ISSUE 4
2011

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MESSAGE FROM BRYAN COLLINGS

With the team just returned from SGIA '11 in New Orleans as I write, we are now facing a long hard winter in the Northern Hemisphere both in terms of weather and probably market activity. On a brighter note it was very encouraging to note many new product developments and new equipment being displayed at SGIA'11, as well as seeing attendee numbers even higher than their last expo in New Orleans in 2009.

With similar positive vibes coming from the recent FESPA Asia and Viscom series of events, it certainly seems to be the case that manufacturers are continuing to spend money on research and development which can only be to the benefit of our processes. As far as we can judge, it seems that most manufacturers have managed their way through the worst of the recession and are now slowly recovering along with the overall market. Certainly marketing spend is picking up as companies seek to create competitive advantage over their rivals. They always say that the best time to buy a new suit is when you're out of work!

Another of our sponsors, ESMA, are also organising a one day Sportsware, Fashion T-Shirt Printing Conference on the 3 February. This promises to offer excellent advice from industry experts and an insight into the latest technologies available today. See page 12 for more details.

Last but definitely not least for events coverage in this issue in addition to our extensive digital and screen technical articles, see pages 62-64 for a fascinating insight into the future of screen-printing.

With shops starting to fill with seasonal goods for the Christmas period it just remains for me to wish all our readers seasonal greetings. Don't forget, if you would like to receive all copies of *Specialist Printing Worldwide* in 2012, the only way is to subscribe at www.specialistprinting.com - see page 11 for more details.

Bryan Collings, Publishing Director, *Specialist Printing Worldwide*

THE ROLE OF PROCESSOR POWER

Computerisation has become a way of life

Back in the early eighties, when I was busy editing a couple of print titles, I made the transition from my portable typewriter of questionable vintage to the first of many computer platforms which have become my work tools over the years. Today, younger folk won't remember the old days before our lives were governed by the power of the processor but there are certainly many of us still around who will never forget our analogue daily tasks.

In the majority of industries, the use of computerisation is a *de facto* element of running a business but, without a doubt, print in its many guises has become particularly dependent on these platforms. This is a discipline which, during the past 30 years, has changed radically and transformed the way in which jobs are generated, produced and output.

Some might feel that the convenience of driving printing machines from a computer platform has deskilled a process which, in former years, required detailed expertise and considerable amounts of training. Rather like photography where learning how to process film and produce final prints is no longer essential as anyone can use a digital camera and take a picture with it, so most elements of the graphics arts and industrial production have become reliant on digital work-flow where, yes, the input of people is still required but the control has become automated and processor driven.

Even the analogue machines used to generate screen-printing, offset or flexo are now reliant on computer power. The days of the repro camera have long been superseded first by scanners and, latterly, by artwork created on-screen combined with digital photography. Film, as we knew it back in the old days, has now been replaced by computer-to-plate and computer-to-screen operations and, at the other end of the chain, pantograph devices have now become history as CNC cutters and routers have taken over.

Of the changes witnessed during the decades I've been working in the graphic arts industry, the most disruptive in technology terms surely has to be digital print. Despite its relative youth, it has transformed the way most people and businesses consider print and has opened production doors which would never have been deemed possible a relatively short time ago.

But has the general adoption of digital processes made us lazy and take for granted techniques and production methods which, formerly, required considerable training and skills? Or has it enabled a greater number of businesses to benefit from capabilities which were outside their radar during the analogue days?

Today, across all production processes, there are elements which are helped considerably by the use of computerisation, whether or not the end results are generated by analogue presses or digital printers. Not only does the driving of machines benefit from consistent, controlled information and data feed but so, of course, does job creation. And this extends outwards to cover various other aspects of running a business, including JDF compliance, MIS, ERP and CRM, much of which can be knitted together with production procedures to make overall job control so much easier.

We hear endless talk about the analogue to digital conversion but, in truth, computer power is going to be involved in one way or another no matter which production process is being used. Digital technology is a wonderful thing, with ink-jet and other new technologies changing the *modus operandi* of many companies and enabling them to work more flexibly in terms of job type and volume. But, even in the analogue world, it reduces the margin for error and adds levels of automation we could only have dreamed about in the old days.

A key reason I absorb so enthusiastically the articles in *Specialist Printing Worldwide* lies in the mix of topics, with discussion on skilled and analogue production methods joining digital techniques across a range of production processes. This acts as a reminder, too, that although many of us rely on computerised techniques in our daily work there are still plenty of businesses that still use manual areas of expertise.

The convenience of computerisation cannot be denied, whether it's an aid to producing consistent colour-correct artwork, organising data for different output devices, generating accurate and repeatable prints to meet specific criteria and finishing, or sorting out stock control and logistics. We use the web to promote our services, use a variety of software for everyday jobs, and rely on e-mail for communication.

Technology advances have transformed the way in which we produce print, mostly for the good. But I'm glad I can remember the old days of production because it helps to put where we are today into perspective and make sure that our reliance on computerisation should never be taken for granted.

Sophie Matthews-Paul
Editorial Consultant –
Specialist Printing Worldwide

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Enfocus PitStop adds colour capabilities and Lion support

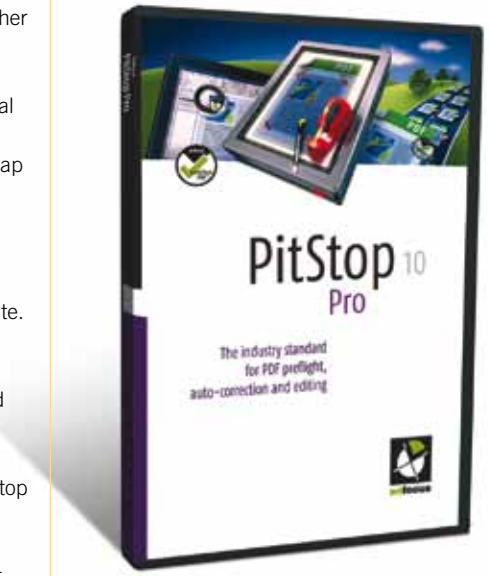
Enfocus has added support for Mac OS X 10.7 (Lion) operating system to PitStop Pro and PitStop Server. In addition, Version 10 Update 3 of both PitStop Pro and PitStop Server includes new channel remapping capabilities and more power, control and flexibility with respect to colour conversion.

"Printing firms are still receiving PDF documents that contain unwanted or incorrect spot colour separations," comments Leen Vanmaele, Product Manager. "With the new Channel Remap functionality included in Update 3 of PitStop Pro 10 and PitStop Server 10, unwanted spot colour separations can easily and accurately be replaced with another spot colour or with a specific CMYK colour. This is important for increasingly time-sensitive work-flows, minimising the potential for expensive errors in the printed job."

Vanmaele points out that Channel Remap allows users to replace easily an unwanted spot colour with the correct spot colour, remove a spot colour channel altogether, convert a CMYK colour to a spot colour, or convert a spot colour to CMYK as appropriate.

In PitStop Pro 10 Update 3, Remap Channels can be accessed through Remap Colors within the Global Changes menu and are also accessible from within Action Lists meaning that the functionality can also be used in PitStop Server. In addition, the PitStop Pro Inspector panel contains interactive Channel Remap functionality within the Separations section. "Making this important capability available from a variety of menu hierarchies as well as through Action Lists helps streamline complex prepress workflows," adds Vanmaele.

PitStop 10 Update 3 adds extra functionality to the Snap to Color Action List, allowing users to replace a specific CMYK colour with a spot colour, or vice versa, while honouring original density specifications. For example, orange in CMYK can be replaced with a spot colour 'orange', keeping the visual representation accurate to the original designer intent. ■



More power, control and flexibility in latest PitStop upgrade

Significant upgrades from Four Pees

Four Pees, exclusive worldwide distributor of the PrintFactory software suite, has released PrintFactory and ProofMaster 4.2. The update for both product ranges includes some new features and fixes reported problems. It also updates the PrintFactory GMG Edition and introduces the earlier announced stand-alone version of PrintFactory Go.

The major change in PrintFactory and ProofMaster 4.2 is the removal of the Quick Production palette and the streamlined integration of the features it offered. Instead it now features a new Production Bar at the top of each document. This allows selecting printer, medium and mode directly in the document window and launching the Driver Settings dialog. With version 4.2 it is now also possible to print multi-page documents on desktop printers.

In PrintFactory Editor, the Production Bar allows you to select the cutting device. And besides the option of printing multi-page documents on desktop printers, users can now also view a coloured wireframe display of cut layers and perform cutter tool selection per layer.

The new PrintFactory and ProofMaster 4.2 RIP makes it possible to create virtual queues for each cutter device so there's no longer a need to manually create queues. Version 4.2 also offers some major new features with regards to device and driver support.

PrintFactory 4.2 release introduces the previously announced stand-alone version of PrintFactory Go which offers the same job preparation and last minute correction tools in an easy-to-use stand-alone application. Users can combine and correct multiple jobs, make edits on colour, masks, shapes, scaling, rotation, mirroring, create tiles and place grommets. Targeted specifically at digital wide-format print businesses, it offers a comprehensive collection of pre-production tools saving time and reducing error and waste.

Version 4.2 is a free update for all existing 4.x users. An upgrade path is available for users of previous ProofMaster and PrintFactory versions. With the update to version 4.2, ProofMaster and PrintFactory are fully compatible with Mac OS 10.7 – Lion. ■

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Germany to host FESPA Digital 2014

FESPA has selected Munich, Germany, as the destination for its 2014 digital event with dates confirmed as Tuesday 20 to Friday 23 May. This show will follow the forthcoming Barcelona Digital exhibition (21 to 24 February 2012) and FESPA 2013 – the flagship 'screen + digital + textile' event – which goes to London, UK in 2013 (25 to 28 June 2013).

FESPA's European community benefits from the fact that the shows move from city to city, making the events accessible and affordable for print service providers from different regions. For exhibiting companies, this pattern ensures that the visitor audience is constantly refreshed, connecting suppliers with diverse decision-makers and buyers year after year.

"We're excited about returning to Munich three years from now," comments Neil Felton, Managing Director of Exhibitions and Events. "It was a very successful host city for our main FESPA event in 2005 and 2010, the city has universal appeal, and the spacious and practical venue is popular with exhibitors and visitors alike."

He continues: "FESPA has always had a strong connection to Germany, with four record-breaking events in Munich, Berlin and Hamburg over the last seven years, and a loyal base of support from German printers, including hundreds of members of BVDM, our national association.

"Southern Germany in particular delivers a strong visitor audience from throughout Germany, Austria, Switzerland and other central European countries, as well as being accessible for printers from Benelux, Italy and UK, all of which are key markets for wide format. Those factors, combined with the stability and robustness of the German economy, point to this as a good choice for our next Digital show."As with all FESPA events, surplus revenues from FESPA Digital 2014 will be reinvested in the wide format printer community through FESPA's programme of educational and knowledge-sharing projects, directly and through its national member associations. ■

Choice of wing pallets simplifies short sleeve screen-printing

Vastex's new short sleeve wing pallet

A new short sleeve wing pallet introduced by Vastex International allows screen-printing across the chest and short sleeve, featuring a 6mm thick foam pad included to bridge the seams in the sleeve and collar. Two sizes are available of 53 x 46cm long and 53 x 69cm long. The longer pallet accommodates tall designs dipping further down the chest to a person's mid-section. The non-warping, rubber-covered steel pallet is elevated off of the supporting arm to allow printing of a maximum sized design without stretching the garment.

Vector layout files of both sizes are available to aid in positioning of artwork. Suggested screen sizes are 58 x 79cm and 64 x 91cm.

The new pallet is supplied as standard with a four-bolt, universal pallet mount that fastens to the rotor arm of any manual screen-printing press. Optional quick-release receivers with heavy duty corner clamps and single hand-screw knobs allow an operator to secure the pallet assembly onto the rotor arm of virtually any manual press in ten seconds.

Other specialised pallets offered by the company allow printing on long sleeves, pockets, legs, zippered garments, umbrellas, hats, koozies and other textiles and hard goods. Square and trapezoidal pallets in a range of sizes allow printing on infant wear to XXL garments, as well as all-over printing and signage printing.

Vastex also manufactures industrial-grade and entry level manual screen-printing presses, infrared conveyor dryers, flash cure units, screen exposing units, screen drying cabinets, wash-out booths and complete screen-printing shop systems, plus there's a comprehensive range of training classes for entry level, intermediate and advanced screen printers. ■

New video tells the story of sustainability in the textile industry

Huntsman Textile Effects has collaborated with the innovative company Source4Style, and its co-founder Summer Rayne Oakes, to create a video that tells a story surrounding sustainability in relation to the textile industry. Released and aired in October, it was created in a light and entertaining fashion to sensitise both the industry and consumers to the seriousness of sustainability.

Huntsman Textile Effects initiated an unconventional information campaign on the topic of sustainability which is designed to push the boundaries as well as raise awareness levels amongst brands, retailers and consumers in a simple and entertaining fashion. This includes the video made in collaboration with Summer Rayne Oakes, producer of 'The Cutting Edge' short videos about sustainability in textiles.

In partnership, Huntsman Textile Effects produced a playful, tongue-in-cheek video to get important sustainable design topics into the public domain. With water currently hotly debated, as world water demand and chemical loads in the environment continue to increase, the video is appropriately titled: 'How to lose water weight'. Disseminated to the widest audience possible, this included publication on social media such as Twitter, YouTube, and selected blogs as well as presentation at a series of events. Reputable organisations that are dedicated to sustainability, such as the Rite Group, are running the video on their websites and during their forthcoming seminars and conferences. ■

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Onyx Graphics names Claes Jeppsson as head of European operation

Onyx Graphics has named Claes Jeppsson as Regional Business General Manager, EMEA, for Onyx Graphics.

Jeppsson has an extensive background in wide-format digital printing. He comes to Onyx Graphics from Epson Europe BV, serving as Head of Sales, EMEA ProGraphics (Amsterdam, The Netherlands), where he was responsible for sales of the complete Epson wide-format printer line managing all regional sales teams and a central team of sales developers and product managers. He also held the position of Senior Business Manager Epson's EMEA ProGraphics group and its ProPortrait group. Before Epson, Jeppsson worked for Xanté Europe, QMS Incorporated, Fujitsu Nordic AB, Saven AB and Scantele AB.

Jeppsson earned a diploma in business management and marketing from the Swedish Marketing Association, and a degree in electrical engineering from the Higher Engineering College of Eric Dalberg, Sweden. He is based near Amsterdam, The Netherlands. ■

Cgate introduces Cbond aluminium composite panels

Cbond panels have a 0.2mm skin and come in sizes up to 1.5 x 3.05m

In response to the increased number of digital flat-bed printers on the market, Cgate has developed a new Cbond product for direct printing onto aluminium composite panels. This new product line has a special coating designed specifically for high sensitivity printing which has a special foil that is applied to protect the surface. These panels will be produced with a 0.2mm skin and can be ordered in sizes up to 1.5 x 3.05m. Tests have confirmed that thy have an excellent surface for direct digital printing, including good results on the Scitex FB500 and 700, and resulting in Cbond Digital now being on the HP's recommended media list. ■

New EcoPrint event is dedicated to sustainable print production

A new print industry event, designated EcoPrint Europe LIVE 2012, has been launched which is dedicated to sustainable print production in retail, interiors, point-of-purchase and packaging. Organised by FM Brooks, part of the Mack Brooks Exhibitions Group, and headed up by Frazer Chesterman and Marcus Timson, the first event will be held in Berlin on 26 and 27 September 2012.

EcoPrint's aim is to draw together a community of leaders, innovators and early adopters who see the true value of sustainable print production, moving the industry forward by enabling print service providers to improve the performance, profit and sustainable future of their businesses.

Frazer Chesterman, Director, FM Brooks, explains: "Most importantly, EcoPrint is an event that focuses on good, sustainable business. We believe that true sustainability is a result of the focus on efficiency, the reduction of waste, implementation of effective process management and a committed, dynamic sales and marketing campaign. Our research suggests that increased profit and competitive advantage can result from a strategic investment in improving your business's sustainable practices."

Chesterman says the content and focus of EcoPrint LIVE 2012 will not only be different from any other event in the print industry's event calendar. It will also provide attendees with a defined and practical guide to implementing and enhancing profitability through a sustainable approach to print business.

"We see that the retail, point of purchase and packaging sectors are leading the change because this is where the consumer comes into direct contact with a product before any purchase is made," adds Marcus Timson, Director, FM Brooks. "Many brands are in the process of aligning their supply chains to meet their carbon neutral pledges in time for 2015 and 2020 and will expect their suppliers to fall into step."

EcoPrint's 'Are you ready?' launch campaign is designed to challenge the print industry and asks whether businesses are really ready for the shift to sustainable print production. "It is better to begin making the transition now and on your own terms before legislation and regulation forces your hand," continues Timson. "Being ready proves you are committed to sustainability and are a trusted supplier of responsibly produced products."

"The print community currently doesn't have a focused forum for eco-print production," concludes Chesterman. "EcoPrint will create a timely and sophisticated environment that encourages strategic conversation, collaborative problem solving and creative thinking. From the outset, EcoPrint has been focused wholly on participating companies and potential visitors, and what they genuinely need from an event." ■

3D CAD system enhances PPMOV's design skills

Pad Print Machinery of Vermont has recently acquired a 3D production printing system to aid its engineering staff in producing quick and cost effective fixturing, multiple tooling sets and prototype parts. The company now has the capability of turning CAD designs directly into 3D product-grade thermoplastic parts.

Several years ago, the engineering and machine assembly teams were expanded to a full one-third of PPMOV's full-time staff. One of the company's major areas of expertise is customising automation systems and custom fixture machining for its clients.

Julian Joffe, CEO of PPMOV states: "Acquiring this unit will give us enormous flexibility, time and cost savings when we are in the development stages for custom fixtures and automation devices. It is a worthwhile investment and a great tool for our engineering team. We are also offering this as an additional service to customers and we will accept a CAD drawing and can produce a prototype part within 24 hours." ■

PPMOV can now turn CAD designs into 3D product-grade thermoplastic parts

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Combined resources lead to laser cutting automation

Eurolaser and Eurosystems have co-operated to design complex processes and to automate laser processing as much as possible, with the end result being designated Touch & Go. This has created an individually customisable software interface for operating automated laser systems, based on OptiSCOUT 7.

Although high-tech laser systems process complex data, operation of the software is very easy. Touch & Go is stated to be a revolutionary product setting new standards in process automation. With the new OptiSCOUT 7 version, a completely revised version of the software was launched already in 2011 for finishing processes with accurate print-and-cut contours. The special version, Touch & Go, can be individually tailored to customer requirements and provides exceptional possibilities to serial and mass producers above all.

The completely automatic process flow lowers costs per unit to a minimum. The machine operators only need to re-supply material and remove the cut work-pieces. This solution is particularly valuable for serial and mass production. Process information about individual jobs can be requested centrally for production management, and important information about the current laser processing can be viewed at a glance. Users can operate several machines in parallel.

Intuitive machine operation and automation from Eurolaser and Eurosystems

OptiSCOUT7 Touch & Go can be operated in a user-friendly manner via touch screens as well as with a mouse. The machine operators are guided step-by-step through the menu, where all options are displayed as a graphic button. Details that are not required are simply omitted, no steps can be forgotten and the operator can revert to pre-set parameters. The error ratio is minimised and operation is very easy.

"On the one hand our customers desire a degree of automation as high as possible, particularly in industrial manufacturing," says Holger Hasse, Managing Director of Eurolaser. "On the other hand, the system settings must be adapted to the customer's application as precisely as possible. This in turn requires a lot of know-how. Customers often wish that the machine operator can revert to tested default settings, without needing to perform any settings. By individually adapting the new software version OptiSCOUT 7 we can now meet our customers' requirements more than ever."

Albert Meyer, Managing Director of Eurosystems, states: "Characteristics of complex laser processing are the comprehensive automation of individual work processes of the customer and high utilisation of machine capacity through shift operation with trained personnel operating the machines. The software requirements in such complex laser systems are contrary with easy-to-use intuitive machine operation on the one hand and automation adapted to the individual, customer-specific work processes on the other." ■

Nazdar wins Swormstedt Award for Specialist Printing Worldwide article

During SGIA '11, Laura Maybaum and Bea Purcell of Nazdar were presented with the prestigious 2011 Swormstedt Award in recognition of their two-part LED curing article that appeared in recent issues of Specialist Printing Worldwide.

The Swormstedt Award recognises the best published article or technical paper written for any aspect of the screen-printing industry.

Laura is Nazdar's Graphics Market Segment Manager and Bea is Market Segment Manager for the membrane switch overlay, in-mold decorating, industrial and container markets.

Laura Maybaum (middle) and Bea Purcell (right) with Specialist Printing Worldwide's Frazer Campbell after the presentation of the award during SGIA '11.

If you would like to receive copies of the two-part article, please contact subs@specialistprinting.com ■

The Lotus laminating system has favourable overall operating costs

More packaging printers in India laminate with Steinemann Technology's Lotus

With its Lotus laminating system, Steinemann Technology AG of St Gallen, Switzerland, says it is on the worldwide road to success – and particularly in the markets of the Asia-Pacific region. With leading packaging printers in India, for example, this solvent-free laminating system is increasingly displacing the manual, water-based laminating machines of domestic manufacturers or the automatic water-based laminating systems of Asian suppliers. Another two of the country's leading packaging printers, ITC Ltd Packaging & Printing and TCPL Packaging Ltd, have also just recently decided to install the Lotus.

"Swiss engineering quality has a highly positive image worldwide. We're seeing that very clearly at the moment, in India and elsewhere. We've installed our Lotus laminating system at many of the country's leading printers in the past few years, the main focus being on the packaging industry,' says Albert Fässler, the company's Area Sales Manager in Switzerland.

Steinemann Technology believes it is the particularly favourable production costs per sheet that play a key role when the printers decide what to invest in. "The Lotus uses significantly less adhesive and energy than many of the other laminating systems available on the market," explains R. Senguttuvan, CEO of ITC Ltd Packaging & Printing. "In combination with the system's high productivity, great reliability and long service life, that results in uniquely favourable overall operating costs in the long term.",

From the point of view of Manoj Mehta, Managing Director of Utility Printpack Pvt Ldt, one of India's largest manufacturers of folding boxes, the cost advantages of the Lotus add up to at least 20% in comparison with other automatic laminating systems.

The Lotus is manufactured at Steinemann (Shanghai) Machinery Co Ltd in China, from where it is shipped all over the globe. The Steinemann Technology factory was opened in 2006 and is certified to ISO 9001. ■

Gandy's Pred8tor features 30 years of experience

The Gandy Digital Pred8tor UV-curable printer

With more than 30 years of experience in the digital print industry and with awards including the DPI 'Innovator of the Year' for creativity and ingenuity of speciality imagers through innovation, James Gandy re-examined the grand format printer market to see how productivity, speed, and print quality could be increased. As a result, he designed the Pred8tor around these key points.

The Pred8tor is a UV-curable flat-bed and roll-to-roll combo printer that achieves the same print quality on all roll materials without compromising true flat-bed capability. It will print high resolution 900dpi photographic quality with inline white or clear and claims to be the first commercially available high speed greyscale printer. The machine operates with full machine controls from the iPad with live diagnostics, image layout, media inventory and video tutorials.

