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WELCOME

Innovation seems to be the buzz word at the moment, and with very good reason. Manufacturers that invested heavily in R&D during the recent hard times are now reaping the rewards of introducing technologically advanced products into the market.

In turn, users of screen and wide format digital printing systems are benefiting from these offerings, helping them make their processes more efficient and competitive.

Innovation has been key to the success of *Specialist Printing Worldwide* since it launched in 2007. We've bucked the general trend of trade magazines and grown year on year in terms of the number of our global subscribers, advertisers and the size of issues. Especially relevant considering the market we are serving, feedback consistently tells us that our readers throughout the world still prefer a paper magazine in their hands as the preferred method to read the types of technical and educational articles that we publish.

In 2015, we will strive to continue to improve *Specialist Printing Worldwide* even further, as well as our online presence. We are very grateful for the support of our global readership, and if you are not a current subscriber then we are pleased to send you this free promotional copy; the only way to receive all issues in 2015 is to subscribe now at www.specialistprinting.com for a total of only €55 / $80 / £45.

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On behalf of our team, I send season's greetings to you all and best wishes for a prosperous New Year.

Bryan Collings, Publishing Director, Specialist Printing Worldwide
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JOINING FORCES

Sophie Matthews-Paul considers how new technology is being adopted by analogue manufacturers

Those who might believe that the worlds of digital and analogue production technologies are separated by a clearly defined dichotomy now need to take time to digest the activities that have been prevalent this year that prove that there is no real either/or that separates processes. The division might be more immediately apparent in the wide-format segment but, in other areas of development, the past twelve months have been a period for integration and co-ordination between research and development and manufacturers wanting to reap the benefits, such as variable data and mass customisation, yet maintain sensible production volumes across the board.

Probably the first notable merging of technologies came when Agfa and Thieme got together to bring to market the M-Press combination machine that was designed to give print shops with deep pockets the ability to bring together digital versatility with an element of screen-printing tradition in the same machine. Perhaps this was a development that was considered to be somewhat over elaborate for its intended production criteria but, in the years since this wide-format printing system first appeared, there have been manufacturers striving to achieve a similar marriage across the different market segments.

INDUSTRIAL ADVANTAGES

There was an inevitability, too, that the industrial arena should be ripe for the advantages that a merging of technologies could bring. It can come as no surprise to see that established manufacturers who, formerly, had dug their toes into their analogue convictions are now co-ordinating their developments with digital specialists to design and produce production equipment that combines a blend of versatility and rugged structure based on a true understanding of what end users want in their printing systems.

The desire to bring the best of both worlds into a single production solution cannot be ignored and, in some cases, it has become the key driver in new machine developments. In the narrow-web and roll-fed segments it has been apparent for some time that printers and converters really want to benefit from both technologies, and this makes perfect sense for anyone generating jobs that include VDP and mass customisation. Certainly in the functional printing arena, bringing together digital and the screen process is a facet that's deemed to be advantageous to a plethora of manufacturers who see end product demand determining how the individual technologies should be employed to result in a practical solution.

A SHIFT IN CUT-SHEET

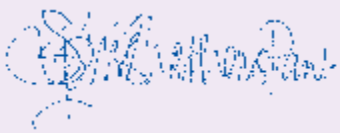
In the commercial sector, offset is also destined to become more of a bed-fellow with digital and, this year, there has been a shift in the cut-sheet market which, thanks to greater reliability and stability with the latest single-pass options, is now expected to present a practical challenge to offset. We have already started to witness a transition in flexo but, in both these segments, the existing challenges presented by dry and liquid toner technologies are now being added to by ink-jet. Packaging, too, has been subject to digital alternatives and, certainly, the objections regarding economic and quality compromises are gradually being overcome. Although there is some way to go before digital can be considered to have melded with, or superseded its analogue counterpart, options from narrow-web up to B2 format are now being tackled seriously.

Returning to the industrial theme, Thieme reports that there has been tremendous interest following the introduction of its digital platform earlier this year and here we have a long-established producer of screen-printing technology moving into new areas. Machines Dubuit, too, provide an example of how to take deep-rooted analogue experience and metamorphose into ink-jet. And Agfa's coding and marking developments are also based on the exacting requirements evolving from earlier methodologies.

With collaboration being key for many manufacturers wanting to add to their technologies, it is interesting to see the alliance, for example, between Heidelberg and Fujifilm, Gallus and Ricoh each of which provides an existing technology that removes the necessity for reinventing the wheel when future platforms incorporating digital are being developed. We also know that long-standing analogue specialists are co-ordinating their development efforts with the assistance of ink-jet knowledge bases and, of course, including the digital front ends required to drive new production methods.

At the recent IMI Europe conference Heidelberg's Jason Oliver explains the company's ink-jet strategies

Scraping off the gloss of this year's technology announcements and digging down into the modus operandi of new machine developments now on offer, across all sectors digital elements are playing a more cogent role in systems' integration. Even those doubters who, two decades ago, might have shunned ink-jet's practical abilities outside the display sector are now realising there is an appealing mix and match capability where the best of both analogue and digital worlds can be combined or, at the very least, acknowledged as playing a respected role in new techniques.



Sophie Matthews-Paul is an independent analyst and editorial consultant to Specialist Printing Worldwide
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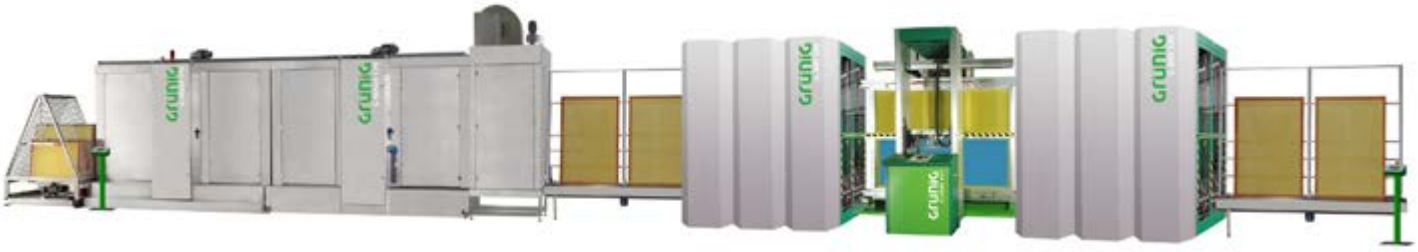

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GLITTERING PRIZES

Alan Buffington describes the best methods for producing faultless results

Murakami has special stencil products to produce stunning glitter prints that often have better wash results and more reflective properties than foils. Glitter inks and glitter dusting are becoming more popular as an embellishment for textile printers seeking a value added print option to bring their designs to life and add some bling to their apparel offerings.

Printing glitter inks requires using very coarse screens with a large enough mesh opening for the glitter flake to pass through the mesh. A typical glitter chip is .008 of an inch in size and needs an opening that will still print even though emulsion may cover part of the mesh opening. One of the keys to better glitter prints is to use thicker art elements that have 2+ mesh openings for line work or 4 mesh openings for dots.

Emulsion often traverses a mesh opening leaving only half of the mesh opening or less for the glitter flake to pass through. Too often the art department creates images that are too fine a line or dot for the glitter flake to image well, and glitter flakes will plug important areas of the print. If you are designing the art, use thicker line work and larger detail elements to help preserve the continuity of the glitter print. (Figures 1 and 2)

Using the 2+ mesh opening for line width helps, but how do you get consistent glitter prints or more details? Well, as always, there are a few tricks and other options to increase the detail quality of a glitter print.

Murakami 25S and 36SS are two meshes that help print glitter well. 25S is the most commonly used since half a mesh opening will still print an .008/inch glitter flake. A 40T or 60S/T will have difficulty printing typical glitter flake since partial mesh openings and even full mesh openings will get clogged with flake eventually and never print consistently. The result are voids in line work, saw toothing or clear dots where only the base carrier prints but little else. While you may get a decent glitter print on T mesh or slightly finer meshes on the first prints off the press, the glitter flake will eventually block less than the optimum mesh openings and not print on the rest of the print run.

BEEFING UP LINE WORK AND DOTS

Designing art with a wider line or dot size helps prevent voids and saw toothing of the glitter print in production. Training the art department to realise they will lose a bit of the art in print helps them beef up line work and dots to achieve better prints where only .8mm flake is used in the ink.

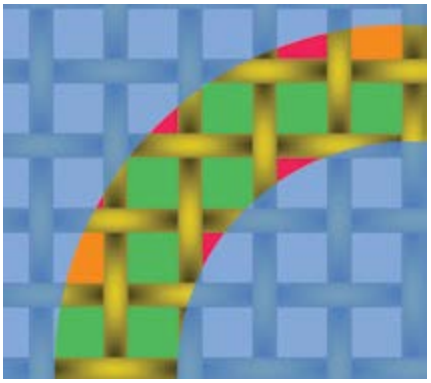

Figure 1: if the width of the art is too narrow it will block mesh openings and yield inconsistent printing with voids in the print. Red above will clog completely with glitter, the orange areas may also plug in over time during the print run. The line will have a sawtooth look and have missing print areas resulting in a weak glitter print.

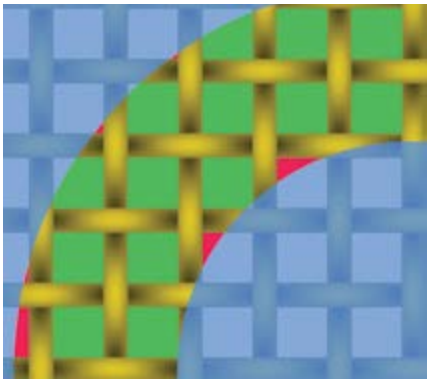

Figure 2: by increasing line width slightly the resulting glitter print will render better. In this case the red areas will still clog with glitter but the increased line width will render a better line print and a more consistent glitter deposit. Red = clogged mesh openings due to glitter flake not being able to pass through the mesh opening. Green areas have adequate mesh openings.

Emulsion thickness and mesh orientation also play a crucial role in how well the solid areas print. If there is no EOM (Emulsion Over Mesh) in the emulsion stencil there will also be very little inkwell for adequate glitter ink to be transferred during the print. Murakami Aquasol HS has excellent stencil build-up qualities when coated wet onto wet. A 2:4 coat with two on the print side followed by 4 on the squeegee side of the screen coated wet onto wet provides close to a 200 micron stencil.

Dry overnight with a fan for complete dryness needed for exposure, or use a hot box and always dry horizontally with the print side down. When the ink well of 200+ microns is filled with ink it allows for less squeegee pressure and transfers a greater volume of ink to the shirt surface and a continuous glitter print. A thin emulsion profile does just the opposite. It limits the amount of ink that can be transferred and, when the squeegee pressure is increased to get more glitter, it will do just the opposite and either pick up the desired glitter deposit or squeeze out the carrier base and leave a transparent halo around the glitter.

S-mesh in these lower mesh counts can be stretched to good workable tensions for easy transfer of the ink to the fabric or substrate. One key characteristic of coarse meshes, however, is when the mesh is stretched square to the frame the threads act like speed bumps for the squeegee on coarse meshes. These are 250 micron threads on 25S mesh. The speed bumps coarser mesh introduces can often only

Continued over

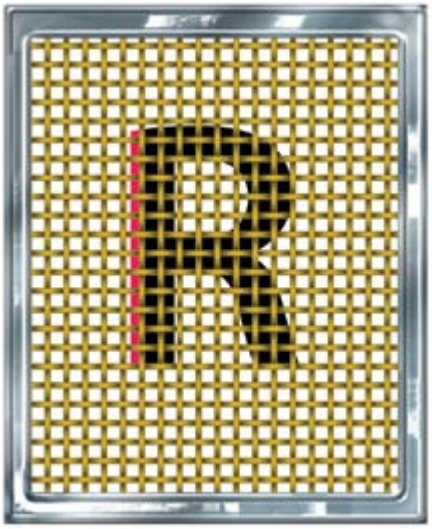

Figure 3: note how vertical or horizontal art elements can randomly create print areas that will block the glitter ink from printing, shown in red above. (Mesh enlarged above within frame to show a 72pt letter).

Figure 4: a bias stretched mesh will provide less mesh issues where vertical and horizontal line elements may not be open enough to print glitter well.

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Examples of glitter

be overcome with more squeegee pressure and can affect the quality of the print with loss of details, or loss of glitter ink being laid down and scraped off by the squeegee and returned to the ink pool in the screen. One solution is to stretch the mesh on the bias at 22 to 45 degree angles. Stretching mesh at an angle creates a smoother surface for the squeegee to travel over as well as printing vertical and horizontal line elements more accurately (Figure 3).

In the next image the mesh has been stretched on the 'bias' to avoid image areas that are too small to reproduce, which is caused by vertical and horizontal art elements lining up with the threads and creating multiple mesh openings that won't print. While there may be some smaller areas that will clog on bias stretched screens, straight vertical and horizontal art elements will reproduce more accurately and cover the desired print area.

Design tricks, however, can only accomplish so much and in most cases artwork is supplied by merchandisers or your clients that simply doesn't fit the 2 mesh opening line rule, or 4 mesh opening dot rule. The solution is to customise your ink a little. There are smaller chip sizes available in .002, .003, .004, .006 inch dry ink flake sizes that can be mixed into the RFU glitter inks that helps overcome partially blocked mesh openings.

THE RIGHT ADDITIONS

Adding smaller flakes can help create better edge quality and the ability to print finer details. Adding dry glitter flake to existing glitter inks will cause them to lose their flow characteristics and create clogging issues in the screen along line edges and smaller openings. Adding clear bases and flow agents helps aid in the print process. It is also worth experimenting with different plastisol ink clear bases so the carrier base disappears during the curing process and yields more sparkle to the print. The addition of dry flake also allows customisation of glitter inks, especially in silver where holographic flake adds a rainbow sparkle not present in stock silver glitter.

For finer lines of artwork, dusting is a different solution than printing finer flake additives. However this process is quite messy. Dusting does have some drawbacks. I had a major client who used dusting almost exclusively in their printing and you knew you were near his shop because the street reflected lots of glitter as you drove up to his facility! Once in the shop a shaft of light from an open shipping door was swimming in glitter dust and the floor was covered in a multitude of glitter flake colours. This is a health hazard for sure and I can't imagine how much dust the workers inhaled. If you are under compliance control by a major apparel manufacturer you need to control this issue with masks, vacuums, and dust collectors.

Typically with dusting you print a clear gel through 40-80S mesh with a thick stencil. Finer details work better when the gel is printed onto a flashed clear base so that the gel is above the surface and can pick up the glitter flake easier. Thick stencils with 200 to 400 microns on 40-60 TPI S mesh screens help to print the gel so that it is thick enough to be a glue for dry glitter flake. Once the design is printed the un-loader flips the shirt over onto a tray of dry glitter by the unloading station before putting the shirt in the oven. These can be custom mixes of fine sparkles, or stock glitter colours, sugar flakes, holographic chips or geometric shaped chips. (Larger chips need coarser artwork and a wider gluing area.)

PREVENTING UNWANTED GLITTER

Once it is placed print side down with an uncured gel print, the shirt is lightly patted on the back to pick up the glitter while the gel print is still wet. Flashing a plastisol image before the gel screen helps prevent unwanted glitter elsewhere in the design or you can use water base, discharge or high solids acrylics to prevent glitter contamination that can occur with plastisol prints. After curing in the oven, vacuuming with a flock remover vacuum, or standard shop vacuum using a brush, helps remove loose glitter flakes that can contaminate shirts being stacked.

Another place a small shop vacuum helps is on the press. Sometimes it is far easier to pull out clogged glitter from mesh openings by vacuuming with just the tube on the bottom side of the print since washing out the image is time consuming and often has mixed results. This small shop vacuum will not be usable for much else unless the motor filter is changed quite often. In production however it minimizes down time and keeps the press going with a quick fix.

The dusting method works well for fine line printing or details that are below the 2 square opening rule for line work or the 4 squares for details or dots. Metallic base plates with overprint glitters or clear gels is also an option, but flashing of theses bases needs to be precise with a short enough time to get adhesion of the overlying glitter inks or gels. Combining a metallic ink print with a glitter print helps form points, fine lines, continuity of fine lines and details that glitter simply cannot print. There are inks on the market that have near foil-like reflectivity that work well with common glitter colours like silver and gold.

GLITTER OPTIONS

Glitter is not limited to direct printing onto fabric. Transfers provide an alternative to achieve multiple glitter colours in one print with a silver glitter backer. Printing multiple colours of glitter directly onto a shirt is cumbersome, with long flash times and cool down stations needed to get just a couple of glitter colours. Transfers, however, provide unlimited glitter colours. Typically gloss transfer paper works best. One of the unique ways of using this paper is to send it out for a litho four-colour process print to achieve tight tonals of famous cartoon characters, bands, intricate designs and then print the transfers with a silver glitter backer over transparent design areas. Other clear backer prints with powder adhesive applied by a dusting method may also be used to help with transfer adhesion. While not as reflective as straight glitter onto the shirt, the transparent areas of glitter will have a 'depth' effect not seen in direct print glitter.

Mixing CYMK process colours with half-tone bases used in transfers result in very transparent inks to see the glitter. The transparent colours are printed and partially cured on the transfer paper, usually in solid colour accents. Then a silver glitter print over the transparent ink areas will yield several glitter colours with just one silver glitter backing print. Combining this technique with other opaque prints of keyline art, characters, corporate logos or other elements yields prints that would be impossible with direct print methods.

The screens you create for any of the above techniques will determine the quality of your print. Coarse mesh with thick stencils can require longer screen exposures to preserve emulsion thickness and bridge mesh gaps. S-Mesh with finer threads helps promote the transfer of glitter inks with more open area as well as using thick stencil emulsions or thick film to create an ink well that will transfer a complete film of glitter with no missing elements or lift off of the glitter inks. ■

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SCREEN-PRINTING STENCILS FOR AUTOMOTIVE GLASS

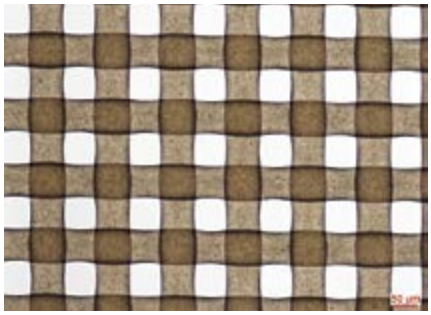
Patrick Brunner considers the requirements of a screen-printing stencil in the automotive glass industry.

The automotive glass industry is highly dependent on failure-free screen printing stencils. An interruption of the screen-printing process due to a stencil that does not properly reproduce the intended artwork usually also interrupts the entire production process. On a fully integrated in-line production, such interruptions may cause damage valued at thousands of Euros per hour. Therefore, the 100% quality control of screen-printing stencils prior to the printing press release is crucial.

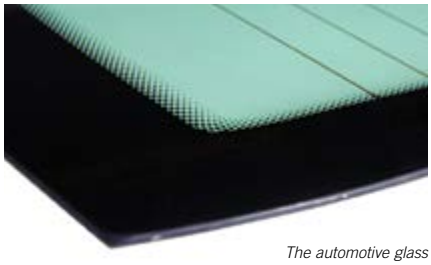
RELIABLE CONTROL PARAMETERS

This circumstance requires the stencil maker in charge to establish a reliable control process. In most cases, this control is undertaken visually by humans. This is very labour-intensive and never 100% secure.

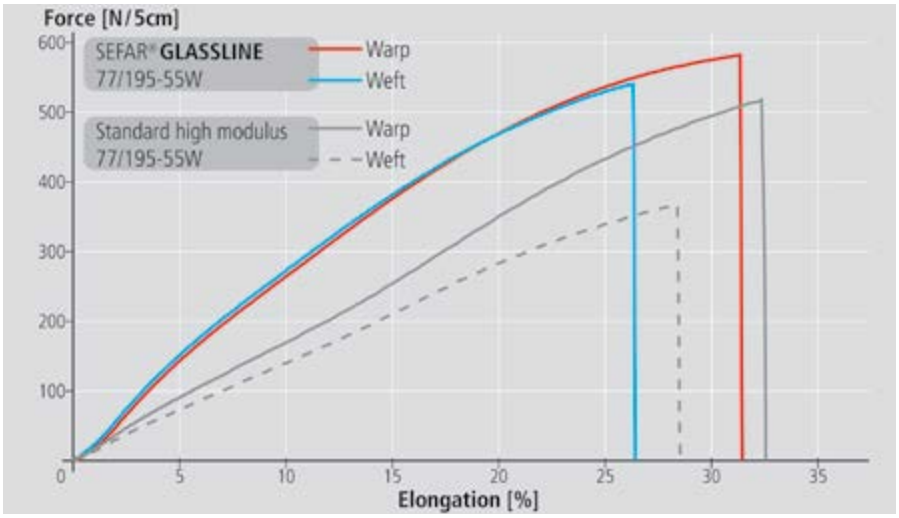
Now, automated camera control systems are also available, where the challenge is to teach an appropriate sensitivity to this automated equipment. The systems are usually unable to distinguish between dust on the top of a printing area and a genuine blocked mesh opening, which a human eye is able to detect. For this reason, not only the investment of an automated visual control system has to be taken in account but additionally, investments in clean room conditions need to be considered.



The precise mesh geometry of Sefar Glassline 77/195-55Y PW.



