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Report



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Analysis



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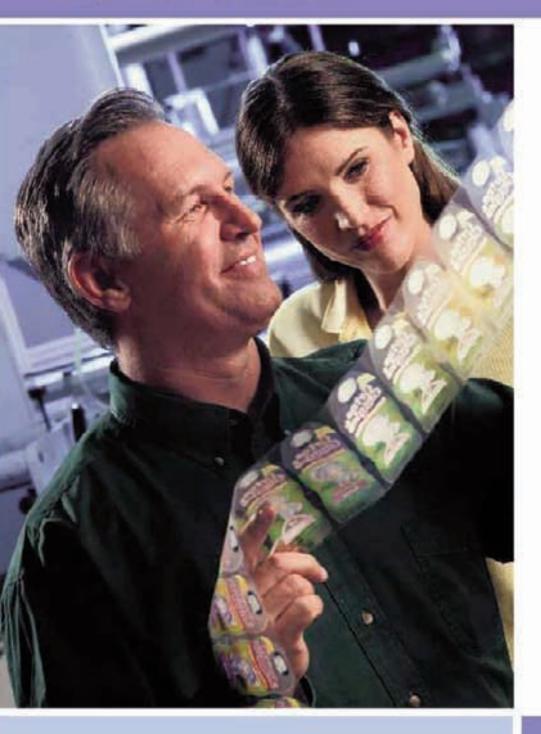








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Leader

he environment has never been such a prominent issue for consumers. But there is a danger in the headlong rush of global brands to be seen as 'green': label converters may be compelled to use materials and adopt practices which do not particularly help the environment but just add additional costs (and guess who has to pick up those costs?).



Eco design guru Wendy Jedlicka, writing in global design agency Interbrand's BrandChannel publication, cites a 2007 report by the TerraChoice Environmental Marketing agency, which examined 1,000 products making environmental claims. The report found that all but one of the products, ranging from personal care brands to televisions and printers, made claims which were 'either demonstrably false, or risk misleading intended audiences'.

"When label converters are asked by customers to adopt more expensive or untried inks, adhesives and substrates, they might justifiably ask the end customer to consider whether real environmental benefits are offered"

When label converters are asked by such customers to adopt more expensive or untried inks, adhesives and substrates, \neg for example recycled papers which present an inconsistent print surface, they might justifiably ask the end customer to consider whether real environmental benefits are offered.

Another simple example: is a PLA substrate manufactured from corn starch necessarily more environmentally friendly than a PP substrate which is going into a well regulated recycling system? Particularly when the likelihood of that PLA film ending up in an industrial composting system is remote?

The wider issue is a lack of standards in this critical area. The environmental standards initiative by the Printing Industries of America – announced at the LPIA meeting in Florida covered in this issue of L&L – is a welcome start. The TLMI and FINAT also have experts in this area which should be fully used by label converters. Indeed, our principal trade organizations should see developing sound, cradle-to-grave environmental arguments for all label materials as a key service to members going forward.

Andy Thomas Group Managing Editor



The market for home care products is more competitive than ever, but now you need never worry about finding labelstock that stands out from the crowd. Our selfadhesive film range includes clear materials designed for the no-label look as well as the new Raflex Plus, a unique face material that combines conformability with exceptional print results. What's more, self-adhesive label technology makes short print and label runs simple and economical, while advances in recycling mean the labelstock is an environmentally sound option. To outshine the competition and dazzle your customers, get in touch today. **Passion for films.** www.upmraflatac.com



Labeling news

Flexo4All alliance promotes flexo

Nineteen companies have joined forces and resources to set up a partnership under the name 'Flexo4All'. Flexo4All is the natural evolution of 'Flexo the Alternative', an agreement between independent businesses initiated by DuPont Packaging Graphics over 20 years ago.

Flexo4All is a strategic cooperation which combines worldwide expertise from independent companies; suppliers of the graphic arts and packaging printing industry. The members work together in partnership, sharing their experience and knowledge to perfect Flexographic packaging printing while also promoting the advantages and innovation. Born to be a strategic cooperation and not a commercial joint venture to sell complementary products or services, Flexo4All is aiming at:

- Encouraging networking within the flexo industry to create active co-operation among all partners
- Connecting the competence of all members to deliver knowledge and added value solutions worldwide
- Promoting the value of flexography as the best technology to satisfy all printing needs
- Achieving improved and sustainable service for the Flexographic Packaging Printing industry

The Flexo4All partners are: Bobst (Switzerland); Comexi (Spain); Degraf (Italy); DuPont (Packaging Graphics, Authentications and Tyvek Graphics) (Germany); Eckart (Germany); EskoArtwork (Belgium); Fischer & Krecke (Germany); Gallus (Switzerland); Gidue (Italy); SunChemical/Hartmann Druckfarben (Germany); Lohmann Tapes (Germany); Omet (Italy); Praxair Surface Technologies (Switzerland); Rotatek (Spain); Siegwerk (Germany); Soma (Czech Republic); Tesa (Germany); Uteco Converting (Italy); Windmöller & Hölscher (Germany).

More information can be found at: www.flexo4all.com

Markzware settles dispute

Markzware, developer of preflighting, data extraction and conversion software, has announced that Enfocus/Artwork has entered into a settlement agreement for its part in the patent infringement lawsuit Civil Action No. SACV07-461-JVS, filed in the Central District of California in May of 2007.

Technologies at issue included preflight products as described in the '641 patent. The agreement resolves all pending litigation between the companies. Details of the settlement are confidential.

Flint reorganizes narrow web division

XSYS Print Solutions, a division of Flint Group Inks, has changed its name to Flint Group — Narrow Web. The name change is the last in a long series of re-branding exercises for the specialist narrow web ink maker, which started out as part of the Akzo Nobel group, then became ANI, then XSYS before its acquisition by the Flint Group.

Commenting on the name change, Russell Joyce, president and general manager of Flint Group – Narrow Web, said: 'For many years the business and company we have represented has continually developed, and now within the Flint Group company that development continues.

The XSYS Print Solutions brand name has been the right thing for the business and the Narrow Web division has continued to make great progress under this brand. Flint Group as a whole offers a unique leading position in the printing and converting industry and by linking our division clearly to the group we show the growing opportunity of what a resourceful supplier is capable of.'

Flint Group also announced the formation of another new global business unit, Flint Group Flexographic Products. It combines the Flint Group Printing Plates activities with the rotec sleeve business, which was included in the Flint Group acquisition of Day International in 2007.

Avery licenses RFID

Avery Dennison RFID has entered into an initially exclusive agreement to license its patented strap attach technology to Mühlbauer AG for its TMA 15000 smart label strap attach equipment. Mühlbauer AG is the first company to be licensed the manufacturing process rights for this technology.

'Our converter partners have expressed great interest in manufacturing RFID inlays for unique applications that the Avery Dennison portfolio does not address,' said Bob Cornick, vice president and general manager of Avery Dennison's RFID division.

The patented strap attach manufacturing process is an alternative to conventional direct chip attach technology and leverages Avery Dennison's core competence in roll-to-roll manufacturing and materials.

The Avery Dennison process creates RFID inlays by placing pre-fabricated straps (a microchip and a connection element on a carrier sheet) on antennas. This allows converters to create RFID inlays without the high accuracy and clean room requirements needed for attaching the bare microchip directly to the antenna.

Stork Prints finds high dot solution

Stork Prints, the inventor of rotary screen printing technology, may have found a solution to a problem that the coating and printing industry has been coping with for a long time – how to apply high dots of paste on a substrate without the problem of smearing.

Wim Claassen (pictured), application specialist at Stork's Technology Center, found the answer while working in a situation where the required dot height was causing the pre-flow problem of paste pouring through the screen before the substrate reached the application point.

'I found that we could solve this problem by using special screens, and extra rollers to guide the substrate around the screen,' said Claassen. 'This way, the substrate itself stops the paste from dripping through, at the exact spot where it should be applied anyway. Once we discovered this worked, I just couldn't imagine why nobody had thought of it before.'

The invention is claimed to not only solve problems with existing applications, but also to enable a range of entirely new uses in printing and coating. 'Just think of glue dots, anti-skid patterns, relief printing and lots of other applications, both for functional and aesthetic reasons. Combined with the advantages of rotary screen technology, this is a great way to add value to products.'

At Stork's Technology Center, specialists have already succeeded in applying dots and patterns from 50 to $1,000 \,\mu$ m, instead of the 50 to $200 \,\mu$ m that has always been considered the maximum possible dot height.

'It is very likely that we will succeed in applying even higher dots,' said Claassen, 'but we are still testing this. Our invention also provides more design freedom because it enables the use of larger screen holes and lower viscosity pastes.'

After succeeding in guiding the substrate around the screen, Claassen also tested if it could solve another persistent screen printing problem: screen blocking caused by dried out paste. His solution turned out to do so, by preventing the evaporation of solvents in pastes, which often occurs in processes requiring a slow printing speed, such as coating cling film.



Macfarlane Group acquires Online Packaging Limited

Macfarlane Group acquired Online Packaging Limited for approximately \$5.1 million.

Online was established in 1994 and is based in Gloucester, UK, with additional sites in Wakefield and Hinckley. Online complements Macfarlane's existing packaging distribution activities in the UK, particularly in the South-West and in Yorkshire. The current management team at Online will remain with the business post-completion.

Clondalkin Group acquires Accutech Films

Clondalkin Group has acquired Ohiobased Accutech Films, a producer of flexible plastic films for industrial, agricultural and food and beverage applications.

The acquisition further expands Clondalkin's presence in the North American flexible packaging sector. Accutech will augment Clondalkin's plastic packaging businesses that include Fortune Plastics which has several production facilities in Connecticut, Tennessee, Illinois, Florida and Arizona – as well as Toronto-based Direct Plastics acquired in June 2007.

Grafotronic opens new factory

Grafotronic, the Swedish manufacturer of slitter rewinders and die cutting machines, has opened a new assembly facility to handle growing demand.

'Now we can assemble and test ten Grafotronic machines at the same time in a modern and efficient working environment,' said Mattias Malmqvist, vice president sales at Grafotronic. 'At Labelexpo in Brussels and shortly thereafter we sold more than 20 machines in Europe alone and now we have the capacity to meet our increasing business also from other areas such as South America, Asia and Africa.'

Labeling news

New UPM Raflatac coating line operational

UPM Raflatac's new special products coating line at its Tampere factory in Finland is now fully operational. The design of the new coating line is based on UPM Raflatac's proprietary technology with special emphasis on versatility in terms of production technologies and cleanliness in production.

UPM Raflatac has also reinforced its special products development organization and team of technical experts.

UPM is to reduce production capacity at its label plants in Finland and Australia after a review of its operations. The global forest products group said it would close three 'outdated' coating lines at its self-adhesive label materials operation in Tampere, Finland, and one in Melbourne, Australia, by March 2008, with the loss of around 30 jobs. The firm said it would transfer products from the Australian coating line to other production lines, and the factory would continue to serve the Australian market with locally produced materials and imports from other Asian factories.

Hammer wins five awards

Hammer Packaging has been honored with five awards in the 2007 International Gallery of Superb Printing competition in the categories of sheetfed offset and flexography printing. Hammer received the following awards: Gold – Dixon Schwabl for production of 'Tavern on the Green'; Silver – Spiderman 3 and Ayala's Herbal Water; Bronze – Night at the Museum and Honorable Mention – Tradewinds Tea House

Winners were selected from more than 2,250 entries from around the world. The competition is produced annually by The Graphic Professionals Resource Network.

Kocher+Beck acquires ADT

Kocher + Beck has acquired American Die Technology, therefore becoming the second largest tooling manufacturer in the US.

ADT was founded in 1985 in Atlanta, Georgia and is now located 30 miles north of Atlanta in a 52,000 square foot facility in Suwanee.

Kocher + Beck USA will manufacture hard tooling at the Suwanee location. The product range includes engraved rotary tools for various applications, which consists of EDM, Marathon, AD2, Platinum, AD1 and Thermalizer dies. In addition to rotary dies are hot stamps, removable blade sheeter/perforators, anvils/pressure rolls, printing cylinders, gears, Equalizer pressure monitors, multi scorer units and magnetic cylinders manufactured in Suwanee, Georgia. All flexible dies are manufactured in Kocher + Beck's Lenexa, Kansas facility.



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GEW strengthens Benelux presence

In a move to strengthen its presence in the Benelux countries, UK-based UV systems manufacturer GEW (EC) Ltd has announced its alliance with Sadechaf UV and IR Technology for the sales and service of its equipment in the region.

Based in Turnhout, Belgium, Sadechaf is a service oriented, privately owned company that has over 15 years experience with UV systems for all the major printing processes as well as for coating and specialized industrial applications.

J & H Printing Solutions opens Latin American operation

J & H Printing Solutions, a distributor of narrow web and wide web flexographic printing and converting equipment, has announced the opening of J & H Latin America.

Effective immediately, Hiram Garcia will assume the responsibility of managing director of the new venture with offices located in Monterrey, Mexico. Garcia will be charged with the task of introducing the J & H product line to the Latin American market and also overseeing after sales service.

DuPont Packaging Graphics celebrates patent milestone

DuPont Packaging Graphics has achieved the registration milestone of 125 patent families consisting of more than 600 patents and applications worldwide. These patents, which represent the technological innovations of the Packaging Graphics business, cover a wide range of products, equipment and processes.

'Since the introduction of DuPont Cyrel photopolymer printing plates in 1974, we have been working with our customers to develop innovative technologies to advance flexography,' said Lisa DiGate, global business director, DuPont Packaging Graphics. 'These patents represent our investment in flexography, the package printing industries and in the innovations that our customers value.'

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Weldon takes on new agencies

New-Delhi, India-based Weldon Celloplast has been appointed agent for US companies Bunting Magnetics and Tailored Solutions. Weldon was founded in 1982 by Harveer Singh Sahni, and is a producer of a variety of customized self adhesive label materials, specialty tapes and security labelstocks.

Bunting Magnetics produces a range of magnetic products for the printing industry, including magnetic cylinder, embossing cylinders, print cylinders, anvil rollers, metal decoration cylinders, hot stamping bases, flat bases, etc. The company also offers a broad line of permanent magnets and magnetic equipment for industrial use.

Tailored Solutions has named Weldon exclusive agent in India, Pakistan, Bangladesh and Sri Lanka. Weldon will market the Label Traxx product to label printers and flexographic converters in the region.

Sun in China ink joint venture

Sun Chemical and its parent company Dainippon Ink & Chemicals (DIC) have formed a joint venture with Nantong DIC Metallic Pigments, an aluminum pigment manufacturer in China.

The joint venture expands on a distribution agreement announced in October 2007 that allows Sun Chemical and DIC to market the Nantong Shanjing products for coating, plastic and graphic arts industries worldwide under the new SunMetallics brand. These products will be launched globally in the first quarter of this year.

Nantong Shanjing specializes in the production and sales of aluminum pigments and pastes. The manufacturing plant based in Nantong of Jiangsu Province produces aluminum pigments and pastes used in a variety of industrial and commercial products in the automotive, industrial and cosmetic industries among others. Nantong Shanjing also has an office in Shanghai.



Brazilian Combat produces winner

A label printed with S-Combat do Brasil 370mm machine is the winner of the 15th Premio Qualidade Flexo 2007, organized by the ABFLEXO/FTA, Brazilian Flexography Association, in the 'narrow web printing on reticulated paper' category. It was awarded on December 6 2007 in São Paulo.

Since 1993, ABFLEXO/FTA has awarded national and international companies for their best performances in flexo printing. The awards are decided by a jury of 100 flexo professionals.

The S-Combat 'Fabricado no Brasil' project was launched by Gidue in 2006 as a result of the co-operation with the Raeder of Petrópolis (RJ) company, which is responsible for manufacturing. The first machine was unveiled in May 2007.

Nilpeter invests in 'leaner' plant

To meet demand for the MO-4 rotary offset combination press launched at Labelexpo Europe 2007, Nilpeter has installed the latest metal processing equipment and automated manufacturing systems at its main plant in Slagelse, Denmark. Around a dozen presses have already been ordered, with more in the pipeline, and delivery will commence from April this year.

Over the past two years the company has invested millions of euros in state-of-the-art precision facilities for the factory, as well as for its US plant in Cincinnati. Nilpeter also has a manufacturing facility in Brazil, with another opening in India later this year.

Nilpeter has also set up a new working showroom in Denmark that opens in April 2008. Besides press demonstrations, there are facilities for operator training and testing users' consumables. As well as an MO-4 platform press, the showroom will also include Caslon, a 4-color UV inkjet press for digital labels, and the company's FA-4 UV flexo press.

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New Products

Novalmelt Wash off 'no label look' adhesive

Novamelt presents Novarad RC 24110: a UV-curable pressure sensitive hotmelt adhesive that is suitable for wash-off 'no label look' labels. The adhesive can be removed in an industrial washing process without any residues from glass bottles. Suitable substrates are for example Cellulose films from Innovia Films or shrinkable PE- or PVC films.

'With this new technology it is now possible to adopt market trends from the cosmetic industry for high-class labels for applications at returnable glass bottles in the beverage industry,' said the company in a statement.

Diaures

New PP liner-based laminates

Italian pressure sensitive materials manufacturer Diaures has completed the development of a new range of products based on a polypropylene liner and acrylic adhesives. The DDP range includes vellum, machine coated, Eco and top thermal, white and Clear PP, and white and clear PE.

The company says the PP liners will sell at the same price as glassine liner, while offering a number of advantages including full liner recyclability, fewer stops for reel changing and liner breaks and higher production speeds.

'The product is ideal for high-speed applications, and there is 15-20 percent more material per reel, leading to a 15-20 percent reduction in the costs of goods handling,' says Stefano Casarini, sales director at Diaures. 'In addition the printing process is cleaner and there are higher quality labels thanks to the film liner.'

Diaures has been operating in the selfadhesive market for more than 25 years. Its current production capacity of 100 million sq meters will be increased in 2008 with a new machine dedicated to the DDP line. The production process has been patented.

FLEXcon

High performanc **PS** acrylic adhesive

FLEXcon has introduced its V-483 permanent pressure-sensitive acrylic adhesive, aimed to fill the gap between regular solvent acrylic adhesives and silicone adhesives. When application temperatures rise, but not to a level where a silicone adhesive is essential, FLEXcon's V-483 can meet the need, says the company. It is designed to produce a high performance bond to a wide range of surfaces while offering a cost-competitive acrylic product for high temperature applications.

V-483 is part of FLEXcon's line of permanent pressure-sensitive adhesives. V-483 is suitable for use in harsh environment applications, including

Claus Nielsen sets up technology group

A company specializing in pre-owned Gallus and Arsoma presses has been established by Claus Nielsen, who formerly headed up Gallus' UK operation. The mission statement of PGM Graphics Solutions is 'to establish a global market platform for buyers and sellers of pre-owned Gallus/Arsoma machinery and to offer specialist advice and service to its clients.'

The company has already helped converters buy and sell Gallus and Arsoma machinery in the UK, Sweden, France, Germany and Holland, with many new projects in the pipeline.

PGM has also become an agent for a number of narrow web equipment manufacturers – including for the EDM200 semirotary UV flexo press developed by SMO, based in Oschersleben, Germany. SMO has appointed PGM as its exclusive distributor for UK/Ireland, Scandinavia and France.

The EDM200 is claimed the first-ever semi-rotary UV-flexo press, and has been designed for short-run work — primarily as an over-printing machine. The press has a very small footprint, is claimed to generate very little waste during set-up and between job changes, is fully servo driven and works with sleeve technology both for print cylinders and anilox rollers.

Among targeted users for the press are flexo printers, who can use their existing pre-press workflow and choice of plate material to match their main production machines. Use of sleeve technology allows them to run seamless printing where necessary. In another interesting development, PGM will act as independent sales agent for Dutch company Lead Lasers, which develops direct laser engraving machines for flexo plates and sleeves, letterpress plates, dry-offset plates and relief embossing tools.

Other agencies for PGM include Danish supplier Flexo Wash, which appointed PGM as exclusive UK/Ireland distributor, and Flexo Art, which appointed PGM as UK/Ireland distributor for its chambered doctor blade systems for Gallus EM280 and EM410 flexo machines. Flexo Art also manufactures the FlexoCompact UV-flexo printing units for Gallus R160 and R200 presses.

PGM is offering a specialist service and maintenance program for Gallus and Arsoma presses in partnership with TQM Mechanical Services in the UK & Ireland. PGM has also just entered a co-operation agreement with the German company ATIQS GmbH to offer the option for complete refurbishment of machines as well as special application machines. areas that have varying temperatures such as electrical boxes, automotive components, and aerospace components. This adhesive bonds well to metals as well as low surface energy and high surface energy plastics.

William Frick & Co.

Harsh environment RFID tags and labels

William Frick & Co. has launched its SmartMark series of RFID tags and labels designed to function outdoors, on factory floors and in metal/liquid-rich environments. Using a wide variety of materials, plastics, and embedding technologies, they reportedly deliver 'unparalleled read ranges in applications that would destroy most standard tags', according to the company.

'We've taken our proven expertise in harsh environment and specialty tag/label design and developed comparable products for the most demanding, unusual and specialized RFID tagging applications,' Jeff Brandt, executive vice president of the Libertyville, Illinois-based company explained. 'Many of our clients are in the transportation, construction, manufacturing and utility industries and they need solutions that can take hard usage and still perform. So, we've created impact resistant, fully-encapsulated, and chemical and temperature resistant tags that can survive and function in extreme conditions.'

SmartMark tags include encapsulated, domed and unique Snaparound designs. With read ranges of up to 20' they offer users Generation 2 passive RFID solutions for applications that have frequently required more expensive active tags. They can be tuned for US or worldwide frequencies and William Frick & Co. regularly develops prototypes based on specific project requirements for its manufacturing clients.

Harper Scientific **Altrawash Blue**

HarperScientific, the printing and coating supplies division of global anilox supplier Harper Corporation of America, has introduced AltraWash Blue, claimed an environmentally friendly, multi-purpose cleaner for UV and solvent-based inks which is safe for use on aluminum, says the company.

The sister product to AltraWash Green, the non-corrosive cleaner designed for water-based inks, AltraWash Blue is a new, concentrated cleaner specifically formulated for cleaning UV and solventbased inks in pressure washing systems, soak tanks and ultrasonic tanks, or it can be used simply as an on-press anilox cleaner. It is also useful for cleaning printing plates.

'The fact that AltraWash Blue is perfectly safe for aluminum is particularly exciting,' explains Tony Donato, product development engineer at Harper Corporation of America. 'Because aluminum is used in the construction of most wide-web and narrow-web anilox sleeves as well as lightweight anilox rolls, a non-corrosive cleaner with a safe pH level is critical for protecting anilox investments.'

AltraWash Blue has a pH of 11.8. The new cleaner's surfactant technology is also environmentally friendly, using no petroleum distillates or environmentally hazardous chemicals. It is a biodegradable, low-V.O.C. product, and has low vapor pressure.

Surfscan Faster die cut label inspection

As much as 20 minutes per shift can reportedly be slashed from 100 percent on-press inspection of die cut labels thanks to an upgrade of its CheckMate inspection system by Surfscan Technologies.

The upgrade is suited to the inspection of matrix stripped die cut labels.

News in brief

Shuttleworth MIS module goes live with Fasson

Shuttleworth's Materials Management module for its MIS now includes live links with Fasson Roll Materials Europe enabling label printers to automatically place orders online via their MIS.

The system is already running live at Superior Labels in Lincolnshire, UK, and according to Sharon Preston, customer services manager at the company, the MIS links with Fasson are simple to use: 'It is saving us a lot of time, about five minutes per order, and if you consider that we might place anything between 20-30 orders with Fasson per day, that's a lot of additional time we have gained. Our administration is becoming much more efficient and equally more productive,' she said.

Rayven installs new Deacro Model C800A slitter

Rayven, a provider of laminating, coating and converting services, has installed a new Deacro Model C800A slitter in the company's manufacturing facility. The new slitter is a customized version of the model C800A specially outfitted to handle narrow slit widths (0.75" to 1.25") of silicon coated film release liners. The 63" wide Deacro brings Rayven's slitter count up to seven machines and adds to the company's converting capabilities.

In addition to increasing slitting capacity, the new C800A can produce much larger diameter rolls. The larger rolls have considerably more linear feet per roll. The longer rolls equate to less roll changes, which will increase Rayven's efficiencies and reduce overall costs.



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New Products

US label shipments to reach \$18.3 billion in 2011

US label shipments are forecast to increase 5.1 percent annually to \$18.3 billion in 2011, according to a new study from The Freedonia Group, Inc., a Cleveland-based industry research firm.

Best opportunities are anticipated for the pressure sensitive segment, which accounts for the majority of label shipments. Pressure sensitives will face increased competition from other application methods such as stretch sleeve and heat-shrink labels, which will post more rapid advances. Gains in the stretch and shrink segment will be driven by increased use in the large beverage packaging industry. Advances in resin technologies will also support growth.

Paper will continue to dominate the label industry, but will slowly lose market share as the use of plastic stock materials expands rapidly, says the report. Advances will be based on the aesthetic and performance advantages of plastic labels; the growing use of plastic packaging; and the popularity of labeling methods which heavily rely on plastic substrates. Oriented polypropylene will exhibit the fastest growth among the major label resins, further supplanting polyvinyl chloride.

Primary packaging will remain the major market for labels through 2011, although demand for labels in secondary applications will post the fastest gains overall. A growing interest in the use of labels as a tool to create a strong brand identity will provide favorable opportunities for labels in the primary packaging industry, as will a rising interest in labels as a means of serving value-added functions such as enhancing security and providing expanded product information. Going forward, secondary labeling will benefit from continued demand for bar coding labels; the utilization of radio frequency identification (RFID); and electronic article surveillance (EAS).

The vast majority of US label shipments is accounted for by labels printed in some manner before sale to the final user. Flexography, which will experience above-average advances through 2011, represents the most commonly used label printing method. A number of other printing techniques are also employed, including lithographic, screen, letterpress, gravure and digital. These processes are commonly combined in the label industry. Digital technology, for instance, will be increasingly incorporated with conventional techniques. Digitally printed label shipments will continue to expand at a double-digit pace through 2011, aided by a growing trend toward the use of mass customization.

Labels (published 12/2007, 321 pages) is available for \$4,500 from The Freedonia Group, Inc., 767 Beta Drive, Cleveland, OH 44143-2326. For further details e-mail pr@freedoniagroup.com or visit www.freedoniagroup.com.

