ISSUE 3
2012

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欢迎您
Добро пожаловать

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MESSAGE FROM BRYAN COLLINGS

Storm clouds continue to hang over Europe, while China remains slow. Despite the USA facing mounting concern for its ever-increasing debt mountain, it's very positive to read in this issue that members of one of our sponsors, NASMA, are very positive about future business prospects.

In the present climate, competition becomes ever fiercer. We all know companies which appeared to be sound but which have failed to survive. It is critical that companies focus on ensuring that they are as advanced as possible in all aspects of running their operations, developing and marketing their products and lastly maintaining a positive cash flow. You can live without profits for a time but you can't live without cash!

Hopefully most readers, either printers or supplies and equipment manufacturers, will find things in this magazine which will help them keep at the sharp end of their respective fields. We continue to cover a broad spectrum of technical subjects and know that many top executives find it an essential read. The only way to receive all future copies is still to subscribe at www.specialistprinting.com or by emailing subs@specialistprinting.com

Drupa 2012 was a great event by all accounts and we now look forward to the inaugural EcoPrint in September in Berlin and the SGIA '12 show in October in Las Vegas. The Specialist Printing Worldwide team will be at both shows and hope to see you there.

A quick tip: looking further ahead, don't miss the AFIP 2013 conference next spring. It's promising to be a great event and certainly one you will want to be at! See page 58 for further information.

With FESPA's triennial flagship event also taking place next year, there's certainly plenty to look forward to and Specialist Printing Worldwide will continue to be the frontrunner in spreading the latest technical news on a global scale.

Bryan Collings, Publishing Director, *Specialist Printing Worldwide*

THE LEARNING CURVE

Sophie Matthews-Paul considers the value of discovering more about technology

Anywhere we encounter technology in everyday life there's every chance that it will decide to move on often before we've even had the chance to consider what's new. Not everyone has an interest in how today's printing processes function even though the elements that drive them have had a profound effect on our working and, even, our domestic lives. But, for those who want to discover more, it's often difficult to keep up, let alone get ahead with changes and developments.

The printing industry has always been driven by new advances as those involved in the process have sought ways in which to improve automation, speed and quality. In digital terms, technological advances have moved forward incredibly quickly, so it is hardly surprising that there's barely time to draw breath before the next refinement comes along. Thus, the learning curve never ends as more and more discoveries occur. But how much do we really need to know, and should we bother?

Anyone involved in operating a machine or its associated software will reap the benefits when delving a little deeper in how results are achieved. Even though most functions can be activated with just the push of a button, there is surely an infinite feeling of satisfaction about knowing why different commands drive a piece of equipment.

Some say that a little knowledge is a dangerous thing, and that ignorance is bliss. Others want to discover more about how a technology works, and why; but, apart from reading the manual or receiving specific training when a machine is installed, resources often appear at first glance to be a little thin on the ground. This means that, for many, the only option is to spend hours poring over comments in specialist forums where some of the so-called expert advice can be useful but, just as likely, might be somewhat spurious.

What happens if, and when, we decide we want to learn about a process whether we're involved directly or we're simply curious? The information is out there if you look for it. ESMA is one organisation which runs some useful work-shops, such as its forthcoming introductions to 3D printing and additive manufacturing which is currently a popular topic for those who find this type of digital application fascinating. FESPA is also keen to share information, with new areas of technology now being covered in considerable depth by FESPA TV.

Interestingly, on both occasions I've run Print Shop live for FESPA, significant levels of interest have come from visitors wanting to know about the processes that they're not currently involve with themselves. So there seem to be two main drivers to learning in this industry; one is the need to know about specific technologies for practical reasons, and the second is the curiosity which underpins discovery and the desire to know how things work. And, because processes rarely are isolated from one another, understanding one link in the chain will help to develop more cohesive appreciation and knowledge overall, and that can only be good.

As well as the help offered by associations, articles and blogs written by specialists, and the various forums where genuine experts vie for pole position, there are other opportunities for learning on an occasional basis. A quick whizz through Google will reveal YouTube options for discovering all sorts of things, from creating cutting paths to clearing a blocked nozzle, with presentations ranging from the highly technical to the downright amusing.

There are also specialist courses. Earlier in the summer I decided to attend one of IMI Europe's summer school two-day sessions, selecting colour management as a topic and digesting huge chunks of information on a vast range of issues. Catering for a variety of knowledge levels, these courses including ink-jet theory, opportunities to learn more about surface tension, wetting and capillarity, and all about getting started in deposition.

Specialist Printing Worldwide does much to whet the appetites of those wanting to know more, and the generosity of contributors enables everyone who's interested to scratch well below the surface of modern-day technology and techniques. Most of us expect a lot from the elements that drive our industry, yet many take it for granted without spending a bit of time discovering more about how it ticks. But curiosity is encouraging, making it easier overall to understand why the processes we use are so effective at what they do.

It's never too late to learn (photograph courtesy IMI Europe)

Sophie Matthews-Paul
Editorial Consultant to *Specialist Printing Worldwide* and independent analyst

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Specialist Printing Worldwide (ISSN 2044-2319) is published by: Chameleon Business Media Ltd,
1 Cantelupe Mews, Cantelupe Road
East Grinstead, West Sussex RH19 3BG, UK
Fax: +44 (0)1342 322664 www.specialistprinting.com

Self-adhesive metal effect films promote easy dry applications

A specialist in self-adhesive films, Aslan now offers two new products that solve the problem of metal-effect film application where, over larger surfaces, a dry application is almost impossible without leaving bubbles behind in the film.

Self-adhesive metal-effect films are ideal for producing exclusive signs and letterings but, currently, suitable polyester films on the market place can only be dry applied. Aslan dry-apply technology, which incorporates air channels in the adhesive for easy, fast and efficient dry applications, is now also available for metal effect films.

Users can choose between two products. First, Aslan CAL 23 is a 50µm polyester film with an outdoor durability of two years and is offered in gold and silver gloss. The second option is Aslan CAL 30, a 140µm thick film with an outdoor durability of five years. Because of the PVC surface of the face film, it is printable using solvent, eco-solvent, UV-curable and latex inks. This product is also available in gold and silver gloss.

These two materials feature the same colour on both sides of the film making them ideal for decorations on glass where both sides are visible. The roll size is 25 x 1.25m for both products. ■

Oeko-Tex certification for PPMOV

Pad Print Machinery of Vermont's textile inks pad-printed on a T-shirt have successfully passed tests based on more than 100 health-relevant parameters and awarded with the Oeko-Tex Standard 100 certification.

The Oeko-Tex® Standard 100 is an international standardised test criteria reaching across 80 countries and more than 9,500 manufacturers world-wide. Throughout the textile industry, the Oeko-Tex label provides a benchmark for consumer health safety and quality assurance for the manufacturer.

"We have many customers who are large T-shirt and underwear producers printing with our inks," comments Julian Joffe, CEO of Pad Print Machinery of Vermont. "We felt the certification process for our textile ink was important and we wanted to do this for our customers." ■

PPMOV's textile inks have been awarded Oeko-Tex Standard 100 certification

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Sepiax's Aquares V3 is backwards compatible

Sepiax to launch Generation 3 resin inks at EcoPrint

During the last two years Sepiax has gained considerable experience in the field of semi-industrial print applications. Its new Aquares V3 formulation is backwards compatible and can be mixed with the V2 ink without any problems. Additionally, customers now can print at even lower temperatures than they did before with the average drying temperature for plastic films now being below 50 degrees C.

"This market segment actually shows the biggest response to our outstanding ink technology," says Karl Ebner, Marketing and Sales Director. "In fact, this is not really surprising to us since industrial manufacturers nowadays still struggle to find appropriate ink-jet printing solutions for their print jobs. In many cases Sepiax inks are the only ones which adhere even on very special surfaces. They even survive tough production conditions such as high temperatures up to 280 degrees C or high pressure during production."

"A lot of feedback for this latest ink improvement came from the industrial segment," adds Franz Aigner, CEO at Sepiax with responsibility for the company's product development. "In addition Sepiax can be seen as the inventor of water-based resin inks for piezo print-heads. We now have more than five years of experience with this new ink technology. Of course, our leading position helps to develop this technology to the next level while others are now starting to launch their first product generations."

One primary requirement, especially from industrial customers, for the new Sepiax Aquares V3 was to improve reliability on long print runs while prolonging cleaning intervals at the same time. In the past, improper handling and excessively high heater temperatures caused some problems.

The Sepiax Aquares ink technology is stated today to be the most advanced water-based ink and still one of the rare inks capable of printing onto virtually every surface without the need of special primers or coatings. This includes many difficult materials like hydrophobic glass without priming, plus acrylics, polycarbonate, wood, metal and textiles (including natural fabrics). ■

Saati set to integrate Fotec activities

The managements of Saati SpA, Italian manufacturer of fabrics, stencil products and screen chemicals, based in Appiano Gentile, Italy and Fotec AG, the Swiss manufacturer of stencil products and screen chemicals, based in Küsnacht, Switzerland have announced that the commercial activities, the production and the trade-names and brand of Fotec AG will be integrated into the activities of Saati by the end of September 2012. Both companies are active in and committed to the screen-printing industry and an agreement was signed recently by both parties.

At the same time Saati made the announcement for full continuity of the relationship with German producer of chemicals for the screen-printing industry, Remco-Chemie Rentzsch GmbH, based in Heidelberg, Germany. Fotec and Remco already held an individual alliance in sales and distribution which is now used as the basis of the new cooperation.

Sales, marketing and distribution of the Fotec brand will be regionally separated. While Saati's sales organisations in Asia, Australia and America will distribute the Fotec brand in these continents, the European, Middle East and African sales activities will be fully paired with those of the Remco brand. Sales of both brands will be handled by SPT (Screen Process Technology) Sales & Marketing GmbH, based in Heidelberg. This company will take over technical, sales and marketing personnel from Fotec AG and Remco-Chemie Rentzsch GmbH and will act as the distribution centre and central warehouse for its sales territory.

Management of SPT Sales & Marketing GmbH will consist of Leo Wyss, the Managing Director of Fotec, and Ralf Roschlau, who has been SPT's Managing Director since its foundation in 2009, then the sales and marketing centre for the Fotec and Remco brand.

Henri Kunz, founder and President of Fotec AG and one of the pioneers of the European screen-printing industry has emphasised that the handover of Fotec's activities to Saati, paired with maintaining and strengthening of the Fotec brand, signifies the continuity of his life's work. Saati's shareholder Dr Alberto Novarese and Remco-Chemie Rentzsch's shareholders Jochen and Dr Marcus Rentzsch stress how proud they are of the recent distributive bond between the two suppliers, fostered by Fotec's integration within Saati. ■

Systec now manufactures and services NW140 UV digital ink-jet printer

As a manufacturer of printing and slitting equipment, Systec Grafische Maschinen GmbH, has announced that it is now manufacturing and servicing the NW140 UV digital ink-jet printer in co-operation with Spartanics Laser Cutting Systems and JetINX UV Inkjet Printing technology in Bielefeld, Germany. This announcement follows the successful introduction of the equipment in the autumn of 2011 and the overwhelming response at Drupa 2012.

The NW140 UV digital narrow web press is the first fully integrated printing and laser finishing solution combining low long-term operational costs with a low initial investment.

"We are excited to join forces with INX International (www.inxinternational.com) and Spartanics (www.spartanics.com) to manufacture and service the NW140 for our European customers," says Reinhard Zimmermann, Managing Director of Systec. "Sometimes it takes a group of experts in individual fields combining resources to produce a system that exceeds market requirements and we are glad to be part of this successful co-operation."

The NW140 UV Digital Narrow Web


The NW140 UV digital narrow web press

Press provides single pass printing at speeds up to 27 meters/minute (80ft/minute) on any label stock. It employs 14 print-heads, an air-cooled UV LED pinning system, a proprietary ink recirculation unit and a 225 high efficiency, water-cooled UV LED curing system.

The NW140 offers a base coat application for non-treated media and will support media up to 2mm in thickness. The LED curing lamps are used for the pre-coat, white base layer and varnish to hold the ink-jet drops in position before a full cure is added by another LED lamp and laser cutting. The end result is labels printed in brilliant colour, quicker job changeovers and automated, accurate cutting paths. ■

FESPA to recognise print's heroes in Hall of Fame

FESPA is inviting printers, manufacturers, suppliers, print buyers and end users to nominate print solution providers into the FESPA Hall of Fame 2013. Seen first at FESPA Digital 2012, it represents the who's who of leading printers across the global print community. This initiative will culminate at the FESPA 2013 event in London which takes place from 25 to 29 June, 2013, where the overall Global Printer of the Year will be announced, alongside the top five printers in each country.

FESPA is encouraging the print industry to start nominating colleagues, who they feel deserve to be recognised and rewarded for their excellence.

The Hall of Fame aims to highlight worthy individuals from all over the world who their peers hold up as inspirational role models. Printers can be nominated for having pioneered a new approach or technology, or demonstrated innovation in other ways. They may simply stand out on print skill or service for a leading stance on sustainability, or have made some other significant contribution to the industry.

FESPA Managing Director, Neil Felton, comments: "The initial Hall of Fame at FESPA Digital 2012 was extremely well received and we're thrilled to continue to celebrate the amazing and inspiring work of printers around the world. We want to encourage the print community to nominate colleagues and industry peers they admire, to help celebrate the exceptional work that they do every day."

Nominees who receive several votes will be inaugurated into the FESPA Hall of Fame offering a host of benefits as part of an exclusive group. With the chance to network with like-minded innovative entrepreneurs, nominees also receive VIP invitations to FESPA global events as well as discounted conference or summit delegate places, in addition to potentially gaining positive media coverage for their business.

Nominations will run until 21 January 2013, and the global community will then be able to vote for their favourite print hero until 31 May 2013. The five winners and top five nominees per country will be announced at FESPA 2013 on 26 June at the Awards Gala Dinner.

Making a nomination is simple. Printers, manufacturers, agencies, brands or suppliers wanting to nominate, simply visit www.fespa.com/halloffame. ■

Marabu does the double with digital and screen products

With two stands at Drupa, Marabu was able to display the latest innovations from both its digital and screen-printing ink ranges. Products included a new aqueous-based digital printing ink called MaquJet DA-E which comes in a recyclable cardboard cartridge, Marabox which was demonstrated with Ilford BioMedia film.

Also new was the company's UltraJet DUV-F UV-curable ink which is designed for flexible materials and is characterised by minimal post-cure odour. This rounds off Marabu's UV-curable ink portfolio which features such products as DUV-H (hybrid) and DUV-R (rigid), catering for all substrates.

In a world premiere, Durst used Marabu's UV-curable coating, Marashield UV-GBC, in a live demonstration on the Rho 1000 which featured an integrated roller-coating unit.

On the company's screen-printing stand, Marabu focused on three products. Its low migration Ultrapack UVFP for food packaging and Ultrapack LEDC for LED UV curing were complemented by Ultramold UVPC which, as its name suggests, has the robust properties needed for the IMD sector.

Marabu also featured on the Sakurai stand where its UV special-effect offset ink and its Ultragraph UVAR for PET film were demonstrated on a Maestro cylinder screen press. ■

Lightweight polystyrene sheet material meets display and recycling needs

Available from the 3A Composites comprehensive range of sheet materials for visual communication is SMART-X, the all-plastic polystyrene sheet material previously known as FOREXsmart. This is a lightweight, all-plastic sheet material with surfaces of UV and weather resistant solid polystyrene (HIPS) and a core of expanded polystyrene that is completely moisture-resistant. These characteristics are said to make SMART-X the world's leading lightweight foam board for external visual communication applications with guaranteed no yellowing, even after two years of outdoor exposure.

SMART-X also shows its qualities indoors, with its lightweight construction combining with its unexpectedly high rigidity to make it ideal for all types of suspended signage, especially large-format panelling and long, narrow signs. In addition, it is also a suitable sheet material for self-supporting, free-standing structures such as point-of-sale applications and any kind of display. Due to its special surface finish and the recently added 2m wide option, this novel substrate is also well suited for direct digital printing.

Masking film protects the mat surface from blemishes and lifts off easily to reveal the white, non-reflecting polystyrene. The adhesion of UV curing inks (cross hatch test result 0) guarantees perfect results without ink chipping even after extensive routing on the contours.

SMART-X is a composite panel of uniform composition made of 100% polystyrene which meets the growing demand for sustainable materials in the visual communication market. It's wholly recyclable with 95% of the production waste being collected and recycled already during production. It also meets the requirements of the RoHS/WEEE directives and REACH regulations of the European Union on the restriction of hazardous substances. ■

SMART-X is well suited to indoor and outdoor applications

SignTronic and Grünig draw a positive balance

SignTronic and Grünig-Interscreen joined forces at Drupa for the first time to present their latest processes and solutions for automatic screen manufacturing. The intention was to demonstrate the range of possibilities that screen-printing provides, and prove that the process is alive and well, helping to dispel the perceived wide-spread uncertainty about the technology.

One essential step in this direction was based on digital and filmless direct screen exposure with computer-to-screen (CtS) not only ensuring a faultless and cost-efficient reproduction of perfect screens, but also allowing improved printing quality and increased the productivity.

Using the maxim that many screen-printers are very concerned about the future of film manufacturing, SignTronic and Grünig-Interscreen were able to demonstrate digital screen making, showing how new technologies cover the present as well as anticipated future requirements.

Grünig offers a full product range for automating the processes involved in screen preparation with modular concepts. It presented its in-line concept XS (eXcellent Screens) that covers all these requirements and can be configured in accordance with any particular situation, accommodating various screen sizes and the possibility to be linked to CtS technology.

Modularity also featured in the safe handling of chemical products which are potentially hazardous for the environment and liable to contaminate water. G-Wash 034 is a solution for cleaning and conditioning liquids and can be combined with new or already existing installations.

Both SignTronic and Grünig-Interscreen drew the conclusion from Drupa that, as before, screen-printing is a very up-to-date technology which during the years has gained in professionalism. In addition, it offers a very wide range of application possibilities, of which the most important one is industrial screen-printing. The companies plan to continue this shared impetus with planned appearances at Glasstec and Fespa. ■

Ruco appoints Junginger as Director Global Business

Helmut Junginger

Helmut Junginger has joined Ruco's board of directors. With more than 20 years of world-wide experience in marketing of printing inks, in his function as Director of Global Business he will concentrate on the development of Ruco's global presence, and develop new distribution channels. Junginger will also focus on Ruco's new, market-ready and environmental ink series, targeted to meet new regulations and specifications regarding substances in printing inks. ■

New low cost flash cure option from Vastex

Vastex International has introduced a new, low cost F-100 Flash Cure Unit with a 41 x 41cm heater that offers higher wattage per square inch/cm than the F1-18 model it replaces, according to Mark Vasilantone, president.

The F-100 unit is offered in 120 and 240 volt models, both with a 1625 watt heater that carries a 15 year warranty.

Fixed heat shields on four sides of the enclosure allow positioning closer to the garment, improving edge-to-edge temperature uniformity for increased output and image quality.

The F-100 unit is also equipped as standard with an on/off switch, NEMA 6-15P (120V) or NEMA 6-15-P (240V) plug and international plugs. There are extra-large side handles, a head leveller to adjust the heater parallel to the pallet, and a sturdy, four-leg stand with vertical adjustment collar allowing 360 degree rotation.

An optional rotary table with two vented steel pallets allows the F-100 unit to double as a low cost dryer.

Also optional is an Auto-Flash AF-120 or AF-240 upgrade that rotates the head into place above the pallet with the touch of a foot pedal, and automatically rotates the head away from the pallet after a user-adjustable dwell time has elapsed. This prevents over-flashing and under-flashing of garments.

The company also manufactures flash cure units with higher outputs, forced air and other features, as well as IR conveyor dryers, screen-printing presses, heat presses, screen exposing units, screen drying cabinets, screen registration systems, washout booths and complete screen-printing shop systems. ■

The lowest cost Flash Cure Unit offered by Vastex International

EFI's Fiery certification program help customers achieve more

EFI's new certification training program for its Fiery digital print servers, tools, and software options means that print providers now have a structured learning program. This teaches them the essential skills they need to increase production capacity through enhanced staff productivity, to expand their service portfolios into higher profit jobs, and to increase customer loyalty with superior colour quality and faster job turn-round. As an added benefit the Fiery Certification program validates acquired skills through a certification exam.

Fiery Certification training modules and materials are exclusively developed by EFI subject-matter experts and provide a comprehensive curriculum that progressively builds knowledge on Fiery systems, tools, features and software options. Designed for new and existing Fiery users, Fiery Certification consists of two tracks – Fiery Professional Certification and Fiery Expert Certification.

The Fiery Professional Certification establishes solid foundational skills on Fiery functionality such as optimal system configuration, print job management, automated workflows, colour profiles and calibration. This curriculum consists of 15 self-paced on-line courses and a certification exam. Entirely Web-based, the program is accessible anytime, anywhere and allows students to create their own learning plan around their schedule.

The Fiery Expert Certification builds on the Fiery Professional Certification and provides in-depth training on more advanced topics such as the use of advanced Fiery imposition and variable data printing tools, PDF workflow optimisation, complex late-stage colour editing, JDF workflow integration, and more. It offers a blended training approach with five online courses, a two-day intensive hands-on classroom training, and an online certification exam. Fiery Expert Certification develops practical application in real-world production situations for more strategic management of Fiery systems. ■

Polytype and Lüscher agree on a distribution partnership

Two long-established Swiss companies, Polytype SA, worldwide leader for systems for tubes, cups and cans and Lüscher AG Maschinenbau, leading supplier of pre-press systems for the graphics industry, have agreed on a global distribution partnership of Lüscher machines that will greatly extend the strategic areas of activity of both companies.

This distribution partnership with Lüscher will enable Polytype to round off its product portfolio and develop into a full-range supplier. Customers can now count on outstanding support not just for their standard requirements but also for highly specific, complex tasks in the fields of block-making and print form production. "This will not only lead to considerable cost savings but will also massively increase our customers' flexibility," state Polytype SA's Daniel Wider, Head of Business Unit Cup Decoration, and Alain Berset, Head of Business Unit Tube Decoration.