The automotive glass industry is highly dependent on failure-free screen printing stencils.



Stress-strain behaviour.

There is a certainty that the development in improved visual control systems will continue. Moreover, there is also potential in the supply chain to secure reliable screen-printing stencils.

MESH PARAMETERS

Next to the stencil parameters, coating build-up and surface roughness, there are important screen-printing mesh-related parameters to keep the stencil making process under control, including mesh geometry, mesh elongation and mesh surface properties. Furthermore, a defect marking system that shows up any kind of defects and can have a negative influence on the print result does support a stencil maker to reduce stencil failures.

Focussing on the mesh parameters that have a major influence on the reliability and reproducibility of a screen-printing stencil used in the automotive glass industry, the mesh geometry and mesh elongation between warp and weft cannot be considered independently because the geometry of a screen-printing mesh has to be precise in stretched condition.

From a precise geometry, precise square mesh openings and a consistent mesh thickness are expected. A consistent mesh thickness allows reproducible paste layers, thereby using the example of a black edge masking can be printed in high density with a minimum of paste consumption or constant electrical resistance can be maintained when printing silver grids of rear window heaters. A consistent, balanced elongation between warp and weft also supports higher accuracy when printing black edge masks close to the glass rim. Exactly square mesh openings help to keep silver grids constant in width.

Another important parameter is the way defects of a screen-printing mesh are marked. Glass is a very sensitive substrate, on which every kind of mesh defect would show up in print. For this reason, it is important that the mesh manufacturer marks all kinds of possible defects such as defects caused through the weaving process itself or knots that connect weft threads to enable a continuous weaving process. A stencil maker who can count on the screen-printing mesh manufacturer's defect marking reduces the risk of stencil failures and therewith cuts additional costs.

With SEFAR GLASSLINE, stencil makers can offer reliable screen-printing stencils to the automotive glass printer. This product has been precisely designed to the dedicated requirements of the glass industry and therefore covers all the important parameters mentioned above. ■

SEFAR GLASSLINE is a registered trademark of Sefar AG.

Patrick Brunner is Product Manager, Screen-printing at Sefar

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COST VERSUS PRICE VERSUS VALUE

An evaluation of why these three elements can cause friction in today's screen-printing environments

Since most readers of this article have grown up fully immersed in our (relatively) free-market economic model, there is a natural tendency to take for granted the particular elements of the formula that coalesce to make sense of what we consider valuable – that consideration being the very root of what drives much of the western world's particular brand of free enterprise. That "the consumer determines value" – and not the producers of goods as in competing economic models, is the touch-stone that binds us. Those commercial enterprises which are intentional about respecting that fact, and behaving accordingly, are at a distinct competitive advantage compared to those that are not.

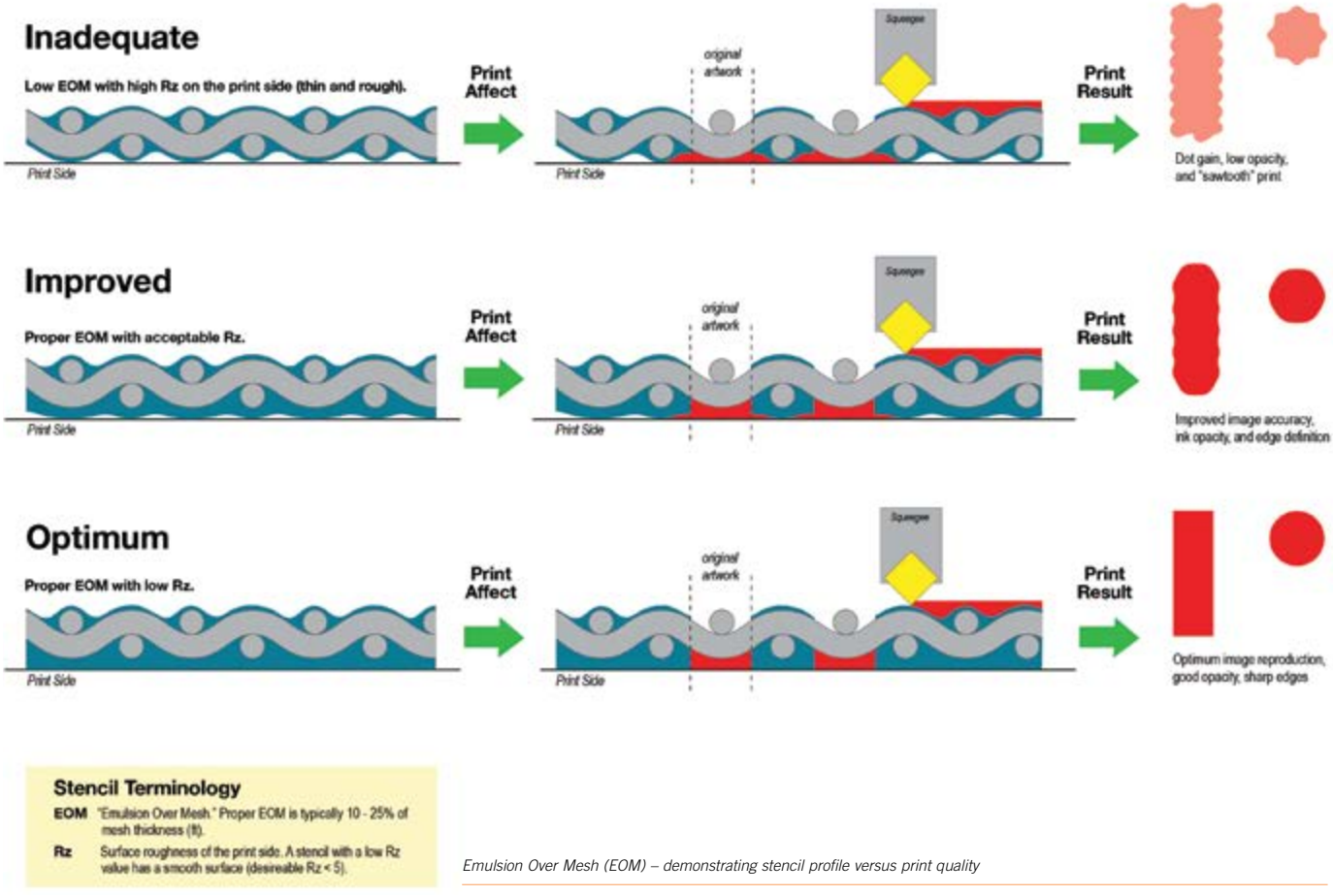
Of course, as in all things commercial, things are easier said than done. And a library full of text books and a world-wide-web of content on the matter is of little comfort when facing the ravages of the real world, day-to-day, competitive imperatives that challenge businesses, not only in the various printing industries, but every business, large and small, that collectively form our macro economy.

Still, it surprises that in many otherwise very sophisticated commercial organisations, there remains a persistent and disruptive comprehension of the distinctions between cost, price and value. Of course, the cost of a given product or service is well understood to refer to the various costs associated with producing/providing a given offering. Similarly, we readily recognise that price refers to the dollar-and-cents, numerical position applied to a given offering to be paid by either the consumer, in a retail setting, or a wholesaler, in a distribution context. Value, however, while closely related to both cost and price, is an animal all its own, infused with a combination of subjectivity, symbolism, hard-and-fast numbers, and even emotion.

THE INTERSECTION OF TECHNOLOGY

Back on planet Earth, in screen-printing operations everywhere, this friction between cost, price and value plays out in ways as mundane as they are insidious. This often manifests itself at the intersection of technology – or lack thereof – and custom, tradition, organisational culture or operational ritual, ie: "We've always done it this way."

Marty Medvetz, 16-year screen-printing veteran, both in R&D and sales, at Chromaline Screen Print Products since 2007, is painfully familiar with this sort of friction. "When I'm meeting with customers or prospects, my first goal is to understand their production flow



Emulsion Over Mesh (EOM) – demonstrating stencil profile versus print quality

and what they're trying to accomplish in terms of work efficiency – which is code for they want to cut production costs. This is totally understandable of course but, unfortunately, lots of people on the supply side of our industry have basically trained screen-printers to cut costs by whittling down the cost of materials, namely the photo emulsion used to make the screens."

While Medvetz fully appreciates the idea that cutting costs all along the production line is an attractive idea on the face of it, he challenges production managers and business owners to take a more nuanced approach, based on the overall cost of production. That is, some cost-cuts can result in an overall compromise in productivity, profitability, not to mention the quality of the end product.

A BROKEN LOGIC COMPONENT

Medvetz continues: "There's a broken component in the logic that treats every element of a complex, multi-faceted operation the same, in terms of cost-cutting. In many production settings, the first thing people ask is: 'How much does your emulsion cost?' Instead, the more critical question is: 'What's the total cost of the screen?', or even: 'What's the total cost of the job?'."

One common practice that illuminates this point is the error in associating cheaper emulsion with cheaper production costs. While this error is multi-faceted, perhaps the most distinct element has to do with achieving appropriate EOM (Emulsion Over Mesh) and the relationship between such achievement and the solids' percentage in a given emulsion. Interestingly, there are no industry standards that regulate or verify percent solids in screen-printing emulsions. Thus, advertisers can essentially say whatever they want with no fear of repercussion. An emulsion with a comparatively low percentage of solids can claim otherwise. This, of course, advantages those making the misleading claim of 'high solids' without reference to any supportive, analytical data. Since percentage of solids is a substantial contributor to the cost of producing an emulsion, manufacturers are keenly incentivised to keep solids low and promotionally claim otherwise.

As a practical matter, using a cheaper emulsion – an emulsion with lower solids percentage – results in having to either coat the screen numerous times, or settle for a lower EOM, resulting in an inferior stencil. Thinner, less expensive emulsions can also lead to pinholes and mid-run stencil breakdowns. Obviously, stoppages in production are profit killers. In this scenario, that 'cheap' emulsion results in down-time, screen re-makes and press re-registration, ramping up labour costs, making the money saved on the 'cheaper' product seem silly, at best.

ESTABLISHING PROPER EOM

From another perspective, using 30% more emulsion volume (more coatings) to establish proper EOM, with a product that is, say, 20% less per gallon in price, results in an increase in per screen cost. According to Medvetz, there's a relatively easy way to distinguish between a cheap emulsion and less expensive production cost.

"The simplest way to understand it is to simply measure the EOM with a micrometre." Medvetz concludes. "For example, if you're using plastisol ink, the EOM should measure between about 15 to 25%. If you don't have that and need to coat again, or decide to go ahead with the run anyway, you've got the wrong product, no matter how little you paid for it." ■

Parnell Thill is Vice President, Marketing at IKONICS

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SOLVENT IS DEAD; LONG LIVE SOLVENT

Mike Horsten argues the advantages of fast, low cost production

In many a history book we have read the lines 'The king is dead; long live the king' – the old king dies and the new king is welcomed and becomes the greatest king. The history and evolution of printing technology and processes could be compared with this premise. In the solvent printing business this has been happening. The older ink technologies which were smelly and poor quality, but seen as wonderful during their time, are being replaced with a new generation of inks which are bright, odourless and long lasting. The question is: "Is solvent the correct technology for the sign-making industry at this moment in time?"

There are many new ink technologies that have come to market in the last few years. The main ones are latex (resin-based inks) and UV-curable ink technology. Latex has been on the market for about five or six years and has developed into a niche market ink for many printing segments. Mimaki is the only company apart from HP that has developed latex. We see the speciality market as a significant opportunity where the use of latex is an advantage to all in the supply chain. The indoor usage of latex has a supreme advantage because latex is a non-VOC and HAPS ink and this makes it ideal for interior decoration such as the wallpaper, indoor signage and print proofing markets. This last segment is something that has recently been developed by Mimaki by adding orange and green latex inks to the portfolio so that the colour gamut is bigger than offset.

The inclusion of a silver ink enables metallic shades to be created

COMMERCIAL PROOFING OPTION

The latest generation of latex ink makes it possible to have a premium solution for commercial proofing specifically on many uncoated substrates. Latex also offers printing transparencies because of the availability of white inks. It is possible to use transparencies with a cling-film effect on a latex printer which can also use colour/white/colour printing to make a perfect back-lit image for day and night printing with this technology.

So if latex is the solution why stay with solvent? Before we answer this let's look at another ink technology – UV-curable inks. These inks are appearing in many markets and for many different applications. In the beginning UV-curable inks were cured by big hot lamps that hardened the inks by changing the monomers to polymers. This resulted in

Continued over

Mimaki claims there is still a big market for solvent-based ink

Mimaki's JV300 Series printers offers a wide colour gamut

Solvent-based and solvent UV hybrid inks both offer affordable production costs

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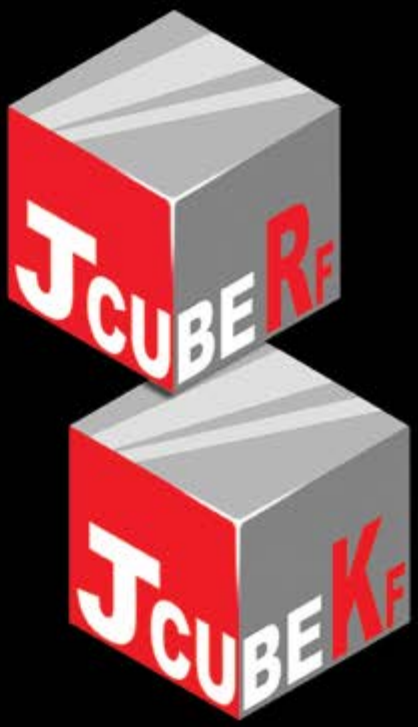

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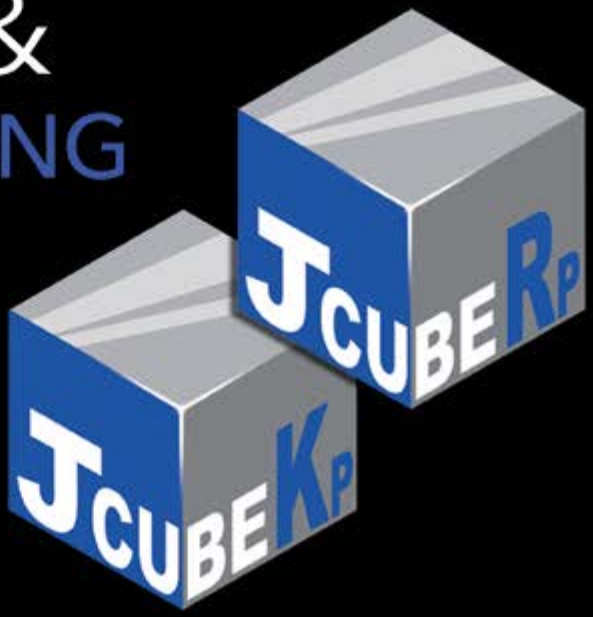

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Today's solvent-based ink-jet printers can print to very high quality standards

great inks for rigid substrates but they were not so useful for roll-to-roll media due to the fact that the UV-curable inks were not really flexible. This has changed in the last few years and, today, the inks are much more flexible and can even be used for car-wrapping giving about 200% stretch. Now it's possible to print all our roll-to-roll media with UV-curable ink and dismiss latex and solvent altogether.

RIGID PRINTING ADVANTAGES

So why go with UV-curable ink? Well, in the first instance, it is a choice because UV-curable printing can be a more expensive production method. The reason for many users choosing to go with this formulation still carries the advantages when printing onto rigid substrates. There are, of course, some hybrid solutions on the market but these are not very effective. Printing roll-to-roll on an expensive flat-bed printer is not only inefficient but I believe you should use the printer for the purpose it's made for. You can always buy a smaller roll-to-roll printer that is faster and better for the price of the roll option on a flat-bed printer. At Mimaki we don't have a roll option for this exact reason. Why pay €20,000 for something that will give you, say, 20 square m/hour when you can get a printer that can do 100 square m/hour for the same price?

So UV-curable printing has taken a part of the solvent and latex markets but it still may not be the right solution for many markets and applications. It is great for glass, wood, metals, cardboard, foam and forex type medias that don't fit into a roll-to-roll printer. One of the other problems with UV-curable is that the adhesion is not always as good on all substrates.

Surface tension is very important for perfect adhesion so you can't print on all substrates, although adding a primer to the substrate can solve this problem. Also flaming, plasma and corona treatment all help with the adhesion of inks but it is still a trial and error way of printing. Lately we have seen new technologies that can replace solvent printing but for some reason this has still not happened. There must be a reason and, yes, there is; but I will get to that later.

BEST OF BOTH WORLDS

So is there more? Mimaki has a new technology which is called SUV or solvent UV hybrid ink and this combines the best of both worlds. The solvent ink side gives adhesion on vinyl that is very good and the UV-curable ink part

achieves the gloss and colourful finish you desire. This type of UV-curable ink component is also flexible so you can really work with it from a roll. The other advantage is that you don't need to wait before you start working with it. You can laminate it without waiting.

The advantage with this ink technology is that there is enough time for the pigment particles inside the ink to fall and lay down on the substrate giving it a very flat surface thus giving it a great scratch resistance and also the best reflection of the widest colour gamut you can think of. The results are stunning. As the ink has a big UV pigment component the weather and light resistance are also extremely good. Three months outdoors on a vinyl substrate is possible without any worries. This is, therefore, perfect for short term outside jobs with no need to laminate. With this element you can save a big part of the production cost.

Mimaki believe this looks like a winning technology and its SUV is on its way. But, although this is a great technology, there is still a big market for solvent-based ink. The more affordable production costs, the diverse availability of substrates and the high speeds of printing still make it the king of printing for wide-format.

Today's solvent-based ink-jet printers can print to very high quality standards on banners up to 100 square m/hour. It is possible to print perfectly onto transparencies with white solvent-based ink, and silver inks give metallic effects that are not available in the other technologies. The solvent solutions work and are a lot cleaner than commonly known and, even with the new REACH laws and environmental considerations, we still have a great technology in our hands. Additionally, what other technology will let you print and cut on one machine? What other technology can you use for a car wrap and a retail poster or community signage by just changing the media? What print technology will let you print 100 square m/hour for less than €20,000? There are no technologies that have yet been able to replace solvent-based technology on all of these fronts.

So long live the king – solvent is still king of wide-format. ■

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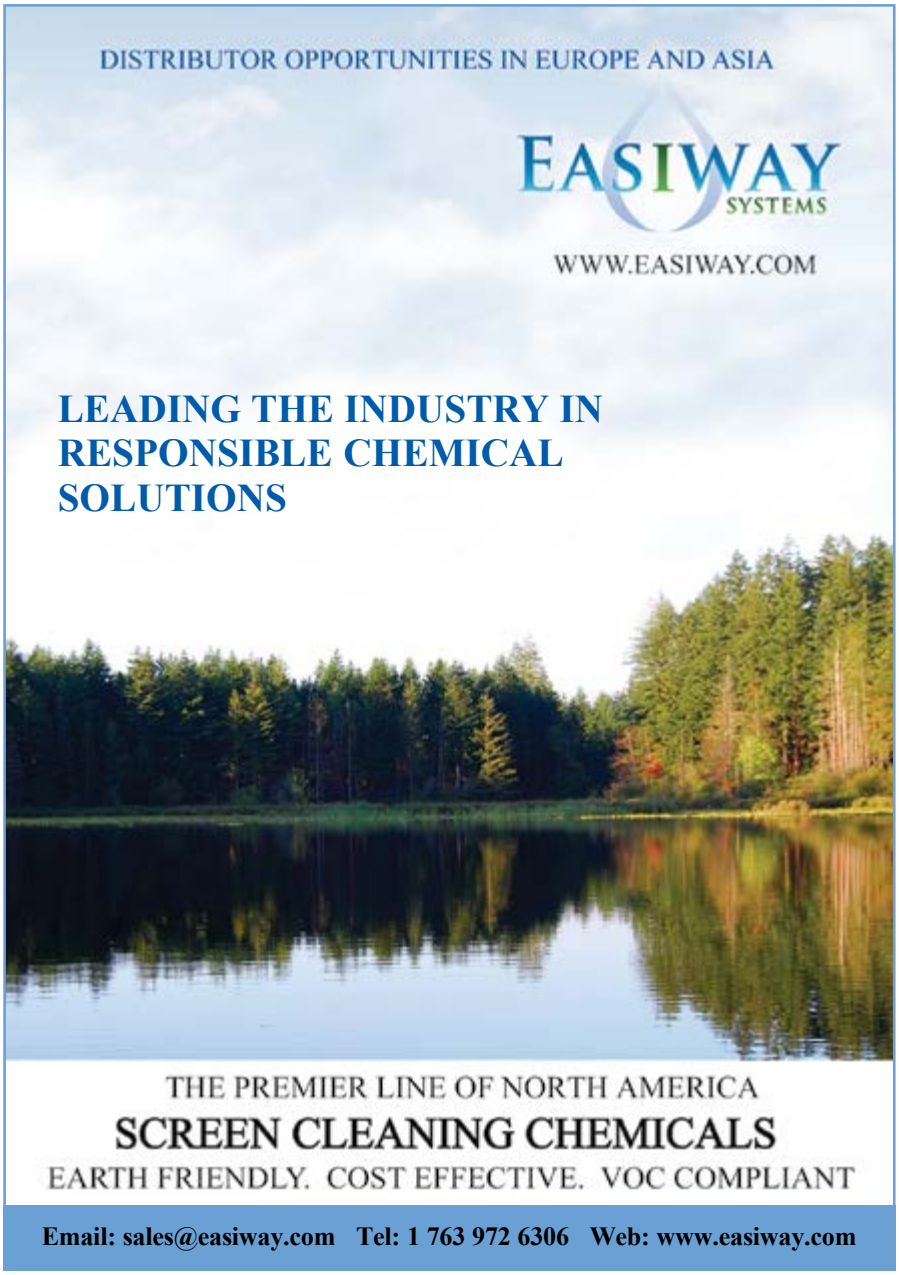
Solvent-based inks offer high speeds with a low investment cost



DIGITAL BENEFITS IN THE CORRUGATED SEGMENT

Sonja Angerer describes the benefits gained from expanding into packaging markets

According to recent surveys, around half of all purchase decisions are made right at the point-of-sale. This being the case, why does a lot of retail shopping space still operate, at first glance, as if the growing demand for individualised and local products has left it unaffected? The merchandise has been around for a long time; just about every supermarket carries food items which are produced locally or under multiple seals of approval. The problem is that, all too frequently, they just are not noticed. Many brand owners still have corrugated packaging and displays produced in large batches using analogue printing methods for financial reasons. The fact that end consumers notice this less and less was already evident before German department store chains started feeling the effects of the latest economic crisis.