Gandy Digital's Pred8tor will print a 1.2 x 2.4m (4 x 8ft) sheet of rigid material at photographic quality and, with the optional roll-to-roll units, vinyl, mesh and fabric type materials can be printed with the same high quality on rolls widths up to 2.4m wide.

Integrated into the head carriage design the GD logo serves as the operations' light indicator giving instant status feedback levels to the operator which are also displayed in more detail on the iPad GUI. Located around the Pred8tor are safety protection zones controlled by laser scanners, halting the Pred8tor if the protection zone is violated. The print-head system is a blade type configuration making installation an effortless and time saving procedure; each colour station simply drops in place and is connected, with no alignment or adjusting required.

The Pred8tor also comes equipped with the latest automated print-head cleaning system. A one-touch operation controlled from the iPad primes, vacuums and blots the print-heads reducing down-time, risk of damaging the print-heads by manual wiping and is a zero clean-up procedure for the operator.

"Everything is new on the Pred8tor," states Gandy. "At the design stage we wanted a total revolutionary new digital printer in every way, from the mechanics and software, to the end user's experience. We wanted to make things simpler to use without compromising quality and still push the boundaries. I believe we've achieved this and more." ■

Swiss screen-printing equipment specialists to co-operate

Leading Swiss suppliers of printing screen preparation systems, Grünig-Interscreen AG and SignTronic AG have agreed to co-operate closely to offer customers and partners solutions for the entire screen-printing sector. While both companies will remain independent, Grünig-Interscreen's Sales & Marketing Director, Andreas Ferndriger will progressively take over the business management of SignTronic. He will assume responsibility for the distribution and marketing department, whereas Henk te Brömmelstroet will continue his activities as Technical Director, focusing on projects and product development. ■

MESSE STUTTGART ONE DAY CONFERENCE

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  Digital production of sportswear for cyclists

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- *Textile Screen Ink Technology and the Global Organic Textile Standard* — *FujiFilm Sericol*

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INX Digital partners with Advantage and Sign-A-Rama

INX Digital International has announced an agreement to partner with preferred vendor Advantage Sign Supply, and supply its Triangle EDX inks for Sign-A-Rama franchisees with Roland printers. The deal was announced in INX Digital's booth at the Specialty Graphics Imaging Association's 2011 SGIA Expo in New Orleans.

Both Advantage Sign Supply and Sign-A-Rama have been in business for more than 20 years. Based in Grand Rapids, Michigan, Advantage Sign Supply is known for its specialised service and national coverage to the sign and graphics industry. Sign-A-Rama states it is the world's largest sign franchise, with a broad range of services for businesses from full production to design and digital printing, and its franchisees produce signs, banners, vehicle wraps and decals, among other products.

Since INX Digital introduced the environmentally conscious EDX inks in 2010, company President Ken Kisner says the marketplace has responded very positively and presents an ideal solution for specialty imagers.

"We are very pleased to announce this dealer agreement with Advantage Sign Supply," Kisner says. "The North American marketplace is looking for more green initiative products like EDX because they are safer to use and better for the environment. I'm confident that it's the right product and the right time. Advantage Sign Supply is a terrific and innovative partner. Our hope is that Sign-A-Rama franchisees agree EDX is the right solution for them."

Left to right: Javier Mahmoud (Advantage Sign Supply National Accounts Manager), Ken Kisner (President of INX Digital International) Jim Tatem, President of Sign-A-Rama and Chip Vielhauer (INX Digital International North American Partner Sales Manager)

Sign-A-Rama corporate evaluates and tests inks through R&D and in-field testing. Many franchisees are looking to consider alternative inks as an option in their locations. The test results are available to their franchise owners on their private on-line intranet.

The debut of EDX nearly a year ago marked the first time INX Digital's Triangle brand offered a colour and chemically compatible fast drying and low odour eco product for the alternative market. ■

Berger announces textile lightbox solution for HP latex technology

Berger has designed a new product, backlight satin FR +ws, which meets demands for lightbox applications being produced on HP's latex printer families. After a long development period this product was first presented at FESPA in Hamburg and now launched at Viscom Germany with a highly positive result, receiving enthusiastic feedback from HP resellers and their customers.

In a final step for independent approval the new product was tested and ICC profiled at Colour Concepts in The Netherlands and sent for approval to HP in Barcelona. It passed all tests and has been featured on the recent HP latex truck road show.

Although HP latex printers are getting more and more market share and cover almost all applications, until now a printable textile for light boxes was a gap to be filled. Textiles on the market and used on latex printers for lightbox applications haven't been able to meet the quality expectations in regards of ink compatibility, scratch resistance and colour density for light boxes so far.

The folding properties of Berger FR +ws makes shipping easier

Berger's satin FR +ws has no pinholes or stars, and features high colour brilliance in lightboxes and frontlit applications. Its optical white fabric produces the highest light transmission, and the material is foldable for easy shipping. This opens up new applications including frame-systems, pop-ups or folded banners for latex printers. Extremely high ink adhesion is complemented by significant water resistance, and the material can also be printed using UV-curable, solvent-based and dye sublimation inks. Water-resistance is also very high and the UV-stability of these inks allows printing of umbrellas and tents. ■

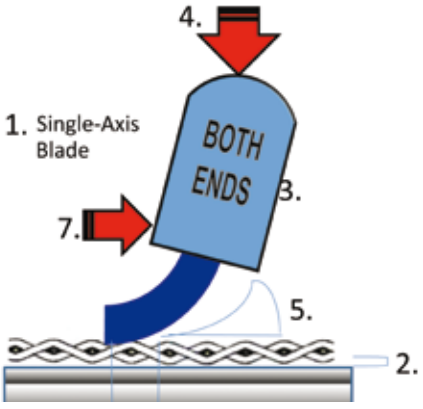
DOT GAIN IN FOUR-COLOUR SCREEN-PRINTING

Joe Clarke explains how to optimise dot structure to achieve the best results

There is an old business adage: "You can't make up profit with volume". Well, I submit to you when it comes to four-colour process screen-printing: "You can't make up volume with separations". Case in point: neither humans nor densitometers accurately interprets changes in dot thickness or shape. Plus, traditional printing blades deposit tall skinny dots with incursions in the centre of the screen and short fat dots with excursions at the edges of the screen.

As such I would like to alter the traditional definition of dot gain from an increase in the printed dot size compared to the intended dot size to any alteration in the printed dot size and/or shape. For you see, with screen-printing, unlike any other method of ink transfer, there is a third and tangible dimension to our dots. Therefore the secret to an acceptable level of dot gain must be to minimise the ink film thickness, to metre precisely the correct ink volume and maintain size and shape consistency from the centre of the image to its edges.

The unindicted co-conspirators in our dot-gain scavenger-hunt include the separator who insists: "print any consistent dot you like and we'll compensate for it in the CTS files". The stencil expert who says: "Build a good gasket but not too darn good or the screen will stick to the (plastic) stock". The Blade Baron who says: "Well pshaw, Billy down at ABC Corp loves this blade!". Or the ink maker who perennially assures us: "Ink don't think" as though somehow this will assuage our fears. Here's the point, they may be absent malice but the information is absent substance.



2D FILES V 3D VOLUME

The *de facto* standard dot shape has become the transforming elliptical because it eliminates the 2D optical contrast jumps in a two-dimensional image. Ironically we screen-print a three dimensional image and, left unattended, the 3D version of this dot will likely cause one or more contrast jumps.

The operative term which will allow the digital file to compensate for the printed flaw is 'printed consistency' but computer-to-screen is regularly riddled with daisy dots; in addition the chaining elements of the elliptical dot can lead to dry-artefacts. The stencils need to be very thin and very flat (on both stock and blade sides) in order to deliver a consistent dot volume; they are not the cause of piling and skipping and are therefore not an optimal solution to their elimination. Agreed the ink is barely innocent but, for maximum dot control, find inks with a low yield stress, high thix index, high shortness ratio, low tack and low surface tension. The final step of the optimisation process will be to characterise and calibrate your press and build profiles from objective test data. The penultimate step follows in detail.

QUIT SQUEEZING THE INK

The mesh defines the thickness of the dot while it restricts its volume. The stencil defines the dot's edge acuity and limits its volume in detail areas. There are two methods of ink transfer – shear-stress, which is becoming passé, and shear-rate in which the blade converts the variable resistance of the screen to consistent dynamic tension at the plane of contact. It functions with a minimal angle (to permit hi-shear), minimum pressure (to eliminate distortion) and maximum speed to cause the precise volume of ink to thin, completely fill the stencil, wet-out the stock, release the mesh and level without the use of deleterious press peel.

Shear-stress printing (ink squeezing) comes with inconsistent ink metering, runaway dot change, dimensional inaccuracy, and all this at a snail's pace. Squeezing does not consistently fill the very tips of the elliptical elements nor will it consistently fill a daisy dot – squeezing is the cause of piling, skipping, streaks, dot gain, moiré and misalignment. Ink squeezing per se works like this; begin with an image proximate to the inside edge of the screen frame, minimise the off-contact gap, run a single-axis blade with a good bit of angle, maximum pressure and minimum stroke speed, and then maximise the press peel.

Shear-rate printing is quite the opposite and starts with the same image at an optimal gap (to balance interface pressure at the stock), zero to minimum blade angle (eliminates runaway dot gain) and minimum pressure (to maintain register), maximum stroke speed (for daisy-dots and ends of elliptical dots) and zero to minimum peel (to eliminate surface flaws). Every one of the proliferation of printing problems is due to the use of an archaic method of ink transfer (shear-stress printing) to produce prints to explicit-specifications within tighter-tolerances that demand the use of hi-shear (rate) printing.

Single-axis blades are the beginning of the battle with piling and skipping, dot gain, colour variance and image distortion. These pressure the operator to use inadequate off-contact gap and excessive angle. This pair leads to excessive pressure and buckling which cause drag, and forces slow stroke speed which demands press peel. (You will see in the illustration "Both ends" the end view represents the ends of the blade mid-stroke. Its mid-section [in the sweet-spot] is not buckled for the same reasons or to the same extent – this disparity underpins most problems on press.)

Consider how the ink manufacturers perennially plead with us to "vigorously stir the [shear-thinning] ink before we go to press" this equals hi-shear (rate). How is it then they tell us: "some inks are just not made to run fast"? Perhaps they don't realise the need-for-speed and its positive effect on predictability, consistency and quality? ■

The Slippery Slope of Shear-Stress Screening

1	Single-axis blade	Piling & skipping, excess edge gain, color variance
2	Inadequate off-contact [+1]	Mesh marks, streaks, tonal moiré, image distortion
3	Excess initial angle [+1]	Dot gain due to weak upper & late lower seals
4	Excess pressure [+1, +3]	Poor clearing, stroke direction variance, streaks
5	Buckling [+1, + 3, + 4]	Broadcasting, lateral distortion, slow speed
6	Drag [+2, + 3, + 4, +5]	Screen stretch, misregister and static charge
7	Slow stroke speed [+1 to +6]	Poor; filling, clearing, wetting & screen-release
8	Peel rate [+1 to +7]	Screen fatigue, stencil loss, mesh marks, streaks

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SECURE PRINTING VERIFICATION MADE SIMPLE

Ralf Hipp details how to improve quality management, deliver zero error rates and add value

Improved quality management, zero error rates and adding value are the watchwords for operations striving to maintain market share and even win new business. And when every production second directly influences the bottom line ensuring problem free, traceable printing is vital. This is why Atlantic Zeiser has created its comprehensive value-added track and trace solutions equipped with highly responsive verification systems.

As businesses expand their ability to deliver highly personalised products and traceability there is a greater need for reliable verification and integrity assurance solutions. Being able to offer clear reportability and guarantee error free production fosters confidence and peace of mind that facilitates long-term relationships. It also allows operations to pitch more confidently for business and start conversations with customers they would not have been able to engage with before.

Track and trace is the process of determining the current and past locations of a product as it moves through the manufacturing line, feeding information to real-time databases and dashboards to allow operators and managers to manage, closely and accurately, the progress of a particular project through the manufacturing process. The technology is also often used to help locate and identify items throughout the supply chain for product recall or other purposes. High quality printing of product production lot number, date code, manufacturing location code, etc, is critical for these purposes as well.

When every production second directly influences the bottom line, ensuring problem free, traceable printing is vital

STATE OF THE ART VERIFICATION SOLUTIONS

Atlantic Zeiser's integrated state of the art, simple to use, verification systems feature high-quality cameras guaranteeing the alignment of the printing. They also integrity check the process, ensuring print and personalization jobs are more profitable by reducing setup times and increasing machine availability at the highest standards.

Pivotal to the solution is the Vericam high-speed camera system that makes 100% data verification and print quality control easier than ever. Combining Atlantic Zeiser's unrivalled camera algorithms with the most advanced user interface on the market, it couldn't be easier to use – job set-up is via drag-and-drop touch-screen technology. This minimising of operator intervention ensures quick and efficient job change-over, helping users take productivity and profitability of variable data printing applications to the next level.

Then there is the latest addition to Atlantic Zeiser's portfolio, the Vericam E offering 100% data verification and print quality control. Featuring an intuitive easy-to-use touch screen, the self-explanatory interface enables the configuration of a wide range of regions of interest – all of which can be set up individually and independent from the context. The most commonly used fonts are available as well as the most widespread 1D- and 2D-barcodes.

It delivers automatic learning functions and plausibility checks, online comparison with the production file, 100% OCR/OCV verification, and fast realisation of customer specific extensions to standard fonts and barcodes. It also indicates the quality of the checked barcodes, verifies both variable and fixed data and algorithms for different surfaces, offers X-/Y-offset-evaluation, compares background patterns and has a colour separator to fade out difficult backgrounds for easier character and pattern recognition.

Typical applications include:

- **Quality control of any font** – Vericam controls 100% of the production and detects the exact position of the string on the banknote or document, global contrast, alignment and angle of the string, right class of character and quality of the printing according to shape and contour, as well as over-inking or under-inking.
- **Quality control of bar codes 1D/2D** – Vericam's system includes the ANSI quality calculation to ensure print quality. Bar codes can be checked according to generally accepted quality standards.
- **Numbering control for security documents** – enables each security document to be individually identified.
- **Sequence control for tickets, pre-paid cards** – the value of a ticket depends on the data printed on it. During production, it's necessary to monitor the printed data to ensure it is readable and matches the print file.
- **Conformity control** – Vericam verifies the presence and readability of characters according to an expected string of up to three lines. Specially developed algorithms guarantee accurate and fast evaluation, even under difficult conditions such as on blister packaging

ADD VALUE AND TACKLE COUNTERFEITING

Where track and trace truly adds value is in enabling sectors such as pharmaceutical and cosmetics manufacturers to tackle counterfeiters. It also empowers brand owners by enabling them to counter the burgeoning counterfeiting threat and protect their brand reputation and revenue.

With a figure of €184 billion put on losses caused by piracy worldwide according to the Organisation for Economic Cooperation and Development (OECD) and a 53% increase in two years, the endemic problem of counterfeiting touches almost every business sector from globally renowned premium brands in consumer markets to capital goods.

The latest developments even make it

Track and Trace delivers quality control of 1D/2D bar codes

The Vericam high-speed camera system makes 100% data verification and print quality control easier than ever

possible to use the packaging material itself as a test criterion, such as DNA testing, whereby scanning the surface roughness of material can unequivocally identify whether the packaging is produced by the brand manufacturer or not. The most effective test procedures are based on optical systems. The test characteristics are captured and compared with background reference templates.

Key areas of labelling options in anti-counterfeiting are direct packaging printing and the use of printed labels or functional RFID labels. Imprinted test characteristics such as encrypted Data Matrix codes represent the least expensive variants – the pharmaceutical sector uses general valid standards based on the stipulations of GS1 (Global Standards 1) for its specially created datamatrix code. And they guarantee adequate security. Printing is done using integrated ink-jet printers that can readily handle the variability and constant changeability of print data. Printing with invisible inks is playing an even bigger role too.

These solutions allow users to maximise counterfeit security and to minimise losses arising from product piracy. Not only counterfeiting by third parties, but also the grey market problem, can be kept under control through seamless product tracking and sustained anti-counterfeiting. ■

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UNLEASHING THE CREATIVITY OF SPECIAL EFFECT INKS

Guy Massé describes why screen-printing is the process of choice

Competition between the different printing processes has always existed. Nowadays, increased by economic difficulties and environmental concerns, this raging competition has generated different choices depending on the fields of activity and the printing jobs.

Generally speaking, print-making techniques can be classified depending on whether they present a printing plate or not. Without a printing plate, they make up the digital printing processes. The conventional printing methods can be divided into direct (direct contact between the printing plate and the substrate) and indirect processes (intermediate support (blanket) between the printing plate and the substrate). The advent of the UV technology in the 70s has globally increased the quality of these printing processes.

Due to its porous printing plate, the absence of transfer rollers and its ability to deposit high volumes and coarse particles, screen-printing is the process of choice to print special effects.

Special finishes and print effects attract a lot of attention, therefore the demand for such applications is increasing. To meet this challenge, Encres Dubuit has created a specific R&D department to develop these special products :

- Fluorescent, luminescent and phosphorescent inks
- Pearlescent inks
- Glitter inks
- Metallic inks
- Thermochromic inks
- Relief varnishes
- Matt, textured varnishes, soft touch and haptic varnishes

FLUORESCENT, LUMINESCENT AND PHOSPHORESCENT INKS

Some particular substances under specific conditions are capable of converting the absorbed UV energy by reemission of radiation. Such processes are generally termed photoluminescence.

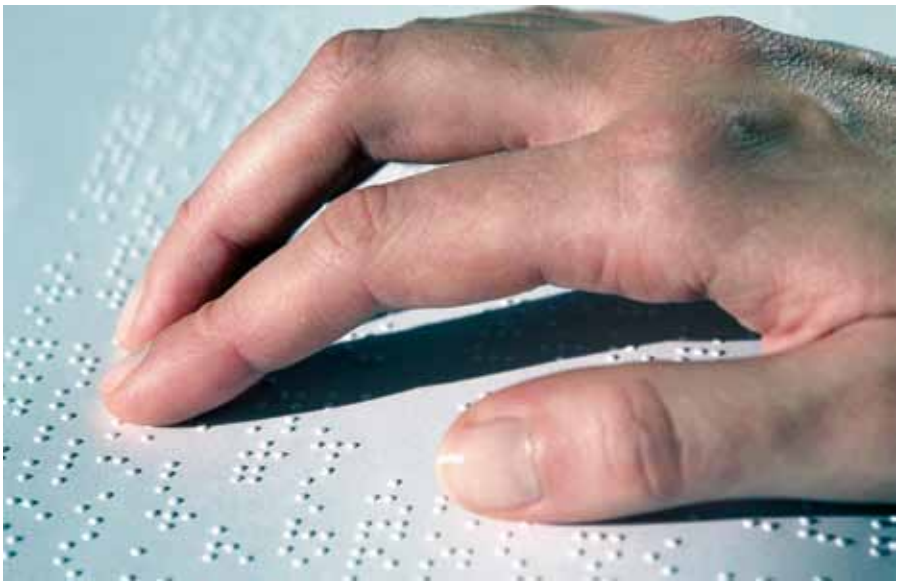
Under daylight exposure, fluorescent systems will appear intensely coloured, with very bright and pure shades. These substances absorb UV-light or the short waves of the visual spectrum, or both, and convert them to a visible radiation, reinforcing the normal colour. This process is called daylight fluorescence. Such products are more simply termed fluorescent Inks. Radiation only persists as long as the exposure is subjected to an exciting light source.

These fluorescent inks are available in UV or solvent-based formulations, in the range corresponding to the desired printing application. Because of their semi-transparency, high concentrations of fluorescent pigments are required in order to achieve the desired effect (from 20 to 30%). For the same reason a white base stock for optimum reflectance is also required. This means that, on a dark surface, a white colour first has to be printed. Usually these inks are printed with PET-meshes in the range of 140 to 120 threads per centimetre (355 to 305 mesh).

Fluorescent inks satisfy most indoor and very short life outdoor applications. But, due to their chemical nature, fluo pigments and, thus, inks do not present a good lightfastness.

Some of these substances have the property of exhibiting fluorescence only under UV exposure, producing thereby vivid colours in the visible spectrum. The fluorescent effect however is negligible when the excitation is switched to the visible region in the form of artificial or daylight illumination. This process is called ultra-violet fluorescence. Such products are incorrectly termed optical brighteners for the blue fluorescence, Invisible inks or luminescent inks.

In phosphorescent systems, there is an appreciable delay between absorption and emission of light, creating an afterglow.



Screen-printing proves its strength with tactile effects. Use UV Relief Varnish HLM2003 by Dubuit for Braille printing

WITH PRINTING PLATE						
Direct printing process (Contact between the printing plate and the substrate)				**Indirect printing process** (Printing plate / Intermediate support / Substrate)		
Relief printing plate	**Engraving**	**Planographic plate**	**Porous plate**	**Relief printing plate**	**Engraving**	**Planographic plate**
Woodblock printing	Intaglio		Screen printing (UV)	Indirect Typography (Dry Offset or Letterset) (UV)	Offset printing (UV)	
Typography (UV)	Etching	Lithography	Stencil		Pad printing (UV dual cure)	Waterless Offset (UV)
Flexography (UV)	Gravure printing					
WITHOUT PRINTING PLATE : DIGITAL PRINTING						
Ink Jet (UV)	Thermal Transfer	Dye-Sublimation	Laser xerography			

Classification of printing processes

Phosphorescent inks are thus characterised by their ability to absorb and store light energy and release this energy for a long period of time in darkness.

Different colours (emission wavelengths) are available for decoration purposes, but the most important one is the long-lasting afterglow yellow-green based on strontium oxide aluminate chemistry (emission wavelength at 520nm). With its long afterglow brightness and extinction, inks based on this pigment are used for many different applications, such as clocks and watches, lightings apparatus and fixtures, energy-efficient night lights, fishing lures, security products, electronic equipment, military equipment, aircraft interiors and exteriors, cars, motorcycles and bicycles, fire protection, escape route markings in buildings, camping equipment, campground and other outdoor signage, fashion and stationery.

The total afterglow time and intensity of phosphorescent inks depend first of all on their pigment concentration. The second important factor is the amount of pigment in the dry film which depends obviously on the ink deposit on the substrate. Usually afterglow inks are printed with fairly coarse PET-meshes in the range of 34 to 77 threads per centimetre (85 to 195 mesh). To obtain an afterglow of eight hours, a thickness of 150 microns has to be deposited (sometimes in two layers). To improve the brightness, a white underlayer is recommended. The final relevant factors are the intensity and type of light source which is used to load up the phosphorescent ink. Basically all ultraviolet, daylight and artificial light sources with a high energy output are suitable. Exceptions are the yellow emission type sodium vapour lamps and any red light. The stronger the intensity of the light sources, the brighter the afterglow effect.