Through its partnership with Polytype, Lüscher will be able to expand its market for plate CtP systems thanks to the use of new, pioneering imaging technology. Customers will benefit from a hybrid imaging system which will allow them to image the whole range of print forms such as dry offset, offset and flexographic plates, rotation screens and all types of flat screens at high speed and in outstanding quality using a single machine. In addition, these Lüscher systems will enable top-quality imaging of magnesium and copper plates for foil stamping applications. ■

Minich becomes Atlantic Zeiser CEO

Manfred Minich has been appointed Chief Executive Officer (CEO) at Atlantic Zeiser Group, a leading developer and supplier of modules and end-to-end system solutions for industrial digital and security printing, numbering and card personalisation as well as individualisation. He has also become a member of the board of directors of parent company, Orell Füssli Holding AG.

Before joining Atlantic Zeiser, Minich was responsible as Managing Director Sales, Marketing and Service at folding and print finishing equipment supplier MBO Binder GmbH & Co KG in Oppenweiler. He will work closely with CFO Thomas Obitz.

"Manfred Minich has an exceptional track record of success in developing and growing businesses," said Michel Kunz, CEO of Orell Füssli. "His broad set of experiences will bring great value to Atlantic Zeiser as we pursue our strategic growth opportunities."

After obtaining a degree in business administration, operation and management, Minich, 54, began building up a wealth of business expertise with 20 years at Metabowerke in Nürtingen, where he gained extensive marketing and sales experience. Positions such as Marketing Director at German/Alpine, member of the management board of Black & Decker Deutschland in Idstein and Marketing Director Worldwide at Loewe in Kronach then followed. In 2001 he was appointed Managing Director of the label division at HERMA GmbH in Stuttgart, later becoming chairman of the executive board. ■

Manfred Minich, new CEO at Atlantic Zeiser

Four new fabrics from Berger

A Berger has added four new materials to its portfolio, all of them being fabrics designed for wide-format digital printing and a variety of different ink formulations.

Samba FR is 100% crease-free and is suitable for use with latex, solvent and UV-curable inks, producing the equivalents of soft signage. It can be used for a range of applications including light-boxes and framed displays, umbrellas, beanbags and inflatables. It has a matt surface with a fine textile structure and is available is widths of up to 3.0m.

Stretch Power claims to be 100% crease-free, and is stretchable in both directions between 8 and 10%, and suitable for transfer and direct dye sublimation. It can be used for 3D-shaped applications, table-cloths and pop-up banners, and it's available in two widths of 1.55m and 3.10m.

For industrial textile printing, Berger's new Banner Canvas produces high image quality at a low cost, and is suitable for solvent, UV-curable, latex and aqueous-based inks. There is a flame retardant option on some of these products, and a 3.05m width will soon join the existing 1.52m product.

Finally, Bannertex offers a 2% stretch, with a tighter, softer structure making it useful for framed display applications. This material can be printed on both sides, glossy and matt, and is approved for all transfer and direct dye sublimation printers. Berger offers free sewing training on this textile product at its Krefeld premises. ■

Defending champion solar car features Avery Dennison vehicle wrap

The University of Michigan's solar car, Quantum, was wrapped with Avery Dennison's vehicle wrap films when it competed in the 2012 American Solar Car Challenge. Avery Dennison MPI 1005 Supercast Easy Apply RS(TM) and DOL 1360 were installed on Quantum by TKO Graphix of Indianapolis, Indiana.

"The wrap is an important improvement to the car. We eliminated a significant amount of weight. The vinyl conforms very well to the compound curves of Quantum's body – and looks just like paint," says Cole Witte, engineering director for University of Michigan solar car. "We focused on streamlining Quantum over the last two years and shaved off 200 pounds compared to our previous car."

Avery Dennison MPI 1005 Supercast Easy Apply RS, a digitally printable pressure-sensitive vinyl that is repositionable and slideable, made application easy. In addition it features air egress technology, allowing air bubbles to escape during the installation process. TKO Graphix, a graphic services provider that has worked with the University of Michigan Solar Car team for several years, wrapped Quantum and several team vehicles in the Avery Dennison digitally printable, pressure-sensitive material.

"It's exciting to partner with college students that push technology to the edge with the passion to win the race," states Kathleen Hall, vice president and general manager, Avery Dennison Graphics and Reflective Solutions, Americas.

Since its inception 20 years ago, the University of Michigan team has built twelve custom solar-electric vehicles and won six national championships, establishing itself as America's number one team. ■

Success for Scodix

Scodix has announced Drupa was the most successful event the company has ever attended. Its unique glitter and Braille effects were shown for the first time, attracting an unprecedented number of visitors during the 14 day exhibition.

For the first time Scodix secured orders for press installations in Russia, the Far-East, and The Netherlands, as well as increased presence in many other countries around the world. The newly launched Scodix S74 PRO and the Scodix Rainbow glitter station worked constantly throughout the event.

Scodix CEO and founder Kobi Bar says: "We are terrifically pleased with the attendance, interest and new customers we received for the Scodix presses during the drupa show. The number of people visiting the stand and the amount of people taking away samples shows the extraordinary level of interest in the unique properties of the Scodix technology."

The Scodix S74 digital press provides the tangible Scodix SENSE experience using advanced jetting blocks and multiple independently controlled inkjet nozzles to deliver Scodix's proprietary PolySENSE clear polymer in small drops. Patent-pending Optical Print Alignment (OPA) camera system executes enhancements with pin-point accuracy (image-to-image registration), scanning each and every sheet to ensure delivery of the Scodix PolySENSE clear polymer to its exact location.

Using special digital enhancement capabilities, the Scodix S Digital Press can produce 99 Gloss Units (GU) up to 250 microns in polymer height and variable density capabilities, ranging from 1 to 100%. The Scodix ink-jet Braille printing technology provides materials to the blind and visually impaired. In addition to recreating standard raised Braille formats, the technology can also reproduce scientific elements, shapes such as triangles and circles, and animal forms. Unlike regular Braille, the letters and shapes created by Scodix stay raised at the same height, never flatten and are very easy to sense-read. ■

Videojet 8510 meets industrial coding application requirements

The Videojet 8510 compact thermal ink-jet printer

Videojet Technologies has introduced the Videojet 8510, a compact thermal ink-jet printer specifically designed to meet industrial coding application requirements for the packaging industry. Also marketed as the Wolke m600 touch in Europe, it offers ease of touchscreen operation and maintenance, maximum uptime with fast, simple cartridge changes and is ideal for a wide range of primary and secondary coding and marking applications that ensure product integrity. Its touchscreen interface allows operators to access all common operations in five or fewer touches, reducing the learning curve and increasing operator productivity.

Xavier Chaveton, Director, European Marketing Director Videojet Technologies Inc, says: "Operators can quickly and easily ascertain the status of the printer, verify the print job that is currently loaded, and check cartridge ink levels and other production line data. This printer has been designed with ease of use and reliability in mind. As the job mix migrates toward shorter runs and faster turn-around times, users must be able to process more jobs in less time to handle increased job throughput. We believe the Videojet 8510 meets those needs superbly."

In addition to its easy-to-learn icon-based controls, the 600 x 600 dpi high resolution Videojet 8510 inkjet printer features spill-free print cartridges that are easy to change in less than a minute and 100% contained. With no moving parts, the chances of line stoppages and costly maintenance are vastly reduced. Its compact controller and multiple low profile print head options make it perfect for integration into space-constrained locations.

The Videojet 8510's compact controller and multiple low profile print-head options allow for quick integration into packaging production lines, even in the most space-constrained locations. In addition, because it can drive up to four print-heads, operators can easily print barcodes, graphics or multiple lines of text. This makes the system ideal for carton and case printing, web-based traversing printing, and variable printing on labellers across the packaging industry, from pharmaceutical and life sciences to food and consumer goods packaging. ■

Esko renews relationship as Fespa's global software and finishing partner

Fespa and Esko have confirmed their Global Software and Finishing Partnership for the second consecutive year. This partnership offers market insight into the trends and developments in software and finishing innovation, working together to educate the Fespa community about the significant potential of new solutions.

Esko's commitment to support the industry is further demonstrated by their generous offer of an exclusive free twelve-month full production licence agreement of *i*-cut suite software. This deal is available to all new and existing Fespa association members and comprises a collection of pre-production software targeted specifically at users of wide-format digital printers and/or digital finishing systems.

As part of the agreement, Esko will also host three webinars covering advanced sign and display work-flow solutions in the areas of 'Preparation, Enhancement and Adding Value'. This high quality content will be available to the worldwide community through www.fespa.com in September and October 2012.

The first two webinars (6 and 20 September) cover a diverse range of business areas. These presentations highlight and discuss new opportunities that benefit print businesses' bottom line, including new work-flow solutions and smart developments in software to help streamline data and prepare for print. The final webinar on 4 October will explain how 3D software can add significant customer value. From CAD to graphic design, printers will learn new simple 3D techniques to create multi-part displays to excite customers.

Steve Bennett, Vice President – Digital Finishing Business, Esko comments: "As one of Esko's key marketing partners, we really appreciate all that Fespa brings to the table. They offer their members and community valuable practical educational information, as well as highlighting new and emerging industry trends, all very much in line with Esko's organisational objectives."

"We are proud of our successful partnership with Esko which included the sponsorship of Fespa Digital 2012 and their participation in Print Shop Live," states Neil Felton, Fespa Managing Director. "Their support has been invaluable and the webinars that have been scheduled over the next few months will help FESPA to continue to provide our national associations, their members and our visitors with access to new ideas, guidance and in-depth market knowledge." ■

WHAT TO DO WHEN SCREEN-PRINTING STENCIL PRODUCTION GOES WRONG

Part three of a four-part summary of the most common errors, their causes and prevention/elimination

9 SAWTOOTH FORMATION DURING PRINTING

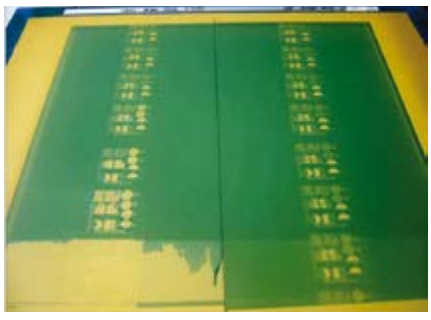
a) Excessive water pressure when developing
Develop stencil by gently showering with lukewarm water.
b) Light scattering on the mesh
Reflection can be reduced by using (yellow) coloured mesh.
c) Poor contact of the film positive with the emulsion
The blackened side of the film positive must have direct contact with the emulsion (vacuum copying frame). Do not use offset films.
d) Exposure too short (emulsion remains soft)
Check exposure time and light source (Kiwo Expo Check, Kiwo UV-Meter Pro or step exposure). Follow guidelines in the technical information.
e) Exposure too long (fine details were undercut)
Check exposure time and light source (Kiwo Expo Check, Kiwo UV-Meter Pro or step exposure). If necessary, switch to coloured mesh. Follow guidelines in the technical information.
f) Coating too thin
The emulsion should equalise the mesh structure as far as possible. The surface roughness Rz should have a value below 10 microns.
g) Wrong type of mesh
The mesh must be matched to the print job. Take into account the type of artwork, the property of the print medium, the thickness of the ink deposit, etc.
h) Insufficient sensitiser
The sensitiser must be completely dissolved and mixed well in the emulsion.
i) Incorrectly ground squeegee
If a squeegee has been ground too roundly, ink can build up at the motif edges, which leads to a sawtooth effect.
j) Insufficient viscosity of the ink
If the ink is too thin, it can run along the mesh filaments and create a sawtooth.

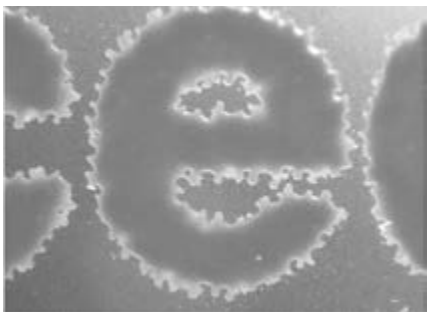
10 NO REGISTRATION

a) Drying temperature too high
The drying temperature should not exceed 40 degrees C. The best temperature setting is 35 degrees C.
b) The vacuum frame is too warm
Cool the glass plate sufficiently between imaging. During long exposure times, cool the glass plate with fans.
c) The film positive is too warm or not completely dried
Store film positive at room temperature. Ensure adequate drying after developing. Do not place on warm light table or vacuum frame.
d) The curing temperature is too high
The curing temperature should not exceed 40 degrees C. It is better to cure at room temperature.
e) The frame dimensions and the mesh tension are different
The screen frames of a set of colours must be equal in size and have the same profile. The mesh type and tension must be equal for all colours.
f) The position of the printed image is different, or too much outside the stencil centre.
The print motif must be positioned as close to the stencil centre as possible and at a sufficient distance from the screen frame.
g) Machine parameters changed
Any changes of squeegee pressure, snap-off, frame lift, speed, etc can affect register.
h) Physical properties of the substrate
Under heat (dryer), substrates react very differently eg: most plastics stretch, paper shrinks. Therefore, the material should be stored accordingly and drying temperatures avoided which are too high.

11 POOR STENCIL RESISTANCE

a) Poorly degreased mesh
Degrease carefully with Pregan A 9 Extra, NT-9 or Pregan NT Paste, then rinse thoroughly with water. Use recommended Kiwoclean degreasers in automatic cleaning units.
b) Mesh not stretched properly
Details of the mesh manufacturer's instructions.
c) Air bubbles in the stencil
After sensitising, all emulsions should be allowed to stand for at least two hours, preferably overnight to allow air bubbles to escape. Coat with a slow, even pressure.
d) Inadequate stencil thickness
Higher emulsion coating required. First, coat the printing side several times, then build up stencil thickness by a single or multiple coating on the squeegee side.
e) Exposure too short (emulsion remains soft)
Check exposure time and light source (Kiwo Expo Check, Kiwo UV-Meter Pro or step exposure). Follow guidelines in the technical information.
f) Media containing corrosive or abrasive constituents
Verify that the emulsion used is suitable for the print medium. If necessary, lacquer over or harden the emulsion. Use suitable non-water based screen cleaner.
g) Mechanical abrasion
Check the squeegee and distance between bottom of the screen and substrate (snap off).
h) Insufficient sensitiser
Dissolve sensitiser completely and mix well into the emulsion.
i) Incomplete drying
Ensure thorough drying before imaging. Ensure a fresh air supply in the drying cabinet. ■


The effect of insufficient mesh preparation


Sawtooth effect

Part two of this series appears in Specialist Printing Worldwide, Issue 2, 2012

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HELPING YOUR CUSTOMERS – AND YOURSELF

David van Driessche underscores the benefits of web-based pre-flighting

What is the biggest complaint any printer has about its clients? Well, in these economically challenging times the answer might come back to correct payment, as well. But, long before that, comes the supply of correct material. It's a problem that gets worse as more clients 'quickly design something' rather than working with professional agencies. And who can afford to refuse work these days?

So we dutifully accept everything clients send us and often eat the cost incurred by fixing problems. What else can we do?

PRE-FLIGHT BENEFITS

Conceptually this is not a difficult problem; so-called pre-flight technology for PDF files has been around since 1997. With pre-flight tools such as Callas pdfToolbox or the pre-flight plug-in built into Adobe Acrobat, you can make a list of requirements for your work-flow and quickly test whether your clients' files will cause problems or not.

You don't even have to invent your own pre-flight requirement list really; the ISO and other standards organisations have done that work long ago. Their standards are fully supported by modern pre-flight tools.

DON'T JUST TELL ME I HAVE A PROBLEM

Even better, don't just check files, but fix them! Those same pre-flight tools can automatically convert colours, fix hairlines and flatten transparency… You can receive client files, fix most problems and only ask for new files when absolutely necessary (low-resolution images are a good example of a problem that cannot be fixed without going back to the client).

Changing client files is obviously not without consequences; even though you are correcting real problems, you might still be exposing yourself to additional liability by doing so. So how do you take advantage of this splendid pre-flight technology without shooting yourself in the foot?

LET CLIENTS FIX THEIR OWN FILES?

Pre-flight tools are capable of generating nicely formatted pre-flight reports that list all problems found in a document. How about you send this back to your client and politely ask them to fix the problems you've found in their documents?

There are a couple of real problems with that approach.

First of all, you look at the world from a production point of view. As a result, you know why, for example, transparency can be a problem. Your clients in many cases won't know this at all; they might not even realise their document contains transparency in the first place. Worse, when using tools such as Microsoft Word, they might not even be able to avoid transparency in their PDF files!

Secondly, clients look upon production difficulties as your problem – not something they should invest time or effort in. And definitely not something they should pay for.

And lastly, however nicely formatted the pre-flight report and your accompanying e-mail are, you are still basically telling clients they did things wrong and you will not print their file before they fix it. And this is a hard message for a client to hear and for a printer to deliver.

Pre-flight standards from ISO and GWG in the Callas pdfToolbox pre-flight application

WHEN DO YOU GLADLY SPEND ADDITIONAL EFFORT?

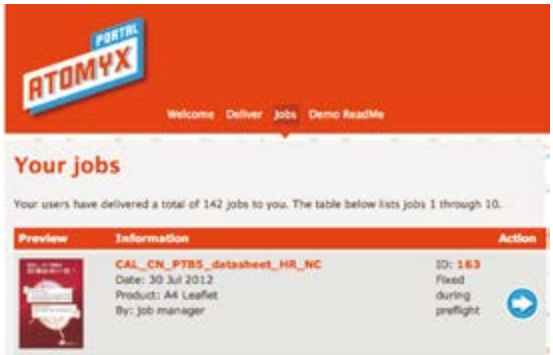
Lets take a step back to find a way out of this bind. We have the technology to find problems in PDF files and to fix many of them automatically; how can we use this in such a way that clients will embrace it rather than go look for a different printer?

This is not a technical but a psychological question. We gladly spend time and effort doing things if we perceive additional value to us. And that value doesn't have to be money; it can be additional convenience, ease-of-use, control or simply the feel-good factor as well.

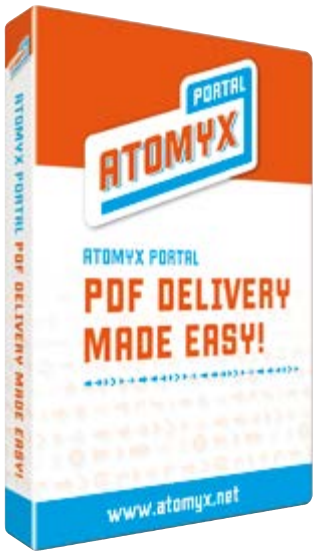
So the question becomes, how can you provide additional value to your clients while improving the quality of the PDF files that you receive to print?

THE FRUSTRATIONS CLIENTS FACE

The key to finding the answer for this problem lies with the frustrations that clients have when they have to get their work printed. First of all, because of the increasing complexity of the printing process, especially in work-flows where innovative media or printing methods are used, it is increasingly hard for clients to be sure that what they deliver will be faithfully reproduced. Anything that improves the clients' comfort levels when delivering work to you is going to be perceived as additional value.



An example of a web delivery portal (Atomyx Portal) showing an uploaded job with immediate quality control status



Atomyx Portal is an Internet platform that incorporates traditional pre-flight technology

Secondly, just as that is the case for you, your clients feel increased economic pressure and the necessity to get more done more quickly. This implies the need for quicker turn-round times for jobs. Have you noticed you get more done if you can work on one task at a time? Imagine how annoying it is to send a job to a printer only to find out two days later something was wrong with it and you need to fix it. Having immediate feedback and being able to finish a job to where you're sure it's good are both key to being efficient.

THE SOLUTION?

I believe the answer to this problem has been around for quite some time; but that it is only today the world has matured to the point where it becomes viable. Years ago, when most pre-flight tools were desktop-bound, a company called DevZeroG developed an Internet based pre-flight solution. For a number of reasons (that had to do with technical aspects but mainly with the business model used and the acceptance of Internet-based tools) the technology never reached a major breakthrough.

Obviously technology has evolved since then, but today we see systems such as Atomyx Portal (www.atomyx.net) and Ad-handler (http://www.ad-handler.co.uk) following the same strategy. Both are examples of Internet platforms that incorporate traditional pre-flight technology to offer quality control and corrections.

WHAT'S SO DIFFERENT ABOUT THIS?

The first important point to make is that Internet based software is much more familiar and acceptable to us at this point. Look at how at-ease we all feel with tools such as Facebook, eBay, LinkedIn, Salesforce and many more web sites. This was not the case ten years ago and, together with increased adoption of high-speed connectivity, I believe this makes Internet-based pre-flight tools a viable proposition today.

The real key of course is that these tools add value to your clients. When you can upload a PDF file and immediately have it corrected and pre-flighted, this means you also have instant feedback. A client no longer feels like he's sending his job into a black hole only to receive complaints days later; they can see what is good and not good on the spot. And today's Internet technology allows providing a simple client experience with an easy yet elegant look-and-feel.

AUTOMATION

But there's a ton of benefit on the printer side as well. In many cases printers today receive files through email, FTP and an array of services such as YouSendIt. As a printer you're left sorting out all of that material and figuring out who sent you what for what purpose.

An Internet based platform excels not only at integrating pre-flight technology and giving instant feedback, but it's also a platform where we are used to providing accompanying information. Filling-out forms on web sites is probably something all of us do daily and modern browsers even offer built-in tools to make it easier for us to fill out repeating content.