News in brief

Nita labeling heads available for OEM integrators in Europe

Canada-based Nita Equipment, a manufacturer and marketer of labeling automation solutions for primary and secondary packaging, has announced that it will make its OEM labeling head available to all interested European integrators.

After developing, selling, installing and refining automatic labelling solutions and equipment for over 18 years, Nita labellers have been available through a multitude of distributors and end users requiring top, side, top & bottom, front & back as well as complete wrap around automatic labeling solutions. Nita has now announced a special 'OEMpurchase-in-bulk pricing' that will enable European integrators to buy the labeling heads and integrate them into their own solutions.

Nita labeling heads are suited to use in the personal healthcare, food, industrial, household products and nutraceuticals industries.

DuPont launches new multilingual website

DuPont Packaging Graphics has launched its new website, www.cyrel.eu, a multiple language website providing detailed information tailored to the needs of the flexographic industry.

The new Packaging Graphics European website, previously available only in English, offers for the first time the possibility to choose the language in which contents will be displayed. Visitors from Germany, France, Spain, Italy, Russia and Turkey will now be able to exploit the advantages of finding information about Cyrel round, Cyrel Fast and Cyrel digital in their own language.

Alwan Color Expertise signs distribution agreement with CMG

Alwan Color Expertise, a supplier of color management software, has signed a distribution agreement with the Color Management Group (CMG). Under the terms of the agreement, the Color Management Group is responsible for selling and servicing the Alwan Product range in North America.

Spinnaker Coating announces PSM/Eagle asset purchase

Spinnaker Coating of Troy, Ohio has announced the purchase of the assets of Lemont, Ilinois-based PSM/Eagle, a contract slitter and distributor of pressure-sensitive roll products to the label converting industry.



Multi-Color's plant in Batavia, Ohio

CMYK in Cincinnati

US converter Multi-Color Corporation has big plans for its future global success, as **Danielle Jerschefske** reports

Nulti-Color Corporation (MCC) has come a long way since its foundation in 1916, when the company was investing in that year's latest technology – sheetfed, 3-color presses. Now it's a publicly held company with seven manufacturing facilities in the US alone and is shipping products throughout North and South America.

Since current president and CEO Frank Gerace joined MCC in 1998, the company's ambitious mission – to become the biggest and best in the industry – has started to come to fruition. 'We want to be the premier, global supplier of decorating solutions in the markets we choose to participate,' Gerace says.

The first step for MCC was to incorporate into its culture the proposition 'one size doesn't fit all'. 'We wanted to become a balanced company, first from a product perspective, and then geographically,' Gerace continues. 'The first phase is substantially complete. The next step is to become more balanced by having manufacturing capabilities overseas.'

MCC is currently in the middle of a major capital investment program which has seen the opening of possibly the world's biggest label production facility along with the installation of state-of-the-art flexo and digital print systems. The company plans to spend \$35 million on new equipment and facilities over the next two years and \$15-20 million in new technologies and automation systems after that. 'Without question, the industry will see MCC investing in digital printing, in a very big way,' Gerace adds.

Paying close attention to industry trends – both in North America and around the world – has been key to MCC's success. Over the years Gerace has seen increased pressure on converters to print on demand and improve speed to market. There has also been growing consolidation, which, Gerace feels, will continue to pick up speed.

As TLMI chairman elect, Gerace's views carry weight: 'It is important for converters to focus on basic business principles – aggressively control costs and protect profit margins. Be on your toes for disruptive technologies to the industry, such as digital and inkjet printing. And choose your partners wisely. You can't avoid consolidation, so players must determine whom they will team up with. Leaders must prepare their business for this and continue the process of creating relationships in the industry.'

Gerace does not believe that one technology will solve all problems -a 'silver bullet' if you will -but he predicts 'disruptive' technologies have the potential to take a significant share of work away from traditional printing methods.

Omets in Batavia

MCC recently moved into what may be the largest label manufacturing facility in the world, in Batavia, Ohio. The 249,000 square foot site consolidates the equipment from MCC's former plant in Batavia and from its Troy, Ohio plant. The facility currently has around 100 hundred employees and runs 24/7.

'We moved into the bigger facility because we were at capacity and needed to have room to grow,' Gerace explains. 'And we will certainly continue to look at other opportunities to consolidate into that facility. The new plant helps to reduce fixed costs, allows us to be more cost effective, and more efficient.'

It is in this impressive facility that MCC's new Omet presses – purchased after Labelexpo Europe in Brussels – reside. One is a 26 inch flexo/gravure combination press, while the other is a 20 inch flexo machine. These wider machines form part of an



industry trend away from narrower 10-13 inch presses, allowing converters more flexibility and product variety.

MCC knew that it needed to make significant technology investments to remain competitive, and its purchasing and technology group has spent the last 3-4 years evaluating different print technologies. 'We were looking for machinery that would give us flexibility, improved productivity, and meet the high-end quality demands of the market,' Gerace notes. 'The group concurred that the Omet presses fulfilled these requirements and needs.'

A team of suppliers helped in quickly getting the new presses running commercial product, and Gerace is delighted with the outcome of the project.

Omet configured the presses for MCC's requirements: to print across all label technologies, with the wider width providing increased throughput with reduced makeready and downtime. The presses are fully servo driven.

'The presses have addressed the complex and demanding print designs used for prime labels,' Gerace says. MCC is looking into purchasing new finishing equipment for the presses.

Additional equipment in the Batavia plant includes both flexographic and offset technology. Two 18 inch Comco commanders produce 80 percent pressure sensitive material, 15 percent in-mold label (IML) and 5 percent shrink labels, while a 40-inch Komori sheet-fed offset press prints only IML. The rotary presses primarily use cold foil stamping, although they can hot stamp when required.

From the Troy facility, the new plant will gain three 10-inch Mark Andy 2200 presses – one eight unit and two ten units – as well as three slitters. Each piece of equipment has been cleaned and tuned by Graphics One and each has been fitted with GEW energy- saving UV brick lamp systems.

'We have set this plant up to be conducive to organic growth,' explains Dirk Edwards, director of marketing for the group. 'We have plans to grow, not just by acquisitions, but internally as well.'

'The building is so large that it will facilitate cellular manufacturing,' says Gerace. His goal is for Batavia to be a selfcontained plant able to provide any kind of label order for a customer.

Although there is currently no digital printing equipment at the plant, Gerace says there is a 'strong possibility' that digital printing and a digital print center will come to Batavia. And he believes that it is only a matter of time before the company invests in computer-to-plate technology there.

Digital in Green Bay

'The Green Bay facility had an imminent and immediate need for digital technology,' says Frank Gerace. 'We needed to bring in the technology for the small and medium run orders. It was a quick transition because we had the orders to fill the press immediately.' Both makeready time and waste have already been drastically reduced.

Of all of the MCC facilities, the Green Bay, Wisconsin plant completes jobs with the shortest run lengths. Most jobs are 1,060 foot per item, although the longer jobs bring the average up to 8,036 ft per item. These short runs are ideal for the HP Indigo ws4500, with makeready time and waste significantly reduced compared to the flexographic presses.

The 40,000 square foot plant is also home to seven Mark Andy presses, three 10-inch – two 4120s and a 4150 – and four 7-inch 2200s, all of which are UV capable. Around 25 percent of the plant's jobs, some 750 a month, have been switched over to the digital press. The longer run jobs are still produced on the Mark Andy presses.

'We do a lot of sample business,' explains plant manager Greg Petre. 'And most of our customers are small, local manufacturers of products such as milk, bottled water and cheese.'

The specially designed, enclosed digital room was built large enough to house additional digital capabilities. 'The Indigo has already surpassed our expectations of what it can do,' says Petre. 'We are very pleased with the speed to production. HP has been really great at supporting us technically with this new technology.'

The plant is working closely with MCC's Laser Graphic Systems division on all of its digital pre-press color management, using ICC profiles to ensure that the finished label looks like the proof. All files are sent from the Erlanger site to the server in Green Bay, and subsequently to the press. MCC is happy with the extended gamut offered by HP's custom produced ElectroInk. 'We are able to match the color as close to flexo as possible,' explains Dean McCabe, production manager.

MCC purchased a modular Delta digital finishing system because it likes the flexibility it gives for completing different types of jobs. The machine is servo driven, offers two die stations – one semi-rotary – a flexo station, lamination and slitting. It can also handle shingling for cut and stack production.

'Green Bay is our Beta site, so to speak, for digital printing,'

Collotype costs Multi-Color \$185 million

Multi-Color Corporation has signed a binding agreement to acquire Collotype for approximately US\$175 million plus an additional \$10 million upon achieving certain financial targets. This follows the annou ncement of a Letter of Intent between the parties dated November 5, 2007. Frank Gerace explains. 'It is a place for us to acquire all of the skills and knowledge to go further, deeper and broader into digital technology. We can use it as a base to broaden the future scope of the technology within our company.'

Gravure shrink line in Scottsburg

At approximately 125,000 square feet, MCC's Scottsburg, Indiana, plant has 219 associates running non-stop to produce both shrink sleeves and in-mold labels. About 80 percent of the plant's output is IML, first started there in the mid-eighties. Shrink sleeves have been in production for six years — this is where all of Miller Brewing Company's shrink labels are produced.

Over the last 18 months, the plant's management team has energetically implemented a project to increase shrink sleeve manufacturing capability. MCC chose Deacro, a Canadian slitting company, as its supplier for a shrink sleeve inspection and doctor-slitting machine. AVT technology will be used to link the vision systems from the press to the slitting machine. Using the AVT system, the rolls will be automatically read and flagged by a Providence flag inserter. Historically, operators had to manually place a flag in a roll, posing real time delays. This new line should be fully installed by April 2008.

Included in the high-tech shrink sleeve line will be a non-stop DCM seamer. 'This eliminates the need to stop a seamer at the

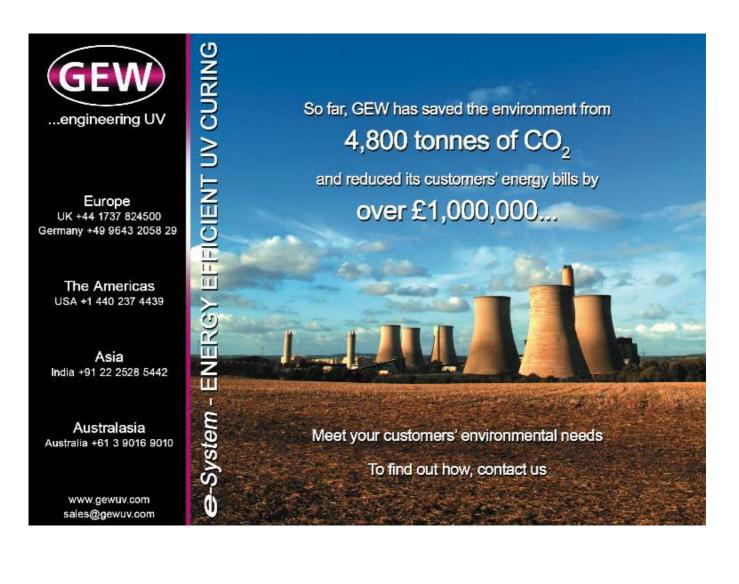
front and at the end, leading to better output, allowing us to focus on high volume runs completed at a lower cost,' says Michael Cook, plant manager. 'And we will still have high color consistency by using the gravure process.' Also added will be a Stanford rewind-inspector.

'Our plan is to increase shrink production by 150 percent,' continues Cook.

With its IML production facilities, MCC transitioned with Proctor & Gamble and Unilever through the change from 1x detergent to 2x detergent through all of last year. IML labels needed to be produced for both container sizes, which greatly affected the plant's capacity. 'It really pushed our production limits to the max,' Cook says, 'but we were successful and able to service them because of our great associates and strong customer relationships.'

A typical IML gravure job takes about 2-3 hours to complete, using, on average, about 7-8 cylinders. There is one 9-color Schiavi, two 10-color Schiavi presses and one 8-color Uteche press in the plant. Each has new drives and gears that were upgraded in 2007. Comments Michael Terselic, converting manager, 'It has increased our productivity by 400 percent while practically eliminating any quality issues.'

Automation has been a key driver in MCC's manufacturing plans, as Frank Gerace explains: 'Investments have been made at our Scottsburg plant and all over MCC in automated machinery.



We look at two things when investing in this type of equipment. First, will the investment increase sales while maintaining our competitive position. Second, it must eliminate process variation by improving quality consistency while increasing productivity.'

Heat transfer innovation in Framingham

In 2003, MCC acquired the Dec Tech division of Avery Dennison, the industry leader in heat transfer labels (HTL), based in Framingham, Massachusetts. 'It provided another value proposition for the sales portfolio of the company,' explains John Geurtsen, director of product leadership and former R&D director for Avery. Just below half of its sales were exported to regions such as South America, helping expand the company's international sales base – a key part of MCC's mission statement.

Traditionally, the technology is based around a specially coated wax paper with the label printed in reverse. 'The ink is in the label and the adhesive is the last to print,' Geurtsen says. The gravure process is used for HTL because the company believes it is best for opacity.

There are two types of HTL: Therimage, used for more rigid containers, and Clear Advantage, mostly used on glass or PET containers with smooth surfaces.

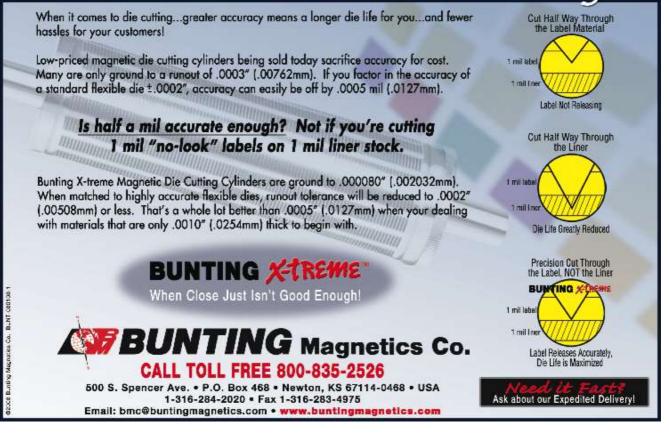
Clear Advantage uses paper with a thin extrusion of film and a thin coat of wax so that the wax is printed only where it's needed. It makes the label look like it is printed directly on the container. 'This is the true no-label look,' says Geurtsen.

To create the final product, the HTL goes through a 3-step process of pre-



Company president and CEO Frank Gerace

When It Comes to Die-Cutting... ...How Close Is Close Enough?





A Schiavi gravure press at the Scottsburg, Indiana facility

flame, decorate, post-flame. Pre-flame oxidizes the surface in a way similar to corona treating to bring up the surface energy. The post-flame process is used to give the label some shine.

'Flameless' technology is the latest innovation for HTL. With Flameless HTL, the adhesive has been designed to adhere to the container without the use of a flame. 'We wanted to simplify the process for our customers,' Geurtsen explains. 'It is moving closer towards the last minute of differentiation. We can put the right decoration on the container at the point of filling. All the customer needs to do is drop one machine in-line with the filling machine and let it go. Now that HTL is made as simply as pressure sensitive, we are positioning ourselves to promote this capability.'

Framingham manufactures its HTL products on seven Bobst Champlain 9-color gravure presses in a variety of widths. The 100,000 square feet site employs 85 associates and runs around the clock, seven days a week.

Global advance

The acquisition of the Collotype group of companies headquartered in Australia is the first step in MCC's plan to have manufacturing capability around the world. 'They are a natural partner,' says Gerace. 'MCC is an acknowledged leader of primary product label production in fast moving consumer goods. Collotype is a recognized leader in the production of wine and spirits labels. We both have commanding positions in two different marketplaces; it's a complementary fit.'

Additionally, Gerace notes how both companies, year after year, lead the industry in awards for quality and innovation.

'Another reason we chose to work together is because of our people. When you meet and visit with the people of MCC and the people of Collotype, it is hard to tell the difference. They share the same values, ethics and principles. Both companies' associates are talented, have a passion for customers, take pride in their work and work hard.'

MCC and Collotype will share technologies and innovations. The plan is to 'leverage economies of scale to reduce costs as well as utilize each other's deep and expansive customer relations', says Frank Gerace. Collotype's management will be taking senior roles within the group, helping to guide the corporation to further global expansion.

The union with Collotype sees a major shift in MCC's product mix, as it transitions from in-mold as its primary technology to pressure sensitive, reflecting trends in the global market.

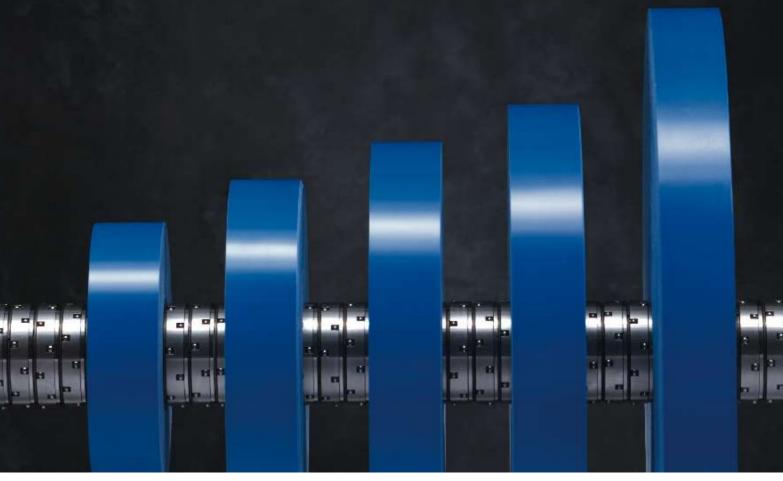
The acquisition has helped MCC to become more balanced – globally, Gerace explains. 'Now we are more geographically spread to take advantage of the higher growth regions in the world.' Offensive strategies are in place and will be unfurled over the next year as phase two of MCC's expansion strategy takes off.



L-r: Dean McCabe, production manager; Greg Petre, plant manager; Jeff Dendler, digital press operator; and Rick Schmitt, process engineer, in front of an HP Indigo press at the Green Bay, Wisconsin facility

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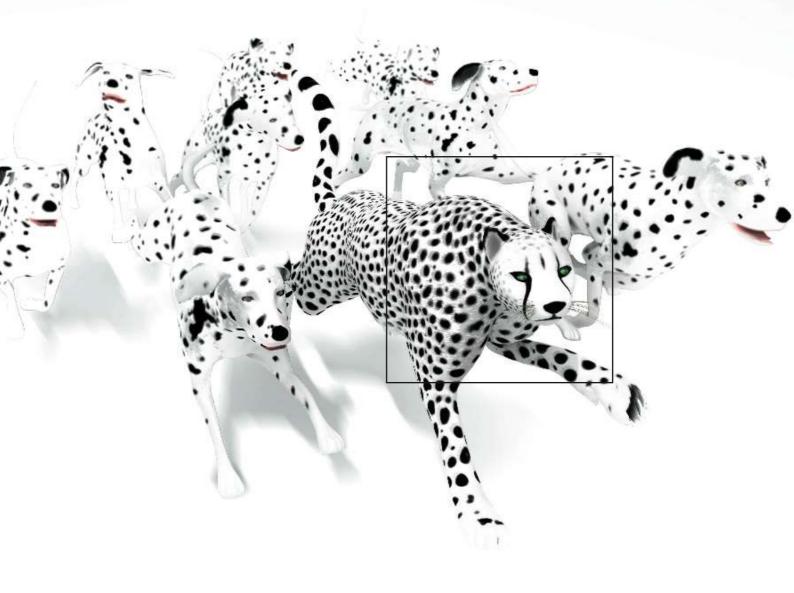
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Understanding label specification

Converters looking to match complex end user requirements need to be aware of solutions already commercially available. **Andy Voss**, managing director of Madico Graphic Films in the UK, explains

B aseball hats aside, the one-size-fits-all philosophy very rarely applies when it comes to the countless goods, technologies and services that we use every day of our lives. Everything from medicines, clothes, cars and holidays are all – either for select groups or individuals – manufactured to fulfill specific needs and to be fit for a particular purpose. Prescribed or chosen incorrectly or randomly, the outcome will range from customer dissatisfaction and wasted expense, to extreme examples that might even be life-threatening.

While it will be no revelation to some, the world of labels and labeling manufacturing is no different. There are thousands of different thermal transfer printable labelstocks available on the market, for example, each of which possess different functional and decorative attributes to meet the exact requirements of a diverse number of engineering, automotive, healthcare and industrial applications. Offering good adherence to the surface area on which it is applied is the primary objective of a label, but there are usually important additional criteria to fulfil.

This is precisely why the foremost suppliers to the industry invest tremendous amounts of time and development funds in researching and introducing innovative new engineered films, among them polyester, acrylic and polypropylene variants.

In the case of Madico, this includes durable films engineered to withstand extreme climatic, chemical and

"The printer producing labels with extremely precise performance criteria, may well find that an exact product actually exists on the market" mechanical exposure, as well as those offering security qualities to protect against product tampering and fraudulent warranty claims. In the latter example, using void polyester labelstocks will ensure that once applied, the label cannot be removed without revealing a non-reversible message. Similarly, tamper-evident destructible acrylic and vinyl labelstocks deliver their own product security benefits by bonding to a range of surfaces and breaking into tiny pieces upon attempted removal.

A little time on the part of the label printer spent investigating and researching the appropriate products available for a customer's unique needs will pay dividends when it comes to assuring performance, avoiding complaints and securing repeat orders.

Madico's own range of labelstocks numbers around 300 products, 30 per cent of which will likely have been designed as bespoke products to meet an individual customer's exact needs, before being added as a stock item to our ever-expanding line. As a result, the printer faced with a seemingly impossible customer request to produce labels with extremely precise performance criteria, may well find that an exact product actually exists on the market.

Be it the need to withstand harsh chemicals such as toluene, Skydrol and brake fluid, or a requirement to resist thermal shock and ensure a



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cohesive bond at 1960C in liquid nitrogen, the most innovative suppliers could well have a stock solution that ticks all the boxes.

For label printers, the ability to provide the client with precisely what they need offers fundamental benefits to the long-term customer/supplier relationship. Moreover, those printers who either posses the in-house technological knowhow to develop specific products to suit these needs – or are astute enough to seek such expertise from their supplier – are the ones benefiting from far more lucrative opportunities.

In addition, with over-capacity and competitiveness creating challenges for label printers, often more crucial is what is being printed, as opposed to the actual quantities produced. Uptime of equipment is of pivotal importance, but there is a huge difference between running a press 24/7 with standard paper stock, to producing premium-priced, specialist labels for niche applications in certain vertical sectors. In such cases, a printer recognizing and serving the needs of such value-added markets could – even if with slower and less costly equipment – enjoy greater profitability than some of those focused solely on high volume.

Even label printers that struggle to win these premium label contracts can still win business by utilizing the right blend of creative instinct, good judgment and ability to spot solutions to their customer needs. Those products that deliver the right features for several different applications can, to the innovative label printer, often hold the key to fulfilling an awkward or niggling customer requirement.

Our Clinglok product, for example, offers the unique benefit of ensuring that the label adheres only to itself in applications where dirt attraction around the edges is to be avoided. This might not be relevant to a label printer seeking other specific features, but it could hold the answer if the same client happens to be seeking a solution for jewellery or eyewear labeling. What is crucial is actually seeing the opportunity and seizing it.

Regardless of who is printing what and for whom, the increasing emergence and importance of quality standards and environmental legislation continues to impact on the industry and those operating within it. The more innovative and reputable suppliers will offer products produced in accordance with exacting quality standards backed by ISO-certified manufacturing and environmental procedures. Such stringent quality control provides an assurance of the product's uniformity of appearance, on-press performance, dispensability, release and subsequent adhesion.

At the same time, environmental regulations such as the International Material Data System (IMDS) are playing an important role throughout the supply chain. This database, introduced by automotive OEMs to manage environmental aspects of all vehicle parts, includes the many badges, warning labels, VIN labels and other under-the-bonnet decals produced by suppliers.

As one would expect, manufacturing in accordance with recognized quality and environmental standards, laws and regulations is not only confined to labels and labeling in the automotive sector. As a result, label printers need to be more aware than ever before that their materials must be sourced from reputable suppliers who adhere to such practices as part of their manufacturing operations.

This will ensure printers don't lose business to a more thorough and alert competitor, while those chasing such accounts can at least rest assured that they are satisfying the qualitative and legal prerequisites demanded by potential customers.

For the label printer, today's industry is both cut-throat and competitive. As suppliers, we can't always guarantee that our customers will win the race for business, but we can certainly ensure that they are fully prepared and fit to do so, as they take their positions on the start-line.

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Konica Minolta's factory in Tokyo, Japan

Konica Minolta enters narrow web arena

Konica Minolta is looking to partner with a narrow web press manufacturer to integrate its new inkjet unit into an analogue machine. **James Quirk** reports

okyo, Japan-based Konica Minolta is adopting a sensible strategy to its entry into the label market. The prototype single pass inkjet unit displayed at Labelexpo Americas in 2006 is now fully operational, and the company sees its integration into a narrow web analogue press as the right move as it looks to increase its presence in the sector.

Konica Minolta is keen to see how the label market will react to inkjet in the long term. 'This technology has many different potential applications,' says Konica Minolta Inkjet Technologies' president Akiyoshi Ohno, 'but the reaction from the label sector was the hottest from all the areas we looked into. We believe that the market has been waiting for this type of technology.'

Ohno is convinced of inkjet's potential in this sector. Since the company's inkjet division became independent in January 2005 – it used to be part of Konica Minolta Technology Center, Inc. – it has grown at up to 50 percent per annum. While ninety percent of the company's inkjet business is currently dedicated to wide format, Ohno predicts that by 2012 over half the division's business will be taken by the label market.

'There is a trend towards smaller orders in the label sector,' says Hiroyasu Endou, deputy general manager of Konica Minolta Inkjet Technologies' business development division. 'Inkjet's ability to tackle short runs is therefore a great advantage, as is its reliability and ability to achieve variable data.'

Konica Minolta realizes, however, that it has neither the sales force nor the sector knowledge to sell directly to label converters – at least not yet. While direct selling is the company's long term plan, it sees integration as the best initial strategy.

'During Labelexpo Americas in 2006, many label converters asked us how to integrate our unit into their existing equipment,' says Ohno. 'We began having conversations with some of the

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manufacturers about integration. We are interested in building a relationship with an established analogue press manufacturer.'

'We are only just entering the narrow web market for the first time,' agrees Hiroyasu Endou. 'I visited Labelexpo Europe in Brussels last year and could see that we have two possible targets in the industry. We can approach narrow web manufacturers for the integration of the inkjet unit; but there is also the option, since we have all the building blocks, for manufacturers to put together their own inkjet printers from our components.'

