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TECHNOLOGY  
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ISSUE # 3

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## FLEXO EMERGES IN CHINA

## CARTON MARKET PREPARES FOR THE FUTURE

## ARE OXO-BIODEGRADABLE PLASTICS THE FUTURE?

## LABELEXPO AMERICAS 2012: PACKAGE PRINTING IN CHICAGO

Find out about package printing technologies to be  
on show at Labelexpo Americas 2012

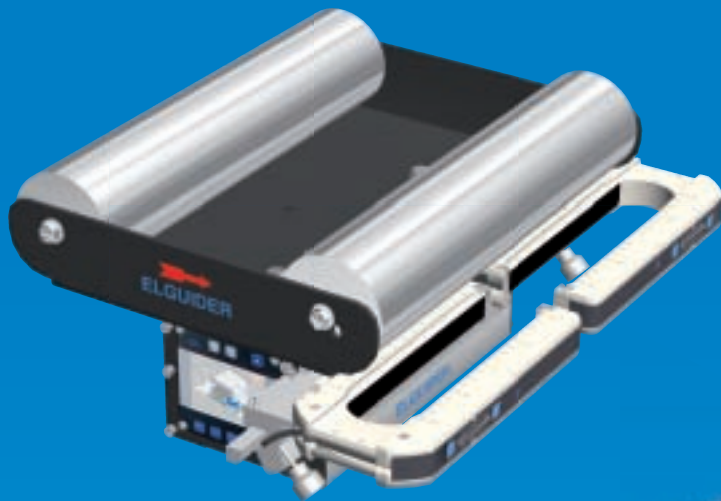


SOLUTIONS FOR HIGH-QUALITY SHORT TO MEDIUM RUN PRINTED PACKAGING



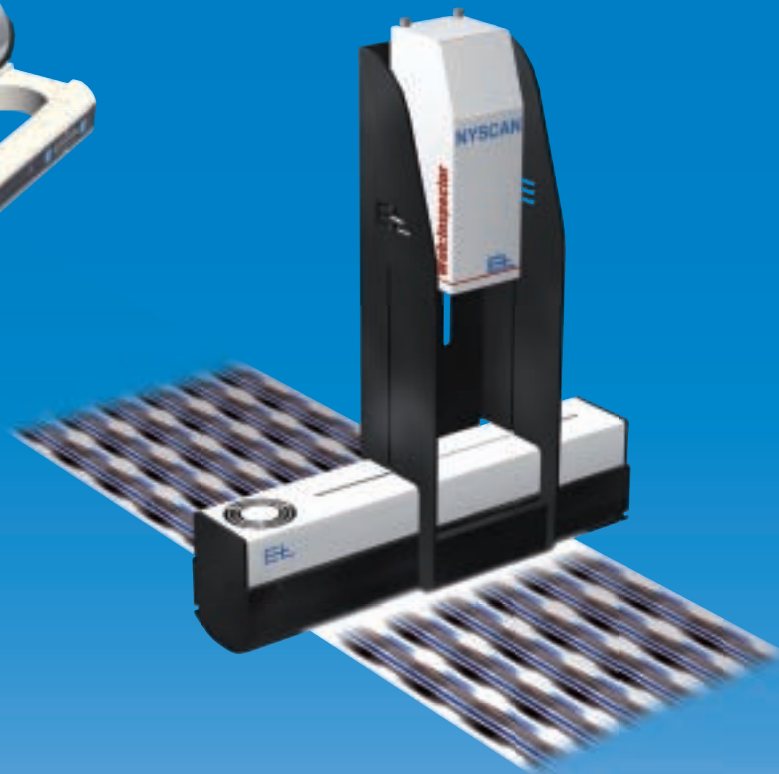
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## NYSCAN

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## ELSCAN

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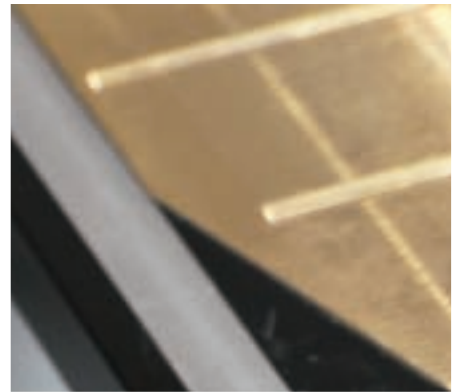
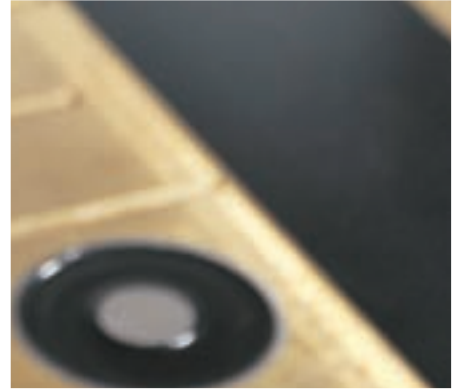
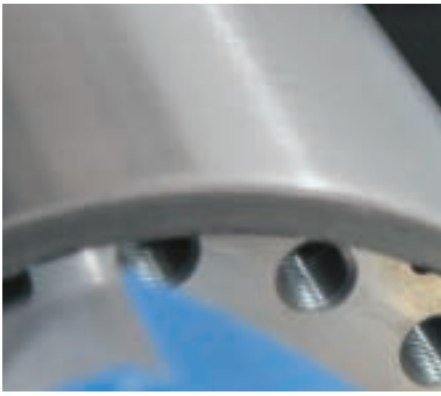
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## **Gallus ICS 670 – Efficient board converting** Print, add value, die-cut in a single pass

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## The wind of change

We live in a world that never sleeps – or so it seems. Computer technology has turned business into a 24/7 occupation all year round, and the printed packaging industry is no exception.