This means that these platforms not only can take care about the quality of the uploaded jobs but they can also be used to solicit key additional information from the client. All of a sudden, as a printer, we have a way to receive quality-controlled content, together with additional metadata for that content – the ideal way to automate production processes further! ■

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AUTOMATION IN PAD PRINTING

Karen Krulikowski explains the benefits of this process in specialist industries

The history of pad printing can be traced back to the 1950s, when a Swiss watch manufacturer used a crude form of pad printing to mark its watch dials. This new printing technique replaced a time-consuming process of hand painting each piece. Pad printing has developed over the years because it is extremely adaptable for printing on irregular surfaces, especially for materials that challenge traditional flat printing techniques (Figure1). Why has this industry changed so much in last half of the century – is it market driven or technology driven? Or maybe a little of both?

Areas of significant change in the pad printing industry can be traced through the advancements of three major components – inks, pads and mechanical equipment. Each area has evolved over the years to allow greater flexibility for printing on a variety of compound materials and irregular surfaces.

There are also a variety of uses for pad printing today within many markets, so the inks may need to be non-toxic, conductive, UV-curable, or edible. Ink formulas consist of pigments plus a combination of thinners, viscosity reducers and adhesion promoters. These additives enable the ink to coat the plate (cliché) and evaporate quickly. Plus the ink must be tacky enough for the pad to pick up and transfer the image to the surface.

SIGNIFICANT CHANGES

The pad material has significantly changed over the years to a high-tech, fast-curing and durable silicone material. The properties of the silicone allow the inks temporarily to stick to the pad and then fully release when it comes in contact with the substrate. The hardness (durometer) of the pad dictates how the image transfers around the shape of the product. The pads can be designed into various shapes, sizes and hardness to meet any printing challenge.

Figure 1: a five-colour coin printer with a vision-centering camera and linear shuttle, custom designed using a standard pad printer head

The pad printer's mechanical improvements have catapulted the industry from one-at-a-time manual printers to fully automated multi-coloured systems, capable of printing thousands per hour. High labour costs and competition with foreign outsourcing has driven pad printing technology to combine with automation solutions, improving production performance. To stay market-competitive, products need to be produced faster and cheaper with decorating being an integral part of that process. The development of pad printing centres or adding pad printing within a production line, allows products to be produced from start to finish.

Pad printing machines are highly adaptable and many automation features can be added to improve production output. Features such as robotics for product handling (Figure 2), rotary tables, elliptical and linear conveyors and bulk loading devices have increased production for many manufacturers. These added technologies have helped pad printing remain the only process that can print reliably, repeatedly and precisely on irregular shaped surfaces. Also, newer servo-driven pad printers can be placed within existing production lines because of their speed and accuracy.

EXAMPLES OF AUTOMATION IN PAD PRINTING AND THE BENEFITS

A recent custom pad printing application involved installing a vision inspection system to monitor the print accuracy and moulded part quality of each specimen tray. The trays were printed with two colours and then passed under the vision camera where the part was inspected against set parameters. The vision system approves or rejects the part and then the tray exits to the appropriate off-loading

Continued over

Figure 2: a single-colour pad printer adapted with a rotary table, robot for loading parts and inline conveyor system

Figure 3: a servo-driven pad printer with PC controller

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EMULSION CAPILLARY FILM PRECISION STENCILS SCREEN MESH EQUIPMENT

Figure 4: pad printing multi-coloured catheters in a single pass

conveyor. This process removed the quality control step usually performed by an operator and eliminates the human factor.

In another case, a leading USA-based appliance manufacturer needed a pad printer that was capable of printing on a variety of models and designs in order to keep the costs down and to stay competitive with overseas imports. The large oven control panels with compound surfaces presented quite a challenge.

The solution involved a fully automated CNC pad printing centre (Figure 3). The complete system is controlled by a PC which stores and can recall hundreds of jobs with all the print parameters. Different sized silicone pads are automatically changed with the rotating magnetic head. The fixture rotates and holds two appliance panels at a time; while one is printing, the printed one is removed and a blank panel is loaded.

With this type of system, the manufacturer has the capability of changing the print program whenever a new model is added to the appliance line. This will reduce down-time normally associated with traditional print setup. Integrating product marking in the manufacturing process saves time, transportation and outsourcing labour, which in turn reduces overall parts costs. The previous decorating process had four operators load/unload and inspects each part being printed on two separate production lines. Now only one operator is required to operate the printer, a substantial labour saving. For this appliance manufacturer, the initial investment was costly, but this printing system has allowed jobs to stay in-house and be competitive with foreign imports.

MEDICAL MANUFACTURE

Many medical manufacturers need to precisely mark around the circumference of multiple-sized catheters or plastics tubing (Figure 4). Others require coloured bands that can be easily identified. Before the advancements in technology and design, printing precisely on tubular shapes was a long and complicated process.

One such automated system was designed for catheters to be picked up one at a time to a waiting robot that carries the catheter down the length of a vacuum-powered printing bed. Built-in laser sensors determine the length of the part and stop the carrier when it has reached the full length. The print bed rolls the catheter or tubing forward to achieve the 360 degree mark. This same technology can also be applied to other small products that are tubular in shape. Adding a bulk loader with an automatic picker also reduced production time and allows the operator to walk away to perform other tasks.

Just-in-time production is very important in order to keep overall cost down. A case in point involved a tool manufacturer who was looking to integrate pad printing into the current production process. During a process review, it was revealed the parts were being moulded in one area of the facility, warehoused in another building, and then sent to the pad printing cell (made up of four machines) for marking. After pad printing, the parts were sent to another area in the warehouse where they were stored until redistributed to the assembly area.

After further analysis, it was determined excessive handling of the product resulted in a definite loss in productivity. The solution was to integrate pad printing into the manufacturing line which would save multiple steps. High-speed servo-driven pad printers were placed on either side of the production line and positioned to print both side of the product surface simultaneously. Additionally a robot was integrated to remove the part from the moulding machine and feed it to the pad printer. After printing, the product was sent directly to the final assembly area. With this new assembly procedure, the manufacturer was able to redirect several of the pad print operators to other plant operations, saving time and resources while improving production workflow. The addition of robots to a pad printing process can also be used for assembly and manufacturing applications, ideal for companies that want maximum flexibility from their equipment investment.

ADHESION CHALLENGES

Printing on certain plastics has also been an adhesion challenge to many decorators. Pre-treatments modify the chemistry of the substrate surface and increase the surface energy, allowing the ink to bond to the substrate. Many plastics require a pre-treatment such as a flamers or a corona unit to provide a better bonding surface for ink adhesion. Highly curved or shaped parts can benefit from flaming, which energises the surface to a point acceptable for bonding by using the ozone present in the flame.

Corona or plasma treatment uses an electric current to create an ozone layer at the substrate surface. Both can be designed in-line with the pad printer or as a separate unit (Figure 5) that could be added to an existing production line. Pre-treated surfaces slowly lose their ionic character over time therefore incorporating a pre-treatment device in line insures a high durable ink bond. These units can be programmed through the printer controls to include automatic product detection and on-off control. The type of surface treatment will depend on the characteristic of the substrate.

These previously noted pad printing examples are just a few of the many innovative opportunities where automation played a key role in enhancing this industry. Pad printing technology, like other technologies, tends to borrow from one another. Advancements in engineering ingenuity, including servo controls, electronics, computer integration and communication technology along with many others, have allowed pad printing systems to advance to levels that have made them formidable opponents to cheap offshore labour. This has allowed American companies with vision to maintain manufacturing at home while still remaining competitive and profitable. ■

Karen Krulikowski works in Marketing and Sales at Pad Print Machinery of Vermont

Figure 5: a custom built pre-treatment conveyor flamer

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GETTING IT RIGHT

Riley Hopkins outlines how to fix on-press registration problems

What the hell is the matter with my press? It won't register right any more!

If you have ever uttered these fateful words, you know how frustrating and expensive those words can be! Do you need a new press? (Maybe.) Can this press be re-set to register correctly again? (Maybe.)

Fortunately, Sherlock Holmes was also a wannabe screen-printer! His powers of deduction are exactly what is needed to sort this all out.

To begin with, you need to start with some 'baseline' information. (Baseline means that you always know where you started from, and can go back there if you need to start over.)

The next thing to do, is document the 'misregistration'. Is this misregistration on each print-station? Only on one or two print-stations? Is the 'off-contact' varying print-station to print-station? Is the misregistration side-to-side? Front-to-back?

If your print-stations and print-heads are not numbered, number them with a sharpie, so you will know which print-station or print-head is giving problems.

Lastly, check with your printers to see if they are adjusting each print-head with each new screen as it's installed, or if they are not adjusting the print-head at all. If they give you a blank stare, or say they are 'using a quarter' to set off-contact, you know you are in deep Kimchee.

FOLLOWING THE INSTRUCTIONAL PATH

My presses unfortunately look very simple. Trust me … they are not simple. If you decide to stray from my instructional path to make adjustments (or make no adjustments) you are doing yourself, and your press a great disservice. I have very specific instructions on our website at www.rileyhopkins.com. Download them, put a copy in a glassine cover next to the press, as well as in the production manager's office, and your office. Additionally, actually follow the instructions!

Every time a new screen is installed in the press, adjust that print-head so the screen lays flat on the off-contact sheet, with the print-head all the way down in the gate (the wide registration block should be touching the head of that bolt that has the 'do not touch' on it). If you are asking what an 'off-contact sheet' is, read the instructions. The off-contact sheet is either a piece of illustration board, or Masonite of roughly an eighth of an inch in thickness, that is taped down to the number one shirt-board on the number one print-station.

You will be adjusting each screen to lay flat on this off-contact print-station (while actually setting the screens up roughly an eighth of an inch above the shirt-board itself, thereby establishing perfectly uniform off-contact across the entire shirtboard surface). No longer will you be using the 'blind man' off-contact method wherein you tap around the screen to see if you feel a uniform distance off the shirt-boards.

The last part of the off-contact setting business, is taping a 'shim' of the same thickness as the off-contact sheet on the outer end of the screen where it contacts the neck of the shirt-board. This will support the outer end of the screen during the print stroke, so the screen doesn't go 'on-contact' from the forty plus pounds of pressure during the print stroke. (Going on-contact at the outer end of the print-stroke means you'll be cleaning the outer end of the screen a lot.)

THE PROBLEM LIST

Okay … back to your problem list.

1) If the misregistration is only on one or two print-stations, see if there is a difference in height between the bottom of the registration block, and the head of the stop bolt in the gate. Generally, if there is a difference in height, it means one of your rocket scientists has decided to use the 'do not touch' bolt to set off-contact … and that is your problem.

A) Using a newly adjusted screen in the number one print-station, go to the next three print-stations to see if the screen will lay flat on an off-contract sheet on the remaining print-stations. If they won't, loosen the jam nut on the stop bolt, and lower the bolt out of the way, until the screen lays flat on the off-contact sheet like it should. Once the screen lays flat, gradually raise the stop bolt until is just barely touches the bottom of the registration block. Tighten up the jam nut. (You will notice the bolt moves ever so slightly upwards as it is tightened.) Recheck the screen, to make sure it is laying flat like it's suppose to. If it's okay, move on to the next print-station, and repeat the process, until all of your print-stations allow the screen to lay perfectly flat on each of the print-stations (with the off-contact sheet installed).

At this point, if this solves your misregistration problems, life is good.

MORE SOLUTIONS

If there are still more problems, let's tackle them one-by-one.

1) If the misregistration is side-to-side, put the print-head (with a screen in it) into the gate, and see if you have any side-to-side play out on the outer end of the screen. If you have movement, take the screen out, put the print-head down in the gate, remove the 'bumper bolt' (the bolt with the rubber hose on it to cushion impact from the print-head being pulled upwards by the springs.) Lift the print-head straight upwards, which will relax the springs, and disconnect the springs from the spring pad on the print wheel. Put the clamp of the print-head on your stomach, and tighten up the axle bolt until the print-head stays up at an angle. Back away from the print-head, and gradually loosen the axle bolt until the print-head drops. (This takes all the 'play' or clearance out from between the sides of the print-head, and the print-head bracket). Put the print-head straight up again, reinstall the springs (adding a drop of oil at the contact ends), carefully bring the print-head back down into the gate, and re-install the bumper bolt finger tight. Do the rest of the print-heads the same way, and you will have taken out all the wear from however many years worth of printing you have been doing!

2) If the misregistration is front-to-back, check to see that the centre nut on the centre shaft is tight. If it isn't, tighten it a quarter of a turn from 'snug' with a spanner, or straight screwdriver blade being tapped gently by a hammer. If you still have in-out play, your centre bearing is worn. On old presses, chances are this is an 'oilite' bushing, which can be replaced. If it's a tapered roller bearing, I would be very surprised if it's loose, as these support an awful lot of weight. Clean the bearing out, add STP (instead of grease) and reset the bearing nut. If the nut is tight, but there still seems to be 'play', add another washer under the bearing nut to see if that gives you the threads you need for adjustment.

If you are still having issues with print-stations, check to see if the scribe lines match up, and the dowel pins are in place. It's not unheard of to have print-stations 'scrambled' at dealerships (when they are storing several of the same model printers at once…and grab the wrong print-stations for your machine). If this is the case, call your dealer, as no doubt there is another customer with the same problem. You should be able to exchange print-stations, to install the mates to your existing ones. Generally, there is a number for the print-station, a letter, and a date on each set. Match the letters, and dates up, along with the print-station numbers, and make sure these all match. When installing the print-stations, make sure the dowel pins go in, and the scribe lines line up.

At the end of the day, your press should last for a least twenty or thirty years minimum with just a normal amount of routine maintenance. As they say in 'Zen, and the art of Motorcycle Maintenance' … do not enter into a contest of strength with this equipment, as you might win. Keep it clean, keep it real, and have fun! ■

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NEW OPPORTUNITIES FOR ROLL-TO-ROLL SCREEN-PRINTING

Specialist Printing Worldwide is in conversation about functional printing with Dr Christian Maas

Dr Christian Maas

Specialist Printing Worldwide: How would you characterise functional printing?
Christian Maas: It is more process manufacturing orientated than traditional CMYK printing. Functional printing has a different set of demands with an emphasis on product consistency, repeatability, and flexibility. The material deposition of electrical circuitry requires excellent printing registration and consistent layer thicknesses.

SPW: What are the advantages of flat screen-printing?
CM: Flat screen-printing is possibly the most versatile method of printing available, enabling a wide variety of material substrates to be used along with the widest possible range of different inks or coatings. It can process almost every liquid or paste-like substance – conductive, semi-conductive, resistive, dielectric inks etc. Flat screen-printing produces the high and consistent layer thicknesses required by almost all functional printing applications. And, finally, screens are cost-effective to manufacture with a full range of applicable meshes.

SPW: You refer to high-end flat screen-printing. What do you mean by that?
CM: High-end screen-printing overcomes the traditional limits associated with flat screen-printing. The combination of a modular, precise, roll-to-roll system with advanced drying technology results in a highly accurate, productive printing system. While a traditional flat screen system can print at speeds of 65 ft/minute (19.8m/minute) and an accuracy of ± 100 – 200 µm, our K 61 roll-to-roll machine can print at speeds up to 131 ft/minute (39.9m/minute) with a print accuracy of up to ± 50 µm.

SPW: What are the advantages of continuous roll-to-roll compared to sheet-fed and semi-rotary systems?
CM: For sheet-fed systems, sheet handling and off-line drying consume a good portion of the overall cycle time. Continuous production can be achieved on a roll-to-roll system due to in-line hot air drying and sophisticated web-tension controls. Constant web tension controls allow for accurate registration and thin caliper substrates. The servo-tension control can adjust for elastic changes in the substrate due to dryer heat. On semi-rotary systems, changing web-tension because of loop-boxes entails registration accuracy restrictions.

SPW: How does Kammann achieve high-end flat screen productivity?
CM: The productivity of our flat screen-printing module starts with precise servo-technology to facilitate flexibility, modularity, and accuracy. The moving ink roller provides exact ink transfer while its 30 degree tilted flat screen improves ink handling and printing results. It can not only handle a variety of substrates and ink film thicknesses, but the screen stations as well as other modules can be configured in any order.

SPW: Doesn't drying speed ultimately affect how productive the system can be?
CM: Yes, the drying/curing process of the special inks dictates the production rate of machine. Drying is a balancing act where the thermal requirements of the printed piece meet the material limits of the substrate and inks. To maximise efficiencies, drying should be done in-line. Off-line drying ovens and slow conveyor dryers do not meet productivity standards. Rotary systems, however, can't take advantage of high-speed due to drying restrictions. The flat screen roll-to-roll speed, however, is perfectly adapted to the solvent ink processes. The high-performance dryer module, which can be configured to hot air, UV, or IR, is engineered specially to print electronic devices. The compact and efficient design handles over 26 ft (7.92m) of web in the dryer at one time – all in less than 6 ft (1.83m) of linear floor space.

SPW: Can you give me some examples of functional printing applications that Kammann has handled?
CM: The range of functional printing that can be produced on our K 61 machine includes glucose test strips, electrodes for EKG machines and defibrillators, solar, flexible batteries, antennas, RFID tags and, even, automotive sealing material.

SPW: What are some of factors that go into the large-scale production of something like a glucose test strip?
CM: To produce the different layers of conductive ink and enzymes that make up simple electrical circuits entails accurately printing on 350 µm polyester material, using solvent-based ink and hot air drying. High registration accuracy is required to meet the circuit requirements. We've seen dramatic productivity improvements. For one customer, the previous sheetfed/conveyor dryer production speed of 2.25 ft/min was replaced by a roll-fed production speed of 32 ft/min which translates into more than 14 times more efficient.

SPW: Final thoughts?
CM: Functional printing is exciting for us because of the technological challenges and its potential. We look forward to meeting those challenges every day in every application. ■

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UNDERSTANDING THE MAGIC OF HYBRID PRINT PRODUCTION

Brian Wolfenden discusses why it's important to blend offset and digital processes

The role of print in the media mix continues to change due, in part, to the increased availability of alternative media, often perceived as less expensive and more effective than print. Print is by no means dead, and it will continue to play a key role in the communications mix. However, market changes have manifested themselves in a number of ways that have not necessarily been positive for the printing industry.

These shifts mean that printers need to adjust their sales and marketing processes as well as their production platforms to position themselves to address today's market realities.

MOVING UPSTREAM IN THE MARKETING SUPPLY CHAIN

From a sales and marketing perspective, savvy printers are working to gain contacts and build relationships further upstream in the marketing communications supply chain. To the extent they earn a seat at the 'marketing table', they will be able to offer advice and influence projects before they are set in stone. Of course, there are campaigns where print is not a fit at all. But many times, marketers may not be educated about some of the new technologies and techniques that can be integrated with print to make it more effective and interactive.

QR codes are a good example. A postcard, sign, brochure or point-of-sale piece with a QR code allows marketers/content owners to direct customers and prospects online for more information in a manner that is much easier than simply printing a web address on a piece. Rather than typing a URL into a browser, recipients or viewers simply point their smartphones at the QR code using a QR code reader app (many smart phones come with them already installed) and they can instantly get more information, or even make a purchase, right from their phones.

CONFIGURING AN OPTIMUM PRODUCTION PLATFORM

Many marketers also still think about print with a long run mind-set. They mentally dismiss print as too costly for smaller campaigns. This is why it is important for printers to ensure that their production platform can cost-effectively handle run lengths that run the gamut from one to many thousands. This requires a hybrid production platform with a blend of offset and digital. And, while many printers are jumping aboard the hybrid train, they are doing so with digital toner-based printing combined with conventional offset, still leaving a production gap in the 500 to 20,000 range.

While longer runs are easily handled with conventional offset presses, and ultra-short-run or personalised printing is ideal for toner-based digital print engines, it is these midrange run lengths of 500 to 20,000 that can be challenging to produce profitably. Research specialist InfoTrends pegs this volume band as the highest growth volume band, yet it represents a strategic production gap between offset and digital technologies that many printing firms are struggling to profitably bridge.

This is where digital offset solutions begin to add value. These digital offset, or DI, presses are designed specifically for short-run, fast turnaround production with a minimum of waste in time and materials, as well as on-press imaging of plates without the requirement to use noxious chemicals. By offloading shorter runs from a conventional offset press to a DI press, conventional offset presses can be made more efficient and profitable, and the printing company can feel comfortable soliciting more short-run work.

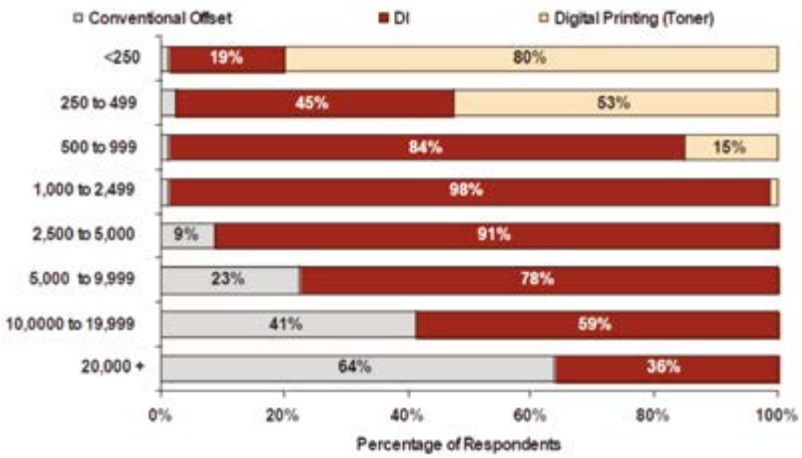
The delivery on a Presstek DI press

The graph below illustrates that print shops that employ a toner device, a DI press and conventional offset are using DI as the bridge between toner and offset.

OPERATIONAL VERSUS MARKET LIFE

There are also times when a company's client base and client needs have changed to the extent that the capabilities on the existing shop floor no longer meet those needs. Historically, many printing operations have continued to utilise equipment that still has an operational life, but has outlived its market life. Perhaps

Presstek offers workflow solutions to support multiple digital and conventional output devices



Print shops employing a toner device, a DI press and conventional offset are using DI as the bridge between toner and offset

Presstek's 52DI highly automated four-colour digital offset press

The Presstek 75DI digital offset press offers extreme automation, a small environmental footprint and waterless printing technology

there is not enough automation to enable faster make-ready and less waste. Or perhaps the firm is still using two-colour presses to produce four-colour work, which not only can present quality issues, but most certainly presents cost and turnaround time issues.

