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### India Summit



More than 600 label printers attended the first India Label Summit

### Analysis



ExxonMobil looks to increase OPP penetration in label market

### Case Study



Lowry Computer Products pushes RFID labels into real world applications





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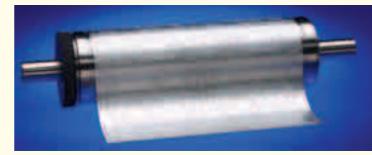
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### Leader

abels & Labeling/Labelexpo's most recent Label Summit in Mumbai, India, brought together over 600 of India's top label printers to discuss current and future developments in the labels sector in this immense and fascinating country.

The Indian pressure-sensitive industry is growing at rates as high as 20 per cent year on year, according to industry sources at the Summit.



Consumption of PS per capita in India remains low by the standards of Japan, North America and Europe, showing the huge potential for future growth.

Today a growing band of Indian PS label printers are producing world class labels using sophisticated paper and filmic materials, multi-combination converting and automated quality control. Western equipment suppliers continue to score major successes among this group of leading players.

"But things are changing quickly. The blocks on foreign direct investment (FDI) in the retail sector could soon be removed."

At the same time a large number of printers aspire to this world class status, many hundreds of whom were present at the Mumbai Summit. Indian label press manufacturers are working to meet the demands of those commercial printers entering the labels market for the first time, and who do not - yet - require the sophistication of the most modern Western rotary combination machines.

This growth potential is being restrained by a number of factors, including high import duties on rotary label presses, inks, dies and materials; blocks on global retailer groups like Wal-Mart moving into India; and the relatively small investment by end users in automated PS label application systems.

But things are changing quickly. The blocks on foreign direct investment (FDI) in the retail sector could soon be removed. And with China's entry into the World Trade Organization, and bilateral trade agreements with countries like Thailand, import duties on foreign machinery and consumables will come down rapidly. Given that India has a middle class greater than the entire population of North America – with a lot of pent-up spending power – these factors could ignite a rapid growth in the per capita demand for high quality pressure sensitive labels.

Indian PS label converters are also in an excellent position to take advantage of opportunities in RFID – particularly in the pharmaceutical industry, as a key end user pointed out at the Mumbai Summit. And there are wider opportunities in shrink sleeve labels and IML labels which are also exhibiting significant growth.

Andy Thomas Group Managing Editor

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# Labeling news

# Voting opens for Label Industry Global Awards



The third annual Label Industry Global Awards will take place on the first evening of Labelexpo Americas 2006, on September 11, at the Donald E Stephens Convention Center, Rosemont, Chicago. The judges have put together a list of nominations and the industry may now vote for the winners online at http://www.labelawards.com/. Voting for the awards will close on May 26.

The Label Industry Global Awards are in four key categories, with leading label industry players sponsoring each one. This year will see the introduction of the RFID Smart Label Manufacturer Award, which will recognize the innovations and accomplishments in this exciting area. The nominations are as follows (further information about the nominees can be found at http://www.labelawards.com/):

### Orthotec launches 'low risk' RFID solution

Orthotec has launched an entry level RFID label manufacturing system which allows label printers to produce small to medium runs of RFID labels at a low investment and minimal risk.

Orthotec's RFID manufacturing system is built as an option on the platform of its CN2850DL+DL press. If it is not manufacturing RFID labels, it can operate as a conventional flatbed letterpress machine.

'RFID is just starting out, and the quantities are not there today,' says Orthotec's John Huang. 'We are offering a machine which matches with that market situation. Up to now RFID label manufacture has been a high investment. Now printers can try the market out, and if it is not a success, they still have a standard label press, so there is no risk.'

The RFID label is converted on the liner after the printed roll. The system uses servo motors to synchronize the RFID inlays with the web speed, to place the transponders at a fixed position on each label. Press speed is around 6,000 rph. **The R. Stanton Avery Lifetime Achievement Award,** sponsored by Avery Dennison: nominees are John Little, formerly of Nilpeter Inc; Joseph Weber, Jnr, Weber Marking Systems; Calvin Frost, Channeled Resources Group; Bruce Bell, Belmark Inc; Walter Dow, Dow Industries

**The Label Industry Award for Continuous Innovation,** sponsored by Labels & Labeling, Label & Narrow Web, and NarroWebTech: nominees are Rotometrics; 3M; Dupont; Rotoflex; Flexcon

**The Label Industry Award for New Innovation**, sponsored by MPS: nominees are Esko; DiMS; Primera Technology; XSYS Print Solutions; Bielomatik

**RFID Smart Label Manufacturer Award,** sponsored by XSYS Print Solutions: nominees are Kennedy Group; CCL Label; Lowry Computer Products; RSI ID Technologies; Topflight Corporation; Graphic Solutions International

### **Finat congress**

The 48th FINAT Annual World Congress will be held in Warsaw, the Polish capital, from 7 - 9 June 2006. The event is expected to attract over 300 delegates from all over the world. The Congress theme is "Growth through Excellence in a Wider Europe".

The Congress will include a keynote contribution from a highranking Polish government official – an acknowledgment of the economic importance of FINAT's members. Another session will be devoted to advice on setting up business in the host country and a case study in diversification by a Polish company, along with assessments of the business and growth climates in Central and Eastern Europe.

Other speakers will take a look at the situation in Russia, North America and Asia, and Label printers from all over the world will share success stories on marketing, product diversification, specialization, innovation, customer service, foreign direct investment – all examples of strategies that have helped to differentiate label printers in a competitive market environment. More information from http://www.finat.com.

# **Turkish edition of Label Encyclopedia**



Aydin Okay, president of Canpas and of the Turkish Label Association (1) and Mike Fairley sign copies of the Turkish Encyclopedia of Labels and Label Technology

Almost 200 label converters, label industry suppliers, special guests and media representatives attended the official Turkish launch of the Encyclopedia of Labels and Label Technology in

### Opaltone certifies Latran halftone proofer

Latran Technologies and Opaltone Inc.have announced that the Latran Prediction digital halftone proofers have been Opaltone Certified. Opaltone pre-press house GMF Flexo has also received certification.

The Prediction Digital Halftone Proofing System incorporates laser ablation transfer technology, which produces halftone dots and images real ink pigments onto flexible packaging and label substrates. Prediction images with a 10-micron spot and 2540 or 2400 dpi resolution, which enables the system accurately to proof any conventional, stochastic or hybrid (flexo) screening technology.

GMF Flexo Prepress, which specializes in graphic prepress services from design through flexo color separation and plates, is a large volume user of Opaltone technology, which offers an expanded color gamut from 7 process inks - CMYK + R'G'B'. GMF has used Opaltone on projects as diverse as labels and wide-web flexible packaging to folding carton applications.

'Opaltone Certification doesn't come easy,' explains Matthew Bernasconi, technical director of Opaltone Inc. 'We conduct a rigorous color certification process for all digital proofing technologies. Congratulations to Latran Technologies and GMF Flexo on meeting our stringent 7-color reproduction specifications.' Istanbul in March.

The book launch was accompanied by a keynote presentation and cocktail reception at the Crown Plaza Hotel, Istanbul. The event was sponsored by Canpas (Can Hassas Kagit San Ve Tic. A.S.), one of Turkey's leading 'world brand' label suppliers to the cosmetics, cleaning products, textile, food and industrial sectors.

The presentation on 'The future of label converting' by Michael Fairley, director strategic development for the labels group, Tarsus Exhibitions and Publishing, was a prelude to the launch of the Turkish language version of the Encyclopedia of Labels and Label Technology – with the translation and printing of the book again sponsored by Canpas.

Following the seminar presentation, Aydin Okay, president of Canpas and of the Turkish Label Association, and Michael Fairley (who is the author of the Encyclopedia), undertook a joint book signing of the Turkish version of the Encyclopedia, complimentary copies of which were then presented to all those who attended the event.

### **News in brief**

### **Durable film opportunity**

The problems of added time and cost incurred by narrowweb converters who have to outsource expensive print-receptive surface coatings for films, or undertake the specialist process themselves, could be at an end -thanks to a new inline primer system jointly developed by durable film manufacturers Valéron Strength Films and dedicated narrow-web ink manufacturers XSYS Print Solutions. *For full story see page 110.* 

### **Sun expands Solaris**

Sun Chemical Europe has expanded its range of specialist narrow web inks under the Solaris program, led by a full range of metallic inks specifically for narrow web printing. Based on the latest metallic pigment technology, products for water based flexo, UV flexo, UV offset and UV screen are available, including MetalFX and high lustre grades. The new Solaris range includes a full gamut of silver and gold shades.

Also launched under the Solaris brand is an improved range of UV screen whites. Supplied under the Solarscreen brand name, products for all flatbed and rotary applications in narrow web are available, including standard and silicone free grades for combination printing.



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# India Summit success

With the Indian label market poised for takeoff, *Labels & Labeling* sponsored the first Label Summit in the country. It proved an excellent opportunity to gauge the strength of the business inside India and the prospects for the country as an outsourcing hub to global label markets. **Andy Thomas** reports

he Label Summit India, which took place 21-22 February 2006 at the Grand Hyatt Mumbai, was a resounding success, with 609 visitors from India and other key international markets attending.

The Summit format includes a tabletop exhibition, and the growing importance of India's label industry is shown by the list of exhibitors, which included Nilpeter; Mark Andy; Alphasonics; Brady Corporation; BST Sayona; Erhardt & Leimer; Esko-Graphics; Focus Label Machinery; Gallus; GEW; Gidue; Golden-State Industrial; GRE Digital Solutions; Hewlett Packard; IGT; Kaygee Loparex India; Link Label Machinery; Omet; and Zeller & Gmelin among many others. Over 60 per cent have already re-booked for the next Label Summit India, taking place at the Taj Palace Hotel in New Delhi on 7-8 March 2007.

Both the conference and the networking opportunities were counted a success. Harveer Sahni, managing director, Weldon Celloplast said: 'It was a great event, where all who mattered in the industry came. The summit left us richer in our experience and more knowledgeable about our industry. It created a great feeling of fellowship and brought meaning to the fact that the global narrow-web label industry is becoming one large extended family.' Speaking from a label printer's perspective, Vivek Kappor, director, Icon Prints, said: 'The summit had an excellent conference program with quality speakers and industry themes that were highly relevant to the international audience attending. Label Summit India has really helped to take the country's label sector to the next level.'

The two day conference was led off by a keynote from Rene Abacherli, VP Asia Pacific at Gallus, which focused on the latest press technology affecting global brands. Printers were also heavily involved. A panel session chaired by Mike Fairley featured some of India's top label printers: Manish Desai, Mudrika Labels; Ashish Agarwal, Paper Products; Vivek Kappor, Icon Prints; and Bhavin Kothari, Interlabels. Another key speaker was Sandeep Lal from Metro Labels, who traveled to the summit from Canada and opened the second day of the conference with a keynote session on 'How to be a successful international label printer'.

### The Indian labels market

Harveer Sahni, MD at Weldon Celloplast, looked at the vast potential of India as a market for PS labels. He pointed out that of India's population of well over one billion, 80 per cent are below the age of 45 and 54 per cent below the age of 25, 'suggesting a



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young workforce that can work hard, earn more and demand more from the market for a sustained growth.' As an example of this pent up consumer demand, one million cellphone users are being added every month, reaching 100 million users this year.

'The number of households with high income growth is expected to increase by 60 per cent in the next year and India is the second fastest growing economy in the world,' said Sahni.

Sahni noted that the Indian label market has already gone through a radical transformation from its initial growth under a protected economic regime. 'I have always felt that multinationals' entry into the country will be good for the market and rightly so – we have grown and implemented tougher quality regimes.'

Sahni described the problems which came from the dumping of stock lots, but said that this was less of an issue as the market segments. 'There are those who cater to the high-end of the market and rely on prime reproducible materials and there are others who are at the lowest end and rely completely on stock lots. Their customers are also aware that the materials will change from time to time.' Between these two groups are printers in the middle segment who 'keep shuffling between the prime and stock lots.'

Following Sahni's presentation, Mike Fairley, strategic director of the Tarsus Labels Group, revealed the results of an electronic survey of the Indian labels industry carried out jointly by the Tarsus Group and the Indian labels association, the LMAI.

This revealed a healthy picture, with almost one third of respondents reporting sales growth of over 20 per cent last year, and one quarter reporting sales growth of 15-20 per cent. Almost two thirds of the sample group said they are preparing to

"There are those who cater to the high-end of the market and rely on prime reproducible materials and there are others who are at the lowest end and rely completely on stock lots"

invest in new technology in the next year, and 84 per cent intend to invest over the next 24 months.

The sample group serviced the whole range of end use applications from industrial and logistics to pharma and cosmetics. Half the labels printed by the respondents are pressure-sensitive, with wet glue accounting for under one fifth.

Film labels are already making a strong showing. One in ten of these printers are converting cut&stack film labels, while 13 per cent convert wraparound film labels. Sleeves represent just 5 per cent. Most PVC shrink sleeves are converted on wide web gravure presses and – unusually in world market terms – are cheaper for end users than PS. This represents a major challenge for the pressure sensitive sector in India.

Over half of the sample print on narrow web presses, with 36 per cent sheetfed and 9 per cent wide web. Perhaps surprisingly, flexo is the dominant process, representing 22 per cent of the sample. Letterpress accounts for 11 per cent of the sample. We

can see in this survey the growing sophistication of the India labels industry: almost 10 per cent of the sample are using UV flexo, and 13 per cent are engaged in combination printing.

As we have come to expect in developing markets, most of these printers are also producing other printed products, with almost one half converting stationery as well as labels, one quarter involved in commercial printing and 17 per cent involved in flexible packaging.

Asked to identify barriers to future growth, most respondents put their finger on downward pressure on prices, followed closely by rising costs and competition from commercial sheetfed printers. The need to understand new technology and to train employees figured highly, as did the high cost of imported equipment.

At the same time, these printers saw opportunities for growth in the areas of product security and anti-counterfeit, where technologies such as tamper evident labeling, holograms and OVDs and security printing will be important. Interestingly, 13 per cent of the survey see digital printing as an area for potential growth.

### Adding value for end users

Speaking as an end user was Rahul Bhargava from Ranbaxy

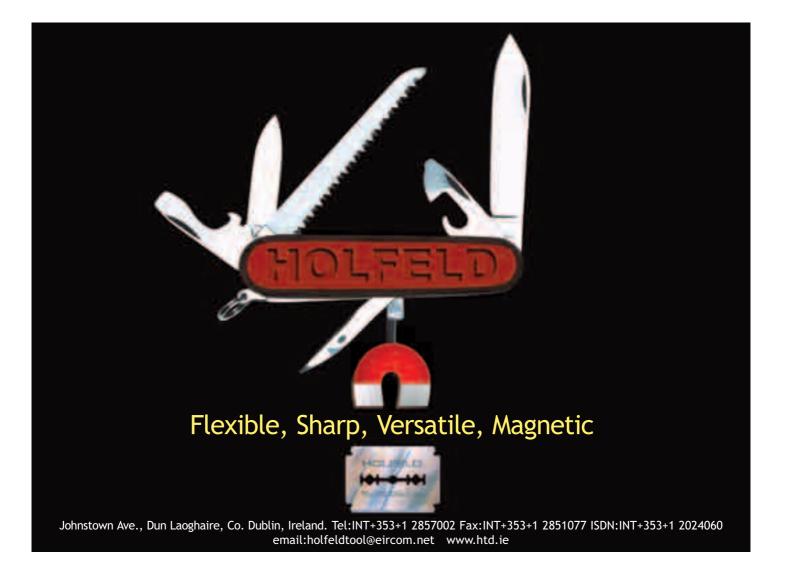
Laboratories Ltd, one of the biggest pharmaceutical companies in India, who highlighted his sector's experiences with selfadhesive solutions.

For those new to the pharma sector in India, Bhargava outlined the critical functions of the label. 'Firstly, a well designed and printed label must ensure that a wrong, but similar looking product is not selected by the consumer.' One way this can be achieved is by the use of color coding to indicate differing strengths of drugs. The label must be easily read and understood in conditions of poor lighting common in some clinical areas, and where there is limited storage space.

Bhargava stressed the importance of building relationships with label converters by sharing information, rewarding for good practice and providing training in the label quality requirements of the pharmaceutical sector.

'This reduces the risks on both sides, gains flexibility, improves performance and enables both sides to achieve their strategic goals – a win-win situation.'

Bhargava is excited by the possibilities offered by RFID: 'RFID labels allow us to replace and control data according to need, and gives faster and more accurate reading of information than barcodes because of reduced manual intervention. They carry more information, have greater reliability and accuracy, and



would be more difficult to counterfeit.'

Mike Fairley picked up on this theme with a 'how to' introduction to manufacturing RFID labels, and a look at the rapid development of other 'smart label' solutions for end users.

'End users want label printers to help them with proof of quality control, proof of process control, product authentication, reduced shrinkage and in automating distribution, handling and storage operations,' said Fairley. 'Smart' solutions will also enhance the shelf impact of products with special offers and promotions, as well as carrying more product information for the consumer, often in multiple languages.

The theme of adding value to PS applications was continued by GRE's Dr Jules Farkas. Added value processes — which are best built in at an early stage in product development — include booklet/multi-webs, RFID/smart labels, foil or hologram stamping, personalization, cold/hot foiling and lamination, as well as intelligent use of adhesive/siliconizing coating systems to create bespoke products. Farkas stressed that training is too often underestimated in these more complex operations.

The Tarsus/LMAI survey of Indian label printers showed that the use of PS film by end users is growing, and Jouni Komulainen, sales & marketing director, Asia at UPM Raflatac, looked at the latest developments in filmic labels – in particular "End users want label printers to help them with proof of quality control, proof of process control, product authentication, reduced shrinkage and in automating distribution, handling and storage operations"

the new generation of films which combine the conformable (squeezable) properties of PE with the clarity and dimensional stability of OPP. Raflatac calls these films 'clear PE'. Commented Komulainen: 'There are many advantages for the end user, including more labels in the reel, excellent transparency and faultless dispensing. For the printer there is exceptional register control, faultless die-cutting and good printing performance.'

Komulainen then took the beer segment as a case study of how clear filmic labels can revolutionize brand image and perceived value. He noted that new pressure-sensitive



application equipment is capable of faster line speeds and changeovers which make it more competitive with wet glue applicators. For the returnable beverage bottle market, however, wash-off adhesive developments are still required if film is to make further inroads.

In the food sector, Komulainen pointed out that film penetration is limited by the fact that not all UV inks are FDA approved. One solution is to use thin PP film and overlaminate it with a 15-30 micron PP film.

An interactive panel discussion followed pursuing many of these points and looking at the latest developments in release liner technology, involving Leon Davids, Hanita Coating, Pranay Godha, Kaygee Loparex, India PVT and Harveer Sahni, Weldon Celloplast.

Jean-Pierre de Moor, VP Esko Asia Pacific, looked at how the digital design, artwork and reproduction system fits into the end user's total supply chain. De Moor emphasized the contribution flexo computer-to-plate makes to quality, repeatability, press up-time, data management and archiving and flexibility choice of screening and dot shapes for different presses and print media. Now thermal platemaking — pioneered by DuPont with its FAST system — is reducing the time taken to make plates and eliminating the use of chemicals for washout.

De Moor looked at the tools available to allow end users anywhere in the world to collaborate over a new label design using a master digital file held by the printer or repro house. Designers, marketers, brand managers or compliance officers can collaborate using a standard web browser, and participants can measure dimensions, check color with a virtual densitometer, mark amendments and see the final result displayed as a 3D model.

### Emerging printing technologies

We have already seen in the Tarsus/LMAI label printers survey that more and more Indian label printers are progressing to combination printing – the use of more than one printing and/or decorating process in-line. Kishore Sarkar, head of process technology at Gallus, looked at the 'hows and whys' of combination printing and processing.

Sarkar looked at how the strengths and weaknesses of different processes complement each other. For example, although rotary screen slows the press speed, its heavy ink laydown can be used to print a base white on clear films, to add special surface and optical effects and to print with conductive inks.

Sarkar looked at problems commonly encountered with hotfoiling as an in-line combination process, which mostly revolve around too low or too high die temperature, or where some of "Film penetration is limited by the fact that not all UV inks are FDA approved. One solution is to use thin PP film and overlaminate it with a 15-30 micron PP film"

the metal pigments – like thread – remain with the carrier, indicating that web tension on the foil re-winder is too low.

Sarkar emphasized the importance of adequate training for press crews in combination techniques and establishing process control.

Useful contributions to the debate on combination presses came from an interactive panel session which included Peter Sage from Mark Andy Australia, Dilip Shah from Nilpeter USA and Paolo Grasso from Omet.

It was agreed that combination process printing allows label printers to add value and flexibility by mixing and matching processes, but that the road can be a hard one. It requires a higher degree of skill from press and pre-press operators, involves longer make-readies, reduces machine speeds to that of the slowest process, and requires more complex ink and prepress systems. Also, as combination presses should also be servo driven, they are more expensive.

In terms of what speeds can be expected, hot foil operates at 100-125 feet per minute (fpm), silkscreen at 100-160fpm, and cold foil 130-200 fpm. By comparison, a straight flexo press will run at speeds up to 400 fpm.

In a discussion on the development of flexo in India, the panel pointed out that India is today in the same situation as in 'developed' countries in the 1970s, when enormous problems had to be overcome to make flexo into the high quality printing system it is today. India has the chance to bypass all the old technology, and move straight to high quality flexo printing.

A second, highly interactive session, added Federico d'Annunzio of GiDue to the panel, and looked at printing unsupported film on narrow web presses. The key issues identified by the panel were managing web temperature and web tension. The use of servo drives to compensate for film extension was considered mandatory, and the audience was warned against being sold 'cold' UV: all UV curing systems generate heat, and the challenge is to manage it by the correct use of chill rolls

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and heat sinks on the press.

It was concluded that there is a wide range of shorter run applications where narrow web can compete with wide web presses — which still account for the majority of film label and flexible packaging work. These include stretch and shrink sleeve labels, tamper evident neck bands, combination shrink sleeve/ tamper-evident bands, twin-packs, stand-up pouches, sachets and wraparound film. Narrow web presses also have the ability to sheet or die-cut cut&stack, lidding, and IML films in-line.

With the Tarsus/LMAI Indian Labels survey showing more printers turning to UV solutions, Malcolm Rae, MD of GEW, demonstrated to Indian converters how the technology is best used. GEW recently relocated its manufacturing operations to Mumbai, so Rae is well placed to comment. He stressed the importance of assessing each label converting application in terms of the nature of UV light required, any potential heat damage, energy constraints and the life cycle cost of UV curing. Electricity costs are typically seven times the operational cost of the lamp itself, 'so you need to focus energy with the most efficient reflector system, choose the most efficient power supply and make effective use of variable power levels.' He stressed that converters need procedures to test ink adhesion and cure and to monitor UV dose.

End users in India are now starting to follow international CPCs in expecting printers to implement proper quality control procedures. John Thome, general manager at inspection specialist BST Pro Mark, outlined two strategies to prevent waste: preventing defects by inspection on-press, or identification and removal of defective labels on the re-rewinder.

Comparing area scan and line scan technologies, Thome concluded that the only way to guarantee customer satisfaction

"End users in India are now starting to follow international CPCs in expecting printers to implement proper quality control procedures"

and optimal press productivity is to implement both process management on-press, and 100 per cent inspection on the re-winder.

Dr Stephan Krebs of Erhard + Leimer took a closer look at inspection systems for security labels, stressing the importance of high resolution cameras and proper illumination of the web. A security inspection system must be able to define 'zones', where special algorithms concentrate on discrete graphic and text elements.

A question raised by many delegates was whether India is yet ready to embark on the road to digital label presses. Nagesh Karuturi, country manager India & Sri Lanka at HP Indigo, sought to persuade the audience that the same trends towards shorter runs and JIT delivery which had struck Europe and North America, would soon impact India. Karuturi stressed that digital does not replace conventional, but would allow Indian printers to optimize their conventional presses for longer runs and make their shorter runs profitable. He also examined new opportunities for the digital printing of short runs of shrink film labels.



# Luxury labels for the world's best wine

Spanish paper manufacturer Manter has been chosen to label a wine voted best red in the world at the International Wine Challenge in London. James Quirk reports

here is the world's best red wine from? One might guess at the traditional vineyards of France, or perhaps a New World wine from California or Chile. In fact, it is from Spain. And this is not simply a matter of opinion.

The prestigious International Wine Challenge in London, UK, voted the Selección Especial 2001 from the Abadía Retuerta vineyard, in Sardón de Duero, Valladolid, as the best red wine in the world in 2005. After being awarded such a high accolade, the vineyard sought to reinvent its image through new labeling and design that would match its wines' international acclaim. Global branding consultant Landor was recruited to redesign the Abadía Retuerta image, and the company turned to Manter, part of the Fedrigoni Group, to provide the new labels.

Girona, Barcelona-based Manter is known worldwide as a producer of specialty papers and self-adhesives. Prominent in the wine sector for over 20 years, the company has built a reputation for labeling gourmet products such as wine, spirits and luxury foods.

'When we heard that Abadía Retuerta had won the award, we sent our catalogues to Landor so they could choose which of our products to use for the Selección Especial 2001,' says Juan

"Landor's ability at rebranding, coupled with Manter's experience and expertise in the paper and self-adhesive markets, have resulted in a label that is stylish and minimalist"

Gil, Manter's marketing director. 'As this wine was voted best in the world, we wanted to dress the bottles with elegance.'

Constellation Snow Sacco, part of Manter's Wine and Spirit Label Collection, was chosen as the self-adhesive paper for the label. An uncoated paper made from pure cellulose, and with a very high degree of whiteness, the Constellation Snow Sacco was matched with an adhesive exclusively designed by Manter for labeling on glass, the SH-3020 Plus.

Year after year, the wine label sector continues to prove its capacity for growth. With the wine market in a state of oversupply, labeling has never been more important both as a product identifier and a marketing tool. The conditions in which a wine is kept, as well as the time it will have to age, determine the type of label to use. White wines are frequently served in a bucket with ice; therefore it is important to use a label with high wet strength to protect the wine's image.

A Walker Watson Associates study shows that in 2004 65 per cent of the world wine label market was made up of glue applied labels, with self-adhesives contributing 35 per cent. But the balance is shifting, and it is predicted that by 2008 selfadhesives will have risen to 68 per cent of the market. A greater level of flexibility and resistance to low temperatures and ice water are some of the reasons behind this.

But brand image remains all-important. Consumer studies show that there is an 80 per cent chance of a product being purchased if the customer picks it up, so a label must make the product stand out on the shelf and draw the consumer in.

'Abadía Retuerta did not have a clear identity,' says Luis Manzano, general manager of Landor's Madrid office. 'We didn't know what the branding was, and even the typography was not consistent between the different bottles. We decided that the symbol of the angel represented not only the wine, but also the care involved in producing it, so we put a bunch of grapes in the angel's hands. Instead of being painted, it is





drawn with flowing lines to make it become an icon, something you will remember.'

The symbol of the angel comes from the XII century abbey located on the Santa Maria de Retuerta estate, now owned by Swiss pharmaceutical giant Novartis, where the vineyard is situated. The area is known as the 'Golden Mile', a privileged geographical location where some of the most prestigious brands of Spanish wine can be found. The first written reference regarding the importance of the Retuerta vineyards dates back to the XVII century, though by the time Novartis arrived in 1988 the vines had all been uprooted. A massive reseeding was undertaken, and the winery was re-established in 1996.

'Novartis is a big customer of advertising company WPP,' explains Manzano. 'Landor is a small but special part of the WPP Group, so that is how the opportunity for us to do the redesigning came about.'

Landor's ability at rebranding, coupled with Manter's experience and expertise in the paper and self-adhesive markets, have resulted in a label that is stylish and minimalist, with a clear emphasis on reflecting Abadía Retuerta's juxtaposition of traditional values and modern innovation. The quality of the wine is undoubtedly demonstrated in the label, a philosophy that Manter takes seriously.