PEARLESCENT INKS AND VARNISHES, OVS

These inks contain pearlescent or nacreous particles, mica platelets coated with titanium dioxide (silver whites) and/or metallic oxides (metallic pearls and interference pearls). The pearlescent effect is produced by the specular reflection of light from the many surfaces of the platelets with parallel orientation at various depths within the coating film. Light striking the platelets is partially reflected and partially transmitted through the platelets. A pearly lustre effect is produced by the dependence of reflection on viewing angle, and the sense of depth is created by reflection from many layers.

The most useful particle sizes to be used by the screen-printing process comprise between 6 and 60 microns.

OVS (Optical Variable Shade) inks contain colour shift pigments changing in shade depending on the light angle.

Dubuit has developed a comprehensive range of glitters for decorative applications in UV screen-printing

Continued over

GLITTER INKS

These inks contain glitter particles and are used for decorative, artistic and festive applications. The brilliant and sparkling effect is produced by the specular reflection of light from the many surfaces of the platelets with parallel orientation at various depths within the coating film. Light striking the platelets is partially reflected and partially transmitted through the platelets. More transparent than coated micas, these sequins provide more chroma, more depth and a more important sparkle effect. On the other hand, their particle size is higher (10 to 190 microns for coated glass particles, 100 and 200 microns for polyester glitters).

METALLIC INKS

Bronze colours (gold, silver and copper colours) have also been available for a long time. Recently, interesting advanced and novel developments to produce optical effects have been introduced, such as mirror effect inks.

Encres Dubuit offers solvent-based mirror inks for specialised screen-printing applications. These mirror Inks are used for second surface decoration of transparent plastics and films (PC, PMMA, rigid PVC, pre-treated PET films) and glass. While drying, the metal pigments are aligned parallel to the substrate's reverse side.

Viewed through the transparent material from the first surface, the pigments create a mirror-like effect. These mirror inks can be used for area printing as well as for fine line printing.

Depending on the optical surface condition of the transparent films and plates, mirror inks can attain a quality near that of conventionally produced mirrors.

Newly developed UV surface-like hot-stamping inks are suitable for printing on the first surface of the substrate. Surface-like chrome effects can only be produced on high gloss surfaces. In comparison with second surface solvent-based mirrors, the gloss level is slightly lower, but on dark high gloss surfaces, impressive chrome effects can be achieved.

THERMOCHROMIC INKS

Upon absorption of thermal energy, thermochromic inks transition from a coloured state to an uncoloured state. The ink is composed of micro-capsules which change colour reversibly when heated to a specific temperature, and revert back to the original colour as the coating is cooled down.

These inks are available in various colours and activation temperatures. The activation temperature is defined as the temperature above which the pigment has almost achieved its final clear or light colour end point. The colour starts to fade at approximately 4 degrees C below the activation temperature and will be in between colours within the activation temperature range.

Colours and temperature responses can be custom developed (0 to 65 degrees C) upon request.

The only way to change from a colour to another is to mix a thermochromic colour with a regular one. By mixing different thermochromic inks with different temperature ranges, it is possible to get an ink with three shade moves.

Opacity of these inks is not very high. The black ink is the only one to be opaque enough to hide an image, slogan or winning message. In this case, a minimum deposit with a screen 43 lpcm (110 mesh) is needed.

These thermochromic inks can be proposed in UV- or solvent-based formulations, in the range corresponding to the application :

- Thermometers (cold drinks, bath)
- Interactive prints (touch reactive, game cards, stress, packaging/labelling)

RELIEF VARNISHES

The printing of thick, tactile layers can have three different functions:

- as a graphical effect, often referred to as high built" in order to highlight specific areas
- as a readable text (Braille)
- as tactile warning symbols

To allow very high ink deposits, a very coarse mesh for UV inks must be chosen. For flat-bed applications, the following mesh types have proved to give excellent all-round results:

- Mesh 32-70 (polyester), 117µm screen thickness
- Mesh 40-80 (polyester), 133µm screen thickness
- Mesh 43-80 (polyester), 130µm screen thickness

For structures such as brush strokes, water drops or other raised patterns, the mesh type used might be even coarser – mesh 24 to 140 (polyester), 250µm screen thickness.

For rotary screen the recommendations are Gallus Screeny BZ 200µm screen thickness and Stork RotaMesh 75 150µm screen thickness.

As well as the clear varnishes, a highly reactive UV ink chemistry and optimised UV curing units currently allow the combination of effect pigments with tactile varnishes. This combination is described best as tactile print finishing. Colourful glitter pigments, flip-flop, pearlescent effects and many others can be used to achieve high impact graphics.

MATT, TEXTURED, TACTILE (HAPTIC) VARNISHES

There are even more possibilities for matt, textured, tactile effects for creative design, with combinations of visual effects, or tactile effects united with visual effects, giving eye-catching finishes you want to touch. The screen process is the ideal technique for haptic effects as high layer thicknesses are possible – even huge particle sizes of up to 200 microns can be printed. Tactile effects are mostly produced with UV-curing screen-printing inks. Due to their 100% solid content they have the advantage of achieving a maximum dry ink layer resulting from the printed wet ink film determined by the screen fabric.

Under daylight exposure, fluorescent systems appear intensely coloured, with bright and pure shades

The screen process can produce a large number of different tactile effects, such as gloss varnishes with a very smooth surface, and structure varnishes with different degrees of roughness ranging from very fine to very coarse. Other examples are serving trays with an anti-slide surface, pencils with soft knobs to achieve a better grip, mouse pads with an anti-slip bottom or keyboard foils with resistant mat structures on the front.

It's no use crying over spilt milk. In order to remain competitive in the future, the screen-printing process should and must concentrate on its strength – special effects' printing. Alone or combined with other printing processes, screen-printing will remain the best choice for opacities and special effects. Encres Dubuit, as a major screen ink manufacturer, will continue suggesting new solutions of decoration to the different segments of the market. ■

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THE TRUE COSTS OF AUTOMATION

Alan Buffington discusses all aspects of running automatic textile presses

Automatic textile presses require more company resources than meets the eye. Too often owners look past the costs of press ownership and focus only on the potential profits. When profit margins are analysed down-line it is shocking how slim they can be, especially with market pricing so low for volume printing.

Let's look at some blind spots that owners never see, but workers struggle with on a daily basis. Some questions first:

1: Do you own your automatic press or lease it?
If you lease your equipment the payment is made before you can begin to pay for anything else. If you own your equipment, production print prices can be more competitive or you can absorb the costs of doing business a little better than someone with a lease payment.

2: How many people does it take to keep an automatic press running all day?
It is far more than three people, as we will see shortly. Operating the press continually requires support departments to be in tune with the automatic press production cycle.

3: How big is your shop?
Is it large enough to 'feed' your automatics? Automatic presses eat orders quickly, as inpallets of shirts per day. We'll look at material handling needs to support your autos in a minute.

4: How strong is your plant management?
Owning a press is just the beginning. Maintaining the production environment can spell success or disaster depending on how well you support your equipment.

5: What are the blind spots costing you production on an automatic press while it is printing?

Your screens play an even greater role in keeping your press working. While companies buy the top of the line presses they often miss this point when making screens for it.

LEASING VERSUS OWNERSHIP

First let's look at leasing versus ownership of automatic equipment. If you are capable of running two to three shifts per day at your plant the lease cost is minor and the payment only affects a small percentage of your bottom line. However, if you run a single shift or you print for part of the day due to lack of work, your lease payment can be quite costly to your bottom line. If you do only contract work and run one shift you need low cost building payments or low labour costs. As many printers in Southern California have found out; high real estate costs and labour costs, combined with low volume production orders, can price you out of the competition for contract screen-printing.

In our shop, we needed to run double shift to meet all bills and, only when we went to 24/7 production, were we able to justify new presses on lease payments.

When large production orders are hard to obtain, having a niche market where your company packages shirt and print can offset costs associated with press leases or overheads. Our company transitioned to an apparel company from a screen-printing company since we could charge more per unit packaging print and shirt together.

Starting your own clothing line takes time, however, and is not something you can transition into without investing in art, merchandisers, fabric, salespeople, and cut and sew services where a myriad of patterns and clothing engineering needs to be done. We were highly successful printers with a large portfolio of clients that gave us steady work that paid for the transition to an apparel company. This became a year long quest to

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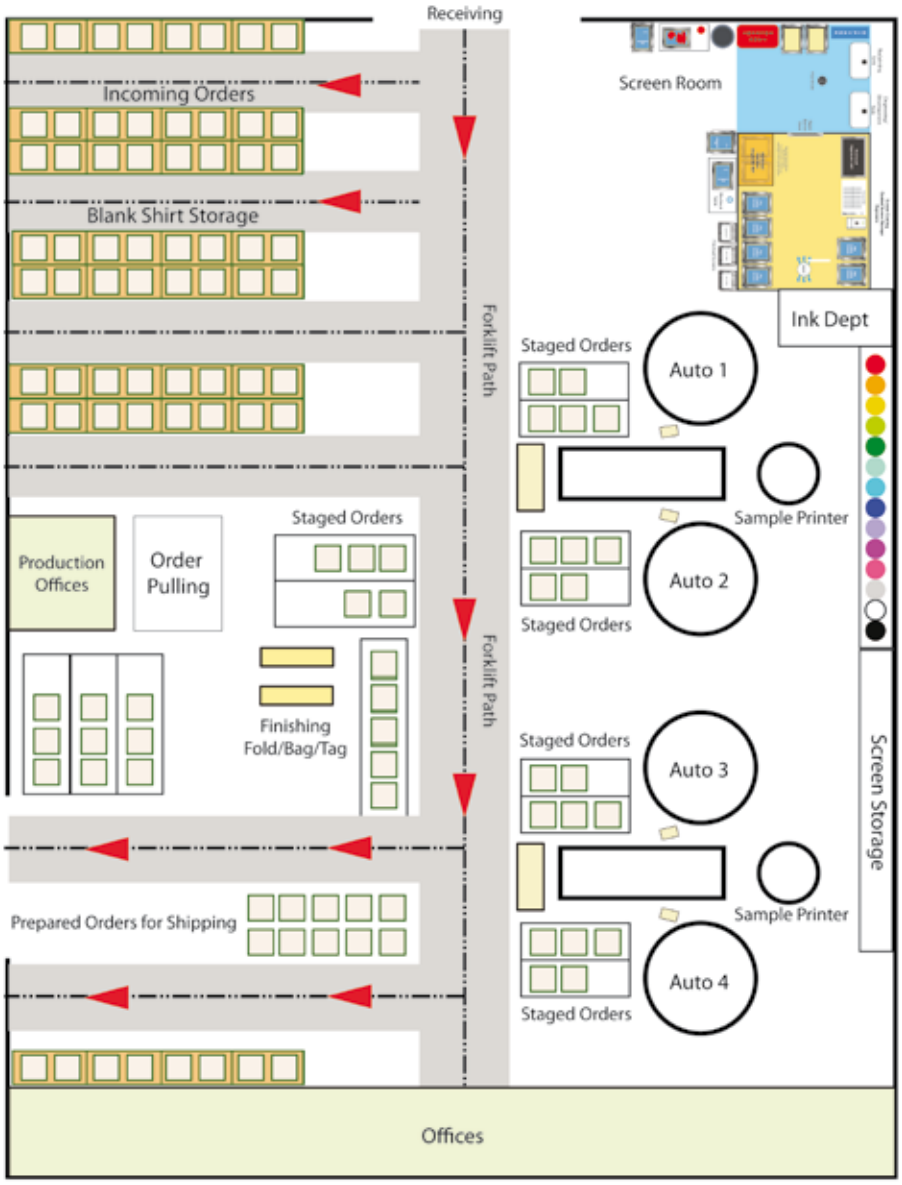

An efficient shop layout showing linear production

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Lease payments on new automatic presses were easily met with a combination of contract screen-printing and apparel sales.

HIDDEN COSTS OF AUTOMATIC TEXTILE PRESSES

How many people does it take to keep an automatic press running all day?

When you see that gleaming print monster at the trade show all you hear is how many pieces per hour it will print, how good the registration is and about all the money you can make. Sounds good until you unpack it, set it up, and get your first job printing. If it is your first automatic it will stand still more often than not as you rush to get screens ready for it, inks mixed, and register your first job (only to find out the sequence didn't work and do it again).

Then, to run a job at full production speed, you'll find out you need employees to load the shirts and unload them, as well as a catcher at the end of the oven to lay them flat to prevent wrinkles. Little thought is given to the next job on press that needs screens shot and prepped by a screen room worker, another to mix inks, another to pull shirts for the next order, workers to fold and bag if needed, shipping personnel to get it out of the warehouse on time and receive new orders, and bookkeepers and office personnel to keep track of billings and payroll, not to mention art personnel to design, separate art, and a co-ordinator to marry art and samples and library all details of a print run.

Lacking in any of the areas above can create downtime on presses. If you are new to the automatic press production world then the hard lesson is that you need to keep the presses running non-stop, all day, every day and, when they aren't running, you are still paying for all the overheads of your workers, rent, and lease payments.

SHOP SIZE AND FLOOR SPACE

How big is your shop? In this case I am referring to floor space, not income.

As mentioned earlier, automatic presses print shirts very quickly. An automatic with good screens and registration and the right personnel can print 3200 to 4000 pieces per eight-hour shift on the newer presses. A pallet can hold 600 pieces if shirts are laid out flat in two alternating 300 piece stacks, or 1200 to 1800 if laid out in dozen folds and wrapped in pallet wrap.

So it is possible to feed an automatic three pallets a day or more when running double shift. Too often an automatic press is squeezed into an existing shop without planning for the material handling needs of the company. If you want to maximise throughput, the shirts need to flow effortlessly through a shop.

I once worked for Nike as a sourcing manager. We were having a difficult time getting on time delivery from one of our vendors. Nike was sending multiple truckloads of finished shirts daily to build inventory at their location long before I was hired.

Upon arriving at their plant I asked where all the shirts were stored as there was only enough for a day or two of production on hand. They took me to another warehouse that was a cavernous old knitting mill from the Civil War era that was stacked from floor to ceiling with thousands and thousands of cases.

It took days to find 10,000 shirts in scale and another day to get them on pallets, accounted for and trucked to the shop miles away. Many small shops use floor to ceiling storage, or any unused aisle or offices.

Poor screen handling procedures

This inefficiency slows down presses, makes it difficult to get any production flow and, in the long run, can be the difference between success and failure. It took us a month in sub-zero temps in the middle of winter to ship the Nike shirts to a warehouse with pallet racking, get an inventory data base done to get production on track and orders flowing to the contract printers.

An automatic press needs at least two to three times the floor space of the oven and press combined to allow pulling and staging to take place days ahead of production; handling them in pallets is the easiest material handling possible in an automatic press shop.

It takes many workers to support an automatic press.

UNDERSTANDING PLANT MANAGEMENT

Most screen-printers waiting for their new automatic press are in a state of euphoria over the new production capacity, the potential for better printing and probably for hands that won't be sore from printing all day. Suddenly however you need to know much more about electric distribution for flash cure units that need 240 volts, or whatever your strongest voltage is in your country.

Electrical distribution is costly when done to code, and more costly when your extension cords overheat and start a fire. Plant power distribution needs to be done before the press arrives. The press needs power but, more importantly, lines need to be dropped from the ceiling for the flash cures that need high voltage and high amperage loads fed through adequate weight wiring to avoid overheating that will cause plug connections to melt or overload.

Always keep spare plugs on hand for the flash units as connecting plugs tend to go bad over long periods of use.

Air compressors, how much horsepower? What kind of chillers? Water separators and filters? What kind of pipe, copper or black pipe? What about air storage tanks? And, of course, how do you maintain all of this equipment? If you decide to forego contacting a good air compressor company and plumber

Continued over

An automatic carousel textile press

The use of rolling racks promotes safer handling of expensive meshes

to pipe your shop, also know you will eventually fill your expensive press with water and rust it from the inside out. When you discover your press is leaking water from air tubes and cylinders it will never work the same way again.

It is also worth every penny to get a quiet air compressor with excess horsepower for growth or for those hot days when it can overheat. A quiet air compressor goes a long way to improve the working environment. There is nothing like a jet turbine sound in your ears all day to drive you and your employees nuts!

Then there is the flow of goods to be printed. While your auto-press often reaches a maximum average per hour with the right personnel, the flow of product to and from the press is a case study in plant layout and material handling.

In my position at Nike I often had to evaluate a printing plant for the amount of blanks it could hold rather than how many pieces per day they could print. I once sent a company three trailer loads of fleece when their plant could hold only one trailer's worth of it!

At a print sign-off the next morning I found 44 pallets of sweats in the rain with only pallet wrap protecting expensive 10.2 ounce hooded sweats that later would have water stains.

You need to look at one to two weeks of production storage per press and an adequate area to pull and stage orders for printing. Not everything can be readied exactly 15 minutes before a job ends.

We tried to have two days or more of printing orders pulled, along with screens and inks for any press in the shop. This requires floor space, and as mentioned, often two to three times the floor space of the press and oven combined.

Plant management also involves traffic flow. Gridlock can occur in shipping if both receiving and shipping occur in the same area with only one or two shipping docks available or when a finishing aisle path crosses with the screen and ink department path to the presses.

Production should be linear where possible, in one side of the building and out another. Ink and screen rooms should be away from both of these areas and feed one side of the press while pallets of shirts enter from the other side. (See shop layout diagram.)

Excess pallet racking space above floor level can serve as a shock absorber for orders waiting to be printed or for finished orders to keep floor space clear while providing security for product to keep counts intact and allow the shipping department room to stage orders for shipping.

Temporary print-ready storage areas should be near production to keep the area next to the presses clear and allow personnel easy access for break down and set up. The space next to the oven can be used to store finished goods on pallet in count and by size if reshipping in boxes, or as was the case in my shop for the next order. Typically this area holds 3000+ shirts on fully loaded pallets.

Again this is to keep goods flowing to and from your automatic press, the one piece of equipment that signs the checks for everyone.

Your aisle width is crucial to your success.

How could this matter you ask?

Well, companies like Nike and many other major brands and department stores require an aisle wide enough for a loaded fork lift as well as pedestrians to pass each other safely with well defined lane markers so the area is kept clear of obstructions.

Your chances of working for a major merchandiser are limited if your employee safety isn't your first concern. Aisles need to allow a forklift or pallet jacks access to every press as well so it can quickly bring shirts to your press efficiently.

We had two lanes next to our ovens on each side, one for the job being printed and one for the next job with a huge red warning diamond like truckers use so it would never be printed until the production manager removed it. It was chained to the lead pallet with a lock, one of the employee suggestions that got them a bonus.

Resting screen corners against mesh will damage screens

It takes more people than you think to operate an automatic press

BLIND SPOTS

What are the blind spots costing you production on an automatic press while it is printing? I saved this part for last since it's the screen that matters and, more than anything else, it's your screens that will make or break your production yields. Of all the items mentioned screens stop a press more often, for longer periods of time than anything else combined. Who hasn't taped out a pinhole or lost a screen to a discharge print, or for that matter a whole set to a discharge print? Or needed to go back and shoot a new screen to keep the registration as precise as print one? We've all been there. Here are the key areas to fix and, over the long term, the difference in price amounts to less than a sliver of a penny per print.

Mesh: Loss of tension is common with inexpensive mesh while high quality mesh maintains register and retains tension levels better, part of the recipe for non-stop production. The higher the retained tension the less labour needed for a new screen to be shot or to adjust the low tension screen on press to see if it can be tweaked back into register. Companies accept downtime; workers and management get used to the stop, start, stop, start of their shop while billable units are lost. Five minutes can equal 25 unprinted shirts at only 300 pieces per hour, and a whopping 66 pieces if your machine is a servo drive running full speed at 800 pieces per hour. At the end of a year these precious prints you lost due to fussing with poor performing mesh and emulsion amount to a staggering percentage of your year-end profits you could have kept for income or retained earnings.

The cost of quality mesh and emulsion

products is inconsequential and is more than offset by improved production yields and competitive print quality.

So, along with a mesh that retains high tension, how well does your mesh print to be competitive? Water-base, discharge and base plates for plastisol print better through S mesh, S being an abbreviation for thin threads while T thread is the common thickness of mesh thread, and HD is a thicker version of the thread.

Each mesh count may come in a variety of thread diameters that internationally use the micron thickness of the thread diameter. So a 150/S mesh can also be called 150/48. Here is my take on mesh selection for your shop.

1. If you handle screens carefully and you want the brightest, softest plastisol printing you have ever felt, the brightest most detailed discharge, and the finest tonal water-bases, go with S thread for base plates, simulated process, or discharge.
2. If your shop personnel bang screens around in handling, reclaiming, developing or in storage you are better off with thread in the middle of the thread offerings like T-thread or a micron thickness that is in the middle of a similar mesh count range. Higher quality T-thread with excellent low elongation properties will give you improved long term registration and withstand poor mesh handling techniques. You can move up to the benefits of S mesh by training employees how to handle fine S-mesh screens.
3. If your shop stacks screens filled with inks and leans them against each other, personnel throw them around during reclaiming and handle them as if they were indestructible. You should be using T or HD diameter thread in higher mesh counts to avoid losing your investment in screens. I have literally seen personnel toss a screen into the sink filled with other screens and complain that their 330-S mesh is popping. It's kind of like saying you can throw dishes into the sink for cleaning and none will be chipped or broken.

Emulsion: Viewing emulsion as a commodity and choosing the least expensive one available is like going to a car dealer and buying the first car you see at the lowest possible price when what you really need is an SUV that can hold your entire family, that is dependable, safe, and a wise investment for years of use.

Emulsions are like that. The mileage and quality of your screen is crucial to success. Screen breakdown can be eliminated by choosing an emulsion that performs non-stop on press, with excellent print qualities and superb resolution of details that you can depend on. Marrying high quality mesh and a durable long lasting emulsion specific to your ink type and print type creates the perfect screen; your survival depends on it in today's competitive textile print industry where high speed presses need screens that can meet your production goals.

SUMMARY:

Buying your first automatic is also the first step in production management.

They are costly as is the personnel to run them. Once you have figured out how to feed the beasts, the most important thing to focus on is striving for non-stop production by making better screens with quality stencil products.

In our shop, if you could set up a job and run it non stop with less than .1% rejects, you got a bonus on payday.

If you could do it repeatedly you got a raise, if you could do it and train others you got a production management job, if you could do it really, really well you went out and started a company and left my shop!

I'm just saying, that's what happens! ■

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NEW DEVELOPMENTS BROADEN SUPERWIDE OPPORTUNITIES

Sylvia Muhr looks at how the latest range of 5m technologies has changed the game

When the 5m ink-jet platform first emerged its range was necessary but limited. These machines used solvent-based chemistry and produced a quality suitable only for long viewing distances, providing a much-needed solution for those producing large building graphics and billboards who didn't want to have to stitch panels together. It didn't matter that the resolution wasn't excellent, as the viewer was always going to be standing far enough away not to notice.

All this has changed. Now, a 5m printer stands for a number of versatility and productivity advantages. With the latest machines in this market sporting UV-curable chemistry and much improved image quality, new applications are possible, including those that need to be under closer public scrutiny.

These engines used to be limited by the number of materials they could print onto, but those producing graphics at industrial quantity can now use these platforms for point-of-sale applications, vehicle wraps, banners and flags, as well as billboards and hoardings in one piece.