Rather than retain equipment with make-ready and other costs that impair profitability, it can be a better choice to divest that aged equipment and reinvent the business with new workflows and new equipment. This can be painful and difficult, but it can be the right choice when it is clear that the market will never be what it once was, and that there's no such thing as 'business as usual'. This is the kind of situation printers have typically faced when a big 'pet' account moves, is acquired, or goes out of business. And it is a situation that printers are facing today simply due to a change in end-user requirements. That is, under any of these conditions, there is a radical change in the customer base, and both new and existing customers require a new base of equipment that better suits their current and future needs.

CONCLUSION

Now is the time for print businesses to take a critical look at their production platforms. The market is changing, and the production platform must change as well. The successful printing business of the future will most likely consist of a hybrid production platform – leveraging the individual benefits of conventional offset, digital offset and digital-toner-based presses to meet a growing range of customer needs and to bridge the strategic production gap that exists today between offset and digital toner-based technologies. This will ensure a stronger, more profitable business that is well positioned to retain existing customers and gain new ones while also offering the right range of services that will gain them a seat at the 'marketing table'. ■

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A STUDY IN DESIGN AND BUILD

Sophie Matthews-Paul looks at the construction and components of a successful flat-bed printing device

The HP Scitex FB7600 Industrial Press

One of the main contenders in the high-end category of engines is the HP Scitex FB7600 Industrial Press which, originally launched as the FB7500, has been the subject this year of some significant and useful revisions since its introduction. This platform was instantly notable for two primary reasons. First, it incorporates the company's own X2 MEMS print-heads which we'd heard about prior to there being a suitable engine in which to install them. Secondly, the unit has a specifically configured curing system that incorporates dichroic coated mirrors designed to optimise production at high speeds, even on stocks as thin as 130 gsm.

Although this platform was to all intents and purpose new when it was launched three years ago, HP was able to incorporate some tried and tested elements, even though these might not be recognisable in this new engine. Some of the technologies incorporated into the existing TJ-series printers proved to be relevant to the flat-bed concept and construction of the FB7XXX series; combined with developments which had been going on behind the Scitex scenes, the end result was a machine which worked first time without any hiccups.

THE HEART OF THE PLATFORM

At the heart of the HP Scitex FB7600 Industrial Press is a 3.2m wide flat-bed platform which is designed to print direct to a wide range of flexible and rigid substrates, including corrugated boards, paper, foam boards, plastics and their derivatives, plus aluminium composites such as Dibond. The maximum sheet size is 1.65 x 3.2m, with thicknesses up to 25mm, more than adequate for the types of job likely to be produced on this engine.

As the first of its kind in the HP Scitex range, refinements and modifications to this flat-bed system were inevitable, to the extent that its nomenclature has been changed so it becomes the HP Scitex FB7600, although existing models can be upgraded, too. This latest version brings with it the additions of white ink and an optional multi-sheet table that enables up to four sheets to be loaded simultaneously so that, when working with smaller sizes, post-print work and finishing is minimised. This feature is testimony to the accuracy of the media handling as it is paramount that absolute precision is incorporated to avoid any margin for error.

Every manufacturer at the top end uses throughput rates as its driver, but these have to be justified by more than just the capability of the print-heads and fast jetting onto the media. Just taking an existing engine and beefing it up won't cut the mustard because, with UV-curable technology, there are many other parameters that need to be factored in to overall productivity. Where HP has scored with the FB7600 is in making each element accountable for the task it performs, from material handling, through print-head and jetting performance, printing and curing, to stacking.

Taking these specific aspects into account, high-speed printing needs a bed which can accommodate the media faultlessly, without compromise. Efficient media hold-down is vital, not only because the output needs to be precise but, also, because the slightest fluctuation can cause a head crash and that is a highly undesirable situation in any digital environment. Vacuum tables aren't rocket science, used universally where materials need to be kept absolutely stable during the printing process, but the faster the process, the more accurate, yet forgiving, they need to be. Furthermore, users don't want to spend time masking areas of the bed to optimise hold-down in the print area. HP's answer to efficiency has been to design a six section vacuum table, that's patented, and works using a pocket system that provides totally even vacuum power, rather than a conventional moving belt employed

White ink is now available as an option

by competitive systems.

In terms of material loading, there are now the multiple sheet option and an automatic capability, with the latter being a partner solution with Hostert Pro that makes sense for longer runs and repeatability as it provides a full stack-to-stack function. Nonetheless, the three-quarter automated option now comes into its own with its ability to work with thin and flexible media of just 130 gsm, an option which is preferable to manual handling at the input stage.

THE BENEFITS OF MEMS

During the past few years there has been much publicity about the potential capabilities of MEMS (micro electro mechanical systems) in the commercial ink-jet sector. Opinion is still divided among manufacturers, but proof that this technology is working well (and has been for some time) can be seen in the HP Scitex FB7600. These heads incorporate silicon wafers, incorporating glass and epoxy, which makes them tough and extremely resistant to corrosion and wear. Additionally, their compact, slim construction is ideal for large closely packed arrays which must maintain accuracy yet enable high-speed jetting.

The X2 is designed as a two-sided side-shooter print-head, with its 64 nozzles, ink channels and piezo actuators delivering up to 30,000 50 picolitre drops/second/nozzle in a 32.5mm swathe. Arranged as multiple print modules, the heads snap into place to form banks and provide positioning on the printer to within 10 microns without adjustment, yet are simply secured with two screws. Because there are no adhesive constituents in these print-heads, instead using anodic bonding, a permanent chemical and hermetic seal is formed between the electronics. Only silicon, glass and epoxy actually come into contact with the ink, protecting the piezo actuators and electrodes.

Yet despite the apparent complexity of the X2 print-heads they are user-changeable, and have proved to be tough and extremely durable, delivering more than 10ml of ink/minute at the highest linear speeds. This equates to user output of up to 500m2/hour or around 100 boards depending on media size. In the HP Scitex FB7600 there are 312 of these drop-on-demand piezo electric heads, each with 128 nozzles (making a total of 39,936 nozzles) to ensure that high speeds and quality can be achieved simultaneously.

INK REFINEMENTS AND OPTIONAL WHITE

Perhaps it was a surprise that the original FB7500 didn't have a white ink option but users of this machine, as well as the HP Scitex FB7500, can now incorporate this if desired via the necessary upgrade kit. For the earlier platform this involves a specific modification using extra print-head beams so that there is no compromise with the process colours or overall quality when white is added to the mix. The pigmented UV-curable low odour inks in the modified engine have been upgraded so that a wider selection of flexible and rigid sheets is now suitable for use with this platform, including corrugateds and plastics, without compromising.

As well as improved adhesion across all substrates, these modified inks now encompass other requirements, not least the ability to achieve proofing standards that meet ISO 12647-7. This specifies the requirements for producing hard copy proofs that simulate a printing condition, namely processes working directly from digital data. Designated HP FB225, these inks also remove time consuming pre-treatment requirements and are GreenGuard certified to meet stringent standards relating to emissions. Furthermore, they have an extended colour gamut which matches Pantone shades, offering high saturation and precision dot control.

CURING SYSTEM

The curing system employed on the HP Scitex FB7600 and its predecessor has its roots in the flexo industry where working with thin films has necessitated a solution where heat is deflected away from the material without affecting the efficacy of the drying process or its

Continued over

speed. UV-curable lamp technology has had to adapt to the increasing use of more sensitive materials in the ink-jet sector; this has reached the point where machine developers have to factor in specific solutions to bring compatibility into the overall platform design and construction. Regardless of the process, the behaviour of UV curing has to comply with several parameters and offer efficient results, aided by the deflection of infra-red energy which is represented by heat and is an unwanted side-effect of the process.

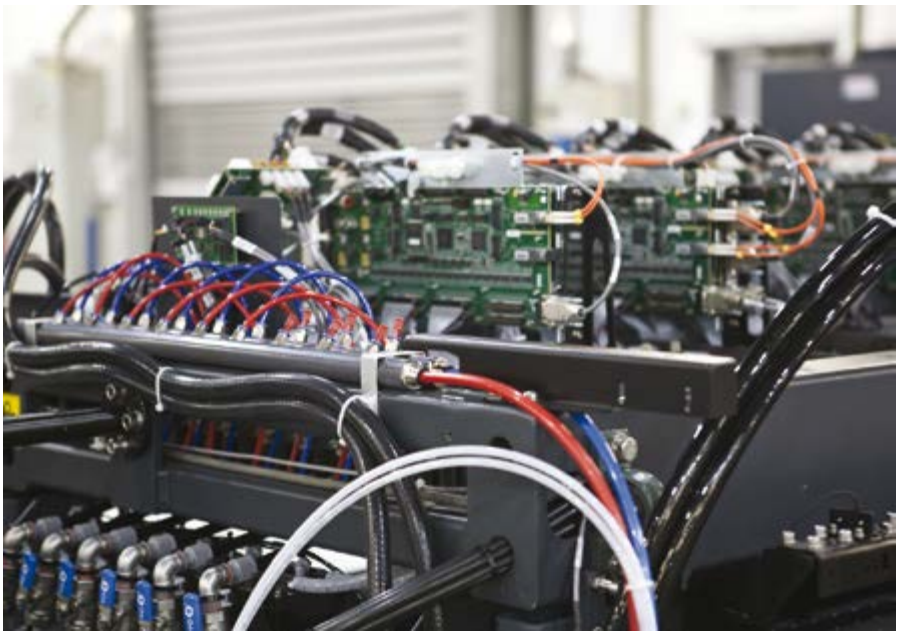
HP's solution to maintaining sufficient power without the energy or heat quotient has been to incorporate cold mirror technology and a configuration which keeps the infra-red away from the surface of the material and prevents undesired temperature increases. This is achieved by using a dichroic coated mirror positioned in an angle to the material which deflects the UV-A and UV-B light through 90 degrees onto the media. In real terms, some 90 percent of the UV light is reflected, and around 80 percent of the infra-red energy is diverted away from the substrate.

VERSATILE, WITH INCREASED PRODUCTIVITY

The wide-format display and point-of-sale markets have generated the need for efficient, high-speed production devices which bring about the convenience of ink-jet printing at good quality. Notable among users deciding to make the transition from analogue to digital processes has been the desire by many to maintain overall daily volumes yet generate and complete a higher number of different jobs. Convenience, low running costs and minimal make-ready have all contributed to this requirement, as has the ever-growing need for versioning and VDP, plus the ability to print edge-to-edge without compromising speed or accuracy. Brand owners and agencies have increasingly become aware of the benefits of customisation, and PSPs now need to address this requirement on a regular basis.

As well as these obvious advantages which digital technology brings, in terms of far less make-ready and greater flexibility, there are notable workflow improvements achieved with the HP Scitex FB7600. These include the multi-loading capability and white ink addition, plus in-line saturation control, and automatic job preparation that incorporates hot folders, job ticketing and queues.

Earlier this year, HP demonstrated its SmartStream Production Analyser, a SaaS application and, thus, hosted on the cloud, which is designed for single- and multi-unit environments. This tool automates data analysis, providing real-time and historical production information, simplifying the monitoring and planning of production processes. Users can assess ink and material consumption, decrease waste and increase user efficiency by reducing down-time, all increasingly important requirements in print houses where accountability and efficiency are key to maintaining margins.



Robust, high quality configuration and components lead to a solid build

The multiple sheet option in action

CONCLUSION

It is, perhaps, telling that HP reports many of its customers investing in a single FB7500 or FB7600 have progressed to installing multiple machines. As well as the construction and the overall performance of this platform, leading to a good ROI, there is also the factor that operation is considerably easier than on analogue presses leading to greater productivity quotients with fewer overall man-hours.

In terms of relevance in today's production environments, companies need increasingly to incorporate greater variability, both in content and volume, in their applications in order to remain profitable. These criteria cannot be achieved using analogue production methods and, as such, it is hardly surprising to ascertain that offset litho and screen-printers have adapted their business models successfully to accommodate versatile platforms such as the HP Scitex FB7600 Industrial Press. ■

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THE RIGHT RELATIONSHIP FOR THE BEST RESULTS

Joe Clarke details the importance of the relationship between blade and mesh

Much of the world of CMYK [four-colour process] printing has acquiesced to purchase multi-colour presses. So far I have discovered two likely reasons for this trend: 1) we are not always capable of predicting colour before the press run and 2) advertising agencies claim to have tired of 'camping-out' on the stairwells of the screen-print shops.

There are four generic types of multi-colour screen-printing presses; 1) web, 2) cylinder, 3) gripper [flat-bed] and 4) movable [flat-bed, carousel, oval or inline]. All four types print proximate to the edge but styles 3) and 4) are worst case; they print exceedingly close to the edge (otherwise the press would consume too much floor-space).

1 FIT THE BLADE TO THE MESH

This proximity problem means when we use the blade to push the mesh into contact with the stock, the resistance of the screen mesh may be more than eight times greater at the ends of the blade than in the centre. The ratio indicates we'll need press peel to release the screen; the image will stretch at the midpoint of the blade, the dots at the edges print short and fat while the dots in the centre print tall and skinny. The variance in image consistency from the centre to the edges is noted below.

Figure 1 illustrates image distortion due to stroke-stretch, erratic dot gain from a top view and piling/skipping in a cross-sectional view. Each of these maladies is due to the misfit of a single-axis blade on the mesh (stretch and edge gain) or on the press bed (piling/skipping and press peel]. Due to excess pressure, single axis blades buckle first at the ends (midway between holder and edge) proximate to the inside edges of the frame. End buckling forces the blade's midpoint to bend nearest the holder where the pressure on the mesh is near zero, therefore edge gain and centre piling and a need for peel result.

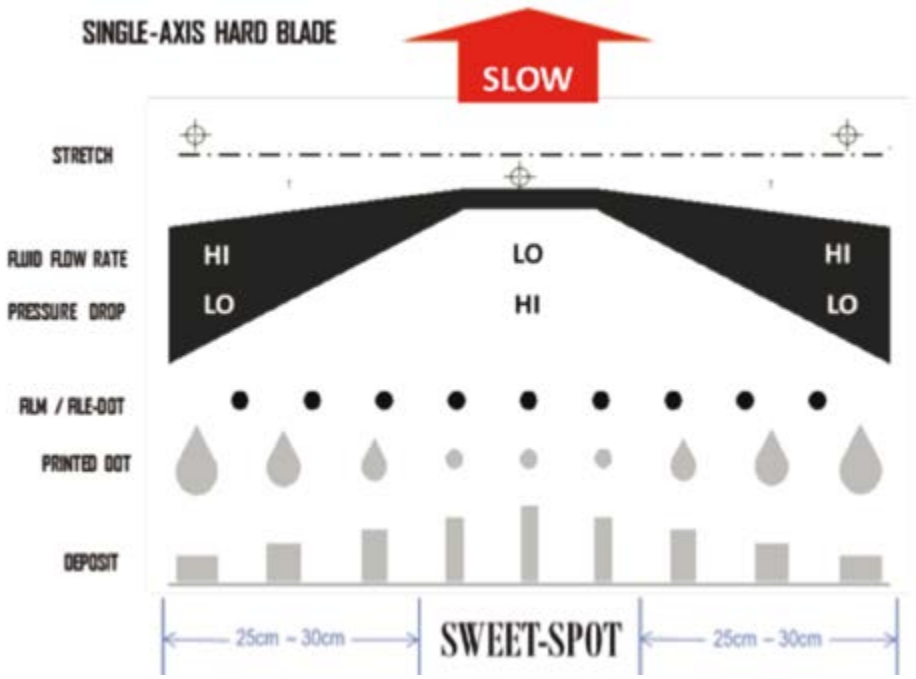

Figure 1: image distortion due to stroke-stretch, erratic dot gain from a top view and piling/skipping in a cross-sectional view

1-AXIS BLADE MIDPOINT [sweet-spot]	1-AXIS BLADE ENDS [proximate to the edge]
Screen lag; mesh sticks to stock after stroke	Screen NEVER sticks at perimeter
Image stretch in the stroke direction	If ANY stretch, off-contact distance is too close
Mesh rips ONLY if off-contact distance is too close	Mesh most likely to rip at ends of blade
Dot piling and skipping	Zero piling and skipping
If moiré; successive is most likely	If moiré; progressive and inversion types most likely
Textured, flat finish	Smooth, glossy finish
Zero dot gain	Excessive dot gain
Washed-out but sharpened colour	Intense but hazy colour
Usually green-yellow or yellow cast	Usually magenta or blue colour cast

Variance in image consistency from the centre to the edges

EXCESSIVE DYNAMIC EDGE	PROPER DYNAMIC EDGE [70A – 75A]
Polyurethane; ether-based MdI or TdI	Polyurethane, ester-based MdI or NdI,
Molded edge	Precision cut edge
Soft [<80 Shore-A]	Hard [80 Shore-A or higher]
Solvent swollen edge [soft blades lose edge]	Robust edge [hard blades maintain edge]
Coarse-sharpened edge	Sliced or sharpened with fine grit [350+]
Excess angle [>5º]	Minimum angle [0º to 5º]
Excess pressure [> N/cm² resistance]	Maximum pressure ~ N/cm² resistance
Ends of single-axis blades	Bi-axial [hinged] blades

A comparison between excessive and proper dynamic edge

2 FIT THE BLADE TO THE BED

In the cases of the first three types of multi-colour presses any heat (IR, convection or residual) is intrinsically separated from the printing surface. However, with movable-bed presses, curing with UV emitters is done directly on top of the press-bed. A by-product of the UV is typically high IR and this intermittent heating and cooling of the beds along with the excessive pressure characteristic of single-axis squeegee blades, over time, creates a highly irregular printing surface.

In order to print half-tone dots on any mercurially-mobile surface, the skilled press operator is forced to create an excessive interface between blade and mesh in one of three ways listed best to worst: 1) by using the infamous 'triple' (soft on the outside and rigid on the inside), 2) by causing the blade to buckle with excessive angle and pressure or third (and worst-case) 3) by buckling a triple.

Buckling the blade causes image drag, piling and skipping, excessive dot gain at the image edges and mandates mesh damaging, press peel in order to tear the mesh off of the

substrate. As a result the operator is forced to use a very slow stroke speed so clearing is poor; this, in turn, causes the operator to add pressure which defeats the goal of printing with zero pressure on the bed.

Most 'process mesh' runs between 140/cm and 150/cm [355/in – 380/in] so the maximum dynamic edge of the blade [contact surface during the print stroke] should be 70µ and 75µ respectively. A smaller radius and the image will exhibit wet artefacts (streaks, mesh marks, tonal moiré etc) while a greater radius will cause wet artefacts (dot gain, screen-stretch, progressive moiré etc). For example, soft surface (60A – 70A) triples are prone to rapid edge swelling and, due to abrasion from the mesh and solvent permeation, the edge quickly grows to 150µ to 200µ and greater. Excess gain, increased image stretch, slower speeds and a need for incremental press peel result.

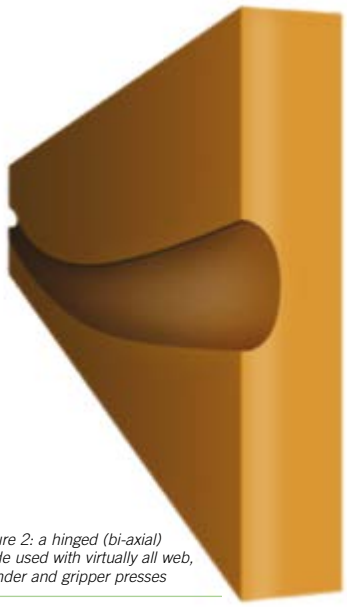

Figure 2: a hinged (bi-axial) blade used with virtually all web, cylinder and gripper presses

Figure 3: this blade maintains a sharp edge while conforming to an irregular surface

3 CONSISTENT INK VOLUME PER TONE VALUE

Even GRACol G7 methodology requires consistent dots per tonal value with single-axis blades. For example a "50%" tone may print 47% in the centre but read slightly higher due to its deposit; at the edges the same tone will print at 54%. One-axis blades print with no gain in the centre and excess gain at the edges and there is no separation software, colour management system or anything GRACol offers which will accommodate geographic variance.

With a single-axis blade, keep the image near the sweet-spot, keep tension maximum, adjust to minimum off-contact and reduce the speed as much as is needed to get a good print. If you are using a hinged (bi-axial) blade with virtually all web, cylinder and gripper presses the blade shown as Figure 2 is an 80 Shore-A, ester-based NdI (polyurethane) and will return the highest resolution half-tones with the minimum deposit. If your press bed is not flat, select an 80 Shore-A ester-based MdI (polyurethane) shown as Figure 3, in order to maintain a sharp edge yet conform to an irregular surface. Both blades deliver high shear-rate, low shear stress, near the ideal zero angle, with minimal pressure, maximum stroke speed with zero to minimal press peel. ■

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PRINTING GLOSSY EFFECTS AND STRUCTURE WITH UV-CURABLE INKS

Marie Swinnen describes how to create very special applications

Example of packaging produced using Roland UV-curable printers

UV-curable inks have special characteristics that prove their worth in the print and sign sector, the packaging industry and the interior decoration market, among others. They are compatible with a great variety of materials, including heat-sensitive materials, and they do not require any drying time. Flexible UV-curable inks can also be pleated and stretched without breaking. In addition to all this, the UV-curable inks from Roland DG also have some special features. They can be used to print relief and to create a glossy or matt finish.

SPECIAL EFFECTS

Using transparent UV-curable ink, glossy and matt effects can be created. Glossy effects, for example, add a luxurious touch to an advertisement for a 'kiss-proof' lipstick or for a bottle of champagne with drops of condensation. The effect – ie glossy or matt – is determined by the settings of the LED lamp in the printer, which dries the ink and both of these effects can also be incorporated together into a print. Two print runs are used for this.