Durst's Rho 1000 system is optimised for printing on corrugated cardboard

The increasing digitalisation of everyday life has created the technical prerequisites for personalising products and services. The end consumer knows this and is asking for it more and more, which is why the graphics industry is relying on digital printing to an ever greater degree. Today, digital printing accounts for nearly 100% of all printing for applications such as design and photo printing, and digital printing machines are used for around 40% of all advertising applications.

GLOBAL MARKET COMPARISONS

None of the sectors listed, however, comprise more than 2% of the global market for print services. By contrast, around 15% of printing applications carried out globally involve packaging, and digital printing has been used in less than 10% of cases up to this point. The main reason for this is that, until recently, there were no economically feasible solutions for high-volume digital printing on corrugated cardboard and double-wall sheets. In the meantime, systems like the Rho 1000 corrugated series from Durst have been introduced. This system is specially optimised for printing on corrugated cardboard and can output up to 1,000 square m/hour with up to 1000dpi, fully automatically.

If you consider the total production costs of a customer's order for printing on corrugated cardboard, the cost of digital print

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runs up to 1,000 units using the Durst Rho 1000 series is comparable to analogue printing. Since the creation of print masters is dispensed with, monthly quotas can be produced just-in-time and in complete batches. As a result, warehousing and logistics become considerably less expensive.

The main advantage of digital printing, however, comes into play where a personal and binding relationship must be formed with the customer. Premium products are not the only ones to benefit from digitally printed packaging which has been individualised or matched to a retail channel. Indeed, personalising also lends bulk goods an appearance of considerably greater value. Coca Cola impressively demonstrated this with its extremely successful "Share a Coke with ..." campaign, and this has attracted the attention of other branded companies. Increasingly, campaigns are being customised with regard to locations, sales channels and target groups in a detailed and directly targeted way. A single high volume order effectively becomes many smaller orders with variable data. What once began in direct marketing, ie – the addressing of each customer individually, will continue in the area of packaging.

NEW MARKET OPPORTUNITIES

This is resulting in new and exciting market opportunities for printing companies in the areas of packaging and corrugated cardboard displays. Unlike almost all other print products, the demand for packaging is not dropping as a result of strengthening digital channels. On the contrary, it is on the rise because of it. High competitive pressure and low customer loyalty on the Internet is prompting even the smaller on-line shops to anchor their offerings with custom printed outer cartons for the entire shipping route and finally, once again, for the customer.

Printing on corrugated cardboard and double-wall sheets is more suitable for automation than for almost any other sector. Tried and tested work-flows already exist, requiring minimal manual intervention from order acceptance to data checking and from printing and finishing to quality management and logistics. This is especially suitable for Central European service providers who are battling continually increasing unit labour costs.

Printing companies which already focus on digital printing can say goodbye to the familiar frequent substrate changes, countless hours of manual work and cost-intensive installation involved with packaging printing. Packaging specialists who have primarily been using analogue methods up until now will benefit even more by investing in digital technology. If need be, they will have to strengthen their pre-press departments, as digital printing involves a large number of small data deliveries rather than a few large ones. Packaging specialists can, however, continue to use their high efficiency finishing processes in the same way so as to offer existing customers individualised premium products with added value.

Coca Cola was just the beginning. Across the globe, creative minds are looking for opportunities to personalise packaging the way it once was at colonial general stores and to make displays as effective as the daily special board at your favourite restaurant. Printing on corrugated cardboard and double-wall sheets digitally enables you to be ahead of the game in a large, future-proof sector of the printing industry. What are you waiting for? ■

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Sonja Angerer is Editor in Chief of Large Format and SignPro Europe (Germany)

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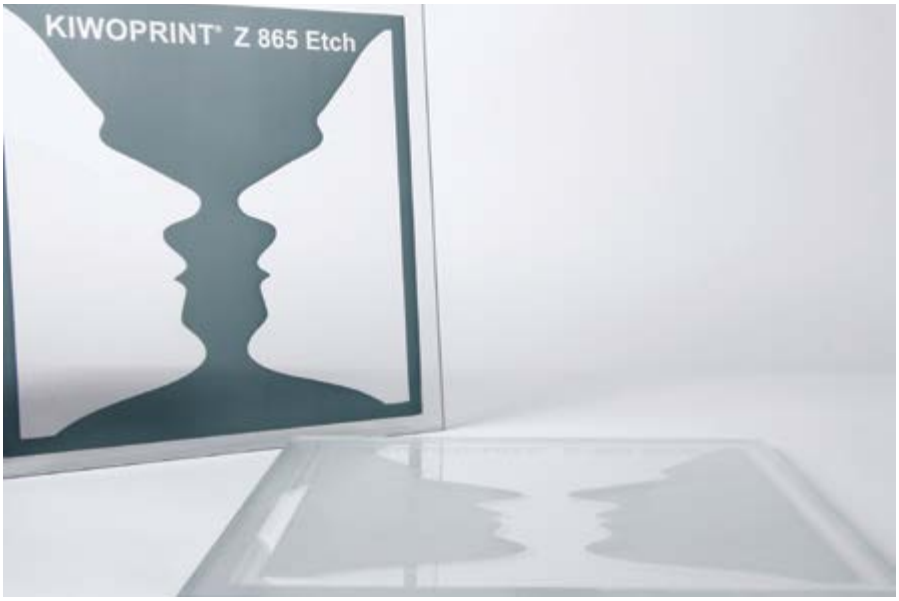
RESISTS AND COATINGS

Michael Gross outlines the best surface treatments for functional and decorative applications

To enable a wider field of industrial and creative applications to be processed in a more economical and effective way, KIWO has launched a series of new products. Founded in 1893, Kissel + Wolf GmbH (KIWO) is a medium-sized, family-owned company headquartered in Wiesloch near Heidelberg. For decades, KIWO has supplied screen-printing and adhesive products to satisfy customers in more than 110 countries world-wide. The international branches in the USA, South America, India, Asia and Australia enable KIWO to be in direct touch with its customers, no matter where they are.

As a leading manufacturer of chemical products, KIWO offers solutions in the fields of adhesives, printing form chemistry (screen-printing and textile printing), and cleaning agents, as well as services for product development and contract manufacturing. Its latest innovations are resists and coatings which incorporate the company's core expertise, based on years of experience in developing and manufacturing chemical products. This new speciality range is tailored for functional and decorative design applications in trade, DIY and industry.

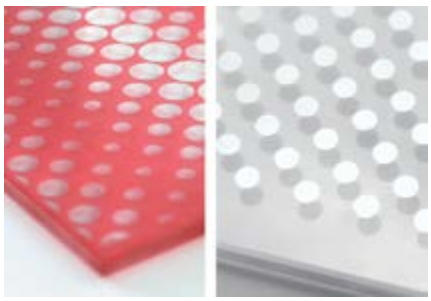
Using a resist, surfaces can be masked with a design, either partially or full-faced, prior to further finishing, processing or transportation, protecting them from outside influences.



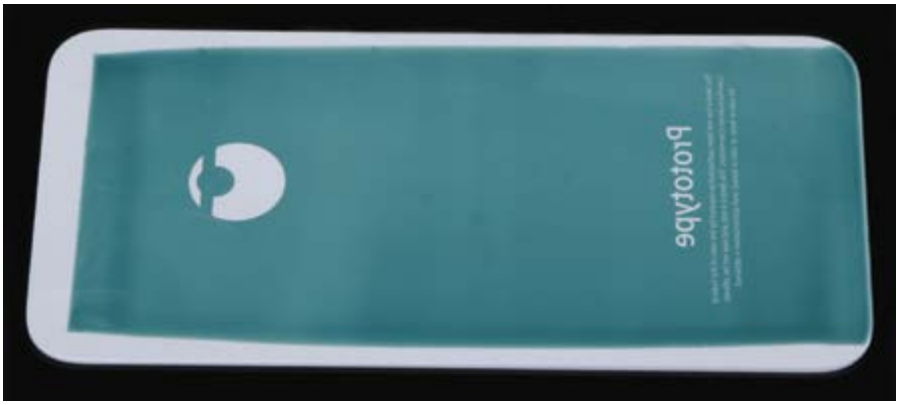
KIWOPRINT's Z 865 Etch is a heat-curable etching and plating resist

Returning to exhibit at Glasstec 2014, KIWO is a regular and popular participant

A screen-printable resist KIWOPRINT W 857 is ideal for selective brushing of metal surfaces



Sputtering and partial mirroring are suited to KIWOPRINT W 850 Etch



PHOTOMASK FMR 216 offers a photo-structurable, diazo-sensitised photoresist

Applications such as etching, sandblasting or sputtering are the focal point of this product range. The resists are medium to highly viscous emulsions and, depending on the product and screen-printing task, they are applied by spraying, rolling (roller coating) or dipping.

PARTIAL SURFACE TREATMENT

Resists for partial surface treatment make it possible to economically mask motifs or structures in larger quantities, either by screen-printing or by exposing with UV light. For example, if a motif needs to be sandblasted on a surface, usually the areas that should not be sandblasted are covered with a plotted protective film stencil. This is the easiest method, if only one copy is required with this design. However, if multiple surfaces are to be manufactured with the same motif, a new stencil would be required for each object. A much cheaper and more effective method is to use a resist, which is either printed directly onto the surface or coated all-over and then exposed to UV light. After processing, the resist can then be removed with special chemicals or simply by peeling off.

Applications include etching of metal surfaces (especially for nameplates, but also in the electronics industry), matting of glass surfaces by sandblasting and brushing metal surfaces. Once a glass or metal surface has been processed, it can be protected from dirt and mechanical stress, with KIWO's new 'liquid' protective film, which is applied by spraying, roller coating or dipping and once dry, it is elastic and easily removable. ■

Designated KIWOPRINT, KIWOMASK, SANDMASK and PHOTOMASK, this product range once more provides KIWO customers with products for new and technically interesting fields that open up a wide range of applications.

Michael Gross is Product Manager at KIWO, Kissel + Wolf

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PHOTOMASK FMR 215 is a water-based photoresist for sandblasting

KIWOMASK W 120's removable, water-resistant 'liquid' film protects against dirt and mechanical stress

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PROFITING FROM CLEAN WORKING

Mick Wiltshire and Anna Harris produce a useful guide to clean room environments

For the specialist screen-printer there might come a time when clean working processes become essential to production, to improve product quality to meet an ever more demanding market, to reduce production scrap and wastage. In marketing terms, products manufactured in clean room environments are value-added as they have fewer quality failures and are typically aimed at advanced technologies. By expanding your market and reducing your cost of quality your investment could soon turn into greater profit.

Building and operating a clean room as a fully-fledged working environment can be daunting and potentially expensive. Diligence is required at all stages of the planning process. You may find that instead of a full clean room you can operate under a simpler controlled environment. The difference between the two is the level of cleanliness and cost, from the initial build to the running of the facilities. Controlled environments are easier to operate and require less stringent processes. It is vital to assess your needs thoroughly to identify the correct solution. Our experience spans all aspects of clean manufacturing and this article aims to give you a greater understanding of key clean room processes. Some of the generic suggestions are fairly inexpensive to execute; others may require advanced planning and highly complex engineering. The difference between essential and desirable can determine the success of your operation.

Clean room clothing suitable for a Class 10000 clean room

CLEAN ROOM FACILITIES: THE FACTS AND TIPS

A SINGLE PARTICLE CAN SPOIL THE RESULT

A clean room is a controlled environment where levels of particulate and contamination of all kinds are minimised. Typically, every cubic metre of unfiltered 'clean' air, such as an office environment, could contain around 35 million particles greater than 0.5µm, which is reduced to only 350 thousand in an ISO 7 cleanroom. ISO 7 equates to a Class 10000 (ie.10,000 particles per cubic foot). A single particle dropping onto a print could result in a failure.

PEOPLE AND AIR

Clean air circulation is at the heart of clean room technology and the first step in achieving a clean room environment concerns air quality. Air is highly filtered using HEPA (High Efficiency Particulate Air) filtration and continuously flushed. HEPA filters can prevent more than 99.97% particles greater than 0.3 microns in size from entering a clean room.

Airflow is of paramount importance; the more gently the air is introduced into the environment the less likely it is that air turbulence will waft particles around. In addition, positive air pressure in the room prevents the entry of dirty air.

Introducing clean air, however, is only part of the process. The greatest source of contamination is people. The human body, by simply walking around, can generate 5 to 10 million skin, hair, dirt and clothing particles every minute yet is ten times less when sitting or standing. For this reason, it is essential to keep personnel movement in a clean room area to a minimum.

Clean room garments, using tightly woven man-made fabrics, have been developed to inhibit contamination caused by people. Everyone accessing a clean room should wear appropriate garments including hats, hoods and overshoes. Due care and attention must be paid to the changing room processes, separating dirty from clean clothing areas and using dressing procedures aimed at preventing the release of particles, eg tucking hoods into garments. Clean room garments should be laundered regularly, at least weekly, and dedicated footwear used.

Continued over

This picture shows air socks to diffuse the air flow from the HEPA filtered air conditioning

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Gallus Rotascreen: give your products that sensual touch

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Tack mats are used as the first step in decontamination

The second step is to use overshoes to cover outdoor footwear

A step over bench is used when changing from outdoor wear to clean room overalls

A final step over bench is used before entering the air shower

A FOUR STEP PROCESS:

Step 1: Tack mats are used as the first step in decontamination

Step 2: The second step is to use overshoes to cover outdoor footwear

Step 3: A step over bench is used when changing from outdoor wear to clean room overalls

Step 4: A final step over bench is used before entering the air shower

Preventing contamination once clean air is introduced becomes one of the hardest tasks. People are a critical aspect of the clean cycle, but attention should be paid to three further elements – facilities, tools and materials.

CLEAN ROOM FACILITIES, TOOLS AND MATERIALS – THE FACTS AND TIPS

Once the facilities have been assessed, it is time to look at the materials used, tools and manufacturing operations.

FROM PAINT TO PENS

To minimise contamination, due care should be paid to all the facilities (walls, surfaces, and furnishing). Stainless steel, plastics or other non-shedding materials are widely used, but even these must be checked regularly for scuff and scratches and discarded when showing signs of wear.

Shelves should be constructed out of open grate stainless steel as this minimises air turbulence and the surface area that dust can settle on. They should be kept away from critical process areas to reduce the formation of air vortices. Paint should also be scratch and chip resistant, such as two-part polyurethane or epoxy based paint. Materials and boxes that need to be introduced into the clean room need to be non-fibre shedding. Only introduce paper-like documents if laminated, contained in a clear plastic bag or glove box with a transparent lid for easy viewing.

Constructing and managing a clean room requires continuous assessment and attention to what might seem even the most trivial detail. For example, even the humble retractable ballpoint should be changed for a single piece pen, as clicking may generate particles. Pencils cause graphite contamination and, along with erasers, must be excluded.

Packaging can present one of the biggest contamination hazards and may have to be cleaned before it is brought into the clean room. Never bring paper and cardboard products into a clean room; consider alternatives such as nylon, polyethylene and nickel/Mylar laminate. Should compressed air be required, specialist oil free air systems are available in the market. These can be fitted with a variety of accessories to furnish air to the required standards.

Fluids, like solvents, should be filtered before use and contain little or no soluble residue. Every clean room should have its own dedicated tool set, eliminating the need for repeated cleaning to perform routine jobs. Emergency materials such as spill mats need to be assessed and used only as a last resort. When essential maintenance is required, processes need to be looked at and HEPA filtered extraction provided if tools such as files or drills are in use.

The task of initial implementation may appear daunting as it requires studying every aspect of your manufacturing process but, if the correct procedures are in place, it will become routine.

WHAT STAYS OUT OF YOUR CLEAN ROOM

By now, the list of prohibited materials should be obvious – anything likely to shed particles. This includes aerosols, food, drinks and even mobile phones. In simple terms understanding this basic principle could also help you if you wanted to introduce a controlled environment to your existing operation, a first step down the road to full clean rooms.

Aside from anything abrasive or powders, some aerosols and chemicals which form particles should also be prevented from contaminating a clean room.

In very clean environments many everyday items, such as food or newspapers, may even have to be banned from changing areas; only filtered water should be consumed inside a clean room and only in allocated spaces.

Lastly, designated communication devices should be used and never anything that may be kept on a person as this might require the unzipping of protective overalls, introducing potential contaminants.

In short, nothing other than the approved materials must be used or taken into these protected production areas.

COMINGS AND GOINGS

Frequent and fast movement should be avoided. Doors and windows must never be left open. A two-door system, preferably with the addition of an air shower in an air lock, should be the preferred entry option. Sticky mats should be used in all outer access points to minimise dirt entering.

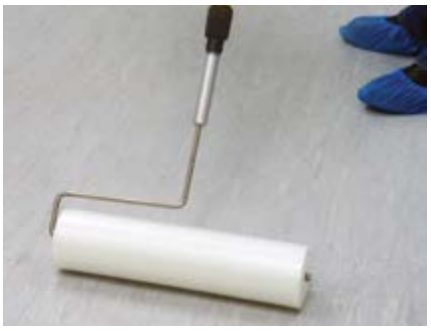
Materials brought into the clean area should always be removed from any fibrous packaging and cleaned with HEPA filtered vacuum, a tacky roller or wipe before being taken in.

Clean rooms remain as such, not only thanks to the practices we have just highlighted, but also because they are cleaned regularly. There is no ISO standard for cleaning frequency, as processes will vary greatly depending on the manufacturing operation; but the purpose is to keep the area continuously in check and every single procedure should have a well-documented supervised routine. Specialist cleaning equipment needs to be used (tacky wipes, mops, buckets, etc) and if vacuuming is needed this can be done only using HEPA filtered vacuum with tacky rollers always at the ready. Remember, only use cleaning methods that do not waft particles into the air – sweeping for example would be unacceptable.

Keeping a clean room tidy isn't just good practice but an essential feature, making the cleaning operation easier and more effective, such as collecting waste materials frequently.

The presence of static, produced through separation, friction or induction, causes more dust to be attracted to surfaces; even the

Tack rag


Tacky roller for floors

Tacky roller for walls

simple act of removing a sheet of film from a stack could produce static by separation and friction. Therefore, in clean rooms the use of anti-static measures, like earthing straps, anti-static guns and blowers may be required.

Key elements of clean room working can be used to create a cleaner controlled environment without prohibitive cost.

1. HEPA filtered air or diffusion socks
2. Minimal personnel movement
3. Clean room clothing
4. Closed doors and sticky mats at doorways
5. Tacky rag, rollers and HEPA filtered vacuums for cleaning
6. Minimal clutter and storage in the clean room area
7. Use non-fibrous shredding materials as much as possible

ADVANCED 21ST CENTURY OPERATIONS

Running high standard clean room operations isn't for the faint hearted and it is certainly far easier to introduce these practices where there are already disciplined and well-documented manufacturing processes in place. For some organisations the step into clean room operations can be relatively painless; for others it may require a complete overhaul of all their procedures. The potential initial cost can be substantial and should only be justified after careful consideration of possible returns.

What is certain is that 21st century manufacturing will continue to evolve, becoming increasingly more complex and demanding. The levels of efficiency and competence that are required in running clean rooms are the ultimate goal in advanced manufacturing, with inherent gains across the entire spectrum of all your operations.

A clean room, or at least a controlled cleanliness environment, may simply mean the difference between profit and loss. It may also give you the competitive edge against your competitors. ■

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WIDE-FORMAT IS MUCH MORE THAN JUST PRINT

Steve Bennett describes the route to adding value with efficient work-flows

It's no surprise that many print service providers (PSPs) have been eyeing the wide format business. As sales of ink ($3.0 billion) and media ($28.8 billion) grow at a compound growth rate of 2%, the $42 billion of output sales are growing at a 4% compound annual growth rate. Compared to other sectors, this is pretty attractive and, when revenue growth exceeds the growth of cost of goods sold, it's a sign of a healthy industry.