Perhaps the most significant change has been improvements to work-flow which have led to the ability to print to three different files on three 1.6m rolls simultaneously. Polytype's Virtu RR50 is one of the key machines offering this productivity advantage. Previously, a print house might have been limited by the need to specialise in 5m output, but now they can also use it to improve general throughput, potentially satisfying three orders at once.

The Virtu RR50 isn't just a pretty face, and has a number of innovations under the hood to drive new quality expectations in the 5m market

It is imperative that a 5m machine has excellent and robust build quality

SPOTLIGHT ON THE VIRTU RR50

Polytype focused its efforts in the 5m market to bring the quality and productivity from smaller platforms into this space. The Virtu RR50 is available in 36 or 48 print-head configurations for either a four- or six-colour work-flow (CMYK or CMYKLcLm), and features a high-productivity ink-feed system which allows for six litres per colour. This allows printers to benefit from bulk prices and, most importantly, is the fact that less time is wasted changing the inks. The UV-curable, pigmented inks provide superb durability for outdoor applications while also being VOC-free, which is vital to satisfy clients purchasing print for indoor use.

The ability to print to porous media is a particular strength of five-metre machines, with lighter output popular for a range of outdoor applications, where logistics and transport must be considered at the point of commission. Polytype's solution handles this with the inclusion of a trough to collect waste ink, meaning that the Virtu RR50 can produce onto long runs of difficult substrates, such as flag, without complication.

Earlier this year the Virtu RR50 was the recipient of the prestigious International Forum (iF) Seal of Design Excellence. The only printer of its class to be considered, the committee rewarded its industrial production capability, wrapped up in a sleek and well-designed unit which incorporates some of the foremost innovations in ink-jet technology. Valid for its entire life cycle, the machine was rewarded against criteria such as design quality, workmanship, eco-friendliness, safety and brand value – all of which should be prime considerations for anyone looking to procure a 5m platform.

UNDER THE BONNET

The Virtu RR50 was designed to be compact yet robust, recognising that those who invest in this printer want to limit the amount of space within their premises for running such a machine, measuring 2.5 x 8.3 x 2.3m (h x w x d) and weighing 10,000kg. It is capable of achieving speeds up to 320 square m/hour at a resolution of 1,200dpi, allowing companies to produce up to 2,160 square m of print every day in high-quality mode, or double in billboard mode, improving capacity to 6,500 square

m/day. It can also be front- or rear-loaded using its assisted loading mechanism – meaning that it can be run by a single operator – and sits comfortably as part of a larger production line for industrial applications, such as glass, where required.

The printer's linear motors eliminate belts, instead running the heads on a monorail-type system; this reduces several traditional ink-jet problems – such as vibration – while improving acceleration and dot placement, making it one of the highest quality-producing printers in its class. This stability across the entire engine is vital to ensure consistency of output. Other forward-thinking production features include an in-built, multi-station X-Y tool for accurate cutting and an anti-static unit on the head assembly.

HOW TO CHOOSE YOUR 5M MACHINE

These benefits are amongst the key reasons why high-profile London-based graphics and display solutions provider McKenzie Clark has recently invested in a Virtu RR50. The company anticipates a busy year in 2012, with increased UK based opportunities on the table. The vast amount of roll-fed work which is likely to arise during the year necessitated an expansion in order to be able to compete, but the Polytype machine offered the best combination of speed, quality and reliability – all of which are vital when considering the type of work to be undertaken.

Yet the main factor for investment in a superwide-format platform must be the ability to justify its worth within the company. There is particular interest in printers like the Virtu RR50 from the screen-printing market, where the volume requirement is well-matched to its potential output. Now larger digital ink-jet engines can print more material simultaneously, businesses can increase throughput and therefore improve margins through economy and efficiency.

Robustness and low maintenance are particularly vital when looking into a 5m machine because of the productivity – and therefore money – that could be lost, and so that the company can truly capitalise on the time and cost savings that they are aiming to achieve. It is advisable to look for a solid construction, high build quality and availability of parts quickly when choosing this kind of printer, which is why Polytype has ensured it has after-sales support around the world.

Changes in the superwide-format arena mean that you no longer have to choose between quality and quantity and, as with smaller UV-curable platforms, the versatility of applications has improved vastly. With the Virtu RR50 capable of tackling substrates as varied as flag, heavyweight tarpaulin and even leather with excellent accuracy, there are all sorts of new markets that can be satisfied at industrial rates of output. ■

Accuracy and quality of output are now as achievable on many superwide-format machines as they are on smaller devices

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Nebula digital textile inks from Stork Prints

DIGITAL TEXTILE PRINTING IS COMING OF AGE

Jos Notermans assesses the comparisons between digital and screen-printing

Many of the main benefits you get with digital printing are already well-known. For a start, you don't have to make any screens, which saves time and costs. There is no material wasted at the start of your print run. And you can also realise more complex patterns, especially if there is no repeat required. What's more, the price per metre for digital is coming down, while the quality is increasing.

One of the major drawbacks of digital in the past was the speed, but that is now changing. With our latest digital printer you can achieve speeds of 5m per minute. However, the preparation time is considerably shorter than with conventional printing, so when you take the total time into consideration the digital printer can have an output comparable to 15m per minute. And, let's not forget, development is ongoing; within three to five years it could well be possible to print digitally at the same speed as with rotary screen printing (typically 40m per minute). After all, our DSI digital label printer, which was showcased on FESPA Digital earlier in the year, already prints at 35m per minute.

HIGH-QUALITY INK

But it's not only the machine capabilities which are important for the end result. The choice of ink, for example, is critical. We are the only company producing digital printing machines as well as digital printing ink. We make sure that our ink causes fewer nozzle blockages or print-head failures, and the quality is also unbeatable. Our black is blacker than anything else currently available.

For the time being at least, the real advantage of digital is that it is cheaper for print runs up to a couple of thousand metres. It is especially suitable for prototyping new designs for exhibitions and presentations because the start-up costs are so low. You used to have to separate your artwork, engrave a screen and then run your printing press to produce, in some cases, a few metres of material. This was both expensive and labour-intensive.

With digital you can just scan the artwork and then print a sample, which is obviously much easier and cheaper. But what happens if your design proves to be hugely popular and someone places an order for, say, 10,000m of this alluring new fabric? Then it will almost certainly be more efficient to produce it using rotary screen-printing, and this can throw up a new dilemma.

The Stork Sphene digital textile printing machine

The Sphene can print on a range of fabrics up to 1.85m wide

DELIVERING PROMISES

If you have to separate your original artwork again to make a screen, the result won't be exactly the same as it was with your digital printing. But we have a solution for that. Our unique bestIMAGE software separates artwork in a way that is suitable for both digital and rotary screen-printing, so the results will be matching even to the standards of the most critical customers. Therefore, if you switch from one technique to another, you can still deliver what you promised to your customer.

This is probably the most important aspect of all. In the end it's not really about whether you use digital or rotary screen-printing; it's about being able to get a high-quality end product to market as quickly and inexpensively as possible. As the only company in the world to offer both kinds of printing solutions, we can always offer objective and carefully researched advice on which approach is best in any given situation. ■

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PEARLS OF WISDOM

Michael Boyle examines how a development for the technical market opened up a world of new opportunities for commercial printers

Through blending the key positive characteristics of two proven printing technologies and creating one revolutionary system, Océ created its CrystalPoint technology, which was first introduced to the market in the form of the manufacturer's ColorWave 600 large-format colour printer back in 2008.

It brought to the market a new printing method that was developed to combine the best attributes from the worlds of toner and ink-jet printing, with the result producing clean, accurate printing of an ink-jet machine, coupled with the robustness and durability of toner-based technology.

SPECIALIST REQUIREMENTS

At the point of its development CrystalPoint was created to address the particular needs of its customers, looking to cover technical, mapping, presentation and poster production. Initially focused on the production of technical documents within the architect, engineering and construction (AEC) market, where balancing the needs of speed, quality and sustainability were crucial, it also quickly developed market acceptance in the geographical information system (GIS) sector. Readability, robustness, resilience and resolution were important in this sector.

These industries had different printing requirements, but, in general, needed to be tough, sturdy and often waterproof. The maps and plans that these businesses and organisations were producing needed to stand up in tough environments. They might be dropped, rained on and folded and stuffed into back pockets many times over.

Offset litho printing is an option for map production. However a problem was this analogue process had not been cost- or time-effective enough to deliver the increasing calls for on-demand and short-run requirements. Ink-jet technology, which is often used for printing short-run maps, has, in many cases, been too slow and, with poor resilence to the conditions maps often find themselves in, water-based inks tend to run if the printed material gets wet.

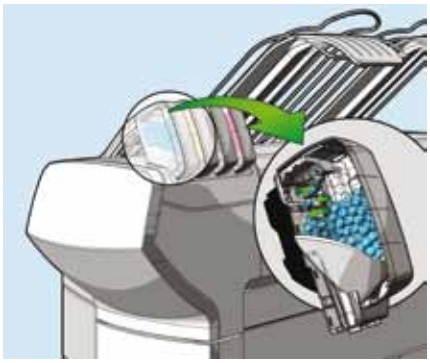
Finding a new method of printing that was quick enough, durable enough and economically viable to meet these specific demands was Océ's challenge.

NEW METHOD

The result of the company's extensive research and development came in the form of CrystalPoint technology, a printing system that allows the Océ ColorWave – the first of a family of printers – to produce a full colour A0 print, at 600dpi, in just 34 seconds onto a wide range of surfaces. These range from uncoated and recycled papers all the way through to specialities such as Tyvek for maximum durability.

The principle of CrystalPoint is that it

TonerPearl is a solid substance, which is stored in see-through cartridges



TonerPearl toner is fed into the system using gravity

The concept of Solid In Solid Out

provides an on-demand printing solution that works on the basis of the piezo-electric technique. It is at least twice as productive as traditional ink-jet production but is still as clean and emission free. It also delivers the quality, water-fast results expected from a toner printer on both coated and uncoated stocks.

With CrystalPoint, Océ has created something completely different, ideally suited to the needs of its loyal and growing customer base in AEC and GIS (mapping). However, it is also a technology that is gaining momentum in the commercial wide-format printing world, particularly now it has been launched into the poster printing market where it is having considerable sales success.

TONER INNOVATION

So what is different about CrystalPoint? At the heart of the technology is its patented TonerPearl toner. TonerPearl is a solid substance, which is stored in see-through cartridges. The toner itself comes in a spherical shape – or 'pearls' – that weigh about one gram each.

There are no fusing chemicals in their composition, which means emission-free printing that eliminates ozone and particulate emission. TonerPearl toner is fed into the system using gravity, when required. The pearls are clean, odourless and do not contaminate either the air or the system itself with powder or dust – unlike with other toner based products.

TonerPearls mark the beginning of a three stage, dry printing process that Océ calls the 'solid in solid out' – or SISO – concept.

SOLID IN

The 'solid in' stage gently heats Océ TonerPearls at around 148 degrees Celsius so that it forms a gel, which is then jetted onto the paper. This differs from other commonly used ink-jet techniques, which use heat in combination with water-based ink. The CrystalPoint method ensures fast drying as well as high quality results on low quality, untreated and recycled stocks.

The round-shaped pearls roll through the printing system, avoiding blockages, spindle build-up and the need frequently to replace parts. They separate easily and leave no residue.

GEL JETTING

The second step is the 'TonerGel' jetting stage. The design of the CrystalPoint printing heads can be compared to the drums in an LED printing system, making them a durable working part. They are robust and are covered as part of the normal service procedures from the manufacturer. Their durability means they will not break and this helps the printer avoid the cost of replacing what can be expensive print-heads, which can happen with other ink-jet printing systems.

The heads jet droplets in the form of a gel onto the substrate's surface, producing crisp lines, a semi-gloss finish and clear texts on the stock. Because of its composition, there is no danger of 'feathering' occurring that can be a common problem with water-based, thermal inks on some uncoated stock.

SOLID OUT

The final stage of the CrystalPoint printing process is the toner crystallisation stage – or the solid out stage. The gel-like droplets crystallise as soon as they come into contact with the surface of the medium. Thanks to a crystallisation agent in the TonerPearls, the duration of the setting stage is accurately controlled to the split second to make sure the ink is properly bonded onto the substrate for the best results possible.

This means the toner will not set too quickly, which might result in a bad adhesion. If the gel crystallises too fast, the toner would already be solid before it reaches the surface. But neither will it crystallise before the gel has had a chance of properly gripping onto the media.

Any toner that is not applied onto the media will return in its solid pearl form in the maintenance tray, which can be removed simply and cleanly. TonerPearls do not contain any harmful components and so there is no need for the printer operator to wear gloves when handling the product. Waste can be treated as general rubbish, making for easy disposal.

FROM NICHE TO MAINSTREAM

Because of its durability, speed and cleanliness, CrystalPoint technology today is earning its place on the production floors in the mainstream, mid-production wide-format arena the world over, as well as in the more specialist printing areas. Indeed, it is most economical when producing 950 square m to 1,400 square m of output per month, but many customers use it a lot more, and some a lot less.

Its ability to 'print dry' means materials can be handled the moment they have been jetted – an ideal benefit for the time-pressured world of the commercial print sector. This speed, combined with the quality, waterproof results, makes the ColorWave 600 an especially attractive machine for the poster printing sector. Its colour accuracy, the range of substrates that can be used and the durability of print also make it a popular choice for the point-of-sale and retail applications.

In this market-place, this printer changes the way people produce posters and make money from producing them. They can use it to increase throughput and reduce production costs for quick-turnaround point-of-purchase materials as well as offload wide-format, short-turnaround jobs to a faster, economical digital printer. It enables customers to react faster to competitors' offers by printing retail posters in-house.

The toner comes in a spherical shape – or 'pearls' – that weigh about one gram each

CrystalPoint has become accepted as a valuable new technology. It has provided another vehicle for Océ to prove its world-leading capabilities and deliver across numerous markets, which now includes the broader commercial print world.

Océ took two proven technologies and turned them into something unique. The quality that is produced with CrystalPoint technology produces superior results that appeal to specialist printers as well as commercial wide-format printers; the speed of the machine, reduced waste and stock versatility, coupled with relatively low cost of ownership, makes it an attractive business proposition across the board.

CrystalPoint has expanded from CAD printing into new areas as its benefits have become valued across so many markets. As well as the technical document printing market, Océ is making significant inroads into the wide-format business document market and poster printing, acknowledging and endorsing the fact that there are important new sectors for this application, particularly in commercial arenas. ■

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TURNING THE SPOTLIGHT ONTO TODAY'S FASHION

Ulrike André suggests creating runway designs with heat printing

What fashion looks are on the runway for 2012? Exotic, romantic, urban, elitist, casual, elegant, glamorous, futuristic – the list of this season's trends is diverse. Layered, vintage and distressed is one look that really stands out. You know that worn out look, the favorite pair of jeans that your parents tried to get rid of, that T-shirt that reminded us of a special event … well, that look is back with a vengeance!

Now is the time for the reprisal of these long lost old friends, so let mom and dad know that you were right all these years for holding on to those t-shirts and jeans. The big names in the fashion industry are asking big money for their interpretation of this retro renaissance.

How can you take advantage of these trends without spending a lot of money? How can you make everything new look old again? The good news—it's easier than ever to create this season's hottest looks with a little help from your heat press.

MAKE IT STAND OUT – THE POWER OF MIX AND MATCH

It all starts with the logo, but even the plainest, most simple logos will look amazing when done utilising the right media. How does it feel when you touch it? Is it 'wearable', comfortable? Texture is incredibly important, not just in retro looks but for any garment. Pairing the right decoration material with the right textile is an important key to success. A thick felt material on a t-shirt material is simply not wearer-friendly. There are a lot of heat printing options when it comes to creating vintage looks. Here are a few to consider:

Mixing a digital media with scraps of holographic vinyl achieves a 'green' effect

THE LOOK OF SEWN WITHOUT SEWING

Vintage sewn twill is a classic retro look, but since not everybody owns an embroidery machine to sew down materials such as twill or felt, you can use a different heat seal material to 'seal' the edges and hold the twill to the garment. A polyester twill material with its beautiful sheen looks great with sealed with a flock or a reflective material. Letting the materials overlap ensures a strong bond of the two materials onto the textile and makes a bold fashion statement.

VISUAL TREATS – RAISING THE DESIGN!

Various puff or raised texture materials are available that can be applied with a heat press and combined with screen printing and other CAD-CUT or digital media. Puff materials are designed to expand and rise when heat is applied, creating an instant 3D effect that looks great with many retro designs.

MAKE YOUR DESIGN SPARKLE AND SHINE

Is bling retro? If you lived through the 80s you know that's a rhetorical question. There is an abundance of glitz, shine, glitter, hologram, sparkle, and prism heat transfer materials out there begging to be used. The rhinestone look is still going very strong after all these years. But, unless you invest in a fairly expensive rhinestone placing machine or are willing to lay out each rhinestone individually, here is a suggestion to create a similar look at a fraction of the cost. Recreate the look out of a cuttable heat transfer film. Simply choose any material that is glittery or shiny. Feed the roll into your cutter and cut small circles/dots (these are your rhinestones) that make up your design. Weed the excess material and what is left is your own rhinestone creation. If you want to add even more pizzazz use your transfers, use a direct-to-garment printer to create a graffiti-like outline. You will be able to play with layers and textures in a myriad of combinations to create any look you want.

This metallic layer is raised due to a puff layer underneath it, creating a 3D effect

Utilising transfer paper, flock and glitter heat transfer material on a burn out T-shirt creates a tattoo effect

Combining a direct-to-garment outline and a holographic heat transfer material to mimic a rhinestone effect

WHO SAID BURN-OUT WAS A BAD THING?

Burn-out fabrics are more popular than ever. They are soft to the touch and they make a bold statement on their own. Butterflies, hearts and tattoos are just as popular as burn-out fabric so why not combine the two, three or four? Transfer papers are a perfect match for a thin fabric such as burnout; the wearer will hardly feel either one. Add some sparkle by outlining a butterfly and you have a unique design that harmonises and balances beautifully.

DARE TO QUESTION THE MIGHTY APPLICATION INSTRUCTION

Bending the rules can bring great results. Some heat transfer materials can create great effects when not following the application instructions. For example, a polyurethane heat transfer material, CAD-CUT Super Film, takes on the appearance of a screen-print when the pressure, temperature and time are altered. Add some flock to it that gets torn off just as it cools down and throw in some reflective material that hints an outline and you have created a very unique looking design.

There are quite a few materials available waiting to be tested and tried, mixed and matched, begging you to push them to their limits to create new looks. The results can be exciting and completely unique.

Sealing the twill material by applying an outline neon effect

DON'T TRASH THE LEFTOVERS – CREATE AMAZING EFFECTS

Why not recycle left over scrap materials? Sometimes the outline that we would weed away and throw in the trash would make a fun new design. Or, if the outline was needed the interior of the design can be heat applied and turned into a great piece.

Mixing some patterned or textured vinyl that was left over with some print and cut digital media, transfer or the like can make a strong statement too and aide in making the design have a stronger impact. Just try it!

Offer your customers choices. When they place an order for plain old heat transfer vinyl, let them know that you can quickly and easily make their design a lot more original. And you will be able to charge more and profit more! Make up samples featuring your most creative work and let the word out that you are mixing various textures and heat printing techniques. Try out different things with the materials you own (altering time, temperature, pressure). Circles and squares along with stripes? Why not? Heat printing makes anything possible! ■

A transfer paper base with torn off flock outlined with reflective material

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NEW DIGITAL FORMULATIONS FOR EXTREME PRINTING SPEED

Dr Mickael Mheidle explains the properties and behaviour of rheological modified inks

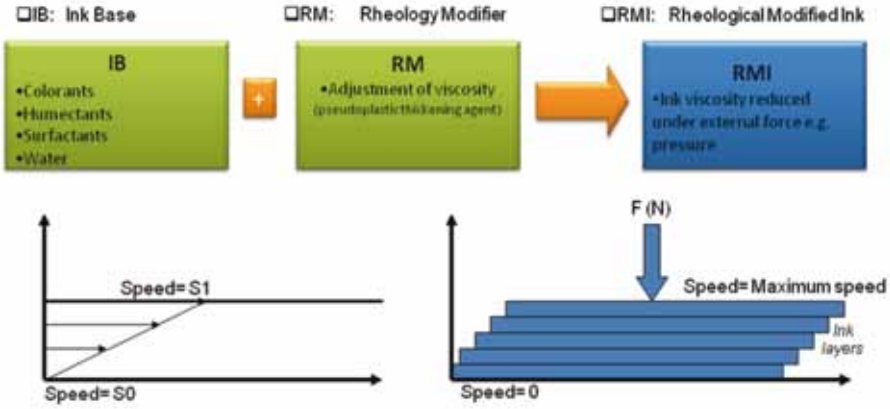


Figure 1

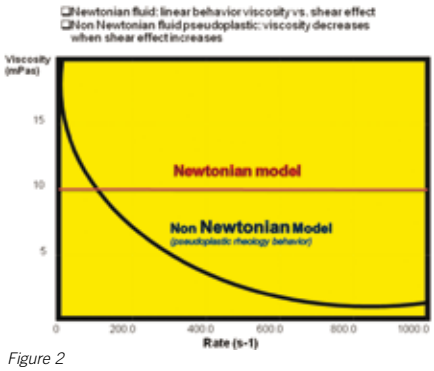


Figure 2

The current industrial inks will not work in the new generation of ink-jet heads, particularly at extreme printing speeds. Sawgrass Technologies has developed and patented new water-based inks for these speeds that allow extraordinary colour vibrancy and fast drying of the inks on the media and not in the nozzles.

The new inks are the result of a serious research and development programme involving new chemistry that changes the whole rheological behaviour of the inks during firing and the ejection process. The Sawgrass inks are branded under the name RMI – Rheological Modified Inks.

To increase the ink-jet head firing frequency and, ultimately, the printing speed, key ink-jet head developers have redesigned the head's architecture and the control of the dot. As a consequence of these technology changes, the new generation of ink-jet heads requires higher ink viscosity. In a matter of a few years, ink viscosities have moved up in range from 3-5 mPaS to 10-15 mPaS.

The current inks are basically raised in viscosity to 10-15 mPaS by adding glycols, which in turn, require that the relative amount of colorants (dyes and pigments) be reduced. The print quality is impacted negatively and results in a reduction of the image colour vibrancy and poor drying behaviour of the inks into the substrates due to the heavy glycol content.

Sawgrass Technologies has introduced the RMI inks to enable the new generation of ink jet heads to deliver higher colour vibrancy and controlled drying behaviour of the inks into the substrates. The industrial digital printing machines equipped with new generations of ink-jet heads can only support and accelerate the switch from analogue to digital printing if the machines run with RMI inks. This is because customers will not accept any compromise regarding print quality – especially colour saturation, dot formation and drying behaviour. In a word, RMI will ensure the same colour intensity with inks at 5 mPaS viscosity or 15 mPaS – but how does this work?

The RMI inks contain different chemical families called RM, (see Figure 1) specifically selected based upon their compatibility with the original inks and their ability to change the rheological behaviour of the inks under the high shear environment experienced during the firing process at extreme printing speeds.