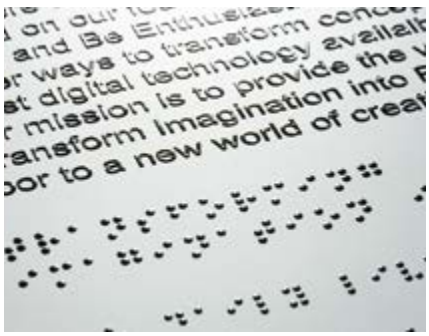
Because the Roland DG printers keep returning to their origin point, several layers of white and transparent ink can be printed on top of each other. A relief or structure can be printed this way, in the form of embossing. This is used, for instance, for iPhone and laptop covers. Examples of structures are crocodile skin, wood structure and a pattern of lines. Embossing also allows Braille printing, which is essential for medicine packages.

A crocodile skin print

INCORPORATING THE EFFECTS INTO A DESIGN

These special effects can be printed with all LED UV-curable printers by Roland DG. Thanks to the colour libraries in the software, effects can be incorporated into prints in a simple way.

1. **Create three effects with transparent ink**
   The transparent inks create three effects: a glossy layer, a matt layer and embossing (several layers on top of each other). All these effects are added to a design with the colour RDG_GLOSS. This colour is available in the colour library named Roland VersaWorks.
2. **Assigning a special effect**
   Assigning an effect can be done simply



Gloss, matt and embossing printing

iPhone covers printed with the LEF-12 object printer

by selecting the design element (text or vector image) and choosing RDG_GLOSS as fill colour. For example, if we want to apply a glossy layer on top of a red flower, we copy the flower in a new layer. After that we select the copy and assign RDG_GLOSS.

3 **Printing gloss, matt and embossing**
In the Roland DG RIP-software, VersaWorks, it is determined what the special effect will look like. So the decision about whether the print will be gloss, matt or embossed, won't happen until it gets to VersaWorks.
When printing embossing, you must indicate how many layers to print on top of each other. The more layers, the thicker the ink will be on the material and the better the structure can be felt.

4 **Printing textures**
VersaWorks contains a basic library of textures that can be printed with transparent ink. The Roland Texture System Library contains 72 patterns, including balls, checks and star patterns. This gives beginning users a good start.

PRINT SPECIAL EFFECTS WITH ROLAND DG UV-CURABLE PRINTERS

The transparent ink is available for the Roland DG LED-UV printers. The VersaUV series has wide-format printers that print or combine printing and cutting. Roland DG also has a printer in its spectrum that was developed especially for printing on objects with a maximum height of 10cm.

These UV-curable printers are often used in the interior decoration market, for example, for the simulation of wood effects. The printers also prove their power for prototypes and proofs in the packaging sector. They can be integrated perfectly into an existing work-flow, thanks to the compatibility with software packages by CGS, Colorgate, EFI and GMG.

All Roland DG printers also come with their own software, VersaWorks. This is a user-friendly RIP, with free updates that can be downloaded. The software includes dozens of ICC profiles for optimum print quality on various types of print media. VersaWorks also contains a system for matching spot colours and a function for printing variable data. In addition, the software contains a large spectrum of layout, editing and print functions, such as nesting and tiling. ■

A simulated wood structure printed with the LEC VersaUV

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THE IMPORTANCE OF ACCOUNTABILITY

Frank Schelfaut explains how detailed studies can help manufacturers assess their carbon footprint calculation

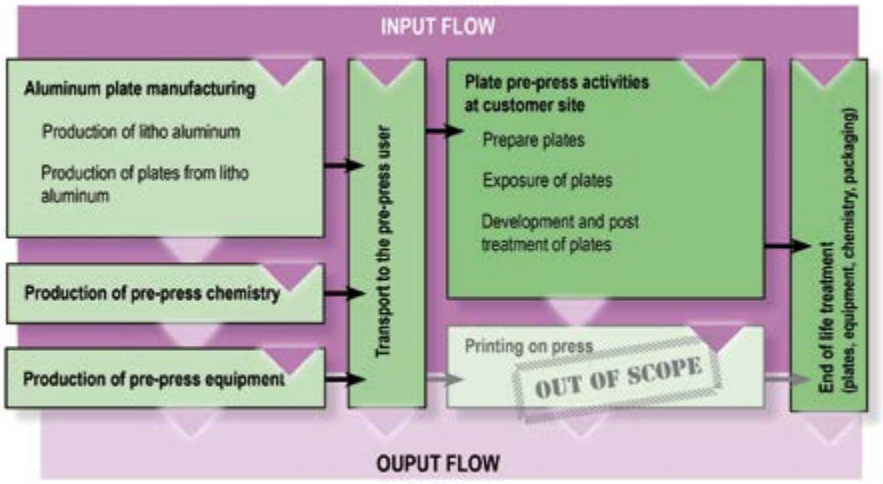

Figure 1: System boundaries for the printing plate systems under study

Not too long ago environmental regulations were generally perceived as a restraint to economic activity. When considered from the wider perspective of sustainable development, however, eco-technology has become a driver for innovation and a differential advantage for forward-looking companies who often take initiatives beyond minimum level compliance.

Managing the environmental impact of production processes is therefore no longer a constraint but an opportunity, for the suppliers as well as for the users of the resulting products.

Today the widely accepted and most comprehensive way to perform environmental analysis is through Life Cycle Assessment (LCA). This is an analytical tool, standardised under ISO 14040 and ISO 14044, that provides us with objective data on the environmental impact, directly or indirectly caused by a product or a system over its entire life cycle.

One of the many (and maybe the most popular) environmental impact categories of LCA is global warming. It is determined by means of a Carbon Footprint (CF) calculation that quantifies the total amount of greenhouse gases released into the atmosphere as the result of production, supply, use and disposal of the product or system. The results are expressed as CO_2 equivalents. Since the quantification is a complex process it is typically subcontracted to industry specialists.

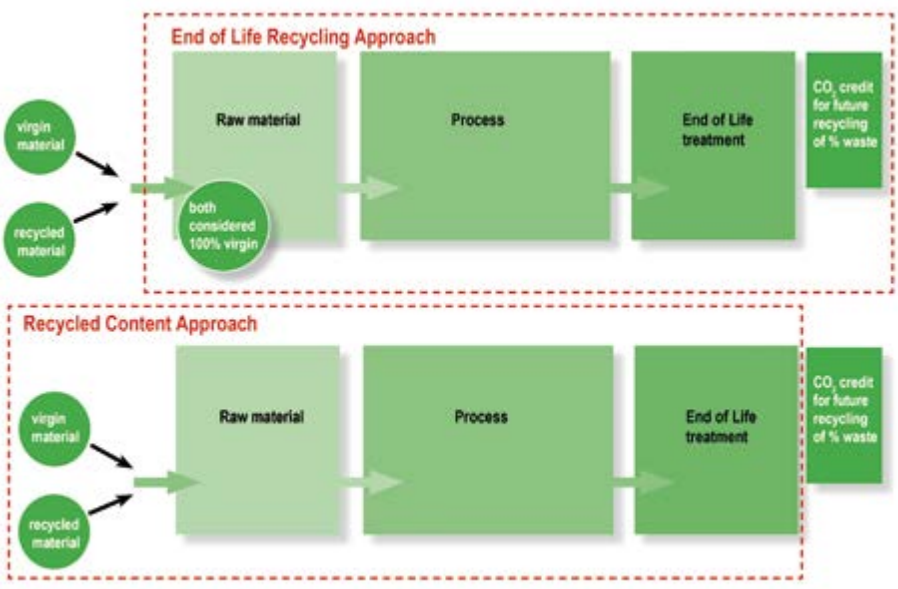

Figure 2: Illustration of approaches dealing with recycling

VITO, an independent Flemish institute for technological research, and specialised in LCA studies for a variety of industries, was commissioned by Agfa Graphics to perform a comprehensive study on the environmental impact of computer-to-plate (CtP) systems. The outcome of the study serves as a concrete example that illustrates the need for in-depth research, accounting for the complete life cycle that involves all direct and indirect parameters.

The quantitative results show that the production of lithographic aluminium is responsible for at least 80% of the carbon footprint of CtP systems. The processes that take place at the plate manufacturer's site, the logistics and all pre-press activities in the printing plant, account for the remaining 20%. Due to the important contribution of the lithographic aluminium production (the same for all Alu printing plate types) to the Carbon Footprint, the difference between various printing plate types is rather small – albeit significant enough to be considered. Moreover it appears that the most advanced CtP systems, offering the highest degree of convenience and cost savings for the user, also have the lowest CF contribution at the printing plant, which confirms a convergence between ecological and economic benefits as equally observed in other industry sectors. The results allow the contracting company to make the right decisions for future developments and focus on the right parameters.

However, CF is only one element of the total environmental footprint. Focusing on just Carbon Footprint disregards the importance of other impact categories (eg: impact on urban and land occupation) and might lead to making the wrong choices when defining an improvement track.

CARBON FOOTPRINT ANALYSIS OF COMPUTER-TO-PLATE (CTP) SYSTEMS AS AN EXAMPLE

The VITO study only involves CtP systems from one supplier (Agfa Graphics) but provides us with an interesting mix of existing plate imaging technologies, many of them similarly used by other manufacturers. This study covers two positive working plates

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(:Thermostar and :Energy Elite) solarised with an IR-sensitive layer, and a negative working photopolymer plate sensitive to UV light emitted from light emitting diodes (:N92V). All three are conventionally developed using a chemical developer solution followed by water rinsing and gumming. The plate mix also includes a chemistry-free version of the UV sensitive photopolymer plate (:N92VCF), which uses plate gum to wash out the non-exposed parts of the pre-polymer image layer, as well as two plates based on Agfa Graphics' Thermofuse technology, both sensitive to IR-laser diodes. :Amigo is cleansed with a water-based chemistry free alkaline solution, only requiring a final water rinsing and gumming step. :AzuraTS features the highest degree of user convenience and ecological performance as the plate gum also acts as a cleansing solution and plate development is strictly reduced to a one-step chemistry free process that requires no water rinsing.

To achieve indisputable results, studies like the one described must be totally comprehensive. Carbon Footprint analysis of the CtP systems under consideration covers the total pre-press cycle and includes the production, the distribution, the use and the waste treatment of a reference aluminium printing plate (gauge 275µm) that is ready for press. Hence the analysis also includes the CF impact of the pre-press equipment used to prepare the plate image as well as the developer chemistry or cleansing solutions. (Figure 1) The entire life span of each plate system has been broken down into the production of the plate itself, including pre-press chemicals, equipment, transport and activities at the customer site until the plate is press-ready. The End-of-Life (EoL) treatment of all CtP system components, depleted gum, used pre-press equipment and packaging material is included in the PCF life cycle inventory.

WASTE TREATMENT HIGHLY DEPENDS ON THE PRODUCT

For the waste modelling in PCF analysis, different approaches are possible, two extremes of which can be considered as the most comprehensive:

- The End-of-Life recycling (EoL) approach is based on the recyclability of the waste product at the end of its life cycle and considers environmental impacts and/or credits resulting from the recycling process.
- The Recycled Content (RC) approach is based on the recycled content of the raw materials needed to produce the product in the beginning and the respective impacts and credits, but does not account for the recycling of the resulting waste.

Suppliers who want to use statements or carbon labeling on their products will rather prefer the Recycled Content approach. (Figure 2) However, in case of printing plates, the advantage of the End-of-Life recycling approach is that it emphasises the importance and the potential of reusing litho aluminium consumer scrap and feeding it into the continuous over-all aluminium life cycle. The importance to do so follows from the simple fact that the 47 million tons total worldwide demand of aluminium (in 2008) was still to be met by no less than 37 million tons of primary aluminium and ten million tons of available scrap. With the short lifecycle of printing plates and consumer scrap readily available for being fed into the over-all and global demand for aluminium, the EoL approach is therefore the more realistic scenario and the difference is quite impressive. The CF study reports a climate impact of about 11 kg CO_2 equivalents/square m. When End-of-Life recycling of the aluminium is accounted for, the high grade of the aluminium scrap provides a substantial CF credit so that climate impact of the most advanced CtP systems is only as low as 3.1 – 3.3 kg CO_2 equivalents/square m (Figure 3).

Also the End-of-Life recycling remains a valuable approach if future research efforts should lead to the recycling of litho aluminium consumer scrap into a perfect substitute for primary aluminium in CtP applications, even when the complex logistics that may adhere to such approach are taken into account.

CONCLUSIONS

It should not be denied that the graphic industry, in common with all industries, has an impact on the environment. The real challenge, however, is for all contenders to take their responsibility seriously for reducing the environmental impact so that the printing business can continue becoming more and more sustainable.

In the above case study, the CF of :Azura TS plates is the lowest of all, which is logical since the :Azura plate needs the least energy resources during pre-press as no developing chemistry or rinsing water is used and only a small amount of cleanout gum is needed. This results in a significant reduction of the contribution to the carbon footprint of the printer's pre-press activities. Thus, by selecting the most advanced CtP technology the printing company not only gets the benefit of user convenience and cost savings but also makes the least CO_2 impact through his pre-press operations.

From the example we learn that access to all data is a prerequisite and that the analysis of all processes involved will help making the right decisions. The ultimate goal of analysing the carbon footprint is to evaluate the efficiency and the improvement potential of products and/operational activities for bringing these products to market, as well as meeting requirements imposed by the industry or local legislation. Communicating CF results to all parties using the product or process is carried out transparently and fully quantified.

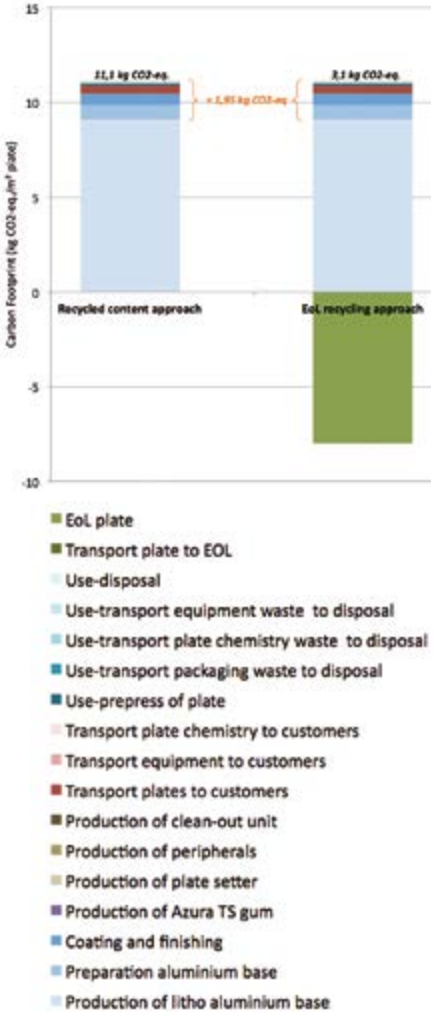

Figure 2: Impact of EoL recycling approach on the CF of the :Azura plate system

ABOUT THE VITO STUDY

Agfa Graphics released a white paper explaining the VITO study and its results for the industry in more detail. Although it is difficult to compare quantitative CF figures published by different suppliers, the conclusions of this CF analysis can be generalised since Agfa Graphics' CtP assortment represents a mix of plate imaging technologies that is used by other manufacturers as well. ■

The white paper can be downloaded for consultation at Agfa Graphics' website – please select Services and Knowledge/White Papers or use http://www.agfagraphics.com/gs/global/en/internet/maings/services_knowledge/white_papers/environmental_impact_print.jsp

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A GREEN COLLABORATION

Roland Biemans discusses the importance of working with specialist partners to achieve environmentally sound solutions

When it comes to developing, designing and manufacturing a digital printing system for any of today's market sectors, the core factors are far greater than just the considerations for building a well-engineered piece of machinery that produces output. From an end user's point-of-view, a solution is needed that encompasses all the ancillary components which must fit together neatly and efficiently so that accurate results can be generated for each and every application.

For Hollanders Printing Systems, compatibility within all elements of its printing solutions is a vital requirement as part of its system development and build. Many of the required criteria rest with specialists in related fields whose products integrate with the production process. With so many variations in software and materials available on the open market, the company recognises that it has an important role to play in ensuring consistency is achieved. In the digital textile segment, these criteria are particularly pertinent because fabrics and their behaviour during the print process tend to need a more exacting and precise work-flow than other media using alternative ink formulations. Because of this, the company believes in testing and certifying the specific elements involved which then become a part of its Competence Center.

COMPETENCE CENTER BENEFITS

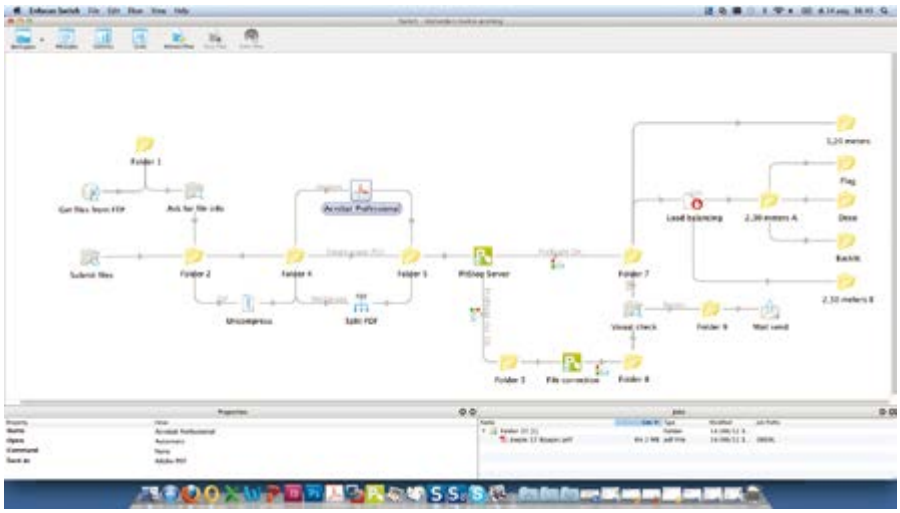
Attending EcoPrint in Berlin during September gives Hollanders an excellent opportunity to demonstrate how this Competence Center benefits from being allied with different partners, all of whom are involved in the accurate, high quality production of digital textile printing. Because every element of the process is accounted for, from pre-press, colour management and profiling, through to proofing and the use of tested and certified materials, these partners play an important role in HPS's principle of best practice. And it is this attention to detail which ensures that end users of the company's ColorBooster wide-format platforms can be guaranteed the highest standards of throughput, matched to the most efficient work-flow.

Unlike other print processes, working with textiles incorporates its own idiosyncrasies when it comes to file preparation and colour management. The physical properties of the sublimation dyes present their own requirements when it comes to generating accurate profiles, with droplet placement and dot sizes reacting differently with fabrics than they typically perform with other materials in conjunction with their relevant ink chemistries.

The colour management specialist and pre-press partners now associated with Hollanders are leading names in their respective fields and representatives will join with the company at EcoPrint to demonstrate how integration of fully tested procedures and systems play a role in sustainability and waste reduction, all helping to promote the environmental benefits of textile printing. X-Rite/Pantone and Enfocus both have an important role to play in terms of file handling, profiling and pre-flighting. These companies are complemented in the Competence Center by GTI Normlicht whose viewing booths provide the correct ambient light for proofing colour critical applications. The overall influence is significant on greener practices within the digital work-flow, resulting consistently in fewer errors, lower numbers of man-hours and the generation of far less waste. It is easy to see how adding these criteria to an overall production operation enhances environmentally-aware conditions both in terms of production equipment and working practices.

MEDIA CHOICE

Removing the error factor, and the likelihood of trial and error, in media choice is also an important factor when selecting greener criteria for a production operation. Hollanders has a strong relationship with Georg+Otto Friedrich whose fabrics for digital printing



Enfocus Switch is a modular software solution that integrates with existing systems

Georg+Otto Friedrich's production facility

The Hollanders ColorBooster XL

have been thoroughly tested to offer not only the right characteristics for textile printing but also strong green credentials that fulfil the remit demanded by the Competence Center. Other specialist companies also playing a role are A Berger and Aurich whose textiles are also used widely in the ink-jet arena.

While some environmental issues are the responsibility of the end customer in terms of premises and overall carbon footprint, Hollanders plays an integral role in ensuring that best practice principles start with the developer and manufacturer of the equipment. Searching for the right partners for the company's Competence Center has been based on those related businesses whose products and services matched the required levels of sustainability and whose green principles provide the correct fit in quality as well as in ecological awareness.

A FULL SOLUTION

It is because Hollanders believes in the approach of offering a full solution that the company is being joined by three of its key Competence Center partners at EcoPrint, with X-Rite/Pantone, GTI Normlicht and Georg+Otto Friedrich. This is because any environmentally aware wide-format print engine is only as effective in ecological terms as those specialist manufacturers who also play a key role in the production process. It is easy to claim a solution is green but to substantiate ethical and sustainable principles is reliant on a variety of criteria.

Sourcing and working with specialist partners has enabled Hollanders to offer all of the on-going benefits to its end customers so that they can invest in complete solutions which encompass the correct environmental principles while remaining extremely competitive both in price and productivity. But the key factor remains that users of wide-format digital printing systems want to be assured of the highest quality and the greatest versatility in their output as well as achieving greener practices. With the right companies working together to achieve all the necessary criteria, and more, textile print businesses can be confident that all their bases are covered for environmental and production requirements. ■

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PLAYING WITH THE PROS

Ulrike André explains how to introduce a brand into a new geographical area

The world is getting smaller. If something happens in one place of the world the information is distributed – instantaneously – to millions of people with the push of the send/receive button on your computer. "Going viral" no longer instills fear but is something that, thanks to the power of social media, is something we hope will occur when we launch our latest innovational product.