But what are the output possibilities of digital print? Viable options today include, in addition to signs and displays, packaging, direct mail, labels and printed collateral. It's important to understand how these forms of output contribute to the product buying decision. Typically, signs, direct mail and printed collateral contribute to exposure, motivation and recognition of needs towards a product. These lower-value tools contribute to 30% of the buying decision. But research has demonstrated that 70% of purchasing decisions are made at the point of purchase – making displays, labels and packaging become of much elevated value to the brand owner.

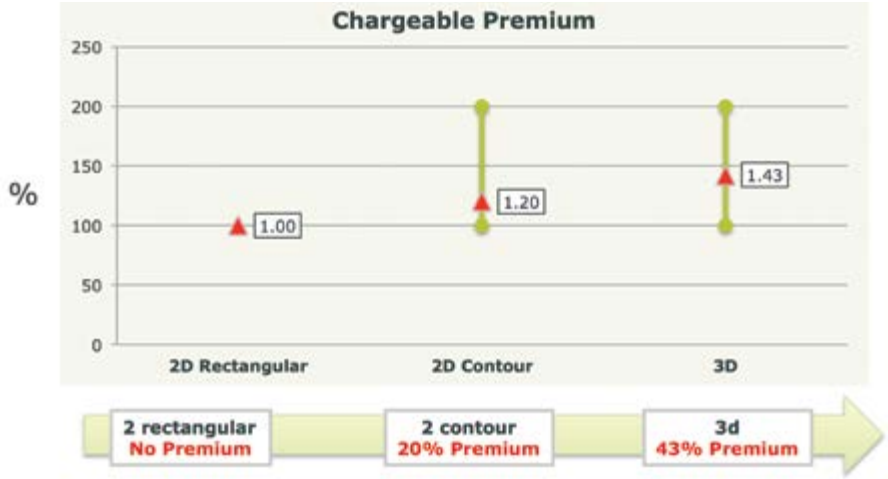
A survey conducted by the In Store Marketing Institute showed that more than half of brand owners interviewed responded that they were placing more emphasis on point-of-purchase displays. This additional emphasis was only slightly less than that placed on packaging design and Internet marketing

PRIMARY APPLICATIONS

The two primary applications for digital point-of-purchase and point-of-sale are for point-of-purchase/in-store displays and promotional packaging. According to IT Strategies, point-of-purchase/in-store displays represent 70 to 80% of demand. These 2D and 3D displays, typically in corrugated and foam board, are printed on average in medium runs of about 300 pieces/job. As we know, the demand for these is growing. Combining the interest in point-of-purchase and packaging is promotional packaging, which represents 15 to 25% of in-store demand. These 3D, corrugated displays of typically one to 500 pieces/job are common and growing in demand. All major wide-format print vendors are targeting packaging and point-of-purchase with their production presses. And, with differently coloured substrates and an interest for greater attention, white and metallic inks are on the rise, allowing true packaging applications.

IT strategies also noted that about $17 billion is spent on point-of-purchase, and are quickly trending to digital run lengths. They are purchased by mass retailers (40%), brand owners (40%), other retailers – restaurants, hotels, movie theatres and museums (10%), and agencies such as advertising, promotion, PR and marketing (10%).

According to surveys we have done at Esko, there is certainly additional value to point-of-purchase materials that exceed two-dimensional rectangular shapes. For the same effort, if we assume two-dimensional displays offer no additional premium, compared to these jobs, two-dimension contour pieces – those that offer a unique shape – can charge on average a 20% premium, while three-dimensional displays command a 43% premium. It's no surprise. These displays also require more design consideration and are more powerful at the point of purchase.



Two-dimension contour pieces can charge on average a 20% premium, while three-dimensional displays command a 43% premium

The smaller the run, the more shops can charge as an 'on demand' premium

'ON DEMAND' PREMIUM

The smaller (and presumably quicker) the run, the more shops can charge as an 'on demand' premium – from no premium for jobs of 550 pieces, to a 20% premium for jobs of 200 units in size, and a 54% premium for small jobs of around 50 pieces in size. We have also found from our own surveys that 70% of all jobs must be fulfilled within just two days of the order, from a turnaround time of about 10 days in 1997. It's amazing what a digital work-flow has done to work expectations.

The premiums that a print shop can charge are staggering based upon a more complex job. From a rectangular to a contoured shape, it's possible to triple the product value (increase net margins by three times). From a rectangle to a three-

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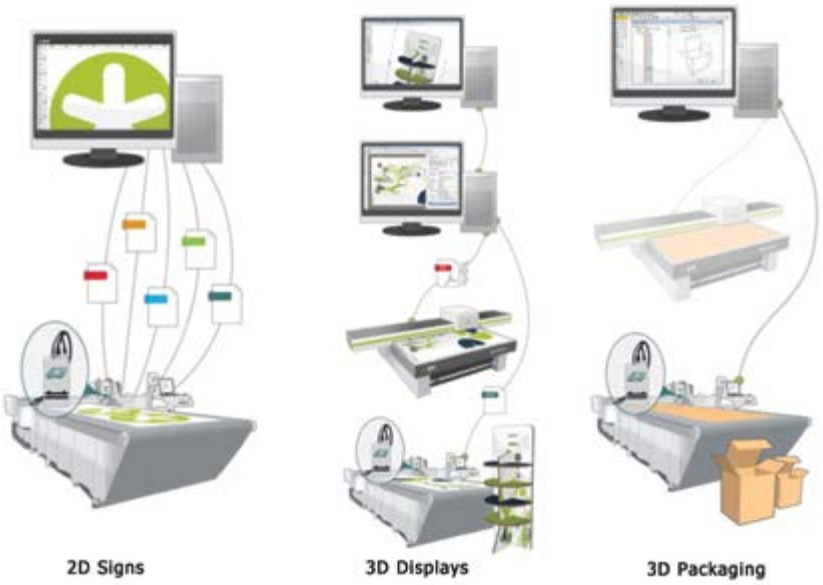


To make 2D or 3D displays or packaging, building a work-flow is essential and the steps for each application are different

With efficient utilisation all applications can be produced in one, complete split file work-flow

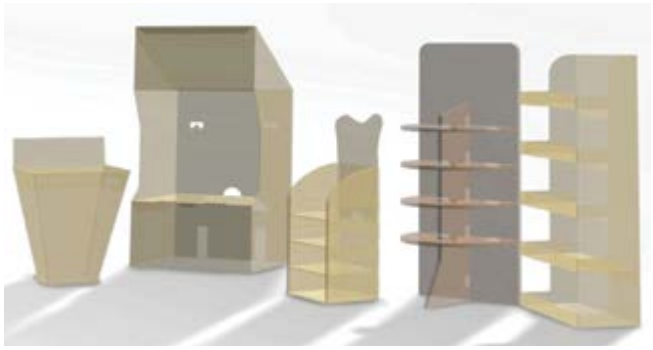
dimensional display, it's possible to increase net margins by five to eight times. If a company is able to offer creative design for these unusual shapes, they can enjoy net margins as much as thirty times that of a typical rectangular shape. Understand that creative design is far more than graphics; it includes structural design, testing for the integrity of the design, and other responsibilities.

All of these studies point to the 'sweet spot' of what to do to command high value. Focus on temporary in-store displays and promotional packaging, retail and manufacturers/brand owners, green ink and media, corrugated and foam board, two-dimensional contour and three-dimensional designs, 550 units or less; and two-day turnaround or less.

DEVELOPING THE REQUIRED SKILL SETS

What becomes of most significance is how quickly you can prepare the artwork and start printing. Prior to embarking into 2D contour or 3D packaging, a company should research what is needed to make each of these applications, and build a standard work-flow – not just for pre-press, but printing and finishing as well.

This all requires different skill sets. The first is developing the work-flows. Building each work-flow requires a few different steps. To build a 2D contoured sign, the basic steps are preparing the art-work, co-ordinating the print files with cutting instructions, sending the file to the printer and completing the job with a digital finishing tool. The work-flow for 3D displays is slightly more complicated, because it requires structural design. The same is required for 3D packaging, plus understanding specific packaging requirements. All of these workflows can be derived from the same, shared equipment. By efficiently utilising graphics and design



Building a design library and recognizing which design is best fit for a certain project is another important skill

software, pre-production software, printers and cutters, all of these applications can be produced in one, complete split file workflow.

The second skill is knowing which substrates are best for each job and, concurrently, which tools are best for each substrate and application. Needless to say, a separate article could be written just on this topic. Substrates vary from folding carton, corrugated and solid boards, to foam substrates and acrylics, woods, fibreglass and metals. Similarly, there is a wide variety of oscillating and static knives, tools for partial cutting, bevelled tools, and creasers and milling tools.

The third skill is building a design library and recognising which design might be best for a certain project. There is a wide variety of shapes and sizes, depending upon the project. Some can also be modular, allowing a company to extend the display based upon the available floor space. Esko offers an extensive 10,000 shape library which makes an excellent starting point.

CAN YOU REMEMBER?

Wide-format involves much more than just print. Companies that will maintain successful, profitable, growing businesses will focus on high value projects, which means experimenting with new substrates and building 3D design-print-cut work-flows.

The necessary tools are design and pre-press software that is able to co-ordinate digital UV-curable ink-jet printer technology and versatile digital finishing.

Those companies that are innovative enough to build these work-flows and hunt for early adopters – brand owners who are ready to take advantage of three-dimensional displays – will find the rewards are significant. ■

Steve Bennett is Vice President Digital Finishing Business at Esko

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HAZARDOUS SUBSTANCES – WHAT'S NEW IN EUROPE?

Dr Wolfgang Schäfer assesses the most important terms and the resulting consequences

The CLP Regulation – or the GHS – was developed by the United Nations and has already been implemented in European law. It includes a completely new system of classification and labelling of hazardous substances. This presents new challenges for ink manufacturers like Marabu.

In the modern world chemicals are part of our occupational and private environment. The benefit from the use of those products is accompanied by the awareness and experience that certain substances and mixtures may have dangerous properties for humans and environment. At the same time, as a part of globalisation, there is a strong expansion from international trading with chemicals. As a result the development of regulations for different areas like classification and labelling of chemicals or transportation has started. Due to the non-harmonised approach the regulations worldwide are very inconsistent.

This results in totally different classification and labelling for substances and mixtures. In the EU, for example, a substance with an acute oral toxicity of LD50 = 257 mg/kg is classified as harmful; however, in the USA, the same substance is toxic and on the opposite in India this product is non-toxic. The varying hazard assessments are problematic in themselves and hinder the international exchange of goods.

CLASSIFICATION AND LABELLING OF CHEMICALS WITH GHS

In 1992 the United Nations Conference on Environment and Development (UNCED) made a commitment to harmonise the classification and labelling of chemicals worldwide. The international community of states gave the UN the mandate to develop the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). In 2003 the first version of the GHS was published as the so-called 'purple book' which, since then, is subject to a continuous improvement process.

The following goals from GHS have been expected:

- Worldwide harmonized system for classification and labelling of chemicals
- To provide a recognised framework for those countries without existing system
- Better protection of human health and environment by providing enhanced and consistent information on chemical hazards
- Worldwide harmonised system, which helps to minimise exposure and risk during transportation of chemicals
- Improvement of occupational safety
- Facilitation of the worldwide trade in chemicals, of which hazards have been properly assessed
- To reduce the need for testing and evaluation of chemicals

STRUCTURE OF THE GHS

One of the objectives of the work on GHS has been the development of a harmonised hazard communication system through labelling and safety data sheets (SDS) based on the worldwide harmonised classification criteria for substances and mixtures.

Basically the GHS distinguishes between three different types of hazards:

- Physical Hazards
- Health Hazards
- Environmental hazards

GHS uses pictograms for the hazard communication through labelling (see pictograms). A pictogram means a graphical composition that includes a symbol plus other graphic elements, such as a border, background pattern or colour that is intended to convey specific information.

In total the GHS comprises of 16 classes for physical hazards, ten classes for health hazards and one class for environmental hazards. For each hazard class the classification criteria are specified in the GHS.

Additionally, signal words are used to indicate the relative level of severity of hazard and to alert the user to a potential hazard on the label. The signal word 'Danger' is used for more severe hazard categories, whereas less severe hazards make use of the signal word 'Warning'.

As well as the pictograms and signal words, the GHS uses hazard statements (H phrases) and precautionary statements (P phrases). The H phrases are used for describing the hazardous property more precisely, whereas the P phrases are used to indicate important risk management measures for handling of the product to minimise or prevent adverse effects.

Together with the corresponding safety data sheet, ink manufacturers like Marabu are able to advise humans, who are working with hazard chemicals, about the hazard properties and provide information about precautions, which are necessary to ensure safe handling,

storage and disposal of those products.

Referring to safety data sheets the GHS contains guidelines

- for establishing a safety data sheet
- requirements for the structure of the safety data sheet including the arrangement of the chapters and the corresponding 16 headings
- guidance for preparation the safety data sheet

REGULATION ON CLASSIFICATION, LABELLING AND PACKAGING OF SUBSTANCES AND MIXTURES (EC) NO 1272/2008

The UN GHS forms the basis for the worldwide harmonisation of regulations for the classification and labelling of hazardous substances and mixtures as well as for the harmonisation of the national and regional systems for classification and labelling. The UN GHS is a recommendation which must be implemented by the individual countries with binding force. In the EU, the GHS has been implemented and brought into force by the European Regulation (EC) No. 1272/2008 on Classification, Labelling and Packaging of substances and mixtures better known as 'CLP Regulation' and was immediately valid in all member states of the EU.

The CLP regulation complements the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (EC) No. 1907/2006, which mainly deals with substances and forces manufacturers/importers of chemicals, depending on a tonnage band, to provide a basic set of health and safety data to close knowledge gaps.

The CLP regulation incorporates most of the classification criteria and labelling rules agreed in the UN GHS, namely new classification criteria, hazard symbols (pictograms), signal words, and Hazard (H phrases) and Precautionary (P phrases) statements, while taking account of some elements which are part of the current EU legislation. Therefore, the CLP will be similar but may not be identical to the way GHS is introduced into the legal framework of countries outside the EU.

The CLP regulation is legally binding across the EU member states and requires industry to appropriately classify, label and package their substances and mixtures before placing them on the market. It will replace the current system contained in the Dangerous Substance Directive (67/548/EEC) and the Dangerous Preparations Directive (1999/45/EC) by 1 June 2015.

The CLP regulation entered into force on 20 January 2009. However, not all provisions of the CLP regulation will be obligatory immediately. In article 61, transition periods were defined which resulted in two target dates, namely 1 December 2010 and 1 June 2015 (see figure 2).

Since 1 December 2010 the following rules apply:

- Substances must be classified in accordance with both DSD and CLP
- Substances must be labelled and packaged in accordance with CLP only, but substances already classified, labelled and packaged according to DSD and placed on the market before 1 December only had to be re-labelled and re-packaged by 1 December 2012
- Mixtures must continue to be classified, labelled and packaged until 1 June 2015 in accordance with the DPD. Prior to this date mixtures could be classified, labelled and packaged according to CLP, but then the labelling and packaging provisions of DPD shall no longer apply to the mixture and labelling and packaging must respect the provisions of CLP.
- Classification of a substance according to DSD must be provided in the safety data sheet until 1 June 2015, in addition to the CLP classification. This is valid for the safety data sheet for substances as such and for safety data sheets for mixtures containing these substances.
- The classification of a mixture according to DPD must be provided in the safety data sheet until 1 June 2015.
- Until 1 June 2015, if a mixture is classified, labelled and packaged according to CLP, the CLP classification must appear on the safety data sheet along with the classification based on DPD. However, a

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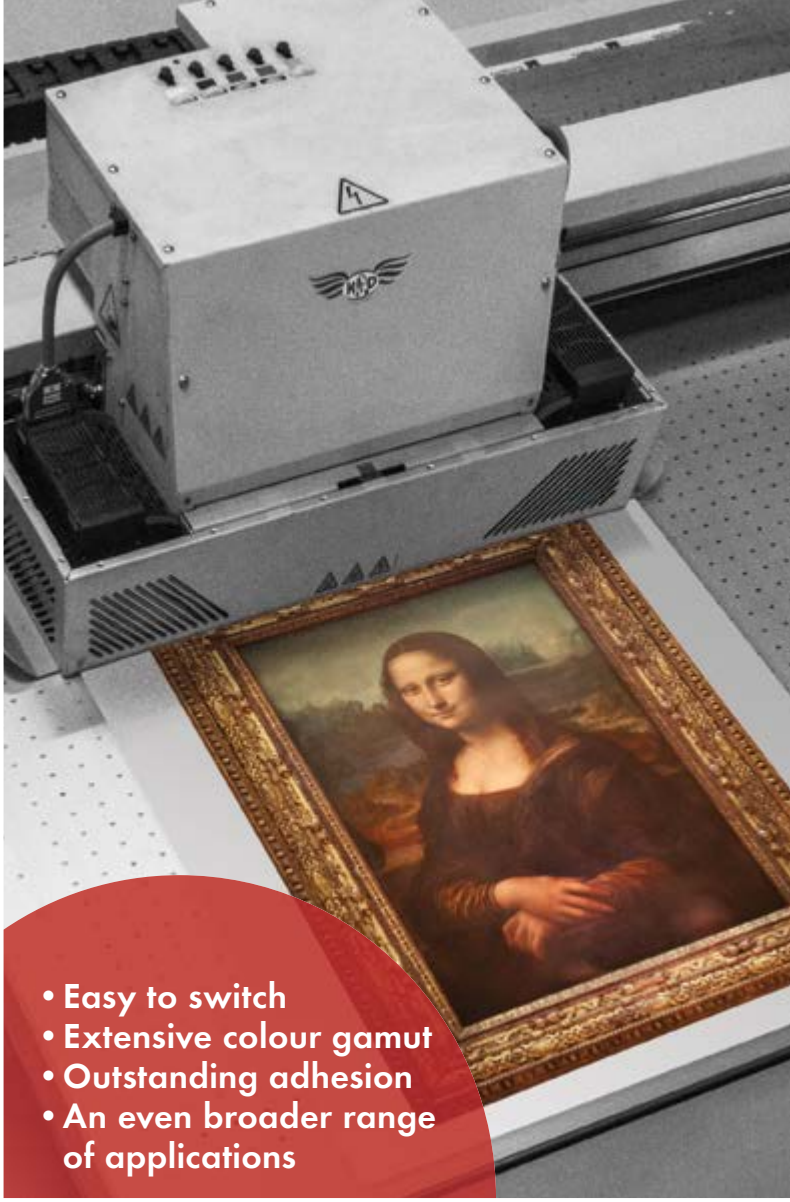

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supplier may choose to identify the CLP classification of a mixture in advance of applying CLP to it in full.

From1 June 2015 the following rules apply:

- Substances must be classified in accordance with CLP only
- Mixtures must be classified, labelled and packaged in accordance with CLP only, but mixtures already classified, labelled and packaged according to DPD and placed on the market (ie 'on the shelves') before 1 June 2015 will only have to be re-labelled and re-packaged by 1 June 2017
- Only CLP classifications of substances and mixtures must be provided in the safety data sheet

COMPARISON OF CLP WITH DSD/DPD

The Dangerous Substances Directive 67/548/EEC (DSD), the Dangerous Preparations Directive 1999/45/EC (DPD) and CLP are conceptually similar as all of them deal with the classification, hazard communication through labelling and packaging.

The most obvious differences are:

- The previous term 'dangerous' will be replaced by the term 'hazardous', which is defined as any substance or a mixture fulfilling the criteria relating to the physical hazards, health hazards or environmental hazards
- The previous orange coloured 'danger symbols' will be replaced by the 'nine pictograms'. New symbols in comparison to the old system are the GHS04 (compressed gas), the GHS07 (lower systemic health hazards) and the GHS08 (systemic health hazards)
- The number of hazard classes has increased, in particular for the physical hazards (from five to 16). This leads to a more explicit differentiation of physical properties
- CLP introduces the two UN GHS signal words 'Danger' and 'Warning' to indicate the severity of a hazard
- The previous risk phrases (R-phrases) will be replaced by the hazard statement (H-phrases), which describe the nature of the hazards of a substance or mixture, including, where appropriate, the degree of hazard
- The previous safety phrase (S phrase) will be replaced by the precautionary statement (P phrases), which is a description of the measure or measures recommended to minimise or prevent adverse effects resulting from exposure to a hazardous substance or mixture due to its use
- The term 'supplier' is not used in DSD or DPD. Under CLP it means any manufacturer, importer, downstream user or distributor placing on the market a substance, on its own or in a mixture
- Due to lower threshold values in the CLP system, the same formulation will lead to more hazardous classifications in comparison to the old system

CLASSIFICATION AND LABELLING UNDER THE CLP REGULATION

Suppliers have to notify a substance to the Classification & Labelling (C&L) inventory established at ECHA in cases where they are placing the substance on the market and they either:

- Manufacture a substance subject to registration under the REACH regulation; or
- Import a substance subject to registration under the REACH regulation; or
- Manufacture or import a substance on its own classified as hazardous, irrespective of the quantity; or
- Import a mixture which contains a substance that is classified as hazardous and is present above the relevant concentration limit, which results in the classification of the mixture as hazardous according to CLP regulation; or
- Import an article containing a substance subject to registration under article 7 of the Reach regulation

Manufacturers or Only Representatives (OR) may submit the information needed for the notification to the inventory as a part of a REACH registration dossier. If a separate notification to the C&L inventory is necessary, the EU importer, for example the ink manufacturer, would normally have to submit the notification. This Task may be delegated to companies providing this service like TÜV SÜD etc.