The current inks exhibit Newtonian rheology, and their viscosity remains constant as the shear rate is varied. The RM components were selected to ensure a non-Newtonian pseudoplastic behaviour; in other words the ink viscosity decreases as the shear rate increases. This is known as 'shear thinning' as illustrated in Figure 2.

To explain the phenomena further, see Figure 3. In current inks, Newtonian rheology results in an uncontrolled, uniform ejection from the nozzle with longitudinal elongation resulting in poor control of dot formation. In RMI inks, the fluid forms coaxial cylindrical layers under high shear which leads to the ability to greatly control dot formation.

Finally, in Figure 4, we can explain how the viscosity changes during ejection, dot formation and impact of the substrates.

The RMI inks contain less glycol and higher colorant concentrations versus the current inks. To summarise the major advantages of the RMI inks, we successfully formulated inks with up to 80% more colorants and 20 to 40% less glycols.

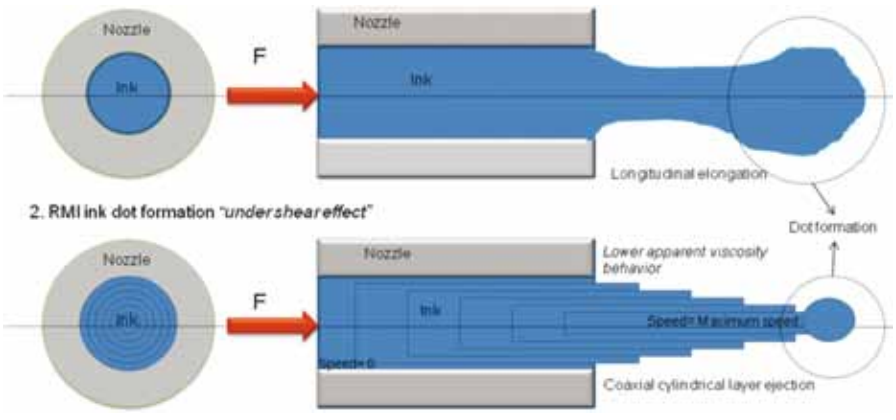


Figure 3

It was confirmed that the print quality in term of colour vibrancy and sharpness obtained with the RMI inks exceeded all results obtained with the inks currently available in the market. The drying behaviour into the substrates helped to increase printing speed and facilitate the whole printing process.

The innovative water-based RMI inks will support and contribute to the success of the introduction of high viscosity new ink-jet heads. One major application was recently demonstrated with the MTT–RMI inks, at FESPA 2011 in Hamburg, for printing on different textile fabrics.

The MTT– RMI range for textile fabric printing was presented in an eight-colour configuration of CMYK, Red, Orange, Violet and Blue.

The outstanding runnability as well as the colour performance and fastness properties surprised many leaders in the industry. They embraced the MTT–RMI for industrial digital printing in high-end market applications such as home furnishing, indoor decoration and outdoor high UV-fast articles. ■

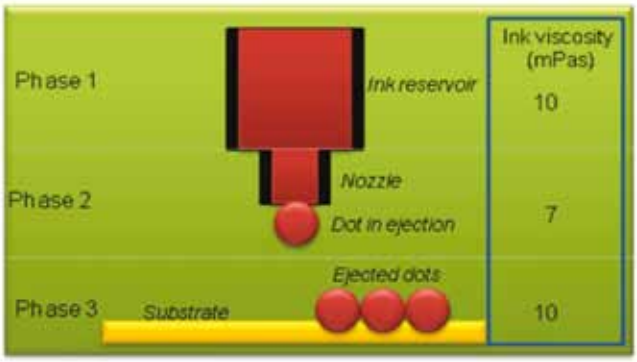
Dr Mickael Mheidle is President of Industrial Division and CEO of Sawgrass Europe

❑ RMI :

❑ **Phase 1:** Ink in the nozzle channel before firing at high viscosity e.g. 10 mPas. ***Stability of the ink in the nozzle.***

❑ **Phase 2:** Ink during firing & dot ejection process at lower dynamic viscosity level e.g. 7 mPas. ***Enhancement of dot formation***

❑ **Phase 3:** Ejected dots are in place in the media: viscosity is back to normal value e.g. 10 mPas. ***Acceleration of the ink drying behavior.***



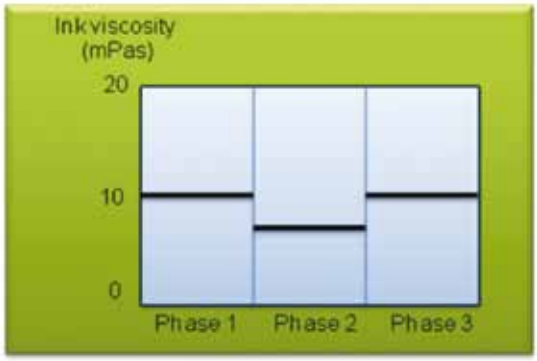


Figure 4

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PRECISION PRINTING CAN'T BE COMPROMISED IN TODAY'S CHANGING MARKET-PLACE

Mike Ruff clarifies the importance of measureable print accuracy

Print accuracy has always been important for the production print producer. The reason is if a colour result at the end of a press line is acceptable the first time, then the printer can move on to the next job. If the print producer can do this often enough each month they get to stay in business. If they don't, they have three choices.

A. Go bankrupt.
B. Get bought out by a bigger smarter printer.
C. Pray for a bail-out of the printing industry. (Yeah right.)

Anyway, you see from these three choices that there are no good choices if we are not accurate in our print production. We must learn to print acceptable colour results the first time or at least with very little tweaking. A fundamental truth related to colour tolerancing you must understand here is that accuracy is not the same as quality; so please do not confuse accuracy with the 'quality'. Quality is impossible to sell because it is hard to prove. But accuracy can be proven, documented and delivered. Because of this, corporate and retail clients are asking for accuracy as a deliverable.

THERE IS A CHANGE COMING

Concerning accuracy, there is a change coming that is going to shake the very foundation of the print production industry. There is a new breed of new colour sheriffs in the industry that will not put up with mediocre. I'm going to explain this in a minute but, first, I want to show you some statistics so you understand that what I am saying is not something that is just my opinion or a wild prophesy to sell books and video tapes. This is real and the cause of it is an industry that is changing and changing fast. No longer can we accept accuracy in print that was good enough last year. The market-place that allowed mediocre to survive is going away.

Proof of this is in the book entitled 'Disrupting the Future', written by Dr Joseph Webb and Richard M Romano; they prove print's future is a future that should be disrupted. We all need to understand that what print does is just communicate a message or information to an intended audience. *Figure 1: Survival demands an improved process* shows information Dr Joseph Webb presented at Graph Expo in Chicago this year. If you get a chance to hear him in person I highly recommend you take advantage of the opportunity. In this example he clearly showed us a trend in the US that print is no longer vital. Print is a choice. I'm sure this is not just in the US because all print is being challenged by these competitive communication choices.

What is disrupting our print future is that print shares a place with other communication medias. Other communication choices are now becoming feasible. Because of less demand print producers are down sizing, consolidating or going out of business. The proof in Figure 1 here shows that the population is growing, GDP (Gross Domestic Product) is growing, but print is not. From 1990 to 2010 *per capita* use of print has dropped from $495 per person to only $273.93 and by 2020 it is projected to drop to only $160.50. In 1990 we had more than 45,000 print companies in the US. Now we only have a little over 26,000. This means more companies are competing for less work. In this environment, only the very best of the strong will survive.

This type of change in any industry drives work to the printers that can deliver what is demanded in accuracy, speed and cost. This has also spawned an entirely new group of professionals serving our industry to make sure this happens – print certification professionals. Because of increased competition and better analysis tools, along with knowledgeable colour police, the printers that want to be the survivors must understand

	1990	2000	2010	2020	Change
160.5 Population (Billions)	250.1	282.5	310.3	340.8	9.8%
GDP (Billions)	$8,826.7	$12,523.2	$14,575.0	$16,963.0	16.4%
Comm. Print (Billions)	$123.8	$132.1	$85.0	$54.7	-35.7%
Employees (Thousands)	816	830	495	295.2	-40.4%
Comm. Print Companies. (Actual)	45,311	39,035	26,859	18,481	-31.2%
Commercial Print Per Capita (Actual)	$495	$467.61	$273.93	$160.5	-41.4%

This historical and future projection of market data by Dr. Joseph Webb and Richard M. Romano prove print's future is a future that should be disrupted. Print producers that survive will be those that move from a craft company to a manufacturing company.

Figure 1: Survival demands an improved process

This is a photograph of a typical color card. On the left is the specification of what the color values should be. The right side is a sample of the color to be used visually to control a clients brand color. The problem is... the color on the right does not match the numbers on the left.

Figure 2: Colour card

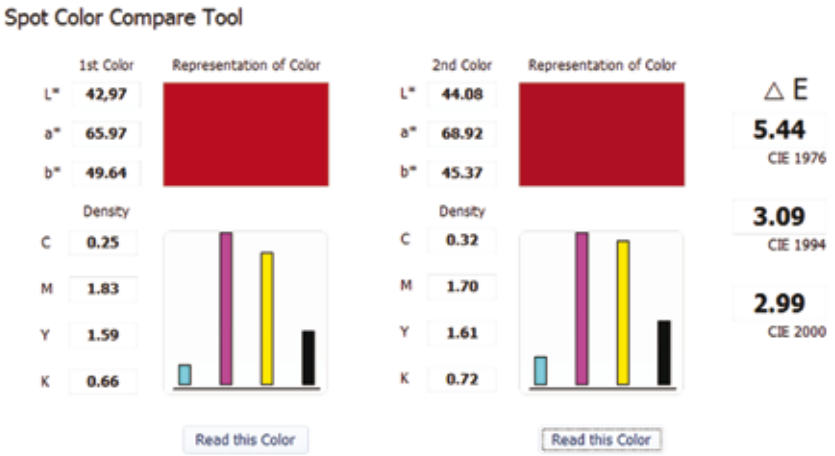

Figure 3: Colour card measured

this and sharpen their skills, improve their equipment and train their employees to focus on measured accuracy.

WHAT IS BEING DEMANDED BY CLIENTS TODAY?

The visual "pretty good" is good enough in the mind of many clients even today. But this is quickly changing. The new norm is print buyers expecting a numeric match to an intended target. Sophisticated and well-trained print buyers and hired professionals now select printers based on indisputable evidence that they are capable of producing a numeric match within a predetermined tolerance. New control procedures now demand that printers put scanning spectrophotometers on each press. Prints are scanned and the information is automatically uploaded to the client's master control site thousands of miles away. The printer receives a score related to accuracy. (Not a subjective visual opinion.) What is even more sobering is when the score is viewed by the client side by side other printers. This electronic verification has moved our industry in an entirely different direction. The client or his agents no longer need to come to press. We no longer need the visual colour target. Visual match to colour card samples are still requested today but this is changing.

Colour card samples of logo colours are being phased out. All printers that print corporate colours are familiar with the client colour cards that have a hole in the centre or the colour is printed to the edge for visual colour comparison. The problem with the colour cards is that they were never within the colour standard tolerance that is requested. *(Figure 2: Colour card.)* The colour card in the photograph is a brand colour that is deep red. The colour specified is L*42.97, a*65.97, b*49.64. The actually colour is L*44.08, a*68.92, b*45.37. *(Figure 3: Colour card measured.)*

Continued over

Table 4 — CIELAB ΔE_{ab} tolerances for the solids of the process colours

Process colour	Deviation tolerance	Variation tolerance
	OK print	Production print
Black	5	4
Cyan	5	4 [a]
Magenta	5	4 [a]
Yellow	5	5 [a]
[a] The contribution of the hue difference (ignoring the sign character) shall not exceed CIE ΔH 3		

Figure 4: ISO standard tolerance example

It is common to find that colour cards are as much as 5 ΔE off. There is no chance a visual match using two different colour cards will match. Since accurate colour is very important to the client, this is not acceptable. Corporate brand managers have produced market studies proving that if the brand colour on their packaging or point-of-purchase material is not correct, sales are affected. They want it right. If the colour begins to drift, over time a colour approved visual sample might become an entirely different colour. But, how can you expect a printer to get it right when the colour cards are out of specification? In today's market place, a print producer must focus on 'measured' accuracy. Accuracy can be difficult but it is the only solution for a printer because it is not subjective in nature like a visual colour approval. Measured accuracy is objective. We have a target. We know what the target values are. We measure the difference between our target and our print and assign a numeric value to the difference. What we can measure we can control.

COLOUR TOLERANCING

If we are focusing on accuracy, then what is good, better and best is how close we are to a print target? Most print devices drift a little job-to-job which, according to ISO Standards is called, 'Deviation'. Also most print devices move a little during a press run, which is called 'Variation' in ISO Standards. Therefore we need to realise that 'best' is not necessarily perfect. This means a tolerance specification is needed. ISO has made use of tolerances in many different kinds of specifications. *(Figure 4: ISO standard tolerance example.)* Standard tolerances for any print process must take in consideration the normal deviation and variation of the print device as well as factor in the deviation and variation of a colour measurement instrument.

The number for deviation and variation is called Delta E (ΔE). Just to be cool and mysterious, we like use the Greek Symbol for delta Δ. Formulae for tolerance calculation range from the very simple, dE76 that only agrees with a visual assessment about 75% of the time, to the very complicated dE2000 that agrees with common visual approval about 95% of the time. Corporate logos and important colour results are now being verified as colorimetrically correct through ΔE tolerancing. This is verified per job, within the run and even now managed through electronic reporting. Qualifications of a printer are not only checked prior to being awarded a job but must be documented through various industry certifications or qualifications like G7 for offset, screen and digital, FIRST for flexography, PCC for process control in the US or PSO in Europe.

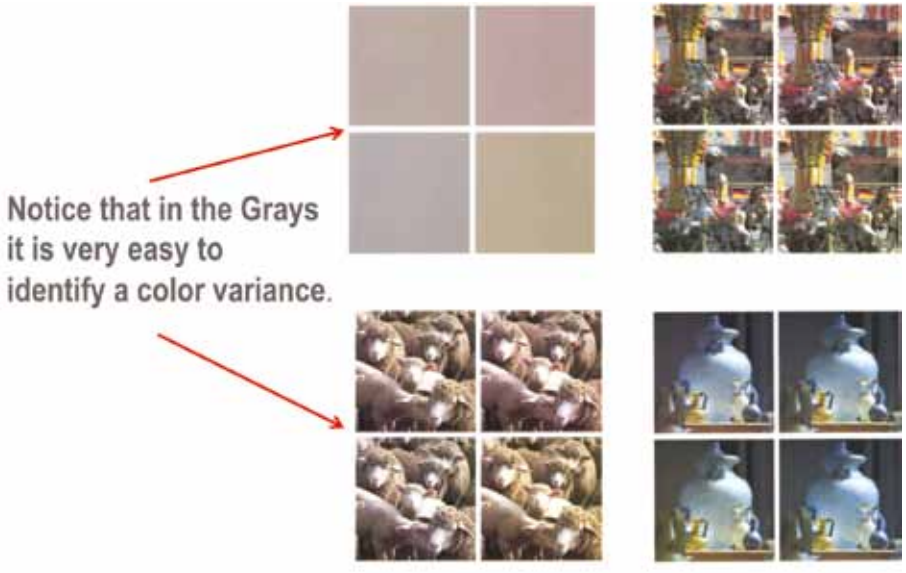

Figure 5: Delta E weaknesses

THE DANGER NON-FEASIBLE DEMANDS

Some requirements are being sold to retail print buyers by the new colour police that are not feasible for production print devices. Just because a tight tolerance can be held on a proofing device, it doesn't mean it can be held on a production press. Also, just because you can see a slight deviation or variation in colour, it doesn't mean the print is a bad product. Colour demands must be feasible for the print device, colour management technology available and the substrate that is being printed on. An example my friend Joe Fazzi, VP of Operations at IDEAlliance uses is a napkin printer. He says: "A napkin printer could be the best napkin printer in the world and yet a photograph would not look at vibrant or realistic as a screen-printer might produce on high quality plastic with UV inks." Therefore tolerances must fit the process. I cannot set my tolerance lower than my process will allow. It would not be feasible. The question is, what should we do?

QUICKLY GET EDUCATED AND KNOWLEDGEABLE

In order to control our destiny, print producers must understand the new focus on print accuracy. They also must understand the measurements and understand the tolerances. If a print producer does not pay attention to the new rules that are coming, they will waste a lot of time and material attempting to attain a print specification that is demanded by their client.

So 'not feasible' means a tolerance cannot be maintained during normal tight production methodologies. The cause of this is several things. For example all colour measurement instruments vary slightly. Hand-held spectrophotometers that are very common for press control have been proven to vary at least .5 ΔE. If the colour police set my requirements at 2 ΔE then I only have 1.5 ΔE to work with. If my press varies 3 ΔE and my instrument varies 1.5 ΔE I'd better not accept the job with a requirement of under 4.5 ΔE. Therefore feasibility has to be defined based on three things.

1. What is the deviation and variation of the instrument I am using to measure the print?

2. What is the deviation and variation of my print device?
3. What is "really required"?

Bruce Ridge, the Technical Services Manager of Nazdar Inks and Coatings wrote an article in the July 2008 Edition of Screen Printing Magazine that was entitled 'Zero Tolerancing'. Bruce points out that absolute zero-tolerance colour matching is a common practice in the reproduction of a color. Zero Tolerancing compares a sample print to the intended colour target. Then a person is trained to reject the reproduced colour should any difference between the two samples be detected. The point is, Zero Tolerancing is not really tolerancing. Tolerancing means allowing expected deviation but setting limits that are acceptable.

WHAT IS REALLY REQUIRED?

What is really required is an agreement of what a print buyer wants and what is possible based on all the knowledge possible about the process, the press and the requirement. Knowing the process is understanding limitations of how the print process works. An offset consultant would assume many wrong assumptions if they stepped into the screen-printer's world. Press knowledge would be important to understand what normal deviation and variation should be. But what is really required must also include reasonable requirements from the clients.

An example of this is a saturated logo colour verses a pastel or even a grey. *(Figure 5: Delta E weaknesses.)* If a requirement is set for 4 ΔE on both, the person that set the specification may have made two mistakes that could cost thousands of dollars in press time. The pastel standard is set is too high and the saturated colour standard is set too low. You can see by the illustration the problem.

The following is a list of things we need to do to prepare for what's coming in a shrinking and changing print industry that will require more sophistication in colour output accuracy.

1. Evaluation: Honestly evaluate the capability of your equipment, your colour measurement tools and software and the skills of your staff.
2. Benchmark: Compare where you are with the best in the industry. If you don't know how to do this or you do not have access to real data that will give you a good evaluation, then hire a consultant that has access to real industry results. The key is to know what is possible before you set your accuracy goals.
3. Set a goal: I call this my 'Critical Success Factor'. Yogi Berra said: "If you don't know where you're going you might end up somewhere else."
4. Calculate the cost: What are the physical costs of time, material, software and hardware.
5. Assess the feasibility: Is it worth it? Do you have clients that will pay extra for extra? Does it open new doors of opportunity? Are you going to lose critical business by not becoming the best in your industry?
6. Execute: Set a time line and get moving toward your critical success factor.

CONCLUSION

The best and most accurate printers in our industry did not get there by chance or accident. Precision printing only comes with a commitment. Do not make this a side item that someone works on during their spare time. It will never get done. Remember this – if someone else can do it or has done it, you can too.

I hope this article encourages you to welcome the challenge of measureable print accuracy. ■

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THERE'S MORE TO WORK-FLOW EFFICIENCY THAN MACHINE SPEED

Roland Biemans discusses the true throughput potential with compatible production systems in a textile printing environment

Today, many production processes are governed by speed of throughput with these rates being the principle criteria for running a slick and efficient business. Manufacturers of printing machines are quick to promote these running speeds as a direct line to profit but, in truth, the numbers of square m/hour which can be generated only represent one element of an overall cost-effective operation.

From a practical point-of-view, production speed has to fit into a company's overall working operation where individual machines are in use for different parts of the process. This also takes into account logistics, manageability and, of course, the number of operators on the print-shop floor. It is not only the maximum amount of printed media in an hour that counts, although many print shop owners and printer manufacturers alike focus on this single parameter; it's more what the total throughput as an end-product comes to.

Speed of a machine's output doesn't necessarily lead to overall efficiency. In practical terms, the most important thing about running a print shop profitably is setting up the work-flow properly. Although this may seem an obvious thing to do, the numbers of companies missing out on making the most of their production is vast. This is particularly true when it concerns printing onto textile, where most of the time another process follows the printing.

In some cases this is forgivable and understandable because the print shop owner literally grew into the situation of having different types of equipment over time. His only solution was to invest in incompatible systems to get a specific job done. However, many businesses and their owners also just accepted the production set-up, simply because there wasn't a trigger to optimise its facility and its work-flow, and to generate greater efficiency.

However, this is now changing. Because of the tougher economy, greater competition and with converging markets, it is becoming increasingly apparent that an optimised work-flow can just be exactly the one thing that keeps a company afloat. Better still, this efficiency can enable companies to grow their businesses with greatly improved margins.

THE FAILURE FACTOR

Print shop owners who take a step back and look at their production facility may come to shocking insights when they discover that 20% of their output is thrown out because of production failure. A quick assessment shows that some machines or operators are standing still and idly waiting for another process to finish before they can run the next step of the production flow. Additionally, because of incompatible systems, considerable amounts of time are wasted on converting or changing media, rolls or processes. Where constant material changes are made, not only is this unnecessarily time consuming but there is always the risk of inconsequent handling of jobs or damaging media in the process.

Another common problem concerns the colour reproduction and matching across systems. An issue often mentioned is the inability to catch mistakes before they happen. And operators that have grown to accept a certain system or method might get stuck with what they are accustomed to, and never research new or better options which can lead to greater efficiency and improved work-flow overall.

Logically, running different types of machinery will cause variations in output. Different inks produce a different colour gamut, and different media will have had different treatments. Different print processes feature different resolutions and ink droplet shapes and sizes. Some inherent differences can't be circumvented but, in pursuing optimisation, there is a key factor that can greatly improve end results.