The SP-12130 incorporates six print heads with 512 nozzles each, print head driver electronics, ink system and head maintenance station into one unit. With a maximum print width of 214mm, it delivers a resolution of up to 360dpi at production speeds of up to 30 meters a minute. With different aligning of the print heads, widths are changeable and speeds of up to 60 meters a minute are possible - allowing for various combinations depending on the market application. Also available is a 36mmwide two head version which can print at a resolution of 720dpi at 20 meters a minute.

The unit uses a black UV curable cationic ink, also manufactured by Konica Minolta, which is suited to printing on a wide range of materials including coated and non-coated paper and plastic films such as PET. The

"We believe that the label market has been waiting for this type of technology"

company believes that the ink's unique chemistry brings advantages over conventional radical UV inks, such as lower odor and high adhesion to flexible substrates as well as rigid media.

'Because of our background in the photo chemical industry, we have strong expertise in the different inks that can be used in inkjet: we are the first to use this ink in inkjet printing,' says Ohno. 'Cationic ink is not easy to handle – it has a different behavior to other inks. Many companies in the industry have talked about it in the past, but we have made breakthroughs that we have patented. All the inks produced under the Konica Minolta name are very safe.'

The SP-12130 is currently a 1-color machine, but Konica Minolta aims to display a full color prototype at drupa 2008. 'Full color is the next step for the future,' says Ohno. 'We are excited about the show because many believe this will be the "inkjet drupa". Up to this point we haven't made a big noise in the foreign market about the unit, but now is the right time.'



International outlook

While Japan is traditionally an inwardlooking market, Konica Minolta Inkjet Technologies' president Akiyoshi Ohno has a strongly international outlook which is a great influence on his employees. Ohno himself lived in Germany on and off for 11 years in the 1980s and 1990s, and employees are required to take regular English tests.

Japan is a specialized market,' he admits. 'But it is important for us to remember that it is part of the bigger global industry. Since the inkjet division became independent, I have sent my 150 employees on over 300 trips abroad. Everyone goes: how can you think globally if you do not travel abroad?'



Konica Minolta is looking to integrate its inkjet unit into a narrow web press



Konica Minolta Inkjet Technologies' president Akiyoshi Ohno predicts that by 2012 over half the division's business will be taken by the label market

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2 AFTER BEING PACKAGED & WEIGHED.

3. SUBSEQUENT EXCESSIVE TEMPERATURE AUTOMATICALLY MODIFIES BARCODE DATA TO CULL PRODUCT AND ARCHIVE THE INCIDENT.

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Product Abstract: Universal Product Codes (UPC) barcodes are auintessential to food packaging. And data acquired from barcode readers is the abiding requisite source of data collection utilized to conduct the world's commercial affairs. With application of the PSS to monitor within the cold chain, the barcode's historical paradigm of "data-in-data-out" will now evolve into a transformative archival global sentinel on monitoring duty throughout the worldwide entrenched barcode infrastructure. In addition to its barcode related marketplace disruptive intellectual property, at the heart of the FSS are equally proprietary irreversible, when activated (IWA) Thermochromic links, calibrated to monitor several temperature thresholds that when elevated indicate conditions indicative of contamination. The inis are compatible with pertinent label industry presses, they are laid down in non-scannable density and in the event product conditions do activate the lnks, they emerge irreversibly. in a pre-set time, into a scannable deep magenta thus adding to the built-in FSS auto reporting element, a readily identifiable line-of-sight alert for consumers at any time, anywhere subsequent to product purchase.



The FSS, palpably more than arguably, responds to the long-standing global imperative to design, organize and then employ a worldwide 24/7/365 food safety monitoring and archival reporting procedure. The intent, and what the FSS provides, is to assure that all trading nations safely produce, store, transport and sell perishable commodifies which account for slightly more than 50 of every 100 dollars spent at supermarkets. The essence of global trade is parity therefore a global monitoring system. responsible for the retention or culling of perishable produce must operate within the tenant of inspection equivalency. And, inasmuch as the global consensus regarding the primary cause of microbial contamination in foods is related to improper temperature, and that Farenheit and Celsius equate to one another nicely - the FSS ranks well as a universal cold-chain monitor. For example



... "The FSS is an excellent response to Japan's food related utility model publication No. 59-163543; ... [the model] is an automatic process"

for determining the quality of a product that undergoes progressive changes upon exposure to environmental stimuli by attaching an indicator device. The indicator has both variable and non-variable regions. When the variable regions change in response to stimuli, the change is calculated based on a pre-established relationship (preferably by a computer)."



Recovering Viable Product:

While industry diligently administers preservation paradigms for transport and storage of perishable products, more than the occasional full case of chilled or frozen merchandise is discovered outside its designated

thermally controlled environment usually after more than a few elapsed hours. Should that event happen to, let's say a full sealed case of muscle meat with an FSS shipping label affixed to the case, the FSS would become activated and thus capable of visual and automatic discovery. In that event food handlers would busy themselves with recovering viable product from within the case where the internal cold mass would more than likely preserve product relying on the FSS line item label as a beacon.



SIRA Technologies respectfully invites inquities from converters, food brands, packaging manufacturers and any other relevant enterprise whose revenue would benefit through coalescence.

For any details associated with your particular business Interests, please contact: Robert M. Goldsmith, SIRA Technologies,

140 S. Lake Avenue, Suite, 349, Pasadena, CA 91101; Phone: 626 568-8606; FAX: 626 795-6032; Email: rgoldsmith@siralechnologies.com Web: http://www.siratechnologies.com

Controlling flexo

Banded rolls can be used for a wide range of money-saving and efficiency-enhancing testing procedures. **Mike Huey** at Harper Graphic Solutions explains

Use of banded rolls has helped many printers be more consistent, reduce downtime and minimize the variables through standardizing the process. Well-known applications in the print room include:

- defining precise ink film for process printing
- defining exact line screen and volume for spot and combination printing
- standardizing inventories
- defining the optimum plate durometer, tape density and ink system for a job

These are all great ways in which we can control the variables in our everyday print operations. Flexographic printing is both an art form and a science, and both need to be used to optimize the process and maintain an edge in profitability.

In this article I would like to analyze some of the traditional and non-traditional uses of banded rolls to cut costs and increase profitability.

Application 1:

Identifying optimum ink film for line, combo and process printing

Preplanning

In order for us to be consistent in our everyday printing operations, we must find the optimum way to define all the variables. This is easily done through the use of a banded roll.

This process should start with a graphic team meeting of plate, ink, tape, anilox supplier and, obviously, the printer. The printer should involve the operator and supervisor as well as a member of the management team for support and buy-in to the project. This meeting should be used to design the roll layout, the various plate durometers to be used, as well as ink and tape. All variables to be tested should be defined along with a plan for measuring and collecting the data.

Keep in mind the ultimate goal is to identify the thinnest ink film to achieve solid ink density for line, process and combination printing and to maximize the tonal range. Keep an open mind, as this may mean that various plate and tape durometers will be necessary to achieve the smoothest, thinnest, most consistent solid ink density.

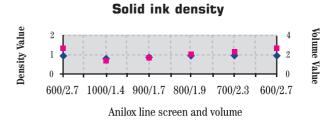
Trial Date

As with any printed job, pre-makeready should ensure all components are available prior to setting up for the trial. Approved 'trial' shop orders should be checked for accuracy and treated like a 'normal' job, listing variables to be tested in chronological order, samples to be saved, etc. Press, inks, tensions, temperature and all other operational variables should be set as they normally are. If you normally run at 24 seconds #2 Zahn, don't set up at 28 seconds. Maintain normal printing standard as you usually would run any job.

As you will in most cases have control bands on each end of the anilox – control bands are bands with the same line screen and volume on each end of the roll – make initial pull-ups checking targets on both sides of the substrate to confirm that impression is set evenly across the roll.

Once you have confirmed your impression settings, pull up at normal operating conditions. Document all run conditions of your pull-up on the order and label/code the print samples for future reference and measurements. Organization of the specific testing platforms – labeling samples and documenting print conditions – is key to a successful trial. Save your samples, measure and chart the variables as seen below:

Chart below shows us that the 800 1.9 gave us the closest to our density target and had the best contrast. Although the 800 1.9 had a little more gain than the 900 1.7 we still decided on the 800 1.9 as the gain could be compensated.



After completing the trial, all parties should discuss and determine the specific criteria necessary to achieve the most desirable result. As we know, there is always give and take in these types of trials and the key is laying out all the data and determining where the cost vs benefit will end up. This requires looking at your core business, deciding what your customers want and expect, and deciding which tape, plate, ink, etc to use to meet those requirements.

Application 2 -

Banded anilox for white?

Utilizing a banded anilox for printing white has not been as commonly used, but this technique can reduce the costs of putting white ink down by determining the minimum thickness to achieve opacity.

As with our initial banded roll above, this would start in the same fashion, with a team meeting to identify the variables. Finding the correct volume in combination with the right durometer plate and tape to get the smoothest, pinhole-free solid, will be key for this trial.

As we have all learned throughout the years, the less pinholes we have, the smoother the white will appear, resulting in the highest opacity. Although many printers don't measure opacity, it is necessary if we are to eliminate our hidden costs.

Why do we run 7, 8 or 9 bcm anilox rolls to achieve opacity? What if, by running 8.5 bcm versus 9 bcm we can achieve a 5.5 percent saving in ink cost? What impact will this have on your bottom line? These savings will definitely pay for the trial, banded anilox and additional anilox rolls for white-specific applications.

Whether it is a narrow web or wide web application, white is the most commonly used ink in many shops, and is where the most color-specific dollars are spent. Job specific money can be saved by reducing the thickness of the white while still achieving the opacity expectations of the customer.

Anilox bcm is not the only factor that influences potential savings. Trials can also be run to utilize tape and plate durometer to achieve the necessary opacity. The illustrations below show a white, utilizing the same line screen, volume and geometry with different plate and tape durometers giving a completely different opacity.

Application 3:

Banded anilox for coating rolls?

This is one area where a banded roll is seldom used but has the opportunity to save a company a lot of money in coating costs.

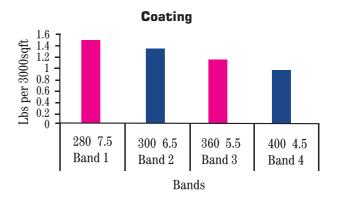
Coatings are becoming a more important part of the flexographic process, and I have received more requests for 'specialty' applications than ever before. We now have coatings that change the color or look of a label or package when heat or cold is applied. We have security coatings and specialty coatings for cell phone batteries. There are coatings for virtually every atmosphere that a printed product will or might be exposed to. UV, water and solvent adhesives are applied in an array of thicknesses and weights.

Long story short, if you are not running a coating roll today, you most likely will be in the very near future.

Most coatings require a specific thickness or pounds per ream to achieve a desired functionality, and most coating manufacturers specify their own target ranges. The key is finding the minimum point at which the coating will perform to your customer's requirements.

For example, if the target range is 1.0–1.25lbs per 3,000 square feet, we would design a roll to achieve that range. Calculations based around the properties of the coating allow us to determine the approximate volume. We can then adjust the volume slightly higher and lower for a trial to determine the optimum coating weight for that particular application.

Suppose 1 pound per ream has been tested to be the minimum weight needed to maintain the coating's properties. In the example below, the 4.5 band is too low and the 5.5 band is slightly high, so a 5 bcm roll would be a great choice. The cost saving is huge compared to the converter using a 1.25 lbs per ream target, which would require a 6.25 bcm roll. Although the 6.25 bcm anilox will work, why would we apply 20 percent more adhesive/coating than needed to make the product work? You probably don't need me to tell you what to do with a 20 percent savings in adhesive usage.



This is a basic example of how you can utilize a banded roll to reduce coating waste while preserving coating integrity and performance. As always, it is the printer's responsibility to monitor, measure and document coat parameters to ensure that a drop in coat weight does not cause a quality concern with your customers.

So there are multiple areas where a well thought out banded anilox strategy can be applied. They can be used to improve quality, to standardize different print processes and – most importantly – to identify cost savings and help maintain a competitive edge.

One last thought. Many printers recover these rolls after their trials. I suggest that you clean the roll and keep it in a safe place. It can be used again to test 'new' plates, inks, tapes, coatings, etc that come onto the market, as well as acting as a quality control device to confirm that variables are consistent with earlier tests. When you feel, see or measure something that is different, put this roll back in with its original parameters, which were documented, and verify that all is still in order.

Thin film trial

At Labelexpo Europe 2007, Avery Dennison launched a 'Lean' labelstock with a 53 micron 'Lean' face film. **Andy Thomas** reports on Italian field trials of the new material

asson Lean Film, first seen in Europe at Labelexpo in Brussels, is based on a thin film facestock – a co-extrusion of a machine-direction-oriented polyolefin blend with a caliper of 53 microns. This should give a significant improvement in the number of printed labels per converted reel of labelstock, saving time and cost in terms of reel changes or splices for both end user and label converter. The question is, how does it print, convert and apply in practice?

To answer this question, Avery worked with Italian label converter Maer Italia and its customer Bolton Manitoba. Both companies are based in Nova Milanese near Milan and collaborate as strategic partners in packaging development.

Maer Italia SRL, founded in 1959, prints with rotary letterpress, offset, screen process, flexo and hot stamping, either singly or in combination. Bolton Manitoba SpA is the international Bolton's Group's European research and development centre for home care products and detergents. Its main brands – market leaders in many European countries – are Omino Bianco, WC Net, Smac, and Merito. The company's Nova Milanese site is its main production centre for the whole of Europe, running the full production process – mixing the product, blow-molding the containers, filling, and labeling. The facility produces 80 million 1-5 liter containers and applies around 250 million labels a year.

Explaining it's participation in the Lean Film trial, a spokesman for Bolton Manitoba said the company is facing a lot of cost pressure, including from rising raw material prices. 'Today, you need to look for new ideas all the way through the supply chain. So we were delighted to take part in the Fasson Lean Film trials.'

Reduced downtime and waste

In a joint statement following the converting and label application trials, Mario Giulianini, key account sales representative at Maer Italia, and Bolton Manitoba, commented: 'Thanks to the longer reels, Fasson Lean Film helped us to save time and increase productivity. Every reel splice means five to ten minutes' downtime, which may not seem much, but it adds up over time. And every splice is a potential risk. If it is not properly made, you can experience a time-costly web break. What's more, splices result in more scrap, and fewer reel changes can prevent that.'

Maer Italia had already conducted trials using the prototype

material. As production scaled up, they ran trials with around 1,000 linear meters, a statistically relevant amount. For Bolton Manitoba's Smac labels, they used non-topcoated white Fasson Lean Film, which they printed reel-fed offset in five colors and over-varnished.

These labels are 17.5 cm high and with an asymmetric shape, which actually exceeds Avery Dennison's recommended specification for the film. But based on results from the prototype material, both parties felt confident in going ahead.

'Fasson Lean Film performed outstandingly well in comparison to generic PE film, particularly in relation to its perfect on-press registration,' says Maer Italia's Mario Giulianini. 'As well as printability, tight, accurate register is critical because there are a lot of full-color, detailed graphics and text on the Smac labels, plus the mandatory instructions for use on the back label. The stability of the material allowed us to increase our converting speed to 70 meters/minute in comparison to the 50 meters/minute we can achieve using generic PE film.'

Label dispensing benefits

Bolton Manitoba's spokesman summed up the company's experience with the dispensing trial: 'When we switched from running generic PE film to Fasson Lean Film, we made no major adjustments to the label dispensing line — and we got a result that ranked among the best. Even though it was just a test run, there were no issues. The asymmetric labels did not lose any conformability, even on the slightly-curved and not completely smooth containers. Additionally, in our post-application tests on ageing and conditioning, the material performed normally. Based on these trials, we see a lot of potential for the Fasson Lean Film range.'



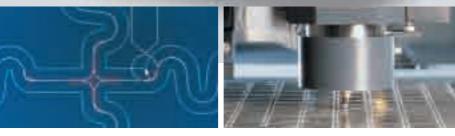
Team analysis of the Lean Film



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East meets

Danielle Jerschefske travels to China and Canada to discover the story behind ETI Converting Equipment's new factory just outside Shanghai

TI, a Canadian converting machinery manufacturer based in Montreal, Quebec, sold its first flexographic printing press, the Metronome, into the Chinese market shortly after Labelexpo Americas in 2006. Shortly thereafter, a 37 percent import tax was imposed by the Chinese Government on printing presses shipped into the country. In reaction to this measure president and founder of ETI Francois Bayzelon, also founder and former president of Aquaflex, researched more seriously into setting up a manufacturing plant in China. 'The tax made it impossible to ship into China,' he says. 'Since we already had confidence in the relationships with our people there, we decided to work through them to open a manufacturing facility. This was the only real way to fulfill our first order into that market, and the best way to further establish ETI in China.'

ETI offers two lines of products: a flexographic printing press, the Metronome, and its converting machine, the Cohesio. 'We will produce only the Metronome in China because print press manufacturing is less complicated than the Cohesio and therefore is easier to move,' explains Bayzelon. 'And, there is not a tax on the Cohesio because it is not a printing press.'

The decision to open the plant outside of Shanghai was

made almost immediately. By September of 2007 the site was nearly built. At the end of December, the first order was complete and ready for installation at a local converter – Haoneng. Already a user of the Cohesio, Haoneng, a predominantly rotogravure house, was interested in printing short order, transparent, clear on clear labels. They felt they needed flexo technology to do so. 'Rotogravure is great for our long-run business for beer label productions, but because of the limitations to the technology, we have ordered the flexographic press to satisfy our needs,' said Li Dong, business manager. 'We feel the ETI Metronome will be better for what that market demands.'

Haoneng is the most popular beer label printer in China, producing approximately 90 percent of Heineken China labels. 'We are known within the beer industry as a reliable supplier, but we want to break into other markets such as cosmetics and other fast moving products,' Dong explained.

The Metronome is designed for film and unsupported materials. It is a roll to roll machine, available with gravure and silk screen units, servo motors and ETI UV units on each unit. The UV nitrogen technology is the same innovation used to dry the silicone on the Cohesio, so it makes for an easy assimilation from machine to machine. A die-cutting unit is

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West

available, if needed, with an automatic system to peel off the waste without stopping the press.

'Our plan for expanding the press in China is to supply it to customers already satisfied with the Cohesio, with whom we already have an established relationship,' says Bayzelon. 'In the next two years we really want to encourage the local market to invest in our proprietary equipment, and we want to export the presses in the local region.'

ETI's Chinese manufacturing plant is set up much like the one in Montreal. It is 20,000 feet squared, and runs one 12 hour shift with 50 employees, more than double the associates since its opening. There is capacity for the production of up to four presses a month. 'We received a lot of interest at Labelexpo Asia this last fall,' Bayzelon says. 'We sold one Metronome and one Cohesio at the show. In the aftermath, we have sold five more Metronomes – two into China, one to Africa, one to Kazakhstan, and one into France. In fact, Mici on the Ivory Coast has purchased both a Metronome and a Cohesio. It has been an excellent start to the year. It is very exciting for us.'



ETI's future in the East

'For ETI, it is a big insurance to have a plant in China. We are a step ahead of everybody and can keep our eyes on what the future holds for us. It is important to us that we are in China to supply the market with original technology. We are very upset about the carbon copies of so many Western label presses, specifically the Aquaflex. By being here, we can help the ETI brand become better known,' Bayzelon explains.

ETI is also working on a joint venture with a Chinese gravure press manufacturer to specialize its plant to produce a press especially designed for unsupported film. 'Using the ETI name, it will give the press some bearing to sell into the European market and around the world. All of the presses are controlled for quality in China, under the ETI auspices, to maintain compliance with EU regulations. This support allows the gravure press to compete with the price of European companies.'

Manufacturing in Montreal

Since the opening of the manufacturing site in China, now designated to constructing only, and all, of ETI's Metronome orders, the Montreal plant schedules a continual assembly rotation for three Cohesio coating machine lines. The Cohesio gives printers the ability to produce their own pressure sensitive materials in-house. Two of the Cohesio machines in the shop at the time of the L&L interview were on the way to France, one to Autajon, and another was shipped to Kazakhstan to be used for clear-on-clear beer label production.





At work on the Metronome press.

'Everything is completed just in time and all supplies for one machine are stored together to help keep costs as low as possible,' says Bayzelon. 'The stock here is only for service.'

The entire machine and control panel is manufactured on site in Canada, including the integration of the Graymills silicone pump and Nordson glue heater. A large storage facility next to the testing laboratory holds film, glue, and face stock from various vendors around the globe. Prior to the purchase of consumables, customers frequently send new supplies to ETI for quality control testing.

Catherine Leveille, sales manager, explains how the selling process of the Cohesio is different than a press: 'Sales time for the Cohesio usually takes a bit longer than with a press because this type of equipment is new to the printer. Usually

"We were running two shifts with the old equipment. Now with the Cohesio we produce the same amount of material in one shift"

the production manager is highly involved in the decision making. It is important for us to convince the converter that by gaining knowledge of silicones and adhesives, much of the competition is eliminated.' ETI believes there is a significant advantage achieved when a printer manufactures its own substrates. The ability to customize and reduce costs allows printers more flexibility.

Seventy percent of ETI's Cohesio customer base has purchased the machine to take advantage of managing the process in-house. Thirty percent decided to buy the machine to cut costs. Similar to the Metronome sales plan, ETI is focusing heavily on selling the Cohesio to its repeat market, or its current customers. Many of the company's clientele are pleased with the production quality and consistency of the equipment, not to mention, the sustainable customer service. William Drori, president of Group DC in Montreal, has had two 8-color Metronomes at his plant to manufacture tamper evident labels and tags for the past few years. He purchased the Cohesio in June of 2007 to increase the amount of proprietary materials constructed in the shop. The company's main two





L-r: L&L's Danielle Jerschefske, Waley Xuan, managing director of ETI China, and Francois Bayzelon, ETI's founder and president

streams of business are coating tamper evident products and price marking systems for the retail industry.

Previously Group DC had been coating its materials with a machine engineered in-house. 'We were running two shifts with the old equipment,' Drori explained. 'Now, with the Cohesio we produce the same amount of material in one shift that we produced in two on the previous machine. And our quality control is much better.' Security products from all over the world are manufactured at the site using ETI equipment. One recognizable product is the red, sticky tape on plastic cash bags most often used for currency transfers by retailers.

'It was easier to get started with the machine than I had



L-r: William Drori, Francois Bayzelon, Maxime Bayzelon, Catherine Leveille in front of a Cohesio at the Montreal plant

expected,' Drori said. 'We were running two shifts in two weeks. ETI engineered a special drying configuration on the machine for our thick coated materials. They gave us the parameters to follow after their testing was completed and all we needed to do was follow them.'

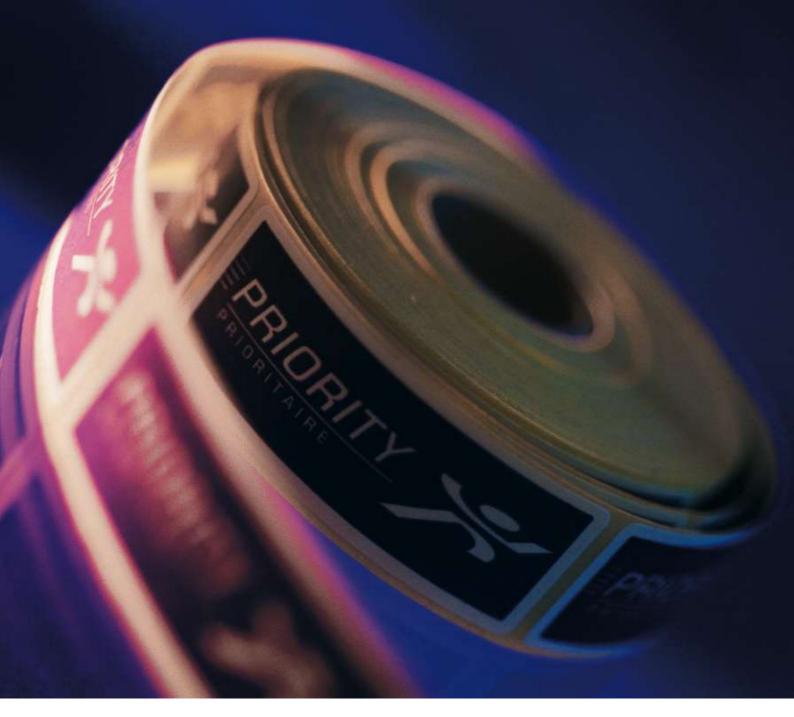
ETI has an extremely positive outlook about its future success. With the confidence of its returning users, and the interest from printers in various emerging markets, 2008 has been fast paced for the quickly growing company. 'We have just returned from very successful business trips in two market areas,' Bayzelon said. 'Both of our plants are full with orders and we only expect more to come in.'

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Dollars from waste

Dion Label is reducing its environmental impact and saving money by having its waste pelletized – and by sourcing from environmentally aware suppliers. **Danielle Jerschefske** investigates



As label converters continue to fall under Green scrutiny all the way up the supply chain, some farsighted companies are taking action to deflect the rising tide of inquiries while boosting their bottom line. One such company is Dion Label Printing located in Westfield, Massachusetts, whose owner John Dion discovered a Green solution to his waste removal problems two years ago. Dion happened upon International Paper Products', not International Paper Corporation, Westfield Converting Facility during a routine delivery and immediately he arranged to have a tour of the facility to learn more about the pellet processing operation there.

Dion discovered that International Paper Products' converting facility uses materials waste to create biomass pellets for use in coal-burning boilers in power plants. 'We presently save about half of the \$85-100 each ton that it costs to landfill in Massachusetts by pelletizing our waste,' says Dion. 'Because Massachusetts waste is taken out of state, landfill costs are quite high here. For less than half the cost of dumping the waste into a landfill, Dion Label is able to reap the economic and environmental benefits by working with International Paper.'

The vast majority of the converter's manufacturing and production waste - paper, film, and adhesive - is utilized by International Paper to create biomass pellets. The facility will accept some wooden pallets as well. 'Better than 90 percent of all our waste, including cardboard and packing materials, are pelletized,' Dion continues. The pellets provide a huge benefit to the user as well. They offer huge savings as the price per BTU is less than coal, and it burns cleaner.

Dion's transition into this form of waste pick was really simple; it only took about three weeks. The converter already had a compactor in place to recycle cardboard. International Paper supplied the container on a 6-year, rent-to-own basis. When the 40 yard container, which holds about 15 tons, is full, International Paper picks it up. The time from the pellet mill to Dion Label is not more than five minutes. So, not only is the converter saving bottom line costs and diverting waste from the landfill, Dion is also reducing the amount of carbon emissions released through the shipping process.