Now that the hype from Drupa is beginning to subside, it is clear that our industry is at a point of change – balanced at a point that sees traditional analogue technology on one side, and the new wave of digital innovation on the other. The big question is which way will the balance tip?

The answer to that depends on where you fit in the market. Trends are towards shorter run lengths, more added value, greater variation, and JIT delivery.

Many of these can be accommodated with traditional technology as the machine manufacturers invest heavily in ongoing R&D to make sure their customers can meet the latest changes in demand from the end user. On the digital side, existing suppliers have developed their technology for package printing, and there have been new entrants into the market place.

A recent survey suggested that as much as 60 percent of all printed packaging worldwide is either bought or specified by no more than 200 companies. It is the purchasing power of these major brand owners and retail groups that is driving innovation in our industry.

Take a look around to see how the retail market has changed in your area. Superstores and out-of-town retail parks replacing local and high street shops, and the ever-upward growth of "own brands" on the shelf. For the top 12 groups alone, this market is valued at almost US\$600 billion per year, and in 2011, 52 percent of all new product launches were "own brand".

Making the right investment has never been more difficult, nor more important.

*Package Print Worldwide* will continue to bring you the latest news of market trends and new technology to help you make your decision.



**Nick Coombes**  
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# NEWS

## STRATEGIES BEHIND IPEX DECISIONS

Leading industry suppliers have pulled out of Ipex 2014 as they focus on their strategies in emerging markets.

HP and Agfa have both confirmed that they will not attend the next installment of Ipex, with Benny Landa's presence at the show also said to be under consideration.

Ronen Zioni, HP's market development director for Graphics Solutions in the EMEA region, told *Package Print Worldwide* there are two reasons behind its decision to miss the show.

'The first is strategic,' he said. 'We've decided to move resources into more focused areas that address application- or country-specific needs.'

'These present better opportunities to engage and develop deeper relationships with our customers, as well as allowing us to target specific vertical markets.'

'Second, we want to put more resources into our customers' business development through programs such as Dscoop.'

He added: 'We want to put a focus on customer business development, and supporting Dscoop is a strategic decision for HP.'

A spokesman at Agfa Graphics said it too is looking to refocus its resources on market-specific events. This includes fast-growing, emerging markets like China, South-east Asia and Latin America, as well as new target customer segments like industrial inkjet printing, which require a "different communication and promotion strategy".

'Local exhibitions, in Europe as well as in other regions, will remain the platform of choice for targeting emerging new technologies or specific industry segments in the field of newspapers, sign and display and industrial printing applications.'

'Going forward, we will carefully review every tradeshow that Agfa Graphics participates in.'

The news of HP and Agfa's decision regarding Ipex follows closely on the heels of Drupa (see pp. 6-8), another quadrennial international printing show in Europe.

The Agfa spokesman added: 'Our view is that the European industry is not in need of a major international tradeshow every two years.'

'Better targeted, more personalized and efficient communication and promotion initiatives that allow our customers to better understand our solutions to their challenges and opportunities is what our industry needs.'

'Tradeshows still have value, but alternative events that are targeted to technology, segments or regions will be explored.'

Zioni said: 'Drupa was good and I'm sure Ipex will be good too, but we have to make strategic decisions based on what has just been and what is coming in the future.'

Despite the loss of HP and Agfa, Trevor Crawford, director of the print group at Ipex organizer Informa Group, remained bullish for the next leg of the show.

He said the show is still some 18 months away, and 2014 is ahead of previous editions at this point in the show's cycle.

'All exhibitors spend a lot of time and effort in attending shows. There are many different themes at the show, and it is

### SUPPLIERS MOVE TO FOCUS ON TARGETED OPPORTUNITIES



down to individual exhibitors to decide if being at a show fits in with their long-term strategic goals.

'Being at the show gives you the opportunity to present in front of people, let them touch and feel your products, and provides an international platform for launches.'

Xeikon and Canon will be at Ipex 2014, and both said the show delivers various opportunities.

Filip Weymans, Xeikon's director of marketing and business development for labels and packaging, said: 'The last edition brought a substantial amount of business coming from various sections of the market: commercial printer, label, carton and document.'

Mark Lawn, Europe and UK marketing director of professional print solutions at Canon Europe, said: 'The level of excitement and optimism about the future of the industry that always comes out of Ipex makes it a vital fixture for the print industry.'