The substances must be notified at ECHA within one month from being placed on the market. In C&L inventory these notifications are made anonymous and will be accessible to the public.

STATUS GHS IMPLEMENTATION WORLDWIDE

The adoption of the GHS is expected to facilitate international trading by increasing consistency between the laws in different countries that currently have different hazard communication requirements. There is no set international implementation schedule for GHS. Different countries will require different time frames to update current regulation or implement new ones.

Information regarding the actual status of the national implementation of GHS for several countries is provided in figure 3.

More details about the status of the implementation of the GHS can be found under the link from the United Nations Economic Commission for Europe (UNECE): http://www.unece.org/trans/danger/publi/ghs/implementation_e.html

The information on this page is compiled country by country. Since the implementation is a dynamic process, this information will be regularly reviewed and updated.

TASK MANAGEMENT FOR THE IMPLEMENTATION OF THE CLP REGULATION

The efforts for the implementation of the requirements of the CLP regulation should not be underestimated. For ink manufacturers like Marabu, as shown previously, a simple change over from the existing classification and labelling system to CLP is not possible due to the new elements from the new regulation. The most important measures are collected in the following list:

- Training of the responsible persons in the product safety department
- Actualisation of existing software or implementation of new software able to calculate classification of mixtures according to CLP
- Evaluation of the calculated classification
- Generation of the SDS containing the classification information according to CLP in all EU languages
- Adaptation of the labelling process to the CLP requirements, installation of an interface between the classification module and the labelling software. Labelling information must be available in all EU languages
- Definition of the labels' layout
- Adaptation to the correct packaging in the shipment department
- Training of internal workers and sales forces
- Generation of information documents for customers
- Adaptation of operation instructions
- Adaptation of the labelling of in-house tanks, containers and cans in the production site as well as in the laboratory
- Adaptation of the working directory and catalogue of hazardous materials
- Check and adaptation of the risk assessment documents as well as the explosion protection documents

Marabu already delivers products to China classified and labelled in accordance with the China GHS. For the rest of the world, Marabu is well prepared for the substantial impact of the requirements in 2015 and will start to use CLP classification and labelling in the first quarter of 2015 to match the EU and others deadline of 1 June 2015. Marabu has been certified to ISO 9001 since 1995 and to ISO 14001 since 2003. ■

Dr Wolfgang Schaefer is Director Product Development & Customization Printing Inks at Marabu

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PRINTING CHEMICALS

A VERY SPECIAL LIMITED EDITION

Collaboration of companies adds to the creation of the 'Soul Bird'

The Print House Group, based in Burgess Hill in the South East of England, is accustomed to taking on challenges in screen process printing. When Peter Kiddell, a Director of the FESPA UK association contacted Graeme Richardson-Locke to ask if the printer would like to support the Screen Printing Now Conference by printing a limited edition art print for its delegates, he agreed willingly.

As a long-standing member of the FESPA UK Association it offered the opportunity for The Print House Group to raise its profile. It also gave the company the occasion to work with the sponsors of this exciting event and presented a great chance to showcase the special qualities of screen-printing.

It was during the early stages of discussion that Richardson-Locke introduced the idea that Sanna Annukka would be a great designer to collaborate with on the project. Her appreciation of screen-printing was really useful as the brief was considered and there was no doubt that her distinctive style would appeal. In addition, her ability to get the best from the process was a certainty.

SCREEN-PRINTING BENEFITS

The final design would need to focus on some of the key benefits of screen-printing. It had to include a large area of opaque white ink to be printed on bright gold Mirri Board. It would then be printed with a succession of Pantone spot colours in close register including an area where one transparent colour would print over white and gold, appearing opaque on white

Feeding the ATMA semi-automatic press

Finished artwork for Sanna Annukka's Soul Bird limited edition

Marabu's lab carried out various ink tests

A high build UV varnish provided the finishing touch

but would change the metallic gold to an alternative metallic shade. As the whole idea was to create a print that would show off screen-print's talents, it included the requirement to include 2pt text and finish with a high build structured UV clear varnish.

The artwork came back in the form of the 'Soul Bird' image and was welcomed by all those involved.

Of course the image was just one, albeit very important, aspect of the project. The first of the sponsors was PaperlinX who provided the 370 gsm gold Mirri Board, of which samples went to Marabu UK who were supplying all the inks. The company was tasked with establishing the best ink technologies to use throughout after running a number of adhesion and shade tests. The solution was to match the colours using a solvent-based opaque white with hardener for the base coat. This was to be overprinted in UV-curable spot colours and finished with the high build UV varnish.

While Marabu was managing the ink supply, G Bopp & Co ensured the printer had the best screens to work with. This company knew the importance of using the correct aluminium profiles to ensure the frames wouldn't distort under the high tensions that Richardson-Locke had requested. Hurtz aluminium frames were used with a mix of polyester plain weave monofilament and stainless steel meshes. These were tensioned to 20 Newton/cm giving the confidence that the tight registration accuracy would be maintained.

LOW STENCIL PROFILE WITH OPTIMISED RZ

The screens were delivered to MacDermid Autotype whose sponsorship included supplying the highest quality stencils. David Parker, Screen Marketing Manager, provided world-class facilities by opening up the company's training school to make the stencils. It was decided to use Capillex CP as a capillary film to provide the benefits of a low stencil profile with optimised Rz to give the best edge definition. The film was especially useful when printing the fine text trough a 400.25 stainless steel mesh. The 24.140 screen used to print the high build UV varnish was set up using an 80 micron capillary film mounted to the screen using MacDermid Autotype laminating fluid that prevents excessive penetration of the film during the mounting process.

Continued over

Sanna Annukka's distinctive style made her the ideal designer for the project

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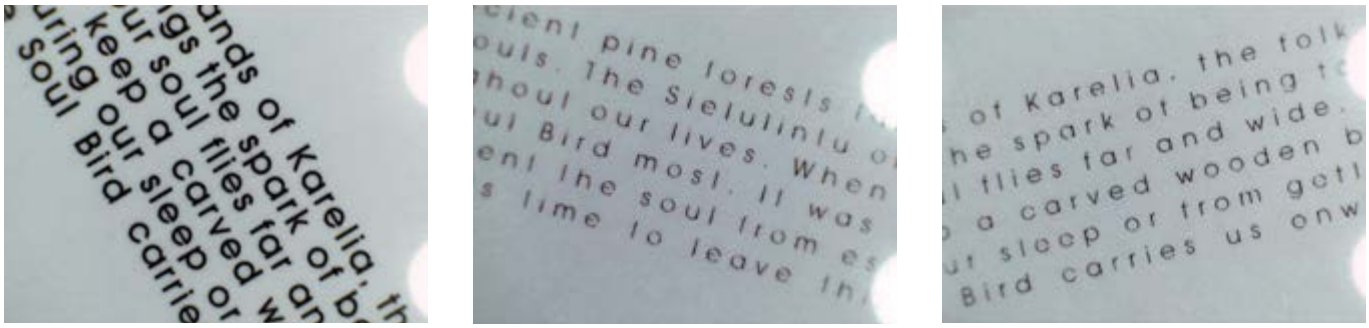

The image to the left shows final film for 3pt text with Avant Garde medium. The two to the right illustrate the unsuccessful attempts to run 2pt Avant Garde light on the image setter at different angles, all leading to incomplete formation of the type

As with any technically challenging job, The Print House Group production team felt that a wet proof was essential to check that any registration issues would be assessed before committing to the full print run. During this proofing run the decision was made to dry the white print on drying racks as even the lowest temperature hot air drying would distort the stock by up to 1mm.

Richardson-Locke stated that this wet proofing, while time consuming, led to the best outcome when printing the 550 run, and prevented any unforeseen problems.

The production run began with printing the white base coat on the ATMA semi-automatic press. The most difficult elements of this were avoiding dust contamination and keeping the ink film smooth across the large area of coverage.

Then followed the sequence of UV spot colour inks, some being more straightforward than others to print. The second was Pantone red 186C and third Pantone blue 308C, both unchallenging once checked for colour accuracy, adhesion and dimensional stability. The Purple Pantone 241C was the transparent colour which required special attention to ensure no squeegee blade lines were visible in the printed film. The fifth colour in the sequence was the Dark Blue Pantone 2695C which, when printed, really demonstrated how satisfying the final limited edition would be.

Waste was trimmed off so that the finished prints were ready for framing

During proofing it was decided to dry the white print on racks

COMPLEX YET FANTASTIC

It only remained to run the 3pt text through the 400.25 stainless steel mesh. This was set up using a thixotropic thickened UV cured ink. The print suffered from bleeding around the type and, despite our team's efforts, it was clear that the ink was the cause of the problem. The solution was surprising – to swap out UV for a gel retarded solvent-based system. Within ten minutes it was clear that a winner had been found. This supported the team's widely held view that screen-printing is a complex process that is fantastic in experienced hands.

By this point Sanna's image was almost complete and high build UV varnish was the finishing touch. The UV gloss varnish from Marabu UK was printed using a 24.140 polyester screen with the 80 micron capillary film stencil. This led to a very thick deposit that bought a new texture to the edition.

Once the printing was complete and, apart from having a very happy print team, the decision was made on the best trimming method. The conclusion was made to die-cut the job to ensure the heavy varnish wasn't damaged in the guillotine stack.

All that remained to do now was a 100% inspection to make sure every recipient would get an fabulous example of screen-printing to take to the framer and hang in their home or office.

The Soul Bird framed and ready for display

ENTHUSIASTIC RECEPTION

Richardson-Locke had filmed the production process to create a show reel for the company and to provide FESPA UK with footage to complement the filming of all the other elements of the project. The Print House Group has posted its film on Vimeo and YouTube under the title Sanna Annukka Soul Bird limited edition. He was also very pleased to present the production story to the delegates at the Screen Printing Now conference and was greeted with an enthusiastic response when the limited edition was distributed.

The Print House Group utilises a wide range of printing processes to achieve the appropriate balance between budget and quality. But it remains committed to screen-printing for special finishes and where customers need high levels of durability and light-fastness as the company is thus far without any serious competitive threat.

From the perspective of the FESPA UK association Peter Kiddell states: "The project demonstrated the capability of its membership in working together to achieve a unique limited edition screen-print. Screen-printing has a great deal to offer the market in terms of fine art and its increasing adoption for leading edge technical applications. Screen-printing will continue its 4,000 year old history into an exciting future." ■

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FROM THEORY TO PRACTICE: HOW WORK-FLOW MAKES A DIFFERENCE

Ben McCabe looks at examples of businesses that have benefited from automation

Impressive as the actual printed output can be, the processes required to drive the job to the printer are often at the bottom of the list of considerations when investing in equipment. These include ensuring costs are met and stock is supplied, as well as providing the in-house team with accurate job tracking so that the client's turnaround demands are achieved. This is where having an effective work-flow solution can make all the difference.

Efficiency was the main ambition of Strasbourg-based DS Impression when it made the decision to install Caldera's Flow+ software. Having changed its focus to incorporate digital ink-jet wide-format technology in 2008 and seen sales grow, it needed to adapt many of its structures in order to move from a manual sales process to an organised, automated system.

JOB TRACKING

A main consideration was the information that the sales team needed to have on-hand to keep their clients informed of job progress, including whether a job was in the preparation, printing or finishing stages, as well as an accurate delivery date. The live job tracking functionality of Flow+ allows this, meaning that the relevant personnel can access production data in real-time, as and when required. The ability to automate invoices has also saved the company vast amounts of time previously taken by needing to duplicate of data for the purposes of accounting.

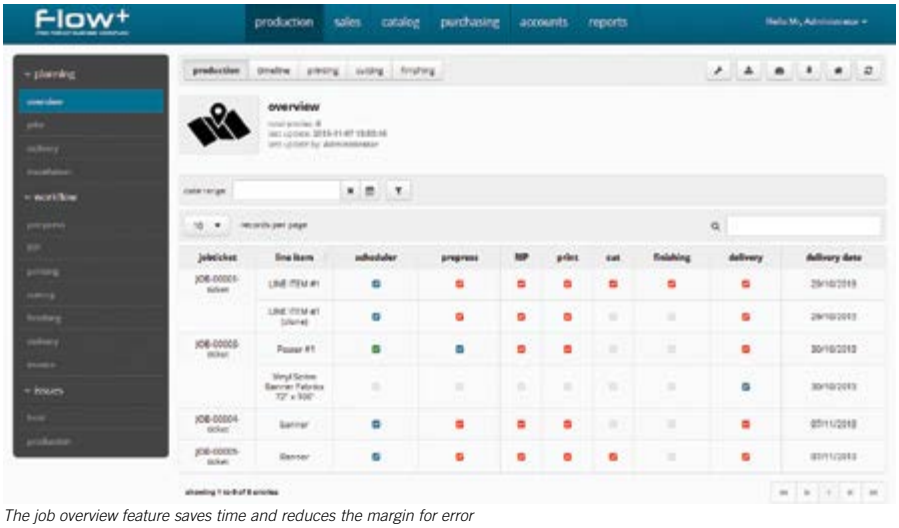
Internally, the ability to track jobs has reaped productivity benefits, meaning that staff no longer need to double-check whether the job being run is the correct one. Flow+ matches artwork with each task, resulting in a more secure process with less space for user error.

"The possibility of tracking a job efficiently through the whole process, from quote to delivery, is something that the customer is very happy with," explains Erwan Bouric, Flow+ technical expert at Caldera. "It is critical for a print shop to know exactly where a job is at any given time – and Flow+ offers that possibility."

With a large stable of devices – four HP Scitex Turbojets, one Uvistar model, a Fujifilm Acuity, an HP Latex engine and an Esko cutting table – DS Impression needed a tool that worked seamlessly across devices. Flow+ software allows jobs to be allocated to printers without having to use the RIP interface, while jobs can be switched between engines to ensure an equal workload. For DS Impression, this meant that operators could be trained on a single piece of software that was relevant for

Caldera's Flow+ provides full browser-based access across all platforms

The sales dashboard incorporates useful statistics



The job overview feature saves time and reduces the margin for error

all devices used by the company.

With 80 percent of the company's output in posters, and the rest mostly consisting of bus wrappings, banners and hangings, creating a flexible wide-format work-flow that spanned across machines and processes was paramount to drive the company's growth forward. Implementing a new work-flow solution has reaped rewards; DS Impression's turnover has risen by 33 percent and now hits €5.2 million per annum.

ROCKET TAKES OFF

When Rocket Graphics became the first UK print house to install Flow+ 2.0, it needed a system that would add flexibility to the wide-format house's production line. Rocket was already a Caldera customer, having implemented its colour management software to ensure print uniformity across its output, which includes products for the exhibition, events and retail sectors.

"When we visited Caldera, we were impressed, not only with the Flow+ 2.0 system but also the back-up support that they provide," states Antony Rider, commercial director at Rocket Graphics. "We considered several work-flow options, but chose Flow+ as we felt it was the most user-friendly."

For this Watford, UK, based company, the new work-flow system had to provide a more effective means to manage its workload. For this, the work-flow overview in Flow+ is perfect, allowing the company to track a job from concept to output from a single dashboard.

Rocket also makes extensive use of the quotation functionality, which allows a user to register and accurately cost a job, while reducing errors between sales and margins. Job visualisation also measures up costs of production compared to selling prices, giving the operator a clear, measurable analysis of profit per job.

According to Caldera's Bouric, this feature is a major selling point for the product: "The facet of Flow+ that is probably the most used is the quotation tool. Every job starts with a quote and, thanks to the easy and digital printing-orientated product configuration process, the customer is provided with a considerable gain of time when costing.

MORE ORDERS, MORE JOBS

"Production is definitely increased as the easy quotation process allows you to take on more orders, hence more jobs to produce," Bouric continues. "It is also much easier to manage your stock and anticipate the shortage of a given material. It helps your company when rationalising the material supply."

Cost saving is an important facet of any digital printing work-flow, and this is what Rocket Graphics sought with Flow+. As well as real-time stock control, the company can create purchase orders for new materials directly from the software. By directly interacting with a Caldera RIP to share information about a job, accurate information can be accessed from the UI (user interface) without the need to extract data from multiple sources.

This means that Rocket can focus on its central ambition to expand – both in-house and with regards to profits. "This was a carefully considered investment," explains Rider. "The decision to invest was made in-line with our on-going programme to grow the business, which has included investments in personnel but also with the installation of new equipment."

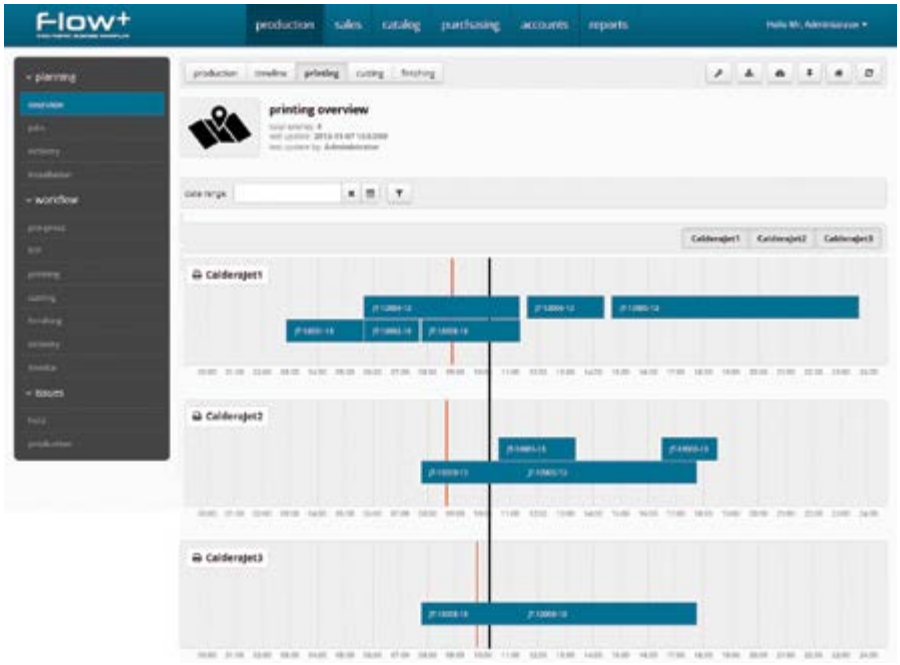
By saving money and speeding up job processing, Rocket has seen 25% growth in 2013 and is well on the way to its stated aim of surpassing £5 million in turnover.

"Without a proper management system, it is pretty easy to find yourself drowning under a litany of jobs that piles up and consumes most of your time," comments Bouric. "Our customers are looking for a tool that helps them manage their daily workload, in a clear and efficient manner."

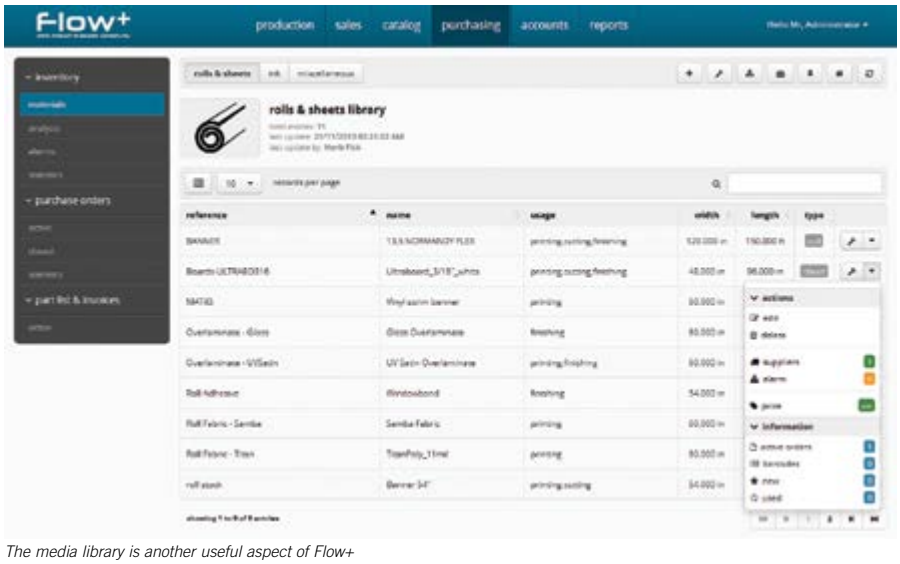
The experience of Rocket Graphics and DS Impression is clear – for ambitious business owners looking for aggressive expansion, there is more to investment than machinery. With the right work-flow software, companies can become more competitive, automate time-consuming processes and – crucially – can bring down production times while still making a saving. ■

Originally commissioned for Caldera's in-house magazine, Gamut.

Ben McCabe is a technical writer



Print production can be monitored easily across multiple devices



The media library is another useful aspect of Flow+

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New glass primer simplifies UV-curable ink adhesion

Salon Iris has introduced an adhesion promoter for UV-curable ink-jet printing onto glass that is colourless and low odour, efficient in use and dries at room temperature. Iris Glass Primer is a one-component system, the Iris glass primer is easy to use and ready to apply.

After thoroughly testing all processes and primers available on the market to improve the adhesion of UV-curable digital inks on glass, the experts at Salon Iris determined that they are not sufficiently effective, too complex to apply, too hazardous or, even, toxic or simply too expensive.