'Our philosophy is quality, not quantity,' says Juan Gil. 'It is not in our interest to try to place ourselves, in terms of volume production, alongside companies like Fasson and Raflatac, who have factories in every continent. There are two distinct levels of volume. We sell products of innovation and quality, creating fashion in the world of wine labeling. Other companies may launch similar products, because of certain trends, but who creates those trends?'

It is certainly a philosophy that is working for Manter. The company is due to expand in August of this year into a new factory

### Enrique Torres, Juan Gil, and Christian Galí of Manter; and Javier García of Etinsa



six kilometers from Manter's current Girona base. 'With this new factory,' says Gil, 'We will increase our production capacity by three times.'

Other than the Labelexpo shows and summits, Manter mainly exhibits at wine shows around the world: in Spain, France, North America, South Africa and Australia. 'It is a way of showing the wine makers that there is a specialized producer of paper for the glass market,' says Gil, 'with a very complete product range and a unique self-adhesive which holds onto glass perfectly and can survive immersion into water and ice.'

At last year's Labelexpo Europe, Manter introduced its Luxury Gourmet Label Collection, further demonstrating the company's commitment to quality paper production. 'The collection is designed for producing the finest selfadhesive labels for gourmet products packaged in glass,' says Gil. 'We are now working on our 2006/7 collection, which will come out in Spring 2007, where we will incorporate 20-25 papers that are completely new in the world of self-adhesives.'Co-operation between Manter and HP Indigo resulted in another launch at Labelexpo: the Digital Label Collection, designed specifically for HP presses and packed with materials such as specially treated felt-marked or laid papers. 'We are not a company who turns its back on new technology,' affirms Gil, 'as our Digital Label Collection shows.'

The results of Manter and Landor's collaboration are printed by Etinsa, a company located just outside Valladolid, just a twenty minute drive from the vineyard. Etinsa prints labels for many different sectors (they have worked with Michelin, for example) and even produced a short run of 500 labels for the Spanish royal family. The company uses a Jores intermittent letterpress to print the wine labels.

'We use very simple, old machines that we have adapted with lots of imagination,' says Ana Garcia, whose father bought Etinsa from his uncles in 1990. 'By doing this we are able to produce modern results, specific to the paper we are printing on. Our ability to adapt our machines is key.'

The general director of Abadía Retuerta is American Donald Cusimano. 'We are very happy with the results,' he says of the new labels. So what has the award done for business? 'It has been incredible,' he says. 'Within two months we had completely sold out. Now we are selling our subsequent vintages on a strictly allocated basis, because of the level of demand.'

'We knew we had a good wine,' he says of the Selección Especial 2001. 'But to win out of 9,700 wines was just incredible. However, we actually consider our 2004 wine, which hasn't even been bottled yet, to be our best ever vintage.'

A wine better than the best in the world? It seems that Manter's philosophy of labeling quality products is set to continue.

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# Skanem moves East

As European branded goods manufacturers move Eastwards to take advantage of lower wage and production costs, the pressure is on Western European label converters to follow. **Andy Thomas** reports from Poznan, Poland

kanem AS, one of Europe's largest producers of selfadhesive labels, has moved into Central and Eastern Europe with the acquisition of Poznan-based Introl SA and its subsidiary, Introl Print in Moscow.

Introl serves end users primarily in the personal care, home care and alcoholic beverage markets, and numbers among its customers multi-nationals including L'Oreal, Avon, Unilever and Colgate.

This is exactly the customer profile of the Skanem Group, which has label production plants across Northern Europe from Scandinavia down to Germany and the UK.

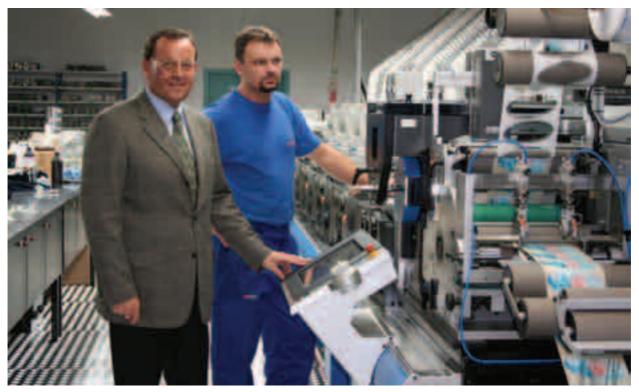
'The Central and Eastern European market in self-adhesive labels is growing fast and this acquisition is an ideal match for our planned business development,' comments Skanem Group president and owner Ole Rugland. 'Introl is a quality labels producer and is also a bridge for Skanem into the Eastern European markets.'

As well as bringing Skanem's production closer to its end users in this fast growing region, the Introl acquisition gives the Skanem Group a lower cost base – which end users in East and Central Europe are increasingly demanding – and further increases the group's buying power.

The terms of the acquisition are interesting. Romuald Szperlinski, who founded Introl, will continue to be in control of the operation and remains passionately committed to his workforce. Indeed, their welfare was uppermost in his mind when considering potential acquisition partners:

'I decided to go with Skanem because they were prepared to make a big investment and because they would guarantee the feeling of a good future for our employees,' Szperlinski tells L&L. 'Skanem is a friendly company to its employees and guarantees a continuation of our good name in this business. This was more important than the price.'

Local autonomy was also important to Szperlinski. 'Many Polish companies were bought by Western groups or German groups who wanted to do things in their own way and not in the Polish way and it was a disaster. You need to find good partners and give them freedom. The personality of Mr Rugland means this is the case and today our figures are as good as our promises. If we are successful, he leaves us alone. Certain things are



Romuald Szperlinski, founder of Introl (left), will continue to be in control of the operation

centralized of course, like purchasing and marketing.'

Szperlinski followed this strategy when he took a 51 per cent stake in Introl Moscow in 2002. 'That was a very good decision,' he recalls. 'It is important to operate with people who understand the Russian language and culture.' The Russian plant is equipped with three Gallus R160 letterpresses with screen and hot stamping, and serves the same profile of customers – including L'Oreal and Avon – in Russia.

Szperlinski is convinced that being part of a larger, pan-European group is in line with current market realities.

'Ten years ago we had three machines and we could supply Beiersdorf. Today we have to go through central buying departments and our end users are increasingly looking for label printers who can supply across Europe, as well as guarantee production from more than one site. The Polish label industry is increasingly mature, and consolidation will be the next stage.'

Szperlinski believes Introl is well situated in Poznan, which is an important industrial centre, while Polish membership of the EU has been 'very positive for us. It means we can deliver labels to Germany at very competitive prices.'

He is confident about the future growth potential for pressure-sensitive labels in Central and Eastern Europe. The former Warsaw Pact states consume just 3 square meters of PS per capita against 12 sq metres in Western Europe, he points out. Introl is currently seeing PS growth rates of 20 per cent and this is already driving the Skanem group to make investments in new capacity.

'Our bigger Polish customers are now having to react to the multi-nationals with the same quality labels, and we are seeing a move from wet glue to PS from them as well,' says Szperlinski.

Shrink sleeve labels represent a significant slice of total Polish labels consumption – particularly in the food sector – but Szperlinski has no immediate plans to move into the sector. 'We will observe this market, but we plan to remain in the upper segment of the PS market. We actually see added value labels moving from sleeves to pressure sensitive in cosmetics, where multi-national brands are using tactile effects, in-line foil blocking and clear film materials.'

### **History and technology**

Introl SA was founded in 1982 by Romuald Szperlinski as one of the first foreign joint investments in Poland. Today the company has around 200 employees and a battery of letterpress and flexo machines, including three of the latest Gallus RCS330 allservo presses.

Szperlinski has a long heritage in the printing business. He founded his first company back in 1973 printing car stickers, before moving into labels in 1978. He is the fourth generation of his family to be involved in the package printing industry, and his son now runs his own package printing business.

Szperlinski bought his first pressure-sensitive press – a second hand Gallus letterpress – in 1993, when the company became a member of the EFER, an association of the fastest growing businesses in Poland. This was followed by an R160B letterpress, the first of seven R160 machines. Szperlinski claims that Introl was the first converter in Poland to produce booklet labels and today has dedicated presses producing pieces with up to 32 pages at 160mm width with overlaminating.

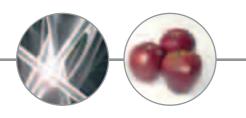
The next major investment was an ILMA 340 letterpress/ screen/ flexo/ hot stamping press, with interchangeable print processes at each print station.

The move into combination flexography came in 1996 with the purchase of Introl's first Arsoma (now Gallus) press dedicated to cosmetics labels production, including special foils and anticounterfeit devices. The presses are also used for special constructions, including de-lam/re-lam printing on the adhesive.

Given Introl's experience of the cosmetics market inparticular, it is interesting to note that half the company's stamping work is cold foil, 'because the quality is so much



# There's a little secret behind great labels

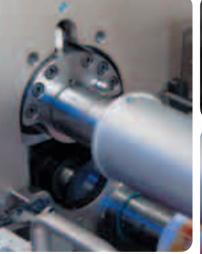


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Skanem Introl's two Gallus RCS330 presses will be joined by a third machine. Note the heat exchangers

improved,' says Szperlinski.

By this stage Introl had a very international outlook, cemented in 1997 when the company joined FINAT, the European pressure-sensitive label federation.

Introl rapidly outgrew its original factory space, and at the end of 1999 moved into a purpose-built 3,000 square meters factory which its 210 employees occupy today.

Szperlinski followed this with the purchase of one of the first Gallus RCS330 all-servo presses to be installed in Europe, equipped with interchangeable flexo, screen and hot foil units. This was quickly followed by a second RCS330, and a third machine was installed in April.

The Poznan plant operates across three shifts, seven days a week, and there is no spare capacity.

Szperlinski sees the RCS330s as an answer to end users' demands for shorter runs of complex PS labels. 'Typically end users are ordering smaller batches in monthly orders. Where we were producing one million labels, we now produce 200-250,000 in a run, and run lengths can be as low as 20-30,000 labels as end users put in more SKUs.'

Had Szperlinski considered a digital press for these short run lengths? 'Two years ago there was a lot of pressure from multinationals to put in HP Indigo digital presses. But we felt that the complex in-line converting on our jobs required the RCS press.'

The focus of the three RCS330 machines on short run converting jobs has led Introl to re-engineer its pre-press workflow.

'We try to build a queue of jobs for each machine with similar colors to save washing up time,' explains Szperlinski. 'And it is easier to produce repeat work on the RCS because you can preset and recall all parameters.'

The use of pre-setting on the RCS also reduces the amount of set-up waste, which is particularly important given the expensive laminates run by Introl. 'Material is expensive and we are down to just 5-7 per cent waste on the RCS from 250,000 square

meters,' notes Szperlinski.

The ability to use screen at all points in the press is another important consideration, although Introl has been a pioneer in the use of Sicpa (now Siegwerk)'s UV flexo whites, which in some cases can substitute for screen whites.

An interesting feature of the RCS330 installation is a heat exchanger which takes warm exhaust air from the presses to help keep the air- conditioned plant at a temperature around 30-38degC. This work was financed by a  $\in$  350K grant from the European Union.

Quality control has been a key area of investment. The company runs Rotoflex inspection rewinders and is planning to install an AVT 100 per cent inspection system to create a networked QC link between the on-press camera and the rewinder.

On the pre-press side Introl makes its own flexo and letterpress plates, engraves its own screens and manufacturers its own flatbed dies. It has an Esko Graphics pre-press system and has dedicated work cells for its major multi-national end user customers.

Now that Introl is part of the Skanem group, it can access group-wide centers of excellence and take advantage of the group's experience in implementing new technologies.

For example, Creo (now Kodak) equipment has become something of a Group standard, and flexo CTP (computer to plate) equipment is on the agenda for Introl his year. 'Some big customers specify litho quality, and experience in the Skanem group shows we can get close with flexo CTP, and we have told our customers this,' says Szperlinski.

So what is next for the Skanem Group? Now that its strategic position is secured in Central and Eastern Europe, the next geographical priorities are in the South and West of Europe, particularly in France, Italy and the Benelux. This would complete the Group's transition into a true pan-European supplier.

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# **Prescription for success**

Tri State Distribution converts labels for the US prescription market and has experienced huge productivity gains with the installation of three Nilpeter FBZ 4200 presses. **Katy Wight** reports

Worth over \$250 billion and growing rapidly year-on year, the US prescription market is a lucrative business to be in. But major pharmaceutical manufacturers are not the only related companies turning over impressive profits. Unlike the European market, where prescriptions are often filled in unit dose packages like blister packs, US pharmacies generally dispense drugs in bottles – which represents a huge opportunity for container, closure and label manufacturers.

Joe Miceli and his brother David Miceli founded Tri State Distribution, Inc. in 1992 to exploit this opportunity, and began reselling prescription drug packaging to pharmacies. The Micelis then began to develop their own proprietary bottles and closures, tackling the dual challenges of child-proofing and ease of use for seniors. Tri State's unique, patented packaging solutions were so successful that today the company boasts nearly 12,000 customers in the US, including independent retail pharmacies, mail order pharmacies, chain drugstores and government hospitals. Looking for a way to sustain its trajectory of growth, Tri State saw labels as a natural extension of its existing product line, enabling it to offer customers an integrated prescription package solution. After a shaky start in the flexo label converting world, Tri State joined forces with Nilpeter three years ago, optimized production and is now running labels for over 5,000 customers.

'We got into the label industry because we were looking for symbiotic products that we could offer existing customers,' explains Tri State president Joe Miceli. 'Every prescription that is filled and sold, has labels that are either pre-printed or have variable data added by the pharmacist, plus you have warning labels and labels with insurance company details. We began

investigating the label market and saw that labels would be a natural progression for our business, so we took the plunge. When we launched, we had a lot of business come our way. We were able to offer our customers economies of scale and we have had many of our customers for a long time, so they trusted

us. All of our label converting is done in the same place that the containers and closures are manufactured, so our overheads are lower than two separate supplier plants.'

New to the converting market, Tri State initially invested in some entry-level flexo presses. The company also struggled to find experienced operators in the middle of Tennessee and ended up teaching itself the intricacies of label printing.

'We had unfortunately chosen some quite outdated technology and we hadn't been aware of the

choices available to us,' says Joe Miceli. 'We launched successfully, but we had to fight all the way. We had many issues with the presses – particularly as our most popular application involves mating dual webs – but we also had certain challenges with paper, plates, ink, dies and glue. We experimented and eventually we found a combination of supplies that worked on those first presses, but the system broke down frequently. These presses are still in operation, but we have added to that capability.'

Joe Miceli then bought two Mark Andy Scouts for single web roll label applications which have proved reliable, but when he decided to invest in the second generation presses for the dual web construction, he wanted to make sure that he had thoroughly researched all of the options available. Joe was focused on finding new technology that would increase press speeds, eliminate waste, maximize reliability and minimize downtime. He visited all of the press manufacturers at Labelexpo Americas and subsequently invited them to visit the plant in Sparta.

'I know that it is a cliché, but people do business with people,' says Joe Miceli. 'We almost bought presses from several manufacturers, but I had many demands that I wanted put in writing to prevent the kind of situation we had experienced with the first presses, and many of these companies just couldn't commit. I met Nilpeter USA president

"After Nilpeter came on board, our problems largely went away. The real beauty of the Nilpeter presses, is that we have had them running for a year and we have not had a single failure"

Andy Colletta for the first time at Labelexpo and he guaranteed that the Nilpeter equipment would work for us and that if we weren't happy with the presses, he would take them back and personally write us a check. We spent a long time evaluating the press — in fact it was the longest purchase cycle that I have ever

experienced, and we buy some very big, expensive equipment for injection molding, blow molding and stretch blow molding.'

Tri State chose the FBZ-4200 press, made by Nilpeter in the US. This modular combination press has a 'z'-shaped frame developed for ease of operation and also features high-capacity hot-air dryers and quick-change slide-out print units. The installation was so successful that Tri State has just installed its third FBZ 4200 in less than two years – and Joe Miceli states that they have

quadrupled Tri State's productivity since they began working with Nilpeter.

The primary labels that Tri State manufactures are a singlepass, dual-web construction, printed with a pharmacy's branding and contact information. A portion of peel-and-stick laser label is mated, using a proprietary adhesive, to a bond paper portion. The pressure-sensitive portion has labels that can be removed and applied to the prescription container and the paper portion has space for patient counselling information. These labels are manufactured in various sizes, but the bulk are 8.5" X 11". Sometimes the bonded portion may be perforated. The print ranges between one and six colors printed front and back – everything from simple designs that customers fill in with their own software, to more complex graphics.

'We used to convert the mated construction on our older presses, but it was phenomenally difficult,' explains Joe Micelli. 'After Nilpeter came on board, our problems largely went away. The real beauty of the Nilpeter presses, is that we have had them running for a year and we have not had a single failure of any consequence. With previous presses, we have had at least one or two problems every week.

'The presses hold registration very well, particularly with dual web applications. It's like a walk in the park. Even if you are running two different materials, the press holds tension throughout, enabling you to print at speeds of 500 ft/min or

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At Gallus (S) means servo, since the Gallus EM 260/410/510 S has direct servo-driven hybrid printing units for flexographic and screen printing: printing cylinders and anilox rollers are simply attached as sleeves. It is also possible to change the process without cutting the web. All this ensures minimum set-up time, less waste, increased safety and precision: in other words, optimum efficiency with more substrate diversity, e.g. monofoils. The entire control, including pre-setting, recalling stored job functions and other important parameters, is made directly from the touch-screen, which further simplifies the work process and improves quality. All these reasons are why the new S-class is better.





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faster. The original presses that we bought wouldn't print faster than 300 ft/min without major problems.'

Tri-State's average run length is around 100,000 labels – but it is not unknown to print up to 3 million labels for one job. The company has combined its high-speed presses with a commitment to process automation, and has invested in butt splicers and waste removal systems for non-stop production. Tri State has come a long way since its rookie days and is a highly sophisticated converting operation today. Confident in its capabilities, the company is beginning to look beyond its traditional applications and market. In the past, its focus has been on high volume applications of medium-difficulty, but Miceli has new markets in mind.

'We're not doing process work right now, but we are working towards that in the next three months. We have plans to move beyond pharmacy labels and nutraceutical labeling is our new focus. We are a new entrant into the market, but our integrated solution really gives us a great advantage,' he says. 'One thing that also attracted us to Nilpeter was the fact that they have a rotary offset line and once we have our presses fingerprinted, it would be easy to move across to even higher quality work.'

This highly-specialized focus on the pharmacy niche has meant that Tri State has seen growth over 20 per cent every year since it began. Today, the company has over 200 employees, a 250,000 square feet manufacturing facility in Sparta, Tennessee and five other distribution sites around the country – and it's growing. What does Joe Miceli see in the future for his converting business?

'More presses and more labels,' he says. 'We are looking to expand — it's just tough keeping up with this level of growth. We want to continue to be a one-stop source of pharmacy packaging products for our customers, and making labels with the highest possible quality and reliably, at the lowest cost, is part of our recipe for success.'



**News in brief** 

### Avery expands in Malaysia

Avery Dennison Malaysia has announced a significant expansion of manufacturing capabilities at its pressuresensitive materials business in Bangi, 35km from Kuala Lumpur. The company unveiled a new, high-speed coater, which will provide one of the fastest productions in the pressure-sensitive materials industry in ASEAN.

The new advanced high-speed wide web coater will be able to produce high quality label material products at a speed that is two-fold faster than the company's existing equipment in Malaysia, resulting in increased manufacturing efficiency. The additional investment at the Bangi plant has increased the size of the facility by nearly 3000 square meter (sqm) to about 8000 square meters. For full story, visit www.labelsandlabeling.com.

### iTi introduces inkjet narrow web press

imaging Technology international (iTi), a global designer and manufacturer of industrial inkjet systems, launched a new version of its Digital Web Press (DWP) at IPEX, incorporating Xaar's latest greyscale printheads - the OmniDot 760 GS8.

This was the first public demonstration of fixed head, single pass printing using this printhead technology. The DWP is a robust narrow web inkjet production system for high speed printing of digital data on flexible substrates such as label stock or film. The DWP delivers high volume digital production capabilities, enabling variable length runs of any given image, just-in-time production, and the ability to support changing images on the fly. For full story, see our Ipex report on page 47-52.

### Karlville opens shrink label R&D center

Karlville Development has opened the doors to its new research and development test center, in Miami, Florida. Located near the company's headquarters in Miami, Florida, the center has slitting, seaming, inspecting and cutting equipment for the conversion of sleeves and a complete range of machinery for the application of shrink sleeves on containers. The center represents an end-to-end testing environment for both converters and their end user customers.

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# AGI invests in customers

If label converters are to survive they must learn to understand their customers' business and enter into the management of their supply chain. AGI Labels has put that theory into practice in a major series of recent investments, as **Andy Thomas** reports

At an open day in the coastal town of Littlehampton in the UK, Meadwestvaco company AGI Labels Tinsley Robor showed off its latest investments in digital platemaking, digital printing, and digitally controlled printing presses.

'This open day is aimed at educating our customers in how to take full advantage of our technology,' says Lee Taylor, AGI Labels general manager. 'We also want to work as partners to manage their labels supply chains more efficiently.'

AGI Labels is part of the AGI Media Group, the division of global packaging giant Meadwestvaco which offers a total packaging solution to media-related clients, including Sony, Disney and Warner Bros. AGI Media has sites across Europe, North America, Brazil and Australia.

In addition to these media giants, AGI Labels has a wide range of customers in the cosmetics and food industry, who had the chance to see presentations from AGI Labels and its key equipment and software suppliers.

AGI Labels' strategy is to turn itself into a 'virtual inplant' for its customers. The company's design development team will help choose the optimum print technique, material and decorative effect for each customer project. AGI also wants to discuss management of the customer's supply chain to take out

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inventory costs and reduce lead times.

The strategy is not just words. It is backed up with a \$2M + investment in hardware, software, new personnel and a new company structure. In the last year, AGI Labels has installed a Creo (now Kodak) flexo CTP system with Prinergy workflow, an HP Indigo ws4000 digital press and a Gallus RCS330 press, all supported by an Imprint MIS system.

A new division was created – called the Digital Cell – which enables customers or designers to test their labels prior to printing the main run. The Digital Cell facility is equipped with the HP Indigo 4000 digital press, an X-Rite spectrophotometer and Digicom flatbed cutting unit with UV coating system, and includes a dedicated studio/repro facility.

'The technology enables our customers to do more than look at a one-dimensional design on a graphic designer's screen,' comments Phil Smith, technical operations manager. 'Digital makeready removes the need for endless correction of proofs and the wasting of two or three days gaining approval for a label design. We can get the designer to come down and run production trials on the final substrate and apply those labels onto bottles and they can change the label design in real time. With Prinergy we can send off PDFs of that design to all stakeholders. They can see the color values, tints and vignettes. In the future these stakeholders will also be able to change the artwork interactively.'

The Digital Cell has become a key part of the AGI Media Group's fulfillment program. For example, if a special DVD boxed set is launched, the Digital Cell can produce on-demand support material to ensure participating stores are fully stocked. This material might include information stickers for DVD boxes ('contains bonus tracks' etc), or coupons for point of sale display units.

Although 70 per cent of the Digital Cell's work is for AGI Media Group clients, more of the company's cosmetics customers are interested. 'We have now started to do proofing work as well as point of sale work,' says Phil Smith. 'We can put in different curves to represent our flexo machines, so if the job is approved we can move to our conventional machines for longer runs. The Body Shop is a great example of a company coming up with new and innovative concepts and we can support them. We can take a PDF and make it into a label for their presentations the next day.'

#### Lean manufacturing

As part of its focus on supply chain management, AGI Labels has conducted its own lean manufacturing review, which saw the appointment of Steve Frost as demand manager and Brendan Etheridge as lean champion leader. "We have set up a Demand Management structure similar to that found within the motor industry. This will help us to eliminate down-time, make planning leaner, be more efficient in tracking our work and in matching the demands of the customer with the capability of our plant"

Steve Frost comments, 'We have set up a Demand Management structure similar to that found within the motor industry. This will help us to eliminate down-time, make planning leaner, be more efficient in tracking our work and in matching the demands of the customer with the capability of our plant. I will be involved with new business, right from the initial briefing, so that we have no nasty surprises for customers just before going to press. This is what my new role is all about.'

Explaining his role, Brendan Etheridge says, 'The Lean Champion Team involves people from each department targeting efficiency within the business, asking questions, rather than accepting the way we've always done things.'

Etheridge has also been working on purchasing effectiveness: 'We are eager to create a "partnership ethic" with suppliers, in other words, working hard to achieve long-term relationships with them and making the best use of their expertise – rather than just relying on one-off agreements. Our paper supply was one of the areas we looked at, and after putting this out to competitive tender, we decided to appoint Herma – a leading German firm, but with a base at Newbury. In-house, we're making sure that everyone works with the ideals of generating greater efficiency, from cutting out day-to-day waste, to the testing of inks prior to going to print. The savings stack up.'

The fully servo RCS330 press is a key element of the Lean Manufacturing program. The press is currently working on a six day/triple shift operation with an average run length 5-6,000 linear meters.

Comments Steve Frost: 'We typically fill the machine's schedule two weeks ahead, which adds up to a lot of work when you consider how fast it is to make ready and run.

'We have engineered the process so we can turn around jobs



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very quickly.'

As an example, a new flexo/silkscreen Body Shop shampoo label design was turned around in just 3-4 days from receipt of artwork.

'An anilox change – the aniloxes are mounted on sleeves – takes just minutes,' says Frost. 'Other things we like are the ease of lifting out the ink tray, the moveable control panel to adjust impression and UV power and the ability to pre-set jobs.' The cold foiling module is being used more extensively. 'I now prefer cold foiling because of the cost and the time it takes to heat a solid cylinder. Hot foil can also create bubbles in the substrate,' says Frost.

With both an RCS330 optimized for short runs and an HP Indigo ws4000 digital press, what is the break point between the two processes? 'Up to 30,000 4x3in labels is a rough boundary,' confirms Frost. 'But there are many variables including the number of variants, which increases the cost of origination for a conventional press.'

In terms of print quality, Frost says his team is getting near litho with the RCS330, and this has opened new markets to AGI. 'We can show a more vivid result than litho. As an example we won the order for a Body Shop haircare product which was previously printed litho. We are printing at 1751pi and we can hold the fine dots produced on our CTP imager. We now make our adjustments on the repro side and not on the press because the print quality is so good.'

To get to this stage has involved extensive remote programming work with Gallus and Creo engineers, fine tuning the plates to hold the dot over longer run lengths.

'In terms of productivity we can replace two letterpress

"We can show a more vivid result than litho. As an example we won the order for a Body Shop haircare product which was previously printed litho. We are printing at 175lpi and we can hold the fine dots produced on our CTP imager"

machines with the RCS, and the quality is matched or better,' says Steve Frost. 'The letterpress machines are used for overflow work or back-up. We will certainly consider a second RCS in the next 12 months.'

Trials are under way on BASF (now Flint Group) digital letterpress plates for AGI's Gallus R200 machines, and these have gone well. As well as the Gallus presses, AGI runs a 16in Mark Andy 4150, which is used mainly for food packaging and has been retrofitted with GEW UV lamps, a screen unit and piggyback label-making module producing peel/read labels. A Nilpeter F-200 is used for short run commodity products.

# Between a Rock and a Hard Place?

Labelexpo Brussels demonstrated that the European market for pressure-sensitive labelstock, although largely supplied by Avery Dennison and Raflatac, is nonetheless highly competitive. John Penhallow reports

#### Manter and Arconvert – a long history

Both Manter (Spain) and Arconvert (Italy) are today part of the Fedrigoni group, which has been in the self-adhesive business for over 40 years. With a total of seven coating/converting lines, the Fedrigoni Group and its subsidiaries can produce over 400 million m<sup>2</sup> of self-adhesive labelstock annually, putting it in third or fourth place among European laminate manufacturers.