'It is a very important event, both for Canon and for the print community as a whole. Not only does Ipex offer customers the unique opportunity to see all the key industry suppliers in one place at one time, but it also really drives our industry forward and provides it with incredible focus and energy.'

'Certainly for Canon it provides us with an excellent opportunity to deepen our customer relationships, and it always delivers an excellent return on investment for us. With it being a "home" event for Canon UK, we're looking forward to having the opportunity to help visitors from the rest of the world to see the bigger picture and identify new opportunities to take their businesses forward.'

Ipex 2014 will see the show return to London at ExCeL, which Crawford said will help organizers achieve the overall aim of growing the show as it provides easy access to a community of designers and associated professionals who may not have traveled to Birmingham to attend the show previously.

Lamination machinery manufacturer Autobond managing director John Gilmore said: 'Ipex is the biggest English-speaking printing and packaging machinery show in the world, and English is the business language of the world, so I believe returning the show after 35-odd years to London, the world's number one city, was a masterstroke by the organizers.'

'A London-based Ipex at the ExCeL will attract even more English-speaking international visitors to our shores. We are looking forward to many, many visitors and orders.'





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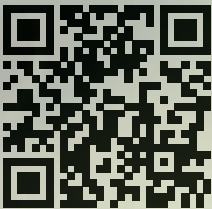
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# NEWS

## MANUFACTURERS AND SUPPLIERS REPORT BIG BUSINESS AT DRUPA



## MARKET REACTS POSITIVELY TO LATEST DRUPA

**Exhibitors at Drupa 2012 responded positively to the show, with many claiming to have achieved healthy returns on their investment in attending the quadrennial global printing trade fair.**

Package printing technology was widely evident at Drupa 2012, which took place at the beginning of May in Düsseldorf, Germany.

Pre-press, press and finishing system suppliers showcased their latest innovations, as did material and consumables suppliers, with a host of new products launched and showcased across the halls.

### Press technology

Bobst said Drupa 2012 was its most successful tradeshow ever, with its three business units – sheet-fed, web-fed and services – each generating record sales. With thousands of leads received – including more than 100 for firm projects due to take place over the next three months – Bobst said it is expecting very strong trading in the wake of the exhibition, and plans to use the momentum generated in Düsseldorf to continue to successfully implement its company-wide transformation process over the coming years.

Bobst also used Drupa to launch a new uniformed branding for the whole company, and chief executive officer Jean-Pascal Bobst said: 'Over the last few years our entire team has worked very hard to pave the way for our company's future. The results of this year's Drupa confirm in no uncertain terms the benefits of these efforts and commitment.'

'We intend to use this success and renewed motivation to further consolidate our company's position in the global marketplace.'

Benny Landa's new Nanographic Printing Process was launched at the exhibition, with sheet- and web-fed presses tailored for the package printing market on show.

Although the nanographic printing presses will not be commercially available until the latter stages of 2013, more than one converter traveled to Germany to put pen to paper on letters of intent to purchase presses.

Flexible packaging specialist Reflex Labels and folding carton manufacturer Firstan signed letters of intent for W5 web-fed and a sheet-fed S10 models respectively.

Both UK firms have stated that they see nanographic printing as the next evolution of digital print technology, and that being early adopters of Benny Landa's latest innovation will put them at the forefront of the digital package printing market.

Italy's Omet was pleased with the reaction it received for its VaryFlex V2, a multi-process technology for all-in-one-pass production of labels, flexible packaging and folding cartons.

Omet sales and marketing director Marco Calcagni said: 'One single machine incorporates all the technologies needed to print the final product for just-in-time deliveries. The solution displayed at Drupa was especially dedicated to carton converters working





*The S10 was one of the packaging-specific nanographic printing presses launched by Benny Landa at Drupa*

with sheet-fed and its aim was to show that no extra handling and costly off-line reworking is needed anymore.'

Established German press manufacturer Koenig & Bauer (KBA) said it signed contracts worth in excess of €100 million, while fellow European manufacturer Comexi achieved sales volumes totaling €17 million during the two-week show, and attracted more than 3,000 visitors to its stand.

Gallus said live demonstrations of its ICS 670 in-line folding carton production system drew more than 8,000 visitors to its stand, with several hundred inquiries from all over the world, and contracts signed during the show.

Windmüller & Hölscher (W&H) reported Drupa 2012 as 'one of the best trade shows in the past few years,' according to chairman Jürgen Vutz. Managing director Peter Steinbeck added: 'We took many orders at the show, proving to us that W&H equipment is properly positioned to meet the needs of our customers and also that the market for flexible packaging is not being directly affected by the structural changes in the overall printing industry.'

Komori took the first order for its new press, the Lithrone GLX40 Carton, at the show. The purchaser, Chesapeake, a UK-based global pharmaceutical and healthcare packaging provider, will install the six-color, H-UV-equipped, 1,041mm (41in) press at its plant in Leicester..

Meanwhile, press control specialist QuadTech announced significant recent sales that coincided with Drupa 2012. These came from China, India and across Europe, and cover a range of the manufacturer's technologies..