And while Westerners would like to think that their innovations will continue to be launched in the West, reality shows this is no longer the case. With an apparent shift in buying power, companies are paying much closer attention to the East and are deciding to use this part of the world as their launching pad. Apple, HP (Hewlett-Packard) and GM, to name a few, have very successfully chosen China as their launching pad for their latest innovations in the most recent past.

What makes product launches successful in Asia and beyond? What do companies that are not Apple or GM have to watch out for to be able to gain a foothold in the foreign markets?

HALLO, HELLO, SALUT, CIAO,

Ideally you have staff that speaks the language of the country into which you are seeking to introduce your products and services. If your staff knows the language, customs and culture then you have the essential ingredients that will help you to build trust.

Our own Asia Sales Manager, Ming Qian states: "The knowledge of a countries' customs is vitally important! Handing over a business card in the Western world involves a simple, one handed, presenting of the card. In the Eastern world one should hold the business card in both hands while offering it to the other".

Seminars, webinars, books and the like are available in abundance to help gain vitally important knowledge about customs and cultures and one is well advised to prepare staff before starting to venture into foreign lands.

IT'S A JUNGLE OUT THERE: COMPANY, PRIVATE INSTITUTIONS AND GOVERNMENT REGULATIONS

There are many regulations one needs to be aware of in the textile industry. There are government appointed and industry regulations, consumer protection agencies, privately held testing institutions and, last but not least, companies' own regulations.

To call a company such as Nike, Adidas/Reebok, Puma, North Face and so forth, a customer of yours is a great accomplishment and clearly very desirable; these companies are top manufacturers and are established brands that need no further introduction. This reputation did not happen overnight, of course. Their standards are strict and enforced with vigour. Nike for example has their RSL (restricted standards list), with Adidas/Reebok's A-01 (standards and policies on restricted substances) to name two.

Should you want to submit your CAD-CUT heat transfer materials you will find that most companies require that your materials must pass their tests or else you don't stand a chance to get into business with them.

INTERNATIONAL OEKO-TEX ASSOCIATION

Founded in 1992 this independent institute has its own Criteria Catalogue that provides a "uniform, scientifically founded evaluation standard for the human ecological safety of textiles, against the background of the globalised and extremely fragmented nature of the textile manufacturing chain". Textiles and clothing are tested for possible harmful substances and given the Oeko-Tex Standard (various classes) if the test was passed and the products pose not health risks whatsoever.

Since its introduction, the Oeko-Tex certification process has gained momentum and world recognition. Voluntary submission of textiles to Oeko-Tex which is documenting and encouraging responsible textile production, from the cotton on the fields to the shirt in the shop.

GOVERNMENT IMPLEMENTED REGULATIONS

Government agencies are creating and implementing their own rules and guidelines to help protect consumers. In order to do proper business in a country one must be aware of and know the regulations imposed in order to avoid costly mistakes:

USA: CPSIA (Consumer Products Safety Improvement Act), 2008

The CPSIA is a law that expanded upon the CPSA and it requires specific testing methods for determining lead and other heavy metals in children's products, and further requires certification of testing by a third-party approved laboratory.

Canada: CCPSA (Canada Consumer

Globally certified CAD-CUT Gorilla-Grip II features a patented adhesive

SportFilm Lite semi-gloss film material for sports' jerseys is CPSIA globally certified

CAD-CUT Fashion-FILM is extremely thin and light-weight and, again, is globally certified

Product Safety Act), 2011

The CCPSA replaced the Hazardous Products Act, legislation from the 1960s that was widely considered out of date. This new legislation gives the federal government the power, for the first time, to order recalls and take other measures. It also gives rise to onerous adverse event reporting requirements and gives the regulator the ability to disclose confidential business information in some circumstances.

Europe:REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), 2007

The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, REACH aims to enhance innovation and competitiveness of the EU chemicals' industry.

RoHS Directive: Restriction of the use of certain Hazardous Substances

RoHS Law is to limit the amounts of certain hazardous heavy metals in specific waste electronic devices so that those metals never find their way into landfills or elsewhere, where they can eventually be released into the environment.

WEEE Directive (2006): Waste Electrical and Electronic Equipment

The WEEE Directive aims to reduce the amount of electrical and electronic equipment being produced and to encourage everyone to reuse, recycle and recover it. In addition, the WEEE Directive also aims to improve the environmental performance of businesses that manufacture, supply, use, recycle and recover electrical and electronic equipment.

The rules, regulations and laws described above are being altered frequently and checking for changes is recommended. Always get in touch with the government agencies of the countries you are interested in doing business with from the get-go to avoid any surprises. And don't forget – even if you are bringing products into a country intended to be used only at a trade show, your goods must satisfactorily pass all government regulated stipulations and requirements before being permitted entry. If you have distributors in the country where you are seeking to introduce your products and services, they will be of valuable help to you.

LOCATION, LOCATION, LOCATION

An intelligently set up distribution network is crucial and plays a vital role in your national and international success to ensure your products and services are becoming established in new markets.

The distributor knows the market, is familiar with the customs, speaks the native language, can host open houses, and has connections to publishing houses and trade show organisers. In short, a distributor has knowledge of what the market needs and how products must be promoted in order to be successful in their respective markets.

Furthermore, they can function as trouble-shooters should the need arise if you experience a problem with your product.

Shipping experts who are familiar with tariff numbers at head-quarters as well as abroad, custom agencies, shipping expeditors – your distributor will "cover your back".

The company I work for has subsidiaries and expansive distributor networks world-wide that serve our customers fast and efficiently. It takes a lot of time and effort to make it a successful endeavour, agreed. In the end, our collective intelligence, innovative spirit,

CAD-CUT Premium Plus is another certified product and offers superior stretch on performance fabrics and heat sensitive textiles

and passion are well worth it; seeing our heat transfer material on a world-renowned active wear manufacturers' garment, our latest transfer paper evolution on a fashion runway, hundreds of our heat presses working with precision at a factory in some far off country… in the end, it's fun and rewarding to work for an accomplished, successful global company. ■

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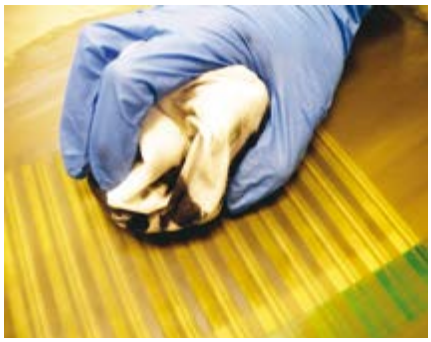
SCREEN CAN BE GREEN

Sophie Matthews-Paul discusses the environmental considerations for textile screen-printing

Historically, printed apparel has always been expected to offer longevity without unreasonable deterioration and, as a result, screen-printing has become the de facto method of production with both rotary and flat-bed units. Although the end product hasn't been compromised, in practical terms using today's equipment and chemistry, environmental issues have been met through improvements to chemistry and operating environments.

Screen process printing is being challenged strongly by alternative production methods driven by digital technologies, yet it still reigns overall and will continue to do so for the foreseeable future. In truth, there is no viable alternative when it comes to durable decoration and marking, whether it is single or multi-colour. There is a common, and often erroneous, belief that today's world is driven primarily by short runs and variable content and, although this might be true in some sectors of print, it is far from being a standard practice in textile environments. This can be easily confirmed in terms of overall chemistry, ink and end unit cost so that analogue manufacturing methods can quickly outweigh the perceived benefits of new digital processes, regardless of volume and life expectancy of the end product.

Textile print businesses are also now put in the position of making certain they meet all legislative requirements regarding the use of chemicals in the work-place. By default, this leads to greater eco aware results; these criteria don't just apply to manufacturing practices, but also are relevant to emissions and waste reduction throughout all production operations. Such practices might seem at first consideration to be overly stringent yet, despite the perceived restrictions imposed by tough compliance, it has become possible to adhere to present-day greener working methodology without compromising health and safety or any of the conditions implied or demanded by current regulations. This, in turn, leads more logically to a greater practical understanding of environmentally friendly functions and environments.



Chemistries should be formulated and processed so that they meet the correct standards

Screen-printing is expected to offer longevity without unreasonable deterioration

MANUFACTURERS' RESPONSIBILITIES

When operational conditions change, either by law or because of a drive by end customers who want to achieve greener credentials via their supply channel, composition of chemistry and its use in production environments falls initially on the responsibility of the manufacturer of those products. A print house can only adhere to specific conditions if it has the right components within its production structure to be able to maintain its practices within the right legislative framework. This needs to be achieved by working with products that, themselves, have been developed to exacting specifications that sit on the right side of legal parameters. While they might not appear to be the cheapest, it is essential that chemistries have been formulated and processed so that they meet the correct standards in terms of environmental criteria and safety management. By achieving this, print companies are able to achieve their goals, plus the benefits of the reality in gaining eco-aware credentials and recognition.

Meeting national and international standards is now standard, with all substances needing, at the very least, to comply with †REACH European Union regulations. Thus, manufacturers of screen-printing products must adhere to the legislation via registration to make sure that adequate information is developed on the human toxicological and ecotoxicological effects of all chemicals. This, in turn, leads to safer and more eco-friendly practices being implemented, maintained and monitored.

In health and safety terms, where hazardous elements are removed from a production process, so the harmful nature associated with working with chemicals and solvents for cleaning is eliminated.

EQUIPMENT REFINEMENTS

The design of screen-printing machines for textile production has also undergone considerable refinement as greener principles have become more important. Similarly, revised screen reclamation and processing procedures are instrumental in assisting print companies to reconsider their waste levels; filtrated high pressure washers save on resources and time, for example, while reclaiming screens immediately after a print run has finished, also reducing labour and man-hours. This is helped by the fact that there are now products available designed specifically to prevent the ink drying in the mesh, such as CPS Stain Preventer Gel

Screen-printing offers good colour depth and versatility across all types of fabric

6000 that has low odour as well as slow evaporation that prevents unwanted drying. Ensuring that the impact of hazardous solvents used in thinners and washes is minimised is also a vital consideration for protecting the environment and these can be eliminated in the evaporation process by employing a chemically formulated solution which reduces VOCs from forming in the first place.

Latter-day solvents and their formulations might lead to higher litre costs at the outset but, largely, these have been developed to contain fewer hazardous components and, in many cases, to reduce the actual levels needed in normal operation. Thus, in the longer term, a more expensive purchase price is countered by significant reductions in overall litres employed, bringing the obvious benefit of a cleaner, emission free environment. A typical example of emulsifiable blends used prior to screen reclamation is the CPS family of screen washes which has been developed to minimise the presence of VOCs, with the additional benefit of very low odour.

RESPONSIBLE ATTITUDES

End customers and brands have been driven by consumers to implement a greener structure as individuals strive to adopt a more environmentally responsible attitude to everyday life, both in business and in domestic environments. This, in turn, has led to production houses wanting to adopt improved eco-aware practices and reduce their carbon footprint voluntarily as well as being compelled to do so through legislation. Such moves impact on the supply chain and, hence, on manufacturers whose products and methodology must adhere to strict regulations.

There is no alternative to screen-printing in terms of colour depth and versatility across all types of fabric, with inks and finishes that cater for every type of output, from industrial textiles and furnishings through to apparel and cloth goods. But green considerations and sustainability must both play a major role in today's production environments without disrupting competitive cost structures and working practices.

Because manufacturers of chemistries have successfully addressed the issues surrounding environmental improvements, there is no reason that the textile sector should not to be considered as environmentally aware as other segments of the printing arena and, indeed, industry as a whole. ■

†Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH).

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DEVELOPMENTS IN THE WIDE-FORMAT MARKET

Tony Cox shares some insights on the growth of digital ink-jet

Tony Cox is Business Manager, Digital Aftermarket Europe, at Sun Chemical

The large-format advertising market has grown rapidly in the last twenty years and the adoption of wide-format digital printing equipment has been a major contributing factor. This is largely due to the ability to produce customised graphics on demand, quickly, reliably and, most importantly, in small quantities.

The range of applications which can be produced by ink-jet has grown significantly since its introduction. The variety of media being printed has expanded rapidly with the use of a wide range of coated and uncoated media, which now also demands both indoor and outdoor usage in all weather conditions. Rapid advances in technology have improved the quality and print speed of the printing equipment which has enabled users to print high resolution up to 1440 dpi with print-head drop volume down to 3 picolitre. This allows print speeds of several hundred square meters of print each hour. The range of applications has therefore grown even further and enabled users to produce everything from tiny labels and stickers, up to large-scale graphics that could wrap whole buildings.

CHANGING DYNAMICS

Through an extensive digital offering, Sun Chemical has a good view of the changing dynamics in this market. The digital printing market continues to gain momentum and wide- and superwide-formats in the graphics market are seeing continued growth. As digital press capabilities are being realised, narrow web and label opportunities are also increasing. Imprinting and personalised print applications have also grown in all geographies.

The Sun Chemical Streamline ink range

Ink-jet overall is growing in all markets, even in the more well established sectors such as wide-format graphics. Variable data markets are seeing tremendous growth in places such as China due to the need for supply chain traceability. In terms of future opportunities, packaging applications and commercial print markets are becoming the focus points for ink-jet technology.

THE DIGITAL AFTER-MARKET

Another area that continues to see growth and to evolve is the digital aftermarket. This is partly due to the global economic situation driving the need to reduce consumable costs and partly due to improvements in ink performance which have reduced the risks of converting from the OEM product. These factors, coupled with consistent quality and easy conversion, have made after-market products an attractive alternative to the OEM product.

Sun Chemical's Streamline range is designed specifically for wide- and superwide-format printers using high-quality solvent based inks.

The company recently launched two new ink ranges to meet the stringent demands of the latest wide-format printing equipment, Streamline ESL HPQ and the Streamline Ultima HPQ. These ranges have been developed following extensive feedback on customer needs and have been carefully matched to the original products for both colour shade and strength as well as physical properties, enabling customers to continue to use all the existing settings when converting from the original inks.

With the ever-increasing pressure and developments of the print market, Sun Chemical is continuously making improvements to product performance ensuring that they are of the highest quality and meet the needs of this expanding market. ■

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KEEPING A FAST PACE

Stan Farnsworth outlines the benefits of photonic curing tools

Interest in printed electronics applications is continuing to advance, as evidenced at the growing number of events, and related publications, covering the space. Developments in photovoltaics, displays, sensors, batteries, smart textiles and flexible circuit technologies are, in turn, motivating advances in materials and processing.

Increasingly these devices are transitioning into pilot and volume manufacturing, and equipment makers are responding to these needs and opportunities. In particular, processing high-temperature materials on low-temperature substrates, such as drying and sintering metal inks on polymer or paper substrates, is a critical capability. NovaCentrix addresses these needs with the PulseForge photonic curing tools for lab and production use. This year the company is expanding its offerings and has two important additions to the state-of-the-art PulseForge 3200/3300 series platform.

In May NovaCentrix unveiled the PulseForge 3200-X2, operating on-site at Drupa 2012. The new X2 PulseForge variant offers twice the coverage area per pulse as the original PulseForge 3200, from 115cm^2 for a two-lamp system to 225cm^2. This increase in coverage area effectively doubles production speeds and decreases consumables' cost in comparison to the other PulseForge tools, which already set the industry standard.

Additionally, the new X2 variant optimises the high-speed drying capabilities of the PulseForge tools which is a requirement for volume ink-jet and also thicker films such as screen-print depositions. The PulseForge tools are able to process depositions 10µm thick and greater using advanced pulse formation. Since May, NovaCentrix has also shipped X2 models of its higher-powered tool, the PulseForge 3300.

The PulseForge 3200-X2 integrated into a roll-to-roll processing tool

Especially relevant for pilot line and production use, a PulseForge 3200-X2, in a partnership with German equipment producer 3D-Micromac AG (www.3d-micromac.com), was integrated into a modular roll-to-roll processing line. This line was successfully operated at Drupa producing screen-printed RFID antennae patterns.

PulseForge photonic curing tools process high-temperature materials on low-temperature substrates, and are ideal for drying, sintering, annealing, and reacting the functional materials of interest in the emerging printed electronics industry. Unlike traditional oven technologies, the patented photonic curing process selectively heats inks and depositions to very high temperatures using microsecond-scale flash lamp pulses without damaging low temperature substrates, such as polymers and paper.

By adjusting the pulse attributes using the touch-screen interface, temperature profiles in the depositions and substrate can be closely controlled and optimised to achieve high-performance properties at high-speed roll-to-roll processing rates. These capabilities are critical for customers developing new applications in photovoltaics, RFID, displays, sensors, and batteries.

The PulseForge tools can be used to process almost any functional inks but, increasingly, companies are developing inks specifically optimised for this type of processing. The Metalon ICI-series of copper-oxide reduction inks is an example. The ICI inks are an innovative class of inks developed by NovaCentrix based on the patent-pending formulation of copper oxide particles and a reduction agent. After printing, these inks are converted to highly conductive thin-film copper when a PulseForge tool is used to modulate a high temperature reduction reaction between the copper oxide and the reducing agent. Additionally, the conversion process happens in ambient air and on low temperature substrates such as paper or plastic at production speeds. The ICI inks are available in print-method-specific formulations and are priced in volume at $75/kg. ■

The lamp housing of the PulseForge 3300-X2

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GREEN: THE COLOUR OF MONEY

Sébastien Hanssens discusses how choosing the right software to print sustainably helps improve balance sheets

The lastest version of Caldera's CostVIEW software features a carbon footprint calculator

An optional ink-saving module like InkPerformer for Caldera RIP software can significantly reduce ink consumption

In recent years, the print industry has made great strides in shaking off its 'dirty' tag. The development of recycled and recyclable substrates, VOC-free inks and more efficient printers has gone a long way towards making print greener. The take-up for such products as these has been excellent, and has shown a definite desire within the industry to be more environmentally friendly.

Driving the trend are the print buyers whose briefs are no longer simply to find the best quality at the lowest price – and their end customers, who demand a more responsible attitude, especially from retailers. As more and more companies implement corporate social responsibility (CSR) policies, they are increasingly looking for the products and services they buy in to conform to internationally accepted standards of sustainability. In order to stay competitive, PSPs have recognised the need to react and join the green revolution.

SUSTAINABLE PROFITABILITY

At the same time, when budgets are stretched to their limits in the current tough financial climate, many PSPs are asking themselves if they can afford to invest in the technology to go green. But what's often overlooked is that sustainability and profitability can often go hand in hand, particularly where efficiency gains can be made in areas such as reducing ink and media usage. If we are really committed to leaner, greener print, it is not just consumables we need to consider; we need to take a long, hard look at our processes and start building a more sustainable model from the ground up.

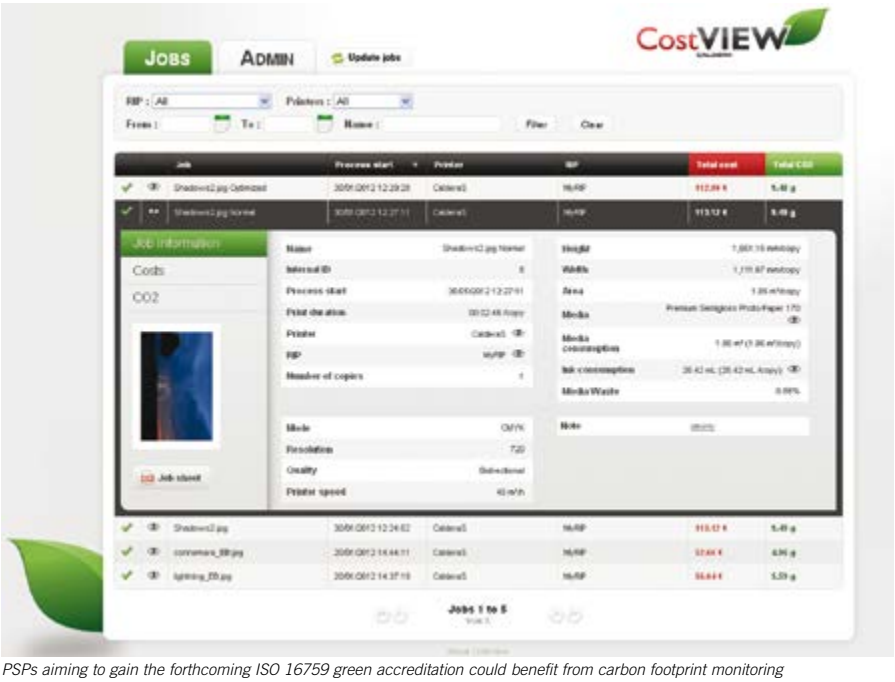
This, of course, is where investment in software is crucial. As the driving force behind every digital printing outfit, choosing the right RIP and workflow software to help your business print more sustainably is as important as choosing the right printer, ink and media.

It can be a significant outlay, but it can also be compared to the difference between buying a ready-made suit and having one made-to-measure on Savile Row. It pays to choose an integrated solution that is built around your business and its unique demands, over one you have to fit your company into that may not be quite what you wanted or needed. In the long run, the extra investment in a tailored, expandable production solution will pay for itself.

The right RIP solution, a keystone in any wide-format printing business, has a fundamental role to play in promoting greener print as well as saving money. Software like Caldera's flagship VisualRIP and GrandRIP packages, for example, incorporate sophisticated nesting tools which help you to make the best use of your media; reduced media consumption equals a lower carbon footprint and less money wasted on unused substrate. It is a simple but effective difference, and it is just the start.

TAILORED SOLUTIONS

No two wide-format printing businesses are exactly the same, so why should the same software be sufficient for everyone? To return



PSPs aiming to gain the forthcoming ISO 16759 green accreditation could benefit from carbon footprint monitoring

Reducing usage of consumables such as ink is good for the environment and profit margins

to the suit analogy, one size does not fit all, and it is important to have options that can be added as and when your business needs them to optimise its performance in every respect.