The Arconvert factory in Arco, Northern Italy, houses four 160 cm coating lines used to make self-adhesive laminates and release liners. The plant's capacity today stands at over 250 million m<sup>2</sup>/year with a high level of production flexibility. Arconvert has agents or distributors in 13 Western European countries, but is strongest in its home market of Italy, and in Central and Eastern Europe, including Russia, where Arconvert (like Herma and Intercoat) is represented by Itraco.

Manter's three coater/converting lines are all in Catalonia, just a few kilometers from the French frontier, and the group is a major supplier both in Spain and in France, where it has its own subsidiary. In UK, Manter also has its own office, but sells and distributes using Fedrigoni's marketing infrastructure. Spain's geographical and cultural ties have helped Manter to gain market leadership in several North African countries. On the other side of the Atlantic, Manter Mexico has its own cutting and distribution center and exports to California and other parts of the Southern US. In cooperation with HP Indigo, Manter recently launched a range of label papers for digital printing; the company's other specialities are laminates for labeling luxury products packed in glass, and labelstock for the wine label sector. Manter has successfully developed its business with wine label converters not just in Europe and US but also in other major wine-producing regions like South America and Australia.

#### Torraspapel and Gombau Autoadhesivos – they gain in Spain

Spain's other leading labelstock manufacturer Torraspapel has a capacity of more than one million of tons/year of coated and uncoated papers. Its self-adhesive laminate production, at

around 200 million m²/year, means it can lay claim to being number one in the Spanish label market and, as part of Lecta Group, one of the top five producers of coated woodfree paper in Europe. Its range of pressure-sensitive laminates covers most applications, and particularly high gloss coated laminates for the cosmetics, wine and food sectors. It recently launched a new range of label papers for wine labeling, and has sales offices in France, Portugal, UK, Germany, Italy, Morocco, Mexico, USA and Argentina.

Smaller and more specialized than Torraspapel, Gombau is a family business with three coating plants — two near Girona in Northern Spain, and one in Italy. Like its compatriot Manter, Gombau is strong on the Spanish market, where it specializes in self-adhesive materials for wine labels. It also makes laminates with BOPP face materials, and a range of non-adhesive laminates. Gombau, like VPF (see overpage), is looking first to the French market to develop its export business.

#### FLEXcon and MACtac – a foot in both continents

US-based FLEXcon, present in Europe for the past 30 years, specialises in filmic laminates, and is believed to be to be the world's largest manufacturer of pressure-sensitive films, with annual sales of €300 million (\$ 360 million) and total production of some 200 million m<sup>2</sup> of PS labelstock per year, mostly in North America. The company, whose head office and main manufacturing plant is in Massachusetts, serves its North American and international customers via manufacturing facilities in Nebraska, Minnesota and Connecticut, backed up by a network of distribution centers. FLEXcon's European manufacturing facility is in Scotland, and its continental European distribution and sales are run out of its Center in the Netherlands.

It is not certain that MACtac belongs in the category of 'medium-sized' pressure-sensitive labelstock manufacturers. Its US parent company Bemis has group sales of just under \$3 billion, of which over \$1 billion derives from its worldwide labelstock business. MACtac makes PS labelstock at three plants in USA (in Ohio, Pennsylvania and Nevada), one in Canada and one in Mexico. In Europe, where it is the fifth or sixth biggest supplier, it has its head office and manufacturing plant in Soignies (Belgium) and fully-owned sales companies in France, UK, Germany, Italy, Sweden, Benelux, Switzerland, Spain, Poland and also (since October 2005) in the Czech Republic and Hungary. MACtac's claim to fame is its expertise in all the three main adhesive technologies used in labelstock manufacture - hotmelt, solventbased and water-based. The company is strong not just in rollstock but also in self-



At Herma's Filderstadt Bonlanden location the world's most modern coating plant will be completed by mid-2007

adhesive sheets, and recently invested in a new sheet packing line at its Soignies plant.

#### Herma - soon to be 'world's most modern'?

With 800 employees and 2005 sales of  $\in$ 175 million (\$ 210 million) - one third of this derives from laminate manufacture -Herma is particularly strong in solvent-free laminates, and has recently made news with its acrylic-dispersion adhesives, said to combine the advantages of acrylic-dispersion and hot melt, and to be particularly suited to labeling food products in cold or wet environments. The company's laminate manufacturing is concentrated in Germany, but Herma has sales and service subsidiaries in France, Austria, Great Britain, and the Netherlands. It also does business in Russia.

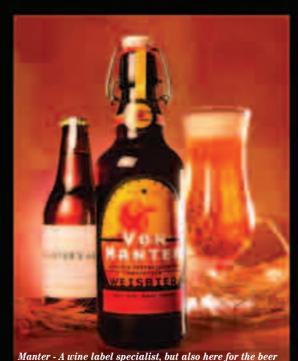
At the end of 2005, Herma announced the construction of what it says will be 'the most modern adhesive materials coating plant in the world', with an investment amounting to about  $\in 30$ million for the first stage alone. The new plant will come on stream early in 2007, and will set a new standard, says the company, in lowering production costs and raising quality levels.

#### Intercoat - 'respecting the environment'

Intercoat manufactures near Hamburg in Northern Germany, and specializes in polyethylene and polypropylene face materials. The company's production, of the order of 100 million m<sup>2</sup>/year, place it in third position in Germany and fifth or sixth in Europe. Outside Germany, the company has developed its European markets with the help of close and long-standing ties with its exclusive distributors in France and UK and its own subsidiary in Spain. Intercoat also has a large presence in Russia where it has close cooperation with Itraco, arguably Russia's leading distributor of materials and equipment for the label industry.

#### VPF you don't need to move the earth

Less well-known outside its native Germany, VPF has nonetheless been making self-adhesive laminates for over 40 years at its Sprockhvel factory. Among its recent developments are multi-layer complexes, luminescent adhesives, patterncoating and security label solutions. If laminate manufacturers were earthquakes, VPF would raise scarcely a ripple on the Richter scale, but its virtuosity in finding new solutions is gaining



it a reputation which the company is using to develop its sales in other parts of Europe and particularly in France.

#### **Ritrama – spanning the Atlantic**

Northern Italy is clearly fertile ground for label laminate manufacturers, including the world renowned Ritrama. With seven coating lines (three in Italy, two in USA, one in England and one in Spain) and distribution centers in Italy, Spain, UK, USA, Switzerland, Mexico, Russia and Poland, Ritrama can justly claim to be a world-class player. The group recently inaugurated a new two metre coating line at its Sassoferrato plant, significantly increasing its total capacity in Europe. Its new products include the 'Clearflex' range with squeezable polyolefin film, tamperevident security laminates and special materials for labeling tyres.

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**Italnastri, roll cover and idea paper – spanning Northern Italy** For the past quarter-century, Italnastri has been making self-adhesive laminates at its factory near Florence in Italy, where it manufactures some 25 million m<sup>2</sup> per year. Most of its customers are in Italy, but the company's decision to expand into other parts of Europe was behind its decision to exhibit at Labelexpo Europe. Made-to-measure laminates for wine labels are its specialty, but Italnastri is also strong in 'squeezable' labels and in hard-to-forge materials to beat the counterfeiter.

From its plant North of Milan, Roll Cover distributes its laminates to label converters throughout the North of Italy; it lays claim to being 'the market leader for filmic self-adhesives'. This manufacturer produces some 15-20 million m²/year of labelstock, and its specialities include substrates for tamper-evident labels, for VIP labels and for wipes.

Parma in Italy is better known for another product, but this town is also the home of Idea Paper, a company which makes and sells self-adhesive labelstock in Northern Italy, Spain, Portugal and South America. A first-time exhibitor at Labelexpo Europe 2005, Idea Paper used the show to develop its sales into other parts of Europe.

#### Sopal-Panoval - 'pass the parcel'

In the past 15 years the factory in Martigny, Switzerland has changed hands three times. Now part of the Gascogne Group, the plant continues to produce a wide range of selfadhesive label laminates using mostly water-based adhesives. At Labelexpo 2005, Sopal-Panoval launched several new synthetic laminates specially designed for ink jet, laser and thermal transfer printing.

The company's other products include labelstock for deep freeze labels, for wet surface labeling, and for removable, dry peel and security labels.

#### Between a rock and a hard place?

Some of the labelstock manufacturers described in this article dominate their home market. Few, if any, would claim to be leaders Europe-wide. What is their future? Some, no doubt, will fall victim to the cost-price squeeze. The successful ones will continue to invest, to lower their production costs, and above all to be more nimble than their competitors in developing new and imaginative self-adhesive materials and applications.

All the labelstock manufacturers described in this article (except one!) exhibited at Labelexpo Europe 2005. Many of them will take part in Labelexpo Americas in September 2006. The increasing number of materials manufacturers exhibiting at these international shows is a clear indicator that more and more small and medium-sized laminate manufacturers are reaching out over national borders to seek new markets.

#### Substrates news

#### 'No-Label-Look' option

FLEXcon has announced a new option in its optiFLEX series for printers and converters producing front and back beverage labels that require "no-labellook" graphics for beer, juice, soda, wine , spirits and water. FLEXcon's optiFLEX PP 200 H Clear TC-332 A-208 TRACrite 100 is a 2 mil topcoated hard clear polypropylene film coated with a new A-208 permanent pressure-sensitive acrylic adhesive and backed with a TRACrite 100 polyester release liner.

The A-208 adhesive is claimed to provide "water-clear" wet out on glass and polyester containers, and resists hazing during pasteurization and ice chest. The top coating is compatible with a wide range of print methods including solvent, water and UV flexo; letterpress: UV offset; hot stamping; and UV screen.

#### Boise announces key partners

Boise Paper recently announced the selection of key engineering and equipment suppliers for the Wallula, Washington reconfiguration of its pressure-sensitive paper production capacity. Boise's engineering supplier on the investment is Pasadena, CA based Jacobs Engineering Group Inc. Jacobs has been working with Boise since August of 2005 on the pressuresensitive reconfiguration of the existing 250" #3 paper machine in Wallula.

The announcement follows a strategic review carried out by the company last year. Commented Kirk Allen, business leader of Boise Paper's Label, Release & Specialty Papers business, 'Our focus has never been clearer. We are investing to leverage proprietary technology on the ideal scale to be a leading supplier of pressure-sensitive papers in North America and globally for many years to come.' The investment is estimated to total \$60 Million, and will provide incremental pressure-sensitive capacity of over 200,000 tons. This project will transition existing commodity production capacity to specialty paper production.

'The pressure-sensitive market is the cornerstone in our strategy to grow in specialty and premium papers,' says Miles Hewitt, senior vice president and general manager of Boise Paper.



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Overview

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### Substrates news

#### **Durable substrates, durable coatings**

Hanita Coatings has extended its range of durable face films to include flame retardant face stocks and heat stabilized films primed for printing by conductive ink.

Hanita's flame retardant white films are available in two levels of flame retardancy. The first group of films meets UL94 VTM-0, the flame retardancy requirement of many electrical,

#### Vintage wine labels

Just in time for the 2006 vintage, Avery Dennison has revamped its product offering for the wine market – including a new Fasson Tree-Free facestock that can enhance brand image, while protecting the environment. 'Made from a unique combination of bamboo pulp, ditch reed and cotton linters, the Fasson Tree-Free facestock appears whiter and smoother than other products available in the marketplace,' says the company.

This new product and more than 30 others are showcased in the Vintage 2006 Wine Labeling Swatchbook, which includes samples of uncoated products, coated products, specialty products and film products designed specifically for use in wine applications.

#### No liner for A4 logistics

Raflatac's Jetlaser Duoface is claimed to mark a new era in manual A4 logistic labeling. With two face layers, each acting as release liner for the other, the doublesided Jetlaser Duoface labelstock eliminates backing waste completely. For converters, Jetlaser Duoface doubles converting capacity, halves packaging and transport costs and saves on warehousing. For end-users, the linerless Jetlaser Duoface stores compactly, many more labels can be loaded into the printer and hand application is faster. Duoface labels can be laser imprinted on both sides simultaneously or bulk printed on one side with general labels such as 'this side up' or 'fragile' while the other is left blank for information on package content or the recipient's address.

electronic, automotive and construction applications, and is a cost effective alternative when the performance levels of PEN or Polyamide films are unnecessary. These white films feature either a glossy primer for thermal transfer and conventional print processes, or a durable matte coating for computer-based digital toner or ink print systems. The second level of flame retardant label face

#### Synthetic additions

The Technical Paper Division of Neenah Paper Inc. is introducing two new synthetic label and tag substrates: Kimdura UV for the pressure sensitive label market, and Kimdura Multi-Task for the non-pressure sensitive market.

Kimdura UV is claimed to have outstanding resistance to sun or ultraviolet light. It can be used for harsher applications to extend durability and also offers high edge-tear resistance and print fidelity.

Kimdura Multi-Task is a line of tag stock said by the manufacturer to offer enhanced graphic and strength performance. The tag stock features a smudge-proof coating that enables end users to print with many Electronic Data Processing (EDP) and conventional tag printing methods. Additionally, Kimdura Multi-Task offers high initiated tear strength and unsupported hole strength. film meets a less challenging UL94 VTM-2 flame retardancy rating, and is printable by thermal transfer and conventional print processes.

Hanita has also developed a new line of topcoated, heat-stabilized PET films to enhance the performance and adhesion of conductive inks used in the production of printed UHF RFID antennas for RFID tags.

#### Resealable pouch label film

FLEXcon has introduced optiFLEX RESEAL, a resealable PP film specifically designed for resealable pouch label applications. optiFLEX RESEAL products are coated with the new V-133 a low-peel, removable acrylic pressuresensitive adhesive. They are available in a 2 mil topcoated clear or a 2.3 mil topcoated white polypropylene film backed with TRACrite 120, a 1.2 mil polyester release liner.

#### Thinner IML films

Radici Film has expanded its range of BOPP films with a reduced thickness film claimed to reduce labelling costs between 10-20 per cent. Radil S508  $45\mu$ m is an ideal film for the new roll-fed injection moulding machines in addition to its use with traditional sheet-fed machines. The material can be used for labelling of containers in various shapes and sizes, and is suitable for use with the most common printing applications such as rotogravure, flexographic and offset printing.



Radici expands IML

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# **IPEX** review



# At the cutting

JDF-enabled workflows, new ink jet technologies and digital flexo platemaking were key developments at Ipex 2006. **Barry Hunt** reports

Unlike other manufacturing industries, printing is a newcomer to automated process control techniques on any scale. But times are changing, as typified by a new breed of internetenabled management information systems (MIS). They reflect a closer consolidation between the main print production and administration processes, including the integration of digital prepress workflows. As many label and packaging converters are finding out, much will revolve around the growing influence of industry standards like JDF (Job Description Format) linked with JMF (Job Messaging Format), for moving data between systems.

JDF digital job tickets now form the heart of several MIS products. For example, Hiflex showed how its system receives CIP3/4 files from pre press systems, interprets and forwards them to the press together with the JDF job-ticket. Networked production like this provides a single transfer of information (from a single source) that contains everything needed for machine pre-setting, including ink controls. The other MIS exhibitors with label-related modules – including DiMS!, Imprint, Optimus, Prism Europe, Shuttleworth and Tharstern – offer similar systems. Although at present identified more with commercial offset printing and finishing processes, the JDF influence is bound to extend deeper into most web-fed applications.

Appropriately, the 'MIS zone' at Ipex was located near the Process Automation and JDF Pavilion. Here, various vendors demonstrated how they exchange information between different JDF-compliant systems and equipment. The Pavilion was organized by CIP4, which developed JDF and the complementary UP3i standard for integrating printing and finishing systems. It is generally recognized that some key compliance issues remain with JDF, but a consensus on PDF creation and preflight settings is progressing well, as outlined at the show by the Ghent PDF Workgroup. "As many label and packaging converters are finding out, much will revolve around the growing influence of industry standards like JDF (Job Description Format) linked with JMF (Job Messaging Format), for moving data between systems"

One vendor member, Artwork Solutions, has adapted its PDFenabled Odystar digital workflow for packaging applications as a gateway to JDF enabled applications. It also offers PA:CT, a version of the industry standard Certified PDF technology from its subsidiary Enfocus Software for the packaging world. Incorporated in the ArtPro and Nexus workflow systems, it offers a new approach to pre-press data access and traceability over all operations, including for customers.

PDF pioneer, Adobe Systems, cause techie hearts to flutter by announcing PDF Print Engine, the first major upgrade to its core RIP software in nearly a decade. At least nine companies use Adobe's software in their RIPs. File consistency from desktop to printed output is ensured and specific output-device conversions are now made only at the time of output.

Agfa Graphics featured ApogeeX 3.0 workflow management software, which allows integration with non-Agfa workflows. JDF and JMF standards determine the processing of jobs and provides cost analysis progress reports. The company demonstrated modules of ApogeeX production software, Delano

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### **IPEX** review

project management and SherpaProof proofing software for outputting various types of soft or hard-copy proofs. For its part, Esko launched Scope 3, an integrated system for packaging applications that works with JDF and PDF files with links to many MIS systems. Also featured was DeskPack, a dedicated label design and production tool for use with Adobe Illustrator CS and PhotoShop CS applications.

**Plates and imaging systems** Noted more for offset CtP systems, Screen introduced its first digital flexo platesetter, the PlateRite FX870, again using thermal laser technology. It images DuPont Cyrel and Asahikasei flexo plates up to 870 x 735mm at resolutions of 2,400 or 2,540dpi with screen rulings up to 200 lp. The platesetter is compatible with Screen's PackStudio SE packaging workflow, based on Artwork Systems ArtPro software and is being integrated into Screen's established Trueflow workflow. The platesetter integrates with any PDF-based workflows and is commercially available worldwide from September this year.

Kodak introduced the Thermoflex Mid Hybrid (plates up to 1,100 x 1,200mm), which joins the Thermoflex Narrow Hybrid (762 x 762mm) introduced at Labelexpo. Both of these digital platesetters image offset, flexo or letterpress plates to extend operational flexibility for users of combination presses. They also include HyperFlex plate resolution enhancement software for flexo. At Ipex the Thermoflex Mid Hybrid platesetter ran with the Prinergy Powerpack scalable workflow management system and Kodak's Approval NX digital color imaging system.

Lüscher now offers the FlexPose! direct laser engraving system in five size formats, including the 250L for label printers. Like the FlexPose! 75 and 130 mask ablation system, it images flexo, dry-offset or letterpress plates, as well as seamless sleeves with a 1751pi resolution. The latest XPose! platesetter exposes conventional



Jetrion's ink jet 3025 SA module with rewinder



JDF Pavilion at Ipex

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### **IPEX** review



offset plates with UV light, thanks to a new imaging head with 405nm violet laser diodes, rather than thermal laser diodes. The existing Xpose! CtP range of models with thermal laser diodes remain in production. A new robotic plate handling system was shown serving two XPose! 130 units.

Esko showed the Cyrel Digital Imager Spark 2120. Aimed at smaller narrow-web label converters and trade houses, the unit digitally images plates up to 533 x 508mm (21 x 20 inches) in around 16 minutes. It handles screen rulings up to 200 lpi with halftone imaging from 1-99 per cent and uses the Adobe-certified PostScript 3 FlexRip 2120.

The FlexoCAM from Troika Systems Ltd is said to be the first quality control tool that can measure the relief height, dot percentage, screen rulings and angles of flexo plates, films and masks, as well as the printed result.

The plate division of the Flint Group introduced Nyloflex ACT for high quality flexo applications. Nyloflex Gold A digital is described as the first digital coating plate, while Nyloprint WF blue is a new foil-based letterpress plate. The Narrow Web Inks Division launched Lithocure 3G ink, a UV ink for offset narrow web sector with optimized ink/water balance, said to provide excellent printability and color strength.

#### Ink jet progress

Ipex included some advanced examples of drop-ondemand (DoD) ink jet technology. They are worth watching. Several introduce hybrid applications by working with UV flexo, offset or even digital printing for short-run label or packaging applications. For example, Agfa Graphics demonstrated its new 630mm wide Dotrix Modular printing unsupported PE film with a line-up that included a flexo unit, web cleaner, corona treater, UV unit and chill drums. Toshiba supplied the DoD print heads and Agfa the Agorix UV-curable inks. Post-printing modules include varnishing, die cutting and finishing. Users can customize a Dotrix line to include transactional and direct mail printing.

Screen entered the ink jet market with its Truepress Jet520 based on Epson's piezo print heads and running at up to 64 m/minute on a 507mm print width. Although shown producing full-color direct mailers, Screen may develop other web-fed applications with a wider range of in-line finishing options. Shipping begins from October.

Among the various projects for Xaar's grayscale print heads is the Digital Web Press from imaging Technology international (iTi) of Boulder, Colorado. The DWP prints full color, high quality images on labelstocks or film with



AVT: PrintVision/Helios on Omega slitter/rewinder

on-the-fly image changes for web widths from 54 to 165mm. The machine uses Xaar's OmniDot 760 GS8 print heads and offers optional UV curing, IR or hot-air drying. At Ipex the DWP ran with SunJet Crystal UOX inks.

Flint Group's Jetrion LLC introduced the 3025 SA, described as the first stand-alone narrow web rewinder with an integrated UV ink jet module. BCL Bar Code Label in Hungary is the first European customer. The 3025 SA uses stitchable Spectra 2.4-inch print heads and includes a lamp head from Honle UV America. The rewinder from Grafisk Maskinfabrik in Denmark offers optional slitting, die cutting and inspection facilities. Mark Andy will manufacture the rewinder for the North American market. A grayscale-enabled version, the 4040, for full-color labels and speciality packaging will be launched at this year's Labelexpo. It will be built at Jetrion's new headquarters in Ypsilanti, Michigan.

Not to be left out, Domino Printing Science showed a prototype of full color UV-curable technology for integration into existing presses. It is based on Domino's second-generation K-Series variable data printers, led by the K200 which prints spot colors and CMYK. It was shown with the Editor GT, which can control up to eight K200s or 16 K100 print heads.

Impika is a French manufacturer of several d-o-d systems for roll-label applications. It featured the C9000 range, which prints text and graphics





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### **IPEX** review



up to 24m/minute at 900dpi in widths up to 429mm with grayscale technology.

The JetFlex from Printing Technology Service Inc offers both CMYK and variable data ink jet printing using UV inks and is backed by the VeriFlex print verification system. Fully-stitched 8-inch wide images, or two across for an 18-inch wide web, are offered with adjustable print resolution. It can be integrated into web presses, sheetfed presses and finishing systems.

#### **Digital presses**

Most of the many digital color presses at Ipex were predictably focused on commercial or industrial printon-demand applications, including Hewlett Packard's Indigo range of sheet-fed models. HP did, however, show label printing on the established reel-fed ws-4050, supported by an Omega Digicon HS converting line with the Sabre eXtreme laser die cutter from AB Graphic International.

Punch Graphix has adopted a similar multi-product approach to digital printing, based on the Xeikon 5000. In addition to labels and textile transfer printing, Punch has developed partnerships with suppliers of in line equipment for producing transactional printing, direct mail products and on-demand book publishing. Xeikon's latest X-800 digital front-end drives the print engine. Version 1.60 includes a Metadata tool to allow last-minute copy or image changes without the need to re-RIP and repeats of the workflow cycle. The upgraded front-end also generates fixed or variable bar codes.

Nipson's toner-based VaryPress 400 for various label, security and ticket applications is a faster version of the VaryPress 200. It can also run with a twin engine duplex configuration for producing a mix of print-on-demand products and transactional documents. Both systems can be configured with several types of in-line finishing equipment.

#### The heavy metal

Narrow-web press manufacturers were few and far between at Ipex. Among those present were Edale with a 250-mm wide, four-color Alpha press printing filmic labels. Its main aim was to attract sheet-fed label printers thinking of moving into UV flexo. Rotatek's 520mm wide Perfect offset press is known to forms and mailer printers. Nevertheless the four-color press was configured with a flexo varnishing unit, a gravure



Sponsorship corner: Quicksilver, the UK's world water speed challenger later this year

module, UV curing and hot-air drying shown printing unsupported PP film, as well as sheeted labels and small cartons.

Known more for book printing presses, Timsons also promoted the film sleeve capabilities of the T-Flex 600 (600mm wide), along with plate supplier Asahi Photoproducts. The short-run packaging press also handles board and prints with water-based flexo, or conventional and cationic UV inks at resolutions of 150 lpi at up to 260m/minute.

Promoting its VSOP offset sleeve press, Drent Goebel plans to show the first VSOP 850 running with an EB curing unit at an open house held in mid-June in Montreal. Omet focused on the shaftless drive and sleeve based features of its Varyflex multi-substrate press. Gallus and BHS, its commercial partner and wide-web press manufacturer, showed a KM 410/510S print unit for producing small folded cartons. Gidue promoted its flexo presses on the stand of its UK agent, ABG International.

Allusions to process control began this Ipex report so it is appropriate to wrap it up with Advanced Vision Technology's approach to 100 per cent web inspection system. It had a PrintVision/Helios system mounted on an ABG Omega SR 300 slitter/rewinder, showing how the system creates an information layer on top of the production layer. On-press real-time information is fed to AVT's PrintFlow Manager infrastructure as diagnostic or quality control reports. The Workflow Link delivers printed roll reports containing defect information for editing by quality managers before the slitting/rewinding stage. Defects presented to the operator automatically activate stop/start and splice operations.





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# Argentina: converting after the crisis

Argentinean label converters have had an uphill struggle since the economic crisis of 2001, but the survivors are all at the top of their game. Katy Wight reports

Argentina boasts a landscape of stunning natural wonders, a sophisticated European-style capital and a legendary legacy in football (that's soccer for those who have never heard of Maradona), but the birthplace of tango has seen more than its fair share of economic woes. Following four years of recession, high inflation and soaring unemployment, the country defaulted repayment on a loan in December 2001 – the biggest default in history – and Argentina spiraled into political and economic turmoil. Restrictions were placed on bank withdrawals, the government was forced to float the currency against the dollar and massive devaluation followed.

The peso performed better than expected after devaluation and GDP has since grown by about eight per cent every year from 2003-2005, but Argentina still faces a unique challenge. Growth is being led by a revival in domestic demand, sturdy exports, and favorable external conditions, but the economy is still plagued by high inflation and skeptical investors.

Aside from the global challenges of decreasing margins and overcapacity, label converters in Argentina have also had to navigate through this financial minefield. The survivors are stronger than ever. Integrated converter Artes Gráficas Modernas is a powerhouse in the Argentinean label market, but there are a number of other major printers that also have a strong foothold – L&L went to visit four of them.

#### **Grafica Impress**

The supermarket industry boomed in Argentina in the 1990s and multi-nationals like Wal-Mart and Carrefour heavily increased their presence in the country. Around the same time, Marcelo Kinigsberg, president of Grafica Impress, Buenos Aires, saw the potential from new thermal paper technology and began importing materials from Japan under an agreement with Ricoh. Starting with a 4-color CI press, Grafica Impress began to service the burgeoning supermarket trade with weigh-price and logistics labels. The company weathered the economic crisis of 2001 and has since moved into a new facility and diversified into prime labels for the food, pharma, wine and personal care markets. Kinigsberg has also invested in two new Nilpeter presses that have raised the company's game in terms of quality and capabilities.

'Many of our supermarket customers began asking about other types of labels,' says Kinigsberg, 'but we needed to improve our quality and be able to print more colors, so I invested in some new equipment. Initially we constructed our own press – which still prints about 80 per cent of our supermarket work now – and then in 1998 we decided to buy a Nilpeter FA2400. That press enabled us to enter the prime label market and work with new substrates and materials and we gradually began to attend to other markets. At the beginning of this year we bought an FA3300 servo press with UV, hot stamp and rotary screen.

'With this new machine we want to enter new markets. I think that in the future, all of the new presses will be servo – things are heading in that direction. There are significant benefits in terms of set-up time, changeover and register, not just the ability to convert unsupported films. Our customers aren't asking for that yet and there are difficulties in entering and competing in that market.'