### Pre-press

In the pre-press arena, CGS Publishing Technologies International partnered with Color-Logic to demonstrate visualization tools to showcase the streamlined design and prototyping of folding cartons, using the new CGS RealVue 3D Packager software.

EskoArtwork showed various technologies from its portfolio, including platemaking systems and workflow solutions. CDI Spark models and HD Flexo technology were notable examples.

EskoArtwork's director of corporate marketing Jef Stoffels said: 'Not only did we over-achieve our targets for sales and leads, but also received confirmation that our long-term strategy for integrated end-to-end solutions integrating with other business systems is the right one.'

'At this "all-digital" Drupa, our industry searches for powerful solutions to become more efficient, consistent and productive. Visitors to our booth reacted very positively to Esko's enterprise solutions, and how they help to improve customer design, pre-press and production workflows.'

### Inks

Ink specialist Jänecke+Schneemann said it impressed visitors with a number of different systems for UV LED and offset printing, including the world's first low-migration, oil-based varnish. Managing director Christian Jänecke said: 'Our offers, starting with packaging, label sheet and tin printing up to high-quality commercial printing, exceed the printers' expectations. It is already clear that we have increased our visibility and strengthened our leadership,

especially in the area of UV LED and low-migration printing.'

Fellow ink business Pulse Roll Label Products featured its latest developments in inks and varnishes, including the new SLM and SG UV Flexo formulations for shrink films and labels, as well as its recently launched SF010 UV screen white for combination printing and products for digital presses.

Managing director Gary Seward said: 'It was great to see our digital coatings running on a number of machines at the show.'

'We are fast-growing company with new distributors being appointed each month. Providing support to them is very important and being at Drupa enabled us to meet together to enhance the Pulse brand further.'

### Post-press and finishing

Schoberttechnologies said that, although the overall number of registered visitors was down, it recorded a larger number of visitors to its stand than in 2008, with both sheet-fed and web-fed converting systems attracting attention.

German die cutter manufacturer Mendel-Stanztechnik sold four high-speed machines at the show, with customers in Germany, Iran, India and Argentina.

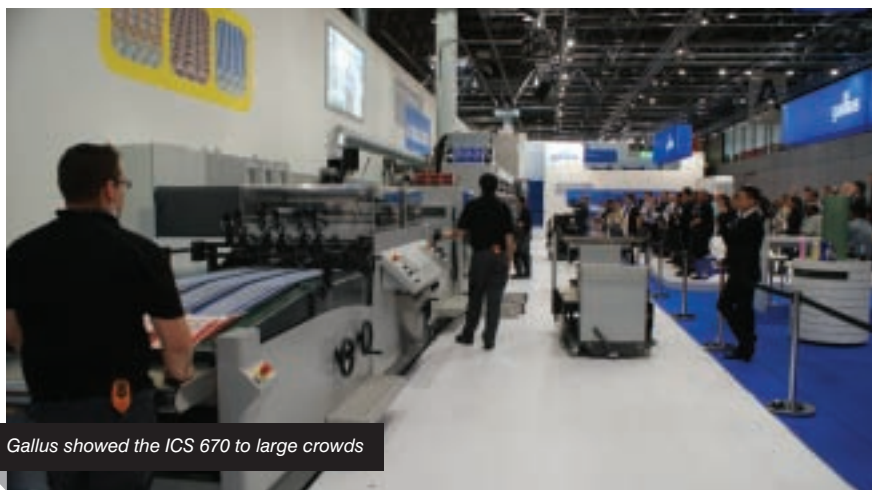
It also said interest was high in the world's first carbon tool that was presented at Drupa.

The UK's Atlas Converting Equipment reported a significant level of inquiries and sales of several Titan slitter rewinders, including one Titan ER610 compact slitter to a new customer in Germany. Daily demonstrations of the new Titan SR9 DT dual turret slitter rewinder were well

# NEWS



Heidelberg presented a number of innovations to package printers in hall 1



Gallus showed the ICS 670 to large crowds

attended and impressed audiences with the machine running at up to 900m/min. and demonstrating reel set changes in less than 30 seconds.

GEW launched a range of new UV systems designed to reduce running costs and extend the production capabilities of both analogue and digital printing and coating machinery.

GEW's multi-substrate curing platforms enable the widest range of heat-sensitive materials to be processed without risking job scrappage due to heat damage. For low migration inks and specialized coatings, GEW also launched an economical inert atmosphere curing solution that uses around 35 percent less nitrogen gas than conventional solutions.

Like many others, UV specialist IST Metz said its order books are well filled after its exposure at the show, with visitors responding well to innovation.

New products it showed included the BLK-6, designed to meet application requirements in rotary printing, as well as the completely redesigned URS Duo reflector geometry, where just one lamp output of 120W/cm is required to achieve the same drying results as those from lamp outputs up to 200W/cm.

'We are very happy with the contacts we made at the trade fair. Compared to the last Drupa we managed to maintain the order volume, which is a terrific success given the lower visitor numbers this year,' said director Dirk Jägers.