Options like Caldera's CostVIEW can do some of the hard work for you. More than simply a cost visualisation module, CostVIEW includes an integrated carbon footprint calculation tool to help you measure CO2 emissions as well as monitoring ink and media expenditure per job. For any PSP wanting to market itself as a sustainable producer, being able to show accurate carbon emissions' data is a step towards environmental credibility, while analysing the information in-house can lead to efficiency gains. Although there is not yet a set standard as to what defines a low-carbon print business, the ISO 16759 standard which is currently in development will seek to address this, and PSPs monitoring their carbon output now will be best placed to conform to the standard when it is ready to be implemented.

If your data reveals that your ink usage is eating up your budget, there is software to help address that, too. Created in reaction to the rising prices of raw materials and the increasing concern from PSPs about the dramatic increases in the cost of their inks, Caldera's InkPerformer module also hands its users the ecological edge over their competition by giving them precise control of their ink laydown. The software was developed with Alwan Color Expertise and works within a Caldera RIP by calculating colour combinations that reduce the amount of ink used whilst maintaining visual colour integrity. It is a small change to make, but one that could save as much as 20% of the average ink consumption per print – which is both cost-effective and eco-conscious.

Cutting is another area where integrated solutions can deliver significant advantages. Cut solutions that interact directly with the RIP, like Caldera's VisualCUT and GrandCUT, offer optimal accuracy by extracting the contours in a document within one simple workflow. With the printer and cutter driven by the same software, there is less margin for error and the chances of having to re-print and re-cut your output become tiny. If you are beginning to see a theme developing, it is because reducing waste and increasing efficiency are two of the most important ways of lessening your environmental impact whilst also improving your profitability.

GREENER WORK-FLOW

The advantages of implementing a full MIS work-flow solution for wide-format print houses might be less obvious in terms of their environmental credentials, but once again, the key is in minimising error and waste in order to maximise profit margins and efficiency. Flow+, Caldera's management information system, ties together all the data from all the other software elements in the work-flow to offer a unified overview of a business. Cohesion between the sales and production departments reduces the number of production errors, the workload of a fleet of machines can be monitored and optimised from within one interface, and stock levels can be managed more effectively. Individually, none of these features seems to offer much improvement environmentally, but collectively they could make a bigger difference than you think.

Ultimately, it can be the smallest changes that make the biggest difference. Using a RIP solution with automated nesting and adding a module like InkPerformer may not look like actions that save much in the way of media or inks on each job but, over time, the reduction both financially and environmentally, will add up. It might not be cheap to go green, but it does not cost the earth – and software is a cost-effective place to start. ■

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PVC DNA – FLEXIBLE PRINT MEDIA DECONSTRUCTED

Jaime Giannantonio Sherman breaks down PVC sign media to examine each component's chemistry, value and opportunities

Ultraflex Systems Inc began more than 25 years ago with Ultralon, a back-lit, 5m wide flexible face PVC sign material that integrated crystal clear, low shrink, polyester yarns so that the pattern of the scrim would disappear when illuminated. It was the first product of its kind and it took Ultraflex and the industry to a new level of development and innovation in print materials. Today, with in excess of 50 unique flexible sign materials in stock across the globe, Ultraflex is a leading supplier of printable sign substrates to the signage and graphics industry.

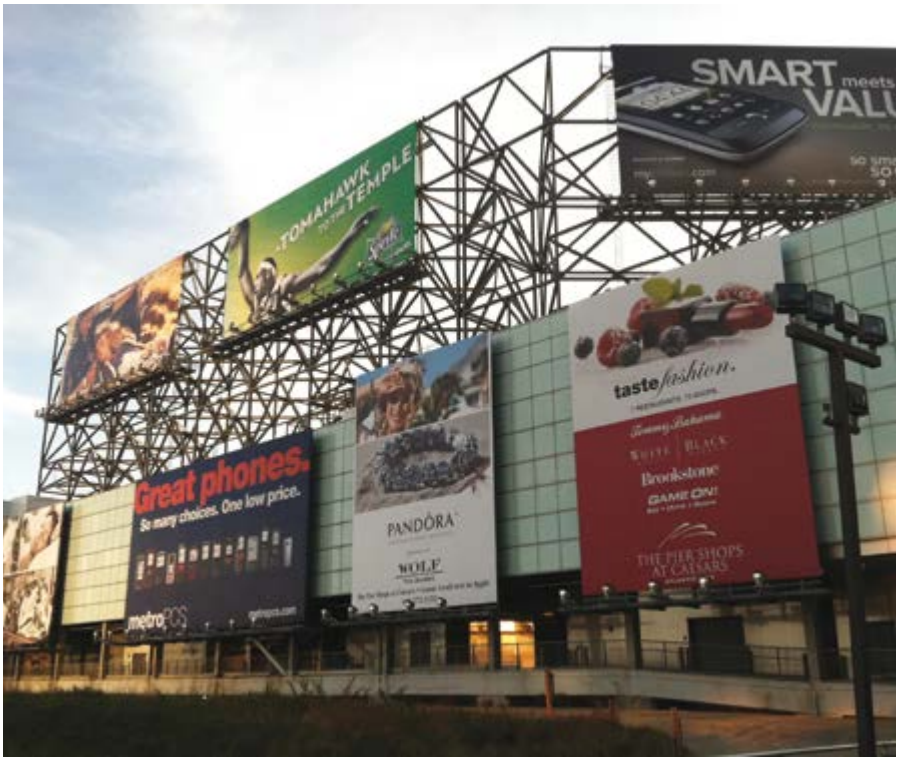
PVC is integrated into the manufacturing of a multitude of products across various industries with what seems to be limitless uses. Why? Simply put, it is one of the most inexpensive and durable materials on the planet.

IT ALL STARTS WITH A BASE...

When it comes to flexible sign media, PVC is almost always attached to a base fabric of woven polyester called the scrim. Like the bones in a human body, the scrim acts as the strength and reinforcement beneath the surface that keeps the sign material stable.

Scrim is just as important as PVC when it comes to flexible sign material. A common term used in association with scrim is denier, the weight/unit length (linear density) measurement of a continuous filament or yarn, used traditionally in textile industry. It expresses weight in grams of nine kilometres (9000m) length of the material. The lower the denier number, the finer the material and the higher the denier number, the coarser the material. Denier is synonymous with strength when it comes to sign materials and, if durability is of importance, the denier should be considered. Ultraflex products, for example, are commonly of a high denier count.

Natural fibres like cotton or cotton blends may be used for base-fabrics of sign materials, but they are not widely used for outdoor banner material because they are not strong enough, they absorb moisture (supporting the growth of mildew) and they are expensive. Therefore, polyester (PES) is most commonly used as the scrim base for flexible sign materials, primarily because it is not affected by climatic conditions, it



Various types of flexible PVC in outdoor application; blockout banner media on truss and front-lit banner media for building wraps.

Polyester yarns being spun together to create the knitted or woven scrim [scrim.tif]

Laminating machine bonding PVC facestock to scrim with roller pressure and heat

Woven scrim construction. PES yarns feeding into weaving loom

Coating machine applying the ink-receptive top-coat.

maintains its properties over time and it is strong, durable, and relatively inexpensive. The polyester yarns are either knitted or woven together to create the scrim.

Woven yarns involve the interlacing of two sets of thread at right angles to each other – the warp and the weft. The outcome is a densely woven scrim with a high compactness, stability, tear strength and tensile strength. The woven scrim base is then integrated into a smooth, coated, higher quality banner material which usually yields an elevated price tag.

Knitted yarns are made up of warp and weft threads that are sewed up by a thin diagonal binding thread. The knitted thread is commonly made of thinner yarns that have a more open structure. Knitting machines are faster than weaving and so, as is evident in the phrase 'time is money', knitting it is a cheaper way of creating a scrim base.

Now that we know what the scrim is and how it is made, it is clear that the scrim affects the strength and durability of a sign material. It is also important to note that the base fabric has an effect on a sign material's surface and printability. For example, if you want a very light media – 400g, 1000 x 100, 9 x 9 scrim, the surface of this product will be slightly rough and will have a certain degree of scrim showing through. Conversely, if you use a 300 x 300, 18 x 12 scrim, the surface would be smoother because the yarn is much finer. The heavier and coarser the scrim, the more show-through you will have if the coating is thin and the material is light.

PVC IN THE MIX

Chemicals, both man-made and organic, are combined with oils to make PVC flexible or rigid. The combination of chemicals is calendered or cast and then laminated or coated. "The method is usually determined based on its end use or application" notes John E Schleicher Jr, Ultraflex Owner and CEO. "For example, if you want an outdoor durable, quality banner material, it needs high abrasion resistance and the best method for this is coating. If you want an economical, 13oz banner material, the best option is lamination because it is a less expensive process."

With lamination, one or more layers of PVC face-stock (or PVC film layer) are bonded to the base fabric/scrim by applying pressure and heat between large rollers. Additional layer(s) of blockout materials may be incorporated; calendered or cast PVC face-stock may be used, although calendered is more commonly utilised. Some basic characteristics of laminated products are that material costs are lower, with faster manufacturing/production processes than others, used for short term applications and optimal price performance. Asian-made materials are commonly made via a lamination process.

Coated products can be knife or bath coated. For knife coating, a liquid plastisol is applied to the fabric/scrim in several passes – first with an adhesion agent, then a PVC top coat and finally an acrylic, polyurethane or other ink receptive top coat. If a material is coated on one side, is generally knife coated. If the product is printable on both sides, it was likely bath coated – scrim dipped in thin coating on both sides. "Coated products tend to be higher quality and more expensive for various reasons," notes Schleicher. "The manufacturing process involves more production steps and requires higher quality ingredients. Also, the end-product achieves longer term applications, high adhesion and abrasion resistance, a longer shelf life, and generally better print results."

GREENER THAN YOU THINK?

PVC has been known to have negative connotations when it comes to the environment. However, PVC can be green in many ways. According to ExxonMobil Chemical Company: "PVC requires less energy to manufacture than its largest volume competitors. PVC products are often more sparing of natural resources in their production, service life and end-of-life state then alternative products.

Continued over

Grand format media avoids multiple pieces and seams.

PVC, along with all municipal solid waste, when discarded is often incinerated (approximately 20%) or landfilled (approximately 60%). Incineration of PVC products produces no more dioxin than the incineration of any other products and combustion products from flexible PVC are no more toxic than those from other incinerator feeds. Today, we have plenty of landfill space with no concerns of running out any time soon, in fact, landfill numbers are falling. Older, less efficient and less environmentally secure landfills are continuously being replaced by larger, more efficient and more environmentally safe facilities. Contrary to some allegations, landfilled flexible PVC does NOT release significant quantities of dioxin, mercury, chlorine gas or vinyl chloride monomer and does not leach additives such as plasticizers and heat stabilizers into the environment. The bottom line is that formulating flexible PVC for durability makes it more eco-friendly. By extending service life, product sustainability is improved."

PRICE-WISE

It is easy to be enthralled by the price of a banner material; however, possessing the knowledge about the components that affect the price will help a purchaser to understand what may be sacrificed in order to achieve that low price. There are many price altering components which make up a flexible, printable PVC sign material. Scrim denier, yarn type (such as high tenacity, polyester (PES), Trevira, nylon and cotton) and scrim construction (250 x 300; 500 x 500; 1000 x 1000) play a large role in the overall price of a banner material. In addition to the base yarn/scrim and top PVC layers, there are PVC resins, plasticisers, fillers (phthalate free chemicals, REACH compliant additives), stabilisers, UV inhibitors, fungicide, flame resistance chemicals, and others that make up your average banner material. Almost all of these components can affect the price of the banner material. Many of these chemicals are oil-based and, as the price of oil changes, so does the price of these chemicals and ultimately the flexible sign material. PVC resin, for example, is directly affected by oil. It is a commodity that is also affected by supply and demand. Schleicher stresses the importance of different grades of components: "Depending on the grade you use, it could have an adverse effect on the quality of the banner material. At Ultraflex, we use only top quality components in our ever-popular, pro line of materials."

End-use of application also has to do with product price. For example, if a PVC material needs to be very smooth with low-curl properties for use in a blockout application, price becomes secondary to hand/feel requirements and print quality. If a material will be used for indoor wall murals or backdrops, there seems to be a necessary balance of print quality and cost with a heavier focus on price. Industry reports have shown that purchasers of

event banners, street pole banners, short-term banners, billboards, and grand-format substrates are the most price sensitive.

APPLICATION AWARENESS

There are many factors to take into consideration when choosing which type of material to use for each project. As the printer, it is important first to be confident that the material is compatible with your printer and ink specifications. Then, developing a full knowledge of the application in which the product will be used is imperative. Once you know the scope of the project, that will help you narrow down which type of material to select. To assist the purchaser further in identifying the ideal product for its application, savvy media suppliers often build products specifically for certain applications; for example, Ultraflex offers Billboard 520 or Pole Banner Pro. When choosing the media for the application, a series of questions should be addressed in order to find the right one.

- What is the primary application or function of the banner? For example, a front-lit media is not the same as a blockout media and therefore should not be used in a blockout application and vice versa. It would be wasteful and costly to use such a media for a simple front-lit banner.
- Where is it displayed?

Indoors? Will it be exposed to traffic or sunlight? Each application has material requirements specific to the environment in which it is used.

Outdoors? What is the kind of climate, precipitation and average temperature? The technical specs including weight, denier and tear and tensile strength will help to determine resilience and durability of a media for use outdoors.

- How long will the media be out in the field? There is a big difference from a one-time use banner to a long-term sign requiring durability of five or more years and media choice plays a lot into this. Flexible PVC sign media can be used for a wide array of applications which include, but are not limited to, event banners, street pole banners, exhibit and tradeshow banners, retail and store décor banners, indoor wall murals and backdrops, project and construction fencing, traditional billboards and more. For each type of application, there is an ideal product or type of product (front-lit, back-lit, blockout or mesh).

When selecting and purchasing banner material and other flexible PVC sign substrates, a trusted media partner is an invaluable resource that should be kept in your back pocket. With their immense knowledge of their product offering, they can help guide you to the right material for your job, which may lead to new opportunities for your organisation. A quality media source will take all of these considerations into account when helping you select the right material for your print job. ■

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WHAT'S IN A NAME?

Sylvia Muhr discusses why rebranding is about more than just a change of nomenclature

The appetite for UV-curable wide-format digital ink-jet technology has grown in recent years to a point where the most versatile and broadly adopted print technologies available fall into this space. While the chemistry started with its challenges – adhesion, compatibility with flexible media and a lack of white ink amongst them – it has evolved to become the mainstay of several print manufacturing processes, especially display.

Yet the choice for those looking to invest in these platforms has typically hinged around the ability of the machine to be a cure-all. UV-curable wide-format engines have largely been sold with the idea that they are either basic or unfathomably versatile. It is true that UV-curable technology's ability to adhere to multiple substrates does make it particularly adaptable, but there is now room to consider more how a business can make the most of its investment rather than anticipating long-term growth in an unsteady climate.

With the launch of Polytype's ground-breaking Virtu Quantum technology at Drupa, the company took the opportunity to present all of its machines in a new paradigm. Unlike other manufacturers, it recognises that many print providers still need sturdy, uncomplicated printers rather than superseding robust and reliable platforms time after time, while still wanting to see a technology path that can take them to the forefront of development in production capability.

RINGING THE CHANGES

Polytype has elected, therefore, to show its range in a new and dynamic light to incorporate the true spectrum of possibility inherent in its expanded range. Like choosing names for one's children, each new moniker was carefully considered not only to be memorable but also to help distinguish between the core capabilities of the machines.

Polytype's inks for the Virtu range undergo rigorous testing to ensure the excellent colour gamut required for blue-chip brand work

The range of materials that can be printed on Polytype's hybrid machines is virtually limitless

We realised that it was important for potential customers to understand in a word what each of our printers is designed to do. Choosing the right machine for any given purpose can be difficult enough without having to remember the sequences of anonymous letters and numbers by which many machines are denoted.

While certain attributes are common to all Polytype printers, such as made-to-measure service for each machine sold and a long list of customers willing to testify to the efficiency of its support operation, they are not all created equal. Each model is suited to particular applications, and the company is hoping that the new designations will help its customers find their perfect match.

MARKET-LEADING VERSATILITY

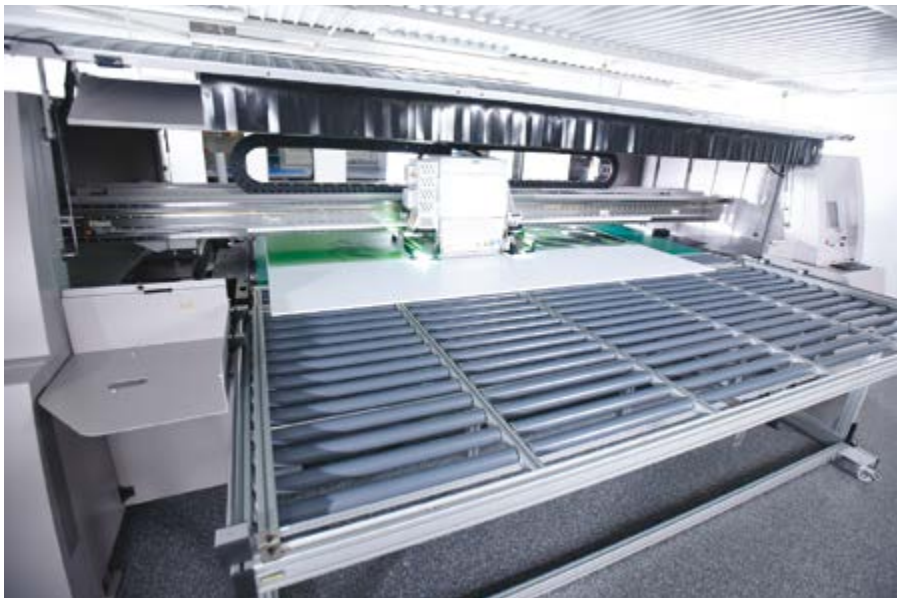
Polytype's 2.5m and 3.5m hybrid machines are therefore christened the Virtu Abacus series, in recognition of their position as thoroughbred work-horses for display applications. However, these machines are not simply benefiting from a rebrand; their print speed for any given resolution has been increased by 25%, providing impressive throughput for a realm of core applications.

These machines are really the core of the Virtu range. There is almost nothing they cannot do, which is why they occupy such a central role in the print houses that have already invested in them.

It is the Virtu Abacus's ability to print at a resolution of up to 1,200dpi onto almost any imaginable substrate that has seen it become one of the most highly-respected engines for display producers, being adopted by market-leading PSPs across the world. More than ten rigid materials, including glass, concrete and wood as well as more conventional substrates like acrylic and foam boards, and a further ten roll materials, such as mesh, paper and banner, make up an impressive catalogue of substrate choices for Virtu abacus owners.

At each of these widths and price points, printers need this kind of versatility from their machine. They are differentiated from the next step up in the range by making the most of a larger drop size to fulfil quality expectations, yet are able to print to common and less usual substrates faithfully.

In addition, Polytype has carefully developed specialist ink sets to encompass all types of application. Its solvent-free UV-curable inks are available in formulations for both flexible and rigid media and interior and exterior usage, as well as the dedicated direct-to-glass Vetro inks. In six colours – cyan, magenta, yellow, black, light cyan and light magenta – as well as white, which can be used as a spot colour or for under- or over-printing, the inks offer an impressive colour gamut, which is why the Virtu Abacus is a firm favourite for colour-sensitive brand work.



The Virtu Abacus is the thoroughbred workhorse of the Polytype stable

THE GOLD STANDARD

The latest addition to the Virtu range, the Quantum, made its international debut at Drupa 2012. So named for its revolutionary ten-picolitre print-heads (as opposed to the 30 or 80 picolitres offered for the Abacus), the Virtu Quantum represents a 'gold standard' for display work.

The Virtu quantum series is the result of countless hours of research and development and feedback from the valued partners that helped Polytype to beta-test the technology. It's at the cutting edge of wide-format printing today for printers who must step up their quality level.

Built on the tried-and-trusted platform of the Virtu Abacus range, the Quantum shares the former's ability to print to an exceptional variety of materials. Its defining feature is an array of 48 ten-picolitre print-heads that allow for the production of near-photographic quality output, developed by Polytype in response to strong market demand for ever-higher print resolutions.

The reception for the Virtu quantum at Drupa was excellent. Five machines were sold as a result, which meant Polytype was able to reach its sales target for the year inside a single quarter. The tests shown to customers, with their stunning quality from the ten-picolitre heads, were singularly persuasive and allowed these new owners to envision a level of quality for their existing user base that will expand their offering significantly.

Three of the Virtu Quantum printers were sold to existing customers following trials with machines by other manufacturers, with one buyer even choosing it over a lower-priced alternative, which is testament to Polytype's quality and customer service.

SUPERWIDE EVOLUTION

Polytype's superwide Virtu Evolvo, which in 2010 was awarded a European Digital Press Association (EDP) award for best wide-format printer more than three metres wide, is the last but by no means least of its range to get a new name. The 5m roll-to-roll machine boasts a print resolution of up to 1,200dpi, and the EDP judges were especially impressed with its top speed of 320 square m/hour in speed mode as well as its ability to print to up to three rolls of substrate at a time.

Since then, however, the Virtu Evolvo has also increased its output speeds by 25%, in line with the remainder of the range, increasing throughput for large display jobs impressively. A robust, hard-working engine for banner and soft signage producers, it is surprisingly frugal in its media and ink consumption too, making it an economical choice for high-volume print houses.

We think this reimagining of the range will help to raise Polytype's profile amongst prospective buyers. While our existing customers already know that our digital print technology is second to none, we want to show that Polytype is a forward-looking business with traditional Swiss values of quality by adapting our range to the needs of even more printers in the market. ■

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Crowded booths confirmed the popularity of all printing techniques

VIVA LAS VEGAS

This year's SGIA Expo looks set for greater diversification

This year SGIA makes a return to Las Vegas where the Expo promises to become what has been termed the industry's most indulgent event by showcasing the most innovative elements of the screen-printing and digital market sectors. As well as hosting exhibitors from all over the world wanting to display and demonstrate their latest technologies, the show is also majoring on its special zones and, for the first time, is introducing a new colour management theatre and a photo pavilion.