Argentina has a unique economic environment, which throws up challenges for converters and customers alike. Kinigsberg explains that although he is well versed in all of the latest converting technology, getting customers to buy into the ideas is a different matter.

'Most of our customers are Argentinean and we don't have any global customers that make global decisions. Price is the most important thing here. We have rotary screen capabilities and we have been showing our customers what we can do, but it is more expensive and therefore more difficult to sell.'

Leveraging sales may be a challenge, but Kinigsberg and his 30 employees easily achieved 10 per cent growth in 2005, and

#### Converting the crisis to cash

'The 2001 crisis was a very different experience for everyone,' says Grafica Impress president Marcelo Kinigsberg. 'The main problem was that we had to pay cash in advance for everything. At that time, we were strong, so we got everything that we needed. The market was difficult, but the market was still there – people were still eating. We got the materials and our customers had to pay for them because supermarkets need labels to stay open.

'In fact, at the beginning of 2002 we started to pick up new customers because no one else was able to get hold of materials. We worked very quickly to respond to the situation We did more supermarket work that year than ever!'

Kinigsberg says they have more capacity on the FA3300.

'We need to replace our existing supermarket customers with new prime label clients. It was a difficult decision to move away from the supermarket business and we've decreased our square meters, but we have increased our margins. It's important now that we increase our market share.'

#### Autopack

Unfulfilled by his role at his father's sheetfed offset printing business, Norberto Fridman, founder of Autopack, Buenos Aires, left the company to begin his own business in 1983. Fridman started a company to make separations, but following a trip to drupa, became concerned about the future of the repro industry and began to research the next big thing in the graphics industry. The new emerging market was pressure-sensitive labels.

'I already had experience of wet-glue labels and color separations, so it seemed like a logical progression,' says Fridman. 'In 1991 I bought a Kopack CI letterpress and then in 1993 we bought another one. We managed through the economic difficulties of the mid-90s, and then in 1997 we moved to this facility and bought our third Kopack. In 2001, there was the currency devaluation and sales fell. It was a very deep crisis, but we have again managed through it. The business is not our machines or our business, it is our people and all together we have resolved and recovered our activity. This year we will finish with a turnover in dollars that is the same as 2001, but we are having to work much harder for the same amount of money.'

The Kopacks are 7, 9 and 10 colors. Autopack has 75 employees and is divided into three divisions: packaging, security products and specialty/promotional. The company has a cutting edge research and development department that focuses on developing new products and expanding the company's commercial offering. Autopack exports to over 30 countries around the world mainly within South and Central America,



Marcelo Kinigsberg of Grafica Impress invested in Nilpeter technology to get into the prime market

South East Asia, Asia and South Africa – and they are beginning to penetrate Europe.

'This is all specialty work where the end user has no domestic supplier for the solution that he needs,' says Fridman. 'We squeeze our brains and try to find opportunities from other people's problems. We print everything from promotional labels to tattoos.' Autopack has agents in many of the regions where it is represented and also has partners with agreements to manufacture on the company's behalf.

Fridman has favored letterpress technology because of its high quality and ability to replicate complex graphics like skin tones effectively – important for multinational health and beauty clients – but he is considering a switch to flexo.

'We are bidding for machines right now and we will probably buy something before the end of the year. We're looking for something wider that can print both PS and film and UV flexo is very good quality now. The wine label market is growing rapidly now and flexo is a 'softer' process that is more suited to textured papers.'

Autopack's existing presses have been highly modified and customized for the company's differing applications. The company even developed its own drop-in flexo unit for one of the presses.

Overall the Autopack plant is very impressive – it's modern and highly organized. The company adheres to cGMP and obviously takes its systems and processes very seriously. Every area is carefully quality controlled – particularly for security customers like the Argentinian Government.

#### Achernar

Achernar was founded over 32 years ago by Haroldo Olcese and today is managed by his son and two daughters, Juan, Maria and Ana Olcese. The company started out with Brazilian-

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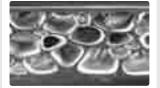
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Maria and Juan Olcese with their HP Indigo 2000 digital press

manufactured letterpress equipment by Etirama, and over the years built a solid reputation for leading with technology in Argentina. In the 1980s, Achernar invested in flexo and was the second company in the country to import a Mark Andy press and move to water-based inks. It was then the first company in Argentina to install the Mark Andy 2200 and move into UV ink. The move to UV flexo improved quality and enabled Achernar to make a significant inroad into the prime market, with clients from all the significant consumer goods companies and pharmaceutical industry. Today, the company has 78 employees, two Mark Andy 2200s with eight colors, one Mark Andy 4120 with 6 colors, a Comco Cadet with five colors a Mark Andy 910 and a Newfoil for hotstamping. Achernar recently expanded its capabilities with an HP Indigo 2000 to complement its long run capabilities.

'We look at what's going on around the world in the industry and what's going on in Argentina,' says president Maria Olcese. 'We want to be one step ahead and be the first to introduce all of the new technology and novelties to our customers. We make sure that we are aware of the global market and maintain close relationships with our key suppliers.'

These close ties with industry vendors helped the company to emerge from the economic crisis of 2001 unscathed. Amazingly, Achernar managed to achieve a sales increase of one per cent despite the collapse. Throughout this period, import substitution, a policy encouraging local suppliers to manufacture products that would have been imported, helped drive growth at Achernar. During 2002-2003, the company took the opportunity to develop some of the specialty labels the company had previously imported, introducing it to new segments and applications. 'The market is good right now and we are bouncing back from a very bad situation,' says Maria. 'We are entering new market segments and we have established a new division to focus on developing new products. We have seen significant growth over the past two years in our durable products and variable data division. We are doing variable work for government departments and the post office, and our durable work includes labels for the oil, gas and electronic industries. There is also an increasing number of car parts being manufactured in Argentina that require durable labels. We also do a lot of security work such as holograms and voiding materials for brand protection.

'The Indigo has been an interesting tool and we are able to take advantage of the short lead times and service, which are great for consumer promotional labels. In the main part, we are printing digital wine, pharmaceutical and cosmetic labels but we are planning to use it more for customization. The cross-selling aspect has been good and we are aiming for 25 per cent growth this year.'

Achernar cites business challenges that are the same for converters the world over – decreasing margins, a lack of operators and material price increases – but Argentina has a number of macro economic problems that make the company's challenges unique.

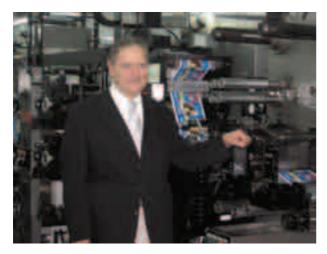
'We want to maintain our profitability, but some aspects aren't under our control –salaries, utilities, taxes and very high inflation,' says Juan. 'This year we have seen a reduction in margin and an increase in volume, so we are trying to focus on our efficiency. We have launched a continuous improvement project to counteract these pressures and introduced a new operations manager with a good track record in CI.'

#### Multilabel

Luis Garcia launched Multilabel 15 years ago with his business partner J.C.Sacco. Garcia had been working in the repro business and his partner was in the continuous forms industry and both industries were under threat, so they visited drupa to find out about new opportunities in graphic arts. Selfadhesive labels were the niche market at the time, so Garcia invested in a KoPack CI letterpress with UV flexo and silk screen – and Multilabel went into business.

Fifteen years later, that business is worth \$9 million in Argentina and also has operations in Brazil, Mexico and Chile. Always on the look out for the next big thing and also in reaction to the economic situation in Argentina, Multilabel is steering its business away from standard prime labels into value-added, specialty arenas.

'Food is our main market and it is a huge market,' explains Garcia, 'but it is a low value-added market. We have many



Multilabel founder Luis Garcia spends time traveling between the company's Argentinean and Brazilian operations

competitors and prices are low. The multi-national companies in particular see price as their highest priority and we would rather work with customers who value quality and service.

'Promotional labels is a totally different business because you are the owner of the idea. It's proprietary business, so the customer can't compare prices and the margins are therefore bigger than prime. This market is always growing because companies know that they need to offer that incentive on their products — if you are choosing between two ice-cream brands, wouldn't you buy the one with a chance to win a car? And nobody wants to use the same promotion as one of their competitors, so we are always developing and improving new promotions and constructions.'

Garcia can show a vast array of promotional and security labels, from tattoos, booklet label coupons, peel and reveal labels, thermochromatic tequila bottle labels and labels that smell like 'Shrek' and washing powder – to voiding labels and holograms. However, promotions can be a one-shot job and therefore rather unpredictable. In 2004, promotional represented about 50 per cent of turnover because of a huge promotion for Carrefour – it's more like 30 per cent in a standard year.

To counter the instability of the Argentinean economy, and as part of Garcia's aggressive strategy of growth, Multilabel is concentrating on leveraging exports. The company aims to export more than 50 per cent of production in 2006. The addition of other plants in South America has become important in order to play the different trade agreements in the export game. Initially the company moved into Brazil and has a wellestablished plant there now — it's the only IML manufacturer in the country and it has been working closely with Pepsico on "Promotional labels is a totally different business because you are the owner of the idea. It's proprietary business, so the customer can't compare prices and the margins are therefore bigger than prime"

some very long-run promotional labels – but now Multilabel is looking to Chile.

'We moved into Mexico last year and we are partnering with a major book and magazine printer,' explains Garcia, 'but we are still trying to make a deal in Chile. Chile is key because it is inside NAFTA and we can export from there to North America, Mexico, Peru, Ecuador and Colombia. With a number of facilities in different countries, we can choose where it would be best to print a job and export it.'

The Buenos Aires plant has three KoPack letterpress machines with 6, 8 and 13 colors, as well as a water-based Propheteer 1000 flexo press with slot in silk screen, bought especially for the wine market. The company also has Newfoil embossing and hot stamping equipment, and a KDO for reprinting wine labels. Garcia likes working with the KoPack letterpress equipment and the Brazilian plant has two 9-color machines and in Mexico they have one 6-color machine.

The Argentinean plant has 42 employees and an office downtown with four employees. Multilabel Argentina has cornered several niche parts of the market – Garcia says that it's the only converter whose labels are all approved for direct food contact and it has also captured the IML market for motor oil bottles and works with all the major petro-chemical firms such as Shell, Mobil and Exxon. Garcia ensures that he is at the cutting edge of developments in the market and as president of the label chamber for the Graphic Federation, he gets a heads-up on most issues.

'We get information directly and information is very important to run a business,' he says. 'The federation has also enabled us to become recognized and is how we came to partner with operations in Mexico and Chile.'



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# **Label Summit Latin America**

Mexico is in a presidential election year and converters are optimistic that a new government will improve the business climate. This year's Latin America Label Summit, held in Mexico City, will examine opportunities in the region

# 23-24 May, Mexico City LABELSUMMIT Latin America 2006

www.labelsummit.com

he last Latin America Label Summit to be held in Mexico City was an overwhelming success for its organizers at Labelexpo. Attendance exceeded expectations and over 650 visitors came for the high-level conference and exhibition. This year's event, taking place in Mexico City on 23-24 May, is shaping up to be an even greater event.

Over 65 international suppliers have signed up for the tabletop event and the conference program is packed with over 20 presentations from global and regional industry experts keen to share insights on the future of the segment. Senior-level delegates are expected from Central, South and North America, and other major international label markets. Highlights on the conference agenda include a focuson regional trends, local case studies and partnerhips, end-user requirements and developments in digital and UV-flexo printing.

Delegates will also hear the results of a new survey analyzing the purchasing intentions of converters in over 20 countries across Latin America. The survey findings will be presented to delegates by Mike Fairley, director of strategic development, Labels Group, Tarsus, and Latin America specialist, Alfredor Domador of B2Bportales inc. The full outline of the program is given below.

Roger Pellow, Labelexpo managing director says, 'the label market in Latin America is very buoyant and the region represents a tremendous opportunity for label converters. With ongoing signs of strong growth in the area, our summit continues to expand and to provide the ideal focal point for regional printers and international suppliers to come together to do business and hear about the latest developments shaping the future of the market'.

For more information, check out www.labelsummit.com

#### Day 1, 23 May 2006

9.20-9.30 Chairman's welcome and introduction Mike Fairley, Director Strategic Development, Labels Group

#### 9.30-10.05 Keynote: Opportunities and challenges in Latin America labels market

- Main label converting trends
- Intentions for the future printing processes
- Carlos Alcaraz, Sales Manager, Green Bay Packaging

#### 10.05-10.35 Analysis of Latin American Label Converting Industry

A snapshot of the industry based on a comprehensive converters survey across the region

Main label converting technological trends in the regionWhat do we convert the most and in which printing

processes?

Alfredo Domador, VP Operations Division, B2Bportales, Inc

#### 11.05-11.40 Discover the latest end user requirements and learn how to manage them

Find out how decisions are made about packaging and labeling

What do end users require now and in the future?

#### **11.40-12.40** Meeting the end user requirements from converter perspective

■ Identifying converter partnerships that will help you win business

Competing with North America on high quality printing jobs Luis Maria Garcia, President, Multilabel Argentina Jeffrey Arippol, President, Novelprint

# 14.10-14.45 Learn how to bring your printing pre-production to new productivity, quality and consistency levels?

Find out how using workflow systems and tools can be a very useful marketing tool

Discover the latest hardware and software solutions Ian Hole, Marketing Director, Esko

14.45-15.20 How can the latest digital developments

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#### Exhibitors at the summit:

3M Mexico SA de CV AB Graphic International Ltd Alphasonics Anderson & Vreeland Ashwell Die Aquaflex FL Smithe Machine Company Avery Dennison Avery Dennison Mexico AVT Advanced Vision Technology Aztech Machinery Inc. BST Pro Mark Chemsultants Degussa Performance Chemicals Distribuidora Grafica Novaro S.A. DE CV Enercon Industries Corp. **ETI** Converting Equipment Flexoexport Ltd. Fujifilm Sericol USA Gallus Inc. **GEW EC Limited** Gidue S.p.A Green Bay Packaging Mexico S de R L de C. V Harper Corporation HP IGT Testing Systems By Industrial de Onformatica SA de CV Ist America J & J Converting Machines Keene Technology Inc (KTI) Kocher + Beck Latran Technologies Link Label Manter Mark Andy Martin Automatic Max Daetwyler de Mexico S.A de C.V MPS Systems Nazdar Nilpeter OMET SRL Paxar de Mexico Praxair Surface Technologies Inc. Provedora Flexografica Raflatac **RK** Print Rogers Corp. **Rotoflex International** Rotometrics Smag Graphique Sony Chemicals Stanford Products Stora Esno Stork México SA de CV Styers Equipment Company Tailored Solutions Inc. Wilson Manufacturing Co. Zeller & Gmelin Corp.

contribute to your business success?
Growth of digital label printing solution
New opportunities and applications Alexander Mercon, Latin American Sales Manager, HP Indigo

# 16.05-17.05 Flexibility for labels and packaging printing: interchangeable units-combination printing

Combination printing technology- the why, what and how?
 How to get the most cost-efficient operation out of your press?
 What are the key options for adding value?
 John Mitchell, Mark Andy
 Eduard Pont, Sales Director, OMET
 IBERICA
 Hans-Ramon Hofmann, Regional Sales
 Director, Gallus

#### Day Two- 24 May 2006

# 9.00-9.35 Production of shrink sleeves- review of the secondary printing process

• Observations on the global shrink sleeve market

The decision to enter the market - questions to ask yourself

 Technical evaluation of the secondary converting process
 Seamus Lafferty, President, Stanford
 Products

# 9.35-10.10 Adapting to changing standards in pressure sensitive labeling

Using PS paper labels in the beverage industry

Changing requirements in the prime label markets

 Alternate release liner technologies
 PS paper labels for the digital imaging and VIP printing markets

Joe Briganti, Business Innovation Manager, Stora Enso

#### 10.10-10.45 Future of smart/intelligent labels in Latin America

■ The case of RFID in Mexico – can you afford it?

■ What is the difference between smart, smart active and intelligent labels

 How to get started with manufacturing smart labels
 Raflatac

#### 11.15-11.50 Hear from the experts on how to make the most out of your UV inks on film and shrink-sleeve

What is new and innovative in flexo inks products?

Learn how to colour match Rick Duarte, Fujifilm Sericol

#### 11.50-12.35 Automation of inspection and control

 Current test and performance standards
 Press and process automation-why and how?

 Using data to enhance, increase performance and reduce waste Donald Pistilli, Sales Support Manager BST Promark
 Amir Dekel, Labels Marketing Manager, AVT

# 13.45-14.20 The very latest information on plate production advancements

Evaluate the new digital plate production

Delivering speed, image clarity and digital workflow

 How to achieve highest resolution and lowest dot gain on press
 Mario Alberto Vazquez Alcantara, Representante Tecnico Senior, MacDermid Printing Solutions

#### 14.20-14.55 High quality printing through anilox performance

Add-on options from foiling to overlaminating and embossing Eduardo Arellano, Technical Service Manager, Praxair

# 15.30-16.05 Which of the die-cut solutions is most suitable for your business?

Discover the importance of correct diecut selection

 Achieving top results with correct handling and storage
 Scott Philips, International Sales, Rotometrics

#### 16.05-16.40 Managing your revenue and spending- how to cost-effectively manufacture in a competitive environment

Learn how to manage and allocate each printing job cost

Assessing and managing waste Key to profitability Mike Fairley, Director of Strategic Development, Labels Group



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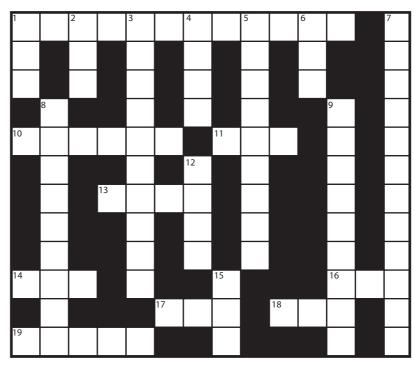
# If you can't complete this crossword...

#### DOWN

- 1 The individual element in the halftone printing process (3).
- 2 The contact point between two driven rollers (3).
- **3** The image transferred from the printing plate or cylinder to the label substrate (10).
- 4 Occurs when the adhesive squeezes out from under the backing in a pressure-sensitive laminate (4).
- 5 The process of raising a design or image above the label surface using a set of matched male and female dies (9).
- 6 Estimated time of arrival (3).
- 7 A set of characters or bars in a bar code which represents both alphabetic and numeric characters as well as symbols (12).
- 8 The areas of a printed image which are nearest to white (9).
- 9 Metal roller or drum that is cooled internally with water (5 and 4).
- 12 Abbreviation commonly used for capital letters (4).
- **15** Label placed inside the mold before a plastic bottle is blown (3).

#### ACROSS

- 1 A photoelectric instrument that measures reflected or transmitted light on colors or printed products (12).
- **10** A term used to describe various printing defects, such as spots or imperfections in the printing (6).
- 11 International Organisation for Standards (3).



- **13** The administration in the US Department of Labor that ensures a safe and healthy workplace (4).
- 14 The acronym or abbreviation used for primary colors of light (3).
- 16 A method of reading (scanning) printed text copy with software capable of

recognizing and converting the scanned images into an electronic equivalent (3).

- 17 Original equipment manufacturer (3).
- **18** Thickness measurement of thin materials used in some countries (3).
- 19 Material to be printed or converted. Also referred to as the substrate (5)

# ...you need this book

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# The digital debate

This year, more than 200 digital label presses will be installed, with even more predicted for 2007. Is the conventional press under threat? **James Quirk** reports from the BPIF debate between HP and Gallus

n the last issue of *Labels & Labeling*, industry expert Mike Fairley wrote that in 2005 digital label presses made up around 10 per cent of all narrow web presses installed around the world. The number of labels printed digitally on HP Indigo presses alone was up some 137 per cent on 2004. With these figures set to rise still further in 2006, press manufacturers HP Indigo and Gallus went head to head for a debate on the future of the label printing industry.

Members of the British Roll Label Association, a special interest group of the British Printing Industries Federation (BPIF), gathered at the headquarters of HP Indigo in Bracknell,

UK, to debate the motion, 'This house believes that the future of the label printing industry is digital'. The motion was proposed by Syd Roberts of HP and opposed by Wim Brunsting of joint-hosts Gallus. Steve Baker of UK-based Baker Labels seconded the motion, while Peter Mulvenny of Labelgraphics Ltd supported Gallus.

"Digital has already become an integral part of printing, and will continue to be so, we live in a digital age"

'Digital has already become an integral part of printing, and will continue to be so,' opened Syd Roberts of HP. 'We live in a digital age: with digital cameras, iPods and Blackberries now in common use.

'Benny Landa, the founder of Indigo, said back in 1993, the year that Indigo and Xeikon introduced the first digital press, that "everything that can become digital will, including printing".'

Roberts quoted research carried out by Mike Fairley, which stated that in 2007 7.5 billion labels will be produced digitally, and by 2010 ten per cent of all labels will be printed on digital presses.

'Sixty-three per cent of all print jobs are for less than 50,000 labels, which suits digital printing,' continued Roberts. 'Customers are saying that margins are greater than 40 per cent on shorter run jobs, and now you can print up to seven colors, with superb offset quality. A digital press can handle between ten and 15 jobs per shift.' Roberts quoted an experiment that HP carried out between digital and new and old flexo presses: 'For a four color, 500 meter job, the traditional press took two hours 54 minutes; the new technology press took one hour 39 minutes; and the digital press completed the job in 45 minutes.'

The experiment also carried out a longer job: four color and 1500 meters. 'This time the traditional press took three hours 20 minutes compared to the digital time of one hour forty three minutes,' he said.

Roberts was keen to point out that he did not see digital printing replacing conventional, rather complementing it.

> 'Today, digital is not a replacement print process; it sits alongside conventional printing as another option. Conventional presses are improving, and are competitive for runs longer than 1500 meters and specific jobs such as metallics. But digital is better for shorter runs, for consistency and ease of operation, and for labels that include added value such as personalization.'

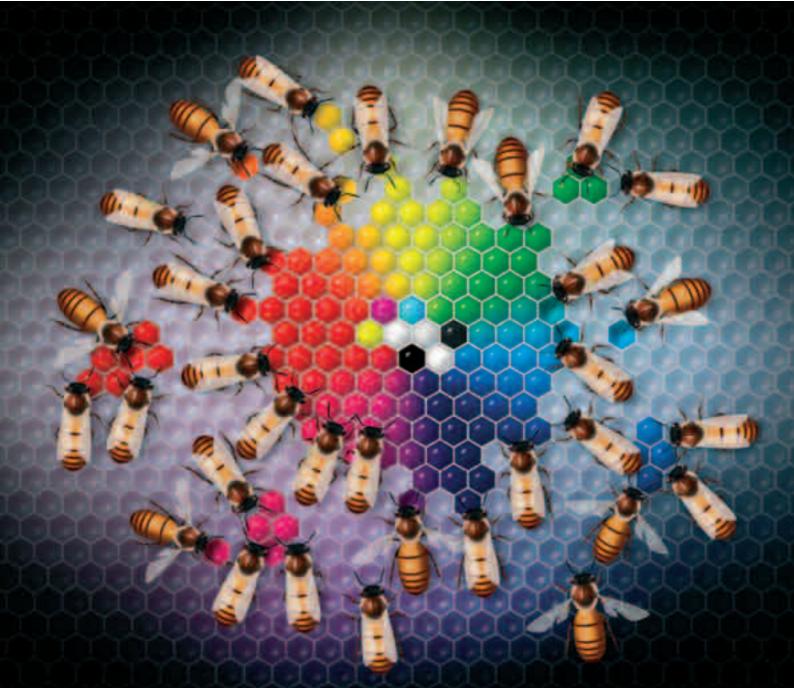
'Digital will increase by a factor of two in the near future. Fact,' claimed Roberts. 'But what more will conventional presses be able to achieve?'

'I say digital has already changed the future of the label printing industry with DTP, workflow and color management, computer to plate, and digital printing,' he concluded. 'HP is predicted to become the number one press supplier, which proves that the label industry sees the advantages in digital printing. It is already an accepted alternative printing process.'

Wim Brunsting, managing director of Gallus Group UK, took the stand to oppose the motion, and immediately claimed that the Gallus RCS 330 press was the answer to all Syd Robert's claims about digital printing.

'Gallus' RCS 330 is the only fully direct driven label printing machine – it can go from paper to film and back again,' he said.

The machine has new printing units for UV offset and UV rotogravure, so can now support six printing processes. 'We are



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Wim Brunsting of Gallus spoke in defense of conventional printing

already digital in many ways. Almost everything is digital on this press, except the printing plate,' said Brunsting. 'There is no main drive, no gear box, no line shaft, and no plate cylinder gears and bearers.'

Brunsting also emphasized the importance of being able to provide customized machines for different companies. 'Almost every machine we sell is bespoke,' he said.

'Since the start of digital printing, much has changed with conventional presses,' said Brunsting. 'Now we have servo drives and more press automation. We have the print quality of UV flexo, and the development of quick change-over concepts. There has also been continuous cost cutting.'

He continued: 'There needs to be an honest comparison of prices. Digital also has fixed costs: artwork still needs to be done, and waste is needed for finishing. Substrate costs for digital machines are considerably higher. Then there are maintenance and consumable costs.'

He argued that the two types of printing are not in fact comparable: 'Production capacity for digital is approximately ten per cent of conventional presses. You have to compare apples with apples.'

In response to Syd Roberts' claim that digital printing can complete ten to fifteen jobs a shift, Brunsting countered: 'It is now common to complete 10 jobs a shift on conventional. Why not opt for a greater level of production?'

'The future for label printing is certainly digital,' he concluded. 'But for now, and the short to mid term sector, digital has to develop into a "normal" technology. Until that moment, there's only one way to have a consistent and reliable production of labels and packaging – with a conventional press.'

The motion was seconded by Steve Baker of Baker Labels, a family run company since 1973. He told how Baker Labels

"Production capacity for digital is approximately ten per cent of conventional presses. 'You have to compare apples with apples'"

chose to become a digital printer because of 'the short run flexibility and consistent high quality'. Quick turn around times and color consistency were also factors, he said.

Peter Mulvenny of Label Graphics supported Gallus, but admitted he was willing to learn more about digital printing: 'I come to this debate with an open mind, as we want to work closely with both Gallus and HP. But for digital to compete with conventional, price is an issue,' he said. The motion was put to the floor, and those present at the debate, excluding the speakers, voted for or against. The motion lost by 11 votes to ten, in favor of conventional printing, although the greater presence of conventional printers over digital printers at the debate perhaps had an influence in the result.

While digital printing has been making massive progress in recent years, there can be no doubt that there is room for it to work alongside conventional printing. In the near future, it is more likely to complement conventional printing than replace it. Both HP and Gallus ultimately agreed that the long term future of the label printing industry would be digital, but the speed at which that happens will depend on improvement in both price and technology.

# Taking the mystery out of efficiency

Many converters are overlooking some easy steps to improve efficiency and increase productivity. **Sean Teufler** and **Alexander James**, Harper GraphicSolutions, look at standardizing processes before going to press

Great initiatives have been undertaken by printing companies with the purpose of improving productivity and reducing spoilage by increasing efficiency and implementing standardization. Typically, these programs are aimed only at the press and press area. Many of these programs are strong out of the gate and have the best of intentions because the need for this change is easily recognizable. The initiative often lacks the specific targets that lead to quantifiable success. Wanting to be more efficient in the printing process is not enough to get the job done effectively. Following through with some simple modifications throughout the whole workflow will demonstrate the results measurable in increased productivity and reduced spoilage. Focusing on the standardizing of processes on press without looking at all the inputs that influence success will eventually lead to failure.

The real focus needs to be on the key elements surrounding production by identifying outlying areas that require attention and getting some measurable results to track the progress. We intend to focus not on the press and the operator, the popular target for efficiency programs because that is where the outcome is expected, but on the inputs to the production department: ink, prepress, anilox management and plate mounting.