Dion says, 'We have been spreading the word about this option to other local converters, but I am not sure if anyone else has jumped on board yet.' Prior to signing a pick-up contract with International Paper, Dion tried to no avail, to get Waste Management involved.

'I do not see any weak points in the process,' says Dion. 'In fact, it offers a secure monitoring of security materials destruction and a

Harvesting light

Orion Energy Systems headquartered in Manitowoc, Wisconsin, has already installed, or has contracts to install, integrated lighting systems in many end users' manufacturing sites: Kraft, Sysco, P & G, and Coca-Cola.

The system Orion offers utilizes florescent lights, wireless controls for motion and time-of-day automation, and direct renewable lighting through the use of a proprietary light pipe. The light pipe is a specially designed 'skylight' type product that harvests daylight, diffusing it over 450 square feet with the use of the highly deflective metal, alanod aluminum.

A recent bill passed through Congress has defined natural light harvesting to be a renewable energy source and a low-cost, viable source of energy. Already, the company has saved its customers \$262 million and 3.4 billion kilowatt hours, in addition to reducing 3.3 million tons of carbon dioxide emissions and taking 340 Megawatts off the grid. Orion's system reduces the amount of energy used during peak and base consumption periods, and offers a 4-5 year payback. Better yet, with government incentives, tax reductions and rebates on retrofitted installations, some of its customers have managed a 2-year payback on the capital investment.

Orion installed its integrated lighting system at Quad Graphics in Wisconsin. With the investment, the printer cut energy consumption by fifty percent, gained fifty percent more light within the plant, and, most importantly, for commercial color rendering, the light quality increased significantly. Quad eventually removed all of its task lighting because the natural light provided the full spectrum of light to best match brand colors.

Bemis Manufacturing also realized annual savings of \$320,000 after installing Orion's integrated lighting system. The new system more than doubled existing light levels within the plant. certificate of destruction is provided. It has been great for us. We'd certainly like to see the process expanded.' Dion advises other converters interested in diverting their solid waste stream in a similar way to first contact a vendor who can pick up the waste and process it. 'If they are located too far away, then it may not make much sense to work with them; it's extremely important to take the distance into account.'

A converter can then take the next step in the process by working with its existing waste removal vendor so that the waste can be separated. He notes that it is crucial to make sure that the company is not locked into any long-term contracts with its current service provider.

Another choice of pelletizer is Pellet America, located in Appleton, Wisconsin, which has been providing a materials waste pick up service to local manufacturers since 1992. The company works very closely with The Channeled Resources Group. Pellet America's president, Lee Robbert, produces over 35,000 tons of pellets annually at his facility. 'It is Pellet America's goal to keep as much waste from going into the landfills as possible,' Robbert says.

The Pellet Fuel Institute, headquartered in Arlington, Virginia, says that there are over 80 pellet mills in North America. However, it has only two commercial pellet manufacturers registered as members: Fulghum Fiber Fuels in Augusta, Georgia and Pellet America. It may behove those interested in transitioning to this form of waste removal to further investigate the opportunities available in the company's local area(s).

Energy saving effort

Waste recycling is not the only sustainable task that Dion Label is involved in. Dion has chosen Masterpiece Graphix, a specialty and digital materials coater, located in St. Louis, Missouri, to supply all of its digital materials. North America's first HP Indigo authorized treatment facility, Masterpiece

Randy Duhaime, General Manager; John Dion, Owner; Dave Dion, Owner



"North America's first HP Indigo authorized treatment facility, Masterpiece Graphix sources 100 percent of its plant's electricity through wind power"

Graphix sources 100 percent of its plant's electricity through wind power. President Doug Watson explains the company's choice: 'you need a leader to take the first step. We do pay a premium for sourcing electricity with a renewable energy, yet, there is environmental gain. When all comparisons between a competitor and us are the same - quality, speed, and service – we hope that our customers will recognize our stance. In taking the first step, we are differentiating ourselves from the competition. If everyone takes a little step, then our surroundings will be that much better.'

While St. Louis is a far cry away from Massachusetts, Dion feels that the renewable energy used to produce the materials offset the travel time to the East coast. 'We do not take the environment lightly and we really want to grow Greener,' Dion says. 'Masterpiece Graphix is the best out there for digital coating. We've tried other vendors, but are most impressed by the Masterpiece work. Their choice to use renewable energy helps us feel more comfortable sourcing material from their location.'



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Smith & McLaurin has been based in its Kilbarchan, Renfrewshire facility since 1853

Environmental pioneer

Just five years after being rescued from administration, Scottish coatings and adhesives manufacturer Smith & McLaurin has increased its turnover by 85 percent and implemented a variety of impressive environmental measures. **James Quirk** reports

Scottish coatings and adhesives manufacturer Smith & McLaurin is proof that 'green' can not only be profitable – it can turn around your business.

The company was taken over by chairman Ian Mackay and the existing management team, who began working on environmental initiatives almost immediately. The result, as Smith & McLaurin celebrates its fifth anniversary under new management, is an impressive new range of environmentally friendly products and a waste regeneration system that is saving the company a six-figure sum every year.

'Because we manufacture so many different products, we produce a lot of start-up materials,' says engineering manager Bill Corr. 'Waste is inevitable, but it is Grade A material which of course can be used. On site, we don't treat it as waste – we treat it as a product.'

Nine hundred tonnes of this start-up material is now shipped to and reused overseas every year, saving the company an estimated \$50,000-\$70,000. 'We looked at various markets and alternate uses before settling on our current method and partners,' says Corr. 'The people we deal with are very knowledgeable so it is a great partnership.' "Waste is inevitable, but it is Grade A material which of course can be used. On site, we don't treat it as waste – we treat it as a product"

Smith & McLaurin also sends 500 tonnes of aqueous chemical waste to a UK company for use in a unique precious metals reclamation process, saving a similar amount of money every year. Seventy percent of the company's waste is now being regenerated instead of going to landfill.

'Landfill and water extraction costs are rising,' says Corr, 'so there is an increasing number of people looking to reuse other companies' waste. Our waste bill was huge, but it has been reduced dramatically by these initiatives.'

Three years of planning and research into environmentally friendly materials led to the launch of the company's AdaptEco



range last year, which includes PLA and 100 percent recycled papers and a new adhesive, EP7000, based on 75 percent sustainable crops which are also cellulose free and not genetically modified.

'We've seen many attempts at a "green" adhesive,' says Elaine Williamson, product development manager. 'They are usually either not environmentally friendly or don't work properly. The EP7000 is even stronger than our standard hot melt adhesive.' According to sales and marketing director Craig Monks, the EP7000 adhesive is of mass appeal and gaining interest across Europe at a rapid rate.

The environmental initiatives don't stop there. Smith & McLaurin is currently researching the development of a range of water-based pressure sensitive adhesives based on renewable polymers. Last year the company became the first self-adhesive laminator in the world to gain dual of chain of custody certification under the FSC and PEFC schemes, which ensure that paper-based products are produced from sustainable and well-managed sources. Where possible, the company will also give priority to suppliers who can deliver FSC approved products.

Many companies are currently jumping on the environmental sustainability band wagon – hoping to cash in on a consumer concern that has increased dramatically in the last 12-18 months. It is rarer to find a supplier with a long-standing interest in these issues – but doubtless Smith & McLaurin is one. The

"We've seen many attempts at a "green" adhesive, 'They are usually either not environmentally friendly or don't work properly"

company hasn't used solvents since 1999, and its environmental initiatives aren't simply for show. Elaine Williamson talks of the need for 'small steps as opposed to knee-jerk reactions', in order to get these processes 'truly embedded'. Craig Monks explains that the company's green initiatives and products will form the center piece of the strategy for growth: 'We intend to be the supplier of first resort whenever environmentally friendly products are demanded by the marketplace'. He and his colleagues are also implementing measures internally to reduce the carbon footprint of the business. On every level, action is being taken. 'It is easy to talk the talk,' admits Monks, 'but there must be action too. That is what we are interested in.'

Smith & McLaurin are also applying 'green' pressure by adopting the World Wildlife Foundation Scorecard as a tool to



Elaine Williamson, product development

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"Smith & McLaurin are also applying 'green' pressure by adopting the WWFScorecard as a tool to evaluate the environmental performance of current and future suppliers"

evaluate the environmental performance of current and future suppliers. Developed by the paper industry, the WWF scorecard focuses on recycling, responsible forest management and climate change.

Products are manufactured at the company's factory in Kilbarchan, Renfrewshire, home to 85 employees and where Smith & McLaurin has been based since its foundation in 1853. The factory produces 70 million square meters of materials annually, and over 2,000 different products are supplied to 24 countries on four continents. The company's raw materials typically end up as food and pharmaceutical labels, car-park tickets or warehouse distribution stickers.

'Our range is almost limitless,' says Craig Monks, who has nearly 20 years industry experience of the global label market. 'We have a philosophy of trying to create products that others don't – so we have many specialty grades that are unique to Smith & McLaurin.'

This philosophy is supported by a comprehensive fleet of coaters, all named in line with the company's proud Scottish heritage. There is the 1.5 meter wide Highlander coater for water-based and solventless pressure sensitive adhesives; the 1m Claymore hot melt coater; the 1m Clansman thermal coater; and the 1.5m Caledonian coater, the company's newest at less than two years old, which is dedicated to specialty products.

The Caledonian works exclusively with water-based adhesives and has a versatile coating system that enables the production of coat-weights from 3gsm to 30gsm. Customers also benefit from flexible and changeable strip coating patterns that can be altered without significant downtime or cost. The versatility of the coater has enabled Smith & McLaurin to produce more clear face materials including 'clear-on-clear' which is in high demand in the personal care market, amongst others.

'The four coaters give us a very complete offering: different materials can be used and any volume can be handled,' says Monks. 'Many bigger companies cannot be so specialized. Plus we are the only major selfadhesive manufacturer to have our own thermal coater.'

The factory also contains three 1.5 meter wide slitters, and such is the variety of products manufactured that there is a substantial area dedicated to samples for sending to customers.

Smith & McLaurin is well-placed as a company large enough to supply such a variety of products to so many international markets, while still remaining flexible and capable of producing specialized and customized ranges. 'We don't have a big company ethos like some of our larger competitors,' says Monks. 'We've centered our philosophy on doing what they don't.' When the result is an 85 percent increase in turnover in five years, it's a philosophy that is definitely working.



Sales and marketing director Craig Monks

Safer UV curing

Drawing on a recent study examining handling of UV inks, consultant **Robert Shimmin** explores the potential health and safety risks and offers guidelines for good practice

As converters focus increasingly on health care, environmental protection and employee safety, the handling of UV inks has recently come into the spotlight.

At the RadTech Europe Vienna Conference in November 2007 the first UV certificates were awarded to two European printers. The UV certificate is issued by the Institution for Statutory Accident Insurance and Prevention in the Printing and Paper processing industry (Berufsgenossenschaft Druck und Papierverarbeitung) in co-operation with RadTech Europe (the European Association for the Advancement of Radiation Curing by UV, EB and Laser Beams). The UV certificate, a trademark for trust and quality in the use of UV/EB technology, owes its existence to a significant piece of EEC funded research called the Uvitech Project.

The Uvitech Project

It was an SME German printer concerned over the potential health and safety implications of the processes that set in motion a detailed two-year pan-European study into UV printing in typical SME factories found in four European countries.

The main aim of the Uvitech Project was to assess the risks associated with UV printing using high quality measurements. The findings were then be used to create:

- a Health and Safety Risk Assessment Matrix
- an Environmental Impact Assessment Matrix

These two matrices are the basis of a comprehensive source of information for the printing sector into the safe use of UV curing technology. Dr Keith Edmondson, Envirocare was technical co-ordinator on the project. He explains the background to the study.

'It was clear that the most vulnerable companies are the smallest ones who do not have the resources or expertise to assess and manage their own risks. This project sought to offer some commonsense, generic information and guidelines to better working practices that would enable printers to ensure that their employees were better protected from hazardous chemicals.'

The key Health & Safety findings from the Uvitech Project are highlighted in this article.

Problems from uncured UV inks and lacquers

Printers are aware of the economic and technical advantages of UV curing as well as the safety implications of using polymer systems containing acrylates.

It is known that uncured UV inks and lacquers may contain constituents which are skin irritants or sensitizers or which may be harmful to the eyes.

Inkfly vapor exposure

An important area of the Health & Risk Assessment Matrix is related to inkfly vapor exposure.

For UV printing it was believed that the aerosol inkfly (particulates) was a greater risk than inkfly vapors. However, during the course of the project the opposite was found to be true. It was discovered that airborne multifunctional acrylates (MuFa) vapors can be found in printing workplaces in significant amounts for comparison with the recommended exposure limit of 1mg/m3 for a standard 8-hour working shift.

The source of MuFa vapors associated with the MuFa monomer used in the ink or lacquer formulations, which can be typically present at levels of 5 percent in UV inks and 20-30 percent in UV lacquers. Tripropylene glycol diacrylate (TPGDA) is the most commonly used monomer in UV lacquer and ink formulations in the printing industry. There is, therefore, more potential for UV lacquers to be the source of MuFa vapors than UV inks.

For all hand-cleaning operations involving operators working close to UV inks and lacquer products, for UV lithographic, small-scale print proofing and UV label printing processes, the risk assessed was significant and in need of further investigation.



High MuFa exposure – causes and recommendations

Printing factories with potentially high MuFa vapor exposures will often have other 'symptoms', such as high solvent vapor levels for both long and short-term exposures and poor working practices.

In principle, therefore, the Uvitech study recommends that the following procedures should be considered:

1. Check ventilation controls

Two types of ventilation control are important to consider in the control of inkfly vapor-ozone and solvent.

• Local Exhaust Ventilation (LEV) is used to capture vapors at source, typically using hoods and booths. LEV systems on UV printing machines are not only an important means of controlling exposure to ozone and removing excess heat from the UV lamps, but also useful in removing solvent and inkfly vapors from the printing machine.

In addition to competent design, installation and commissioning of a ventilation system, regular inspection and maintenance is essential and this is normally the requirement in most European countries. Operatives should also be encouraged to report any faults.

• **General ventilation** (for example roof vents, windows and doorways) dilutes vapor concentrations found in the workplace. General ventilation can either be natural or forced ventilation and creates a flow of air into and out of the workplace.

Recommendations might include: installation of ventilators in window frames (for example louvred windows), installation of roof vents and installation of powered ventilation systems in walls and roofs.

2. Improve working practices

· Reducing skin and eye contact

By employing good working practices the risks from solvents and uncured UV inks and lacquers coming into contact with the skin/ eyes can be minimized.

Skin contact can be reduced by good plant design. For example, one SME factory that was studied modified their UV printing press so that automatic roller and blanket washes could be selected and controlled by the printer at the machine to enable them to switch between the UV wash solvent and the conventional wash solvent and between individual ink units.

• Safe systems of work

Where automated procedures are impractical, safe systems of work are paramount. The use of protective clothing such as gloves, aprons, eye/ face protection and footwear may be necessary.

A poor working practice observed frequently in many of the SME factories were solvent cleaning operations on UV machines, carried out by hand using rags and without wearing gloves, even though they were provided. Adequate protective clothing – for example impervious apron and gloves – should be used. Skin contact with contaminated rags can lead to skin irritation due to the 'defatting' action of solvent and the deposition of uncured material on the unprotected skin.

Cleaning rags, once used, should be disposed of immediately and not put in clothing pockets or left on benches where they may be handled by others. Suitable lidded containers for the contaminated rags should be provided and labeled to indicate that skin contact should be avoided. The containers should be disposed of safely – for example via a cleaning/ recycling organization.

Permeable clothing which becomes accidentally contaminated should be immediately removed and placed in suitable containers, labeled and sent for laundering.

UV cleaning solvents that are not absorbed through the skin into the body are commercially available and it is therefore sensible for printers to select these.

If cleaning solvents are intended to be used several times before subsequent disposal, they should be kept for use only for cleaning machines using UV cured materials, and should be stored in suitable closed containers, labeled to indicate that skin contact should be avoided.

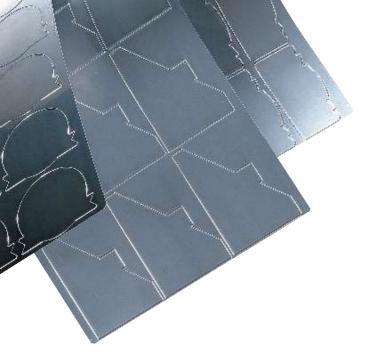
• Health surveillance / biological monitoring

Health surveillance will detect adverse ill-health effects, and can also help the management to monitor the effectiveness of process controls. For persons exposed to UV curable inks, lacquers etc, dermatitis may occur on the hands and forearms.

The following measures will help protect employees:

- Arrange for a responsible person, (supervisor or first-aider) to receive training by an occupational health doctor or nurse on the symptoms and signs of dermatitis, and set up a system of periodic skin inspections. Typically this might be carried out at least every six months.
- Screen new employees for skin problems before they start work with the substance that might cause skin reaction
- Refer any employee found to have symptoms to a suitable medical practitioner





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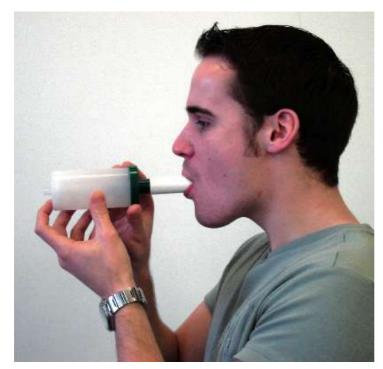
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Breathing into HSL Breath Sampler

	Risk Assessment	Comments
Total inhalable dust	Low risk	Insignificant levels of total inhalable dust found in the workplace
Ink-fly particulate	Low risk	No desposits of colored inkfly found on filters exposed in workplace by personal or static monitoring
Inkfly – MuFa vapor	Medium risk	Significant levels of MuFa vapors found in one workplace with poor general ventilation and high solvent vapor levels
Airborne solvents	Medium risk	Solvent exposure can be a problem in some factories with poor ventilation. Trichloroethylene was found in one factory in general use as a cleaning solvent
Ozone	Low risk	Normal extraction on machines adequate to control exposure
Actinic UV	Low risk	Most UV lamps in modern printing machines are adequately shielded
Noise	Medium risk	Noise can be a problem around some machines
Working practices – eg use of PPE, eating, drinking and smoking in factory work place	High risk	Commercial pressures still override implementation of good health and safety working procedures at some SME's



Expelling exhaled air onto sampling tube

(occupational health physician) who is familiar with the process risks

• Train employees so they can recognize and report any signs of symptoms and signs of illness to the responsible person

Investigate sources of 'low vapor' UV inks and UV lacquers

During the Uvitech project two 'new generation' UV lacquers were developed for trial purposes in order to reduce the risk from MuFa vapors.

At one SME factory these new-generation low MuFa-vapor lacquers were tested under commercial conditions on one day. These lacquers were formulated from acrylate monomers previously shown under laboratory conditions to have much lower MuFa vapors than TPGDA. MuFa vapors were detected close to the machine's lacquer unit, but at significantly lower levels than when TPGDA monomer was used; no MuFa components were detected from these low-MuFa vapor monomers in the printers' breath tests, taken post-shift.

New method for biological monitoring

During the Uvitech project a new method for measuring MuFa airborne vapor and its components was developed. This was presented at the RadTech Europe Conference 2007 held in Vienna.

A breath test biological monitoring technique, adapted by Bradford, UK-based Envirocare, that is able to identify the multi-functional acrylate monomer-content (MuFa) of the vapor, strongly featured in this study. This new method was used to reassess the health and safety performance of the same four SME printers as used in the original project and summary of the findings can be seen in the table below.

Dr Keith Edmondson, Envirocare, explains: 'Since working practices had been identified as high risk, biological monitoring can be a way of demonstrating how good the control is and how much of the chemical has entered the body. It is a way of assessing exposure by all routes of entry and



Dr Keith Edmondson, Envirocare – technical co-ordinator on the Uvitech Project

involves measuring the chemical, or its breakdown products, in urine, blood or breath. Biological monitoring can identify specific residual solvents (or metabolites) in urine and breath tests can also be adapted for use on multi-functional acrylates'.

This work has shown the importance of using an analytical method which is capable of identifying and measuring all multi-functional acrylate components present in the vapor arising from uncured acrylate monomers.

Since it is believed that MuFa's have not previously been measured in the breath, further work is necessary to assess the significance of these results.

A way forward

Printers should view the health and safety of their employees, clients and their responsibility to the environment as the most important aspect of their business.

But as with all businesses, commercial pressures can still override the implementation of good health and safety working procedures.

The findings from the Uvitech Project clearly identify hazards that are relevant to most printers using UV inks and lacquers.

It is recommended that all printers take a look at the full findings from the Uvitech research available to all on the Envirocare website (www. envirocare.org). In many cases the recommendations are relatively easy to implement, but the only way to be certain that the risk assessment is safe and sufficient is to undertake some actual measurements with the help of professionals. This is particularly important for printers preparing for formal environmental or health and safety accreditations.

Envirocare is a leading consultancy in environmental air emissions monitoring and health & safety services and can offer the services which will enable compliance with legislation. More specifically they can offer risk assessments related to UV printing. Their methodology for measuring acrylates in air will allow printers to ensure that their staff are able to work in a more productive environment and are better protected from hazardous chemicals.

It is also encouraging to know that a 'new generation' of low vapor MuFa lacquers and inks are now technically possible. It is clear that the work as outlined in this article can make an invaluable contribution to health and safety in the labels industry and beyond.

The alveolar breath is transferred by a plunger into a steel tube containing an adsorbent material that stores the substances contained in the breath sample, whilst allowing the water vapor in the breath sample to pass through the adsorbent. The adsorbent tube is capped and then put into analytical instruments to separate and measure the components of the breath.

Why carry out biological monitoring?

Biological monitoring has a number of benefits when compared with other types of exposure monitoring:

- it can help to show whether personal protective equipment (e.g. gloves, masks) and engineering controls (e.g. extraction systems) are effective in controlling exposure
- it measures exposure to a chemical via all routes breathing in, ingestion and absorption through the skin
- it can tell you what has actually been absorbed into the body
- it can show how effective any improvements in controls have been in reducing exposure
- it can provide reassurance to workers that their personal exposure is under control

More information

For more information on the Uvitech project or risk assessments related to the printing sector contact Dr Tony Smith, Envirocare: tonysmith@envirocare.org or visit www.envirocare.org. Robert Shimmin, of Shimmin Associates Limited, can be contacted at robert@shimminassociates.co.uk, and for more information about RTE, visit www.radtech-europe.com. ■

Pioneering breath test

One of the most reliable ways of assessing a printer's exposure to harmful substances is through biological monitoring.

Biological monitoring by means of breath test sampling is the most convenient and acceptable method and is widely used for measuring exposure to the volatile organic compounds found in solvents.

Envirocare has adapted the HSL Breath Sampler used on solvents in order to detect MuFa vapors from uncured UV inks and lacquers. MuFa's, as well as being well known skin contact irritants and sensitizers, can also induce respiratory hypersensitivity leading to asthma.

The HSL breath sampler is in the form of a large plastic syringe, into which the worker breathes through a mouthpiece (see pg 51).





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Okil – an international ink partnership

In the first of a two-part article on one of Russia's biggest label printers, **Andy Thomas** reports on a successful alliance between Okil and ink supplier Fujifilm Sericol



One of Okil's flexo presses

n the last two decades Russian business has not only managed to strengthen its position in many sectors of the world market, but also introduced technological and management innovations into the global business framework. For this reason it is no longer a surprise when successful western brands come to Russia not only in search of new markets and customers, but also with the aim of forming strategic partnerships with Russian companies.

One such successful alliance is between UK-based ink supplier Fujifilm Sericol, and leading Russian self-adhesive labels converter Okil.

Historically the main focus of Sericol was screen printing ink. Following the development of UV flexo printing technology in Europe, priorities have shifted. The company has placed more emphasis on the development of UV flexo inks and today occupies a leading position in that segment.

One of the keys to Sericol's success in this technology – as well as searching out new niche markets – has been a careful selection of reliable business partners capable of providing necessary support to the development of new products.

In an attempt to venture into the Eastern European market, Sericol came to Russia and Ukraine. St Petersburg-based selfadhesive label converter Okil was the first company to see the potential benefits of working in collaboration with Sericol, and has provided comprehensive support to Sericol's research and development of new flexo ink systems.

One example of this collaborative approach is Sericol's Uvivid range, which allows a finer anilox to be used, giving a lower ink film weight without compromising color shade or brightness. This move also allowed for finer dot reproduction and cleaner vignette printing. Currently, manufacturers of flexo inks tend to aim to increase color density and decrease the number of lines of raster on anilox rollers.

'Seven years ago manufacturers were cautious about this approach, and the only printing house in Russia which supported Sericol in development of this method was Okil,' says Ian Isherwood, business development manager Narrow Web Europe at Fujifilmsericol.

A search for the latest technology trends and their implementation in the Russian market has always been an important component of Okil's strategy, and the company has pioneered more than one new technology in Russia. The collaboration with Sericol provided Okil an opportunity to innovate and grow, and its production sites have become something of an experimental field test facility with their own Sericol color management lab.

Okil has been involved in a number of products developed by Sericol, which have included special white inks as well as the UVivd range of specialist narrow web inks. Chief director of Okil, Denis Okulov, comments on the business partnership with Sericol: 'Sericol offers the best inks and meets our requirements in respect to innovations, technological equipment and standards of service. Sericol works with companies whose work ethos is close to ours.'

Okil has ten years' experience with flexo. The company purchased its first flexo press in 1998 – a used Nilpeter – and a year later was the first label converter in Russia to acquire a flexo press with a rotary screen printing unit. Today the company's battery of flexo presses includes machines from Nilpeter, MPS and Gallus.



How far can flexo go?

Despite increased competition from other processes, flexo technology still flourishes. **Barry Hunt** reports on developments

Challenged at the top end by rotary offset and sniped at by digital printing at the other – that's how flexo technology looks to some people. Others feel that it has reached some kind of technical plateau, or even a dead end. The reality would seem different. Manufacturers are still coming up with new ways of making their narrow and mid-web presses more productive (see boxout). Modern flexo presses are also far more flexible and generally capable of delivering a quality of printing that compares well that of offset. Most of these advances have been driven by label market demands and an increased emphasis on film-based packaging products. The supporting infrastructure has also seen many advances in respect of energy-saving UV curing systems, flexo inks and coatings, and laser-engraved fine-cell anilox rolls. The pre-press applications, digital proofers and direct-to-plate systems are also more geared to the industry's needs.