Proving to be popular areas at SGIA Expo, the zones are intended to provide a mass of information on specific production areas. Featured are the Digital Apparel Production Zone, aimed at helping visitors to find solutions to their garment decoration needs, and the PDAA Graphics Application Zone where decal application is the focus, complete with live demonstrations of vinyl installation. The Screen Printed Apparel Training Zone will include the latest in garment special-effect techniques while, finally, the Industrial and Print Electronics Zone will show state-of-the-art processes plus a vast arrange of high technology production which is used to produced printed electronics, automotive parts and more. This last area is complemented by the Printed Electronics and Membrane Switch Symposium that is being held for the same time in conjunction with the Expo.

The new colour management theatre is designed to be a non-sales area of the show floor where industry experts will pass on tips, techniques and tricks which are all about managing colour. This also focuses on specialist tools, as well as RIP and third-party software solutions.

Interest was high across all technologies being exhibited

Another new feature at the 2012 Expo is the Photo Imaging Pavilion, which brings all those specialising in this type of imaging together in a single location.

The SGIA Expo has long been a prime meeting point for all those involved to see and discover more about how technologies are evolving to embrace new production methods and markets. It's also a valuable place for those wanting to leverage the capabilities of their existing equipment so that they can move into niche and growth segments. And, of course, it's renowned for its networking opportunities both during the event hours and socially.

This year's platinum sponsors of the SGIA Expo are Agfa, Durst, EFI, Epson, Fujifilm and HP, complemented by gold sponsors INX Digital, Novus Imaging, Roland DGA and Stahls. These companies represent the many specialists who are choosing to exhibit at the 2012 event, with one core reason being its ability to be a strong source of information for the imaging community across all segments.

The SGIA Expo also provides a golden opportunity for any business wanting to invest in new equipment. According to SGIA's recently completed Industry Pulse Survey, 69.5% of graphic imaging companies, 64.4% of garment decoration companies and 70.1% of industrial printers plan to purchase production equipment in the year ahead. In the survey, purchases were defined as production focused and costing more than $5,000.

The dates for this year's SGIA Expo are 18 to 20 October, and the venue is the Las Vegas Convention Centre in Paradise Road. There's also a preferred hotel reservation service plus a wealth of general information at www.sgia.org/events/current_expo ■

Further information:
web: www.sgia.org

The 2011 event attracted 140 attendees from 19 different countries.

ADVANCED FUNCTIONAL & INDUSTRIAL PRINTING CONFERENCE RETURNS IN 2013

In recognition of its importance on the global printing events calendar, ESMA are pleased to announce that the Advanced Functional & Industrial Printing event will return to Düsseldorf on 6–7 March 2013.

Expert speakers will offer printers, OEMS and Tier 1 suppliers a series of presentations covering the best practices, as well as offering an invaluable insight into the latest technologies available. Applications to be covered include automotive, film insert moulding, nameplate, fascia, printed electronics, circuit, label and solar cell technologies.

Confirmed keynote presentations to complement the technical programme include Professor Gunter Hübner of Hochschule der Medien addressing 'Functional printing with screen or digital' and 'Volume printing of multilayer products' by Swansea University's Professor Timothy Claypole.

Advanced Functional & Industrial Printing 2013 will take place at the easily accessible Radisson Blu Scandinavia hotel in Düsseldorf. The conference programme will be presented in dual English and German, and will be supported by regular intervals dedicated to an accompanying tabletop exhibition of leading manufacturers of machinery and consumables.

DISCOUNTED ONLINE REGISTRATION OPEN

Online registration is open now at www.AFIP2013.org and for a limited time only, attendees can take advantage of a reduced 'early bird' delegate fee of only €495. Registration includes access to all presentations, exhibition displays, refreshments, lunch and dinner. Further discounts are available for multiple delegate bookings and ESMA members.

PROVEN TRACK RECORD OF SUCCESS

Advanced Functional & Industrial Printing 2013 follows on from the 2011 event which incorporated the Membrane Switch Symposium and was deemed an outstanding success by an international audience of over 140 attendees from 19 different countries. 100% of attendees stated that the conference programme was good or very good, and 98% said the 20 presentations would be useful to their business.

Technical presentations were made by representatives of Agfa, Algra, Bayer, ColorGATE, Conductive Compounds, Folex, GC Limited, KIWO, MacDermid Autotype, Marabu, Natgraph, Pröll, Sefar, SignTronic and Xennia. Keynote speakers included Ed van de Kieboom of the Plastic Electronics Foundation, Gunter Hübner from HDM Stuttgart, Lumoza's Wouter Moons and Peter Kiddell of PDS Consulting.

Printers enjoyed networking opportunities in the tabletop exhibition at the 2011 event.

ORGANISERS
Advanced Functional & Industrial Printing 2013 will be staged by ESMA, a European association for specialist printing manufacturers of screen, digital and flexo technology. Members are manufacturers of machinery, equipment, software or consumables. The event is supported by Chameleon Business Media, publisher of this magazine and *Glass Worldwide*. Both partners have proven track records of staging highly successful educational conferences and exhibitions, including Advanced Functional Printing, Membrane Switch Symposium, GlassPrint and CTS & Digital Work Flow. ■

FEEDBACK FROM 2011 EVENT
A selection of comments from attendees at the successful 2011 event include:

"We were able to meet with several current and potential customers at the symposium, and to make contact with many other suppliers and industry participants who we were not aware of. The content of most presentations was both timely and relevant to the rapidly growing market for printed electronics applications and technology worldwide." ***Douglas Banfield, Conductive Compounds (USA)***

"It was a very good and interesting conference with a lot a high level speakers. Not being a screen printer, it made me realise what an incredible number of technical applications are covered by screen printing. In these specialty markets we have to analyse what digital printing can bring." ***Emmanuel Swolfs, EFI (Belgium)***

"Our compliments for the excellent event ESMA have held in Düsseldorf. An event full of survivors that believe in our Screen Printing common future and had the opportunity to "digest" top quality, informative and professional presentations that clearly show a future vision for many new "Opportunity" applications on "thin" and "thick" screen printing industrial perspectives…if we want!" ***David Forrester Zamith, Ruy de Lacerda & Ca. Lda (Portugal)***

"The workshop was perfectly balanced between practical, hands-on information and on the other hand a solid scientific content and exciting new developments." ***Bart van Duffel, Sirris (Belgium)***

ESMA
Driving Print Excellence

AFIP
ADVANCED FUNCTIONAL & INDUSTRIAL PRINTING 2013

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NEW EVENT FOCUSES ON SUSTAINABILITY

Specialist visionaries join with exhibitors to promote a greener future

Berlin in September sees the launch of a new event, EcoPrint. The idea behind it is to focus on the business of sustainability and its commercial benefits by uniting all elements of the supply chain. This includes market specialists and brand owners and, of course, incorporates print and its providers as an important element.

EcoPrint is intending to provide answers, insight and innovation through high quality seminars presented by the world's leading sustainable brands and experts. It should give all visitors direct insight from all related areas in the design, specification and production chain, so that everyone goes away with information needed to equip businesses with a new and greener type of thinking, aided by the latest products and methodology to meet sustainable demand.

Senior executives from leading global brands including Coca-Cola, Toyota, Nike, DM: Markt, Aveda, Clear Channel, JC Decaux, along with case studies from IKEA, make up a roster headlined by keynote speeches from two huge names in European sustainability. These are business book Cradle to Cradle co-creator Professor Doctor Michael Braungart and founding director of the Potsdam Institute for Climate Impact Research, Professor Hans Joachim Schellnhuber.

Frazer Chesterman, Director of EcoPrint: states: "It's the content of this show that will set it apart from any other print industry trade show. Attending EcoPrint will not be a passive experience; it's designed to be immersive and engaging and to that end, we have collected leading thinkers, print-buyers and sustainability visionaries – people of action who are designed to inspire. Some of these speakers represent the very people who are increasingly raising the issue of sustainability with print businesses – can anyone afford not to hear what they've got to say?"

EcoPrint 2012's focus on content and discussion is reflected in the exhibition's floor design, which places the main stage as the central hub surrounded by the exhibition space. The content programme will take place in two key areas: centrally, on the main stage under the banner Think! and 'The Round' debating area under the banner Talk! In total there are nearly 50 events taking place across the two arenas in two days.

EcoPrint's speaker programme is designed to connect visitors with leaders in sustainability such as Michael Braungart and a group of top brands such as Coke, Nike, Toyota, P&G, Aveda, DM Drogerie Markt and IKEA and leading outdoor advertising agencies such as JC Decaux & Clear Channel as well as high level insight from the world's leading business research organisation, Mckinsey & Co.

EcoPrint's exhibitors will be showcasing the latest sustainable technological innovation providing visitors with leading technology and education on sustainable print and this further informs and inspires the leading print professionals who attend EcoPrint, to add value to their campaign, solution, service and ultimately business. Print is a major media and compelling communication platform and channel. ■

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NEW APPROVED SUPPLIER SCHEME

Elaine Campling explains the raison d'être behind rewarding the drive for print excellence

ESMA's Approved Supplier logo

ESMA will launch a new Approved Supplier scheme during EcoPrint Europe 2012 in September. This Approved Supplier scheme was developed in support of the customers of ESMA Member companies (Members) who asked for some way of demonstrating that they purchase from reputable suppliers that are producing quality products and services.

ESMA was founded in 1990 as the Association of European Manufacturers of Screen printing equipment and supplies. ESMA is a non-profit making organisation, funded by members to work on behalf of them and their customers. In 2000, ESMA extended membership to companies manufacturing machinery and consumables for the digital imaging market. The ESMA membership now includes many of the major European manufacturers of machinery and consumables produced for the specialist printing industry, accounting for a significant proportion of products and services supplied to both European and global markets. This year, ESMA opened its membership to consultants and print service providers, further expanding the representation of ESMA.

The ESMA slogan Driving Print Excellence is bound in the objectives of the organisation to promote quality products and specialist printing processes that are produced by members with strong health, safety and environmental values, through the work of various ESMA Committees, exhibitions, the press, public relations, technical training and research. The ESMA Approved Supplier scheme is a further step in the goal of ESMA to drive print excellence. The scheme is set eventually to operate with three levels; these are Primary, Middle and Top tier, which are outlined below:

PRIMARY TIER

The organisation self certifies by completing an on-line form using check boxes to respond to a number of questions probing the organisation's status on Quality and Environment. A positive response must be applied to all questions, in order to achieve primary level approval. The organisation must also have ISO 9001 and ISO 14001 Certification, or equivalent policies, management systems and procedures on quality and environment and have completed an internal register of their legal duties.

Organisations self certifying to the primary level must be committed to continuous improvement and the consistent delivery of robust, good quality products and services.

MIDDLE TIER

The rationale to this level is that members must be able to demonstrate enhanced performance. These organisations strive for excellence in the quality of their products and services. They will have a high level of corporate social responsibility and senior management commitment to achieving the highest performance standards. These organisations will lead by example and commit resource to help industry to improve performance and standards.

TOP TIER

This will be awarded to an organisation which can demonstrate innovative or novel systems, technology or cultural achievements leading to an outstanding health, safety or environmental performance, or quality of products/services. It is hoped that this prestigious award will be presented formally at an awards ceremony.

The Scheme will be introduced with the launch of the Primary Tier, available for subscription in 2013. The Middle and Top Tiers will follow later, with successful launch of the primary level. It is only open to ESMA members and only those members that satisfy the qualifying criteria. ESMA approval can only be awarded to fully paid-up members of ESMA who have been members for two years or more, and who have verified compliance to the requirements as set out by ESMA, by completing the online Self Validation Survey, agreed to the Terms and Conditions and paid the Joining Fee. Successful organisations will be entitled to use a logo on their product labels, company documentation and website.

It will be the individual company's responsibility to inform ESMA if they no longer meet the requirements, from which time they will then be required to discontinue the use of the logo on their company documents, their website and all other company literature. This will also apply in the case that they are no longer members of ESMA.

The idea for an ESMA Approval scheme was initiated by the ESMA Applications Committee Chairman who, with the ESMA Board, endorsed the work achieved by the ESMA Health, Safety and Environmental Protection (HSEP) Committee in developing the structure and defining criteria of the scheme.

The HSEP Committee is experienced in deciphering complex legislation and developing organisational compliance strategies. Its work has helped to successfully guide ESMA members through the difficult times of the REACH and CLP Regulations, representing members' interests in negotiating with regulatory bodies and providing information, support and guidance both to members and their customers. The HSEP Committee develops best practice standards and publishes information on European legislation, chemical hazards, safety data sheets, labelling and other HSE related topics.

The HSEP Committee will hold its Golden Jubilee Meeting early next spring in 2013, ie its 50th Meeting, representing many years of dedicated work by this Committee, who will celebrate the exciting launch of the Approved Supplier scheme in its golden jubilee year, entering into a new phase of ESMA.

Although yet to be finalised, it is expected that ESMA Members will apply for the second and top tier prestigious award by submitting an application that will be externally validated by a third-party body. It is hoped that all categories will feature significantly in the applications. Aside from strong health and safety values, ESMA is committed to encouraging both the green credentials of its members and the quality of the products and services they supply. ■

Elaine Campling is Chairman of ESMA's Health, Safety and Environmental Protection Committee and Product Safety Manager for Fujifilm Specialty Ink Systems

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MOVING INTO THE THIRD DIMENSION

Peter Buttiens previews ESMA's forthcoming printing and additive manufacturing workshop


ESMA's CEO Peter Buttiens

ESMA's first 3D Printing and Additive Manufacturing workshop will take place on the 8 November 2012 in Liege, Belgium at the premises of Sirris, a company with leading expertise in this field. Three different technologies based on 3D printing with polymer, metal, ceramics and titanium will be explained and shown in Sirris's labs.

We are organising two identical half-day sessions (morning and afternoon). Delegates will get introduced to applications and additive manufacturing technologies including for polymer parts, design for additive manufacturing, additive manufacturing technologies for metal parts and ceramic parts, biomedical applications and aerosol jet printing.

Attendees will find out what these technologies can offer in the design of new products. These include rapid prototyping, direct manufacturing of unique pieces or small lots – geometries that can't be realised with conventional methods.

In addition there will be a 50 minute lab tour where delegates will see stereo lithography, paste polymerisation for ceramics and metals, 3D printing of plaster and metal powder, laser melting and laser cladding.

Programme: 9.30 – 13.00

Opening – Survey of applications and AM technologies

- AM Technologies for polymer parts
- AM technologies for metal parts
- AM technologies for ceramic parts
- Biomedical applications
- AJP aerosol jet printing

Lab tour : 50 minutes

- Stereolithography
- Paste polymerisation for ceramics and metals
- 3D Printing of plaster and metal powder (Z-Corp + 2 Prometal)
- Laser sintering of polymeric powder
- Laser melting (MTT)
- Laser cladding (IrepaLaser EasyCLAD)
- Video of other location equipment:
  - 3D printing of wax (Thermojet)
  - Objet Connex500: bi-material
  - EBM ArcamA2

Prices are €125 for normal and €75 for ESMA member delegates (all prices exclude Belgian VAT). To register online for this event, those interested should visit www.esma.com/3Devent/ ■

Peter Buttiens is CEO of ESMA

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CURRENT TRENDS AND FUTURE OUTLOOKS

Mike Fox reflects on the key issues covered in the most recent forum group


Mike Fox.

Our NASMA forum group met on June 5, 2012, at our host's, Electronics For Imaging, Inc (EFI), head-quarters in Foster City, California. Our mission remains to provide a forum where senior executives and owners of North American Specialty Manufacturers serving the printing industries can meet to discuss current trends and outlooks for the future. This year's spring meeting did not disappoint.

We had a great opportunity to listen to Mr Fred Rosenzweig, former President of EFI, share EFI's transformation in the digital print market-place. Fred's comments were very timely as our members are all dealing with the transition from analogue to digital technology and how we all can remain relevant and profitable. One of the nuggets we all left with was Fred's emphasis that 'hiring the right talent' that is the 'right fit' for our companies is key. Mr Peter Offermann, CEO of Cellotape, Inc, gave us a customer's perspective of the transformation that is underway in print markets.

We do ask that our members attending the meeting give their views of future business decisions affecting their companies. Here is our members' view of key matters discussed:

- They expect sales in 2012 to be better than 2011.
- They will be increasing our marketing spend in 2012.
- Capital expenditures will be higher.
- They will be increasing staffs and expect to have wage and salary increases.

We all remain concerned about the global economy but are optimistic for the future.

Our fall meeting will be hosted by KIWO at its US headquarters in Houston, Texas. ■

Michael P Fox is Chairman of NASMA and President of Nazdar

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PRINTED ELECTRONICS TARGET TO LAS VEGAS

Specialty Graphic Imaging Association

Michael E Robertson looks ahead to the autumn symposium


Michael Robertson

We're experiencing important changes in the management of the global supply chain for imaged electronic components; these changes are bringing some production back to the USA and Canada. It wasn't long ago that US-based manufacturers were losing production to other countries where the price per part was lower. Getting the lowest price per part was clearly driving the market.

However, for many US-based manufacturers of printed electronics components, it's a different story today. Value is driving the market, and quality issues, time-to-market concerns and sustainability initiatives have boosted the value of localised production. The push for value has stepped up quality controls and improved production management methods. The cost of producing the part might be slightly higher when using a local provider, but order volumes are more easily managed, tight schedules can be maintained, storage is reduced, waste is reduced, shipping costs are dramatically lower, and quality control is more effective.

The production of printed electronic components continues to be a very competitive field where it's critical to stay informed of technology developments, production methodologies and market trends. The Printed Electronics and Membrane Switch Symposium program is designed to support creative development. Here are just two of the key presentations slated for the 2012 Symposium (for a complete list of programs visit SGIA.org, Keyword: PEMS):

OPENING KEYNOTE: The Shape of Things to Come – Interacting within the World of Printed Electronics

Mark Fihn: Veritas et Visus

This presentation will cover the increasingly broad world of printed electronics – including displays, photovoltaics, sensors, batteries, logic and various novel developments. Challenges for implementation, both technological and market-driven, will be highlighted, as well as the enormous opportunities presented by several large market needs. Of particular emphasis will be the link between flexible electronics generally, and the fast-rising implementation of touch-capable technologies. Both flexible devices and touch-enabled devices (which are likely to become a single category of flexible and touch-enabled devices) share many of the challenges associated with printing on multiple layers while maintaining electronics-industry tolerances and performance requirements.

PHOTONIC CURING: Technology, Simulation and Applications

Stan Farnsworth - NovaCentrix, and Scott Gordon - Dupont Microcircuit Materials

One of the limiting challenges in flexible printed electronics has been to reconcile the conflicting high-temperature processing requirements of high-performance materials, such as inorganic conductive inks with low temperature substrates (eg polymers and paper materials). Photonic curing has been shown to be effective in heating inks and functional films to very high temperatures, in excess of 1000 degrees C, on low-temperature substrates without damaging them.

SGIA's Printed Electronics and Membrane Switch Symposium is an important annual event for technology users, as well as the manufacturers and suppliers serving the high-tech sectors. The symposium is rich with detailed presentations relating to conductive applications. We strive to keep a 'small meeting feel' at the symposium to encourage interaction with industry leaders and the sharing of ideas.

This year we're doing something a bit different. (And we're excited about it!) The 2012 Printed Electronics and Membrane Switch Symposium will be held in conjunction with the 2012 SGIA Expo in Las Vegas, October 18 and 19. The symposium will be held in an area convenient to the SGIA Expo. Our goal is to maintain the closeness of the symposium while providing attendees with the great added value of the SGIA Expo and the Industrial Zone. This co-location provides a 'two for one' trip for attendees and reduced exhibitor costs.

For complete details on the SGIA Printed Electronics & Membrane Switch Symposium visit SGIA.org, Keyword: PEMS ■

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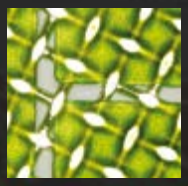

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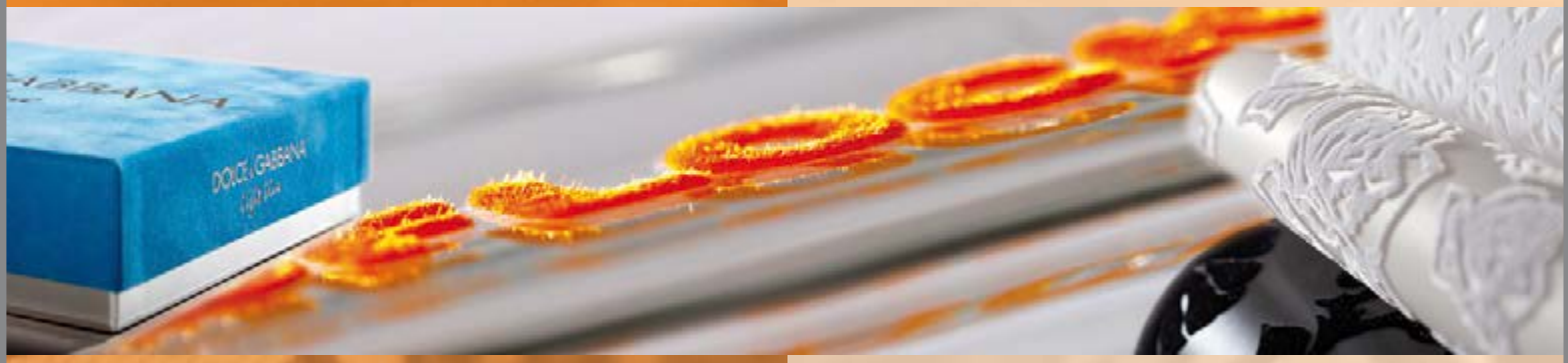

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