Surely, one area which doesn't make it any easier to optimise production practices lies in the fact that, in a single print shop, many manufacturers and suppliers will have delivered equipment with their own methodology and their own ideas on how to approach a

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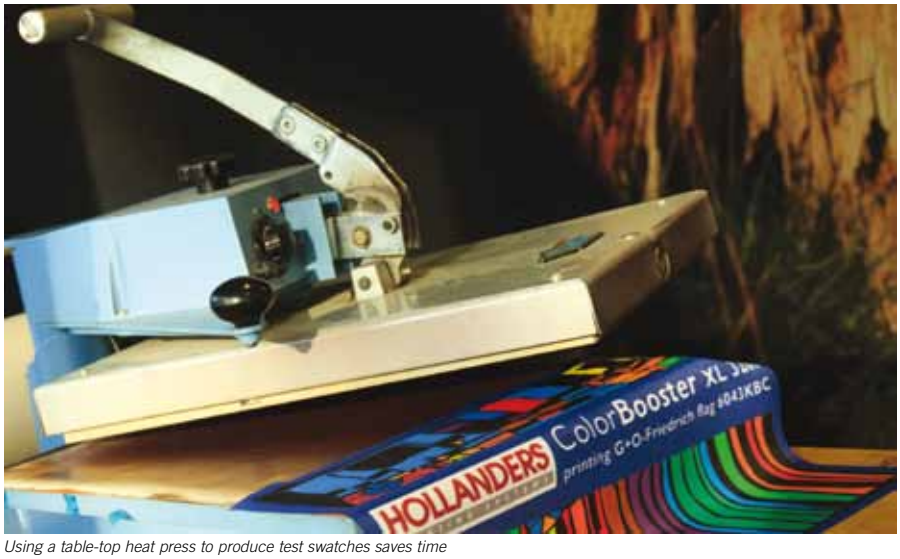

Using a table-top heat press to produce test swatches saves time

The HPS software features the different handling of objects to increase colour reproduction quality

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production flow. Where one supplier suggests optimising their specific machine in a certain way to get better results, this can result in adverse effects along the way with other processes. An example of this is a material that is developed with a coating for dye-sub transfer for use in a calender heat press system; it may not be suited for vibrant output when printing disperse direct ink and fixating it with an infra-red system. While one production method may work well, in another it may cause a lesser quality or, worse, slow down overall production.

Where one manufacturer's RIP software will be perfect to run a specific machine, in a combined environment of different printers it can cause operators to lose time or find themselves struggling with unwanted misprints. Likewise, where one supplier may claim it sells media fit for any purpose, this can actually result in worse output than would be possible had a better material from another supplier had been used. In textile, shrinkage and deformation will become a factor when not addressed properly. And, where after-market or third-party inks may seem to be a good way to lower costs on the purchasing side, this can prove to be a false economy causing printers to function less effectively, and resulting in more wasted resources and lost time. An example of this is having to clean a system more often or having to deal with colour deviations and its subsequent need for colour profiling.

This poses an interesting question: is print speed still the most important factor when concerning the overall production process? If, for instance, print speeds are limited by an in-line fixation process, the maximum print speed may not count for much. If loading media or preparing and RIPping artwork for print is slowing down the printing process, how does that relate to the over-all production speed? The obvious answer is: work-flow efficiency does not come from print speed alone.

IDEAL ENVIRONMENT

In an ideal world, particularly in textile production environments, a truly efficient and reliable work-flow needs to be based on compatible elements which, together, provide seamless production in a harmonious environment. There would be no nasty surprises likely to spring up from any part of the processing procedure, from file generation, colour management, printing and finishing.

For the majority of ink-jet technologies in use today each element is independent from the next, so that the printing machines and finishing stations are not related because they are manufactured by different specialists. And, even where one manufacturer provides a bundle or combination, it is often based on equipment coming from different places. This means slightly different machine width and different media handling, a different approach to optimising speeds or developing interfaces and no relation between what happens at the beginning of the process and what can influence it at the end. It doesn't mean that any single component is bad in itself, but combined make it less efficient.

It would be good to know that equipment can effectively be put in one production flow without too many disturbances. For example, the media handling system being the same across different machines so that it is straightforward to load 2.3m media on a 3.2m wide machine as the handling is familiar, logical and fast. Likewise, being able to adjusting ink volume precisely at the artwork processing stage, to optimise the parameters which are essential for efficient printing, fixation, wash-off and media penetration, makes a more efficient system. Coming from one manufacturer, with an eye for the details in the overall development, it is likely to become less a problem in setting up a production platform.

GETTING IT RIGHT

Hollanders Printing Systems (HPS) seems to be the odd one out in digital textile print production when it comes to enabling a profitable work-flow. It is one of the few, if not the only one, to take all the different aspects into account. Not only on the hardware side, but also when it comes to including software and supplies, HPS minds how the single components correspond to an efficient production system.

HPS takes its attention to detail further with a special option in its CMM (colour management module) to set a target ink volume curve and regulate the behaviour of the ink-flow during printing. Standard RIP software doesn't let you do this. The HPS solution can even set this individually per channel so, in combination with the humidity and temperature in the print environment, it enables the operator to make any necessary changes on the fly, without having to re-RIP artwork.

There's also a separate approach to line-art (vectors) and images (bitmaps and rasters). The HPS software not only features the different handling of objects to increase colour reproduction quality, but there is also a colour recipe library where ink values are set according to the named colour. This enables a one-time only investment in getting the colours right, without having to go back and forth with PMS swatchbooks and weekly swatch prints.

Good work-flow also involves generating efficient practices across all production areas. Many of these might appear to be based on common-sense but this approach normally only becomes apparent when a system manufacturer is aware of all the processes involved in daily working, from start to finish. Examples are plenty. Using a hand-held sewing machine to join rolls, in particular at the ColorWash, saves time and resources. Ensuring that media is certified which not only prevents unwanted output but also addresses colour profiling, makes for less waste during production.

Additionally, it is easy and fast to test small swatches using a table-top heat-press. This means it is possible to lay a test media on top of an open structure material and quickly print a small piece and then have it fixated using a small heat-press. This logical and time-saving process allows for quick tests without having to stop and load a roll of media.

A hand-held sewing machine makes it quick and easy to join rolls

Another benefit is that any shrinkage compensation values can be set in the software, and this influences fixation temperatures by ensuring they are correct and eliminating the need for constant 'trial and error' procedures. Because fixation and printing speeds are independent and, thus, not reliant on each other, there are no delays between processes.

CONCLUSION

Particularly in the area for textile printing, application driven solutions offer tailor made processes which are beneficial in specialised production environments such as working with fabrics for soft signs, flags, banners, garment, décor and industrial end products. The value of efficient work-flow is based on overall throughput, and not merely that of the printing machine speed – after all, its role is only one part of the entire process.

System efficiency and ergonomics also play a vital part in the economics and logistics of running an effective production line. Similarly, true compatibility between software, printing, fixation, washing and finishing ensures that a 24/7 operation flows smoothly and economically. This type of set-up, where each unit represents a sum of the total system, means that operators can add to the overall productivity by planning each job within given parameters, knowing that their work-flow is tailored to the solutions being used and the people who are using them, and without unwanted or unexpected interference or disruption. ■

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THE IMPORTANCE OF BRAND PROTECTION

Christine Lancaster establishes why covert technologies will help in the challenge against counterfeiting

Christine Lancaster

Security and brand protection is one of the biggest concerns for brand owners and retailers today and the issue remains high on the business agenda. According to a public survey, 61% of the population believes that counterfeiting is theft and is wrong, but one in five would still sometimes buy counterfeit goods.

Although you might save money, buying counterfeit goods is a very risky business as you cannot guarantee that the product was made to the right standard, which in turn may mean that the product is both harmful and dangerous. Nowadays, counterfeiting is a global phenomenon and a whole range of products is under threat – from coffee, condoms, clothing, footwear, drinks, toothpaste, batteries, mobile phone parts to pharmaceuticals. The global counterfeit goods market value is estimated to be worth nearly $1.59 trillion so, therefore, brand owners have a bigger challenge than ever on their hands.

THE SECURITY CHALLENGE

Brand protection comes at a cost, but having to deal with the counterfeiting of a brand, could prove even more expensive, as well as dangerous.

Brands face a variety of 'costs' if subject to counterfeiting:

- Erosion of brand value
- Reduction in consumer confidence
- Reduction in corporate profits
- Deprives governments of tax revenue
- Defrauds the consumer
- In some cases can lead to serious health risks

CHANGING ATTITUDES

Overall awareness of the need for brand protection has increased significantly over the past few years. Unfortunately for brands, this awareness often comes as a direct result of their products being subject to counterfeiting. A few recent health and safety scares, which had serious repercussions to the brand owner, have also lead to a higher demand for security.

Brand owners often find themselves having to police their products in the market-place and cost is usually a key factor for those considering security solutions, but counterfeiting is now such a stark reality that the issue can no longer be ignored. Security is not a new issue, but counterfeiting is becoming so sophisticated that some brands find themselves competing with their own counterfeits!

Simply putting a hologram on packaging or labels and thinking that will do the trick is tailing off in favour of applying covert features that a trained inspector can authenticate in the field. The huge advantage with this approach is that it can result in the identification and possible prosecution of those who are passing on counterfeit products. Using a "yes-no" authentication device therefore offers more reliability to the brand owner versus a visual check.

Example of a security detection device

MARKET NEEDS

It is clear that different levels of security are needed for different types of products and packaging. Brands need flexible solutions that could address the required level of sophistication whilst successfully countering the threat in a cost effective way.

A multi-layered approach to security allows brand owners the flexibility to add and remove security features as required, which in turn allows them to stay one step ahead of the counterfeiter. These layers could range in sophistication without compromising the level of protection.

Most importantly brands need to understand their options in order to make an educated decision about the best security for its products and/or packaging.

Sun Chemical offers a range of anti-counterfeit and authentication solutions to make items more difficult to copy and enable brand owners and government officials to check if products are genuine or fake.

Essentially all security solutions can be grouped into two segments:

- Overt technologies are added for consumer verification purposes, for example holograms, thermochromic and colourshift inks. These are visible features and do not require detection.
- Covert technologies need to be detected through a reading device. These include technologies such as:
  - UV readable inks and coatings
  - IR responsive inks and coatings requiring a reader

The most effective security solutions are covert technologies, which are integrated into the inks used for printing. Covert solutions offer increased security compared to overt solutions and are viewed as the second line of defence. ■

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MORE REGISTRATION DATES AND CLASSIFICATIONS LIE AHEAD

Future deadlines related to hazardous substances and the first update to the ATP of 2009 are scrutinised by Elaine Campling

The European Commission has issued a draft third adaptation to technical and scientific progress (ATP) of the CLP Regulation (EC) No. 1272/2008. This is the first update of harmonised classifications since the first ATP of 2009, containing amendments and some new entries to Part 3 of Annex VI. Part 3 of Annex VI contains two lists (Tables) of hazardous substances with harmonised classification and labelling (C&L). Table 3.1 comprises the substances with harmonised C&L based on the CLP Regulation, while Table 3.2 is the list of hazardous substances with harmonised C&L based on the criteria set out in Annex VI to the Dangerous Substances Directive (DSD), 67/548/EEC.

Transitional arrangements have been put in place with a compliance date of 1 June 2013. Transitional arrangements are necessary to ease the burden of stock re-labelling, i.e. for existing stock to pass through the supply chain, and also to provide time for operators to comply with their registration obligations (in accordance with the REACH Regulation, (EC) No. 1907/2006) for substances with newly harmonised classifications in the following categories:

- Substances with 1A or 1B carcinogenic, mutagenic or toxic to reproduction classification, according to the CLP classification criteria (Table 3.1) and Categories 1 and 2 according to the DSD (Table 3.2)
- Substances classified as very toxic to aquatic organisms which may cause long term effects in the aquatic environment.

The 1 June 2013 deadline for application of the harmonised classifications set out in the 3rd ATP to the CLP Regulation coincides with the second REACH registration deadline for substances manufactured or imported in quantities equal to, or exceeding the 100 tonnes per annum bracket. Momentum is already gaining, and industry nerves showing, as we move towards this registration period. More substances are expected to be registered during this second phase than in the first wave of registrations. However, more smaller and medium enterprises are expected to be involved, with less experienced lead registrants, managing more limiting data (due to the registration volume tier). The European Chemicals Agency (ECHA) has launched a campaign 'REACH 2013 – Act Now' to help industry prepare for the impending deadline.

LONG AWAITED C&L INVENTORY

In the meantime, ECHA is expected to issue the much awaited C&L Inventory by the end of the year, delayed from the original summer 2011 publicised release. The C&L Inventory is the database of substance information submitted to ECHA to date, following notification under the CLP Regulation, or registration under REACH generally for so called high hazard and high volume substances. It will also include the list of hazardous substances with harmonised classification and labelling, i.e. listed in Annex VI of the CLP Regulation. The full contents of the database may be accessed by Member State Competent Authorities, but limited extracted information on substance C&L will be made available for public viewing.

The C&L Inventory will require updating fairly regularly in the coming years if it is to be a definitive source for identifying hazardous chemical substances on the EU market, since notification under the CLP Regulation is an ongoing process. Manufacturers and importers with an obligation to notify the C&L of qualifying substances must do so within one month of placing the substance on the market. There is no volume threshold for hazardous substances, which also includes hazardous substances exempted from the registration requirements of REACH e.g. polymers. The notification requirement also applies to substances with 2013 or 2018 REACH registration deadlines,

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whether the substance is hazardous or not and certain substances in articles, where registration is required in accordance with Article 7 of REACH.

There are a number of chemical databases already in existence around the globe and notification/REACH registration style schemes are being developed in a number of regions, which has led to the notion of a global chemical inventory of substances with harmonised classification. However, although many of the emerging registration schemes have similarities with REACH and the European CLP Regulation introduces the classification criteria of the UN Globally Harmonised System of classification and labelling (GHS), the ideal of a 'harmonised' classification database appears difficult to attain.

CLASSIFICATION DIFFERENCES

Differences in classification for identical chemical substances are a feature of global inventories and it is well publicised that differing classifications have been notified to ECHA for many seemingly identical substances. Classification differences are permitted if justified, e.g. due to the level of impurities affecting the classification. However, it is understood that notifiers or registrants may have arrived at different classifications for the same substance due to interpretation differences, when evaluating the available substance data, or in the application of the CLP classification criteria. For mixture manufacturers, notification may have been the first attempt at (substance) classification in accordance with the CLP criteria, which was a daunting task for many.

However, Article 41 of CLP requires notifiers and registrants to make every effort to agree a classification for the same substance, unless a deviating classification is justified. Dialogue between companies is expected to resolve the differences, leading to the eventual 'harmonisation' of classification for all hazardous substances on the EU market and not just those that the European Commission is required to harmonise e.g. carcinogenic, mutagenic or toxic to reproduction substances. For these substances, ECHA is committed to working with Member State Competent Authorities and other interested parties in reviewing available information and recommending a harmonised classification to the European Commission. However, since company contact details will not be published on the public C&L Inventory, this will make it difficult for some companies to identify who they should be negotiating substances classification differences with, and there is currently no defined mechanism for doing so.

There has been some movement towards making global chemical substance classifications publicly available. The OECD (Organisation for Economic Co-operation and Development) provides access to national/regional GHS substance classifications via their eChemPortal, described by the OECD as "a globally accessible international repository for hazard data on existing chemicals". The OECD has also recently published the results of a survey outlining the global status of GHS and availability of GHS substance classifications, noting that many OECD member countries and international organisations have provided web-based access to their substance classifications.

However, while we wait in hope for the unification of global inventories and emergence of a global database of substances with 'harmonised' classifications, organisations must be aware of country/regional classification differences and try and make sense of the substance information that is available to them for a number of purposes, not least of which to classify their substances or mixtures, to meet the CLP notification requirements, resolve classification differences with their EU counterparts and to meet the requirements of global regimes, if they are to supply to an international market. ■

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HOW TO STAY AHEAD OF IMPENDING ACTS

Peter Gower looks at the existing European legislation governing the use of chemicals in the screen-printing industry

Cleaning solvents are used widely for screen and press equipment in the printing industry. However, the challenge lies in selecting products that offer the best performance at the lowest unit price in an attempt to keep costs down, while also meeting the stringent requirements of the latest chemical and safety legislation.

Growing awareness of the potential dangers of some cleaning chemicals on both users and the environment has spawned a new generation of safer solvents that are more effective than traditional products, while being more environmentally friendly and presenting far fewer risks to the health and safety of staff. However, a good understanding of the current and impending legislation is vital for ensuring best practice and optimum health and safety in the printing industry.

EXISTING LEGISLATION

The Registration, Evaluation, Authorisation and restriction of Chemicals (REACH) Regulation 1907/2006 came into force throughout the EU in June 2007. Introduced to ensure a high level of protection to human health and the environment, it places responsibility on manufacturers, importers and end users of substances or mixtures to seek safer alternatives to hazardous chemicals.

In addition, the REACH Regulation aims to manage the risks presented by such dangerous substances through the provision of enhanced safety information, enabling the assessment of hazards and allowing the implementation of risk management measures to protect humans and the environment. In particular, manufacturers and importers are now required to register information regarding the safe handling of chemicals in a central database run by the European Chemicals Agency (ECHA) in Helsinki. The ECHA acts as a central point in the REACH system, managing the database and coordinating the in-depth evaluation of suspicious chemicals and making this information available to consumers and professionals. Most critically, substances that were not registered by the deadline of 30 November 2010 cannot be marketed in the EU. Companies that failed to register but continue to place substances on

the market face enforcement actions and legal consequences.

Similarly, the Classification, Labelling and Packaging of Chemical Substances 1272/2008 (CLP) Regulation is about communicating the hazards of chemicals and the steps that have to be taken, mainly by industries, to inform others about them. It applies within the EU and complies with the United Nations (UN) Globally Harmonised System of Classification and Labelling of Chemicals (GHS). In particular, this legislation introduces new classification criteria, hazard symbols and labelling phrases, while taking into account elements which are part of the current EU legislation.

CLP Regulation requires the hazards of substances and mixtures firstly to be established before they are placed on the market and states that they must be classified, labelled and packaged in line with identified hazards. In essence, workers and consumers must be able to tell from the labelling on a substance what they need to know about any hazardous properties.

CURRENT CHANGES

2010 saw the introduction of significant changes in chemical legislation in Europe with the widespread implementation of both REACH and CLP having already started and continuing right through until 2018. In particular, this spells many changes to the safety information available through labels and safety data sheets in the coming years. For example, 30 November 2010 was the deadline for REACH registration of the most hazardous substances. By this date all carcinogens, mutagens or reprotoxins (CMRs) produced or imported in greater amounts than a tonne per year, substances toxic to the aquatic environment over 100 tonnes per year and all other substances above 1,000 tonnes per year must be registered.

Additionally, new rules under the CLP Regulation mean that substances were also reclassified by 1 December 2010 and mixtures will be by 1 June 2015. As a result, manufacturers and importers were required to notify the ECHA by 3 January 2011 of the classification of substances placed on the market that are subject to REACH registration, classified as hazardous or in mixtures above a certain concentration, resulting in the need for classification.

WHAT DOES THE FUTURE HOLD?

It is expected that outside pressure from environmental lobbyists and non-governmental organisations (NGOs) will push for ever more stringent controls on the chemical industry through REACH. In particular, it is likely that the most hazardous chemicals to humans and the environment, such as SVHC (Substances of Very High Concern), PBTs (Persistent Bioaccumulatic and Toxic) and vPvBs (very Persistent and very Bioaccumulative), will be subject to increasingly strict controls on their use, with companies having to apply to the European Commission (EC) for authorisation to use them. At present, there are only eight chemicals subject to authorisation; however, there is a list of more than 40 chemicals that have so far been identified by the EC as SVHCs.

Furthermore, the SIN (Substitute It Now) List from the International Chemical Secretariat intends, according to its website, to "speed up the transition to a toxic free world". It lists 356 chemicals that they claim should be classified as SVHC, and the list is currently being evaluated by the EC. This indicates that many more chemicals, which are not thought of as being CMRs, PBTs or vPvBs at present, may soon be, with all the restriction in use that this entails.

As new information becomes available about raw materials it is expected that some product classifications will become more severe. Conversely, there will also be occasions where new information leads to a previously classified product becoming hazard label free.

An example of this is CPS's Screen Opener D, which was previously classified as an irritant, but is now considered hazard free. This high performance product is a solvent blend used on-press for the effective removal of dried-in ink residues to restore optimum print quality and is proven to offer better cleaning results than other more hazardous products. Its unique formulation means that it evaporates rapidly so that printing can be restarted quickly, eliminating downtime, while its composition does not affect the drying rate of the ink.

Just as importantly, a new screen opener also meets the requirements of European Standards such as EN12921-3:2005 (Machines for surface cleaning and pre-treatment of industrial items using liquids of vapours. Safety of machines using flammable cleaning liquids). The specific requirements of this European Standard are to ensure that flammable cleaning liquids have a flash point at least 15 degrees C above ambient temperatures. Indeed, CPS has always recommended using solvents with a flash point above 55 degrees C that are not classified as flammable in automatic ink cleaning equipment. Most recently, the company introduced a screen opener with a flash point above 40 degree C that meets the standard for on-press cleaning.

While these standards are not legal requirements they have been introduced to ensure best practice within the industry, with many enforcement agencies and insurers expecting printers to be operating according to these guidelines. For example, in the event of a fire it may affect a claim if a printer cannot prove they meet the standard or an equivalent level of control.

CPS's detailed knowledge of chemical legislation means that the company is well placed to take advantage of similar changes to protect printers through the reformulation of products when chemicals become more severely classified. Driven by a philosophy of innovative and safer chemistry, the company has pioneered the development of less harmful alternatives. Indeed, compliance with chemical regulations across Europe has always been the cornerstone of its development and manufacturing processes. Equally critical is the fact that CPS always keeps its customers informed of such changes to ensure full compliance with the relevant legislation.

CONCLUSION

The introduction of REACH and CLP legislation in recent years has highlighted the potential dangers that chemicals can present to both humans and the environment. Accordingly, this has enabled manufacturers to use their knowledge and experience to develop safer and more environmentally friendly substances that also offer an exceptional degree of performance at relatively low cost. Ultimately, this allows organisations operating within the printing industry to maintain consistently high levels of quality and productivity in a responsible and cost effective manner, which can only help to significantly enhance profitability.

ABOUT CPS

CPS is part of the MacDermid Autotype organisation, the leading global innovator, designer, developer and manufacturer of specialised screen print chemicals and coating technology for films used in a wide range of applications. These include touch and vision systems, membrane switches, Film Insert Moulding (FIM) products for the automotive, telecommunications and domestic appliances sector and screen printing. With specialist expertise in precision coating technology, MacDermid Autotype, transforms and enhances the performance of films for many high technology and demanding applications.

In recent years MacDermid Autotype has brought screen printing to new levels of control and repeatability, reinforcing the benefits of the process for new applications such as flexible circuit printing, DVD and industrial glass printing. MacDermid Autotype's most recent launches have been of antimicrobial hard coated films for hygiene critical surface applications and of diffuser and anti-reflection films for use in flat panel displays.

The company is part of MacDermid Inc. of Denver, Colorado. MacDermid is a leading supplier of offset blanket, flexo plates and of chemicals for industrial finishing, including plating and coating of metals and plastics. ■

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ALL THE BENEFITS OF STEEL WITH NONE OF THE DRAWBACKS

Printable polyester films bring advantages to membrane switch and fascia panel production

MAPP Systems is an example of the spirit of entrepreneurship that is driving the economy of this country, even at challenging times like these. Since its foundation in 1989 it has provided other small and medium size companies with a number of services in die-cut labelling and membrane switch manufacturing. The company takes huge pride in offering customers cutting edge solutions and bespoke services, unafraid of tackling the most demanding jobs.