Flexo's strength is reflected in some solid technical advances in recent years. They include the wider adoption of servo drive technology, bringing measurable and automated precision to the principal press functions. This has allowed even faster changeovers for plates and inking between jobs on faster and often wider-width presses. More new presses include the option of sleeve/plate technology allowing a wider choice of repeat lengths and greater all-round flexibility.

Of course, these high-end features are also an integral part of the latest rotary offset presses, which figured so prominently in our recent review of Labelexpo Europe. Some may see it as ironic that a combination of technical progress and market forces should bring both processes into head-to-head competition at roughly the same time. At its simplest, this view sees flexo as being very effective in producing vibrant solid colors on many types of packaging substrates, whereas offset runs away with the quality crown. In most cases it is a sterile argument. No single printing process is the best all rounder capable of handling all jobs. This is reflected by the growing number of converters who operate flexo and offset as complementary processes, much as they may add digital color printing into the mix.

The hybrid approach

We are also seeing more press manufacturers including both processes in their ranges, either as dedicated presses or as some kind of hybrid. For those with a long term view of things, Nick Hughes, managing director of Nilpeter UK, points out that after ten years the extra cost of buying an offset press compared with an equivalent UV flexo press would roughly balance out, thanks largely to cheaper repro and plates.

Hybrid platform presses can be equipped with UV flexo, rotary offset or gravure units, as well as the usual rotary screen and finishing modules. Some offer sleeve/plate technology. As extensions of the combination concept, hybrid presses are capable of multi-substrate production and are not necessarily confined to high-end PSA applications. They are also an ideal choice for the growing number of sheet-fed offset printers who are diversifying into web-fed production of glue-applied and patch film labels for the drinks industry.

Obviously, any multi-process production method requires press operators who are sufficiently skilled to work with totally different processes. New entrants would also need to set-up separate platemaking facilities, or use trade platemaking services if available. The latest types of CTP thermal imagesetters simplify the hybrid workflow by processing flexo, letterpress and offset plates. Examples include Luescher's FlexPose! and Kodak's new Thermoflex Mid Hybrid film and plate imagesetter.

Whatever type of printing method converters install, they naturally want to remain competitive and, above all, profitable in the face of declining prices and rising costs. Competition is certainly one of the more volatile aspects of manufacturing presses in Europe, the USA, Taiwan and Japan. It is an interesting aspect of the flexo industry and highly topical now that more Chinese press manufacturers are seeking to expand beyond their domestic markets. Some may question the build quality of many of their basic and mid-range flexo models, while noting a vague resemblance to an existing design. But in China, as elsewhere in South East Asia, these presses are at least affordable to those seeking to specialize in label printing. Only a few of the larger printers/converters are in a position to afford to invest in the type of equipment that we take for granted.

Manufacturers and suppliers who are opening up these developing markets are optimistic that the healthy double-digit growth for PSA labels will invariably lead to increased business for them. The growing influence of international brand owners also plays a key role in this development process.

Several of the larger manufacturers already acknowledge the need to raise their game in order to compete domestically, as well as in export markets. Providing the fast-growing Chinese economy does not implode upon itself, some may even establish stronger manufacturing, licensing or marketing partnerships with western manufacturers. They may even take them over if evidence of the so-called "Traditionally the coatings are applied by one or more inline UV rotary screen modules, however cost considerations have led some converters to try the latest high opacity UV flexo white inks"

sovereign funds in international banking is anything to go by. It's worth remembering that the first Japanese roll-label presses were direct copies of western semi-rotary letterpress machines. The enormous growth of the self-adhesive label market from the mid-1970s onwards led to the introduction of many innovative domestically-produced machines. Interestingly, most were semi-rotary or rotary letterpress machines as is the case in China today. Only recently has flexo begun to gain ground in Japan, as is expected in China.

Opaque flexo inks

A central aspect of printing and converting film-based products is to print solid white background coatings onto the treated substrates. Traditionally the coatings are applied by one or more inline UV rotary screen modules, however cost considerations have led some converters to try the latest high opacity UV flexo white inks. The suppliers claim that these white inks offer printability levels that resemble those for UV screen. They can be overprinted by any process and avoid the extra costs involved in preparing screen cylinders and UV screen inks. Of course, there are certain requirements to make this method work, such as installing laser-engraved anilox rolls that offer a higher ink volume to optimize transfer. Thin photopolymer plates also help.

Omet's new X-Flex UV flexo press



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"Sleeve technology allows the fast mounting of photopolymer plates – or seamless 'in the round' sleeves – onto lightweight cylinder carriers"

When Fujifilm Sericol was developing its Super Nova White ink it worked in partnership with UK-based Sandon Global Engraving Technology. Its latest HOW anilox engraving process was specifically designed for use with high opacity UV flexo white inks. Other high opacity whites include Xsys's Flexocure Ivory, Sun Chemicals' high opacity version of Solarflex White to augment its UV Solarscreen inks, and Zeller + Gmelin's Opaque White in the Nuvaflex 30 Series of UV flexo inks.

Given the increasing interest in these inks, it's worth repeating a comment made by Niklas Olsson, global brand manager, narrow web division, Xsys Print Solutions in a recent article on screen technology (*L&L*, June/July 2007). He said increasing the opacity of a UV-curable white ink involved more than simply throwing in more titanium oxide. Doing this would inhibit the essential polymerization effect. Also, to achieve a fast-curing crisp white without discoloration demanded careful selection and blending of the titanium oxide and photo initiator pigments. While high opacity flexo inks will certainly gain ground, it is likely that most producers of premium-quality filmic labels will continue to rely on the proven UV rotary screen technology for opaque backgrounds, as well as for tactile images and texture varnish effects.

Sleeve technology

Another narrow web flexo development that has appeared relatively recently is sleeve technology, which allows the fast

Some UV flexo developments

Has flexo gone as far as it can go? The following examples of some developments prove otherwise. The X-Flex from Omet features the servo-driven Vision-1 register control system. By combining the chill drums with the impression cylinders, the designers have kept the web path exceptionally short to minimize web tension problems in a manner that emulates a CI flexible packaging press.

Comco's successor to the Pro-Guide, the shaftless and gearless C2, typifies the new breed of mid-web, multisubstrate presses Its servo-based I-Drive (Intelligent Drive System) controls the main web tension, automatic registration and printing functions, giving measurable control over performance. Options include a gravure print unit (but not offset), which also functions with the C2's dry-bond lamination unit. This gives multiple web path options for laying down adhesives or coatings in any order or configuration. The C2 comes in five web widths up to 32 inches, prints at up to 305 m/min (1,000 ft/min) and features sleeve technology.

Edale says it went back to first principles in designing the recently launched high-end Gamma for multi-substrate production. The Pit Stop Colour Change (PSC) system incorporates print heads that are said to allows complete color changes in two minutes. PSC uses a pre-register device that can automatically place exchanged print cylinders almost spot-on to the final linea register position. It also stores job-specific references, including auto register, ink colors and tension settings for materials ranging from thin films to cartonboard.

mounting of photopolymer plates – or seamless 'in the round' sleeves – onto lightweight cylinder carriers. Besides reducing set-up times on multi-color jobs, sleeves give greater flexibility with repeat lengths without the extra cost of using steel or aluminum impression cylinders. Beside being cheaper, sleeve carriers require no gears or bearing rings, which reduce wearing parts. They are also easily stored and can be prepared off press during runs. The introduction of direct laser engraving of seamless sleeves has extended converters' capabilities in handling mixed packaging work. Flexo has a distinct advantage over offset in this respect. Printers using offset sleeves carrying wraparound metal plates have a plate gap of around 3mm to work around.

In a briefing paper from Rotec Hülsensysteme, a German sleeve manufacturer, Torsten Scholz, Gallus's product manager, is quoted as forecasting a strong trend towards seamless flexo sleeves. They are ideal for not just printing large runs, but also handle jobs with numerous plate changes or frequent repeat orders. He said this type of origination can retain critical color registers, which suits many film-based products, especially shrink sleeves.

Mario Busshoff, Rotec's CEO, adds a caveat when referring to the differences between narrow and wide web applications. The former places a higher demand on the plate in order to obtain accurate register. 'Label printers tend to use the entire web width when using impression cylinders, which means any printing forme must be dimensionally stable right up to the edge zone. The demands on concentricity and, above all, diameter accuracy have a maximum plus-minus tolerance of only one hundredth of a millimeter. It is much more difficult for plastic sleeves to fulfill these requirements compared with metal impression cylinders.'

The porosity of compressible flexo sleeves also poses a challenge to maintaining dimensional accuracy and concentricity. Other narrow web factors include mitigating the effects of temperature changes introduced during the production process. Dimensional fluctuations in the flexo sleeve would also lead to register problems for other combination processes.

"The introduction of direct laser engraving of seamless sleeves has extended converters' capabilities in handling mixed packaging work"

Rotec, however, claims its recently-introduced Blue Light Label multi-layer sleeves give high dimensional stability to the sleeve's outer edge zones and consistent performance even after intensive use.

In summary, it is fair to say that flexo technology remains a dynamic part of our industry and is still growing, but it faces increased competition on several levels. For example, more powerful and versatile industrial digital printing and finishing lines challenge flexo in the many expanding areas requiring shorter run lengths, some degree of personalization and the versioning of label runs. A new generation of UV-based color inkjet modules may also have an impact, although here most will run either integrated within a flexo press or as a web-fed stand alone unit. Rotary offset with its lower pre-press costs and high print quality remains an unquantifiable threat to UV flexo, but only in certain high-end label and packaging markets. The latest semi-rotary offset presses also have an expanding niche at the quality end, such as wine labels. But all in all, continual improvements to all aspects of flexo will ensure it continues to dominate much of the global market for labels and packaging.





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Innovation With Passion



Labelexpo Asia reflects Chinese market growth

The dramatic growth of the Chinese label industry was reflected in the size of Labelexpo Asia 2007. **Andy Thomas, James Quirk** and **Danielle Jerschefske** report

abelexpo Asia welcomed an impressive 14,004 visitors from China and abroad to the Shanghai New International Expo Center – a 54 percent increase on the 2005 figure. The show demonstrated how the Chinese and Asian label industry has radically changed since the last event in 2005. The quality of the technology on display – both from foreign and local suppliers – was higher than ever before, reflecting not only the

development of the local market, but also the recognition by foreign companies of the increase in quality labels being produced by local printers. The Chinese labels market is currently booming with the growth of over 18 percent per annum.

Visitors came from 71 countries, with almost 15 percent of people from outside China. Large delegations attended from



Korea, Japan, Malaysia, Thailand, Singapore, Indonesia and India.

The net floor space grew by 16 percent, with 210 leading Chinese and international suppliers exhibiting (compared to 150 in 2005). The success of the show was also reflected in the exhibitors' re-booking, with 50 percent of the floor space already sold for the show in 2009.

Mr Wu Wenxiang, honorary board director of the Printing Technology Association of China, which supported the show, said: 'This year's Labelexpo Asia has outweighed the former two editions, in terms of the number of visitors and exhibitors and the quality of exhibits.'

Mr Yin Deming, president of Shanghai Printing Association, said: 'We are very pleased to see that Labelexpo Asia maintains such a high number of international exhibitors and visitors. Having visited the show this year, we realized how great the potential of the Asian label market is, and we are certain that Labelexpo Asia 2009 will be another great success.'

Digital printing

HP Indigo

When narrow web digital printing systems arrive in a market, it is a sign of increasing sophistication amongst end users

Labelexpo Asia 2009 to be extended

'Having had some fantastic feedback on the quality of the show from visitors,' said Labelexpo managing director Roger Pellow, 'we have decided to extend Labelexpo Asia 2009 to four days to give extra time to exhibitors to do business. We aspire to build on the success of Labelexpo Asia 2007 to encourage a further growth of the labeling industry in the region.'

pushing for shorter runs, more personalization and variable data in color. The big question is whether the Chinese label market – still at a relatively early stage of development – is ready to make major investments in digital printing.

HP Indigo bought its latest ws4500 digital press technology to the show. 'Personally I found the show above expectations,' commented Christian Menegon, industrial business development manager at HP Indigo.

HP Indigo. 'We brought an ultra-modern technology for which I thought the Chinese market would not see the interest yet. I was not too wrong, but other factors are moving things forward quickly. Globalization through brand owners installing manufacturing sites locally is demanding an equivalent type of service and quality everywhere, including China.'

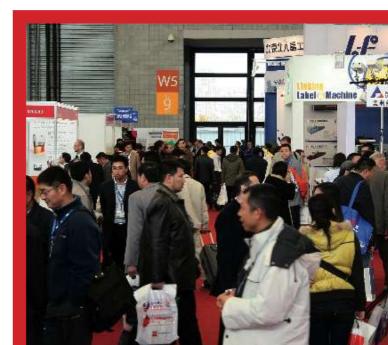
Menegon says deals for machines were signed at the stand and there are many more leads to follow up.

'All that makes me think that the local guys can jump over what took western countries years to develop, and go to the most suitable technology available at the moment, with no development curve. The demand is there, the tools are there.'

Xaar

Xaar introduced its advanced inkjet technology to the Chinese label sector at the show with demonstrations of its latest printhead, the Xaar 1001. The Xaar 1001 printhead made its label printing debut at Labelexpo Europe in September in the innovative 'Caslon' modular print module developed by FFEI for Nilpeter. In addition, Sun Chemical's new SolarJet and EFI's Jetrion 4000 systems both rely on Xaar printheads to deliver industrial label printing performance.

'The trend towards limited-run special offers, short-term marketing initiatives and multiple language variants are driving label and packaging manufacturers to look for alternative production methods,' explained Wangwei,





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managing director, Asia Pacific. 'Inkjet printing enables shorter runs to be produced cost-effectively and can be integrated into conventional flexo press lines if required to add personalization and versioning capabilities.'

FujiFilm

An interesting development from FujiFilm was CodeStream, a transparent, water-based coating which produces high quality human- and machine-readable marks when exposed to a low power CO2 laser. CodeStream allows variable data to be applied to labels in the exact position specified by the designer, making label design less restrictive and eliminating mark-related rejects. At FujiFilm. CodeStream also has security benefits, as its marks are tamper-evident and unalterable.

The system is targeted against thermal transfer, inkjet and laser ablation systems and is claimed compatible with laser writing equipment found on most existing production lines.

Press manufacturers

Omet

Omet demonstrated a Flexy-S 330mm wide press printing PS labels, and the machine on stand was sold to a Chinese converter. Omet has now sold eleven presses in China – five in 2007 alone. 'We are finally seeing a growing demand for quality in China – it has taken us a few years,' says Paolo Grasso, sales manager Asia

'For us the show has been a success. We have been surprised by how many people have come from outside China, for example Australia, India, and these are people who would not normally travel to a European show.'

Mark Andy

Mark Andy showed its commitment to the Chinese market with two presses on stand. One was a 13in LP3000, with eight color units all UV and in-line cold foil transfer. The press was printing on a PE face/ Glassine liner PS laminate. The second machine was a 10in 2200, again with eight UV print units. Also on the stand was a 13in VSR 300 inspection rewinder with a BST Shark 100% inspection system. The system was shown with a circular knife cassette and shear cutting cassette.

'We had a particularly good show for our slitter-rewinders and some firm press orders will result from the show,' said Mark Andy's Mary Sullivan.

'Mark Andy's showroom and training center has already been a great success, and we have plans to run a series of training seminars – much like those run with great success in North America and Europe – in 2008.'

Nilpeter

For the first time at Labelexpo Asia, Nilpeter was demonstrating combination offset technology with its MO-3300 Servo multi-functional label printing press.

This machine represents the third-generation of Nilpeter's established offset-based combination press with a maximum printing width of 330 mm (13 inches) for producing labels, cartons and flexible packaging. The MO-3300 Servo can also include a gravure printing module that allows printing with metallic inks, heavy solids and cold-seal coatings.

The press on the stand had been sold to one of China's biggest label converters, which counts amongst its customers Proctor & Gamble in China.

Commenting on the show, Nilpeter's Jakob Landberg said: 'We had an excellent first two days, and the show this year was much better than that of two years ago.' Landberg also noted the highly international flavor of visiting label converters, coming from Korea, the Philippines and Thailand in particular.

Labelmen

Labelmen showed three machines on its stand. As well as a silkscreen press incorporating servo-driven tension control systems, Labelmen demonstrated two new press developments. Firstly, the company showed single pass production of in-mold labels, including printing, cutting and stacking in-line. It also demonstrated a press configured with integral Martin Automatic STS automatic butt splicer and STR

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automatic turret rewinder – the result of a joint development project between the two companies.

Gidue

Although not demonstrating a label press, Gidue used the show to introduce its certified service center in China and a new local agent, Bill Shen.

At a press conference during Labelexpo Asia, Gidue MD Cristina Toffolo and strategic sales director Giovanni Perego outlined the company's history and product range.

Like other flexo press manufacturers in China, Gidue is forced to overcome lack of support infrastructure for flexo, but the company is more enthusiastic about prospects for its offset technology. 'It has a better chance for this market,' said Cristina Toffolo.

Gallus

Gallus also came to the show without a press, showing instead static modules. The company's Felix Egger was anxious to stress that this did not mean Gallus was any less committed to the Chinese market. The Asia-Pacific region now represents 18 percent of the company's turnover.

'There are great opportunities in the market because of its high growth rates and the use of high value added labels is increasing. I strongly believe flexo will take off, but it will take the availability of inks and plates at the right price,' said Egger. 'In Europe larger volumes are increasingly split up and delivered JIT, which has driven the growth of flexo. The question is, will that happen here?'

Gallus is promoting offset for the longer run market: 'today an elite group can afford it to produce high value-added combination labels.'

Egger identified the high import tax on imported machinery as a major issue for all Western press manufacturers.

Focus

Focus has some 30 flexo presses installed in China, and an extensive installed base of textile machines, secured when UK-

based apparel and textile companies moved production facilities first to Hong Kong, and then to mainland China. Working in a market segment under pressure from cheaper local 'copy' machines, Focus relies on the fact that printers servicing global brands have to buy their presses from an approved supplier list.

Focus managing director David Lee also stresses the importance of developing new products which keep ahead of the copies. In a carefully guarded room on the stand was a machine dedicated to the production of heat transfer care labels. These tagless systems compete with silkscreen labels. 'We can print photographic images in up to 6-colors in one pass, roll to roll, including silkscreen,' says Lee. The label becomes an integral part of the fabric and can withstand heat and washing using inks certified for direct skin contact.

Drent Goebel

Drent Goebel, which opened a sales office in China in 2004, promoted its Variable Sleeve Offset Printing (VSOP) press. 'Our strategy is not just selling the equipment, but the applications too,' said sales manager Oliver Thiele. 'Premium labels are increasingly being printed by offset.'

Unlike in its local European market, Thiele said that the advantage in China, where the process is far more prevalent than flexo, is not having to convince customers of offset's quality. He reported good interest from visitors from Japan, South Korea and the rest of Asia.

Beijing Beirenfuji

Narrow web flexo press manufacturer Beijing Beirenfuji, a Sino-foreign joint venture enterprise owned jointly by Beiren Printing Machinery Holdings Limited and Fujikikai Kogyo, announced that it is planning to sell its narrow web presses into Europe, and is currently in the process of finding distributors.

The company was showing a new flexo press, the BFF22800. Built around a sturdy 30mm thick cast iron frame and base plate and cantilevered for ease of access, it features servo web





tension control and a patent-pending system for changing the plate cylinder: the operator can change the plate cylinder with one hand and quickly lock it into position pneumatically with the push of a button. 360deg print register control is available as an option, and the press incorporates chrome-plated hardened steel helical gears. As standard there are three diecutting units, with dual die-cutting stations and one sheeting station, and options include a delam/relam unit with the ability to print on the adhesive side of the label face. Cold foil is also available.

The press is designed to run at up to 150 meters/minute on materials from 0.12mm – 0.28mm on a maximum print width of 270mm. Repeat capability is 254mm-457mm (10-18ins).

Marketing manager Wei Yang commented that the Chinese flexo market is growing slowly: 'The materials are too expensive, like inks and plates, and finding good pre-press is a big problem.'

Dowell Swiss

For Dowell Swiss the future of the narrow web industry in China – at least in the short term – will be gravure, and not flexo. 'Gravure is the standard in China already for printing on PVC shrink sleeves,' states the company's Jules Farkas. 'In China today we need to leapfrog PS. China is the opposite to Europe. There are no dedicated PS label converters and converters are not starting with PS, they are starting with shrink sleeve labels. We are seeing a 27 percent growth in sleeves in China. The international brands like P&G will stay with PS, but Chinese brands will go to shrink sleeve labels first. Later they will make the move to PS.'

Farkas makes the point that most cigarette cartons are produced on gravure machines, while flexo presses converting cigarette cartons have gravure units. 'In China 80 percent of companies converting labels come from the flexible packaging side and already have gravure. For these companies solvent recovery is not an obstacle, and cylinder costs are very low – \$300 in our size range of 550mm, so low cost and high quality printing is easily available.' Dowell Swiss will still produce flexo units, and is also building combination letterpress/flexo presses 'to feed the Chinese letterpress hunger'. Farkas says that after two years spent building relationships in China, Dowell Swiss is now building a distribution network across Asia-Pacific.

Link Label Machinery

Labelexpo Asia was Label Link's second show. The Taiwanese press manufacturer has been engineering machinery for the label printing industry for 26 years. At the show, the company demonstrated its new all-servo controlled, 6-color letter press, the LLR 360. The press shown had a UV flexo varnish/ rotary die cassette. 'What's new about this press,' said Vivi Liu, sales manager, 'is our patented release-screw cylinder design which allows the operator to easily switch out the cylinder.' The technology is patented and Label Link engineers have developed all of the software.

Also shown at the show was the HL 300, a hot stamping and die cutting machine with a maximum die cut of 280 by 280. Soon Label Link will introduce the HL 400 offering the ability for a larger die cut. Customers can order specialized press and finishing machines upon request.

The company's focus market is Europe, because European converters are willing to pay a better price for superior quality. 'European converters focus more on quality rather than price. We are very successful in France and Turkey. In Asia, interested customers only question price,' explained Liu.

Beijing Basch Company

Basch Company is a Beijing, China, based printing machinery distributor focused purely on supplying its domestic market. The company currently has 120 employees and has no intention of moving its business onto the international platform. 'Why move,' said K.Y. Cheng, chairman, 'when there is plenty of room to expand right here in China?'

At the show, the Basch Group demonstrated a 5-color Iwasaki TR2 offset press. It was purchased by Shijiazhuang Zhongan Security Printed Ltd, a converter located outside of



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Beijing, to produce the 13 million summer Olympic Games tickets for 2008. 'I believe that offset is the way of the future,' explained Cheng. 'It is easy to operate, there are cost savings, and the process offers higher quality.'

In conjunction with the Iwasaki, Shijazhuang Zhongan has also purchased a Jetrion 3000, the first sold into China, to print the variable data on the Olympic tickets. The Basch Group is the sole Jetrion distributor in the country. Both machines will be delivered in December; the tickets will be printed from January until May.

Three years ago the Smart card division of the Basch Group separated out to focus solely on RFID expansion. This new division distributes Wave Zero inlay antennas throughout China. In the past year, the distributor has sold five RFID laminating and finishing machines. 'We expect to sell many more next year,' Cheng said. 'The first installation was slow, but now RFID is rapidly growing.'

Stork

Rotary screen specialist Stork Prints demonstrated its RSI printing unit program, along with its re-engravable RotaMesh and reusable RotaPlate screens.

A new area of rotary screen demonstrated by Stork is for printing conductive circuitry – including solar panels, radio frequency labels and electro luminescent strips.

Stork has partnerships with almost all major Western press manufacturers for integrating its RSI modules, and has now added Labelmen and Taiyo to this 'A' list. The RSI Compact unit is designed to work above the press configuration, optionally on a sliding rail, while RSI EasyFit units, are bespoke 'cassette' format modules, under 27kg weight, for fast easy manual insertion into the mainframe of the press. These are designed for presses that allow easy interchange between different processes at each station.

The market for combination presses



in China is still relatively small, and Stork estimates it has no more than 25 potential customers at the moment, although this situation is expected to change. 'We are facing intense competition from gravure, where a cylinder costs \$300 and can be delivered in two days, while import duties for our systems can reach 40 percent.' One major area of success for Stork has been 20 screen units sold for scratch-off receipt applications.

Martin Automatic

Martin gave live demonstrations of its latest STS automatic butt splicer and STR automatic turret rewinder, both of which are designed for narrow web applications. After the exhibition, the STS splicer and STR rewinder were delivered to CymMetrik, a leading label converter and multiple Martin user in Shanghai. Visitors to Labelexpo were also able to see Martin's automatic roll changers running on a press at the Labelmen stand. Among trends noted by David Wright in China is a move to wider web widths. 'We used to see press widths of 330 mm or less, but more and more we are finding companies with presses up to 750 mm wide,' he said. Wright has also seen a merger of the labels and packaging industries and an increasing number of Chinese printers who know how to handle film. 'These trends are where our company's challenges are. We must be able to identify our customer's goals and help them achieve them.' Martin Automatic has had a sales and technical support team in China since 2002 led by general manager David Ho.

Materials and coating

Avery Dennison

Avery Dennison was demonstrating the full range of its most advanced products at Labelexpo Asia, including conformable films, labels for durable goods and for beverage applications.

The company has a strong commitment to China and the wider Asia-Pacific region. "There are big growth opportunities in areas like Taiwan and Japan as well as on the Chinese mainland, where Avery is opening a new coating center and evaluating more distribution centers,' says John Quinn, VP/GM for Roll Materials Asia Pacific Avery Dennison. 'We are seeing double digit growth across the Asia-Pacific region.'

The company recently opened its Neil R&D facility co-located at is Kunshan coating plant as part of a strategy of localizing product development and support.

In China Avery is seeing a strong growth in the use of filmic PS materials, particularly for the beverage sector. 'The no-label look is spreading from the global brands to local brands, and automatic label application systems are replacing manual systems, which requires higher quality adhesive and release coatings in particular.'





"Labelexpo Asia welcomed an impressive 14,004 visitors from China and abroad to the Shanghai New International Expo Center – a 54 percent increase on the 2005 figure"

Quinn also notes that major global retail groups are extending their operations from the bigger cities to other parts of the country, with PS replacing direct silkscreen printing.