Following in-depth research and discussions with glass-coating specialists and chemists Salon Iris decided to pursue an innovative approach to have a completely new glass primer solution developed which is specifically well suited to be printed with UV-curable digital inks.

Founded in 1996 in Vienna, Austria, Salon Iris is a leading photographic and fine art digital print provider. When the studio extended its activities in 2012 with wallpaper and flat glass printing capabilities, owner Stefan Fiedler and his team were facing new challenges related to adhesion.

Printing glass treated with the Iris Glass Primer

The opinion was that glass has a number of very specific properties when it comes to printing it at highest photographic quality with UV-curable inks. As well as achieving the best possible print quality, the inks' perfect adhesion to the glass surface becomes the most critical issue.

Application of the Iris Glass Primer is said to be straightforward and involves thorough cleaning of the non-tin side of the glass before the even and sparing application of the primer with a lint free tissue. After a few minutes of evaporation the glass is polished again with a lint free tissue, or with a buffing machine on larger areas. Primed glass can be stored in the dark for 24 hours prior to printing. ■

Natgraph produces its largest automatic sheet stacker

Natgraph, Europe's largest manufacturer of conveyorised dryers utilising forced air, infra-red energy and ultra-violet radiation, has come up with the engineering solution to complete an extraordinary production line developed by Republic of Ireland extrusion specialists, Xtrupac.

The extrusion line produces polyethylene terephthalate (PET) sheets from recycled water bottles. The end product – a flat, recycled substrate – is then used in the world of promotional printing.

Xtrupak travelled Europe in search of a large-format stacker solution to complete the line, eventually deciding on Natgraph, largely because of its in-house manufacturing facility. The purpose-designed and built Natgraph stacker, capable of handling sheet thicknesses ranging from 0.5mm to 3mm, also has a continuous operation mode.

The final product has been delivered and installed and is beginning in production. The challenge of stacking sheets up to 3m long and 1.5m wide has been met with a smoothly operating and versatile stacker. The unit incorporates all of the standard features, PLC control, dual air blowers, four side joggers etc, but also has extra safety features including curtain light guards and strain gauge monitoring of loading.

An additional requirement was that the stacker could be quickly withdrawn from the production line for access to other equipment for maintenance purposes, so it was designed and built on a base frame fitted with rollers.

This, the largest automatic sheet stacker that Natgraph has yet manufactured, demonstrates once again the versatility and design capabilities of the Nottingham based specialist. ■

Natgraph's largest automatic sheet stacker

The new SubliNova G7 ink from InkTec

InkTec introduces its SubliNova G7 premium sublimation inks

Introduced by InkTec is a new premium dye sublimation ink, SubliNova G7, which joins the existing brand line carrying the same name. SubliNova G7 inks are specialised dye sublimation inks for DX7 head printers and high-speed mode printing. This ink boasts outstanding printability and is suitable for use with various transfer papers. Additionally, this ink can be used with DX5 head printers.

During the year InkTec has launched three new sublimation ink series, these being SubliNova G7, SubliNova HI-LITE and SubliNova Sure, growing the company into a specialised sublimation ink manufacturer.

SubliNova Hi-Lite inks are stated to be extremely efficient, with low production costs for high colour concentration and vivid colour, making them suitable for use with uncoated and coated light-weight transfer paper. The SubliNova HI-LITE ink is formulated to suit printers equipped with Epson DX5 and DX7 print heads.

The SubliNova Sure inks are specially formulated for TFP (thin film piezo) head printers, assuring chemical compatibility with a stated easy switch over from the Epson ink. The colour gamut of the SubliNova Sure Ink claims to be wider than that of Epson's sublimation ink.

"These new sublimation inks have been tested by InkTec R&D and customers from South Korea, China, and Brazil for several months to meet the high quality," says Rick Kim, Marketing Manager at InkTec. "They will confirm to us the increasing growth of InkTec as a leading brand in the international textile market." ■

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Sun Chemical enhances Streamline range with new low odour ink

New from Sun Chemical is a new low odour ink which has been added to its Streamline aftermarket ink-jet range. Streamline ESL HPQ represents the first products to benefit from Sun Chemical's innovative new low odour chemistry.

The inks have been developed for the Roland SolJet Pro 2, Pro 3 and VersaCamm printers. They are also compatible with printers from Mutoh, Agfa and Uniform along with other eco-solvent ink-jet printers using Epson DX 4 through to DX 7 piezo print-heads. Extensive tests throughout a six-month period with customers in the UK, Russia and Europe, has demonstrated the long term performance of these inks in a broad range of machine installations.

James Gould, Product Manager for Streamline, Sun Chemical comments: "The industry is seeing a boom in entrepreneurial start-up companies using wide-format printers and these companies tend to occupy smaller offices. As a result, many of our customers work in closer proximity to the printer than is often the case in larger print shops. This is making low odour inks a 'must have' for many of our customers.

"Our Streamline range offers an alternative to OEM inks," Gould adds. "The new low odour range offers the high print quality and performance of Streamline ESL HPQ, with a low odour formulation. This provides the best of both worlds for all of our customers."

Streamline ESL HPQ in use in a Roland printer

Customers who already use Streamline ESL HPQ inks can switch to the new low odour versions without flushing out their machines as the inks are fully inter-compatible.

Streamline ESL HPQ LO is available in CMYK, light cyan and light magenta along with a flush solution. The inks will be available throughout Europe in 440ml cartridges and one litre bottles for use with bulk ink supply systems.

The Streamline inks are manufactured at Sun Chemical's site in Midsomer Norton, which is dedicated to the manufacturing of its ink-jet range and is one of the largest research and development, analytical and technical centres for ink-jet worldwide. ■

Eurolaser's Watchdog improves customer service

Making its debut at Eurolaser's in-house fair during September's 20-year jubilee international in-house fair, was the new analysis tool Watchdog. The company now states that the first systems equipped with these new functions are being delivered to customers.

Watchdog will have a large positive impact on service quality for Eurolaser's systems. By considering this analysis tool, customers will always be able to view all the most important functions of their systems. Via remote diagnostics, service calls can be better planned and faults can be rectified much faster. This is a large step towards making Eurolaser's systems even more effective. Although the company states that this process is not completely new, it claims it is a one of a kind for this market segment. For the user, Watchdog is employed as a technical complement of the laser systems and minimises downtime. ■

Caldera creates freedom without compromise in V10

The tenth edition of Caldera's feature packed printer control software will liberate today's print houses through productivity, connectivity and modernity, the French developer states. Leading on the freedom to develop and create dynamic new applications, V10 of the popular suite doubles previous average RIP speeds to provide printers of all sizes and types with the independence to print what they want without having to sacrifice speed or complexity.

V10 incorporates smart algorithmic processing, APPE 3.3 (Adobe PDF Print Engine) and new remote management capabilities within a svelte yet fully-featured new interface. Designed for ergonomic efficiency, it allows users to streamline their screens to focus only on live tasks, while icons and markers have been standardised throughout in a modern style. Caldera's use of HTML5 provides cross-platform, cross-OS support for remote management via a new module, VisualRemote, which recognise the nature of today's print room by providing different levels of off-site access to operators.

"In the latest version of Caldera, we have considered at length the way companies deploy their RIP, both now and also over the course of the product's lifetime," explains Caldera's Chief Technical Officer, Frédéric Soulier. "V10 marries new usability concepts with major advances in raw speed making it, we believe, the RIP of choice for this exciting era of applications' development within and outside the graphic arts." ■

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EFI acquires Polymeric Imaging's thermoforming ink technology

Key intellectual property assets for digital ink-jet printing of thermoformed products have been acquired by EFI from Polymeric Imaging, a specialist provider of UV-curable and UV-LED inks for industrial and graphic arts applications.

Based in North Kansas City, Polymeric Imaging has extensive R&D experience in the development of ink-jet inks that address important curing, adhesion, density and durability issues encountered by industrial and graphic arts print professionals when printing on challenging substrates. EFI will use the acquired technology to enhance its customers' ink-jet production capabilities for thermoforming and other high-elongation applications requiring exceptional ink durability and flexibility.

Financial terms of the acquisition were not disclosed, but the deal is not expected to be material to EFI's Q4 or full-year 2014 financial results.

"This acquisition continues EFI's momentum in ink-jet graphics printing following a highly successful SGIA Expo highlighting our leading portfolio of UV and LED ink-jet technologies," says Stephen Emery, Vice President of EFI's ink business. "The technology we are acquiring will allow EFI to continue expanding our efficient, high-quality ink-jet platforms into new markets."

"As a world leader in UV ink-jet manufacturing, EFI has long set a standard for excellence and innovation in digital printing," states Polymeric Imaging founder and owner Don Sloan. "This deal provides significantly greater scale and reach for the development and commercialisation of some of the key R&D breakthroughs we have made with ink-jet ink."

In addition to buying technology from Polymeric Imaging, EFI has hired key Polymeric Imaging employees responsible for technical and market development of digital ink and coating products. These employees are currently assisting EFI's ink operations in the development and testing of new formulations for use in EFI ink-jet products. ■

Roland DG's new RT-640 offers numerous features for digital textile production

Roland DG's Texart RT-640 targets textile printing

Targeting the textile sector, Roland DG has announced its Texart brand for digital production, with the release of the 1.62m (64 inch) RT-640 as the first product in the line-up. This claims to be a state-of-the-art dye sublimation transfer printer which features innovative print control technology, powerful RIP software and a choice of four-colour (CMYK) or eight-colour (CMYKLcLmOrVi) original dye sublimation ink.

"One of the RT-640's major innovations is our new ink," said Yuko Maeda, General Manager of the Textile Market Development Department at Roland DG. "The newly developed Texart ink delivers bold and vibrant colours, and deep and rich blacks. The orange and violet inks increase the colour gamut and allow for exceptional reds, oranges, deep blues and purples, while light cyan and light magenta provide subtle gradation and a remarkably fine level of detail."

The RT-640 offers numerous features for digital textile production and has a practical print speed 22 square m/hour. The optimised fan keeps transfer paper flat during printing and a newly designed feed adjuster at the front and back provides even tensioning and prevents skewing. Users have a choice between Roland VersaWorks and ErgoSoft's Roland Edition RIP software, developed especially for the RT-640.

Masahiro Tomioka, Chairman and President of Roland DG Corp comments: "We see huge potential in digital textile printing, and established our Textile Market Development Department just a year ago with a firm commitment to make a full-scale entry into the market. I believe the digital textile printing business will become one of our core businesses and the next growth driver for the company."

Maeda concludes: "The RT-640 is based on our core ink-jet printing technology cultivated through years of experience in the sign and display market, combined with our extensive market and user research in the textile printing market. I believe the RT-640 offers users a comprehensive, optimal combination of superb quality, vivid colouring and highly stable performance needed for professional textile printing." ■

Sawgrass Technologies and STS sign new sublimation licence agreement

Sawgrass Technologies and STS Refill Technology of Boca Raton, Florida have entered into a long-term licence agreement under which STS, as an authorised Sawgrass licensee, will sell digital inks for sublimation imaging.

"STS is the latest licensee to recognise the depth of our patent portfolio," states Nathan Hale, CEO of Sawgrass Technologies. "We have new patents being issued all the time and a portfolio that continues to be relevant well into the future. STS is one of the younger companies in our industry, and it is nice to see new innovation continuing in what we believe is still a very early growth phase of an explosive market for digital printing."

STS joins an exclusive group of companies who have signed similar licence agreements with Sawgrass. These include BASF, Huntsman (formerly Ciba Specialty Chemical), InkTec, J-Teck3 (now part of the Kiian Group), Kiian Group, Kiwa Chemical, Mimaki Engineering Company, Nazdar and Sensient Technologies.

Sawgrass owns a portfolio of more than 160 patents issued globally and continues to expand with substantial investment in cutting-edge research on digital printing solutions. STS has a global distribution network and has signed a licence agreement that allows the company to sell its own manufactured dye sublimation ink around the world for use with printers having a carriage width of greater than 1.06m (42 inches).

"STS has collaborated with Sawgrass on various projects because we share a common belief in producing high-quality digital products," comments STS Founder Shahar Turgeman. "We value our relationship with Sawgrass and look forward to selling our licensed products globally." ■

ColorBooster 250 increases demand for Hollanders' printing systems

Following the introduction of the ColorBooster 250 fully modular digital textile printer into Europe earlier this, Hollanders Printing Systems has reported an unprecedented number of orders for the new machine. As a result, the company has extended its manufacturing capabilities to keep up with demand which is set to increase during 2015 and beyond.

The ColorBooster 250 is a 2.5m wide-format system that is designed to fit the market requirement for a robust, sensibly priced and versatile digital textile printer. Although its concept is new, the modular machine is based on the established reliable technology developed by the Eindhoven-based manufacturer whose early models have long proved their durability by still being in daily use even though they are now more than ten years old.

"Market trends showed us that there is demand both from first-time users and longer term textile print businesses that need a rugged 2.5m wide-format printer that has the characteristics of a high-end system but is priced sensibly," states Jacco Aartsen Tuijn, CEO of Hollanders Printing Systems. "This makes the ColorBooster 250 ideal for anyone wanting to produce high quality, durable output onto polyesters and mixes. In addition, the modularity of the machine's design and construction means that we can adapt it for specific production requirements, and we even offer the ColorBooster 250 Carpet Edition for customers wanting to print direct to flooring materials."

"The timing is right for the ColorBooster 250 as general awareness of the potential for digital textile printing is really beginning to impact on the sign-making and display segments," continues Aartsen Tuijn. "Typical customers are those who know that they want to produce greener applications and work with light-weight materials, but want to invest at a realistic pricing level. At Hollanders we have always helped businesses transfer successfully to textile production, and this new 2.5m machine now opens the doors to companies that want a solid and reliable print engine that is designed to grow with them as their needs increase."

With the growth in popularity for its newer wide-format digital textile printers and the benefits now incorporated from using the latest print-heads and engineering, Hollanders Printing Systems is now ceasing to supply standard service contracts on its original ColorBooster 230 machines. Instead it will be offering its existing customers ad hoc maintenance options as well as emphasising an attractive upgrade path to either the 2.5m ColorBooster 250 or the 3.2m ColorBooster XL platform.

Introduced in 2004, the ColorBooster 230 was the first commercial wide-format textile printer to be produced by Hollanders and its longevity and reliability have both proved to be powerful features of the machine. With several units that are more ten years old still in daily use, their ergonomic and rugged design and construction have made them powerful work-horses. As a result, they have long exceeded

High levels of interest are being shown in the Hollanders ColorBooster 250

their expected life-cycles although it is anticipated that many will continue to be employed on a regular basis for many years to come.

As well as the 2.5m upgrade option available to existing users of the original 2.3m printer, there are the ColorBooster 250 Carpet Edition and the 3.2m ColorBooster XL printer, both of which extend the production opportunities available. Hollanders also offers the ColorBooster DS-320s, a double-sided system that includes two print engines and an inline fixation unit to simplify the complete production cycle on both sides of the material simultaneously.

Users wanting to retain their existing ColorBooster 230 printers can discuss their future flexible maintenance options with Hollanders Printing Systems. The company, which also supplies the ColorWash and ColorFix finishing systems, will also assist customers making the transition to a newer printer model to ensure seamless changeover. ■

Thieme targets industrial market with new digital systems

Following its successful trade show participation at InPrint, FESPA Digital and LOPEC, Thieme has drawn positive conclusions about the interest in its solutions, primarily in its new industrial digital printing system. As well as the Thieme 3020D and the LAB Digital laboratory and development platform, the company believes its overall approach to the topic of digital printing now essentially differs from its competitors, offering strong opportunities to innovators. The industrial machine can be operated with various powerful ink systems to fulfil the task required, and customers can purchase the matching inks directly from independent ink manufacturers. Thieme accompanies the customer in the selection and approval and enables access to ink systems which have had prior approval.

The system solution developed by Thieme for digitally printed membrane keyboards which are post-processed using the screen-printing method, has been well received. Development partners in the demanding and co-ordinated process incorporating machine concept, membrane and ink for the digital printing of membrane keyboards include the ink manufacturer Mankiewicz and the foil specialist Folex.

Thieme states that most interested parties are seeking an expandable entry into digital printing technology with all conceivable degrees of freedom. Consequently, the Thieme engineers have developed an additional series within a very short space of time, this being the Thieme 500D, a sustainable and robust digital printing machine. The height-adjustable vacuum printing table allows for the printing of rigid and flexible materials from the most diverse industrial sectors up to 50mm in height. Some typical examples of usage for the Thieme 500D include the printing of decorative industrial products made from diverse materials such as input systems and component printing.

The Thieme 500D offers the technical screen-printer a reliable entry into industrial digital printing. Knowledge gained about this can later be reliably transferred to all Thieme digital printing series machines, such as the THIEME 3000D.

The Thieme 500D now provides the market with a powerful industrial printing machine with a format of 400 x 600mm at a very attractive price. ■

Thieme's digital technology brings strong opportunities to innovators

MACtac transforms MRI machine at children's hospital

MACtac Distributor Products donated IMAGin RoughRAP high-performance vinyl, designed for easy application on to rough, textured surfaces, to transform a MRI machine in Sant Joan de Déu Children's Hospital in Barcelona, Spain. The renovation was completed by applying space-themed MACtac self-adhesive films, printed by the Spanish company, Demibold, with HP latex ink technology to the entire outside of the medical device.

The renovation was initiated by HP in June 2014 as part of a project aimed at improving the comfort of the young patients visiting the children's hospital. The update to the MRI facilities of the hospital involved completely covering the large scanner that most children see as frightening. As a result, the room is now re-named the 'Spatial Zone', a place where children can make believe they are an astronaut instead of a patient. ■

MACtac transformed a daunting MRI machine into a space-themed 'Spatial Zone'

Gallus's innovation days score a hit with label printers world-wide

More than 700 visitors came from all over the world to attend the Gallus Innovation Days 2014 which was held for the first time at the Gallus Ferd Rüesch AG headquarters in St. Gallen, Switzerland, during September. The main focus of the three-day event was the world premiere of a new generation digital printing press for labels. Other innovations this year included additions to the company's machinery and service portfolio, and its printing accessories and Gallus Screeny screen-printing programmes.

The new Gallus DCS 340 digital inline label printing system is a digital converting system that was unveiled under the 'no more compromise' banner to a global audience. With its native resolution of 1200dpi, print speed of 50 m/minute and maximum register accuracy, this new digital press generation from Gallus claims to set hitherto unknown label printing standards in terms of productivity, flexibility and quality. This digital press is the result of a co-project involving Heidelberger Druckmaschinen AG and its expert partner in ink-jet technology, Fujifilm, in response to the ever greater demand for short runs and customised or versioned labels. These trends have inspired a growing willingness to invest in digital print technology that enables Gallus to tap into new growth potential in this particular segment.

The demonstrations of a Gallus DCS 340 prototype enabled the many visitors to see for themselves the printing quality and fast job changes that can be achieved without any paper waste whatsoever. "We are not going to stop at the current printing speed of 50 m/minute," reveals Stefan Heiniger, COO Label Business at Gallus. "We want to improve even further upon what is already a very decent rate by the time the Gallus DCS 340 goes to market a year from now. Our aim is to create the most attractive digital printing system on the market."

As well as the new digital printing press, the event's many visitors were also impressed by the other Gallus innovations on show. David Baumann, Product Manager at Gallus, demonstrated the practical benefits of the Gallus RCS 330 in combination with a QuadTech colour control system. This system automatically adapts the ink zones to the pre-defined target colours on the fly throughout the run, which prevents potential operating errors and unnecessary paper waste.

Another highlight was the direct matrix removal of a highly complex die line on the Gallus ECS 340 at top speed and entirely tear-free. This is made possible by the new, innovative, high-performance matrix removal device that can be retrofitted to the Gallus ECS 340 as part of the 'Plus' update package to increase further the existing machine's productivity and economy.

Alongside various live demonstrations, the Gallus screen-printing department also showcased its new generation of Gallus Screeny Advanced Line (A-Line) screen-printing plates, which are exceptionally robust to ensure maximum plate re-use. In addition, visitors were treated to the live debut of the company's 'Metallic Doming' combination printing process – a metal relief effect on transparent self-adhesive materials or tube laminate – on the Gallus RCS 330.

Other new additions to the Gallus printing accessories program include the Polymount twinlock-coated printing cylinder that was demonstrated on the Gallus ECS 340 by Gallus Customer Service representatives, who also answered plenty of questions from the audience. ■

The Gallus Innovation Days proved to be a world-wide success

Plasma AC is compatible with Fujifilm Acuity printers

Bordeaux launches duo of printer specific inks

Bordeaux Digital Printink has launched a new duo of printer specific UV-curable and eco-solvent based inks. The first of the two, the company's new flexible UV-curable ink, Plasma AC, is claimed to be the first printer specific solution for Fujifilm's Acuity series printers. A mix and match ink, it is chemical and colour compatible with Uvijet KI ink, but the company states its own products offers better flexibility, greater adhesion and long lasting durability on sign and display, speciality and industrial applications.

"A printer specific ink, like Plasma AC, is formulated to enhance a specific printer model and is marketed with a dedicated chip and OEM equivalent packaging for zero-downtime installation," says Moshe Zach, CEO of Bordeaux Digital Printink. "Meeting the growing demand for printer specific products, Bordeaux developed complete eco-solvent and UV-curable ink solutions. These inks are in high demand since they help maximise printer capabilities."