The ink department is an area that has a dramatic influence on the improvement of spoilage, production and time management. The purpose of any ink department is to manufacture or blend the ink by using corrected and consistent formulas based on the press, anilox volume, and type of substrate. Let's identify quantifiable signs of an inefficient ink "Focusing on the standardizing of processes on press without looking at all the inputs that influence success will eventually lead to failure"

department. Initially and most obvious will be the amount of on-press time required to match color and the setup material wasted in on-press proofing. This can be easily tracked and measured by downtime, wasted substrate and ink use or loss. What factors contributing to this problem would be apparent in this ink room setting? Poor ink formulas initiate a lot of onpress chemistry. Personnel must be able to accurately weigh ink and formulate according to application and anilox line screen and volume.

During the transition period to perfect formulas, additions to ink must be documented to help adjust the formula for the next time the particular color is needed on press. Each ink should be documented by anilox and volume. Ink room inputs can be double-checked as well. Incoming base ink inconsistencies can be controlled by checking via proofs that all base inks are of sufficient strength. Dispensing units do not guarantee that the bases are mixed properly by merely re-circulating the ink. Check the bottom of the drums with a stick for settled pigment,



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The importance of proper image resolution: the images are both the same size, but different resolutions

especially on colors that do not get used up quickly. Other factors can contribute to error on press. Contamination by mixing equipment from poor cleaning habits will cause tinting issues on light or bright colors. It is difficult to mask any contamination and becomes a real problem that may require a fresh batch of ink for replacement. Make sure inks are blended long enough for a proper mix before they get to press. Use proofing systems that imitate the inking system on press. Typically, this can be met with a functional bladed anilox proofer with specifications that correlate to the same line screen and volume on press.

Printable viscosities can be brought close to press operating values while preparation is taking place in the ink room. Training for ink personnel will address all of these issues and help promote standardization by getting the team to function together and follow the same methods. Develop a keen awareness and an understanding of how ink quality affects the most important element of the process: precious production time and material waste. This will go a long way towards guiding the pressroom to greater efficiency.

In the prepress department technology varies but fundamentals remain the same. Process controls and defined workflow is required to ensure consistency and efficiency. information never gets fully utilized. Information defining minimum dots, minimum fonts (Serif and San Serif), minimum line rules (positive and reverse), press gain, trap (overprint), grey scale balance, densitometric targets, L\*a\*b\* and L\*c\*h° are all relevant for defining what is achievable in a given environment.

Parameters for design, prepress, ink, anilox selection and press tolerances are all defined on a fingerprint. Based on that data a packet defining your company can be part of what you communicate to your vendors; design and prepress. Defining design specifications enables usage of a checklist as part of your workflow for every job your customers submit to you. In order to ensure the best possible result, a golden rule for every printer is to maintain a 2 to 1 ratio of image (raster) resolution to plate line screen. Think about it, by the time a design goes from the designer to printed product it very well could be up to five stages away from the original. Once jobs are entered into the prepress environment tolerances determined from the fingerprint should again be part of your workflow checklist.

Raster images and vector graphics should be checked for minimum dot and trap tolerances. All imaging devices should have a calibration schedule defined as part of the weekly workflow. Each device will experience a 'drift' and without

"All imaging devices should have a calibration schedule defined as part of the weekly workflow. Each device will experience a 'drift' and without recalibrating on a regular basis you will never be assured of consistent results"

Most companies will conduct a fingerprint and the prepress department will use the information to define compensation curve and colorimetric information. The data on every fingerprint is quite extensive; however, the majority of that recalibrating on a regular basis you will never be assured of consistent results. Film output for each job should to be monitored with a transmission densitometer. Regardless of which film thickness (4 mil or 7 mil) is use the d-max should be



A hand-proofer enables you to check inks before going to print

#### "Parameters for design, prepress, ink, anilox selection and press tolerances are all defined on a fingerprint"

checked for a reading of at least 3.5 to 4.0.

Depending on how your workflow is defined plating is either part of prepress or part of the production department. Regardless how plating is assigned workflow checks should be defined at this stage. Every brand of plates provides specifications for hardness of plates (shore A), overall plate, floor and relief thickness. Use that information as your benchmark when establishing tolerances in your given environment. Conduct exposure test on a regular schedule and with a plate micrometer monitor the floor and relief of your production plates.

Multiple measurements should be taken on every plate. Check for overall plate uniformity and once processed, check the relief and floor thickness. If your budget permits, use a plate measuring device as part of your workflow to verify that established tolerances are being met. Of course don't neglect the plate exposure and processor units. Abide by the recommended intervals for changing of the light bulbs and the washout solutions. The cost of changing bulbs is much less than the cost of press down time due to deficient plate exposure with worn supplies. Other aspects of the plate department revolve around the mechanical. The choice in plate cylinders greatly affects the printed results. Aluminum cylinders can be functional provided they are not scarred by razor blades from the need to cut printing plates and mounting tape. Each cut grows the circumference of the plate and will cause fit and registration troubles. Closely grouped cuts on the surface of the aluminum plate cylinder can cause the high spot to print before the rest of the image. Hardened ceramic cylinders are resistant to cuts and abrasions. They are also more effective for minimizing plate fit issues because they are not likely to change in circumference.

Fine registration requirements make it important that tight circumference tolerances be kept with the plate cylinders. Plate cylinder bearings are also often neglected and they need to be tested by simply spinning the plate cylinder on your extended fingers for narrow web or spinning the plate cylinder on a shaft and feeling for vibration and grinding. Plate cylinder gears are also in need of checking for teeth wear. Normal operations of the press will cause the wear that sharpens the teeth of the plate cylinder. This causes a contact problem

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between the plate cylinder gear and the impression roll gear. The results of the worn gear cause registration drift from poor gear-to-gear contact and gear bounce from gears bottoming out and teeth slap. Mounting tape choices cannot be overlooked. Various densities, closed and open cell configurations and adhesive release characteristics make for quite a selection. They are very critical to the results on press and the right type of cushioning for the plate application will be necessary to obtain print quality and maintain print consistency. Check with your suppliers and test the options.

Anilox management is an often neglected facet of the preproduction room environment. The reasons for this problem are easy to identify. It can be time consuming if not done properly by trained personnel. There also is a lack of appreciation for needing to understand how the volume of the anilox controls the ink film thickness. Each anilox, due to individual conditions of use over time can become unique in volume despite of the same line screen value. How does this problem get addressed? First, this type of undertaking requires ownership and control of the entire process by a few specialized individuals. Ownership and buy-in must also occur from any employee in direct contact with the anilox and its function.

Without ownership of the process, any ink or volume data will not be collected properly and therefore become invalid. Training can be addressed by your anilox supplier. They should have the technical resources available to help impart the knowledge required by your team. Anilox management can be easily defined. It consists of inventory control and standardization. Inventory control can be best approached through a thorough audit of the aniloxs and subsequent utilization of the data generated. Aniloxs must be cleaned and restored to the full potential volume to get accurate measurements for every audit. This data does not have to wind up unused in a folder, it can be given real-time responsibilities.

Information on roll condition, line screen and current volume can be installed on tags that travel with the anilox and can be updated when the time warrants another audit. This type of analysis and use of information is invaluable to the trained operator for proper anilox selection and ink technician for educated calculation of ink formulas. Audits without data utilization at press are a waste of valuable and pertinent information. Standardization is the best method to simplify the anilox inventory and make for a universally sound production environment.

Standardization is created from a thorough analysis of the pressroom anilox requirements, ink system capabilities and

"Defining your workflow in each input area and establishing checklists and standardization is the key to creating an efficient and consistent level of production"

current resolution goals. This analysis generates ideal anilox choices and volumes to meet the needs of production process. Banded rolls can be utilized to test parameters in the production environment. Banded rolls consist of various line screens and volumes to test the capability of current and test ink systems. Once the trends are documented and the capabilities are ascertained, standardization will optimize and revolutionize anilox management.

Often times all the emphasis for standardization and efficiency programs is directed towards the operators to improve their time management, spoilage and production. The operators, in most cases, are set up to fail in this environment because they are asked to influence or compensate what they cannot control. Identify where the downtime is spent and how much spoilage is generated during setup. Run times and lower productivity can also be attributed to having to work with compromised inputs from the ink department, prepress, plate department and anilox management.

Defining your workflow in each input area and establishing checklists and standardization is the key to creating an efficient and consistent level of production. The final stage of the improvement initiative would be to educate one's staff of support personnel on the importance of each stage and how they fit into the workflow. Too often individuals in various departments have no appreciation of how they contribute to the success or demise of every job on a daily basis. Once each department has been established and operated efficiently, it would be very beneficial to take the next step in the process. This is to take the time to walk an employee through the life cycle of a job. This procedure would consist of every department the job must pass through and what occurs at each of those stages. This fosters a greater appreciation of each department and builds greater team work ethic.



Round Table participants (L-R): Andy King, joint managing director, Shuttleworth; Paul Briggs, managing director, Mark Andy UK, Paul Thompson, product manager – Packaging and Labels Finishing Systems, Heidelberg UK; Clayton Sampson, joint managing director, UV Integration; Mike Fairley, director of strategic research, Tarsus; Andy Thomas, editor, Labels & Labeling; Paul Evans, Picon

# Round table

New ideas and an interesting take on problems confronting the labels industry came out of a round-table discussion between a group of label industry suppliers. **Andy Thomas** reports

t's not often we get the chance to take a morning out of a busy workday and discuss industry trends. When trade association PICON approached L&L to chair a round table discussion on technology developments in the labels industry, the first thought was... 'can I afford the time?' In fact, it proved to be a thoroughly enjoyable, stimulating and thoughtprovoking exercise, and one we might well repeat. As you will see from the following transcript, there was a free-flowing stream of ideas, reflections and predictions from a small group of people who all have extensive experience in developing technology for the wider labels industry. I have divided the round table into rough themes, although in reality the discussion flowed back and forth between them.

#### The participants:

- Chair: Andy Thomas, editor, Labels & Labeling Paul Briggs, managing director, Mark Andy UK Clayton Sampson, joint managing director, UV Integration
  - Paul Thompson, product manager Packaging and Labels Finishing Systems, Heidelberg UK Andy King, joint managing director, Shuttleworth Mike Fairley, director of strategic research, Tarsus

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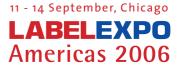
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#### Digitization and service – the new paradigm

**Paul Briggs (PB):** Just five years have seen more change than in the previous 15 years, because converters need to produce smaller quantities, just-in-time, for end users. The days when you could take half a day to set up and run for two days are gone. For the vast majority of label printers in Western Europe and North America, technology is all about speed of changeover and cost reduction using automation and sophisticated electronics. The future is for more digitally controlled machines which may be gearless and incorporate sleeve technology.

Machines should take as much routine work away from the operator as possible, so we can automate repeatable performance. Registration is automatic, repeat work can recall data from the previous run and within seconds the press is in the same configuration.

Of course, jobs are likely to change more quickly as products are taken off the shelf if they do not work. So you can't just put in the old data, but you should be able to get close to a sell-able label more quickly.

Andy King (AK): The big challenge is to integrate management information systems (MIS) into production, and Job Definition Format (JDF) is designed to do just that: to decrease overheads and speed the whole operation.

**Mike Fairley (MF):** Digitization of both machinery and inputs is the key trend. If you take digitized mechanical printing and digital printing, there is now not a lot of difference between the two. Digital die cutting at a suitable cost means that this mechanical process will also be digital. Digital servo drives means automation and presetting, and the whole industry will have to adopt common communications protocols.

**PB:** It's not just about machinery. Every component has to play a part and has to be supported, artwork, plates and consumables need to be incorporated into the workflow.

**AK:** JDF (connectivity) is already there for guillotines. The basics are there, and in the last few months the CIP4 committee has agreed a JDF standard for on-roll labels. These are very early days, and of course JDF equipped equipment still has to be brought to the market.

**PB:** People are wary of digital technology because it is not something you can easily identify where a problem may lie. There is a fear, they do not understand it. So you need to bring in a third party who you trust will. It's like the move from fax to email.

**AK:** IT should be a tool. There is a fear that IT could destroy the flexibility a company needs to operate effectively. This is a valid fear. ERP systems sometimes lack flexibility, and companies have to adapt to them, not vice versa. And people do resist change. But the

inflexibility of ERP is not the same as a graphic arts MIS which has a much smaller pain barrier. Label companies simply have to adopt process control. We need to educate our users in the techniques which have been successful outside the labels industry. **MF:** The better companies are now using use their MIS to manage their customers as well.

**AK**: Agreed. In the last two years, customer relationship management (CRM) packages have enabled our customers to manage their customers better. Everybody can buy the same kit, but we need to understand customers' needs far more closely.

**MF**: The big challenge for the future will be the integration and management of information and the concept of 'service'. 20 years ago you purchased a press and with two salesmen you could make good profits. But in the '80s and '90s with the development of digital pre-press technology and in-house platemaking, label printers were forced to split their investment between machinery and digital prepress. Today we have to spend as much money and time again on data management and servicing customers, so profits now have to go into three types of investment.

**PB**: Some printers are also moving into packaging fulfilment – applying labels onto the bottle then sending out a finished product

**MF**: Label buyers have a key role in cutting purchasing costs per label. Printers therefore need to talk to the brand manager, for example to suggest changes which will cut the overall applied label cost. One third of retailers' total cost is in the supply chain. The label converters which can work with end users to take costs out of the supply chain will grow

**PB:** Printers are now working inside their customers' operations and influencing the design of labels before the color separations stage. It is still not uncommon to see four spot colors running on a job because the customer dictates these must be solid colors.

**MF:** Facilities management is particularly interesting. Digital label printers are already considering putting in machines at their customers.

**AK:** MIS is about defining the job with the customer then effectively communicating that to our operation, so what we produce is right first time.

**PB:** Repeatability and consistent level of performance – you have to plan the workflow up to the press. As press manufacturers we are becoming more involved when a new factory is set up. For example, is the machinery laid out in a logical order? As companies expand there is a tendency for equipment to end up laid out in an inefficient manner. As press manufacturers, we too must offer better service. We can't just sell the press and disappear.

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#### "It's a mistake to think that any inks are FDA approved. There is no certification that solvent inks are approved for food contact either!"

**MF**: Internet communication and remote diagnostics is now a requirement because of the increased technology in the press. You can see if the servo is turning at the right speed etc. You can change things remotely – upload software. So the skillset of the operator will change, and young people are coming in who are fully computer-literate.

#### **Beyond pressure-sensitive**

**PB:** One way forward for converters is to look outside narrow web label markets into film, flexible packaging and other niches, and we need to supply the products which allow them to do it, not just in the narrow web arena. The wider web manufacturers are coming down in width and we are looking at wider web widths – from 20in to 32in and to 40in machines.

RFID is at the point where manufacturing costs are manageable to help end users track and trace. In the long term the components will be printed and RFID will come to individual items. We have already installed machines in the USA where people are inserting inlays.

**MF:** One quarter of all labels produced worldwide are now on filmic substrates with the emergence of new technologies like sleeving, cut&stack film, wraparound films and new PS films. Film overall has been growing 3-4 times the rate of paper for a few years. Sleeving is growing in popularity because one sleeve can replace maybe three PS labels and gives 360° decoration.

**PB:** Sleeves and flexible packaging are primarily produced wide web using solvent inks, gravure and flexo rather than UV at speeds of up to 400m/min. UV is now the dominant ink technology on narrow web presses being purchased in Europe. Fifteen years ago we sold our first fully UV-equipped press into the UK, and today a water-based press sale is a rarity.

**CS**: And there is no such thing as 'cold' UV or 'cool' UV for heat sensitive materials – it's just less stinking hot than normal UV. Heat sinks under the film or chill rolls do a better job of heat reduction than putting a water filter in front of the UV lamp. Water also filters out the UVC, which is the wavelength which 'closes' a substrate and stops the ink film surface becoming greasy. So you need more UV power to close the surface, which generates more heat!

Andy Thomas (AT): UV Inks are also an issue for food contact packaging.

**CS**: Free radical UV inks are a 'no-no' around food contact packaging and I don't know of any work pushing in that direction. It's a mistake to think that any inks are FDA approved. There is no certification that solvent inks are approved for food contact either! In reality it is the laminates which provide a total barrier to ink penetration.

**PB:** Mark Andy and UVT have been doing research with ink companies in the last 12 months on these issues.

#### **Label finishing**

**Paul Thompson (PT):** Our strategy is to increase the amount of in-process converting on larger format presses, some of which we already have in the smaller formats. We can now carry out die cutting in-line on a Speedmaster 52 on sheet sizes of 520 and 370mm, where makeready can be down to 3-5 minutes. On the Polar side of the business we are decreasing setting time and automating processes to increase labels productivity.

With the trend to shorter runs, a lot of work has been done in reducing makeready times of small format offset presses. Print speeds are now 15,000 sheets/hour (slightly slower with UV) engaged on a 52 cm format.

Another way of handling shorter runs is batching together ten prints on one composite sheet. This needs managing, because the next time you run the job, it's a new plate, because not all the same ten jobs will be run.

Security tagging and Braille is already there on the larger format machines and will come to the smaller format.

**MF**: What about Incorporating RFID on wet glue labels? It is feasible to put self-adhesive RFID inlays onto label sheets, but there are not the technologies to do it, because all current systems are for in-line webs. This would be particularly good for wines and spirits, as 36 per cent of these labels by volume are printed sheetfed.

**PB**: We see some sheetfed printers also installing rotary label presses.

**AK**: With an MIS you can help decide what goes onto sheets and what onto rolls. You create templates for different formats which can be adjusted as jobs come in. The trick is to manage information coming in, and we provide tools that allow users to place orders quickly into their workflow after receiving orders over the internet. We have one customer who uses a web interface which is constantly selling and automatically moves jobs to the correct production run. With JDF you can pass that information to the press to cut makeready time – all using the same piece of information. You don't have to keep creating different generations of data. One database and one source of information.

**PB:** It is also possible to go in-line from roll to finished cut&stack labels, with rotary die cut and in-line stacking. We have a customer in Dubai producing water bottle labels in-line at 120 meters/minute into a batcher-stacker. Also in Portugal we have customers die cutting and stacking in-mold labels in line.

**PT:** We have equipment to finish in-line. We can automate the press and equip guillotines with auto handling equipment through to the

**Picon** Picon is the independent business support organisation providing services and developing new strategies to serve the needs of the printing, publishing, papermaking and paper converting industries in the UK.

#### Machine guarding

An interesting discussion centered around CE marking for machinery. Here are a selection of comments:

**PB:** Customers are now required to make their own risk assessment on all equipment they install. Guarding has always been subject to intepretation

**PT:** It is still open to individual interpretation. Despite CE, we still have to go back to our German suppliers and say a piece of equipment is still deemed not safe by UK factory inspectors.

**PB:** In the past local factory inspectors influenced the guarding in each area of the country. We tried to get agreement from across the regions to accept the same guarding. Guards can sometimes be detrimental to operation of the machine, but we have to make the machines and the guards idiot-proof.

label punch. But is it always wise? You have to build in the facility to bypass it, because not everything requires in-line finishing. For example, you will need the option to move straight to the jog pile or re-orientate the press, and you then find you are not using half the system! But we do need to find ways to reduce multiple handling and work-in-progress.

**PB:** There may be a high makeready time for in-line finishing – around 20 minutes for the batcher/stacker, which works against you on short runs. So you need to match run lengths and delivery options together carefully to remain efficient in line.

**MF**: Sheetfed printers can also print cut&stack film, but have to deal with static and they are harder to die cut.

**PT:** Our Polar operations are looking to increase the range of substrates they can handle.

#### Inkjet

**CS:** Inkjet made big inroads into screen, and created new markets which were not traditional markets. Resolution will increase, costs will decrease and speeds increase, and then inkjet will become a real threat to flexo and then litho. Start-up companies won in the screen area and not necessarily traditional printing companies. These new companies simply bought in the new technology.

**PB:** Inkjet speed is not the issue. The Dotrix Spice engine runs at 24 meters/minute, and for short runs this is quite fast

enough. Resolution and fine type still has room for improvement. We took the decision that if you are going to move with the times, you must embrace digital, but it has to be in-line with standard equipment. No one process can do it all. For example you need flexo for solids or to match pantones. Foiling or other common in-line processes may also be required. Laser die cutting in-line is another exciting possibility. In 2004 we showed this configuration with butt splice and turret rewinding, and the press never stopped.

Laser die cutting requires no make ready so one job after another takes place with less than a meter of waste between each one. We printed and die cut ten different jobs without stopping the machine and each was removed from the press on individual rolls ready for despatch to the customer. Truly an integrated workflow!

**MF**: Inkjet hasn't really moved in terms of label industry installations since Drupa, although there is a lot of interest in the potential of inkjet for label production.

**CS:** The resolution of the heads is improving all the time. Xaar has new greyscale heads, and the latest Spectra heads are running at two meters/second and they are finally getting the resolution. Consumables hold UV inkjet back from being universally accepted. You have to stick with the supplier-approved inks or there is a danger you will block the heads. Originally Dotrix with Barco said the (Spice) UV ink technology should be licensed out to other manufacturers. But Agfa wanted to keep the technology proprietary.

**MF**: Digital inkjet has big potential. 200 digital presses will go into the labels industry this year, and next year 14 per cent of all narrow web presses will be digital, but these are from Xeikon and HP Indigo and not yet from inkjet. The narrow web industry is used to UV, but nobody is really developing the narrow web inkjet market for labels.

**CS:** I hear you should check out the new TruePress inkjet machine from Screen, which is printing at 250 ft/minute. Bear in mind also that over half of all inks produced last year by value were inkjet and color printing direct to the product with inkjet is in theory just a couple of months away – it can cope with a certain amount of roughness in the product surface.

**PB:** The goal of press manufacturers is to help our customers to make money, and we will integrate any technologies which give our customers an advantage. Inkjet is uppermost in our minds as far as digital is concerned.Karlville opens shrink sleeve R&D test center.



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### Karlville opens shrink sleeve R&D test center

Karlville Development, a manufacturer of converting machines for slitting, producing and applying shrink sleeves, has opened the doors to its new research and development test center, in Miami, Florida. Sales have doubled for Karlville over the past year, as more and more converters decide to exploit the opportunity from shrink.

Located near the company's headquarters in Miami, Florida, the center has slitting, seaming, inspecting and cutting equipment for the conversion of sleeves and then simulates application along a factory conveyer. The conveyer then leads the containers through a steam shrink system. The center represents an end-to-end testing environment for both converters and their end user customers. Karlville has created different configurations of the line, which can be manipulated to test empty and full bottles, cups, glass containers, aerosols and even square-shaped containers. Karlville vice president Raul Matos believes that the center's six-meter steam tunnel will be able to test over 80 per cent of the industry's possible applications.

'We believe that the converting part of shrink sleeves is only 20 per cent of the equation,' he says. 'This is a very complicated business with a lot of variables. The contents of the container, the inks and the material all react very differently. Nearly all products are custom-made.

'All of our customers are free to use the facility and do tests for end users. It's an opportunity for converters to offer even greater service to their customers. We want to help them to grow their business.'

The center is also open to materials and consumable suppliers that want to test new product combinations and end users that need to find a solution for new product launches. Matos explains that they have already had everyone from brewery beer masters, checking that the heat shrink process doesn't affect taste, to fish product companies measuring the effect of temperature on their anchovies.

'The shrink sleeve market is growing at between 15-20 per cent,' says Matos, 'and we think there is a huge potential for our flexo narrow web converters. Each converter already has a vast number of shrink sleeve prospects from their existing customer base. We are introducing a new smaller-sized applicator to the market that we are dedicating to narrow web converters, and they can profit from applying the sleeves to the container themselves. It's very exciting.'

The test center promises to be an invaluable resource for converters that are both experienced and new to the shrink sleeve market. 'It's like having your very own testing lab right on your doorstep,' says Matos.

# Film show

With the commissioning of a new coater at Virton, Belgium, OPP manufacturer ExxonMobil Chemical Films is looking to develop a new range of specialist labels and flexible packaging products. **Andy Thomas** looks at the company's European labels strategy

he opening of a new coater at ExxonMobil's Virton plant, marks a significant development in the company's European label films strategy.

Representing an investment of  $\in 25M$ , the new line is designed to coat a wide range of labels and flexible packaging materials, including OPP, polyester, oriented polyamide and oriented high density polyethylene.

The 3.3 meter-wide line is highly flexible, with a variable web width which enables it to produce short runs of niche filmic products in a wide variety of gauges. It uses mainly water-based coatings optimized for the full range of narrow and wide web printing technologies found in the labels and flexible packaging industries.

The flexibility of the Virton coater reflects a change in ExxonMobil's approach to the labels market, from a product/technology focus to a more integrated market segment approach.

This is driven by brand managers looking for product decoration solutions which cross the traditional boundaries of individual product categories. Mineral water for example, has seen a move from wet glue and cut & stack paper to a range of film decorating technologies including pressure sensitive, cut&stack, reel-fed wraparound, shrink and stretch sleeve labels.

According to ExxonMobil's representatives, the company aims to 'lead the supply of film into all categories where label usage is growing.' But if we take the labels market as a whole, the penetration of OPP is relatively small except for the niches of reel-fed wraparound and IML. So what is ExxonMobil's strategy to expand its presence in the labels sector?

#### **Pressure sensitive**

From the point of view of ExxonMobil's pressure sensitive (PSA) business, the Virton coater represents a serious commitment to the development of niche, value-added PSA products.

Today OPP accounts for less than 10 per cent by volume of PSA reels. But it is growing fast, driven by a number of factors, including:

- Continued replacement of paper in performance applications
- the growth of clear-on-clear labeling, especially for beer
- good growth in white PSA
- migration from sheetfed to UV flexo printing

There are many areas where OPP usage can expand further. Currently, OPP is not used on recyclable glass bottles, which cuts out a huge potential market in Europe. The reason? Caustic wash cannot penetrate the face material to dissolve the adhesive for clean removal of the labels. So ExxonMobil is actively supporting filmic PSA de-labeling opportunities.

And if beer moves into polyester bottles, OPP film labels could find a profitable niche. 'In this case OPP labels are better for recycling and for the product's image,' explains Mirek Tokaj, ExxonMobil marketing manager. 'We wait to see in which direction this dynamic market moves.'

Conformable PSA film is another area with huge potential for OPP growth. Currently, in applications such as personal care products where the label has to move in conformity with a flexible container, PE-based label films are dominant. However, PE films are harder to print and do not exhibit the clarity of OPP. Last year, L&L reported that Innovia launched a conformable OPP film. ExxonMobil developed its own product range at the same time.

In the longer term, replacement of paper could speed up dramatically if machinery capable of dispensing thinner PSA



substrates becomes available. Tarquin Crouch, ExxonMobil's labels market segment manager, estimates ExxonMobil could cut the thickness of filmic face stocks by half and make thinner filmic liners whilst still growing total OPP volumes at the expense of paper.

#### **Beyond PSA**

Outside PSA, ExxonMobil is looking at a wide range of opportunities to replace paper or alternative plastics technologies.

#### Reel-fed wraparound

ExxonMobil has established a strong position in reel-fed wraparound labels, and today over 90 per cent of this market is accounted for by OPP. Growth has been largely driven by carbonated beverages and mineral water, although this whole market is maturing.

The trend today is to differentiate through the use of shape and shrink labels. New technology allows converters to shape a reel-fed wraparound label by laser die-cutting one or two edges of the film, while ExxonMobil's ROSO (reel-fed roll-on/shrink-on) films offer a limited degree of shrink. ROSO has carved out its own niche in the dairy, soft drinks and aerosols market and to increase capacity ExxonMobil has outsourced production to Bimo. Current ROSO technology developments focus on increasing yield and shrink values.

#### Cut & stack wraparound

There has been a slow move to filmic labels in this market, but it remains dominated by paper. OPP today accounts for under five per cent of total volumes. While the bigger fmcg brands have moved to reel-fed wraparound technology – which is more efficient for higher volume requirements - cut & stack machines, which dispense cut labels from a magazine, are easy to maintain and relatively cheap, and remain popular with smaller brands.