A big question for the global brands is global specification of consumables, including substrates. Avery has just launched its Global co-ex GCX film range to give global brand owners access to a globally available top-coated film, and the product is still undergoing trials. Release liners, however, are still sourced according to local requirements in terms of application equipment, for example.

Quinn sees many similarities between the Indian and Chinese label markets. 'Chinese and Indian consumers have sophisticated tastes and demand high quality packaging and labels – especially younger people, who have a taste for quality brands and have an expectation of excellence.' Both countries operate 'dual label economies': on the one hand, inexpensive, hand applied labels, and on the other an increasingly sophisticated product decoration sector. 'Both are growing and the lower level will migrate to the higher.'

An interesting trend in India is a move at the higher level from shrink sleeve labels to PS. Shrink film in India is traditionally cheaper than PS, but as containers get bigger to attract the attention of consumers in busy retail environments, PS labels become an economically viable option.

In John Quinn's experience, the vast majority of Chinese converters are using letterpress, although the use of UV flexo and rotary printing in general is increasing. 'Printers here are increasingly demanding more efficiency, and Avery is importing its best practice from across the globe, so we now offer our Exact and Splice-free programs.'

Avery's Kunshan converter training college is also involved in pushing best industry practice at the technical level, and by the end of last year had graduated more than 1,000 students, one third of whom were end users.

What advice would John Quinn offer to printers in China considering entering the labels market? 'You need good market analysis; decide which segment you want to play in; go back to your supplier base for the best equipment to meet the needs of that market; and come to the converter college to learn.'

UPM Raflatac

Through an expanding production capacity and supply chain, UPM Raflatac is offering an increasingly diverse product range to the Asian market.

At the show, the focus was on the US\$40 million label materials factory that started operations in the spring 2007 in Changshu, China. The factory offers customers an extended product range including label materials with UPM Raflatac's proprietary removable adhesives. In addition to paper products, the factory produces film label materials, which are gaining popularity throughout Asia.

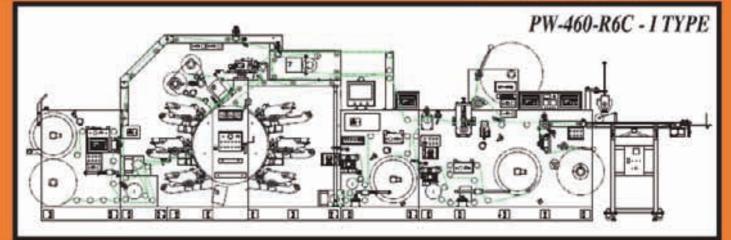
The company showcased a versatile film labelstock portfolio including PP Clear TC 50 for the clear-on-clear look and the Raflex Plus – created for the beverage and personal care industries. In addition, UPM Raflatac presented a range of tire and removable labels as well as an expanding range of HF and UHF RFID tags and inlays.

UPM Raflatac has in recent months significantly expanded its operations in the Asia-Pacific region. In addition to the new Changshu factory, terminals have been established in India, New Zealand and Thailand. The company currently operates factories in the Asia-Pacific region in China, Malaysia and Australia.

Labelexpo Asia continues on page 92 >



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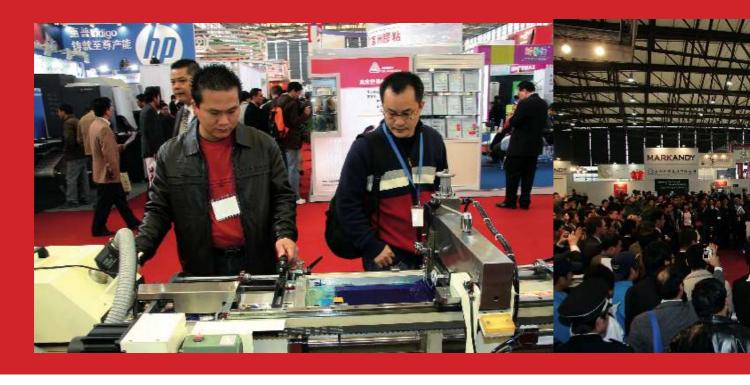


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Labelexpo Asia continued from page 72 >

ETI Converting Equipment

ETI presented its Cohesio narrow web coating technology. The Cohesio applies silicone and adhesive to any facestock and release line in order to produce self-adhesive material. It is claimed to offer label printers between 30-70 percent savings on their self-adhesive material.

'For us Labelexpo Asia was very successful – ETI sold one Metronome and one Cohesio, both in China,' said president Francois Bayzelon. 'We met also a lot of prospects and we were really surprised to see high-quality machines with original design, manufactured in China. I was also very surprised to meet a lot of ex-USSR potential customers and I think we will be busy with requests from them.'

One Chinese ETI customer is label printer Haoneng Group, which displayed various samples of its work in a booth at the show. The Group said it gained many customer contacts, in particular leads requesting pressure sensitive labels, a sector the group has seen grow quickly in the Chinese market over the second half of the year. 'We have been producing all of our Heineken material on ETI's Cohesio in-line coating machine, and it has been a big success for us,' said Li Dong, lead sales representative.

Dow Corning

Dow Corning has been manufacturing in China since 1997 at Songjiang, Shanghai, and in 2002 co-located its China Services Center for Applied Technology there to provide technical support services to manufacturers in China and throughout the Asia-Pacific region. The company is also developing what is claimed to be the biggest silicone plant in China, a joint venture with Wacker Chemie to produce base materials in Zhangjiagang. The plant, started in 2006, represents an investment of over \$1 billion and at full production capacity in 2010 is expected to produce over 200,000 tonnes of silicone a year.

Alan Yu, who heads up Dow Corning's release coating and PSA industry group for Asia from his office in Shanghai, China, says the Chinese PS labels sector is a major focus for the company. 'We see roll labels showing growth double China's GDP, with big investments in automated application machinery requiring high quality release coatings. Film labels are growing faster than paper labels, particularly for applications such as beer and beverage products. The use of film release liner is also increasing fast because of its better strength properties, using mainly solvent-based coatings. As the multi-nationals move to China, Chinese brand managers are learning quickly, and what took 10-15 years in Europe and the US is happening here in just two years.'

Laminators in China are still using mainly solvent-based silicone release coating systems, and Dow Corning developed the world's first 100 percent solids silicone release coating for solvent-based application systems, Syl-Off SL 7688, specifically for this market.

Traditional solvent-based release coatings contain up to 30 percent silicone. Additional solvent is added until solid content reaches 4 to 5 percent during processing, and, unless optional pollution control equipment has been installed, much of that solvent is subsequently discharged into the air.

'There is growing concern in China about the negative effects solvents can have on health, safety, and the environment. This, coupled with the global increase in crude oil prices and resulting increases in the price of solvents used in release coating operations, has created the need for a practical, economical alternative,' says Alan Yu.

Since the 100 percent solids silicone coating was introduced in 2006, Chinese customers have reduced their reliance on solvents by as much as 70 percent, according to Dow Corning's figures. They have also reduced their processing material costs by as much as 10 to 30 percent, and saved more than 2,400 tons



of solvent waste from being discharged into the environment.

'Additionally, users of SL 7688 Silicone Release Coating have saved energy, improved process efficiency, and increased productivity through the coating's fast, low-temperature cure performance. The product is also safer and less costly to transport, store, and handle than traditional solvent-based coatings,' says Yu.

Yu believes that environmental pressures will eventually drive the growth of solventless systems, but this requires investment in more expensive coaters – 'which in turn requires converters of a certain size.' For these applications Dow Corning demonstrated its new Advantage emulsion release coating system at Labelexpo Asia. The system consists of Syl-Off EM 7990 emulsion coating and its concentrated platinum catalyst, Syl-Off EM 7975 Catalyst Emulsion, and enables users to reduce their application costs through increased platinum catalyst efficiency, reduced coat weight, and faster line speeds. Additional cost savings are claimed to result from the coating's 'outstanding coverage' that permits the use of less costly base papers.

Wacker

Germany-based Wacker Chemie, manufacturer of silicones for release liners, was pleased with the attendance at the show. Timon Xu, technical manager, paper release industry, said, 'We have met with more potential clients that we had expected.' Xu explained that the company's main focus in the Chinese market is to offer clients high quality products which are also more environmentally friendly and easier to handle.

Polyonics

Levi Dow, Asia regional sales manager of Polyonics, a supplier of harsh environment material for electronic product identification and product security, said, 'we are very happy with the results of the 2007 Shanghai show. The response from attendees reinforced the value of our efforts, as well as the usefulness of the trade show as an effective medium.' The material supplier has a large sales and support staff throughout the Australasia region to sustain and grow Polyonic's presence in the area. Specifically in China, Polyonics has representative offices in Shanghai and Shenzhen. Because so much of electronic and security manufacturing is now completed in the Asia, the market is key to the company's expansion. Polyonics has secure plans to open a Hong Kong warehouse within the next year.

ExxonMobil

ExxonMobil was demonstrating its Label-Lyte BOPP film range, for applications including PS, shrink, wet glue patch, cut & stack and wraparound labeling. The company's global marketing manager Paul Griffiths identified the major challenge in China as 'the need to shape the market trends towards value and to concentrate on total applied cost. How do you create value? You need to create a product that's hard to make. Chinese manufacturers, for example, can't make our 5layer films.'

Griffiths identified wet glue patch labels as another area where ExxonMobil can create value with unique products. Patch labels are clear film labels which substitute for paper labels, allowing brand owners to move to clear film decoration using a clear adhesive on their existing wet glue applicators. The can be produced either roll to sheet or sheet to sheet.

TD (Transverse Direction) Shrink could also be big in China, says Griffiths, allowing TD bottles to be labeled before hot filling. Development work continues on higher shrink ratios for more complex container shapes. 'This allows us to compete against cheap PVCs accompanied by poor technical service.'

Griffiths estimates that in China today around 85 percent of PS is paper-based and 15 percent PE/OPP film. 'PSL will continue to grow at the expense of paper, with a growing use of high value conformable films in the toiletries sector.' In-mold label usage is also increasing in China.



'Each of these films has a different value proposition. We wait to see which way the market will go,' concludes Griffiths.

DuPont

DuPont promoted its Tyvec series of paper, film, cloth-like substrates for various tags and labels. The main goal of the company in China is to teach converters what the possible application are for its product line. 'We want to show the region that the material is water resistant and can be used for a wide variety of applications,' explained Elaine Chen, DuPont sales representative. DuPont's R & D headquarters for all products is located in Shanghai

Innovia Films

UK-based Innovia Films promoted its whole range of products, including squeezable films for the personal care sector and durable films for industrial applications, while focusing on the company's premium products. Innovia has a local sales office in Shanghai.

Wayne Middleton, global sales and marketing manager, labels and graphics, said: 'Our business here is growing dramatically, mainly driven by the beverage and health & beauty sectors. It is vital to have a local office here – it is the fastest growing area for us in the world.'

The company is supplying films to the Chinese cigarette market from the UK, while a factory in Australia is also serving China.

Innovia also displayed its NatureFlex biodegradable film, and Middleton admitted surprise at the level of interest in the product: 'We didn't think that the renewable film would get a lot of interest from this market, but we have been surprised by the number of enquiries. Of course, as the number of products being manufactured in China for use in the US and Europe increases, this is more important.'

Jinda

Jinda is one a new breed of Chinese pressure-sensitive laminate manufacturers which has invested in world class quality control systems and state-of-the art production machinery to compete directly with Western suppliers outside China. The company now exhibits at all the major Labelexpos in Europe and North America, where it distributes through agencies and retailers.

Jinda's catalogue includes a wide range of application grades, including VIP, battery films, tire label, frozen food labels and a range of release papers. Most of its current output is paper-based, but its future focus will be on higher margin film materials. 'Margins for paper are small and there are many Chinese suppliers,' says Yanyou Chen, deputy general manager at Jinda.

Although Jinda can source paper and silicone from Chinese companies – as well as from international suppliers like Dow Corning – local manufacturers cannot yet produce sufficiently high quality film and clear adhesives for its new filmic laminates, so Jinda uses exclusively international suppliers.

'Cosmetics and shampoo products which require film are growing applications in China and now label printers here are buying good equipment like flexo so they can print on higher quality materials,' says Yanyou Chen.

Jinda has found it difficult to go direct to multi-national brands operating in China to sell its film laminates. 'They buy direct from international suppliers,' states Yanyou Chen. 'As Chinese suppliers we are trying to break through this culture, and hope to supply foreign printers who do work for companies like P&G.' In China, Jinda's focus is on building a value proposition based on brand recognition, quality and price.

Tianjin Zhongtian Hongda Adhesive Company.

Founded in 1992, Tianjin Zhongtian Hongda, is a manufacturer of hotmelt glue, hotmelt coating machines, and pressure sensitive materials. The company only began supplying PS material in 2004 following extensive market research. 'We



found that there was a need to supply pressure sensitive material,' said Ma Xiangying, general manager. 'And we thought it was in the best interests of our company to expand ourselves in the supply chain. We believe that by offering this entire line of products, we are unique in the Chinese marketplace.'

Tianjin has noticed that more of its customers, and other converters in China, are purchasing coating machinery and glue to create substrates on their own. Ma Xiangying believes that converters are saving 20 - 30 percent on total cost because the materials are cheaper to produce on their own. Another motive for this trend, she believes, is the ability to create a niche in a new market.

By 2009, the company has set goals to be established globally, beginning with India, the Chicago area in the US, and Germany. Tianjin representatives attended a German printing show hosted in Shanghai a few months ago to begin establishing relationships with choice German companies. The company plans to send representatives to Labelexpo Americas in 2008 to begin facilitating and establishing similar partnerships. They are looking for distributors and agents in all of these locations as well.

Yupo Corporation

Tokyo-headquartered Yupo launched its UAIA clear in-mold label, specifically designed for the Chinese market. Aimed at the personal care and cosmetics markets, Katsuhiro Naito, international sales group manager, sales and marketing division, revealed: 'Many of our customers are moving to the new UAIA because it is cheaper and better than the last IHC label.'

Yupo, which celebrated its 40th anniversary last year, supplies the Chinese market from Japan and also has mills in the US and Germany. In-mold labeling in Japan is decreasing, and 70 percent of the company's in-mold products are now in the Chinese market. 'There is still a lot of potential for in-mold in the personal care market,' said Naito.

Valéron Strength Films

Part of the ITW Group, Valéron Strength Films opened a sales office in Shanghai one year ago and works with Yuhuaxing Labeling Materials as its partner and distributor in China.

The company manufactures high strength, tear resistant, cross laminated films, and is benefiting from the increasing attention being paid in China to issues such as safety.

'In the automotive sector, for example, China is beginning to recognize the importance of air bags,' said Thomas Zao, business unit manager, China. Jinheng, the country's largest air bag producer, has recently started using Valéron's fire retardant TLC material for its air bag labels.

The US-headquartered company promoted a new transparent tear resistant film, aimed at pharmaceutical applications, which can be used as both a hang tag and information label. It is also finding local success with thermal transfer-printed luggage tags.

Also on display was Valéron's range of wrist bands, which can be printed by digital, inkjet or flexo. 'One of the advantages is that our film is very smooth, so the colors can be bright — which is good for branding,' said Zao. Valéron also operates in the packaging and construction industries, and Zao foresees a time when, between its different sectors, the company is justified in setting up a manufacturing operation in China.

Arjobex

Arjobex, manufacturer of Polyart synthetic paper, presented its range of substrates for the most demanding tag and label applications.

Polyart is an expanded HDPE coated film resistant to water, tearing, grease, chemical products and variations in temperature for self-adhesive labels, durable tags, IML labels and tamper evident labels. Polyart can be printed with thermal transfer barcoding, letter press, flexo and traditional offset print. It is recommended for use with labels and tags for tracking, security, logistics, chemical drums, pharmaceutical, direct food contact, luggage tags and tamper evident seals.





'Smart' labels and RFID

Labelmen

Taiwanese press manufacturer Labelmen launched a DNAbased label security system which uses specialist inks applied by a new module on its printing presses. The system was developed in conjunction with research company Biowell, which builds a unique DNA profile for each customer, then delivers these specialist inks to the printer. The label can be authenticated in the field using a handheld swab which turns the label temporarily from blue to pink– a process which can be repeated multiple times. For further analysis the label can be sent to a forensic laboratory.

The DNA ink is water-based and Labelmen is currently developing a delivery module which will be available as a retrofit to its presses in the first half of 2008.

Biowell says that early field trials sales have proved very successful, with sales of a premium scotch increasing by 15-20 percent after counterfeiting of the product was successfully deterred. Other potential applications could include protection of DVDs, pharmaceuticals and high value toiletry brands.

Inks and curing

Fujifilm Sericol

Fujifilm Sericol, a subsidiary of Fujifilm Japan, reported a successful Labelexpo Asia.

'It was an extremely busy show for us,' said Alan Leung, sales director, NE Asia. 'We had over 200 customers, mainly from China.'

'The UV flexo market in China is growing rapidly,' he continued. 'Initially, price was the most important thing, but now the market is changing. People are recognizing the importance of quality.'

The company has six manufacturing sites around the world: in the UK, US, Brazil, Australia, India and China. The Chinese operation, based in Nanjing, was established seven years ago.

The company promoted its range of UV flexo inks, as well as its new flexo white. 'Our white can give as good opacity and whiteness as screen white,' said Leung.

Fujifilm Sericol also brought to the show its color matching

service. 'Color matching is an important service for the Chinese market,' said Leung.

GEW

Following the launch of GEW's range of UV curing systems, including the new XC, 'extreme cure' UV cassette with fully focused, dichroic coated aluminum reflector and integrated clamshell shutters, at Labelexpo Europe, GEW presented the range at Labelexpo Asia.

The design ensures a broad UV output spectrum across both the UV and IR (infrared) range, which maximizes curing power. The electrically actuated shutters automatically protect the substrate when stopping the press. The XC Cassette is available for GEW's existing range of VCP and eCP models and the recently launched e-system Mini with 3.6kW 'plug and print' single phase power supply for 10" (250mm) press widths.

The company's e-System Inert is aimed at the narrow web market where the use of printed films for food, pharmaceutical and cosmetic applications is increasing. The system enables the use of ink and coating chemistry with reduced levels of photoinitiators so minimizing the risk of taint and odor migration from the packaging. It can also handle silicone coating for release liner and applications for thermal paper manufacturing.

The system features a sealed curing chamber built around a small idler roller. Oxygen is purged from the chamber using nitrogen gas, which is introduced in a controlled manner via a 'nitrogen knife' at the web inlet and via an injector in the curing chamber. An oxygen sensor within the chamber continuously measures oxygen levels. Controlling the oxygen level within the curing chamber is simply a matter of adjusting the nitrogen flow rate until the desired reading is obtained. For critical applications an alarm can be set to activate should the oxygen level exceed a set control limit.

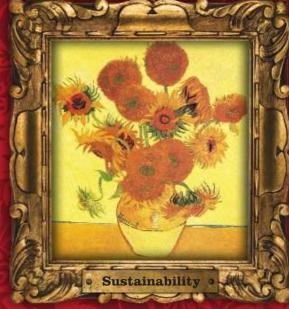
The e-System Inert can be supplied with new press purchases and retrofitted to almost all existing presses depending on space limitations.

IST Metz

IST Metz promoted its MBS-5 UV curing system for the narrow web sector. New developments in reflector geometry and integrated URS technology mean that the MBS-5 can produce curing results using low power UV lamps, which were







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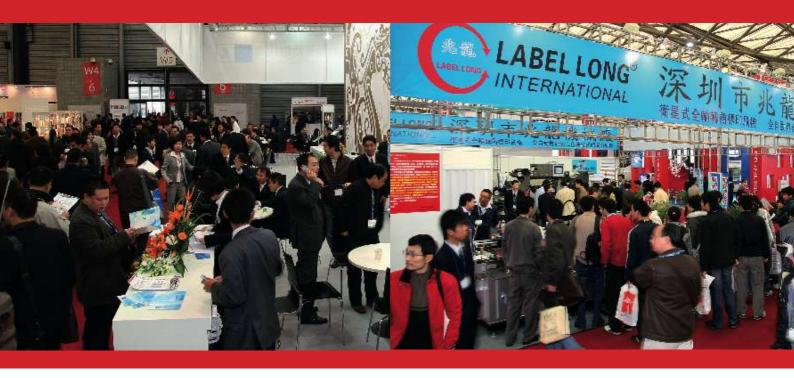
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previously only achieved with higher powered UV systems. The energy saved has a direct impact on the energy bill. The MBS-5 System reduces press downtime with its user-friendly design and easy access to parts ensuring that all service work – from changing lamps to cleaning the unit, can be carried out quickly.

tesa

German-based tesa has been present in China for ten years and has a distribution office in Shanghai. The company is primarily focused on the flexo market, which is small in China. Entry into the local market has been helped by partnerships with both local and international companies.

tesa promoted its new UV Stip for determination of UV ink dosages. The color change of the UV Strip is measured with a digital reading device from Hönle.

'It is very convenient to use,' said Jerry Hua, manager, PPF. 'It has received a lot of interest from ink suppliers.'

Hua reported that mobile phones, LCD and automotive are the company's biggest sectors in China.

Rotary tooling

Kocher + Beck

Kocher + Beck's presence at Labelexpo Asia, where it promoted the company's complete rotary tooling product range, was an indication of the event's regional importance. Marketing director Martin Stierle admitted that local need for rotary tooling is small: 'The top level printers, companies like CCL, are already our customers,' he said. 'We hope to meet with potential customers from other parts of Asia during show. Being here is an opportunity to access other Asian markets.'

Rotometrics

Manufacturer of rotary and flexible dies and printing cylinders Rotometrics addresses the Asian market from its administrative offices and manufacturing facilities in Melbourne, Australia. Currently, the company does not have any plans to open sites in China, but as the market expands, it will reassess the situation. Peter Petran, sales director of Rotometrics Australia, said, 'We can overnight our products into China and service the entire Asian region with our current set-up. In this market we have seen more of an interest in complex die converting and expect to see more growth in the near future.'

Schober

Another rotary tooling specialist, Germanheadquartered Schober, also exhibited in Shanghai in order to access customers from other Asian countries.

'I am here to see my customers from outside China,' said sales director Denis Stephan. 'For mass production, China is perfect. But for customized products, such as ours, it is not yet a sustainable market. But slowly these things will change, which is why we never give up our marketing in China.'

The company promoted a number of new products, including an RFID card processor and a rotary die-cutter for in-mold labels with an in-line stacking facility.

'There has been a lot of interest in the RFID card processor in particular,' Stephan reported. 'It is specifically for short to medium runs – which is generally what people in this area are looking for.'

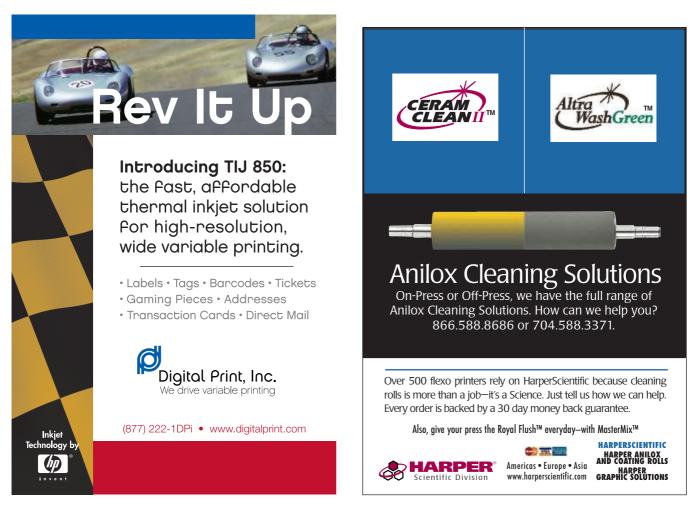
With two facilities in Germany and 50 agencies around the world, 70 percent of Schober's products are exported.

Harper

Harper Asia/Pacific has provided support to the Asian market through its operations in Thailand for the past 15 years. 'Converters in this region do not know much about flexo,' said Prasert Vachiraprakarnsakul, technical director. 'Our strategy is to educate them.'

The company collaborates with press manufacturers such as Mark Andy and Nilpeter and ink manufacturers to host seminars for their customers to help them





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improve the quality of production on their equipment. One problem Harper has noticed in the market is the tendency for converters to look too closely at price instead of teaming up with good quality suppliers, which is the only way to produce high quality labels.

Bunting Magnetics Co.

Bunting Magnetics purchases much of its magnetic parts from China and decided to attend the show to display its magnetic printing cylinders for flexographic printing. 'We feel that the industry in China is not ready for flexography yet,' explained Michael Wilks, marketing manager. 'It is going to take bigger manufacturers to open facilities in order to expand the technology.' Bunting believes that the Chinese market must get to the point where it becomes more regionalized and requires shorter runs. The company reported steady traffic while at the show.

Inspection and testing

AVT

AVT's Guy Yogev notes that more Chinese label converters are showing an interest in quality control systems on-press and on the rewinder. 'Companies that we never heard of – and not just big companies – have approached us at this show. Packaging quality levels are high here, and Chinese converters are sending more sample rolls to Israel from local brands. We are also seeing interest in our PDF to camera systems and linking on-press camera to the rewinder (Print Flow Manager).'

Guy Yogev sees a major source of growth in Chinese brands moving their products out of cartons and into labeled bottles where the product can be seen. 'In pharma in China, booklets are replacing cartons, and this trend is moving to household and promotional products.'

As well as working with Western press manufacturers in China, AVT is establishing relationships with Chinese manufacturers like BeirenFuji, for flexible packaging and for labels applications.

AVT's agent in China is Brotech, a company owned by Nilpeter China MD Ramon Lee which assembles rewinders and acts as agent for a number of other Western suppliers.

'Quality assurance is no longer just for Western converters serving multi-nationals, but also for local converters and brand owners, because everybody wants to differentiate,' says Lee. 'We are already seeing interest from medium-level converters, even those with small letterpress houses with presses from companies like Labelmen and Taiyo.' Lee says that while most applications are for cameras on the rewinder, specifying cameras in-line on the press is a growing trend.

'This is part of a global trend,' says Guy Yogev 'Around 3-4 years ago 20 percent of installations were on-press. Now that figure is up to 40 percent, as converters see the benefits of running faster, with less waste and with full quality control.'



Guy Yogev says that a major driver for AVT's inspection systems is the rising cost of labor in China. 'Also, Chinese companies now have to pay compulsory insurance for workers. This is pushing companies to replace manual with automated inspection systems.'