The second new product from Bordeaux is its Fuze Eco PR4, a printer specific eco-solvent ink compatible with Roland SolJet Pro4 printers. This fast drying ink is, again, mix and match and designed to replace OEM alternatives, simplifying conversion. According to the company, it offers greater cost savings.

Bordeaux's wide range of solutions includes almost every ink-jet technology and application. In its portfolio are dye sublimation inks for transfer and direct applications, eco-solvent, UV-curable and UV-LED inks, coatings and laminates as well as innovative ink-jet technologies. ■

WHEN SIZE DOESN'T MATTER

Kylie Schleicher describes the benefits of a broad substrate portfolio

Taking up its claim to be the major international supplier of flexible, semi-rigid and rigid substrates Ultraflex states it has been the recognised worldwide leader with its brand names for more than 25 years. It has achieved global recognition for several product lines including JetFlex, Normandy, Ultima, Vulite, Ultralon, Wallscapes, Ultramesh and Artex.

Ultraflex services the United States, Canada and Latin America through multiple US warehouses and an impressive network of highly trained distributors. Additionally, Ultraflex Europe offers quality services and sales expertise for the UK, Europe and the Middle East.

Ultraflex's AquaFlex enables underwater advertising

At Ultraflex, the company states that size does not matter. Products are available in a wide range of sizes from 762mm to 4.98m (30 to 196 inches) and are compatible with solvent, eco-solvent, UV-curable, latex and screen-printing. In addition to extensive front-lit, backlit, block-out and mesh product options, Ultraflex offers printable wallpapers, self-adhesive material, perforated window film, flooring, carpet with much more in its portfolio.

INDUSTRY INNOVATOR

Ultraflex says it is proud to be the industry innovator, adding and modifying formulas to offer a wide variety of products. The recently launched VorTex product line offers soft, signage solutions in a simplified, organised way that is application driven and consumer friendly. VorTex is presented in three exclusive custom lines offering cost-competitive textiles with uncompromised quality and consistency. These are specifically designed to provide optimal print performance on all print technologies including dye sublimation, eco-solvent, solvent, UV-curable and latex.

The growth and success of Ultraflex is due to the superior technical support and customer service. The company maintains high stock levels, provides many useful services to customers and has technical data sheets as well as fire testing results readily available. The staff in the logistics department are experts in their field while customer service specialists guide customers to the appropriate product choice for their applications. Their knowledge of the Ultraflex product line allows customers to carry out their business with ease.

"Imagination becomes innovation … follow the leader" are Ultraflex's own words. ■

Kylie Schleicher is Marketing Manager at Ultraflex Systems

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DIGITAL MOVES INTO DÉCOR PRODUCTION

Specialist inks now promote the use of ink-jet for interior decoration

Luca Guggiari

Wood and marble finishes can be emulated with J-Melamine

Italian digital ink manufacturing specialist, J-Teck3, has developed its own range of aqueous-based pigmented formulations that is dedicated to interior decoration applications. Its new J-Melamine series is designed for use with Epson and Kyocera print-heads.

Selecting this sector of ink-jet printing as a priority, the company has long specialised in high quality products for dye sublimation and direct printing onto textiles. But now this credo has guided the company in its latest development with a series of pigmented inks designated J-Melamine which is dedicated to the printing of laminates and panels utilised in the furnishing and décor industry segments.

The potential for J-Melamine has been studied in depth, with its suitability proving to be ideal for printing with devices that are equipped with Kyocera and Epson print-heads. As a result, these inks are suitable for melamine papers which are used to decorate panels and laminates with graphics that emulate marbles, woods, ceramics and decorative patterns whose final applications are furniture, floors, wall coverings, and point-of-sale among suitable end uses.

GOOD ABSORBENT CAPACITY

Luca Guggiari, J-Teck3's R&D Manager, explains: "Melamine papers are special papers, also called décor papers, manufactured with alpha-cellulose material. They are very thin sheets which feature a very good absorbent capacity combined with the characteristic of providing high opacity property to the final product.

"These special papers are soaked with melamine resins which provide extreme surface hardness to the finished panels. The melamine papers are printed in digital with waterbased pigment inks," Guggiari continues. "J-Teck3 has developed two different ink lines, one to be used with printers equipped with Epson print-heads, and the other for industrial printers equipped with Kyocera print-heads. After printing, the melamine papers are applied to the panels. This process is done by thermopressing at 20 to 30 kg/square m with a temperature of approximately 200 degrees C for 30 to 40 seconds. The combined action of temperature and pressure enables the melamine resins to melt and penetrate deeply into the board with the action of permanently anchoring the decorative layer to the substrate. The final product, resulting from this coupling action, features extreme surface hardness, stability and impermeability as well as high resistance to heat, steam and surface spots.

"The recent development in printing techniques allows users to achieve exceptional graphic results as it is now possible to reproduce any natural woods not only in their graphic pattern but even in their physical characteristics," he states. "Furthermore there are panels which can be post-treated and painted so that it is now very difficult to recognise natural woods from their perfect imitations.

REALISING DIFFERENT FINISHINGS

"In addition to woods, it is possible to realise different decorative finishings including matt, glossy and corrugated. These effects can be achieved with the use of special plates that are applied to the heat press, which reproduce in negative the desired finishing and transfer it onto the board during the thermopressing process."

Guggiari adds: "J-Melamine is also suitable for printing laminates, substrates

Examples of the effects that can be created using J-Melamine

covered with synthetic materials formed by layers of papers soaked with thermosetting resins such as melamine or phenolic products, and that melt through heat and high pressure. The printing and thermopressing process is the same as for melamine boards but the plastic laminates feature an overlay finishing made of décor papers which have been treated with transparent synthetic resins. This treatment allows for the laminates to have that peculiar glossy effect combined with very high resistance to scratching as well as chemicals used for cleaning spots of foods and liquids commonly present in kitchens and dining rooms, etc. Plastic laminates are decorative materials also derived from papers for manufacturing where kraft and/or melamine papers are used.

A selection of boards printed with J-Melamine pigmented inks

"We can say that the utmost reliability of J-Teck inks allows to carry out high quality prints on melamine papers featuring exceptional image definition and colour reproduction which are fundamental issues for the final results we have to achieve," says Guggiari. "Also, thanks to the optimal dispersion of J-Melamine, it is possible to print non-stop with no problem and with no clogging of the print-heads.

"In conclusion, it is important to underline how the high digital technology of J-Teck's inks together with the great creativity the interior decoration industry is capable of expressing," Guggiari concludes. "This makes an exceptional combination in a sector which is not conventional but which has huge potential for the future." ■

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BREAKING ALL RECORDS

Las Vegas hits new heights for the imaging community

According to its organisers, the 2014 SGIA Expo was "off the charts" in terms of being successful. There was solid proof that the community as a whole is gearing up to grow their businesses, taking full advantage of the opportunities that lie ahead.

This year's Expo took place at the Las Vegas Convention Centre at the end of October and promised to be the "greatest speciality imaging show on earth", a claim that proved itself easily, judging from the enthusiasm of the attendees and the exhibitors alike. Incorporating features that included industry experts providing classic, educational sessions, the show hosted a broad range of digital and analogue imaging technologies, enabling visitors to discover the latest methods that can be used to generate and produce the best results.

Records were broken on the opening day, with more than 22,000 registered visitors and 541 exhibitors which is stated to be the highest numbers thus far in the history of the event. The atmosphere was busy and vibrant from the moment the doors opened at the start. Attendees were able to see the latest printers being demonstrated, along with new ink formulations, and there was a strong emphasis on workflow that is becoming ever more relevant to everyone in both digital and analogue production environments.

Exhibitor numbers reached an all-time high in Las Vegas

LIVE DEMONSTRATIONS

The organisers also noted that industry veterans were joined by newer attendees, generating valuable networking opportunities and the chance to discuss the relevance of newer technologies in today's production environments. Visitors were given the ability to view live demonstrations, and had the added benefit of being able to attend a series of class expo sessions, all run to SGIA's acclaimed high levels. These provided a mixed range of topics designed to cater for every type and size of business, with the line-up complemented by the Expo's education tracks that were specifically designed for imaging specialists.

This year's awards contained a variety of categories that included digital inks, media, finishing, and print technologies which also featured screen-printing. The Product of the Year competition raised the bar by bringing on board a new class of entries so that every entrant had the opportunity of winning an award.

The success of this year's SGIA Expo, in-line with its on-going pattern of growth, is a clear indicator that speciality imagers are expanding their markets, and using the latest technologies to bring value to their customers. This type of productivity continues to be the bright spot in the printing and imaging industry and the SGIA community is clearly taking full advantage of its expertise to dominate in markets where speciality imaging is so highly valued.

With SGIA Expo acting as a significant cornerstone for both communication and interaction, it is anticipating new capabilities for existing markets complemented by new technologies that open doors to new segments. Clearly, the SGIA community will be prepared to lead the way. ■

There were more than 22,000 registered visitors at this year's SGIA Expo

Further information:
web: www.sgia.org

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NEW CONFERENCE DEEMED A SUCCESS BY ATTENDEES AND SPEAKERS

First-class academic expertise joins with corporate technical experts into one location

"An excellent collection point for today's experts in the world of digital printing," were the word us by Stefano Corradini, Sidel SpA, to describe ESMA's inaugural The Inkjet Conference (www.theijc.com) held last September and sponsored by enabling partner Drupa, in Neuss, Düsseldorf.

Rick Hulme of Sun Chemical said it was "a new and exciting conference which has brought the industry together to discuss ink-jet, its capabilities and opportunities both now and in the future" while Ian Clark of Intrinsiq Materials described it as "a varied and wide-ranging conference highlighting applications and the future".

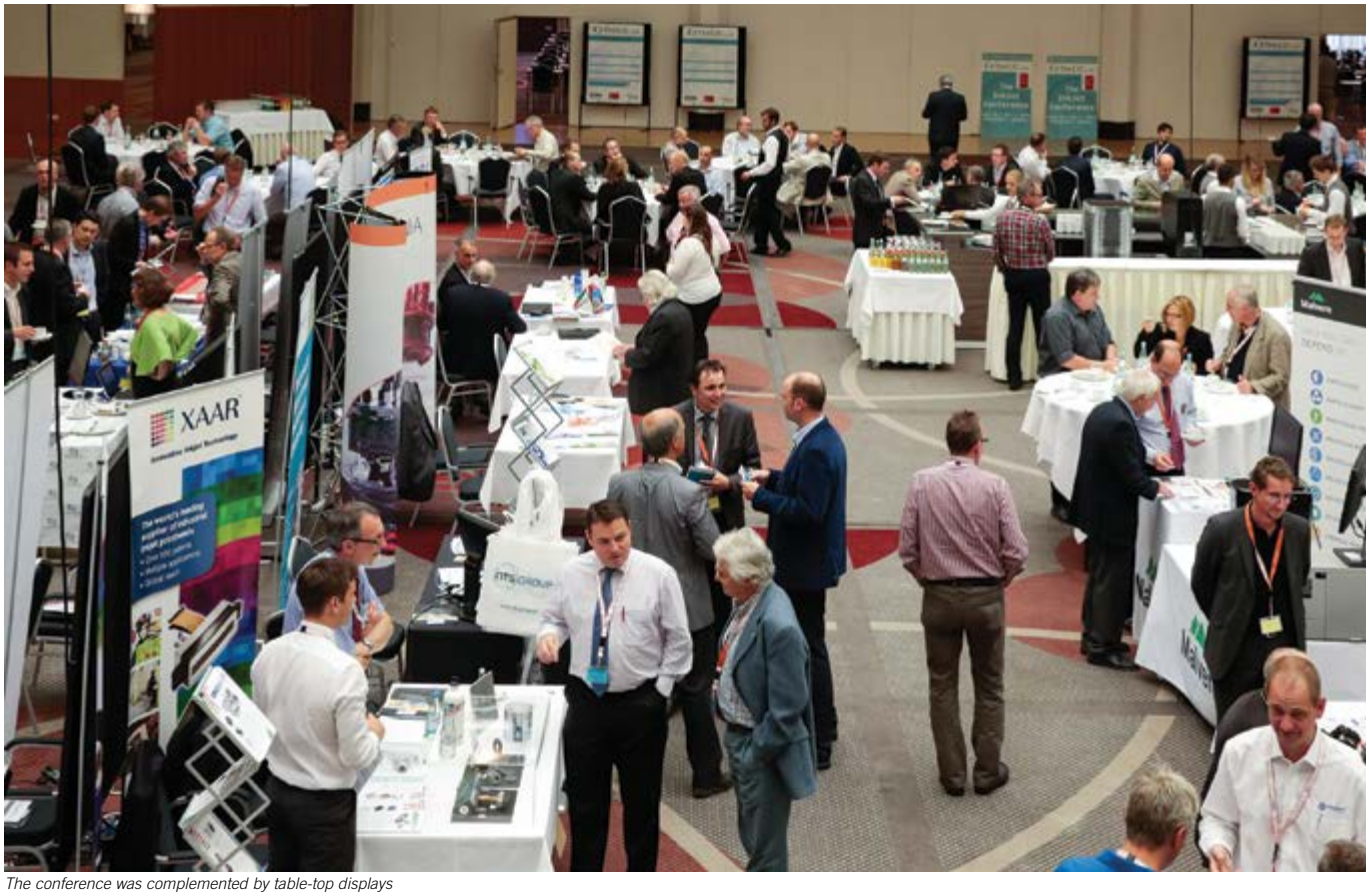
According to Friedrich Goldner from Marabu, the event "had excellent presentations covering a wide span of ink-jet printing applications and a good number of potential industrial users. The table-tops gave excellent networking opportunities to further exchange on ideas and trends. It was a very worthwhile event to attend".

MULTI-SUBJECT AND EDUCATIONAL

The two-day, multi-subject educational conference brought together industry and academic leaders in their fields who spoke about the latest advances and future developments driving digital print. It included a focus on ink-jet engineering, a review on fluid and ink components such as nanoparticles, conductive, aqueous and UV-curable inks and an academic track open to all universities and non-commercial research institutes to present their work.

There were more than 30 different presentations with topics as varied as UV-LED systems, piezo ink-jet for precision dispensing of functional materials and system integration. Also included were an ink point of view,

ESMA CEO Peter Buttiens at The Inkjet Conference



The conference was complemented by table-top displays

There were more than 300 attendees at the new event

Participants enjoyed a busy programme

improving ink-jet industry by implementing intelligent sensors, and industrial inkjet for packaging.

Steve Knight, founder of Digital Direct, who runs The Inkjet Conference was overwhelmed by industry interest. There were more than 300 attendees hungry to learn about ink-jet for industrial applications from 38 exhibitors and 41 speakers. "As well as the updates on the significant technological steps being made by suppliers and experts in this arena, the event also presented the wealth of opportunities for collaboration, inter-industry developments and cross-market adoption," he stated.

A GREAT STARTING POINT

"A great starting point to follow the developmental course of DOD and nanoparticles throughout the next exciting upcoming years," was the view of attendee Luc Van Damme, while Mark Stephenson from Fujifilm said it was: "A good start and hopefully many more to come." Jason Remnant of Xaar, welcomed the range of attendees to "help broaden customer opportunities and networking options" while Yair Kipman, of Imagexpert, said the conference was excellent "with many of the appropriate players in the inkjet market".

Peter Buttiens, CEO of ESMA concluded: "The energy and buzz surrounding the first edition of The Inkjet Conference is indicative of the excitement we are seeing across the industry regarding the capabilities the new technology is offering. It is so interesting to be a part of the conversation that is exploring what the next steps could and should be." ■

Further information:
The Inkjet Conference
web: www.theijc.com

OVERALL SUCCESS HAILED FOR NEW VENUE

Goa event continues with consistent delivery to its exhibitors and visitors

This year's Screen Print India exhibition proved to be an opportunity to gain knowledge and benefit from networking with a net worth awaiting those who visited and participated. Held in September at Dr Shyama Prasad Mukherjee Stadiumin Goa, the event is said to have divided the screen-printing world into two distinct sections.

Starting from the inauguration by Francis D'Souza, Deputy Chief Minister, Goa in the presence of Johnny Shell, SGIA's Vice President of Technical Services, C P Paul, Secretary, IPAMA among other dignitaries, it was a four-day show packed with fun, interaction, business and leisure. Held bi-annually in Mumbai since its inception two decades ago, this international exhibition on the screen process and textile printing made its Goa debut this year.

Devang N Sheth, Director of event organisers Aditya Expositions, states: "Most of our foreign exhibitors and visitors were not comfortable with a temporary structure and that inspired us to change the venue to a permanent event facility. While this added to our costs, our desire to provide a truly world class experience exhibitors and visitors prevailed. The Screen Print India show has consistently delivered on what it has promised exhibitors and visitors, raising benchmarks higher and higher with every edition and SPI 2014 continued that tradition."

Anil Brahmbhatt, President, SGAI, points out that, to make an industry grow and take a success story forward, you have to get out of your comfort zone and take things to the next level. "As the national association for the screen-printing industry in India, we have taken our role in ensuring this very seriously. Relocating this event to Goa is a strategic innovation that has made it a 'must attend' event for exhibitors and visitors from across the globe."

WORLDWIDE VISITOR ATTRACTION

In common with previous editions, SPI 2014 attracted visitors from across India as well as delegations from countries across the globe, and these were focused on those who were genuinely interested in exploring business opportunities and new technologies. Additionally, the event had the support of leading industry associations from across India, Asia and the world.

In addition, the interactive seminars were attended with a great deal of enthusiasm, with attendees able share their opinion about the screen-printing industry in its present scenario and going forward. "The Screen Print India show has a rich tradition of providing knowledge through seminars and workshops," continues Sheth. "SPI 2014 provided a platform for upgrading the industry standards and achieving this growth through value addition strategies provided at these seminars."

"What amazes me most is that the screen-print companies that I've been in seem to make the most of the materials that they're using," comments Shell. "In the USA, we have very high-end top technology and that is not the case here in India. Yet, the quality almost

Continued over

The four-day show was packed with fun, interaction, business and leisure

matches what we achieve in the USA with top end equipment. So, what is being done here with the limitations that are faced in India is very impressive. The quality of work that's being produced here is amazing. I'm very impressed."

WHAT THE FUTURE HOLDS

Michael Ose, Technical Sales Manager of SignTronic, AG, adds: "People are questioning themselves as to which direction the entire printing industry is going. So, people are not really sure about what the future holds for screen-printing. Nevertheless they know that there is almost no alternative so customers find themselves in a very difficult situation in making up their mind about the future of the business."

This is endorsed by Andre Kreuter, Sales Manager at Grünig-Interscreen, AG. "Screen-printing is alive and this is a fact. What we need is to focus on improved and better quality in screen-printing." Dirk Oelschlager, Technical Sales Manager of Ulano, USA, adds: "I have been in India for a long time already as I have travelled frequently to this country for the last ten years. I can see the whole market for screen-printers moving towards a really high level of quality." Sefar's Hugo Gmuer says: "The screen-printing that I see here is real screen printing. It means the industry is still the industry. I think the industry in India is not affected too much by other applications. So, it is focused on screen-printing. This is actually what I like about this exhibition. It is focused."

Finally, Mike Young of Imagetek Consulting includes: "In India an interesting trend in our industry today is that more and more industrial printing companies are becoming ISO 9000 certified. The number of printing companies getting certified in India is unusually high in comparison to North America or Europe."

Lastly, when the Screen Print India competition awards were all presented, many from the audience were pleasantly surprised to hear that yet another innovation was being unveiled during the event's Goa debut, with a three special award for women entrepreneurs, presented by Johnny Shell to women who have carved a niche for themselves in the industry. ■

Some of the individuals responsible for the success of this year's event

Further information:
web: www.screenprintindia.com

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THE FUTURE LOOKS BRIGHT FOR THE SCREEN PROCESS

Dedicated event confirms continued growth for the industry

Claimed by its organisers to be the only dedicated event in Europe this year, Screen Printing Now proved a strong celebration of the process, and pointed the way towards a bright future. FESPA UK Association's Screen Printing Now, staged in conjunction with Sakurai UK, took place in London on 30 September and 1 October. It attracted around 100 sponsors, exhibitors and delegates with a packed programme of inspirational presentations from leaders in their fields, live printing demonstrations and valuable networking occasions.

The two-day event included many highlights, including a presentation by Professor Tim Claypole MBE, of the Welsh Centre for Printing and Coating during which he provided details of some ground-breaking development projects. Shoichi Komi of Sakurai Japan, made a special trip to talk about precision control in screen-printing and special effect varnishes while Marabu UK flew in senior executives from its head office. Dr Wolfgang Schaefer and Jon Bultemeyer passed on vital information about new ink legislation and future developments in ink technology. Dr Kate Stone of Novalia had the audience entranced with her vision for the present and future in the world of electronics for the display industry.

Commenting on the atmosphere of the event one of the delegates, Peter Young of GSM Graphic Arts said: "You could smell the excitement in the air of people talking about our industry. It was nice to be part of something that's growing and looking at new developments."

Peter Kiddell of FESPA UK Association was delighted at delegates' reaction to Screen Printing Now, and commented: "This is a 4,000 year old process which is having a tremendous affect on the future of technology. What we saw at the conference definitely confirmed that this is a process for the future."