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#### In-mold

Good growth continues in In-mold labeling (IML), where OPP now accounts for almost 80 per cent of volume usage. At Labelexpo Europe ExxonMobil launched a range of lower density clear and white IML films claimed to overcome the 'orange peel' effect often associated with OPP. 'We've now got a good product and are looking to take a significant part of this business,' says Tarquin Crouch. 'If we are to be seen as the major filmic label supplier we need to be in this segment.'

#### **Universal coatings?**

Since Ciba unveiled its Prime IT coating technology there has been much discussion as to whether universal coatings will eventually supersede today's wide range of specialist coating technologies. Certainly there is an increasing demand for universally printable films as printers wrestle with shorter runs of more complex, multi-process jobs, and as less experienced printers in developing markets look to print high quality labels.

'A universal printing surface is very difficult to achieve,' says Tarquin Crouch. As an example, ExxonMobil recently launched its 'Rhiza' OPP coating technology which is suitable for a wide range of printing technologies and addresses problems caused by mottling – uneven ink coverage which results in variations in color density during UV flexo printing. 'Rhiza coating helps eliminate mottling problems and changes the printability of the film,' says Crouch. 'It makes it more universally printable but still does not cover all decoration methods. That is a bit of a Holy Grail.'

#### Sleeve labels

Shrink sleeve labeling is the fastest growing labels segment, albeit from a low base, and is dominated by PVC, PET and OPS. ROSO is ExxonMobil's only offering that competes with this sector, and its penetration is limited by the restricted shrink characteristics of OPP.

But Mirek Tokaj says an OPP with the right shrink characteristics could challenge the dominance of current plastics technologies: 'PVC continues to be under pressure for environmental reasons, PET is too expensive and OPS labels on a polyester bottle can cause problems in recycling the valuable PET. So we will continue to work on developing higher shrink reel-fed wraparound products.'

Seen as a declining technology, stretch sleeves are not high on ExxonMobil's R&D priority list.

#### Wet glue (patch)

An interesting opportunity for enhancing a brand's image is the direct replacement of wet glue paper labels by OPP films.

Take beer as an example. ExxonMobil in the US has produced a rotary printable metalized beer label with a special absorbent



#### **Flexible packaging**

ExxonMobil has been tracking the growing trend to convert flexible packaging on narrow web presses. Mirek Tokaj, marketing manager, spells out the implications:

'The new Virton coater symbolizes the coming together of our labels and flexible packaging products. Some of our converter customers take both flexpack and labels films. Ice cream is a typical example of a segment that takes a mix of flexible packaging and labels.'

Tarquin Crouch agrees: 'As narrow web label presses get wider, from 330mm up to 700mm, so our printer base is becoming less specialized in just labels and we need to market our flexible packaging films to a new group of customers.'

Crouch points out that label printers looking to enter the flexible packaging arena need to be aware of the complex issues surrounding food contact approved UV inks. Nevertheless, it is a market segment ExxonMobil will look to grow.

layer which can be applied on standard wet glue machines, and a new offset printable version is being trialed in Europe

Even more interest is seen for a robust, clear, wet-glue film label that could be applied on the same applicator as paper labels, allowing brand managers to obtain a clear film effect without needing to invest in pressure-sensitive applicators.

This application represents a real challange for OPP development as it requires a material of excellent antistatic properties and a degree of water permeability or absorption. 'There are many more variables to control with wet glue films, including the surface characteristics of the bottle and the thickness of glue,' explains Tarquin Crouch. 'And because our wet glue film labels are thicker and more sophisticated than our rotary films, in order to achieve dispensability, this does impact their cost.'

The first applications of this labeling technique are starting to appear. ExxonMobil's 50LTG702 film is being used by printers and end users using high solids glues. Crouch sees a big opportunity for wet glue OPP labels in developing markets like Eastern Europe where marketeers want to achieve the sophisticated look of clear-on-clear PSA, but where acceptable standards are lower and wet glue applicators are the norm.

'In this case wet glue film is a good intermediate step to reel fed wraparound or PSA clear-on-clear labels,' says Crouch. 'However we are working to develop a robust solution that is fully fit for use.'

Wet glue OPP technology presents an opportunity for sheetfed label printers to compete in the clear label market, providing that their presses are equipped with anti-static attachments and die blade angles are changed to cut film. It would also be possible to produce wet glue film labels on an in-line press with a sheeter, providing they can be stacked in a format which can be loaded into a wet glue magazine. 'There is a requirement for rotary end-of-line finishing solutions for cut&stack and wet glue film applications which are not yet met by equipment capabilities,' says Tarquin Crouch.

#### Digital

ExxonMobil is reporting strong growth in all types of digitally-printable films – particularly films printed with conventional narrow web processes then overprinted with inkjet or thermal transfer.

HP Indigo's digital presses present something of a dilemma for ExxonMobil. The company currently sells three specially coated HP Indigo label films, and is evaluating the potential of the market.



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# Mated forms from Maryland

Hub Labels of Hagerstown has cornered a niche segment of the direct mail market with a proprietary process to mate forms on a Gallus press. **Katy Wight** reports

hile most converters are just beginning to think about diversifying, Hub Labels of Hagerstown, Maryland, has long been stretching the boundaries of pressure-sensitive into new applications and market segments. Although the company has a substantial presence in product identification, nearly half of its sales are for the direct mail market. On top of the usual pressure-sensitive prime labels, Hub converts an array of marketing materials such as decals, stickers, membership cards and constructions similar to post-it notes. Most recently, the company has developed some patent-pending technology for printing and mating forms that's set to be big business in the direct marketing world.

Hub Labels is 27 years old and today is managed by brothers Anton and Thomas Dahbura. The brothers' parents, Bud and Mary, founded the company after fleeing the civil war in El Salvador in the 1970s. They had already been running a label company in the Central American country, but sold their interests and moved to the US when the political situation became unstable. Hub's current location was purpose-built in 1985 and it has been through a series of expansions to handle the company's growth. It now has 140 employees working two shifts on 12 water-based Aquaflex presses, an HP Indigo ws1000, a Gallus 410, two 510s and two RCS 330s, all with UV curing.

'I had wanted a Gallus press for years,' says Thomas. 'We bought the first 410 in January 2002. Our customers were requiring higher quality and we needed to increase our capacity. We were only running water-based inks at the time and we couldn't consistently meet their demands. We needed to eliminate runtime errors, so we did some research, and we approached Gallus as they're right up the road in Philadelphia.' Investing in Gallus equipment didn't just mean a move from water-based to UV inks. Hub also gained the flexibility derived from servo-drive technology, enabling them to tackle everything from unsupported film to carton board on the same press. The company has used this technology as a launch-pad for its own technical developments – including its innovation with mated forms.

'A lot of our mated forms business came from our distributor on the west coast,' explains Thomas. 'We had a strong presence in California making mated forms for pharmacies – for example prescriptions with a pressure-sensitive section at the top, mated with a normal sheet of paper containing drug information or a letter. We would print both webs and initially we used hot melt glue to laminate them together, but when the customers started to switch from dot matrix to sheetfed laser to add variable data, the glue would get warm and ooze out. We switched to cold glue, but the whole process was still very slow to create and very complicated to set-up. You also needed extremely tight tolerances because essential information, such as warnings, had to get printed within designated boxes on the form and that is very difficult when you are dealing with two different sheets that sometimes move.'

Hub was approached by one of its direct mail customers to produce a combined letter and sticker set on the same page, so it began to experiment with different ways to make the forms.

'We couldn't manufacture one million parts fast enough on two webs,' says Anton, 'so, our plant manager did some experimenting and we sourced a special type of one-sided coated paper that we laminate the PS part to. The paper web is printed with the template of the letter on one half of the web width and coated with silicone on the other half. The PS roll is fed off the unwind, laminated to the paper and printed with sticker designs. The end user can then print their letter on one side of the page and they have the stickers as a gift on the other half, and you no longer need to marry them offline.'

Hub has retrofitted a Gallus EM510 for the process and it runs at around 250ft/min. The servodrives allow you to isolate different stations within the press for different functions. Unlike the pharmaceutical jobs, which were printed on web widths of around 12", these direct mail pieces are much bigger at around 20".



The Hub plant in Hagerstown, Maryland, has five Gallus presses

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'The modular characteristic of Gallus presses means that you can be flexible in terms of where you put the laminator, in relation to the number of colors that you need to print,' says Thomas. 'The laminator is on a rail. Some of our customers like us to print black graphics on the reverse side of the marketing piece, in which case we print the 'back' first and then turn it over. Many of our customers also find it very appealing to have some kind of printed message under the gift stickers, in which case, both sides of the paper are printed before lamination.

'The whole process and managing the tolerances is much simpler than the old style. Production has been running very smoothly and everyone wants to trial it. All of the tests are always successful. We are very confident with the process and have reached the point where we are happy to add hot stamping.'

Hub has been developing this process for about two years and has been marketing it slowly to existing customers, but Thomas believes that the

process has great potential. 'This makes sense for our direct mail customers,' he says. 'They see it and their eyes light up. It can mean a 20 per cent saving when you compare it to collating a letter and a sheet of labels. We are also reducing costs as we are able to buy offset grade materials and we are not locked into liner grade, which in turn can give us better graphics.'

Hub's direct mail business has been growing steadily between 25-30 per cent over the last six years and today it equates to 45 per cent of sales. Aside from direct mail, the company has built a solid reputation for leadership in quality and innovation for product identification labels. Hub has customers in the food, dairy, water, juice, meat, transportation and mailing industries.

Part of this success can be attributed to a close relationship with all of its suppliers. Hub acts as a consultant on strategic issues for Avery Dennison and has collaborated on many R&D projects with the company, as well as beta-testing equipment for other key vendors. 'We have certainly developed at Hub through our investment in state-of-the-art technology,' says Anton, 'and we have relied on our suppliers for their expertise. Knowing when to get into a market and being aggressive is crucial, but building relationships and being flexible are also key in the company's success.'

Hub is well positioned for growth. The company is committed to continuous improvement – whether through new technology investment or process improvement through lean manufacturing. Thomas and Anton Dahbura make a dynamic, young team, but they are also fortunate to benefit from the guidance of their father, Bud, who is still a driving force at the company.

'Our strategy is to continue with more organic growth. We want to take advantage of the Gallus technology and the capabilities that it gives us,' says Anton. 'The direct mail market is still a big opportunity for us. Everything is pushing towards PS in direct mail and it always tests well. The direct mail market in the US is very robust and many of the customers that we already work with have multiple suppliers, so there are definitely more opportunities.'



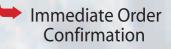
Thomas Dahbura handles all operations at Hub

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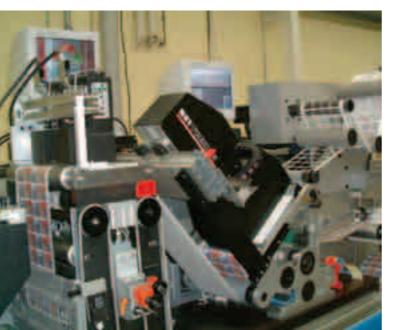
# Print inspection strategies

BST International general manager **John Thome** makes a comparison of print inspection strategies and technologies for label applications

or many years now video web inspection systems have been one of the fastest growing product categories in the label market. Tens of thousands of systems have been installed on label presses of all kinds, all over the world. And for good reason – they generate an immediate return on investment, a measurable impact on productivity, a reduction in waste and an improvement in print quality. And as the price points have fallen about 50 per cent over the last ten years, what were initially a good value are today a great value.

Package buyers and consumer product companies are putting pressure on suppliers for 100% inspection. They require defect free product, consistent print quality, scanable bar codes and correct and consistent color. Yet these same customers do not realize that 100% inspection is not always comprehensive print inspection and that by demanding 100% inspection they may be jeopardizing other critical quality attributes.

The technology used for print inspection of narrow web



applications is changing today, and changing fast. Video systems have morphed into intelligent active print management systems. These are on-press devices that have both visual inspection capabilities and various software modules which actively help the operator manage print quality. Such systems are extremely effective for defect detection, color monitoring, bar code verification and process management and continuous improvement.

At the same time, the process of defining the optimal quality control and/or inspection strategy has also become more complex. Major technological advancements and computer systems standardization and processing speeds have made 100% inspection a viable alternative. And break throughs in digital image processing power, shutter technology and digital camera technology have also allowed some pretty exciting new product alternatives for the narrow web market.

For example: it is possible today to inspect the entire print repeat area (up to 13" X 9") about every second and a half and perform in-line automatic detection of defects, active color monitoring and bar code verification — with no operator involvement other than the initial job set-up. The camera shown to the left uses a 4.2 mega pixel digital camera — critical to inspect such a large area and still be able to catch defects smaller than a pin head.

It is necessary to understand the differences between area scan (the core technology used in video and print process management systems) and line scan technology (the core technology used in 100% inspection systems). Each has strengths and weaknesses that must be carefully considered.

This camera system uses a 4.2 mega pixel digital camera which can detect tiny defects in large areas



Both area scan and line scan systems can identify a wide range of print defects, on press or on the rewinder. But they do not identify exactly the same kinds of defects or to the same degree

### Identification (quality control) or prevention (process management)

The first decision to be made is whether the quality management strategy is to inspect on press, on the re-winder, or both. This is an important strategic decision, as each will have implications on your entire operation and on your customers.

Inspection on press allows management of the print process at the source of the waste. In most instances, corrective action can be taken to eliminate or reduce waste and correct defects before they get out of hand. The objective is to manage the production process efficiently in order to prevent or minimize non-conforming or sub-standard quality.

That cannot be done on the re-winder. Inspection on the rewinder is strictly an 'identify and remove' quality control strategy. And there are clearly different levels – depending on whether the re-winder inspection is being done with humans or with automatic inspection equipment. The quality of the finished rolls will vary greatly with the quality of the inspection mechanism being used.

When evaluating which strategy fits your needs best, be sure to carefully consider the importance of your customers quality critical print attributes, the waste stream to be managed, and the specific print defects to be eliminated.

For example, if color is a quality critical print attribute for your customers, then an effective system on press to manage color should be a requirement. Without it, this one quality variable could cost you many customers.

Color can be very effectively monitored and managed on press using area scan inspection technology, while line scan inspection technology is not at all effective for color monitoring.

What about defect detection? Both area scan and line scan systems can identify a wide range of print defects, on press or on the re-winder. But they do not identify exactly the same kinds of defects or to the same degree. And while area scan systems do not inspect 100%, line scan systems have inherent limitations with machine speeds and extensible substrates.

Retailers such as Wal-Mart, Sears and Target levy large fines on suppliers who deliver packages or products with bar codes that will not scan in the store. On press Print Management systems are highly effective for monitoring and managing this quality attribute. This can also be done on the re-winder using laser bar code scanners. But line scan systems do not verify bar codes to ANSI/ISO specifications. Failure to have systems in place to verify bar codes on a consistent on-going basis throughout the entire run is the printer's equivalent of Russian Roulette.

In order to define the strategy, it will be necessary to consider your company's quality objectives, your customer's needs (quality, delivery, etc.), the legal needs of your product, the size and scope of the waste stream to eliminate or reduce, any inherent limitations in the presses being used and the potential impact on the overall operation from a change in strategy or inspection standard operating procedures.

#### Line scan or area scan technology?

There are three types of systems available today: video inspection, Print Process Management and 100% Inspection Systems. The first two use area scan camera technology and the last uses line scan camera technology. The two camera technologies are vastly different and each has pros and cons.

Area scan camera systems inspect one area (field of view) in each picture. Taking and processing a new picture takes 1-2 seconds. As web width and repeat length get larger, the time required to inspect the entire repeat area gets longer. This can be reduced significantly with the use of a very large field of view, but doing so requires a much higher resolution camera sufficient to provide the necessary detail.

Line scan camera systems scan across the web in one long line. There are a wide variety of systems available. For high quality print inspection, one camera is typically used for about

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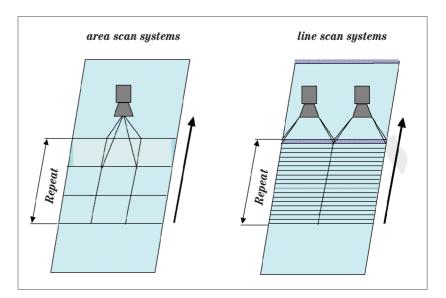
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#### Line Scan (100%) systems Strengths

- Inspect 100% of the material produced
- Effective for random defects
  - Bugs, hairs, web crease, splash
- Effective for repeating defects
  - Register, streaks, fill-in, missing print, hickeys
- Very effective for identification and sorting of good from bad material

every 200 mm (8") of web width, but this is not fixed. The camera resolution is fixed, so as a single camera is used for wider web widths, the result is a lower cross web resolution.

As web width increases so does cost, primarily because additional cameras are needed to yield sufficient cross web resolution. Cameras are available with 2096 or 4096 pixel resolution, and with 'color' cameras that display images of the web in color rather than black and white.

On the re-winder, 100% systems are a very real and viable inspection tool. Such systems are far more reliable than humans, more consistent in their evaluation of quality and far more accurate.

Using automatic 100% inspection systems on re-winders is quite effective for eliminating re-runs and returns, and that is where the payback will come from. 100% inspection on the re-winder will also help guarantee that only acceptable product goes to your customers, so it should have a very positive effect on customer satisfaction.

But do not expect a 100% inspection system on the re-winder to reduce waste. It is more likely that the more comprehensive inspection will result in an increase in overall waste. When considered in the bigger picture – in light of overall waste, re-runs, and returns – there may or may not be a net reduction.

On press, 100% inspection (line scan) systems have minimal advantages over area scan systems. They inspect all the material, are very effective for random defects, most (but not all) are effective at identifying repeating defects and most (but not all) are effective for identifying gradually developing defects.

As an on-press print management tool, the disadvantages far outweigh the advantages for most applications. On press, line scan technology can be dangerous as it lulls you into a false sense of security. It is normal to think that 100% inspection means all bases are being covered.



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#### Line Scan (100%) systems

#### Weakness

- Very press speed sensitive
- Smaller the defect to be identified, slower the machine must run
   Ineffective for color or color related defects
  - Color, haze
- Some are ineffective at identifying small, gradually developing defects
   Register shift, slow color shift
- Cannot verify bar codes to ISO/ANSI standards
- Ineffective as a process management tool
  - Lower productivity
  - Increased waste
- Likely that the time and effort for down stream web processing will increase
- No viewing capability or image magnification
- Not useable during job start-up or make-ready

#### Area scan (sampling) systems Strengths

- Very effective for trend identification and in-line process management
  - Color
  - Bar codes
  - Repeating defects
  - Integrated register pre-setting
- Faster reaction
- Mean time to correction of defects is shorter
- Very effective viewing capability and image magnification
- Useful during job start-up or make-ready

#### Area Scan (sampling) systems Weakness

- Do not inspect 100% of the material
- Cannot identify random defects

All line scan systems are inherently speed limited. This has two consequences: (1) the faster the machine speed, the larger the defect must be before the camera will see it, and (2) if the press is run too fast, the effect is that of turning off the inspection system altogether.

It is also important to know that most 100% inspection systems do not work well with extensible substrates, and most 100% inspection systems are not capable of identifying gradually developing defects such as register shift, haze and streaks. Using such a system on a narrow web press could be catastrophic.

More importantly, line scan technology cannot measure and monitor color to any degree acceptable for a printing operation. The technology simply is not suitable for color monitoring. If the strategy is to have 100% inspection on press, and color is a customer critical, there will also need to be a separate system or device for monitoring and managing color.

The same holds true for bar codes. Some line scan cameras can 'read' bar codes, but none of them can verify bar codes to ANSI/ISO standards.

Another important consideration when looking at line scan systems is user friendliness. Some are so simple they require almost no operator training to use. But others were designed by engineers that paid no attention to user friendliness, and take a rocket scientist with four degrees to operate.

In the end, 100% systems are great for identifying defects, but they are not as effective for managing print quality and preventing waste during the production process. Line scan technology is simply not capable of managing quality critical print attributes to the same extent as area scan technology.

On press they will often produce lower productivity, as operators chase every little

#### Comparison of print process management tools on press

|   | Video<br>inspection<br>systems | Process Mgt.<br>systems | 100%<br>Real Time<br>inspection |
|---|--------------------------------|-------------------------|---------------------------------|
| Effective for<br>missing print          | Good                           | Good to<br>excellent    | Excellent                       |
| Effective for<br>hickeys                | Good                           | Good to<br>excellent    | Excellent                       |
| Effective for print-to-die              | Very<br>good                   | Good to<br>excellent    | Excellent                       |
| Effective<br>for haze<br>identification | Very<br>good                   | Good to<br>excellent    | Good to poor                    |

#### Comparison of print process management tools on press

|   | Video<br>inspection<br>systems | Process Mgt.<br>systems              | 100%<br>Real Time<br>inspection            |
|---|--------------------------------|--------------------------------------|--|
| Learning curve<br>and ease of use       | Fast very easy                 | Varies greatly<br>with the<br>system | Varies greatly<br>with the<br>system       |
| Amount of web<br>inspection             | Small but<br>effective         | 1% to 30%                            | 100%                                       |
| Degree of detail<br>inspected           | Very good                      | Very good                            | Depends on web<br>width and press<br>speed |
| Mean time to<br>correction of<br>errors | Fast                           | Very fast                            | Fast                                       |

defect. And because they are so effective at finding 'every little thing', it is also common for down stream web processing time and costs to increase.

In contrast, area scan systems have only two shortcomings – they do not find random defects and they do not inspect 100% of the material. But they are highly effective on press for color monitoring. They will verify bar codes to ANSI/ISO standards. They will find just about every kind of defect any press can produce. They can even set register on CI Flexo presses. And they are extremely useful for viewing and magnifying the web to access print quality.

To better determine which type of system is best for your needs, consider the five tables provided on this and the following pages. They compare the effectiveness of video, print process and 100% inspection devices on 22 critical attributes, all of which must be considered in the evaluation and determination of a proper and effective print quality management strategy.

### Following are characteristics that are important for effective print process management:

- Systematic the device must provide systematic management of quality critical print attributes color, defects, register, bar codes, etc.
- Every converter needs to know precisely what the quality critical print variables are

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for their customers. They should be prioritized and each should also be quantified as to their importance to the customer.

■ Continuous – the system must inspect the entire print repeat area on a repetitive basis, within a relatively short period of time, or perform 100% inspection of the material produced.

Viewing Capability – to be a practical tool for the operator, the system must include some means to see what is being printed and to visually look at any area of the repeat with at least 20 X magnification.

Start-to-Stop – the tool must be available for use by the operator from make-ready to the end of the job.

• Operator Friendly – if it is not intuitive and easy to use it will not be used. Even worse is that it is 'dummied down'. Example: 'Brand A' claims to be easy to use, but more often than not, the operators turn the defect detection settings so low that they have turned defect detection off.

Optimize Quality – one characteristic that distinguishes these systems from visual systems is their intelligence. They can actively help the operator manage the print process and monitor corrective action. I often explain to lead operators that they should look at defect detection, color monitoring and bar code verification as 'a crew of three' - one dedicated to managing print defects, one dedicated to monitoring color and one dedicated to guaranteeing that the bar codes will scan in the store.

Comprehensive – the system must provide a comprehensive attack on the waste stream Making inspection decisions without a proper waste stream analysis is not recommended. Quantify which kind of defects you are commonly experiencing and the degree.

Accountable – as with any good system, it must be accountable, providing both report output and audit trails.

#### **Conclusions**

Defining an effective and efficient quality management policy is no longer a simple process. One must be prepared to: (1) clearly define quality control and print management objectives (2) analyze and quantify the waste stream and (3) fully understand the strengths and limitations of the two technologies on the market. Only with such a comprehensive approach can an inspection strategy be defined that will accomplish the necessary objectives.

As one might imagine, in the future there will be an ever increasing number of printing presses with both 100% line scan and print process management systems. For converters or print suppliers who wish to optimize productivity on the press, eliminate re-runs and returns and deliver only acceptable product to their customers – a video web inspection system or a Print Process Management System on press and a 100% inspection system on the re-winder is also a very viable solution.

#### Comparison of print process management tools on press

|  | Video<br>inspection<br>systems | Process Mgt.<br>systems | 100%<br>Real Time<br>inspection |
|--|--------------------------------|-------------------------|---------------------------------|
| Effectiveness as<br>job start-up<br>tools          | Excellent                      | Excellent               | None                            |
| Overall viewing<br>capabilities                    | Excellent                      | Excellent               | None                            |
| Magnification<br>(ability to see<br>print details) | Excellent                      | Excellent               | None                            |
| Functionality for<br>viewing colour<br>problems    | Excellent                      | Excellent               | None                            |

#### Comparison of print process management tools on press

|  | Video<br>inspection<br>systems | Process Mgt.<br>systems | 100%<br>Real Time<br>inspection |
|--|--------------------------------|-------------------------|---------------------------------|
| Effective for colour Mgt                   | Good                           | Excellent               | Poor                            |
| Effective<br>bar code<br>verification      | Poor                           | Excellent               | Poor                            |
| Effective<br>@ registration<br>monitoring  | Good                           | Excellent               | Excellent                       |
| Effective<br>@ registration<br>pre-setting | No                             | Excellent               | No                              |
| Effective for<br>identifying<br>streaks    | Good                           | Excellent               | Good                            |
| Effective for random defects               | Poor                           | Poor                    | Excellent                       |

#### Comparison of print process management tools on press

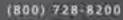
|  | Video<br>inspection<br>systems | Process Mgt.<br>systems | 100%<br>Real Time<br>inspection |
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| Functionality for<br>viewing colour<br>problems    | Excellent                      | Excellent               | None                            |

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# Intercoat takes value road

Following a strategy of value added – and not competing on commodity products – Intercoat had its best Labelexpo ever, with a raft of new products now hitting the market.

Andy Thomas reports

ntercoat had its best-ever Labelexpo in Brussels last September, and today business is good: the German pressuresensitive specialist has its coating machines working at full capacity, and is now thinking of investing in new capacity.

The company's current success follows a complete overhaul of its strategy, as sales director Tony Harman explains: 'The team before us made the mistake of trying to buy business from its competitors, which damages the whole market and pulls down the market price.'

In addition, Harman says that Intercoat had lost touch with its end users' requirements. 'In the past we've failed because we have not supplied the right material. Now we acknowledge that we need to understand the application environment, container surface, how flexible or liable to shrinkage is the container, how aggressive the product being packed, any aggressive gases in the storage area and so on.'

As a measure of the new team's commitment to this goal, at least 95 per cent of Intercoat's current R&D is working on bespoke, customer-related projects. 'We don't want to attack Avery Dennison and Raflatac in the mass product market any longer,' says Tony Harman.

Another thrust of the company's strategy is to drive efficiency through the business to avoid having to pass on to converters the full weight of recent raw materials and service price increases. Intercoat now produces master (jumbo) label rolls in one standard width, and not in a range of widths. 'The purpose is to reduce downtime due to constant format/shift changeovers and so reduce the cost of production and supply chain management,' says Harman. 'A new software system allows advance planning of our production cycle, and coupled with an intensive study of our fast moving products we are now able to produce and place in stock jumbo rolls to reduce delivery times, whilst maintaining some level of flexibility for the Express orders we have come to expect.'

Such a strategy can only work if the complete supply chain is re-engineered: 'It needs not only a comprehensive dynamic forecast model, but also a close relationship with our customers and partners around the world, to assure there will be no worsening of pricing or delivery lead times. This demands compromise from all parties.'

"At least 95 per cent of R&D is working on bespoke projects. We don't want to attack Avery Dennison and Raflatac in the mass product market any longer" "Intercoat's biggest selling product line today is its clear-on-clear labels, and this was a key focus for new products introduced at Labelexpo"

Intercoat sells its products direct only in Germany. It has distributors across the globe with Strategic Partners situated in France, the UK, South Africa, Greece and Russia and its own subsidiary in Spain. 'There are huge opportunities for growth in Eastern Europe, and especially Poland,' says Tony Harman.