Having manufactured membrane switches for well over two decades MAPP Systems is fully familiar with the Autotex range of printable polyester films from MacDermid Autotype, one of the global leading producers of hard-coated plastic films for membrane switch, overlay, IMD and display applications. The Autotex range is the international yardstick for durable and screen printable, textured polyester films for membrane switch applications that, even when embossed, can give a switch life performance of over five million actuations. In addition to its outstanding flex life, attractive appearance, scratch and chemical resistance, Autotex is compatible with Windotex, a screen-printable windowing lacquer, producing clear, scratch resistant windows allowing the incorporation of LCD and LED displays without damaging the physical integrity of the front switch panel.

The secret of Autotex's success lies in the specialist coating technology applied by MacDermid Autotype. This process enhances the film's inherent features as well as allowing selective texturing, to expand the range of possible applications. Recently, the company was able to add a new line to its Autotex family, with a film that closely simulates the texture of brushed steel. Called Autotex Steel, this latest product is easy to handle and uses a special primer layer, making it compatible with most screen inks, in particular, the new range of mirror inks used to replicate the cosmetic features of steel.

Stephen Morse, MAPP Systems Managing Director, was quick to identify the potential of this new product, introducing two of his clients to Autotex Steel – one for the production of a control panel on an amplifier system, the other for a line of portable printers. The results were astonishing, as he explains: "When we presented the prototype to our clients they thought that we had used wafer thin steel and simply couldn't believe that it was in fact a polyester film.

"The beauty of Autotex Steel is that it offers a number of advantages over conventional stainless steel materials. High quality keyboard or graphics' panels can be produced at a much lower cost and can be easily embossed, making them ideal for use in applications where keys or panel areas need to have raised edges or domed switches thanks to the material's excellent flex life. By comparison, applying buttons to a steel surface would require separate components, decreasing the number of potential applications as well as making the finished product more expensive. With Autotex Steel the operation is simple and the buttons are incorporated as one single part, making it easy to create a fully sealed fascia or keyboard panel."

Unlike stainless steel, Autotex Steel does not show fingerprints, doesn't dent easily and can effortlessly be printed with clear display windows or even secret-until-lit graphics. The film offers excellent colour rendition and light transmission in clear areas with graphics being printed on the second surface, so are protected from wear and abrasion by the body of the substrate itself, which is textured and chemically resistant. Paradoxically, Autotex Steel has greater scratch resistance and a more cosmetically long-lasting appearance than brushed stainless steel, without requiring specialist cleaning materials to return each part to pristine condition. With a lighter weight, manufacturing and shipping costs of parts made using Autotex Steel can also be greatly reduced – the latter being a real bonus at times of ever increasing transportation costs. Autotex Steel is a high quality textured film, consisting of a polyester base coated with a flexible chemically bonded, UV-cured textured coating. The product is available in sheet or roll format in different gauges ranging from 150 to 200 micron, for solvent and UV inks printing. Autotex S can be windowed using MacDermid's proprietary lacquer Windotex to improve the clarity of incorporated LED and LCD windows. It is resistant to alcohols, dilute acids, dilute alkalis, esters, hydrocarbons, ketones and household cleaning agents (DIN 42 115 test method). Optically, Autotex S features a Gardner Haze test result of 50% ±5% (ASTM D10031) and Gloss Level (60°) of 25 to 30% with the grain (MD) and 8 to 10% against the grain (ASTM D2457-031). ■

Autotex Steel uses a special primer layer, making it compatible with most screen inks

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PRODUCING THE FINEST FINISH

Dietmar Engler talks to Specialist Printing Worldwide about the versatility of laser cutting and engraving

Specialist Printing Worldwide: What exactly is your company's position in the specialist printing industry?

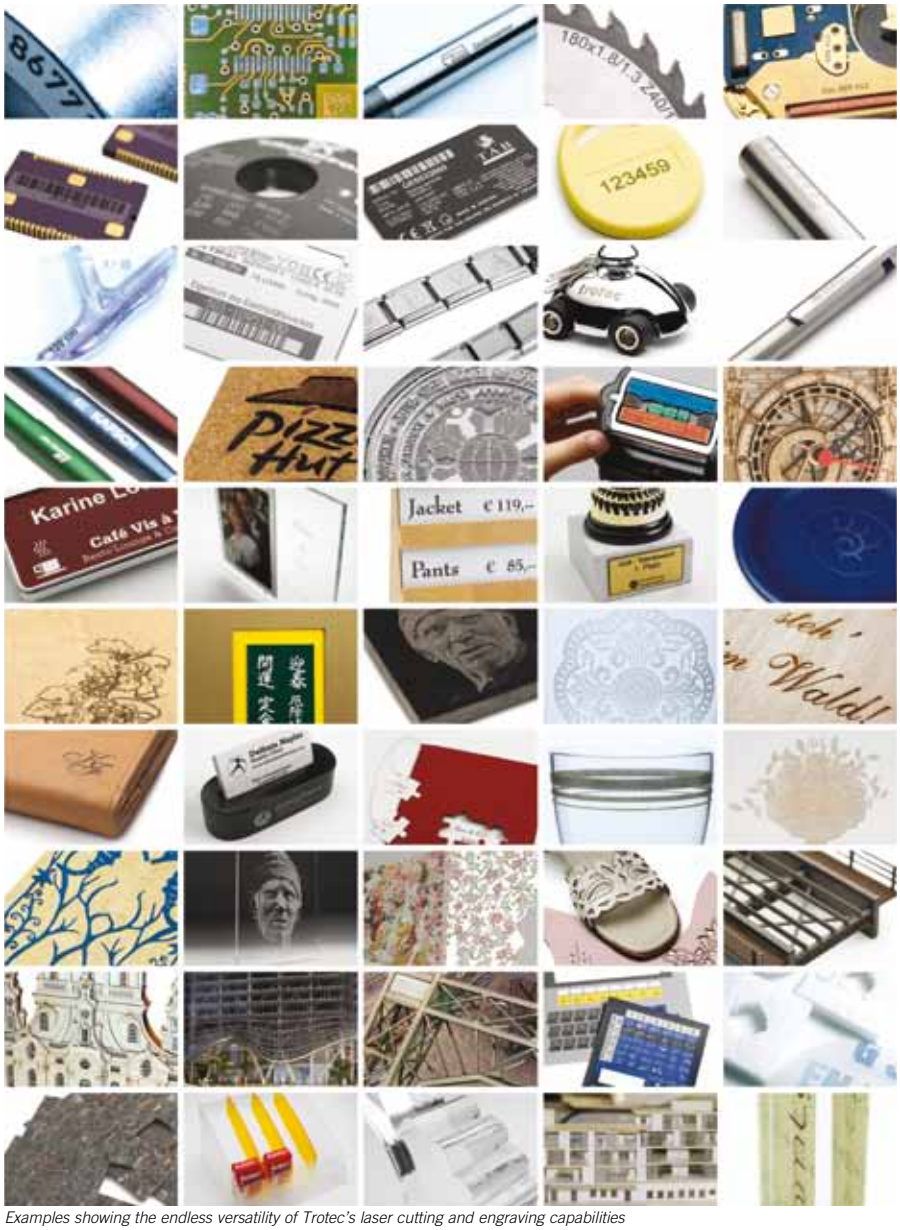
Dietmar Engler: Trotec Laser offers a comprehensive range of systems for the post-processing and finishing of printed materials, such as acrylic, paper, cardboard, MDF (medium density fibreboard) and many more. With this specialist finishing of high quality printed materials, print service providers can offer new products and services, which means they gain a competitive advantage. These PSPs, plus sign-making and display companies who provide contour cutting and laser engraving as a service, are able to expand their businesses successfully.

So in summary, our innovative solutions for the post-press process in the printing industry enable our customers to become more profitable. We aim at setting new standards in every industry we are active in.

SPW: What products are manufactured by your company?

DE: Trotec is a leading international provider of advanced laser equipment for a wide range of applications, from laser cutting and engraving to industrial marking. Our lasers stand for quality, reliability and innovation.

We manufacture flat-bed laser systems, galvo laser systems and exhaust systems. All are manufactured by Trotec in Austria.



Examples showing the endless versatility of Trotec's laser cutting and engraving capabilities

SPW: What are the company's origins?

DE: Trotec was founded 1997 in Wels, Upper Austria, as a division of Trodat, leading international manufacturer of rubber stamp and marking systems since 1912. At the beginning, the company was focused on laser engraving but, because a laser offers endless possibilities, a lot of new and interesting market segments have developed. Today we are organized in three strategic business segments: laser engraving, laser cutting and laser marking.

SPW: Are there any particular people who have had a big influence on the company and its development over the years?

DE: Teamwork is one of the key factors behind the success of Trotec. All over the world experienced laser users and development specialists are part of the Trotec team and contribute to the success of the company.

The General Manager of Trotec is Dr Andreas Penz who developed the first Trotec laser and is now in charge of Trotec worldwide. He is the strategic head of Trotec and has gained a lot of valuable experience over the years. His innovative spirit is noticeable at all levels of the company and the employees live this spirit – "Setting New Standards" are not just words for us.

As already mentioned, Trotec belongs to the Trodat group and this strong alliance has made it possible to build up a long-term strategy for the growing laser company. Trodat has been family owned since its foundation in 1912, and has been a great supporter of the development of Trotec.

Another aspect is the company's co-operation with universities and research institutions. Trotec has strong partners in these fields which also contribute to our technology leadership.

Furthermore, Trotec has a very ambitious management team with Dr Andreas Penz, General Manager, Christian Spicker, Sales Director and Dietmar Engler, Marketing Director supported by Stephan Fazeny, Head of Research and Development and Dave van Lieshout, Head of Production and Logistics.

Alexander Jauker is Product Manager SBS Cutting. He is responsible for our involvement in the printing industry and concentrates on the continuous development of the Trotec

Trotec is the innovative leader in laser technology

The Trotec Speedy 300 CO2 flatbed laser engraver is a premium-class laser engraver

laser systems to fit the needs of signage and display companies.

SPW: How has the company grown and its product range expanded and changed strategy during the course of its history?

DE: The company history by organisation is as follows, and shows its steady growth path throughout the world:

1997: Foundation of Trotec Produktions und Vetriebs GmbH
2001: Foundation of Trotec Distribution and Service Centre, Germany
2002: Foundation of Trotec Laser Inc (USA)
2004: Foundation of Trotec Laser BV (The Netherlands)
2005: Foundation of Trotec Trading Xiamen, China
2006: Foundation of Trotec Laser Canada
Foundation of Trotec Laser Japan Co Ltd, Tokyo
Foundation of Trotec Laser GmbH, Munich (Acquisition of Optiray Laser)
2007: Foundation of Trotec Laser Russia
Foundation of Trotec UK
Foundation of Trotec Laser Automation GmbH, Germany
2008: Foundation of Trotec Laser AG, Switzerland
Foundation of Trotec Laser Australia
2010: Foundation of Trotec France
2010: Expansion of Trotec UK: acquisition of Suregrave and Identify
Since the foundation of Trotec in 1997 our goal has been a global organisation to provide local customer satisfaction. Today we serve our customers with 14 subsidiaries and with distributors and service centres in 90 countries all over the world.
Our product developments have evolved as listed here:
1996: Construction of the first Trotec laser
1998: Power Laser and Power Laser Pro
1999: Speedy
2000: Speedy Compact
2001: Professional TP1313 and Vmax
2003: Speedy II and Laserati
2004: FineMarker and Speedy 100
2005: SpeedMarker CL, FineMarker Hybrid and Speedy 300
2006: SpeedMarker FL (fiber laser) and Speedy 100 R
2007: FineMarker 100, JobCreator, FC100, FP100 and Speedy 500
2008: FP 300, Rayjet, Laserati DT
2009: SP 1500
2010: Rayjet [e], Exhaust Atmos, Speedy 100 fiber, Speedy 300 fiber, Speedy 300 flexx
2011: ProMarker

Trotec's innovative designs and products are constantly setting new standards which, in turn, make our customers successful. Leading the way in innovation and quality, along with uncompromising customer focus, are important success factors.

The Speedy 300 flexx is a prime example for this innovative leadership. This laser system is equipped at the same time with a CO2 laser source and a fiber laser source, unique on the market. This makes it possible to switch automatically between the two laser sources. For example, one can engrave on organic materials and mark on metal in one set-up.

SPW: Do you have any funny stories or memories from over the years?

DE: Well, in 1997, when Trotec was preparing their first tradeshow, there was a little accident. When loading the laser it fell down to the ground. After the first moment of shock, the team checked all the functions and the system worked perfectly; even the laser beam was undamaged without any additional adjustment being needed.

And now, some years later, top companies from all over the world and a wide variety of industries trust in the Trotec quality. Printing and signage companies, awards and engraving companies, medical technology specialists, businesses involved in the automotive industry, and jewellery manufacturers are just some examples.

In addition, and this is more curious than funny, it's interesting what can be engraved and where. Customers use Trotec lasers for engraving wine casks, cheese, apples, and even sausages.

SPW: What are the biggest changes in the specialist printing industry the company has noticed over the course of its history?

DE: In the area of signage and printing, using lasers for cutting acrylics has been quite common for many years. With the expansion and market penetration of UV-curable technology and its close association with a wide range of printed materials, we've noticed the trend for creative finishing, particularly during the last three years.

Continued over

The Trotec company strategy is making customers successful

Trotec Laser's head-quarters in Wels, Upper Austria

A long-term trend is certainly the creative finishing of printed materials such as acrylic, paper, cardboard, MDF or Forex with laser systems. Unusual shapes for displays, signs or paper products make an end product more interesting and of higher quality.

Obviously one of the major changes has been the transition of finishing from specialists to general PSPs. That means that nowadays there are a lot more full service providers in the market for signage and display. Typically before, the material was printed by one service provider and finished by another; today this is happening in one company.

Print service providers and sign and display companies, who offer the contour cutting of printed materials as a service, are able to expand their businesses. Those jobs were very common for conventional knife cutters and milling machines like Kongsberg or Zünd. But in the last few years sign and display companies have expanded into contour cutting with laser systems for the above mentioned applications.

SPW: How large was Trotec when it started and how big is it now in terms of staff, output, range of products and global representation?
DE: The company was started in 1997 with five employees, manufacturing 50 laser systems per year. In 2011, Trotec can look back on a successful history with more than 10,000 installed laser systems in around 90 countries and 200 employees.

SPW: Who is the longest-serving member of staff and how long have they been with the company?
DE: There are two members who have been with the company since its foundation in 1997, with five more team members joining in 1998. This team is still on board, which confirms the fascination of working for a leading laser company. Since it was formed, the industry has developed a lot, and the applications and market segments where laser technology is used have increased enormously.

In 2009 Trodat and Trotec were chosen the best employer in Austria in the category "companies with more than 250 employees". This led to a jump into the Top 100 Best Workplaces in Europe.

SPW: Have there been any significant partnerships or alliances with other companies or industry representatives and, if so, what brought them about?
DE: Over the years we have established a number of significant partnerships. For the printing industry the most important ones are our co-operation with EskoArtwork and Evonik Industries.

EskoArtwork is the provider of i-cut, a precision registration-mark and cutting-path compensation system, consisting of a CCD camera and cutting software. It is available for the SP1500, Speedy 500 and Speedy 300. Trotec has built upon years of experience using i-cut on large platform systems and, in 2010, the company applied this knowledge to become the first laser manufacturer offering i-cut with a micro camera on a mid-sized laser system.

Evonik Industries is a world-wide manufacturer of PMMA products sold under the Plexiglas trademark on the European, Asian, African and Australian continents and under the Acrylite trademark in the Americas. Since 2011 Trotec and Evonik have built up a co-operation for the transfer of knowledge concerning the laser processing of Plexiglas.

SPW: What do you think have been the most significant product developments over the course of the company's history?
DE: The Speedy 100 and 300 platforms have certainly contributed greatly to Trotec's success. Speedy stands for reliability, innovative design, precision and, of course, highest speed and productivity on the market.

A well-protected machine interior, in combination with the Trotec patented InPack Technology, offers optimum protection from dust and fume intensive materials. Low maintenance costs and a long system lifespan are the result.

Another significant product is the JobControl laser software which stands for maximum functionality and versatility in laser processing; it's the most flexible laser software on the market. The laser system functions and suction systems can be effectively monitored and serviced. JobControl is the standard for innovative laser software.

Finally, the Speedy 300 flexx is a prime example for innovative leadership. The laser system is equipped with a CO2 laser source and a fiber laser source, unique on the market.

The Speedy 300 flexx is an exceptional flat-bed laser system which ensures maximum flexibility. This system marks and engraves on all kinds of organic materials, metals, plastics and even mixed materials can be processed in only one step.

SPW: Do you have a specific company motto or strategy?
DE: The Trotec claim is: "Setting new standards". Everyday our employees aim at fulfilling our role as innovation leader in the laser industry.

Our mission is: "Making customers more profitable" by providing them with first-class laser system solutions to fulfil their exact needs. This also means being a consultant for our customers, supporting them in their ideas, and showing them new possibilities on how to run their business more successfully. With our laser systems we give ideas for new services, new products, and added value.

SPW: What is the key to a good customer relationship?
DE: Firstly, strive to inspire your customers, to create enthusiasm amongst your customers throughout the entire relationship. Listen to your customers needs from the first contact to the after sales period. Develop and market excellent quality products. Do not just sell products but complete solutions which in the end make your customers more profitable. And finally, provide excellent service: from the first contacts, to the application samples done by our Application Lab, to the evaluation process, to the financing, to the installation, to the training on the product and software, to the application training, to a timely

technical support. All of these steps will contribute to a good customer relationship, which pays off for both parties in the end.

SPW: How does the company intend to develop generally during the next five years?
DE: We will grow strongly and will further develop our solutions for specific market segments. For the printing industry bigger platform sizes and work areas on our laser systems are, without a doubt, of interest.

SPW: How has the industry changed since the company began? What has been the effect of the growth of digital printing?
DE: In the beginning, cutting acrylics was the main application in this industry; the companies were processing jobs with less productive and smaller laser systems. With bigger and more productive laser systems appearing on the market, the applications on the customers' side developed as well. With the growth of digital printing laser systems comes new possibilities for creative finishing of printed materials. Unusual shapes add value and make an end product more interesting. As mentioned, print service providers nowadays are able to do the printing and finishing in house.

SPW: Where do you see future growth in the specialist printing industry coming from generally, and why? What do you think are the developing markets for specialist printing in general, and for the company in particular?
DE: Another growing field of application is textile printing. What can the laser offer in this sector? When cutting with a laser, no pressure is exerted on the material, the entire process is contactless, and the end product is therefore perfect. Unlike in processes using die-cutters or knives, laser cutting does not result in paint chipping off from the end product. The controlled fusion of the material results in sealed edges.

SPW: Moving on to finance and products, what is the annual company turnover and which was its best ever year?
DE: The turnover of the Trodat Group in 2010 was $160 million. 2011 has been a very good year for us and, in 2012, we are forecasting a massive, strong growth.

SPW: In terms of products, which are the biggest sellers?
DE: This is the Speedy product line.

SPW: Which regions does the company sell to? Which is the company's biggest market in terms of geographical location?
DE: Trotec generates more than 95% of its turnover from exports. With distributors in more than 90 countries and subsidiaries in France, Germany, Poland, the Netherlands, China, Japan, Russia, South Africa, Australia, Switzerland, Great Britain, Canada and the USA, Trotec is ideally placed to serve its customers the world over. The biggest markets are Europe and Northern America.

SPW: Does the company intend to expand geographically and if so where? Which of the markets is expanding the most rapidly (geographically and in terms of products)?
DE: In the next few years we will continue the expansion of our business in the USA. With the acquisitions of Identify and Suregrave in the UK, we've also positioned ourselves more broadly in that region. The Speedy product line and more specifically the Speedy flexx concept will be the strongest drivers of our growth. ■

Dietmar Engler is Marketing Director of Trotec

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AN INTERVIEW WITH STEPHEN KAHANE

Specialist Printing Worldwide caught up with the outgoing NASMA Chairman after the association's recent meeting

Specialist Printing Worldwide: Did member feedback and survey results at the recent NASMA 2011 fall meeting portray the same optimism in the market that you reported after the equivalent meeting last year?
Stephen Kahane: The optimism felt late last year into early this year has turned to caution. Members are expecting some growth in the coming year, but they're not seeing a strong tailwind in the economy. And with the coming election season, this uncertainty is expected to remain through a good part of next year.

SPW: Were any new developments or plans agreed during the meeting for NASMA to push forward with?
SK: The executive forum format we have in place now works well for us. While it may evolve over time, we have no plans to make any changes at this time.

SPW: Is NASMA's restructuring that took place in 2010 still reaping rewards for members and ultimately their customers?
SK: Once we evolved away from being a formal association with all the guidelines and various other requirements to become an executive forum, we became a slimmer, leaner organisation and we have found our stride. We are very comfortable with our value proposition and what we offer. Our members enjoy the networking, the engaged discussions on common experiences and issues, and learning from each other.

SPW: So is NASMA actively looking to recruit new members?
SK: While we want to be inclusive and build membership, our objective is not to see how large we can become. The quality and active participation of our membership and the quality of our meetings are what's most important to us.

It is relatively easy to become and remain a member. We have several simple and straightforward criteria for membership. Once met, there are no membership dues, just a nominal meeting fee. We had two new members attend our recent fall meeting – Dubuit and IFC Fabrics. In some ways, it pays to be a relatively small group because the interaction can be stronger. But it is also very encouraging that new members want to join us.

SPW: Who are the members of the executive committee?
SK: We made several changes to the executive committee. Dave Goward (Roland DGA) and Gary Gayton (Kiwo/Ulano) joined the committee, replacing Parnell Thill (Ikonics) and Steve Duccilli (ST Media), who rotated off. Other members include Mitch Bode (Fujifilm Sericol), Richard Bowles (Nazdar), David Koebcke (Sefar) and me (International Coatings).

SPW: Is it an objective of NASMA for the members to co-operate to keep business in North America?
SK: We have not taken an advocacy position in that regard. We are a relatively small organisation and do not have the market force of the larger retailers or brand companies. I should emphasise, too, that NASMA members are very mindful of the United States anti-trust laws. We don't do anything that could be viewed as violating those laws.

SPW: How far are you into your tenure as chairman of NASMA and how is a successor identified?
SK: I just completed my second year and, as it turns out, my tenure as chair. I am pleased to announce that Mike Fox (Nazdar) will now become chair. I will remain active in NASMA and on the executive committee.

Steve Kahane (centre) with Specialist Printing Worldwide's Dave Fordham (left) and Frazer Campbell.


Nazdar president, Mike Fox, is NASMA's incoming chairman.

SPW: What is NASMA's relationship with ESMA?
SK: We don't have a formal relationship but a number of our members belong to both NASMA and ESMA. So, we have an interest in ESMA's success and I am sure they have an interest in ours, too. With that said, we are two different organisations that operate independently from each other.

SPW: How does the North American market break down for textile printing?
SK: It ranges from the brand name companies, such as Nike, Adidas, Russell Athletics; in some cases they do their own printing. Then you have large contracting companies that basically go out and license. For example, they'll license with Disney for a new movie coming out and they'll print and sell to what we call the 'big box retailers' like Target or Walmart. Then you take a step down and you have the medium-to-small printers – most printers in North America come into that category. These are the folks that rely on many manual presses and one or two automatics, and they are doing smaller and, perhaps, quicker turn programmes. They are the heart of the industry here in the US because a lot of the textile industry has moved offshore.