Sheet-fed lamination specialist Autobond said it now has a full order book through to the end of the year, which is growing. 'With many orders placed on our stand, and blessed with over two thousand enquiries to follow-up, the hard work starts now,' said Autobond managing director John Gilmore.

Color-Logic and Scodix partnered to demonstrate decorative new print technologies.

Visitors to the show saw several print samples using both processes. Scodix produces visual and tactile elements that add awareness to print. Color-Logic produces metallic special effects.

Color-Logic director of sales and marketing Mark Geeves said: 'Color-Logic was pleased to cooperate with Scodix at the world's largest printing show, and to welcome Scodix as a technology partner.'

'Our companies produce special effects and together we demonstrated how printing can move to a sparkling new dimension.'

Print finishing specialist Leonhard Kurz welcomed a record number of visitors to its stand, with large interest in its finishing technologies.

Flexo Concepts' QuikWash system drew attention from distributors around the world wanting to represent the product.

By combining a special clamp with the company's TruPoint DeltaFlex plastic wash-up blade, the system cuts wash-up times in half by maintaining a fine contact area with the roller for more effective wash-ups. Another strong selling point is that DeltaFlex is compatible with UV solvents and resistant to aggressive press wash, making it a good solution for printers who have experienced blade swelling due to chemical incompatibility.

While Flexo Concepts had previously gone to market with QuikWash in limited geographic locations, the company used Drupa as the official launch site to introduce its exclusive technology to a global audience.

Chris Nolin, Flexo Concepts' vice president of sales, said: 'Our objective was to grow our reseller base for QuikWash and there was a great amount of interest from people all around the world interested in selling the product.'

## Key result

Bernhard Schreier, president of Drupa 2012, and outgoing board chairman at Heidelberg, concluded: 'Drupa was a resounding success for the sector.'

'The trade fair sent out key impulses. Numerous business ideas and innovations were showcased here that all led to high investment. What the 1,850 exhibitors presented here over the past two weeks will strengthen the development potential of the print and media industry long term.'

Visit [www.packprintworld.com/drupafedback](http://www.packprintworld.com/drupafedback) for more from exhibitors



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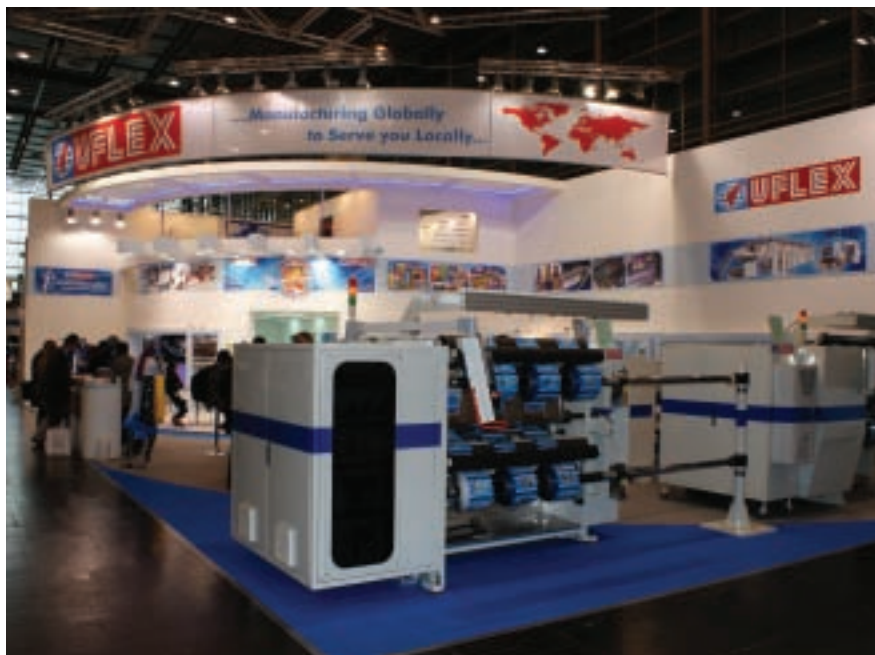


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# NEWS



## UFLEX TARGETS INTERNATIONAL GROWTH

India-based Uflex Group is aiming to operate out of 12 countries by 2020, significantly growing its existing manufacturing footprint.

Uflex started operations at a new biaxially-oriented polyester (BOPET) film plant in Poland this summer, which forms the basis of its plan to set up strategically located manufacturing lines as close as possible to major film markets in order to dispatch just-in-time supplies of freshly manufactured films to customers anywhere in the world, within seven days of receipt of the order.

The Polish BOPET plant features a state-of-the-art 8.7m-wide film line that runs at 500m/min. It is one of the largest film lines in the world, Uflex said, and can turn out 36,000t of film each year.

It is supplemented by a plasma-enhanced high-barrier metallizer that can convert 6,000t of film per year.

The project, which operates under the name Flex Films Europa, is located at Wrzesnia near Poznan in Poland and is Uflex Group's fourth overseas manufacturing facility.

The Uflex Group now has large state-of-the-art film plants operating in India, Dubai, Mexico, Egypt and Poland. Another facility is under construction in Kentucky in the US, which will be operational by the end of 2012.