Erhardt + Leimer

Germany-headquartered Erhardt + Leimer is another Western company excited about the increase in quality needs in the Chinese market.

The company is well established in China through its web guiding equipment. It set up a sales, service and assembly facility in Hangzhou four years ago, and boasts two other sales and support centers in the country.

At Labelexpo Asia it promoted both its web guiding and inspection equipment. 'We are trying to create a different atmosphere around inspection,' said Donald Lewis, international business manager, print inspection systems. 'There is a great need for inspection in China, particularly for those companies which are exporting to other countries.'

'The quality is rising in China,' said sales manager Dirk Schröder. 'Price is no longer the most important issue. Some local companies are looking to upgrade the appearance of their machines by investing in Western technology – as it raises their image.' Jürgen Paul, regional sales Far East, reported a successful show: 'We have had a lot of customers and contacts; it has been a good show for us. Our name is well known in the Chinese market, but not necessarily connected to inspection. This is what we are trying to promote.'

Unilux

Surface inspection manufacturer, Unilux, has had sales offices and technical service support centers in Shanghai for the past two years. They have recently opened a sales office in India, and intend to open one in Columbia within the next year.

As the Chinese market picks up, Unilux is seeing more of its customers concerned about quality. 'The market is very different than it was five years ago. We are seeing a shift toward companies demanding high quality,' said marketing coordinator, Stacy Black. 'As the Chinese middle class grows, so is the demand for improved quality labels. And with new technology comes the need for inspection equipment — this is where Unilux intends to meet the needs of the evolving Chinese market.'

The Chinese government is beginning to focus on combating counterfeiters, creating an increased need for ultra-violet lighting and inspection methods. 'Unilux believes that Chinese converters will soon be forced to adopt security measures by adding one more step to their process,' Black added.

Tectonic International

Tectonic International displayed its range of print inspection systems and Flexico V5 'hands free' plate mounting machines at Labelexpo Asia.

Tectonics' K2 color-check print inspection system allows the printer to set his preferred tolerance for color checking. Once the color standard is set, the system then continues to monitor the color and as soon as the color starts to drift outside the printers set tolerance, an alarm sounds.



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FAG Graphic Systems

Switzerland-based FAG Graphic Systems promoted three new products at the show: the New Scan 2000 video system is a simplified version of the company's New Scan 4000 range; the Vipflex 334 measurement solution for transparent flexo plates; and the VipPak, an inline flexo densitometer for color measurement which uses the same measurement technology as standard handheld densitometers.

'It has been a very good show for us,' said general manager Phillipe Orville. 'More and more packaging made in China is ending up in the US and Europe, so quality control is increasingly important.'

arpeco

arpeco, supplier of inspection, slitting, and rewinding machines, promoted its Platform 20/20 at Labelexpo Asia. The Platform 20/20 was designed especially for pharmaceutical and security label printing. 'The show has been very positive for us,' said Brian Ivens. As the market expands, Arpeco is responding to pressures from customers for better quality control and increased security.

RK Print

Sample preparation equipment specialist RK Print has had a presence in China for nearly 20 years, and has a network of three distributors covering the country.

'We don't come here to sell directly,' said managing director Tom Kerchiss. 'The printer tells the supplier: "I am having trouble with this red", for example, and the supplier will point them in our direction. If you want to test anything, you have to be able to make a repeatable sample.'

Kerchiss revealed that presence at the show was an excellent way of educating visitors about the company's machines. 'Being at the exhibition, people walk past our stand and ask about our equipment.'

'A couple of years ago,' continued Kerchiss, 'China was our second largest export market. It is a very important market for us.'

IGT Testing Systems

IGT displayed its new flexo tester with integrated UV curing. The F1-UV is suited for use within the frameworks of ISO 2846-5 and ISO2834-2 to measure the color of flexo inks and test prints with flexo and gravure printing inks.

The printed test strips can be used for the determination of color and density tolerances as well as characteristics such as wear resistance, scratch resistance, adhesion and gloss, ink transfer, light fastness and resistance to chemicals. All kinds of substrates can be printed on the tester: paper, board, cellophane, plastic film, laminates and metallized substrates.

Cleaning systems

Teknek

Another sign of increasing quality awareness among Chinese label converters was the presence of web cleaning specialist Teknek. The company displayed new cleaning products at the show – including the NWP contact cleaning system. The NWP is designed for the narrow web sector and keeps the product clean, free of contaminants and reduces waste. For ultra-narrow web applications, the MWC (Mini-Web Cleaner) has been added to the product line up. Both the NWP and MWC remove contaminated particles as small as one micron.

Recyl

Recyl, providers of cleaning products and equipment for flexo gravure and offset printers, presented a new range of products at Labelexpo Asia, including the ACL machine, for automatic anilox cleaning; the FPC automatic plate cleaning machine; and the Booster and Booster Plus cleaning products, designed for waterbased inks.

Labeling systems

Altech

Altech promoted its new system of applying labels on heat formed packs of fresh pasta. The system can print labels with different types of variable data – such as batch number or barcode – in different languages. The system can apply the labels automatically to the bottom of packs, with considerable flexibility in terms of customizing the products and managing their related variable data. An upper labeling head on the same system can also apply promotional labels.

Euro Plus

Euro Plus presented its product line under its NiceLabel brand, a range of labeling software products that provide a barcode printing solution to desktop and enterprise users.

Translated into 25 languages, including Simplified and Traditional Chinese, NiceLabel is composed from three major product series: the Standard Series for barcode and RFID label design, printing and entry-level integration; the Enterprise Series, for centralized printing system management; and the Developer Series, for software publishers and system integrators.

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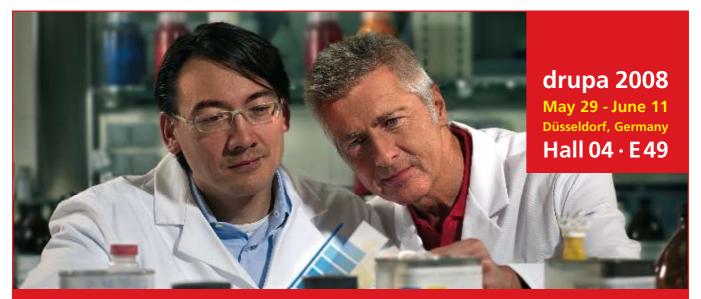
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The LPIA Annual Fall Management Conference held in Miami looked at the pressures facing the label converting industry in North America. Danielle Jerschefske reports

Bienvenido a Miami

he Label Printing Industries of America hosted its Annual Fall Management Conference in Miami, Florida last fall. Two full days of programs, with presentations and interactive discussions, challenged LPIA members to think of new ways of improving their businesses. Highlights of the program included presentations by L&L's own managing editor, Andy Thomas, a purchasing manager from Heinz, a presentation on private label growth and a discussion about sustainability.

Global label trends

Andy Thomas kicked off by looking at growth areas for sheetfed label printing. Although wet glue labels overall continue to lose market share to PS, European sheet converters are excited by the potential of clear patch labels. These are clear films, printed in sheets and diecut on standard wet glue converting equipment, which are applied with a clear adhesive on standard wet glue applicator lines. Although still at an early stage, this technology could allow brands unable or unwilling to make the move into PS application equipment to move towards clear film labeling.

Thomas also looked at future opportunities for high valueadded label products using smart coatings. These will have a wide range of functions from detecting viruses to combating bacteria and sensing decay in fresh produce.

One significant global technology trend noted by Thomas is the very high penetration of UV flexo in North America after a long period in which Europe led the way. In converter surveys carried out by the Tarsus Group at its global Labelexpo and Label Summit events, 66 percent of all North American respondents reported they are using UV flexo against 46 percent in Europe. North American converters also registered higher useage of CTP technology than their European Ralph Pasquariells of Heidelberg and his wife susan



Stacey and John Buening, Peter and Bobbie Buening, Julie and Bernie Lacy, Jerry Manzi



counterparts. Profitability levels for North American converters remain perilously low, however, with over half of respondents

reporting operating profit on sales of less than 10 percent.

Other global trends noted by Thomas included: the growing use of narrow and mid-web technology to convert shrink sleeve labels; the growing maturity of digital label printing - now representing 12 percent of narrow web press sales; and global alliances as a response to the globalization of label sourcing by end users.

The future of packaging according to Heinz

Heinz North America's purchasing manager, Daniel Sanchez, explained that the point of packaging from the company's perspective is 'to get the consumer to look at a product even when they don't intend to buy it.' For example, the idea of the picnic pack, including two bottles of ketchup, mustard and relish, he says, was a great way to entice customers to purchase Heinz products. It gives them a reason to purchase – the feelings of a summer barbeque evoked emotions in consumers to buy more than they normally would.

Sanchez says that the company is always looking for new ways to make its products look better on the shelf. He said, 'We are looking to use encapsulated inks and like the idea of thermochromatic inks to help prevent anti-counterfeiting. Also, it's important to us to help consumers with expiration dates; they are more aware than ever.' Heinz always wants its products to be a solution solver for its customers. A good example would be when one of its current suppliers came to them with the idea of flipping the bottle over to help with the flow of ketchup. 'There was a very enthusiastic response from consumers. We've had double digit YOY growth since its introduction. In fact, the new packaged bottle currently represents 20 percent of our ketchup sales.

These kinds of innovations are things that we look for,' Sanchez says. 'If a supplier

informs us prior to a presentation that they will be bringing forward-thinking opportunities like these to the table, I would make sure that we had a marketing person in the meeting. I'd drag one in and ask them what we could do with the technology'.

Sanchez also informed his audience of the difficulty in finding consistent packaging around the globe, specifically in emerging markets. 'There are no global paper packaging companies,' he says. 'In a low cost country, the trade off is low technology. While a lower price is great, at the end of an experiment, we still want consistency and price. Companies that interact with us globally definitely have an advantage.'

The company is looking for consistent and on-time production of the Heinz brand and also for the supplier to put the right team together to fix any problems that may arise.

Sanchez explained how working together with graphics groups makes for a better final outcome. 'Color management programs are a must,' he says. 'Our organization has a low tolerance for out-of-spec printing. We have found the GWG - Ghent workshop to be a especially helpful in alleviating many of these quality problems, and it also helps to speed-up the approval process.'

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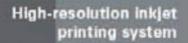
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Private brand trends in North America

Steven Rubow, former president of Top co Private Label, explained the importance of private label brands to the LPIAlisteners. 'Private label brands account for one out of five sold in US supermarkets, drugstores and other large retail conglomerates,' he said. 'They account for 45-60 billion dollars of business in these stores and are growing. faster than many national brands."

Differentiation is the key for retailers such as Kroser and Costco, which are developing their private label brands to compete with Wal-Mart. This in turn has spurred Wal-Mart to re-design its own private brands.

Being green - Gary Jones, PIA

Gary Jones, Environmental Health and Safety director for the PIA, described the Green 'overnight sensation' now hitting the printing industry. We are on the cusp of a fundamental charge in the way in which we do business,' Jones suys.

For printers eager to know what they can do. Jones advised them to 'appoint a corporate sustainability officer and create a Corporate Social Responsibility report which documents the sustainable actions your companyis taking."

Jones also forewarned the crowd that 'carboni's going to get regulated'. He says that printers must look immediately at ways to reduce energy consumption. The cost (of energy) is projected to go up 35-30 percent in the next five years. Your

William Hickey inducted into LPIA Hall of Fame During the Full Management Conference, the LPIA inducted William J. Hickey, III, president, Smyth Companies, Inc. as the eighth recipient of the LPIA Hall of Fame award. Hickey has been with his family's business since 1979, working in a variety of capacities, including sales, sales management, operations management, and now president. Smyth Companies is a familyowned label and promotions company that has been in business since 1877. The current Hickey seneration is the fourth to own this business. Smyth has five manufacturing plants with approximately 425 employees located in St Paul, Minnesota; Minneapolis, Minnesota; Austin, Minnesota; Bedford, Virginia and Golden, Colorado. Smyth services major consumer goods companies throughout North America

Hickey is a graduate of the University of St Thomas, St Paul, Minnesota, He has a B.A. in business finance, and an MBA in business/marketing.

Hickey serves on a number of boards and committees for various civic and charitable organizations including: United Way, Boy Scouts of America, Minnesota State Handball Association as well as local church and school groups. He is the current chairman of the LPIA board of directors.

company also needs to have an Environmental Management System. Once you have these in place, live, eat and breathe environmental policy.

It is imperative that the company establishes a base line to measure performance, which provides the data to substantiate environmental claims. A company's most important asset is its credibility, so create and maintain a data log.

Recently the PIA/GATF, SGIA, and the FTA founded the Sustainable Printing Partnership to promote the participation of the graphic communications and printing industry in the global movement to reduce environmental impact. It is establishing benchmarks for the industry regarding best Green practices and will create a registry of printers accredited by a third party.

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Cold chain warrior

SIRA Technologies is ready to introduce a cold chain monitoring system which uses inks embedded in a barcode. Could it be the industry's next disruptive technology? **Danielle Jerschefske** reports

n the 1990s the demand for a safe monitoring system for cold food supply chains was catalyzed by the lethal contamination of food consumed at a fast food chain. SIRA technologies rose to the challenge by creating a product capable of notifying both consumers and suppliers that a product had expired or had remained too long at a point in the cold chain where conditions were conducive to contamination dispersion.

A pathway to product development became visible when a report published by the federal government stated that 73-79 percent of food microbial contamination is, by and large, due to the lack of maintaining consistent, proper food temperatures throughout the supply chain. After diligent research, SIRA technologies developed its Food Sentinel System (FSS) and did so in accordance with the US Government Accounting Office directive advising that if any food safety monitor be produced it should be Simplified, Inexpensive, Rapid and Accurate. Incidentally, from this directive, the company also derived its name.

Founders Bob and Cathy Goldsmith filed for appropriate intellectual property and began to develop a germane monitoring platform to help prevent a similar microbial crisis in the future.

After substantial investment by their company, SIRA Technologies, the development process was partially funded by the US Defense Department's Defense Logistic Agency (DLA).

SIRA's first FSS product, which is the IWA thermochromatic ink combined with a basic barcode, indicates a breach at temperatures above 40degF. The second product is designed to detect breaches

above 0degF. The latter is in its final stages of development.

Kinetic properties in the ink allow variable elapsed monitoring times (2-4 hours) before an FSS label monitoring a package's condition would provoke a barcode scanner to reject the item. In the event of a rejection, the incident would be archived on all collateral databases.

'The thermochromatic ink [the key element to the system] has been developed to remain stable at print room, transport, or storage temperatures and, as well, on packages in a retort phase of production,' explains Goldsmith. 'And the FSS is chemically organized to evolve into an irreversible active, low-temperature threshold thermal monitor, whether it arrives at point of use preactivated for ready monitoring, or manipulated to activate within the food processing cold chain, either in a label format, or within a scannable tracking symbol that is printed directly on the packaging material.'

Food product companies that choose to integrate the ink into their own packaging process will be able to combine the FSS with their specific UPC product barcode. The deep purple mark that appears in the barcode when the food package has breached the maximum temperature limit (40degF) is transparent within the barcode until the breach occurs. 'After a costly search, we found ink pigments with the necessary characteristics that made the system easy to use and impervious to high temperatures and early expiration until activated for cold chain monitoring,' Goldsmith explained. 'However, once the ink is activated within



the barcode, it reverts to a 40degF monitor for chilled food; it allows purveyors and consumers to continually benefit from an archival response.'

The FSS is designed for use within the well-established barcode label infrastructure, but is also easy to amalgamate with other products too. 'The beauty of this is that it can be used globally,' Goldsmith said. 'It doesn't require a new set of standards; it is already compatible with any known or emerging scannable symbol thus providing auto-data modification when conditions dictate, anytime, anywhere.' Since the entire Food Sentinel System consists of the IWA thermochromatic ink and a standardized barcode format, it is well suited for any type of global archival data collecting system.

Goldsmith shared some of the market readiness indicators the company garnered: 'In one survey we found that 96 percent of respondents revealed they were more likely to purchase a package with a freshness indicator on it. In yet another survey, completed in 2007, 68.6 percent of consumers established that they looked to food labels for safety pertinent information, up 15.7 percent from 2006. Food fear has taken significant hold of the consumer's angst and, in time, Goldsmith reckons that 'smart' label reading will evolve into an automatic aspect of consumer purchasing. 'The bottom line is that people are paying attention to labels.'

Goldsmith says his product is widely regarded as a 'disruptive' technology for the food label and packaging industries, at least partly because of the low cost of entry: 'At 3 cents apiece, it is an extremely affordable way to prevent the spread of microbial infection in foods.'

Several large consumer product companies and food chains are already interested in the technology, and SIRA is working with them to structure alliances. Goldsmith believes this might even provoke discussions leading to a cold chain monitoring standard.

Headquartered in Pasadena, California, SIRA technologies will be showcasing, for the first time, its Irreversible When Activated (IWA), Time Temperature Integrator (TTI) thermochromatic ink at Labelexpo Americas 2008 this year. The product is ready to be licensed out to converters.

News in brief

GEW UV system eliminates need for chill rollers

UV curing systems manufacturer GEW (EC) Ltd has announced the development of AirFilm, a heat management solution that permits processing of a wide range of heat-sensitive materials without the need for water-cooled rollers.

AirFilm incorporates static heat conductive rollers immediately adjacent to the UV lamp-head on the press where air is directed through the inner cores of the roller, removing the heat. While the company still offers water-cooled systems, it says that in many cases AirFilm offers an alternative that does not require the installation of plumbing, pumps and a refrigeration unit.

Radiated and conducted heat can distort films in both the x and y directions during the printing process. This distortion can then go on to cause problems throughout the production cycle and in particular affect registration and die cutting. AirFilm permits a wide range of films to be printed without distortion and provides traditional label printers with the opportunity to enter new market areas in film packaging. The system can be specified for integration on a new press purchase or fitted as an upgrade to existing machines.

Systems Labelling offers 'green' choice

Systems Labelling has developed a range of filmic materials for the packaging industry. Options include recyclable, bio-degradable and home compostable labels that have been developed as a result of comprehensive R&D projects and utilizing an in-house coating facility. This enables the label printer to match face materials with the relevant recyclable backing liner. Particular progress has been achieved in the peel 'n' reseal market for application on wipes for the cosmetic and healthcare sectors. Systems Labelling has previously received an OPPack Award from ExxonMobil as a result of its achievements in this area.

Systems Labelling self-adhesive label material was developed to comply with the key industry standards including; EN13432, Dincerto and OK Compost Scheme and is available on a range of recyclable liners.

Avery Dennison offers new digital products

The Fasson Roll North America division of Avery Dennison has added Fasson MaxFlex Silver DTC to its portfolio of products preoptimized for use on HP Indigo ws2000 and ws4000 series presses. Fasson MaxFlex Silver DTC is a premium finish, metallized paper that provides a highly-reflective silver appearance, thus enabling a metallic look in labels produced digitally. This flexible paper facestock makes it ideal for demanding tight wraps or small mandrel applications, e.g., neck band labels on wine bottles.







Counterfeiting

James Bevan, managing director of industry consultant Vandagraf International, examines the fast evolving landscape of counterfeiting and piracy and the growing need for brand protection solutions

V and agraf International Limited, in association with the Product & Image Security Foundation, has just completed a major new market report entitled: 'The International Market for Brand Protection Solutions' – a second edition of a report first published in May 2004.

This report is the result of a fresh in-depth analysis and evaluation of the state of product related crime in 2006 and reveals how the sector is evolving.

The landscape for the brand protection business has been evolving dramatically over the last few years since the earlier report was written.

Product related crime continues to grow significantly year on year, fuelled by trade with China and enabled increasingly by the internet as well as a variety of other driving forces.

Financial losses due to counterfeiting, piracy, tampering and theft amounted to an estimated \$610 billion in 2006.

This estimate is somewhat lower than financial loss figures

"Product related crime has increasingly been facilitating and financing international terrorism in the post 9/11 world"

that some other specialists in the field have proposed in previous analyses, but is the product of improved methodology – unlike previous reports in this field, Vandagraf researchers have examined more than 20 end-user sectors individually and in this way have been able to build up a more accurate figure for the overall financial losses resulting from product related crime in 2006.

The market for brand protection solutions, however, still only amounted to some \$3.7 billion – in other words the total market for brand protection solutions is equivalent to only around 0.6 percent of the worldwide cost of product related crime.

This is considered be a surprisingly low level of market penetration and parts of the brand protection business looks poised for significant growth over the next few years.

The market for brand protection solutions is forecast to grow as shown in the following table:

As can be seen from the preceding table, the markets for brand protection solutions to combat counterfeiting and product piracy are showing double digit annual growth, while solutions to combat tampering and retail theft are showing more modest growth.

The clothing sector where the greatest amount of trade in counterfeit products takes place is undoubtedly the clothing, footwear and textiles trade. In this sector counterfeit products have achieved widespread acceptance.

and piracy

The world market for brand protection technologies (including tamper evidence and anti-theft technologies)

Product protection technologies	2006 \$ millions	2011 \$ millions	2006–2011 Forecast annual growth rate – %
Brand protection (against counterfeiting and piracy)	1,532	3,812	20
Tamper evidence	1,545	2,167	7
Anti-theft EAS systems (consumables only, excluding. reader systems)	620	719	3
Total	3,697	6,698	

Growth rates of product related crime versus brand protection solutions with breakdown by type of crime

	Product related crime 2006 Annual growth rate – %	Brand protection solutions 2006 Annual growth rate – %	Market status
Counterfeiting & product piracy	10	20	Emerging markets – very high growth rates for brand protection solutions Around double the growth rates for financial losses
Product tampering	7	7	Mature and well developed markets & solutions . Modest growth rates comparable to growth rates for brand protection losses
Retail theft	3	3	Mature and well developed markets & solutions. Modest growth rates comparable to growth rates for brand protection losses

The relationship between growth by type of product crime and growth rate by type of brand protection solution is illustrated in the following table:

As is shown in the table above, counterfeiting and product piracy are the types of crime that have been growing fastest and this is set to continue.

The most interesting opportunities for brand protection solution suppliers lie within the fast emerging – and arguably long overdue – demand for solutions aiming to address counterfeiting and product piracy.

Opportunities also exist within the more well developed markets for tamper evidence and retail theft prevention fields, although such opportunities inevitable tend to favor well established companies and products, while potential new entrants could well encounter significant barriers.

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End-user sectors affect	ed
by product related crim	е

A large proportion of the overall financial losses of \$610 billion incurred in 2006, due to counterfeiting, piracy, tampering and theft were suffered by the 20 plus end-users specifically identified by the World Customs Organization.

The following table shows a condensed version of these findings assembled into 10 broader end-user groupings, each typically containing several end-user sectors (for full detailed analysis – see main body of the report).

The chart on the right shows a summary of end-user sector groups impacted by financial losses due to counterfeiting, piracy, tampering and theft

Note: The full report contains more detailed breakdowns of 20 plus enduser sectors (as identified by the World Customs Organization) covering around 100 individual product categories in all, complete with quantitative market estimates.

Driving forces – product related crime

There are a number of drivers of such product related crime but the following two primary forces in particular have been growing in importance in recent years, causing accelerated growth of availability of counterfeit products:

- The economic boom of China and the shifting of many Western manufacturing operations to region coupled with the fact that China has become the number one counterfeiter in the world both for exports and within their own home market
- The rapid growth of the internet as a tool for buying and selling almost anything worldwide, either by direct website/email contact or via on-line auction houses

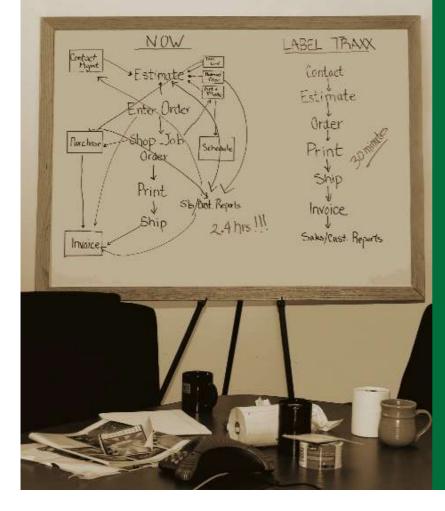
Sector groupings	Comments	
Clothing and footwear, including textiles (all types)	The sector where the greatest amount of trade in counterfeit products take place is undoubtedly the clothing, footwear and textiles trade. In this sector counterfeit products have achieved widespread acceptance. Apart from financial losses to brand owners, such counterfeiting is mostly harmless, with some notable exceptions in terms of fireproof clothing, especially for children, as well as high standards required for safety related apparel.	
All electronics equipment and components, incl.	Computers, domestic entertainment, telephones (excluding automotive and aero, household electronics, power tools etc) The electronics sector is diverse and most areas are impacted by counterfeiting. The problem extends throughout the value added supply chain right down to counterfeit integrated circuits often sourced via the internet. Risks identified are safety related with most counterfeits failing to meet even minimum regulatory requirements (EC mark, Underwriters Laboratory etc.)	
Business and games software, video and audio	Piracy affects business and games software, video and audio media products. This industry sector has been a pioneer in end-user empowered product authentication.	
Medicines, pharmaceuticals and veterinary products	Counterfeiting is this sector is particularly serious with its implicit threats to life and health. The US is trying to combat the threat with Pedigree regulations. Counterfeiting in the developing world is rampant. Other considerations for manufacturers including responsibility for 'due care'.	
Cigarettes, tobacco and tobacco products	Smuggling of cigarettes is a major problem, particularly for countries with high excise duty such as the United Kingdom and elsewhere. Counterfeit cigarettes are also a significant and growing problem, often manufactured in nightmarish clandestine underground operations.	
Luxury products – perfumes, colognes, toilet preparations and cosmetics, fashion accessories and baggage	Strongly brand luxury products, by definition command high margins and as such represent a highly attractive target for counterfeiters. Health risks are generally minor but cases of serious skin damage have been reported from some counterfeit products	
Automotive and aeronautical parts	Counterfeiting is widespread in the automotive sector, particularly for replacement parts (eg: brake linings). In the aeronautical sector, there have been some high profile cases of counterfeiting and fraudulent documentation for reconditioned parts, which have even led to air crashes and loss of life.	
Labels and packaging	For counterfeit product to be convincing, counterfeit labels and packaging are an essential component of the counterfeiter's art. Fake packaging is readily available to order in China, Turkey and elsewhere.	
Drink and food	Though grouped together drink and food have little in common in terms of product related crime. Alcoholic drink products are widely targeted by smugglers (like cigarettes particularly for countries with high excise duty). Alcohol is also subject to counterfeiting and also various forms of refilling and/or dilution. Food products are most vulnerable to tampering, together with a few cases of counterfeiting usually for high margin regional products (eg: Parma ham).	
Stationery and imaging equipment	Counterfeiting of printer cartridges is a widespread in this global market. Manufacturers take significant measures to combat the problem.	
Toys and gadgets	Counterfeiting is this sector is particularly serious with its implicit threats to life and health. There have been a number of serious cases recently including the return of 18 million toys imported by Mattel, US from China. Main problem areas are the use of low cost toxic paint and small items (including batteries) that can be swallowed by small children. Counterfeiters usually ignore all safety considerations.	
Sporting goods	Counterfeiting of such products, particularly those that are strongly branded is widespread, ranging from tennis racquets to telescopic gun-sights to surfboards.	