SPW: How is the USA market impacted by imports of cheap printed textiles from Asian countries?
SK: We have certainly seen an impact, there is no question about that. A lot of the textile industry has migrated away from the USA. But what we are seeing and what happened during the recession is that some of the big box retailers wanted to shorten their supply chain. So instead of an eight-week turn, they wanted it closer to a three-week turn. So they moved some of their printing and some of their textile manufacturing to Mexico, Central America, and the Caribbean. So there is a thriving textile market just south of the USA. Some of the larger runs may still be done in Asia for example, but some of the replenishment or the quick turns will be done in Mexico, Central America or the Dominican Republic.

SPW: What has been the impact of digital printing in the textile sector, and how have screen-printers responded to the challenge?
SK: Digital is a growing technology and so far it has complemented the textile screen-printer. The digital market has grown for one-off, for sampling, very low volume, speciality type programmes. And with the growth of the Internet, there have been these customised Internet based opportunities such as putting your family's faces on a T-shirt. And that is a very interesting niche, because with digital on the Internet, you get a $3 T-shirt that you can custom embellish and charge $20 for. That compensates for the relatively high capital costs. Screen-printing still predominates for larger volume runs and for certain effects that can be offered.

Through its members, NASMA incorporates the different technologies and it covers the suppliers that include consumables such as inks, chemicals, mesh and equipment companies. So it's covering the range of both digital and screen for graphics and textiles. Certainly some people get nervous about new technologies and their possible impacts, but sticking your head in the sand is not the answer!

SPW: Are there any niche high-end textile printing sectors developing?
SK: There are always high-end niche developments happening because printers are always looking for something new, and their customers are always looking for something new. With special effects or speciality printing, people are always looking at what they can be doing new and differently. For example, at the International Coatings booth at SGIA '11, we offered new print application techniques with, in some cases, new types of inks, like non-PVC inks for example. It is an ongoing evolution. ■

Stephen W Kahane is outgoing Chairman of NASMA

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GETTING PREPARED FOR 2012

There's a busy year ahead for ESMA and its members

Peter Buttiens

ESMA is to feature pavilions at Drupa and glasstec during 2012

The first item on the agenda is 3 February when ESMA is organising the Sportswear & Fashion T-shirt Printing Conference in Stuttgart which has been finalised with two keynote speakers, Bio Racer and Kiesewetter, and eleven presentations. The programme covers a variety of topics for digital and screen-printing, including software, on-line design and ordering, ecology and sustainability and the latest developments in applications. More information can be found on the website at www.textile-printing.org

From 3 to 16 May, the world of printing will gather again in Düsseldorf for Drupa 2012. During this event ESMA and twelve partners will launch ESMA Screen City: 'The World of Functional Printing' in a 480 square m pavilion in Hall 3.

Drupa and ESMA are co-operating to promote screen-printing and functional printing. A special website will be launched by ESMA to promote all partners activities on the pavilion during the next few months running up to the exhibition.

ESMA will organise 'Future of Print: Functional Printing/3D printing' on Sunday 13 May, a one day conference in the Drupa Cube in Hall 7A. The concept is a small conference with five presentations and one keynote speaker. The price, €195 for non-members and €165 for ESMA members, includes access to the show and the Drupa Cube, plus all presentations, lunch and a networking gathering after the conference. ESMA is now the official associate partner for Drupa 2012.

During glasstec 2012, from 23 to 26 October in Düsseldorf, ESMA will have another potentially successful pavilion of 300 square m in Hall 12. This world-leading glass exhibition is becoming more and more attractive for printing applications, and its goal is to promote printing solutions within the world of glass.

Following a beneficial co-operation between ESMA, Chameleon Business Media and Messe Düsseldorf, support for the GlassPrint Conference 2011 is already provided by glasstec. All companies interested in joining the glasstec pavilion are welcome; please contact pb@esma.com.

A small on-line survey held by ESMA amongst its newsletter readers revealed some interesting results. The newsletter is a free subscription; the majority of readers are manufacturers with an equal split between digital and screen. Of all subjects covered in the newsletter, printed electronics and functional printing seem to be of the greatest interest to readers. Other subjects that matter are apparently wide-format print, textile, glass and, also, interior decoration.

You can sign up for the ESMA newsletter via www.esma.com ■

Peter Buttiens is CEO of ESMA

ESMA
Driving Print Excellence

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INDEX TO DISPLAY ADVERTISERS

PRINTING VERSUS IMAGING

Michael E Robertson expands on the role of changing business models

The words 'printing' and 'imaging' are often used interchangeably in today's market-place. I suspect that if graphics' producers ask their customers if they perceive a difference in the terms printing and imaging, most would not. The customer is more concerned with the product and implementation than the production method.

But looking ahead, I believe the terms printing and imaging will differentiate and help define sectors within the graphic production community. We see some of the differences today. The traditional lithographic community has been hit hard by commoditisation, excessive competition and declining market share as electronic information has reduced print production.

Some lithography companies have turned to speciality applications such as wide-format imaging to supplement declining income from traditional print. But many have struggled with the dramatically different business model required for digital imaging. Often, they are approaching imaging with a traditional print mind-set. Those lithographers that employed digital document production before adding other imaging capabilities, such as wide-format, seem to make the transition more effectively.

On the other hand, graphics producers driven by an imaging philosophy are open to a host of technologies and image presentation solutions that could benefit the customer. They probably have traditional print and digital imaging technologies as their core capabilities much like their more traditionally minded competitors, but they see the marketplace in a different way. For these companies an image can take many forms and be presented many ways. They are more concerned about the image than the technology.

It's a challenge to develop and maintain a corporate philosophy that is truly ready to respond to change. I know graphics' producers who are successfully expanding into new markets because they effectively change their business model to suit opportunity. And I know graphics' producers who have failed when they couldn't apply conventional print ideologies to emerging technologies. A long history of success can make changing the business model even harder. It's difficult to balance past success and future opportunity when they require different ideologies.

Today, we tend to think of printing and imaging as interchangeable labels that describe the general focus of our community, but, in the future, the real difference between the terms 'printing' and 'imaging' will be found in the business philosophies of graphic producers.

Traditional print will continue to lose market share to electronic communication, but opportunities for imaged products abound throughout the business landscape. New technologies and expertise are opening new markets for imaged products all the time. Imaging, in its many forms, probably touches more markets than any other process.

The SGIA community is succeeding because they're bringing valued solutions to their customers. We're fortunate that emerging technologies complement the community's experience and expertise, and support the community's efforts to address the changing needs of their customers.

Looking ahead, the rate of change will just get faster. The needs of customers will continue to change. New technologies will simultaneously create opportunity and disrupt the status quo. But at every turn, imaging will be a valuable component that offers profitable opportunities in a host of markets. ■

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

SGIA
Specialty Graphic Imaging Association

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Crowded booths confirmed the popularity of all printing techniques

HIGH LEVELS OF ATTENDANCE CONFIRM SGIA EXPO'S POPULARITY

A prominent date in the calendar is SGIA Expo and this year's event, held in New Orleans, featured a host of exhibitors along with a selection of different zones which were aimed at providing demonstrations and presentations covering specific production areas and techniques. The show ran from 19 to 21 October, with high international attendance across all days proving that speciality printing technologies remain of primary importance to printers from all over the world.

Interest was high across all technologies being exhibited

With hundreds of familiar leading exhibitors showcasing their products and services, digital and screen-printing were complemented by all elements of finishing, plus materials, with the decal and garment markets also being strongly supported.

SGIA has reported that more than 16,000 visitors attended the three-day show and, in addition to viewing a strong selection of innovative equipment, software solutions and ancillary products, many took part in the educational sessions. These were a strong feature of this year's event and included hands-on learning for a variety of industry segments, including the Digital Apparel Production Zone which provided the ideal environment for print companies wanting to find out more about this market, plus the Digital Signage Zone which enabled people to discover more about the technologies employed in this display sector.

Everyone intrigued or with a practical interest in industrial production and the

Networking opportunities are always a good reason for visiting SGIA Expo

world of printed electronics had a Zone which specifically catered for this market segment, with diverse topics such as medical and 3D object printing also being included. Also of interest was the Zone catering for the growing demand for narrow-format applications, and this was designed to enable attendees discover the benefits of adding labelling, name-plates, decals and smaller point-of-purchase products to their range of services.

Finally, the PDAA Graphics Application Zone created considerable attraction for visitors interested in wrapping not only vehicles but other everyday and unusual items, whilst the Screen Printed Apparel Training Zone featured interactive sessions which took on board a wide range of related topics. This latter area provided proof, indeed, that screen-printing continues to be a buoyant and innovative market sector.

Sponsored this year by leading manufacturers in the platinum category, including EFI, HP, Agfa Graphics, Durst and Fujifilm, these were complemented by gold sponsors such as INX Digital Roland DG and Epson. All played an important role in the show's success by exhibiting and demonstrating their latest solutions for digital production.

There were interesting and innovative Product of the Year Awards which included the Océ Arizona 360 XT printer which won the Flatbed Rigid White Ink UV (less than $200K) category, continuing a tradition of being honoured with this award every year since the Arizona product line has been shipping. Asphalt Art won the award in the Media-Films section whilst Roland DGA announced that the company's new ECO-UV S ink took top honours in the Digital Ink category. Interestingly Ilford was successful in the Media-Vinyl category with its recently acquired BioMedia display film products.

Other successes were Visual Magnetics with its VM-Canvass-22 in the Media-Textile category and Mimaki, who won two of the Test Print Shoot Out sections with the JV33-130 in the Poster Size Solvent/Latex printers and the JFX-1631 which was victorious in the Flat Bed Rigid Substrate UV (less than $200K) category.

Another popular winner was EFI with its VUTEk GS3250LX in the category for flat-bed-rigid substrate printers. "This year's SGIA was a big success for EFI on many fronts, including our breakthrough GS3250LX printer with innovative LED UV-curing technology taking home a Product of the Year award," states Scott Schinlever, Senior Vice President and General Manager of Inkjet Solutions at EFI. Next year SGIA Expo returns to Las Vegas Convention Center in Nevada, another popular location for exhibitors and visitors. The dates of the show are 18 to 20 October 2012. ■

Further information:
web: www.sgia.org

STANDING ROOM ONLY AT NOTTINGHAM EVENT

Alan Shaw shares his enthusiasm for the future of screen-printing

"Screen-printing is finished, it's a dying process"
"Digital can do anything that screen can do"
"It is not worth investing in screen"
"Why would I buy a new screen-printing press or dryer?"
"Screen-printing has no future"

Hearing these comments with increasing regularity whilst at the same time being involved in so many new and outstanding screen-printing installations around the world, we (Natgraph and Sakurai) decided to do something about it, to inform the market of the success we are having and to share news of the outstanding screen technology that we so regularly see being installed.

An event to confirm the viability of screen-printing with print demonstrations would be a good idea, but would people come? The pressures we all work under today mean that, unless a company is close to considering a purchase of equipment, it will probably not be prepared to invest expense or time in sending someone out for a day or two.

So, what incentives could we offer to get people to come? We decided that technical presentations from leading industry manufacturers would be a great attraction and, as Natgraph represents both Grünig screen washing, stretching, coating systems and CST for computer-to-screen systems in the UK these were the obvious start point, with Marabu inks supporting the initial team. If other leading industry suppliers could give presentations showing how to increase efficiency, give an insight into new developments and market opportunities, then screen-printers, particularly those involved in industrial products, should surely find this event of interest?

Alan Shaw (right) talks to international visitors at the event

The objective to demonstrate the latest innovations in printing and drying machinery, as well as new consumables and ideas, was complemented by several other leading manufacturers all supporting the event with a table top exhibition. The idea grew into a three day, action packed event that became 'Screenprinting – The Future'.

We were delighted that FESPA sent along Chris Smith who produced an independent report on the event, which we have been given permission to use, so read on for his observations on all that took place. ■

NATGRAPH AND SAKURAI: 'SCREENPRINTING – THE FUTURE'

Chris Smith reports on his experiences at this valuable event

I spent a very interesting couple of days at Natgraph in Nottingham in October where the company, together with Sakurai, had organised a three day event entitled 'Screenprinting – The Future'. With a clutch of leading suppliers to the industry, Marabu, MacDermid Autotype, Kiwo, Sefar, Grünig, CST and ScreenX! participating in the event as well. Those of us fortunate enough to be a part of this event were about to explore new initiatives in screen-printing and to assess where screen was today and where it was going. Primarily, the objective was to explain how printers can make the process more efficient and more viable (therefore more profitable) by using latest technologies from top manufacturers. Natgraph had managed to convert part of the factory into a fully equipped lecture theatre which was ideal for the event; but Alan Shaw told me that, to add to the confusion, on the previous day (Monday) two lines left the Natgraph factory for the US, one for the SGIA show and one for a customer. This involved loading three 40' containers and three airfreight boxes. How they managed I do not know.

I was amazed to discover that people from all over the world had come to Nottingham for this event which was testament to the fact that printers and users of the screen-printing process do want to learn about the latest developments in screen and see where the future lies.


Gold special effect ink provided an awesome sight

High attendance at Natgraph's Nottingham premises

Two visitors (one from India and one from South Africa) had come specifically to attend this event, together with delegates from Germany, Poland, France, Russia and Hungary plus a large group from Scandinavia. In total more than 250 people were involved at some stage or other over the three days and the view of all those that I spoke to was very, very positive. There was an infectious buzz about the whole event, which gathered momentum as each day (and night) unfolded.

BRILLIANT AND INFORMATIVE PRESENTATIONS

Chaired by Peter Kiddell, Director of Prism (the UK FESPA Association), we were not only treated to some brilliant and informative presentations, but also attended printing, drying and finishing demonstrations as well as undertaking a tour of the factory. I was last here in 1999 and it soon became clear that significant major changes had been made since my last visit. The factory is now much bigger (by the addition of two adjoining units) and now totals 4,000 square m.

So let us start with Natgraph, the world's leading dryer manufacturer who, in partnership with Sakurai, is installing fully automatic screen lines each month in countries all over the world. Alan Shaw, Commercial Director, welcomed us all and hoped we would all gain worthwhile knowledge and information as well as enjoying our time at the event.

Alan said that, in 31 years, Natgraph have installed more than 13,000 pieces of equipment in 91 plus countries, all of them manufactured in the company's modern factory in Nottingham, UK. I am sad to say that manufacturing in the UK has diminished to such an extent that there is very little left, but at Natgraph it manufactures 95% of its whole range of products at its factory, so this truly is a British manufacturing company. Alan introduced a short video (www.natgraph.co.uk) which tells part of the Natgraph story, so please do look at this so you can see just how fine their products are.

New and innovative products improve the screen process further

'Screenprinting – the future' being printed

SHORT-RUN PRODUCTIVITY

During his introduction, Alan mentioned a recent visit to Italy where he had been so impressed observing a female Sakurai cylinder press operator printing runs of just 25 off (for membrane switch and flexible circuits) with four plus colours and her change-over of ink and screens took just ten minutes for each. She was also able to change complete jobs, including substrate size and ink types in just 25 minutes. Her work rate and make-ready time, as well as print quality was incredible, so short runs are possible even on a cylinder press and can therefore be very profitable.

Alan then introduced Shoichi Komi from Sakurai, Director of International Trade, who told the story of Sakurai's growth since 1946 and its involvement in manufacturing screen cylinder presses since 1968. Komi also described how cylinder screen-printing had distinct advantages over more traditional flat-beds due to less interference to the mesh, and showed some impressive statistics as to how this was achieved. We would later see two of the machines in action.

I firmly believe that those fortunate enough to be attending this event derived considerable benefit from the technical presentations made by the companies involved. As one would expect, the representatives from the manufacturers were so knowledgeable and spoke with much passion about their products that there is no way I can begin to show in this short report the detailed information, facts and figures they so ably demonstrated during their presentations. But I don't need to as Natgraph has made all of the presentations available on its web site.

It was a great event to remind everyone of the capability of the screen process and update us with the most recent technologies which could save printers money as well as assist them in meeting their environmental obligations – in effect making them more efficient and productive. I am not a screen-printer so much of the technical information went way above my head, but the general buzz from the printers around the table-top

Continued over

stands during breaks and demonstrations was highly charged and quite infectious. I truly believed that all those attending learnt a lot, as well as having a great opportunity to network with international colleagues which was so worthwhile and valuable.

Everyone I spoke to made many valuable new contacts during their time at the event and this in itself had been extremely worthwhile. But when one added to it the tremendous information supplied by the co-exhibitors in the event, it really was a most informative and rewarding gathering.

FULL FACTORY TOUR

In addition to the speaker programme we were treated to industrial screen-printing demonstrations, print finishing demonstrations and a factory tour where all visitors were able to see Natgraph's complete manufacturing processes. Something fairly new in the factory was a large, fully automatic laser cutter which cuts up to 12mm thick steel for the fabrication of Natgraph's dryers With the recent acquisition of this laser, Natgraph has increased its efficiency dramatically.

Natgraph and Sakurai have to be highly commended for the initiative in organising this brilliant event. A lot of time, effort, energy and money went into this and delegates were as surprised as me to find that as well as lunch on all three days, the hospitality extended to fabulous evening meals for those staying overnight.

One final word of thanks goes to the whole Natgraph team who were subjected to this strange invasion by so many international visitors yet continued to work on regardless. The whole operation was overseen by Michelle Kennedy, Sales and Marketing Manager at Natgraph and she did a really remarkable job as everything seemed to go so smoothly. Thanks from everyone Michelle for all your hard work.

It was great to be a part of this event and if anyone requires further information about any of the suppliers, you will find them all on the web or shortly you will be able to access the presentations and a video of the event itself via the Natgraph website.

To me, this coming together of so many people from all over the world, all of whom were hungry for extra knowledge or understanding of screen-printing, proved that Natgraph and Sakurai got it right with 'Screenprinting – The Future'. Well done! ■

Chris Smith is Head of Membership Services at FESPA

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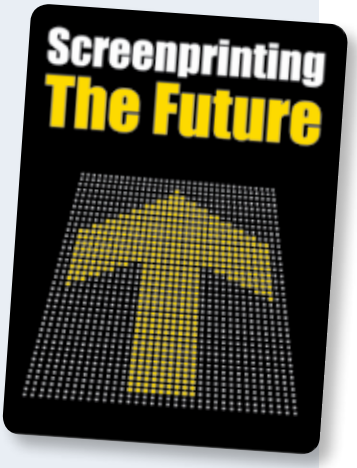
ALAN SHAW SUMS UP



As can be seen from the report opposite, 'Screenprinting – The Future' was extremely well attended, with the high majority of the delegates coming from outside the UK. (28 came from Scandinavia.) Those that came were not disappointed. They were treated to a wide range of examples, applications and industries where screen-printing is having continued success as a vital part of the manufacturing process of many new and exciting high value products.

One of the many highlights of the event was an industrial print demonstration entitled 'Virtual Reality in Print' which involved a six-colour, double-sided, 3D mirror finish print designed to include automotive trim quality, with functional and promotional features.

Also, each exhibitor was showing new and innovative products to improve the process still further, as well as details of how to produce printed effects and quality prints that digital cannot commercially compete with. The response from the delegates and exhibitors was just wonderful, with much food for thought and the seeds of many new projects being sown.

I was personally delighted to give a presentation expanding upon the future of UV curing (electronic or LED?), answering questions that we at Natgraph receive every week about this evolving technology. All of the presentations given at the event are now available for download from our website www.natgraph.co.uk/screenprintingthefuture

GOING FOR GOLD – AT HIGH SPEED

Seeing a high speed Sakurai/Natgraph Cylinder line running at 3,600 prints per hour was also an awesome sight to behold; even veterans of the trade were amazed to see a gold special effect ink being printed in such high quality at these amazing speeds. "Who said screen is dead?" was heard more than once!

Comments on the event included:-

Peter Young of GSM Graphic Arts: "It was a very brave move to stage this spectacular screen-printing showcase. At a time when the print world is on its back foot, it was fantastic to see our industry come out fighting and pass on so many positive messages. Natgraph and Sakurai should be commended for their enterprise."

Amit Shah from Spectrum Scan Pvt. (Mumbai): "Great event, great effort, great speakers."

Artem Nadirashvili from MIDI Print (Russia): "There was a lot of extremely interesting and very useful information; we also had a unique chance to meet a lot of interesting people."

Jacek Stencel from Pasja (Poland): "Very professional, fantastic information to help me plan for the future and forecast much more accurately."

These comments and the general buzz confirmed that Natgraph and Sakurai had indeed done the right thing in holding this unique event. A real bonus was the receipt of two orders for Sakurai and Natgraph that were not at all anticipated. One UK screen-printer was so impressed by the performance of the equipment, that he went back to his factory to collect a special substrate to carry out a test there and then, and an order was confirmed in the final moments of the event.

I would like to thank all of the companies and people who helped put this together. The attendance proved it was the right event at the right time and is already being emulated by others – what do they say about imitation and flattery?

So, in conclusion, all of those involved know that this was a success on every level, technically, commercially and socially. But above all it was confirmation of what Natgraph and Sakurai already knew so well – screen-printing does indeed have an outstanding future!

Note: The event was filmed and can be seen on Natgraph's website as well as on YouTube (Natgraph – Screenprinting The Future) ■

Alan Shaw is Commercial Director of Natgraph

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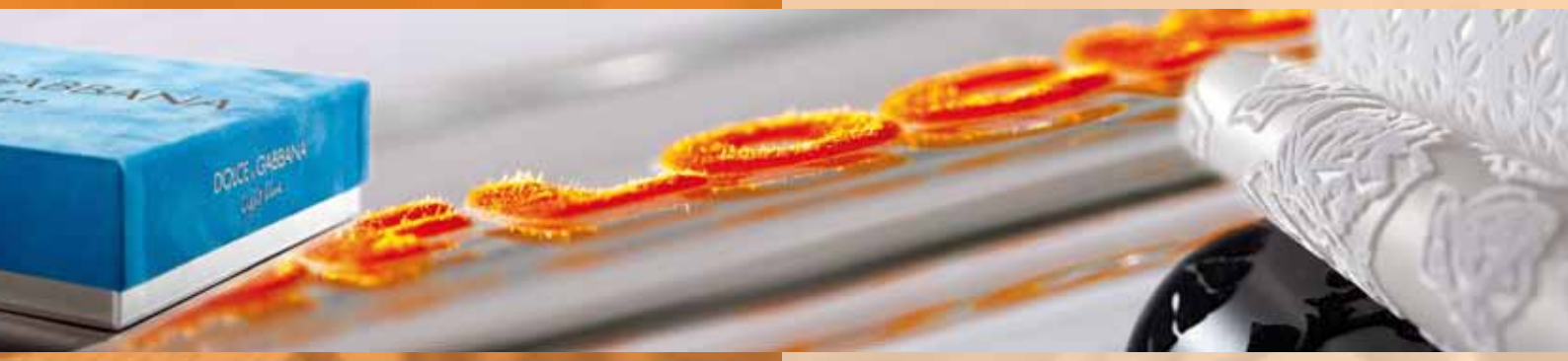

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