Pradeep Tyle, chief executive officer of the Uflex global films business, said: 'We want to get ever closer to our valued film customers by locating plants next door to them.'

'Just-in-time deliveries not only enable our customers to totally do away with film inventories and warehousing, the freshly manufactured films also bring with them better functional properties that are better suited for conversion.'

'We tell our customers to keep their money in the bank and not in warehouses. We intend to operate out of at least 12 countries by 2020.'

## ECMA HOLDS FIRST FOLDING CARTON LEADERSHIP SUMMIT

The European Carton Manufacturers' Association (ECMA) held its inaugural Folding Carton Leadership Summit in Brussels, as it moves to provide the industry with a dynamic network of business links.

The summit offered delegates the opportunity to address the latest industry trends and evaluate the technology on show at the recent Drupa exhibition in Düsseldorf, Germany.

Attended by carton makers, industry suppliers, and other decision makers within the industry, the event was moderated by Nick Coombes, *Package*

*Print Worldwide* editor, who gave a presentation entitled "Innovation and the Future of Packaging".

Delegates were invited to engage in a discussion on the themes and challenges that will dominate folding carton production in the near future, which include offering a wider range of services to customers, and working more closely with them to develop new products and achieve favored supplier status.

Coombes said: 'The folding carton industry has a unique opportunity to improve its performance and role within the supply chain – I challenge you all to seize it.'

The day after the summit, ECMA's new executive committee was chosen. It is: Andreas Blaschke (pictured, opposite page), of Mayr-Melnhof Packaging, who is now ECMA president; Tim Whitfield, of Chesapeake Corporation, named treasurer; Arend-Jan Luten from Contego Packaging, who'll deal with technical affairs; AR Packaging's Jean-François Roche, taking responsibility for marketing and communications; Christian Schiffers, of FFI, who'll handle associations development; and Alican Duran, from Duran Dogan Packaging, covering business networking.

For more on ECMA's new management team, see [packprintworld.com/ECMAcommittee](http://packprintworld.com/ECMAcommittee).

*ECMA will host its 2012 congress on September 19-22 in Denmark.*

## PACKAGING FIRMS HAIL NANOGRAPHY AS SECOND DIGITAL REVOLUTION

Three of the early adopters of Benny Landa's Nanographic Printing Process have said it represents the next revolution in digital printing.

Reflex Labels and Firstan, both based in the UK, and Canada's Pazazz all signed letters of intent to take a nanographic printing press when they are commercialized in the second half of 2013.

Six presses were unveiled at Drupa by Landa, both sheet- and web-fed variants, with three specifically suited to the package printing market; the W5 and W10 web-fed models, and the S10 sheet-fed unit.

For Firstan, deciding to invest in the Landa S10 signals its first foray into



Andreas Blaschke is now ECMA president



digital printing, while Reflex Labels' Will Parker was one of the first to bring Indigo technology into Europe when it made its debut in the early 1990s.

'We've had a long, and sometimes painful, introduction to digital technology,' said Parker. 'A lot of what we've seen has been a refinement of 1990s technology. We've been waiting for the next step.'

'This technology is that step, offering speed, versatility and ecological benefits to our company. It's a no-brainer for us to invest.'

Andrew Hartwig, managing director at Firstan, said: 'We have a B1 sized litho printing workflow, and haven't seen anything close to what we've needed before.'

'This technology fits into our operations, and allows us to make the move into digital.'

Warren Werbitt, the founder of Pazazz, said he was impressed by what he saw at Drupa, and wanted to be involved in the introduction and development of nanography as a digital printing process from the beginning.

He said: 'Benny Landa is a genius, and is revolutionizing digital printing, as he did when he introduced Indigo. We want to be part of the next revolution.'

Parker said: 'You can't stand still as a business. This is leading edge technology, so we expect some issues, but the payback is that we are regarded as innovative and leading the market.'


'Benny Landa is recognized as having moved the industry forward, and he has done it again,' said Parker.

Hartwig added: 'Benny Landa is the father of commercial digital printing, and there's a lot of faith in what he does.'

'Our pharmaceutical customers are looking for us to take a lead with new technologies. We're very excited about this technology, and happy to be involved in its development.'

'If we want to feel the benefits of developments like this, we need to be involved with it from the start. It's a long-term game.'


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# Light

## at the end of the tunnel

**What is UV LED technology? Chad Taggard, vice president of marketing and business development at Phoseon Technology; Jennifer Heathcote, North America general manager for Integration Technology; and Nidal Abbas, group product manager at Lumen Dynamics report on behalf of the UV LED Curing Association.**

**W**hen you hear the term UV (ultraviolet), you might think of the sun.

When you hear the word LED (light emitting diode), you probably think of lighting for your house. UV and LED technology combined has a wide spectrum of capability depending on the UV wavelength. UV LED technology can be used for visible lighting, water purification, nail curing, industrial curing and many other applications.

LED curing occurs when polymerization happens; the process where monomer molecules react together to form 3D networks, also known as polymer chains. The complexity of polymerization is due to various functional groups present in the reacting compounds.