Intercoat's biggest selling product line today is its clear-onclear labels, and this was a key focus for new products introduced at Labelexpo. P6H is a new adhesive developed exclusively for clear-on-clear labels, incorporating a high shear construction which reduces adhesive bleeding.

Adhesive bleeding is caused by a wide range of parameters which begin during the lamination process and continue into converting and through to label application. When adhesive bleeds out of the roll, layers of film stick together, thus affecting web tension on the press. Adhesive sticks to the rollers and adhesive-free areas can be created on the label.

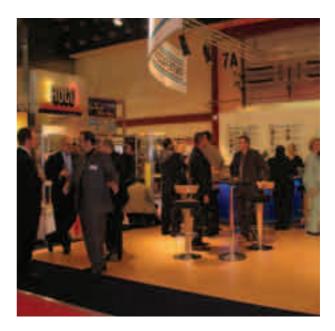
Intercoat claims that P6H 'significantly reduces' bleeding. 'Its high elastic qualities result in a cleaner cut during slitting and also reduce wear and tear on the cutting knives,' says Tony Harman. Laboratory test analyses show the sheer qualities are double that of Intercoat's standard acrylic adhesive.

Monomers are used in the construction of P6H to ensure a high level of transparency, and like all Intercoat adhesives, it is water based, and fulfils standard industry

recommendations concerning contact with food substances. The company also puts a primer coat on all its films rather than corona treating, which can become unstable after a few months.

The launch of the P6H adhesive was accompanied by the first showing of new 40 and 30 micron grades of BOPP clearon-clear labels.

Another new product launched at Labelexpo Europe was a  $60 \text{ g/m}^2$  high-density glassine liner for improved die-cutting and faster label dispensing speeds. K6D glassine paper is



produced using Steam-Box technology, which allows a uniform distribution of the paper fibers in the machine as well as in the cross direction during the production process, leading to a smaller deviation of paper grammage. High densified paper wood cell with very long fibres is used, which cross link in the machine direction. The reduced thickness of the HD paper allows a good die-cuttability due to the lower compressibility of the paper. These properties allow the use of lower die-cutting pressure.

The die-cuttability of the K6D paper was tested by Intercoat with two rotary die-cutting machines from Gallus and Kocher + Beck, with a similar result to the company's 85 micron polyethylene film. The K6D papers are also claimed to exhibit a high degree of transparency, while the lower grammage allows more labels per square meters.

K6D was tested on a Krones Autocol-APS2 applicator at a labeling speed of 40,000 labels/hour, and no tears were observed.

The use of pure cellulose material means the K6D paper is resistant against yellowing, while better oil absorption allows optimal siliconizing and a stable release value, according to Intercoat.

The company has also expanded its range of digital printing substrates targeted at the HP Indigo ws 4000 and 5000 series presses, introducing a new range of PE films which were recently accredited by HP Indigo. Previously Intercoat sold only PVCs coated for the HP Indigo machines. A PP film will follow shortly.

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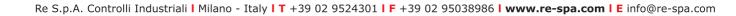
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# Heartland invests in roll automation

Heartland Label Printers of Little Chute, Wisconsin, has become a globally competitive player after installing Martin butt splicer systems on its label presses

eartland Label Printers makes stock and custom printed direct thermal labels for the weigh scale, bar code and compliance labeling markets, and production manager John Wojcik was looking for ways to track cost, cut waste, and improve profit margins. An obvious target was material waste. 'About 60 per cent of our cost is in the substrate,'says Wojcik, 'so controlling substrate waste is always an issue.'

At the time, the Lean Manufacturing philosophy of increased efficiency and reduced waste was beginning to spread throughout the industry, and automatic roll change was one component. The conventional wisdom stated that automatic roll change had value in long run applications, but was impractical for the label business – and likely not worth the significant investment.

Wojcik remained unconvinced. 'The way I see it, a roll change is a roll change,' Wojcik explained. 'Short run or long, you have the same down time and the same waste with every change.'

After a careful analysis of Heartland's business, Martin Automatic developed a projection showing annual cost savings of approximately \$60,000 ( $\in$ 48,000) achieved through waste and downtime reduction. The ROI analysis proposed the installation of a Martin butt splicer system. By Martin's estimation, this could eliminate two hours of downtime and around a mile (1500m) of wasted substrate – caused each day by 21 roll changes on Heartland's 13' (330mm) press.

Despite the fact that the Martin equipment was at the top of any price listing, Wojcik took the plunge and installed a Martin MBS-05-16-40 butt splicer on his 13" Mark Andy press, and began to track the results.

'It has turned out that Martin's savings estimates were actually a little conservative, 'says Wojcik.



According to Craig Thomson, marketing manager for Martin Automatic, that was no accident. 'Managing expectations is important,' Thomson cautions. 'We prefer to take a conservative approach to ROI analysis, so if there are any surprises, they are pleasant ones.'

A close check was kept on savings versus investment costs, and the result was a very attractive return on investment. The improvements are not only financial, however. 'We have improved throughput, raised productivity, and improved quality,' Wojcik enthuses, 'and the presses run smoother with the Martin equipment. The operators do not have to worry about when the roll is going to need changing, production is now continuous.'

Wojcik finally ordered four Martin automatic roll change systems. 'We're certainly pleased with the quick ROI, but this was a decision made for the longer term,' says Wojcik. 'It is an investment that will add value for years to come, and positions us for the future. Higher margins equal increased flexibility and a competitive edge. That, more than anything, will help guarantee a future for Heartland.'

# **Durable film opportunity**

A joint development program between narrow web inks specialist Xsys and Valéron Strength films has opened exciting new opportunities for printers/converters of durable film labelstock

he problems of added time and cost incurred by narrowweb converters who have to outsource expensive print-receptive surface coatings for films, or undertake the specialist process themselves, could be at an end – thanks to a new inline primer system jointly developed by durable film manufacturers Valéron Strength Films and narrow-web ink manufacturers XSYS Print Solutions. The new system means that reel-to-reel printers can now produce durable labels on truly high-specification substrates – without the need for offline preparation of the substrate by laying down a printreceptive topcoating offline. This is an interesting development in the world of narrow web print, expanding converters' opportunities to enter the high-margin niche market for durable film tags, labels, and similar products for rugged and technical applications.

Petri Ven, business and market development manager for Valéron Strength Films, says: 'While our films have been perceived as the most durable choice, there has been some resistance in the web printing market to buying a product which requires surface processing prior to printing. This can be costly, and it also extends the time required for delivery of the printed items. In today's competitive label and tag market, the added cost of heavy coatings or fillers to the cost of the film substrate, plus an additional and specialized machine pass (often off-site), have to a certain extent limited Valéron Strength Films to premium uses, where performance rather than price is the prime driver. This ground-breaking new inline primer system — which partners XSYS Print Solutions' industry-standard Flexocure Gemini UV flexo inks perfectly is about to change all that, I believe.'

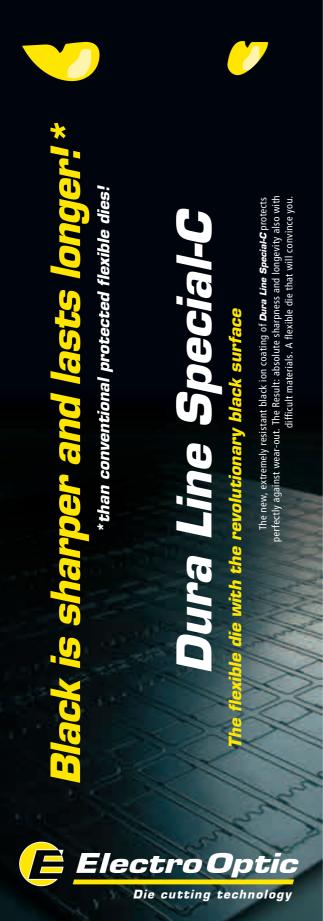
The XSYS Print Solutions inline primer UVT00100-408 – applied on press, inline, on one standard print station – performs all the functions previously required of offline specialty coatings and fillers to make the print on Valéron Strength Films as durable as the films themselves. Adhesion of the printed image to the film's surface is said to be outstanding. Scratch resistance, as well as water, chemical, and UV resistance, are high. The printed image passes all the industry-standard TESA tape tests, and Valéron's own in-house tests have proved that it also withstands high-pressure cleaning with a water jet at 100 bars without damage. Overall, the combination of Valéron Strength Films with this new XSYS Print Solutions inline primer together offer higher durability than the unprimed films themselves. It is also a more environmentally-friendly solution than surface fillers and offline coatings.

Niklas Olsson, global brand manager, XSYS Print Solutions, says: 'Valéron films benefit from their extremely high-energy surface, so although they are corona-treated when they leave the factory, we advise converters to corona-treat once again before printing. Corona treatment refreshes surface energy, helps vaporize any possible surface contaminants such as film additives or plasticizers, and etches the film's surface.

'However, once the new primer is applied to the substrate, UV flexo printing with our Flexocure Gemini inks, and any required subsequent overlamination or varnishing, proceed in a perfectly normal manner. The printed result is visually appealing, with bright graphics, high-definition text and barcodes, and a gloss finish.

'Technically speaking, what the new primer brings is an optimal combination of UV monomers and resins to give the right surface tension and good ink wet-out qualities. Our expertise with UV flexo ink developments has helped us, working with Valéron, to develop a 'cocktail' of monomer, binder, and photo-initiator for the unique properties of their films, to deliver good cure response and through-cure. This minimizes shrinkage – essential for high-specification durable print. Both the primer and Flexocure Gemini inks offer a lowodour solution, too, which is desirable for medical disposables and similar products.

'Perhaps, from the converter's point of view, the most significant feature of this new development is the opportunity to offer customers the established market-leading durable films without the added cost of offline pre-treatment. Our new inline primer really brings significant savings in time and money – and will certainly help converters to take new business by adding value and shortening delivery times in the very competitive durable labels field.'



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### **TLMI honors management excellence**

Select US converters were rewarded for their management excellence at the TLMI annual converter meeting

our converter member companies of the Tag & Label Manufacturers Institute (TLMI), were awarded the prestigious TLMI Award for Management Excellence at the institute's 2006 converter meeting, held in Half Moon Bay, CA. Awards are given in four categories, based on annual sales volume and those honored included Stixon Labels, Albuquerque, New Mexico; LGInternational, Portland, Oregon; Consolidated Label Co., Longwood, Florida; and Belmark, Inc., DePere, Wisconsin.

Stixon Labels won for the second consecutive year in the small company category, with annual sales of less than \$6 million. Company vice president and TLMI board member Julie Chavez accepted the award: 'When TLMI president Frank Sablone called to notify us that we had received the Eugene Singer Award, we were thrilled and honored. Receiving the award last year was a high point in the history of Stixon Labels. Being recognized a second year in a row shows that the hard work and dedication of our team really does pay off.

'The member benefits of TLMI, such as the Management Ratio Study, the Quarterly Trends Reports, the Wage and Labor Study, and the Technical Conference, are invaluable and have aided us in achieving these results,' she added. 'Spending time with other converters and suppliers in various forums has been educational and the camaraderie will last a lifetime.'

LGInternational returned as a winning company in the midrange category, with sales between \$6-15 million, for the first time since 1996. The company previously won four consecutive years, from 1993 to 1996. Founder and CEO Lon Martin gives praise to his son, Mike, who has been President of the company for the past four years: 'How sweet it is to hand off the baton to someone you love and respect, and see them succeed in the business world.'

Consolidated Label won for the fourth consecutive year, for the second time in the medium company category, with sales from \$15-35 million.

'Consolidated Label had a very strong year in 2005, keeping the momentum going from 2004,' said company President Joel Carmany. 'Our employee base grew significantly and they all worked very hard to make it a great year. We thank our employees and customers very much for their continued support.'

Belmark won for the eighth year, this time in the large company category with sales greater than 35 million.

'On behalf of all our employees, president Karl Schmidt and I are absolutely delighted to learn that we won the 2005 Eugene Singer Award for the Large Company category,' says founder and chairman Bruce Bell. 'Our industry is growing in both size and skill, so winning this award among all the participating good companies in the TLMI is both an honor and greatly appreciated.

'We continue to praise our customers, vendors and employees for making this award possible. It is only through their loyal commitment that we are able to even qualify for this recognition



Winners of the Eugene Singer Award: (left to right) Joel Carmany, Consolidated Label, Longwood, Florida; Bruce bell, Belmark, DePere, Wisconsin; TLMI president Scott Pilsbury; Julie Chavez, Stixon Labels, Albuquerque, New Mexico; and Mike Martin,

among our business peers. Our thanks go to the TLMI membership and our industry for selecting Belmark as this year's winner.'

#### **TLMI world label winners**

Nine members of the TLMI were also awarded World Label Association Awards at the converter meeting. In the contest, winners from individual label competitions held by TLMI, the Japanese Federation of Label Printers (JFLP), FINAT, which represents European label converters, and LATMA which represents Australian label converters, are judged against one another in a variety of categories to determine the world's best labels.

First-place winners were: National Label Company in the flexo line category for its 'OneTouch GluccoTouch 25'' label; Banta Specialty Converting in the flexo line & screen/tone category for its 'Briggs & Stratton Power Products 5550 Watts' label; TAPP Technologies Inc. in the offset wine & spirits category for its 'Oliver Vineyard & Winery 2004 Gewurztraminer' label; Multi-Color Corporation in the flexo cosmetics category for its 'Olay Total Effects Wet Cleansing Cloths' label; Collotype Labels in the combination printing line category for its 'Prendville Reserve' label; and McDowell Label in the tag (any process) category for its 'Hempz Shelf Talker' entry.

Honorable-mention winners were: Kimballs Pack Inc. in the letterpress line & screen/tone category for its 'LECIT-E Capsule Vitamen' label; Valley Forge Tape & Label Co. Inc. in the flexo wine & spirits category for its 'VO 1.75 litres Direct Marketing Label'; and The Kennedy Group in the coupon label category for its 'White Caps and Berlin Raceway PowerAd Booklets' label.



# **Gravure leads the way**

The best gravure converters in packaging and labels were honored at the 2006 PLGA Global Print Quality Awards

Since going global last year, attendees at the Packaging and Label Gravure Association (PLGA Global) Operational Conference have grown by 25 per cent. More than 250 converters, brand owners and suppliers attended the conference in Miami, Florida, entitled 'Gravure leads the way'. Attendees viewed case studies from gravure buyers, heard about new technical developments and also learned about print process improvement. The success of the conference was a fitting tribute to PLGA executive director Bill Klein, who has decided to retire from his position at the association.

The highlight of the meeting was the 2006 PLGA Global Print Quality Awards Program. This year there was a total of 103 entries, with 17 entries for the International Print Quality Awards. Avery Dennison Security Printing Division stole the Best of Show award with its Ben Franklin Commemorative stamp collection and many other label printers were rewarded for their work. Here is a selection of the label-related product winners:

### Functional

Winner: AD-620 (RFID), Avery Dennison Security Printing Division

### **Stamps**

Honorable Mention: Let's Dance Bailemos, American Packaging Corporation Winner: Ben Franklin Commemorative, Avery Dennison Security Printing Division



### Use of non-solvent ink

Winner: Henry Weinhard's Classic Dark, Inland Label & Marketing Services

### Non PSA Labels/Wraps: Paper-top coated

**Winner:** Presidente – Cerveza Tipo Piilsener, Editorial Padilla, Dominican Republic

Film surface printed

**Winner:** Crystal Springs, Editorial Padilla, Dominican Republic

### Sleeves/tubes:

Reverse printed Honorable Mention: All Small & Mighty, Fort Dearborn Company Reverse printed Winner: Mega Moose, SleeveCo, Inc. Heat shrinkable – less than 12 per cent Winner: Thomas Kinkade, Fort Dearborn Company Heat shrinkable – more than 13 per cent Honorable Mention: Hellmann's – Half The Fat Sauce, Fort Dearborn Company Heat shrinkable – more than 13 per cent Honorable Mention: Baja Rosa, SleeveCo, Inc Heat shrinkable – more than 13 per cent Winner: Fancy Feast, Alcoa Flexible Packaging

### Non PSA labels/wraps:

Paper-top coated Winner: Black Horse, Inland Label & Marketing Services Film reverse printed Winner: Aquafina Flavor Splash, Diversapack In mold label-paper Winner: Tide-Clean Breeze Detergent, Multi-Color Corporation In mold label-film Winner: Purex-Lavender Fresh Detergent, Multi-Color Corporation

### Heat transfer label

Honorable mention: American Chopper Big Gulp, Multi-Color Corporation Honorable Mention: Pfizer Strongid C Feed, Smurfit-Stone, DI-NA-CAL Label Group Winner: Dulux Wallguard Paint, Smurfit-Stone, DI-NA-CAL Label Group

### **Glue applied label**

Winner: Arizona Diet, Inland Label & Marketing Services PSA labels: No label look

Winner: Heineken, Spear

Avery Dennison Security Printing Division won Best of Show with its Ben Franklin Commemorative stamps (right) and Spear of Mason, Ohio won an award for its no-label-look pressure-sensitive Heineken beer label





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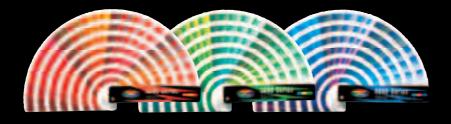


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### "The presses just run smoother with Martin equipment."

Heartland's production manager, John Wojcik, was looking for ways to track cost, cut waste, and improve profit margins. "About 60% of our cost is in the substrate," says Wojcik, "so controlling substrate waste was an issue. Martin Automatic, worked with us to reduce our waste and increase our overall productivity. They analyzed our needs, made recommendations, and projected a very attractive yet conservative ROI on their solution."

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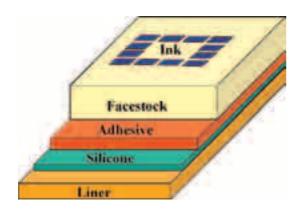
# Finding the balance

**Loretta Jones,** associate pressure sensitive industry scientist, Dow Corning Corporation, looks at PS cost reduction factors related to silicone release

### The role of silicone in pressure sensitive products

Silicone release coatings are used to protect pressure sensitive adhesives during manufacture, storage and handling and to release sticky materials. In labeling applications, the silicone release coating is applied to a disposable liner, which is paired with an adhesive-coated facestock to create a pressure sensitive laminate (Figure 1).

### Figure 1. The pressure sensitive laminate.



### Factors influencing silicone release coating selection

Multiple factors influence the selection of an appropriate release coating technology for labeling. What type, size and shape of label will be used? What substrate or surface will the label be adhered to? Will the label be permanent or removable? And is point-of-sale impact a consideration?

Label requirements affect and are, in turn, affected by technical requirements related to material choices, processing and converting. Non-technical requirements, such as cost, global supply and environmental and regulatory factors also influence release coating selection.

One underlying constant is the need to reduce costs across the entire supply chain, without sacrificing performance. The best way to achieve that goal is through cost optimization.

### **Cost optimization trends**

Cost optimization involves more than price. It requires finding the best possible balance among complex cost, productivity and end-use performance issues related to processing, raw materials, release coating chemistry and regulatory compliance.

Today's cost optimization trends center on increasing production speeds, reducing energy cost through the use of lowtemperature-curing coatings, reducing silicone coat weight and the use of lower-cost and down-gauged substrates. Lower costin-use is the constant underlying theme.

#### **Processing/coating**

Along with the drive to reduce costs, the requirements for pot life, cure speed, silicone coverage and coating line speed must also be accommodated. The need for fast cure must be balanced with the need for good coverage, and the need for faster line speeds with the need to control silicone mist.

Release liner manufacturers are applying the silicone coating at increasingly faster line speeds, but there are limits to how fast a coating can cure without reducing pot life and impairing coverage. The faster the coating speed, the more challenging it becomes to control the fine silicone mist that forms at the coating head.

In response, new crosslinker additives have been developed that are capable of delivering 95 per cent mist reduction at high line speeds. A silicone coating from Dow Corning employing this mistreduction technology recently demonstrated a record-breaking 1,600 meter/minute coating speed at Kroenert/BMB in Europe with no loss in coverage or cure and no visible silicone mist.

Another way of reducing costs is to reduce silicone coat weight. Unfortunately, this can affect coverage, especially with more porous papers. Coat weight also impacts release performance. Lower silicone coat weight has the potential to expose paper fibers to adhesive, which can result in tighter release, loss of subsequent adhesive properties, unstable release and, in some cases, degradation of the silicone/paper interface by chemicals in the adhesive. In many cases, the perceived cost savings in reduced silicone usage is offset by increased quality issues and complaints.

#### **Converting/dispensing**

In converting and dispensing, labels are die cut, and the matrix (surrounding unwanted facestock) is stripped away. The individual rows of labels are then slit, rolled and finally dispensed. Just as coating line speeds are increasing, so are converting and dispensing speeds.

Labelers today expect 100% error-free labeling at speeds as high as 1,000 hits per minute. This requires total release force control. If the release force profile of the cured coating is too low



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Wahl GmbH Buchenteich 1 D-73773 Aichwald Tel. +49 (0)711/361365 Fax +49 (0)711/364693 info@gsb-wahl.de www.gsb-wahl.de at the required line speed, the label will lift away from the liner at the wrong time. If the release force is too high, the label will remain stuck to the liner when it should not.

Increased converting and dispensing speeds generally require easier release across the full range of peel speeds. Consequently, new polymer architectures have been developed to improve high-speed converting. These architectures allow for smooth release across all peel speeds and reduce 'zippiness', an important factor for filmic labels, especially where a no-label look is desired.

### **Raw Materials**

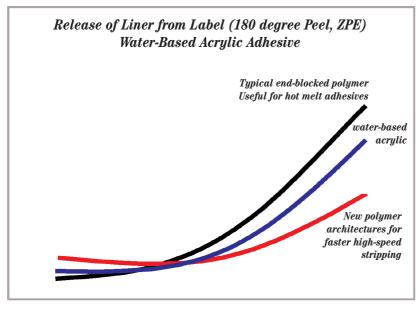
Paper/pulp, machinery, energy, adhesives and release coatings are becoming increasingly more costly to produce and to purchase. Consequently, there is a push to optimize every aspect of raw material use.

#### Liners

In response to the need for lower coat weights and less costly papers, release liner technology is changing. Recent improvements include liners with greater smoothness, better caliper control, higher yield and improved silicone hold-out. There is also a move toward down-gauging (the use of lower basis-weight papers). Interest in filmic liners, such as PET, OPP and PE, has also grown.

Smoother papers with better holdout allow lower silicone coat weight, but they often employ surface treatments that can negatively impact silicone anchorage. These issues affect polymer selection, crosslinker selection (which has an impact on cure) and catalyst requirements.

### Figure 2. Release force profiles of solventless silicone polymers.



Peel Speed, log m/min

The use of lower basis-weight papers reduces paper costs. However, it also changes the angle of peel, which raises release force. Lower-release silicones and less use of release modifiers are required to compensate.

Filmic substrates have excellent smoothness and holdout, which enable lower coat weights; but cure of temperature-sensitive films and anchorage to untreated, low-cost films can be problematic.

UV-curing silicone systems were introduced to meet low-temperature cure

requirements. However, due to customer preferences and limited release-control options, thermally curing silicone release coating systems were sought that could be used to coat many different types and grades of films — from temperaturesensitive polyolefins to low-cost unprimed polyester.

One such system available from Dow Corning (Syl-Off 9100 Series) offers base coating, crosslinker, catalyst and additive choices that can be combined to create the optimal balance of anchorage, line speed and release for various films and end-use applications.

#### Adhesives

Pressure sensitive adhesive suppliers are modifying their formulations to reduce raw material costs, often without realizing how these modifications can affect the silicone release coating. Adhesives must be chosen with care due to the potential for chemical interaction with the silicone. The silicone has the potential to react with the adhesive, causing blocking. Conversely, solvents or surfactants in the adhesive can physically attack and damage the silicone, impairing anchorage and leading to silicone rub-off.

#### Silicone release coatings

Two issues that impact the costoptimization of silicone release coatings are: 1) the global shift away from solventbased coatings toward more regulatory compliant solventless, 100% silicone coatings, and 2) rising silicone coating raw materials costs.

Solventless coatings require higher coat weights than solvent-based coatings to achieve the same coverage, and anchorage may be more difficult to achieve without the use of an anchorage additive. Solventless coatings also offer a narrower range of release values than solvent-based coatings, although release force modifiers are available.

Like other pressure sensitive industry materials suppliers, the silicone release coating industry has been challenged by rising raw materials costs. Silicon metal prices have continued to increase strongly since June 2001. Methanol prices are constantly rising, and natural gas costs have more than doubled since 2004. But the most troubling increase has been in the price of platinum metal.

Of the nearly 25 billion square meters of release liners and films coated globally, more than 80 per cent contain coatings catalyzed by platinum metal. Unfortunately, the cost of platinum on the global commodity exchange has risen sharply in recent years (Figure 3), making it the raw material that most significantly impacts release coating cost.

Currently, the most effective way to reduce release coating costs is to reduce the platinum content in the coating formulation. One way to accomplish this is to reduce the inhibitor level along with platinum level. This is not possible with all formulations, due to the potential impact on cure. Eventually, the point is reached where the coating demonstrates fast cure, but has no bath life. Automated mixing systems can help, but they must be online with small nip-fed delivery.

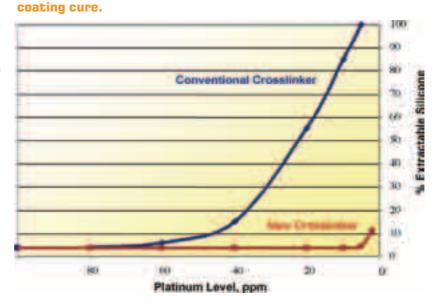
As an alternative, Dow Corning developed a low-platinum, cost-control solution that minimizes the need for processing or release performance compromises. Syl-Off Advantage Series features a selection of base polymers and crosslinkers with proprietary architectures that enable significantly lower platinum usage: 20-80 ppm vs. the 100-150 ppm conventional systems require. (See Figure 4.) The system also includes a choice of release modifiers and catalysts. Two inhibitor choices enable users to meet differing needs for low-temperature cure vs. longer thin-film bath stability in hot, highspeed processing operations. This 'toolbox' approach enables flexible control of cure characteristics, release profile and costs.

### Ongoing challenges for silicone release coating producers

To help pressure sensitive manufacturers and converters gain market share over other decorative methods like direct printing, shrink sleeves and wrap-around labels, silicone suppliers must do more than reduce their prices. They must help customers drive down their total costs, while creating value through technical innovation, services and



Figure 4. Impact of platinum level on silicone release



solutions. This requires the supplier to maintain a level of profitability that supports continuous innovation. This can best be accomplished by developing and strengthening strategic cooperation between customers and co-suppliers, including adhesive and substrate manufacturers.

Information about recent innovations in the pressure sensitive industry from Dow Corning in the areas of film-coating and platinum reduction is available at www.dowcorning.com/psi or you can send an inquiry to

paper.industry@dowcorning.com.

Figure 3. The evolving price of platinum metal, 1992-2006.







