium of Messe Berlin. Themed as the Airport Lounge of the Future 2030, it reimagines a futuristic airport arrival and transfer experience with printed interior décor applications provided by FESPA 2018 exhibitors. Within the Printeriors setting, visitors will find a bar, seating areas, workspace and catering options all featuring printed décor elements where they can take a break, work or meet with industry peers.

FESPA PRINT CENSUS 2018

Further underlining its ongoing investment in research and intelligence gathering, FESPA will share the findings of the FESPA Print Census 2018 during the Berlin event. This survey of over 1,400 print service providers and suppliers worldwide explores the perspectives of the community itself on the major industry trends, giving a real-world indication of how these are reflected in actual print and sign-making businesses today, and in the respondents' projections for the future. ■

Further information:
web: www.fespaglobalprintexpo.com

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JOIN NOW AND BUILD THE FUTURE

STAYING RELEVANT

Shane Waltmire, recently elected as the President of NASMA, provides a forum update

Shane Waltmire

NASMA is an executive forum of manufacturers of digital and screen printing equipment and supplies in North America. Member companies work together to really understand the screen and digital imaging industry, and determine how we as manufacturers can better serve the needs of this rapidly changing industry.

We do this through semi-annual meetings where we discuss industry needs, trends, advancements, and opportunities. In order to get a customer's perspective, we invite at least one printer to speak at our semi-annual meetings. Whether large or small, the printer who is presenting typically incorporates both screen and digital printing in their operation. As we want to stay relevant to all segments of the market, we invite printers from any number of printing segments such as graphic, garment, industrial and electronic.

VISION FOR THE FUTURE

Our fall meeting was held at Nazdar's headquarters facilities in Shawnee, Kansas. It was Mike Fox's last meeting with NASMA. Mike retired as President of Nazdar and was one of the founders of NASMA. He was also a past NASMA Chair whose leadership helped evolve NASMA to its current executive forum format.

Our two speakers at the meeting were Ford Bowers, President and CEO of SGIA, and KC Mathews, Chief Investment Officer of UMB Bank in Kansas City. Ford shared his vision and plans for the newly formed partnership between SGIA and NAPCO Media, and for the new 2019 Print United Show. Ford is a regular participant and supporter of NASMA, and is an important link between the printer and NASMA member (vendor) communities.

KC Mathews provided a high level review of the US economy and his short term outlook. He compared/contrasted President Trump's then-proposed (now enacted) tax reform plan with that of President Reagan's. He suggested that while Trump's plan to lower taxes on businesses will in fact stimulate growth, it will have less of a positive effect on the economy than if the money was spent on infrastructure (such as roads and bridges). He added that major indicators are showing that growth in the US economy should be stable around 2.5% GDP for 2018 (while the Fed's [Federal Reserve] forecast is around 2.1%).

BUSINESS OUTLOOK SURVEY

A regular feature of our meetings is a Business Outlook Survey. Members provide a sense of our industry and their outlook for the coming year. The survey results from our Fall meeting indicate that member companies overall are optimistic about the print industry and the attendant demand for equipment and supplies. Members expect sales increases in the coming year. To achieve those increases, members plan to spend more on marketing and capital expenditures. Personnel levels are expected to remain steady. Of concern are the pricing pressures the industry is experiencing. These are exacerbated by increased raw material and labour costs. Member companies indicated that their highest priority is developing and offering new products.

NEXT MEETING

The next NASMA meeting is scheduled for June 7 and 8, 2017 in Chicago, Illinois. It will be hosted by Peter Walsh and M & R.

We welcome any North American manufacturer of specialty printing equipment, ink, mesh or related consumables, to contact us for information about joining NASMA. ■

Shane Waltmire is President of NASMA and Vice President of Operations at NBC Meshtec Americas Inc.