Principal sponsors of the event were Sakurai, Marabu, G Bopp and Co Ltd, Natgraph and MacDermid Autotype. *Specialist Printing Worldwide* was the official event journal. ■

Marabu's Jon Bultemeyer presented 'Screen - Always on the move'

Sun Chemical was one of the companies represented at the event

MacDermid Autotype's David Parker discusses screen-making department design

The screen process is having a tremendous effect on the future of technology

Natgraph's Alan Shaw presents his company's philsophy

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SUPPORTING A GLOBAL COMMUNITY

Lascelle Barrow endorses the philosophy for tackling future challenges

Lascelle Barrow, President of FESPA

FESPA's roots may be in Europe, but our future as an organisation is well and truly global. We have been seeing the emergence of several economic power-houses over the past decade, which are challenging the established supremacy of the USA, Europe and Japan. Educated and ambitious entrepreneurs with access to substantial and comparatively inexpensive workforces are driving growth in countries such as China, India, Brazil and Russia, while the development of social strata with high aspirations and disposable income fuels demand and spending.

Economies in Asia and Latin America are expected to grow exponentially in the future, to say nothing of the Middle East and Africa. This points to enormous opportunities for promotional and industrial print in these markets over the next decades. FESPA has proactively developed an event portfolio addressing these markets, with the launch since 2005 of FESPA branded events in India, Thailand, Mexico, Singapore, China, Turkey and Brazil. What we may need to do – and will do – is take our exhibitions to other new and developing markets to ensure that FESPA remains a truly global player in this industry.

GROWING MARKETS, DIFFERENT ISSUES

These new markets will have different concerns and issues and it's our goal that FESPA should be the forum at which these concerns and issues are expressed and addressed. What's harder to predict is quite what these markets will need from FESPA. New markets will not develop just like the old, because technology has moved on since the older markets started to develop. It's likely that the emerging markets will leap-frog several generations of development in print as they have in everything else. Just look at how emerging markets are bypassing the landline stage in their telecommunications development, instead embracing the opportunity to adopt mobile technologies, with all their advantages around cost, implementation and flexibility.

As a global organisation, our challenge in the future will be to be as relevant to our community members in these emerging markets as we have been in mature European markets for the last 50 years. When FESPA launched, it represented the needs of members in just eight countries, all of whom had an active role in the organisation. Now we have 37 member associations, and need to have structures in place that give all of those stakeholders a voice. Our first step has been to amend our constitution to give non-European members equal voting rights with the founding European members. In time, the importance of these new markets points to an expanded FESPA board with representation from all regions.

NEW BLOOD, FRESH IDEAS

As I think about my goals for the remainder of my Presidency of FESPA, I'm excited about the new blood and new ideas coming from these markets; they will keep FESPA fresh and vibrant for many years to come.

With such a rapidly growing stakeholder community, our challenge in the future will be to broaden our contacts with the membership (our customers), to listen to them at every opportunity, and to respond energetically and professionally to their wants and needs. I want new and exciting ideas to bubble up from our member associations and form a part of our future service to the members.

FESPA profit for purpose

Fespa's message of profit for purpose

AN ORGANISATION OF PRINTERS, FOR PRINTERS

Representing our grass roots organisation has always been central to FESPA's mission – we are an organisation of printers, for printers. Our geographical reach may be wider than ever before, but we need to remain true to that principle. We'll ensure that print service providers in these countries have the right level of input to what we are doing in their markets, and that they continue to benefit appropriately through our Profit for Purpose reinvestment programme.

Profit for Purpose is pivotal to FESPA's future. FESPA is an unusual umbrella trade association since through our exhibitions we are able to generate the income to help support and develop the national trade associations, rather than be a drain on their resources. Guided by this philosophy, FESPA will continue to maintain a strong commercial focus. So long as it does it will continue to support the associations and their members around the world. ■

Lascelle Barrow is President of FESPA

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UV LED's myths and realities

Stacy Hoge confirms the efficacy of this curing methodology for decorative printing

UV LEDs have quickly become a mainstream curing technology in industrial screen-printing, flexography, offset print production, and digital ink-jet. Concerns that were raised when UV LED curing technology was first introduced have since been resolved thanks to productive collaborations among technology developers and ink manufacturers.

If you are not yet sure that UV LEDs can improve decorative printing processes, let's set the record straight for five outdated myths about UV LED curing.

Myth 1: UV LED is too new and unproven for current use.
Reality: The time to incorporate UV LED is now.

UV LED light sources are quickly becoming standard in more and more printing and coating equipment. UV LED curing lamps are ideal for equipment where size matters and larger lamps simply are not practical.

All of the top players in UV-curing systems have followed the lead in advocating the adoption of UV LED light sources.

Today, tens of thousands of UV LED light sources are reliably running equipment for dozens of applications, including flexographic printing, screen-printing, narrow-web printing, packaging containers, coatings, adhesives, interior décor laminates, and wide-format ink-jet printing.

In fact, UV LED light sources are becoming widely used for pinning – a popular, single-pass ink-jet process that can achieve higher levels of image quality on decorated products such as labels, wood décor, and aluminium cans and bottles by 'gelling' of the ink to reduce dot gain.

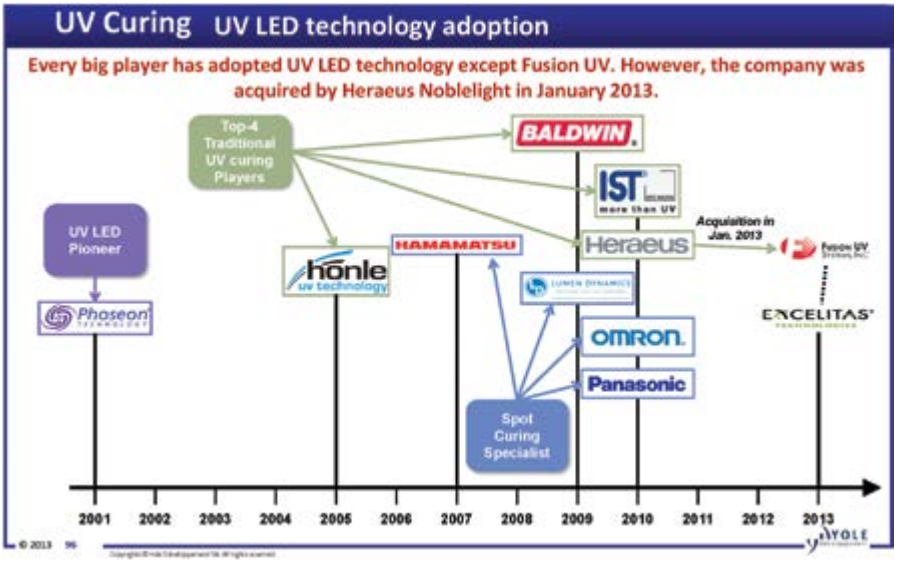
Recent advances in UV LED curing technology and compatible, eco-friendly inks have fostered the development of a new generation of bench-top ink-jet printers that fits easily in small sign shops and store-front printing firms. These new UV LED-equipped printers are being used to custom decorate everything from laptop covers, smartphone cases and pens, to golf balls, awards, and water bottles. With these devices, small sign shops and printing firms can diversify their product lines and enter new markets without having to expand their floor space or expose employees to VOCs, harmful UVC radiation, or infrared radiation.

Myth 2: LED is not powerful enough
Reality: UV LED produces equal or more effective power

The amount of power UV LED systems output today is about four to six times more than it was just six years. Since 2007, the amount of UV irradiance (W/cm^2) produced by UV LED light sources has increased by about 77% a year.

In June, 2013, Phoseon introduced the industry's highest performing UV LED curing lamps on the market. The FirePower line of products offer up to 20W/ cm^2 peak irradiance.

UV LED light output is concentrated in a narrow range of wavelengths, meaning it does not generate harmful UVC radiation or infrared radiation.



The adoption of UV LED technology (Yole Report 2013)

UV LED lamps generate no ozone and about 50% lower CO_2 emissions

The high-performance UV LED curing units have shown to increase quality and throughput speeds in flexographic printing, while also facilitating a variety of new applications in digital and screen-printing systems.

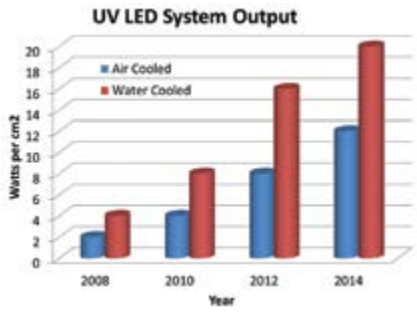
Myth 3: The choice of inks is limited
Reality: Virtually all the major vendors offer inks compatible with UV LED lamps

Since 2006, the number of vendors offering inks compatible with UV LED curing systems has rapidly multiplied. In 2013, more than 20 ink vendors promoted products compatible with UV LED light sources.

Dozens of ink manufacturers now offer UV LED inks and materials, including Agfa, BASF, Becker Acroma, Chimigraf, Collins Inkjet, Deco-Chem, Flint, ImTech, Ink Mill, INX, Kuei, Lamberti, Makiewicz, Marabu, Nazdar, Paragon Inks, Pelikan, Ruco, Sherwin Williams, Siegwerk, SunJet, Triton, Wikoff, and many more.

Claims that all inks formulated for UV LED curing pose health or environmental risks are untrue. Many ink companies have focused on developing eco-friendly solutions. Flint Group offers the EkoCure eco-friendly, high-performance inks for flexographic and rotary screen-printing. Agfa's Agora ink systems are free of solvents and VOCs and can be used with high-speed ink-jet print-heads for industrial decorative printing. The German ink-maker Ruco offers screen-printing inks (the Series 900UV-LED system) that are free from toxic solvents and comply

Typical decorative printing applications



UV output over time

with a European directive for toy safety.

Future-focused, growth-orientated ink manufacturers understand that current UV LED systems offer end users economic and environmental advantages that are too beneficial to ignore.

Myth 4: UV LED is not suitable for higher-end production

Reality: UV LED offers expanded capabilities

UV LED light sources are ideal for high-speed curing in roll-to-roll screen-printing, container decorating, narrow-web presses, industrial flat-bed presses, and other forms of printing.

Users of UV LED curing systems can process a variety of materials (including thin and heat-sensitive substrates) at maximum production speeds with low-input power. UV LED technology drastically reduces energy consumption and the surface temperature of the items being decorated.

Because of the wavelengths at which they operate, LED lamps provide excellent through cure which improves adhesion. The lamps deliver high uniformity and consistency over time giving the end-user confidence in the quality of their process.

A number of companies already use UV LED curing in higher-end production systems. Serigraphie Richford uses UV LED light sources to cure inks and improve the quality of designs printed on glass bottles used for spirits, health and beauty products, wine, beer, and food. Barberán uses UV LED curing for single-pass digital printing of wood-grain looks on particle board, MDF, wood, melamine, and other materials used in furniture, floorings, kitchens, doors, and windows. UV LED technology is included in the Jupiter digital printing line offered by Hymmen Displays and Domino's K600i high-speed, variable-data product-identification system.

Now that UV LED curing has gained worldwide acceptance, more and more users are recognising the real-world benefits.

Better cures: Users report that UV LED curing lamps produce better cures and better adhesion on a wide range of materials, including recycled materials. They can also achieve higher speeds with black and white inks.

More uptime: UV LED curing units have been proven to support trouble-free press operation. Manufacturers of printing equipment no longer have to worry that arc lamp performance will adversely impact the overall performance of the printing system.

Less heat: Because UV LED lamps do not radiate infrared waves, they produce significantly less heat than arc lamps. As a result, chill rolls or plates aren't required when printing on heat-sensitive or thin substrates. Less operating heat also prevents material distortion, making it easier to rewind and re-register colours. Energy cost savings can be substantial, particularly if energy costs continue to rise.

Finer controls: On larger presses, UV LED lamps enable finer controls, such as curing only portions of a web. Operators can choose to turn on only the portion of the lamp needed for each job.

More compact designs: Floor space is valuable in all types of businesses. UV LED lamps can be used to build more compact printers, with shorter web paths that minimise waste. Compact printing devices for product decorating can be used in a wider range of printing environments.

Compact UV LED curing units can also easily be built into industrial machines for curing screen-printed inks on plastic and glass containers.

Greater stability: Because of the uniformity and long-term consistency of LED lights, designers can develop safer, more stable, and more reliable processes for low-migration printing. LEDs can last more than 20,000 hours of operation, with only a minimal drop-off in power over the life of the curing unit.

Myth 5: UV LED is an expensive way to "go green"

Reality: Regulations are forcing firms to get serious about safety and sustainability

The rising tide of government regulations is causing all types and sizes of manufacturing firms to be more proactive in adopting safer, less toxic equipment and processes. This is where UV LED curing can really be a plus.

Besides being mercury-free, UV LED lamps generate no ozone, and about 50% lower CO_2 emissions. Studies have shown that, in certain applications, replacing mercury lamps with UV LED lamps can lead to 25 tons of CO_2 reduction.

UV LEDs contribute to work-place safety because they don't generate dangerous UV-C radiation or excessive heat or noise.

Companies that have already installed more environmentally sustainable printing processes report that it has helped them attract younger workers and more customers that prefer eco-friendly processes.

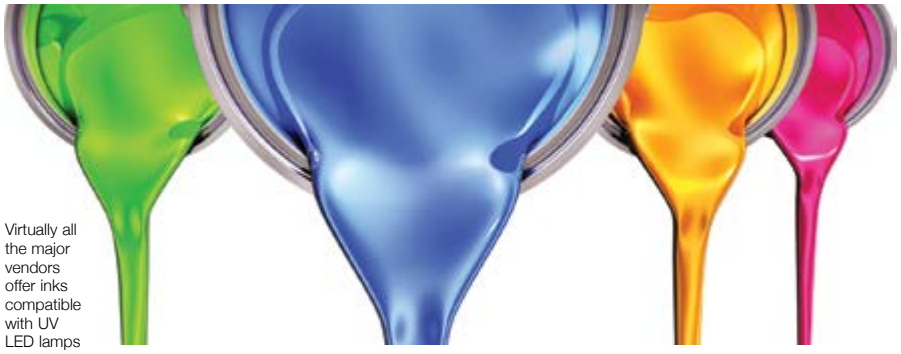
Conclusion

Do not let outdated assumptions determine your technology choices. Many myths and misconceptions are spread by people who have financial interests in preserving the status quo.

Over the past few years, initial performance questions about UV LED curing technology have been successfully addressed. The amount of power UV LED systems can generate has significantly increased and virtually all major ink companies now offer UV LED-compatible inks.

UV LED curing technology uses significantly less energy, requires no outside venting, and has no ozone emissions. So, companies that use UV LED curing technology in decorative printing can expect long-term, quantifiable advantages in energy costs, operating efficiencies, environmental impact, and workplace safety.

Considering all of these advantages, it's no surprise that the market for UV LED curing systems is growing quickly. As the demand for more environmentally sustainable, energy-efficient manufacturing processes continues to accelerate, the future of UV LED curing systems looks very bright indeed. n


Virtually all the major vendors offer inks compatible with UV LED lamps

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MAXIMUM AUTOMATION

Michael E Robertson outlines the benefits gained from today's technologies

Michael E Robertson

Digital print technology has advanced at rocket speed over the last few years. Increased print production speeds and versatile ink systems are opening new markets, and digital image quality is at an all-time high. As the technology advances – and the controls of the technology improve – the competitive window for graphics producers narrows. For many graphics producers, the focus today is on gaining profitability by controlling costs. Automation is the key.

Over the past few years, I've had the opportunity to monitor many graphics producers. One leading graphics producer was particularly interesting to follow as they moved from exclusively using traditional printing to exclusively using digital imaging. Considering the current and projected needs of their established customer base, they believed going completely digital would be the best way for them to serve their customers going forward, while improving their competitive position. An important focus of their business model was to control costs by automating as much of the process as possible.

AFTER THE TRANSITION

Checking back a few years after the transition, this company's annual production is at an all-time high. Their facility is smaller than it was previously; dramatically reducing overhead. And, their employee cost is less than half of what it was before the transition.

Another company I monitor has dedicated a great deal of effort toward automation for one of their primary markets. A major segment of their business is focused on very short-run imaging – often a single image. The cost associated with production management can quickly eliminate any profits from a small job. They are working toward a fully automated production scheme where the first time a person touches a file or print is when the image comes off the output device ready for verification and fulfilment.

Advanced automation controls also support the concept of "distribute and print". We're much closer to having image control and verification systems that will allow graphics producers to send a file anywhere on the planet and be confident that the output produced will meet the needs of the most discerning customers.

The just completed 2014 SGIA Expo was a dramatic display of imaging and automation capability. When walking the Expo floor, it was impressive to see how far we've come with automation in the last few years, and you could sense that we are about to turn the next corner.

During the coming year, SGIA will have several educational opportunities dedicated to automation. We've assembled a team tasked with maximising current technologies and processes related to automation. ■

Michael E Robertson is President & CEO of Specialty Graphic Imaging Association (SGIA)

Specialty Graphic Imaging Association

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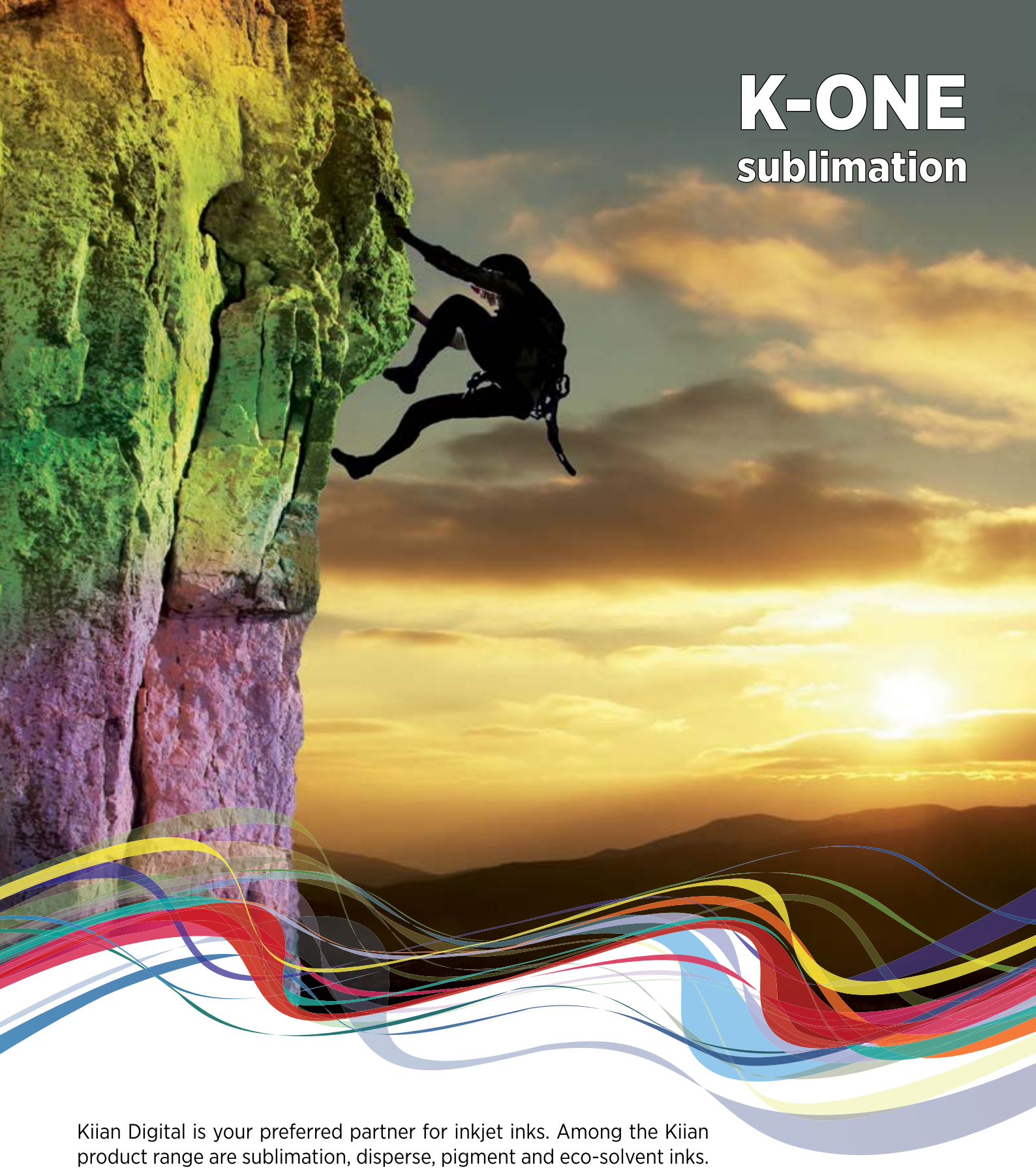

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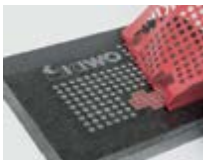

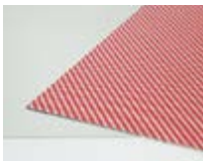
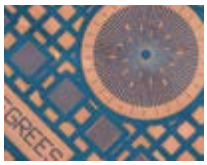

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