Because of the range of properties of polymeric materials, they play an essential role in everyday life. Adhesives, inks, coatings and sealants used in our daily lives undergo polymerization that requires a hardening process to be more useful.

This reaction can be photo-induced, light cured or UV cured. Curing can occur either by free radical initiators or cationic initiators. For light cure adhesives, coatings and inks to interact with UV light, a photoinitiator must be present in the formulation.

These photoinitiators fragment into reactive species when exposed to a light source, and initiate a rapid polymerization process with monomers and oligomers to form a cross linked and durable polymer.

Much of that chemistry relies heavily on photoinitiators tuned to broad band sources that peak around 365nm. As a result, not all previously formulated broadband UV ink chemistry will work with monochromatic LEDs.

In many cases, the chemistry must be reformulated to react and accomplish the same or similar cure results within the more restrictive but also incredibly more intense band of LED output. While this no doubt presents challenges, it also yields the positive aspect of eliminating the infrared and UVC components.

As a result, when compared to conventional curing, there is less heat transfer to the substrate (no IR) and no harmful UVC rays or resulting ozone to address. The UV from current LEDs is all UVA with a slight visible component in the violet wavelength range.

Traditionally, mercury-based UV lamps have been utilized for curing, but now more energy efficient and environmentally friendly LED-based UV technology has proven a superior solution for the printing industry.

LED curing technology uses semiconductor-based LEDs to project UV light when an electric current is passed through them.

There are three key components that contribute to a UV LED curing system. When these components are optimized correctly, they can provide an economically advantageous high throughput solution to the printing industry.

The three elements are: UV curable materials (inks) that can absorb energy in the UV region to undergo polymerization



process; a UV LED curing lamp, which provides energy in the UV region of the spectrum; and a printer where the UV LED lamp is integrated to cure material underneath it.

These elements together provide a long-term sustainable printing method through green technology, eliminating ozone emissions and lowering energy consumption.

### Material suppliers

Approximately 50 percent of the top international companies offer inks optimized for UV LED curing technology.

These include Sun Chemical, Flint, Tokyo Ink, Siegwerk, Altana, Fujifilm, Zeller+Gmelin and Wikoff.

### Lamp suppliers

There are many UV LED lamp suppliers in the industry currently working to bring the benefits of UV LED to end users. These include, but are not limited to: Baldwin, Hereaus NobleLight, Höhle, Integration Technology, Lumen Dynamics and Phoseon Technology.

### Printers

The number of printers moving to UV LED technology has increased significantly in the past few years.

At Drupa 2012, over 30 printing vendors displayed equipment showcasing UV LED technology, and the benefits of reduced heat transfer to substrate, quieter operation, elimination of ozone and ventilation, and economic savings. The booth traffic at the show was at an all-time high for vendors specifically exhibiting presses installed with UV LED curing systems.

The overall positive impression of Drupa 2012 attendees toward UV LED curing clearly shows that it is finally taking their place as a mainstream curing technology in the printing industry.

Rapid technological advancements being made in all areas of printing, from digital inkjet to flexo and even into offset, demonstrate the far-reaching potential and growing acceptance of UV LED curing.

### Ink formulation and materials

With the improved availability of UV LED optimized ink chemistry, UV LED sources have become a very viable curing solution for many in the printing industry.

One of the key ingredients in the chemical formulation is a photoinitiator that serves as a catalyst to initiate the polymerization process when exposed to narrow spectrum UV LED energy. And with the continued widespread acceptance of UV LED systems, availability of suitable base materials continues to grow.

The driving factors in advancement of chemistry of raw materials are increased capability and cost effectiveness of commercially available UV LED curing lamps.

UV LED lights have a narrow spectral output centered on a specific wavelength,  $\pm 20\text{nm}$ . LEDs are a solid state device that can be built with various wavelength diodes including but not limited to 395nm, 365nm, 385nm, 405nm and 410nm, unlike the broad spectrum of wavelength range output from Hg-based lamps.

This monochromatic distribution requires new chemical formulations to ensure proper curing of UV material (ink). Currently, the most popular wavelength is 395nm, with 365nm being used in specific applications.

### Market drivers

While there are many drivers shaping the market such as improvements in compatible inks and materials, more powerful LED output and reduced total cost of ownership.

Providing advanced capabilities and economic benefits while also being a “green” technology ensures that end users can grow their revenues without sacrificing existing business.

### Advancements in UV LED technology

With the rapid development of UV LED curing technology, OEMs have widely accepted UV LED curing for digital inkjet and screen printing applications. Flexographic and offset printing applications will be next on the horizon. From the ink and material side of the market, over 20 ink and material vendors on the market offer support and ability to formulate for LED.

In addition to the OEMs and ink suppliers, end-users are increasingly asking equipment manufacturers for LED options, and the market-leading vendors are responding. Confronted with such exciting and rapidly evolving technology, system builders and end users are closely monitoring the ever-changing UV LED curing landscape.



Phoseon's water-cooled FirePower UV LED lamp



Phoseon's air-cooled FireFly family of UV LED curing lamps



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# QR code marketing – a sticky subject?