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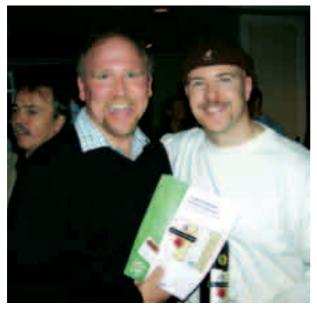
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## **Avery hosts wine industry**

Avery Dennison hosted a wine tasting event at the 2006 Unified Wine Symposium in Sacramento, California. Vineyard owners and label converters were given an opportunity to sample North America's finest wines – and admire their labels. A number of converters' work was showcased and Avery Dennison was able to promote its extensive range of wine label substrates



Don Wright (left) of Wright Labels, North Carolina, admires a wine label convertered by John McDowell of McDowell Label and Screen Printing, Dallas, Texas (right)



(from left to right) Thomas Deegan, regional sales manager, WS Packaging Group and Sal Caravello, senior account executive, WS Packaging Group



Brian Uhlin, senior sales engineer; business development team, York Label; James Taylor, senior account manager, York Label; and Christopher Harris, vice president of sales and marketing, York Label



The Landmark Label team from Milpitas, California: (from left to right) Sherry Heyman, Ken Wickman, Doug Smith and Nicole True

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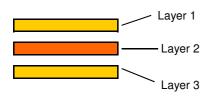
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# Taking trial and error out of RFID

What does it take to land an RFID contract with the US Department of Defense? Lowry Computer Products knows the secret. **Katy Wight** reports



President Mike Lowry with a sample from the company's RFID hardware line

was one of the pioneers of the early barcode industry. Today, the company is using its vast experience of data collection systems, software and label converting, to position itself as a leading integrator and supplier of radio frequency identification (RFID) solutions. The company offers a unique turnkey solution to customers, supplying every aspect of the RFID value chain from labels to printers, encoders, software integration with ERP systems, consulting and training.

Lowry Computer Products' president Mike Lowry is excited about the transition from UPC to EPC.

Both he and the company have a technical, electronics-based background, and RFID is a perfect fit in the high-tech realm where Lowry Computer Products' expertise lies.

Mike Lowry's father founded Lowry and Associates, a manufacturer's rep company, in 1974 and two years later Mike joined the company. Around the same time, they were approached with an opportunity to get into the computer peripherals business supplying industrial printers, displays, storage products and data communication for the manufacturing, supply chain and distribution business. In 1978 Mike Lowry took over the company, divested the rep business and got involved in the barcode scene.

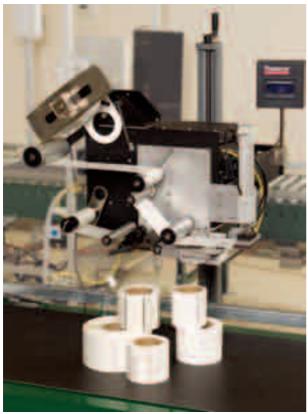
'The Midwest was the epicenter for emerging standards in the barcode field and we got to work with many of the founders. Marsh Groceries of Troy, Ohio, read the very first barcode on Wrigley's chewing gum, which is interesting because gum is probably the last thing that will be labeled with RFID.'

Lowry Computer Products saw robust growth over the next few years, and computer peripherals still accounted for over half of the company's revenue. However, the focus of the peripherals market seemed to be shifting away from Lowry's core competency in the industrial segment to personal computers, and in 1986 Mike Lowry made the bold decision to exit the market and concentrate solely on data collection. The decision paid off and the data collection business grew from \$8 to 20 million between 1986-1990.

'At the same time we decided to provide additional services to our customers, such as linking software into ERP platforms, as well as installing hardware,' explains Mike Lowry. 'Prior to that we didn't remarket any labels. I wish that I had recognized the potential from labels in the 1970s, but they were low-tech to us and we didn't realize the sales opportunity. In the 1990s we began looking for ways to generate more revenue. We got into a joint manufacturing deal in 1990 and in 1992 we purchased our first label converting operation, Data Recall in Northern California.'

The acquisition was a strategic move and expanded Lowry's mid-west

### {SMART LABELS infinite possibilities



Lowry manufactures its own line of print-and-apply printers and applicators

regional presence to the west coast, enabling the company to offer direct label manufacturing. Lowry bought four regional bar code firms, of which two were converters, in the early 1990s, and today all of its manufacturing is consolidated in White Bear Lake, Minnesota. The company also manufactures its own printand-apply printers and applicators, switching the business model from a 100 per cent re-marketer, to a 60 per cent share for Lowry's own hardware, software, labels and services.

'In automatic identification and data capture (AIDC), some converters have tried to move into the technology space, but most of them have remained predominantly converters,' says Mike Lowry. 'One aspect that makes us unique is the fact that most people in AIDC don't have as large a services component, and we are completely devoted to AIDC.'

Lowry's label converting business includes, blank, custom and stock labels, color flexo, variable pre-printed with serialization and RFID.

'We are anticipating strong growth with the emergence of RFID/EPC,' says Lowry. 'We are in a unique competitive advantage to supply to those customers. If a customer needs a printer, then he needs labels – and we sell thousands of printers

#### Yields – filling the gap

Lowry Computer Products produces RFID labels by inserting dry inlays and relaminating the web. The labels are read during the conversion and also on the finishing equipment and bad tags are marked for removal. A custombuilt offline edit and replace system replaces bad tags with good tags to ensure that the company only ships 100 per cent working tags.

'Yields are improving from inlay suppliers,' says Mike Lowry, 'and I am feeling very confident that we'll be closer to standard yields. We're approaching 95-97 per cent. When we started out in 2004, yields were in the 60 per cent range, but the gap keeps on closing.'

every year. We are at the point of purchase and our technicians maintain over 40,000 devices already, so we understand all of the unique needs of our customers and the environments that they work in. We know what it's like to label in a frozen turkey factory!'

Lowry's experience of implementing solutions in harsh environmental working conditions has enabled the company to win big business, including from the Department of Defense (DoD).

The DoD supply chain is unique in its size, demand is relatively unpredictable and distribution centers can be sand lots in the desert surrounded by razor wire – plus supplies may be transported above deck on ships which is particularly demanding. Lowry Computer Products is taking the challenge in its stride and isn't phased by issues that RFID implementation has thrown up.

'In the barcode industry we have seen all of these issues before – read rates, where to position the label,' explains Mike Lowry. 'People forget today that we had the same issues 25 years ago and they take it for granted because it was all solved by the label and computer industry. For example, trying to put adhesives through thermal transfer printers was a problem – nobody realizes how far we have come. I couldn't be more excited about RFID. Labels are now moving into my core competency – now we're talking about programming and memory. Our business has come full circle after 30 years.'

A small number of converters in the US are dominating the RFID landscape – partly because they offer services that go way beyond the manufacturing of labels. Lowry Computer Products leads the client all the way through compliance to integration with an ERP system.

'There is the 'pilot' way of doing things, which is based on trial and error, but doesn't give you a great deal of confidence because there is no scientific support. Ship me a pallet of your product



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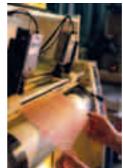
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Lowry can advise on all aspects of the value chain, including inlay and labeling choices

and we'll test and recommend the best RFID labels, placement, reader and we will give you scientific reports for each step and advise what you need to invest in for a pilot. We have custom software that will find the 'sweet spot' on the package and we can give the client autocad drawings. End users can't afford to invest in this kind of lab equipment.

'Then taking into account the amount of information that you need on the tag and the write speed, we can work out your performance and calculate when you are going to need to change rolls and how many ribbons you will need. We can provide a modest desktop system right through to the high speed Paragon print-encode-and-apply system. We will also recommend applicators and we can provide exact performance criteria. The diagnosis of problems for RFID is different and it's not like barcodes, because you can't physically see problems with radio waves versus the printed bar code symbologies. We should be able to predict tag performance through our documented handbook of scientific tests, at our client's site and at their customers'.'

A big believer in formal training, Mike Lowry has had two of the company's VPs trained in OTA Training's RFID curriculum to teach and train members of its staff and clients to pass the new CompTIA RFID certification test. All sales and field engineers have been through the course and the rest of the company will be certified before the end of 2006. Mike is also on the Board of Directors of AIM US and AIM Global, and is also a member of EPC Global. It's obvious that he and the company are committed to the advancement of the technology.

'My gut feeling is that item-level tagging will occur first where you see EAS installed today, for example on high-cost items in Best Buy, but you won't see it in grocery stores yet,' says Lowry. 'In the future RFID will have enhanced capabilities – things that we would never even have thought of. It will assist, not only in track and trace, but also combine with biometrics for security applications. It is a technology that has come at the right time for the world and for the economy.'

### Mike Lowry outlines the recent significant issues in RFID:

■ The highest cost of an RFID tag will be the antenna and chip. When Avery Dennison announced an inlay priced at 0.79 cents, it was what the consumers were waiting for. Standard inlays had been between 19-30 cents and more complex ones are even higher priced. This will drive adoption forward.

■ We are expecting to see the emergence of 'winning' inlays. At the moment only the Impinj Gen 2 silicone is widely available, but Philips and TI should be following with products soon.

Antennas are still etched although we are seeing a move away from copper to aluminum, but there are still environmental issues that need to be resolved concerning the end of a tag's life

■ There are also issues around the development of 'strap' attachment as Avery Dennison holds a patent. Many people aren't aware of IP and regulatory issues in the RFID space.

### The benefit of Gen2

'We needed to establish read rate criteria at certain points in the supply chain,' says Mike Lowry. 'With the sunset on class 1 and the move into Gen2, I think that they will just dust off the performance read rates for barcodes. We are just waiting for the technology to mature.'

Gen2 is the first agreed standard between users and technical providers. The new standard aims to increase interoperability between readers, add more memory and increase read and write speeds. It has greater security and encryption capabilities and can read multiple tags at one time, while avoiding collision in dense reader modes.

'Now we have a standard, people can concentrate on developing best practices rather than protocol. The industry will now focus on applications, such as making 'robust' chips for harsh environments,' he says.







## Systems integration broadens RFID horizons

**Simon King,** director, Integrated Solutions Group, Domino Printing Sciences, reflects on RFID World, where systems integration and partnerships were among the hot topics

his year's RFID World in Dallas had one unmistakable lesson for those of us involved in global supply chains – namely, that RFID is but one part of a multi-strand approach to developing 100%-secure solutions to track and trace products.

The RFID industry has, as it were, raised its eyes from the immediate issues that have preoccupied it recently – for example, refining the technology, or meeting the compliance requirements of retailers and pharmaceutical regulators – and recognized the enormous opportunities provided in the broader industrial and commercial world.

Although RFID World was still 'RFID-centric', there was much talk of systems integration, turnkey solutions, plug-and-play applications and partnerships. This is gratifying to those of us in Domino's Integrated Solutions Group, which is predicated on the belief that RFID will best fulfil its potential when it is combined with coding and traceability systems based on internationally-recognised alpha/numeric and 2D solutions such as barcodes. In our view, the building-blocks of the evolving global supply chain will be such inter-operable, interchangeable data-carriers that meet global compliance regulations. While in some sectors its impact will be considerable because it creates quite new ways of doing things, in most cases it is an enabling technology that enhances some existing solutions but – crucially – depends on existing technologies to fulfil its own potential. In other words, RFID is a team player.

As more industries investigate and understand RFID, more and more permutations of potential supply chain models are possible. Some customers will need electronic 'chains of custody' that track-and-trace product as far as the retailer (some as far as the consumer); others – automotive manufacturers, for example – currently see advantage in 'closed loop' applications that improve their own internal asset tracking or work in progress. But all will certainly want to know which of their existing systems they can retain, which they have to replace, and what it's best to replace it with.

In this scenario, systems integration holds the key to the immediate future, and because no single vendor possesses all the expertise in all the technologies, partnership is the name of the game. The recent agreement between Domino and Systech International is a good example: it brings together Domino's expertise in coding and marking technologies and Systech's track-and-trace know-how, combining support for coding formats ranging from bar code and Data Matrix to RFID with in-line verification and tag reading capabilities, failsafe data and product tracking control. The pharmaceutical manufacturers who are its main market get a comprehensive end-to-end solution to combat counterfeit product and potentially increase patient safety.

#### Capture, move, read

Essentially, the key requirement in any coding and traceability system is to capture, move and read the data, and some technologies do this better than others in certain supply chains, or at different points in the supply chain. As we see it, production-to-distribution-to-consumption supply chains will be built around a core of software packages that will generate and manage the numbers and associated data (date, time, lot, production, time, location, and so on). At some stage of the process, a device of some kind will create a data carrier – by marking or coding the product, or writing an RFID tag; the nature of the data carrier will depend on various requirements, and at different stages there may well be different solutions, sometimes printed, sometimes an RFID tag. As the software develops and customers' requirements change, the various devices - printed codes, tags or other devices - can be interchanged by connecting them to the software backbone that controls the data.

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### SMART LABELS infinite possibilities

This flexible 'mix and match' approach makes possible 'hybrid' solutions that vividly illustrate the benefits of systems integration.

#### World's first

As part of the team that has developed the Pfizer RFID system for Viagra, we have demonstrated how interoperable technology can be applied successfully. In the pharmaceutical industry we are finding that at unit-of-dose and pack level, a combination of EPC code and Data Matrix can deliver substantial benefits. As readers of *Labels & Labeling* may be aware, this is at the heart of the recently-announced solution implemented at the National Centre for Hereditary Coagulation Disorders in Ireland (NCHCD) – where Domino and GS1 Ireland have projectmanaged a pilot scheme that provides the world's first fully-integrated EPC solution for the pharmaceutical industry.

The scheme delivers 100% track-and-trace of Clotting Factor Concentrates (CFCs) administered to haemophilia patients at Dublin's St James's Hospital. The spur for the project was the contamination of blood products during the 1990s, which had catastrophic implications for some haemophilia sufferers. Some of the infections were due to supply chain defects, which made it difficult both to identify who had received infected CFCs and to recall the contaminated products. The goal of the pilot scheme – the brainchild of Dr Barry White, director of the NCHCD – was to provide electronic traceability throughout the supply chain by providing real-time identification of CFCs for immediate recall in case of problems, optimise stock management and save on wastage.

Besides Domino and GS1, the expert suppliers involved in the trial included Baxter BioScience, who make the CFCs in Belgium, VeriSign (the EPC network), Melior Solutions (the number generation and aggregation software used at the manufacturing facility) and specialist cold chain logistics suppliers Temperature Controlled Pharmaceuticals (TCP), who worked with Advent Software as local solution provider.

The system these parties developed uses EPC technology to assign a unique number to every single item coming off the production line, embedding the EPC within a Data Matrix code. Domino, Melior Solutions and VeriSign developed an automated solution for the creation of the EPC numbers on the Data Matrix code which can be linked to the EPCglobal Network. The Data Matrix is highly regarded for its robust structure and the volume of data that it can encode in a very small space: in addition to a serialized number, the Data Matrix code also includes a Global Trade Item Number (GTIN) as well as a lot number and expiry date.

The result is an end-to-end solution, from original manufacture of the blood product through delivery to the

individual patients at home. The project has proved that full traceability is possible – with data being captured at each product movement in the supply chain. But what's also important is that it can evolve, and accommodate other technologies – for example, patients could use a handheld webbased device such as a mobile phone that can scan the bar code on the drug when they administer the product, automatically updating the patient's records at the hospital and prevent manual errors in recording data. Once RFID is added to the mix – as is almost certain to happen – and the 'chain of custody' becomes even more comprehensive: for example, it will be possible to monitor the temperature of products as they pass through the distribution network.

**Demand for turnkey implementations** This kind of intensive cooperation between specialists makes possible the turnkey implementations of product/asset traceability systems that manufacturers and other organisations demand.

This situation demands that systems integrators really understand their customers' businesses. It places a premium on a consultative approach that identifies where the customer wants to get to and how quickly, evaluates which components of their existing set-up they can retain, and presents options that balance cost-efficiency with performance.

Providing a turnkey system that meets all the above criteria calls for an experienced consultancy – and this appears to be what manufacturers now need. In our experience, each client and each application is different and requires a highly personal approach. Typically, Domino consultants will start with a full audit of a client's situation. The next step is to establish a migration path that is cost-effective and time-sensible. It may be based on a two-year roll-out (or longer) or – it may be phased to coincide with an imminent upgrade to an ERP system such as SAP version 3.0. Whatever the timetable, the consultancy service should include an annual review of technical/compliance developments to assess any impact on the proposals and re-engineer it if necessary.

What RFID World showed is that the RFID industry is now clear about the place of the technology in the real world, and ready to grasp the opportunities. Working alongside other coding and traceability solutions opens up countless applications for RFID, and these broader horizons are apparent in the increasing number of industries that RFID vendors address. One vendor at RFID World noted that while most of his business used to be with consumer packaged goods (CPG) manufacturers, he was now in contact with 14 other industries. The more we explore the role of RFID alongside other technologies in integrated solutions, the greater the potential we see.



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# Smart Label Summit Americas preview

With the Smart Label Summit in Miami approaching, **James Quirk** previews an event which will look at the latest developments in smart and RFID label technologies

Smart Label Summit Americas, taking place June 27-28 at the Intercontinental Hotel in Miami, will explore the infinite possibilities of the complete smart label technology solution – including pallet, case and item level RFID tagging, as well as smart active and intelligent labels. The two-day conference, with a tabletop exhibition alongside, will bring together the full value chain, including converters and brand owners, with a 'Brand Owner Showcase' and live RFID/smart demonstrations.

The smart labels market is anticipating extreme growth over the coming years — with forecasters predicting that by 2015 1,000 billion RFID tags will be sold annually, of which 99.5 per cent will be in the form of item-level smart labels. In 2005 alone nearly 500 million labels were supplied with RFID capability. In addition, developments in smart active and intelligent label growth have brought new generations of oxygen scavenging, gas scavenging, odor absorbing, moisture absorbing, temperature and time indicator tags onto the market. The forecast growth of these smart active and intelligent labels by 2010 is expected to reach over 1.8 billion. Smart, smart active and intelligent label production is yet another challenge for suppliers to understand and apply to their business — and the information and practical knowledge on offer at Smart Label Summit Americas will be the key to success.

Highlights of the conference program will include:

- Creating global standards: fact or fiction?
- How can time indicator smart labels reduce food waste?
- Working with retailers to ensure the success of RFID implementation
- More than just track and trace adding value to RFID tags The tabletop exhibition will be packed full of exhibitors

including: Atlantic Zeiser; Bielomatik; Brooks Automation; Domino Printing Sciences; Emerson + Cuming; Innovative Equipment; Mark Andy; Meco; Muhlbauer; Spraylat; Timestrip; and Xink.

Roger Pellow, Smart Label Summit managing director, said: 'Smart Label Summit Americas and its sister event, Smart Label Summit Europe, are unique in this industry and have duly attracted a great deal of interest. They are the only events in the world that cover 'smart labels' as well as RFID – an area that is growing incredibly rapidly but one that people know surprisingly little about. The suppliers who are already successfully producing smart labels are doing good business, and if you're not one of them already, maybe you should be? Smart Label Summit Americas is the best opportunity there is in the USA to learn about the new technologies – and about how to practically apply them to real business.'

Masterclasses, which proved to be a great success at previous events, will be held the day before and the day after the event, comprising of a small focused half-day program led by industry guru Mike Fairley and a panel of leading industry experts. The key objectives of the various sessions will be to provide converters and other delegates with a hands-on, practical understanding of the technology of smart labels and RFID.

Delegates will be taught how smart labels are constructed, including in-line and off-line manufacture, the printing of antenna with conductive inks, methods of attaching straps and inlays, how and where to test for faulty inlays, and controlling the finished product.

'To-date, almost 100 converters have successfully been through the Masterclass program, making valuable contacts with suppliers, gaining confidence to make investment decisions and being able to talk to potential customers,' said Mike Fairley,

# SMART LABELS *infinite* possibilities

"Almost 100 converters have successfully been through the Masterclass program, making valuable contacts with suppliers, gaining confidence to make investment decisions and being able to talk to potential customers"

Masterclass chairman. 'Some have now sourced equipment and are now moving into smart label production. These events have proved a valuable resource to grow the label industry.'

Smart Label Summit managing director Roger Pellow commented: 'Following the success of our Masterclasses held alongside Labelexpo Europe and Smart Labels USA in 2005, we are delighted to be replicating these high level events in 2006 at our Smart Label Summits in Europe and America – and also at Labelexpo Americas 2006. These classes give people the opportunity to really get to grips with issues that are important to our industry today – and to discuss these issues with experts who are not normally easily reached.'

Another highlight of the event will be the participation of Timestrip Plc, the developer and manufacturer of an inexpensive and versatile smart label technology that accurately measures elapsed time.

Timestrip technology is relevant to both food and non-food products which, once opened, should be used or replaced within a recommended time. Regulatory insistence on the display of 'use by' dates means that Timestrip is increasingly relevant to brand managers. Expiration and 'once opened use within' dates feature prominently in markets such as food, food service, household consumables, pharmaceuticals and cosmetics. By communicating to consumers the time to expiration in a simple and visually effective way, brand owners have an opportunity to differentiate their product offer and ensure the rate of repeated sales.

Reuben Isbitsky, Timestrip's joint CEO and co-founder, said: 'Smart Label Summit Americas is a great platform to introduce Timestrip to all sectors of the industry. The company is already working with an impressive client list, including Nestlé, Pfizer, Bayer, Hamilton Beach Procter Silex, Daymark, to name just a few, and I'm looking forward to raising awareness of our product by speaking to such a high caliber audience.'

Roger Pellow is also excited about Timestrip's presence at the event: 'We are very pleased to welcome Timestrip to Smart Label Summit Americas. This kind of cutting edge technology is leading the way in the field of labels and it will be fascinating to hear a broad overview of the market potential for smart label technology from Reuben Isbitsky – and a case study specific to Timestrip's current market activities.'

The event has attracted a long list of top speakers from all areas of the industry. Presentations include:

- Mike Meranda, president, EPC Global US Creating global standards: fact or fiction?
- Neco Can, CIO, J.Crew Using RFID to bring about greater customer satisfaction – The J Crew Story
- Howard Stockdale, CIO, Beaver Street Fisheries The mutual benefits of the Wal-Mart mandate
- Aaron Graham, VP & chief security officer, Purdue Pharma The future of item-level tagging within the pharmaceutical industry
- Tony Walsh, European development manager, Domino Pharmaceutical serialization including RFID, barcodes and datamatrix
- Simon Langford, chief RFID strategist, Wal-Mart RFID at Wal-Mart
- Mike Fairley, director of strategic development, labels group, Tarsus Exhibitions & Publishing – Adding value to labels through smart solutions
- Rueben Isbitsky, joint CEO and co-founder, Timestrip Timestrip elapsed time indicators – It's about time!
- Mike Fairley, director of strategic development, labels group, Tarsus Exhibitions & Publishing – Focus on 'How to' manufacture RFID/Smart Labels
- Jan Svoboda, business development director, RFID, UPM Raflatac – Bringing down the costs of RFID tagging
- Max Golter, vice president sales, bielomatik jagenberg Efficient and reliable manufacturing of smart labels
- Ken Daming, director product management, Mark Andy Printing of RFID tags, what is the success rate on a flexo press?
- Wanda O'Hara, principal engineer, Applications Technology Group, Emerson & Cuming – Advances in die strap attachment for inlay assembly using adhesives



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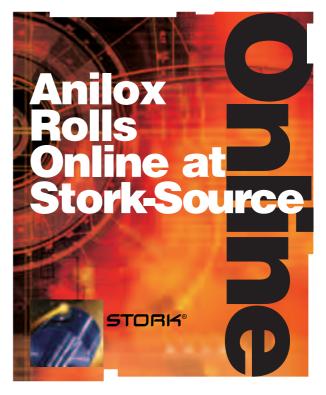


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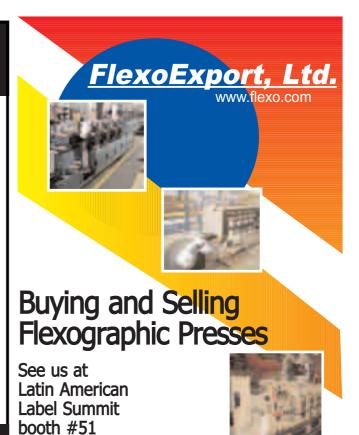
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# SMART LABELS

## Smart labels with attitude

The increasing necessity for smart technology to push the boundaries of innovation is perfectly illustrated by B&H Colour Change Ltd's Smart inks. **James Quirk** reports

W inner of numerous industry awards, UK-based B&H Colour Change Ltd is an expert in the research and production of thermochromic and liquid crystal products. It has been at the forefront of specialist ink techniques since 1985, producing cleverly devised promotions with 'smart' color changing technology.

All printed material and products are triggered by changes in temperature, UV or moisture and are used for in-pack/on-pack promotions, direct mailing, game cards, security printing, leaflets, point of sales and smart packaging.

For example, B&H recently produced a large number of wine labels for a major wine producer to go onto their bottles of white and rose wine to show consumers when their wine was the perfect temperature to maximize their enjoyment.

Each type of ink has its preferred substrate in order to create maximum effect, but it can be adapted or applied to different substrates. B&H Colour Change has created color changing packaging, magazine covers, posters and POS material, and can even apply these inks to glass. The ability to manufacturer its own inks allows the company the freedom to change anything from binder systems to consistency and temperature, to get the inks to work on almost anything.

A key aspect of the technology is its interaction with the consumer. A direct mail piece bearing a panel of color-changing ink, which the recipient has to bring to a certain store to discover what they have won, will often get a higher number of people into that store than a piece of conventional print.

B&H is not involved with the development of the equipment technology, it works on creating inks and effects that can be used on that equipment. With any new specialist ink created, the company has to ensure that the resulting printed item complies with various directives, such as EN71 Part 3 for heavy metals compliance. Depending on how the item is to be used, other safety issues will be checked: for instance, the company is producing a game card that reveals a win message dipped into food or drink, it would be tested for taint and migration.

As well as producing inks B&H also prints, allowing the company a direct insight into the capabilities of the technology. Services include reversible thermochromic and photochromic Inks for flexo, litho or screen, together with irreversible thermochromics. The company also provides glow-in-the-dark inks; liquid crystal inks; and hydrochromic Inks.

### Game card promotions

B&H Colour Change Ltd often runs projects for game card promotions, such as 'Chill + Win' game cards, which are particularly suited to



beverage and chilled food promotions; or overprinting work such as a 'Touch + Reveal'.

For Haagen Dazs ice cream, for example, B&H provided the 'Dip 'n' Win' ice cream game card. The cards were handed out to passers-by outside Haagen Dazs cafes across Europe. To reveal the prize the consumer had to go into the cafe and purchase Haagen-Dazs ice cream. The food-safe dippers, with liquid-reactive ink, were stuck into the Haagen-Dazs ice cream and then licked to reveal which prize level the consumer had won. Each dipper revealed a percentage figure, and the big prize was an Italijet scooter. The promotion was clever in that the 'top prize' of 100 per cent was an extra scoop of ice cream. The promotion resulted in a sales uplift of 30 per cent.

Another promotion was 'Cook 'n' Win' for Freshbake's Microbake Pies. The packaging incorporated a special heat sensitive area which revealed a win message when heated to the required temperature. Customers had the chance to win a Mini Cooper car, with other prizes including solar radios, money, and free pies. The promotion ran in all major supermarkets in the UK.

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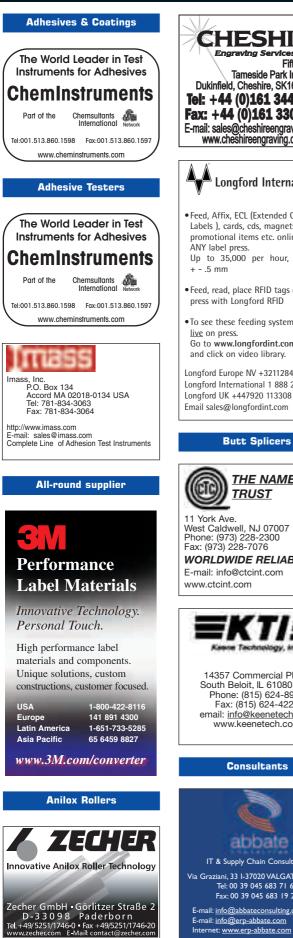
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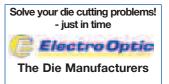
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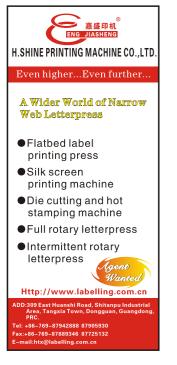


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