Further information:
NBC Meshtec Americas Inc, Illinois, USA
tel: +1 630 886 1783
email: shane@nbcmeshtec.com
web: www.nbcmeshtec.com

ASK THE AUDIENCE

Ford Bowers shares the preliminary results from a survey on printers' areas of focus

SGIA
Specialty Graphic Imaging Association

Ford Bowers, President & CEO of SGIA

In my last article for this magazine, I wrote about the impetus behind PRINT United – how SGIA is evolving its trade show presence in North America and addressing the need to incorporate new market segments into a broader trade show. The benefits will accrue to exhibitors and attendees based on the assumption that there is a blurring of previously discrete segments – ones historically based on specific technologies, and that a 'convergence' of printing disciplines, made possible by digital printing methodologies, is occurring. This allows printers to develop new product lines and serve new vertical markets more easily, and prompts the exhibitors to find ways to address multiple audiences at one time.

Up until now, the notion of convergence was based primarily on anecdotal evidence gleaned through numerous conversations with printers from multiple segments and the exhibitors serving those segments. In January, in an effort to better quantify this phenomenon, we fielded a study with the assistance of NAPCO Research to determine the extent to which this is happening. The results are still coming in, but a first look at preliminary data demonstrates a significant trend toward convergence.

SURVEY FINDINGS

More than 450 printers responded to this survey, including those who identify their primary market as commercial, graphic, in-plant, garment, packaging and industrial. The result, as summarised in this study, is, 'Printers clearly signalled there is opportunity to better serve their customers with services outside of their current offerings. They also showed strong growth in the degree to which they are migrating into new segments and the rate at which this occurs will accelerate over the next few years.'

Relative to opportunity, fully 95% of respondents recognise that expanding into other product lines and vertical markets – based on acquiring new technologies – exists. A third have already taken steps to expand offerings and 39% are researching these new opportunities. Another 29% recognise the opportunity but have not yet done the research required to undertake new directions.

The expansion of services is tied to both market and business considerations. The market-driven forces reflect buyers' strong inclination to have fewer vendors handling a wide range of products and services, thus relieving them of multiple points of purchase and coordination. It also makes sense that the more a printer provides, the more they reduce the opportunity for competition and loss of client relationships. From a purely business perspective, more opportunities mean potentially more revenue streams and greater relevancy for clients. These two sets of forces are inextricably tied together.

The printers surveyed were also overwhelmingly in tune with the notion that the degree of expansion is significant, with 93% seeing this as either 'Significant' or 'Somewhat Significant' in the marketplace, and they were virtually in agreement that the rate of expansion of services and products was either 'Somewhat Accelerating' (53%) or 'Significantly Accelerating' (28%). The conclusion being that this is an established trend and should be a focus for all printers now and in the coming years.

UNITED INTERESTS?

So, where are printers focusing most of their efforts? According to the study, 'Most interest is on the commercial, graphics and packaging segments.' Specifically, of commercial printers who are expanding or planning to expand, 43% are looking at the label market, 37% at graphics and 32% at folding carton. For graphics printers, 40% are looking at commercial, 34% at label and 30% at garment. And the convergence goes on and on from there.

So, in the end, does the need for a more unified trade show ring true or not with printers? The results show that 42% feel this type of event would be 'Significantly Better' and 38% feel it would be 'Somewhat Better' than the events in place today. Those stating there would be no difference totalled 13%, and 7% said it would be 'Worse' or 'Significantly Worse.'

Based on the research, we agree with the 80%: A more broad-based trade show will better serve the printing industry. ■

Ford Bowers is President & CEO of SGIA

Further information:
Specialty Graphic Imaging Association,
Fairfax, Virginia, USA
tel: +1 703 385 1335
email: sgia@sgia.org
web: www.sgia.org

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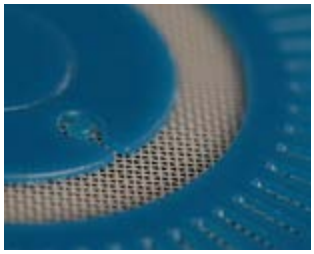

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www.kiwo.de