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Computers, domestic entertainment, telephones. The electronics sector is diverse and most areas are impacted by counterfeiting. The problem extends throughout the value added supply chain right down to counterfeit integrated circuits often sourced via the internet.

Face to face transactions are not required and the anonymity that can be maintained suits counterfeiters well. Neither may products be inspected prior to delivery.

Such internet based sales of counterfeits involving direct website/email contact, following a 'Google' search or by other means favors a variety of product categories from pharmaceutical products like Viagra to electronic microchips and integrated circuits for the manufacture of consumer electronics and other types of electronic products.

On-line auction houses can suit counterfeiters of certain product categories such as luxury goods like watches and jewellery, sporting goods, toys and the like.

It is understood that eBay has been starting to apply some pressure (some say long overdue) on such fraudulent suppliers of goods – traditional auction houses like Sotheby's and others take pains to assure the authenticity of products that they offer, so why should on-line auction houses behave any less responsibly?

Nonetheless, problems associated with on-line auctions and counterfeits will not go away so easily in the near future.

Additional driving forces have put further pressure on brand owners (and also governments) to take pro-active moves in terms of brand protection.

Traditionally the main drivers behind brand protection were the facts that financial losses are colossal, that brands suffer damage to their image and that there is danger to health and human life.

Then there is the more recent idea of 'manufacturer's responsibility'. The argument is that brand owner manufacturers should foresee that counterfeits could enter the supply chain and/or that their product could be vulnerable to tampering.

If a brand owner is deemed to have failed to have used reasonable efforts to secure the packaging and distribution chain from mis-branded, or imitation versions of their products, then the company may be judged to have breached their duty (of "If a brand owner is deemed to have failed to have used reasonable efforts to secure the packaging and distribution chain, then the company may be judged to have breached their duty of care"

care) and been negligent.

More and more 'manufacturer's responsibility' cases are being brought before the law courts by consumers and legal precedents are being set.

This is likely to encourage brand owners into taking more proactive security decisions, particularly in areas where there are health and safety issues to be taken into consideration. For example, by means of brand protection features embodied in the product packaging.

Finally and perhaps most compelling of all is the increased involvement of organized crime and terrorist groups in product crime. Counterfeiting, in particular, is often sponsored by organized crime syndicates and/or terrorist groups that use such criminal activities in order to finance or launder the proceeds of their malevolent activities. Product related crime has increasingly been facilitating and financing international terrorism in the post 9/11 world.

The widely held public perception that a great deal of counterfeit products are basically 'OK', perhaps even a source of amusement, is unfortunately deeply misplaced.

Industry structure and breakdown by different types of supplier of brand protection solution

The competitive situation and industry structure in the brand protection sector is complex and is characterized by a wide variety of different types of players.

Ranging from suppliers of fully integrated brand protection solutions, through suppliers of raw materials and/or brand protection components that can be incorporated by printers into labels and packaging, suppliers of brand protection/security inks, smaller companies based around a single technology or family of technologies that do not rely on packaging, suppliers of labels with integrated brand protection/security features, including suppliers



In the electronics sector is diverse and most areas are impacted by counterfeiting. Risks identified are safety related with most counterfeits failing to meet even minimum regulatory requirements (EC mark, Underwriters Laboratory etc.)

of fabric labels for the clothing sector, that offer other types of devices, including companies offering tamper evident closures, specialist 'one-stop-shop' suppliers of packaging/labels to a particular end-user sector to major packaging groups.

A proper understanding of the competitive environment is key to surviving and prospering in the brand protection business.

Note: The full report also profiles nearly 200 brand protection solution providers (up from around 50 providers in the first edition of the report in 2004 – many recent new entrants).

Marketing of brand protection solutions can be challenging

The brand protection business tends to be a sensitive issue for brand owners and their approach has often been cautious and conservative (in some cases overly so).

Brand owners tend to feel more comfortable dealing with wellestablished suppliers with a track record of success before entrusting work to new players.

This means that new entrants to the brand protection business, even if such companies are already well established as conventional packaging/label converters and material suppliers, should plan for the medium/long when planning marketing campaigns, whilst building business relationships, confidence and trust.

In the past, brand owners have often decided to upgrade their brand protection defenses only after they have been subjected to a product related attack. This is set to change as brand owners see the need for a more pro-active approach to the alarming growth of the problem.

An exciting trend in brand protection – empowering end-users to verify the authenticity of products that they have purchased

An interesting recent trend has been for providers of brand protection solutions to offer systems that can empower enduser customers to verify the authenticity of products that they have purchased.

A factor that may have been holding back the market for brand

"The widely held public perception that a great deal of counterfeit products are basically 'OK', perhaps even a source of amusement, is unfortunately deeply misplaced"

protection solutions has been the fact significant expertise and/or specialized equipment has been required to authenticate products of most types.

Given that counterfeits today often simulate genuine products very closely, it should not be assumed that law enforcement officers (eg: police officers, customs officers) however dedicated and informed they may be will be able to differentiate a counterfeit sport shoe or a watch, or an OTC pharmaceutical product from the genuine article.

A new system offered by Domino Printing Systems, for example, involves mass serialization using 2D matrix codes. The system operates by means of scanning a matrix code marked on packaging of say a pharmaceutical product.

Special software that has been pre-loaded on to the enduser's mobile phone handset enables the matrix code number to be read via the phone's in-built camera.

The code number can then be sent by SMS text message to the brand owner's central data base for verification of authenticity (or otherwise).

Finally a reply SMS is sent back to the mobile phone. The code can be encrypted to achieve some level of forensic security, although it still remains to be seen how well such a system will hold up over time in the face of resourceful criminals.

Conclusion

The time brand protection suppliers to step up their product development and marketing activities is now – by the time the market really takes off it may well be too late to enter the brand protection business.



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Digital in action

AB Graphic and HP hosted a successful open house in North America, while leading label converter Pamco demonstrated the equipment of both vendors in action. **Danielle Jerschefske** reports

AB Graphic International and Hewlett-Packard Indigo Division jointly hosted a three-day Open House at ABG's North American facility in Elgin, Illinois. Current customers, and converters interested in digital technology and finishing equipment, discovered more about the latest innovations of these two companies.

'Wow, that's something,' said an onlooker in the crowd while watching the ws4500 print various color labels in one run. 'That's incredible.'

'It's supposed to wow you,' responded Tim Staples, operations manager, ABG North America, 'because you can't do this on a conventional press. The waste is much different with digital too.'

Staples pointed out the main points of interest on the HP Indigo ws4500 machine.

Binary Ink Development (BID) rolls have been designed so that a converter does not throw ink away – ink is pulled from the cartridges only when needed. Similar to offset printing, the ws4500 uses a blanket to transfer the ink to the material and has the capability to lay down double hits of white in one run. A densitometer built into the machine measures ink viscosity inline. Cleaning the ink cartridges is quick and easy, requiring a 25 minute flush.

When a question was raised in the crowd about the speed of the digital press in comparison with conventional, Staples responded: 'Sure, the press does not run as fast as other presses, but how long does it take to change the plates on those? What is your makeready time? The preparation time with the Indigo is extremely quick. With the 4500 you can profile a job to simulate traditional printing - for instance, you can add the 12-15 percent dot gain – save the settings, and let the Indigo run. Jobs become more consistent by cutting out human intervention.'

ABG Finishing

ABG's Omega Series 2 semi-rotary servo-driven finishing machine displayed its ability to transform digitally printed material into a finished label. Available in widths of 8 -18 inches, with a 2 -18 inch repeat, the Omega Series 2 is capable of hot stamping embossing – with foil saving system – has an edge guide, a die cutting station and slitting station.

'This new finishing system provides numerous advantages,' Staples told his listeners. He demonstrated the Rotometrics magnetic cylinder technology for the dies and the hot stamp system. 'There is a low amount of waste because of the web sensors and servo motors. The die station is the home station. Using that as the reference point, the sensors automatically adjust and the die pressure is self-regulating.' Another advantage,



ABG points out, is the 10-20 minute set up.

Fully modular, the Series 2 now offers a semi-rotary silk screen unit with Stork Rotoplate technology, providing 30 percent savings compared to Rotomesh, ABG says. Also new, is the pin and groove hot foil stamping unit; a 100 percent inspection module incorporating a Flytec Systems' (now AB GmBH) line scan camera; and a redesigned flexo unit. The flexo unit can be fully stripped without tools and the impression adjusted by calibrating the hand screws.

ABG also demonstrated its Vectra turret rewinders, Omega slit rewinders and pharmaceutical rewinders.

Pamco goes digital

Pamco Label Co. Inc., located in Des Plaines, Illinois, hosted an Open House for its customers and suppliers to introduce its new digital print capability. The company has installed an HP Indigo ws4500 and an ABG Omega Digicon HS to finish the digital web.

'We can now offer the best of both worlds,' explains VP of sales, Danny Fishbein. Traditionally a flexo house, he says: 'The 4500 gives us much more flexibility in what we can offer to our clients.'

Based in Des Plaines, Illinois, Pamco plans to use the ws4500 for short run private label products, marketing trials, seasonal and regional specialty labels, and variable data printing. 'The digital press offers 175 to 200 line screen print capability which allows us to closely match labels to a flexo process,' Heaster continued.

The ABG Digicon offers Pamco the ability to foil, hot stamp, UV treat and laminate. Pamco has been extremely pleased with the ease of use of the machinery.

Its customers were intrigued to see the capability of the press. Many said they were very interested in what the new technology could do for their brands.

Ink round-up

Andy Thomas rounds up the latest news from manufacturers of inks, coatings and varnishes. Key trends include low migration, low odor inks for sensitive food and pharma applications, special effect and other 'smart' inks, and compatible series of multi-process combination inks for a wide range of substrates

Sun Chemical launches new ink series

Sun Chemical has launched Solarflex LM low migration UV flexo curing inks, allowing narrow web printers to expand into new markets including short-run flexible packaging.

Comments Jonathan Sexton, Sun Chemical's business manager – Narrow Web Labels: 'Flexible packaging has traditionally been printed using solvent gravure inks. The solvent gravure process is well suited to long print runs, which requires a significant investment in the press, print cylinders and solvent management systems. With the growing requirement for shorter print runs, narrow web UV flexo is becoming a viable solution for flexible packaging printing.'

Solarflex LM will also meet the needs of markets such as sensitive food and pharmaceutical packaging, for which high-quality print and low migration potential are important.

Sexton says that the low migration ink series retains high performance characteristics. 'There is no loss of running speed, on-press capability or print finishing, and cure speeds and mechanical resistance are equal to other UV flexo printing inks.'

Solarflex LM uses Sun Chemical's M-Cure polymeric photoinitiators, which become locked into the cured ink film and so prevent migration. 'They are odor and

taste neutral and do not use Benzophenone or ITX,' says Sexton. The inks are available in a full range of process and blending colors, including fully resistant shades.

Solarflex LM forms part of Sun Chemical's complete package for low migration printing. The company also offers offset inks – Suncure ULM and LMQ systems – that are also based on M-Cure technology. These are marketed to narrow web printers through the Solaris family of products, a global product line of inks and coatings formulated to meet the needs of narrow-web printers.

In other developments, Sun Chemical has enhanced the security element of its Solaris range to include machine readable taggants, as well as Flexo Print Conductive Silver, a water-based silver conductive ink designed for the production of radio frequency identification (RFID) antennas. 'This provides a unique combination of high-speed printability, fast drying, and conductivity in an easy to use ink system, and is ideal for application in the narrow-web market,' says Jonathan Sexton.

'Narrow web is the ideal print environment for security and other special and functional effect printing. Screen, gravure and flexo processes are ideally adapted to apply the high filmweights needed to maximize effects, and multiple processes can be printed in-line, saving time and cost.'

Sun Chemical has also expanded its Solarscreen range of UV curing screen inks "However, with a number of these effects a thicker ink film produces a better result – a consideration which should not be overlooked when determining the print process"

with Solarscreen Meteor, claimed to offer higher opacity 'with new levels of print lay and over-printability and with elevated adhesion and cure speed.'

In terms of ink management, Jonathan Sexton says Sun has seen increasing interest in its Solaris Colorsat ink room management systems developed with GSE Dispensing.

Intercolor launches special effect inks

Intercolor has developed a new range of UV curable special effect inks and coatings. The Interact range offers various visual, tactile and functional effects including coin reactive coatings, textured and tactile coatings, thermachromic inks, metallic ink effects, photochromic inks, UV fluorescent inks and multi-fluorescents.

The multi-florescent line includes a number of colors, including three yellows, that look the same under normal light but different under UV light. Coin reactive coatings provide the scope for innovative marketing promotions by, for example, enabling a message to appear in a creative fashion.

These special effect inks and coatings can be printed on a wide range of substrates and most printing processes can be used to apply them. However, with a number of these effects a thicker ink film produces a better result – a consideration which should not be overlooked when determining the print process.

At Labelexpo Europe 2007 Intercolor showed print samples including a mock airline ticket with a front hologram printed using eleven standard and special effect inks and coatings with the reverse printed with three standard inks plus two special effect coatings. Four passes through the press were required to produce the ticket. A special laser sensitive coating on the front enabled the tickets to be instantly personalized on the stand. Also shown was a pressure- sensitive wine label printed with eleven inks and coatings incorporating a number of special effects.

Visitors to Drupa can pick up printed samples of these special effects in the form of handy credit card sized prints.

Ruco launches '3 in 1' compatible ink series

Ruco Druckfarben has launched its new '3 in 1' system for combination printing, consisting of the new UVFX flexo ink series, series 985UV/NV inks for high-speed rotary screen printing as well as series 960UV printing lacquers.

The new ITX- and silicon-free UVFX flexo inks are heavily pigmented and highly reactive, according to Ruco. 'In addition to their high opacity and high yield, they are outstanding for excellent curing and adhesion characteristics as well as very good printability at high speeds. Further important pros are high process stability in the print run and very low odor.'

Series 985 UV/NV inks were developed for the decoration of plastic films by high-speed rotary screen printing. The low-viscosity printing inks are highly reactive and come in a high-gloss formulation, says the manufacturer. 985UV/NV inks incorporate good resistance to solvents and water and are suitable for pretreated polyolefins (PE/PP), PVC, other pretreated plastic films as well as paper and cardboard.

The series 960UV printing lacquers are available in various formulations from high gloss and matt lacquers with high resistances to specific media, to special-effect lacquers such as series 960UV393 tactile lacquer. The latter was developed for achieving haptic effects so that people with poor of no vision can feel – and thus read – imprints on drug packages etc. All printing lacquers can be used for rotary printing and flat screen printing.

The crosslinking characteristics of Ruco's label printing ink series has been optimized to ensure the inter-compatibility.

Spring launches new UV flexo ink range

Following a major investment in its manufacturing facilities – which saw a tripling of capacity and new pigment grinding capabilities – Spring Coating Systems has launched a new flexo UV ink range.

The Lumina range 'responds to a market demand for true process color inks,' according to managing director Tom Korchak. 'Surprisingly, most process blues and yellows are neither fully transparent'

nor fully pantone. This limits the printer's

ability .

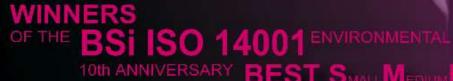
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Laser sensor picks up invisible marker in ink

to match pantone proofs and to change the order of printing stations.'

Lumina is made from in-house pigment dispersions, which allows Spring to adjust the density and brilliance of the final ink and modify other parameters in the formulation to improve characteristics such as through cure and adhesion.

Spring is currently looking for companies capable of promoting the Lumina range outside of France. For more information email contact@spring-coating.com.

Invisible mark sensor system launched

Tri-Tronics' Smarteye Stealth laser sensors are designed to detect invisible markers formulated into water-based or solvent-based materials such as inks, plastics, or adhesives. The markers can also be applied directly to objects and materials. This combination of a laser sensor and the invisible marker makes it possible to perform a wide variety of tasks such as invisible registration mark detection, product sorting, inspection, identification or authenticity verification.

Since the Stealth sensor operates in the near-IR region, there is little interference from other light sources such as ultraviolet (UV) fluorescent materials that are present in man-made or natural materials. Conventional fiber optic light guides can be used in hard-to-reach areas or high temperature environments.

IIMAK and InkSure form strategic partnership

InkSure Technologies Inc, a leading provider of covert machine-readable authentication solutions, and IIMAK (International Imaging Materials, Inc.), the world's largest manufacturer of thermal transfer ribbons, have entered into an exclusive international authentication distribution agreement for the joint development and marketing of TrackSure covert barcode solutions for the prevention of product diversion.

The Agreement provides that IIMAK will be InkSure's exclusive thermal transfer ribbon (TTR) supplier, and InkSure will be IIMAK's exclusive supplier of security taggants, where TTR technology is used for the printing of covert barcodes. Both companies agree to market the InkSure-encoded IIMAK TTR for the printing of covert barcodes directly and through their respective distribution channels.

Commented Rick Wallace, sr. vice president of marketing for IIMAK, 'The TrackSure solution provides security in the form of covert barcodes that will not be detected by tools commonly used by gray



Reading taggants on TTR label

marketers, such as black lights. More importantly, these barcodes cannot be seen by the naked eye, even when authenticated by our proprietary reader. In addition, TrackSure utilizes existing barcode symbology for plug-in connectivity to our customers' existing logistics and information systems.'

Added Don Taylor, InkSure's VP global marketing, 'With millions of thermal ribbon barcode printers already installed, the capability to implement TrackSure's covert barcodes becomes relatively easy.'

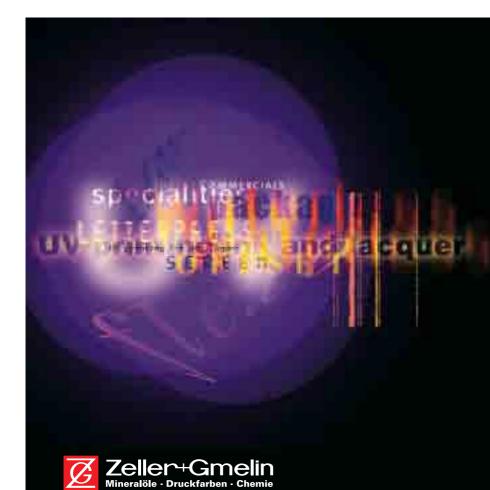
IIMAK has also agreed to supply InkSure with color and invisible TTR incorporating InkSure security taggants for brand authentication, and the companies have agreed to work together to develop conductive ink TTR solutions for InkSure's new SARcode chipless RFID technology.

Marabu releases screen inks

New products from Screen inks specialist Marabu include a new 'hot foil effect' high gloss silver, S-UV 296. The effect is 'strikingly authentic and covers many applications previously only possible with hot foil stamping,' according to the company.

At the same time, the silicone-free 'UltraRotaScreen UVSF' range has been widened with a new opaque white 173. 'The advantages are optimum ink flow, first class quality white and a maximum price-performance ratio,' says Marabu.

Also new from Marabu is the dense matt opaque black Ultrastar-M UVSM 181, which is particularly suitable for finishing on roll-to-roll adhesive labels on



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Screen inks enhance high value wine labels

flat bed screen printing set-ups. This product was shown for the first time at Labelexpo Europe 2007.

Marabu is upbeat about the future prospects for specialist screen inks: 'Screen printing is unbeatable when it comes to printing special effects, for example tactile, glitter or high gloss silver. Additionally, flatbed label screen printing shows its advantages in producing small batches of high-quality labels.'

UVitec introduces flexo texture coating

UVitec Printing Ink, Inc has introduced its 22690-87 flexo texture UV coating, which cures to a raised, rough surface that appears as an off-white matte finish. This product works best with lower line anilox rollers. The product is ideal for high end folding cartons and prime labels that need an interesting effect to use in conjunction with a gloss coating or as a stand-alone effect. Rotary screen versions are also available.

While designed to integrate with UVitec's premium offset, letterpress and flexo series of inks, the coating is manufactured to complement most other ink systems available.

The manufacturer says the coating – comparatively resistant to scuff and rub – is manufactured to flow properly on press and will not settle in the print unit. In addition to the standard coating, the product can also be tinted in a variety of different colors.

Pulse Roll launches special effects brand

Pulse Roll Label Products has launched its Inspira collection of special effects inks and coatings. The new brand brings together a range of products formulated to provide enhanced decorative properties to labels through both aesthetic and physical properties.

The Inspira collection includes super matt varnish, soft touch varnish, scented inks, Turbolam UV adhesive, thermochromic inks, luminescent inks, multi-shift inks, Roughtex varnish, relief/tactile varnish, cold foil adhesives, phosphorescent inks, scratch-off inks and glitter varnish.

Pulse Roll Products has also launched a newly formulated UV matt varnish. The product is claimed to tackle problems caused by the need to mix a powder with the varnish resin just prior to coating. The powder is, ideally, in suspension but often settles out in the coating fountain and the anilox roll cells causing press downtime for cleaning.

The company says it has carried out extensive field tests that showed no product separation and resulted in a very smooth, thin coating with no sludge in the tray or anilox to clean at the end of the shift. In addition it found the varnish provided a greater matt effect with excellent scuff resistance. Varnish consumption was also shown to be greatly reduced in comparison with the usual 12 volume, 100 lpcm anilox roll traditionally used. The Next Generation product only requires a 5 volume, 280 lpcm roller.

'Customers have also seen improved quality of over-printability with foils, giving improved lay and sharper edges,' says sales manager Alan Day.

Dynic introduces new resin ribbon

Dynic USA Corporation has announced a new resin ribbon formulation, NK45. The new ribbon complements Dynic's Sirius line of ribbons, which include wax, wax-resin, resin, near-edge, color, and specialty formulations. NK45 is for use in both flat-head and near-edge printers and is compatible with a wide variety of substrates, including coated and gloss paper, synthetic substrates such as polypropylene and polyester, and films. It has excellent chemical, I.P.A. (isopropyl alcohol) and water resistance, according to the manufacturer. NK45 is FDA-listed and available in both black and white.



"Surprisingly, most process blues and yellows are neither fully transparent nor fully pantone"

Michelman wax dispersions add matting effect

Michelman has developed wax dispersions – Michem Guard 349 and Michem Guard 350 – claimed ideal for imparting a matting effect to most aqueous coatings and varnishes. The coatings give water-based inks the performance properties of solvent-based systems, without the environmental hazards, says the company. They also enhance other properties such as blocking, and abrasion, water repellency, scratch and mar resistance.

Characterized by large particle size, Michem Guard 349 is a nonionic polyethylene, while Michem Guard 350 is a nonionic Fischer-Tropsch wax dispersion. Both are solventfree and are designed to highlight the positive properties of large particle sized wax and minimize unnecessary interaction from dispersing agents.

GSB shows range

At Labelexpo Europe GSB Wahl showed UV-inks for letterpress, litho-, flexo- and silkscreen printing, which the manufacturer says show high pigmentation, fast curing and high gloss characteristics. All systems are silicone free, so are over-printable with TT-tapes and hot-foil films. The company in addition showed UV varnishes, including matt, printable and hot foil stampable, special effects and cold foil. Special effect inks included one-component gold and silver, claimed to show high coverage, high gloss and good tape and scratch resistance for all materials and for all printing processes.

Bordeaux Digital launches inkjet range

Bordeaux Digital PrintInk has launched a water-based pigmented ink for Piezo inkjet Technology, called Eden PP (EdPp). Eden PP broadens the already available Eden ink series, Bordeaux Digital PrintInk's complete water-based ink solution. EdPp is a pigmented ink available in 6 colors: C, M, Y, K, LtC, LtM and flushing liquid. The ink is intended for printers with Piezo printhead such as the Mimaki JV2/JV4,

Roland Hi-fi Jet, Mutoh Falcon II (8000) and Agfa Sherpa series. 'The added value of Bordeaux Digital PrintInk EdPp inks lies in its unique ingredients, and especially in the



pigment used. Bordeaux Digital PrintInk formulation uses self dispersed pigments which ensure stability and lightfastness,' says Amnon Shalev, Bordeaux Digital PrintInk product manager.

Eden PP is highly UV resistant and therefore also suitable for point of sale (POS) and Point of Purchase (POP) applications. 'Bordeaux Digital PrintInk also regards Eden PP as a milestone in the development of water-based textile inks,' adds Amnon Shalev. 'This new ink has been developed with a capability for direct inkjet on textile relying on the compatibility of pigmented inks with cotton fabrics.'

Other products now available from Bordeaux include generic 'pure green' solvent inks; 'eco-solvent' inks formulated from non-corrosive materials to increase the printheads' lifespan and offer adhesion to uncoated media comparable with real-solvent inks; and fast curing UV inks which are non-volatile and have improved droplet and flow properties.



Wax dispersions impart matting effect to aqueous coatings

Buyers' guide

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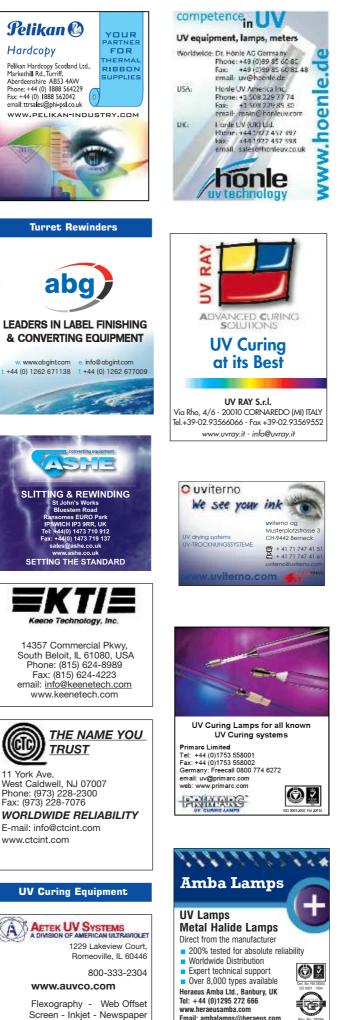
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