**When a leading international brand owner turns to QR coding to market one of its products, the indications are that the technology and its acceptance has come of age. Nick Coombes visited the consumer goods producer and market leader in adhesives, sealants and surface treatments, Henkel, to meet Dr Salima Douven, the company's new media manager responsible for consumer adhesives, and find out how the campaign was planned and executed.**

**W**ith about 47,000 employees around the world, Henkel considers itself a leader in brands and technologies, and is one of the most internationally aligned German-based companies in the global marketplace.

Founded in 1876, Henkel operates in three business areas: detergents, which account for 29 percent of its business and includes Persil, Purex and Dixan; cosmetics, which accounts for 22 percent and includes Schwarzkopf, Dial and Syoss; and adhesives, which is the largest sector at 48 percent, and includes brands such as Loctite, Terson, Pritt, Metylan and Pattex.

It was the last mentioned of these brands that was chosen for QR code marketing, having evaluated the alternatives of PoS touchscreen, PoS shelf navigation, application videos and printed material. The manufacturer believed that an adhesive was a product that required explanation if it was to be used effectively, and the PoS is an important place to maximize benefit to the consumer.

Dr Salima Douven, Henkel's new media manager for consumer adhesives, says: 'We first had the idea of using QR codes on a product back in 2010, and chose Pattex, which we wanted to relaunch with new branding.

'The concept was to imply that Pattex empowered the user to do a good job, and we redesigned the packaging to be more eye-catching and tactile, using less text and more illustrations to give easier assimilation of the information needed to use the product.'

The product proved ideal for QR coding, because it required information to be provided at various levels to ensure best usage, both in-store at time of purchase, and subsequently at home, where the product may reside in a cupboard for long periods without being needed. The use of a QR code allowed Henkel to simplify the packaging by reducing the printed text, which gave a less fussy and more attractive appearance, while providing more detailed information via the scanned code mark.

It faced the questions of how much information to give, what is the customer actually looking for and can this be presented on one mobile website, or does it require more?



The need was to explain usage, for example, that Pattex is a contact glue that needs to be applied to both surfaces to adhere correctly. A QR code can do this, but it needs to be product-specific.

'Since the Pattex brand covers an extensive range of products, we also wanted to be able to give guidance on its full capacity – and we saw the opportunity to use QR coding as a gateway to more information about our company's products, rather than it being an end in itself, which is more typical of traditional forms of marketing,' she added.

#### Market testing

Between March and July 2010, Henkel began to test-market the new pack designs. Wanting to keep the space required for the QR code as small as possible, to prevent it dominating the image, especially on small format packs, a key decision was how much information to hide in the code and how much to print on the pack.

Certain products in the Pattex range required a more clever solution, so it was decided to print the QR code on those products under a peel-off label. Equally, there is a minimum size for the printed code if it is to work effectively and consistently – 2.5 sq cm was chosen initially, though this size can be slightly reduced now.

The next task was to establish a mobile strategy for code scanning, and of those investigated, which included mobile optimized websites and apps, mobile sites were preferred. Likewise, QR codes were chosen ahead of augmented reality, Bluetooth, SMS, and MMS, and smart phones were preferred to tablets.

Creating a mobile site requires a virtual storyboard. Beginning with the promotional phase, which saw a "Pattex Hero" created, the mobile site went on to allow the viewer to select different materials by clicking an icon, followed by an insight area that gave useful hints, including how to use the product on different materials, an overview of other related topics, and finally a link to other sites within the same product category.

'With an international product, we also had the problem of language to overcome, so the mobile websites needed to cater for up to 10 additional ones. This can be accommodated by making the packaging tri-lingual, and then directing the user to his or her own language via the QR code itself.'

Phase one of the campaign was launched in 2010 in 11 European countries, and combined with phase two in early 2011 to include 29 mobile pages, which summarized QR coding with separate pages per sub-category. By phase three, launched towards the end of 2011, there were over 200 products (SKUs) with QR codes in 11 different languages across 14 countries in Western Europe.

#### Product diversification

With early results looking promising, Henkel began to consider other products for QR coding. 'Different products require different usage, so the mobile website needed to reflect this with its content. Some of our adhesives are straightforward to use, while others

require greater explanation, so we needed to ascertain what information the customer would find most useful for each product,' says Douven.

The problem initially was how to overcome the psychological barrier of scanning the QR code. The concept was new, and available only to those with the correct type of mobile phone.

The reward was more detailed information about the product and an explanation of its uses, but this was of little value without a ready acceptance of the technology.

#### Smartphone growth

Fortunately, the launch coincided with the growth in smartphone uptake, which currently sees Apple's iOS and Google's Android dominating, and three manufacturers accounting for 90 percent of market share. With acceptance of new technology largely a generation issue, what is clear is that products suited to younger age groups will, at least in the early days, be better suited to QR code marketing.

'It's difficult to accurately compare costs with more traditional methods of marketing because it depends on how ambitious you aim to be with QR. Our concept cannot be seen as a one-time campaign approach, and deserves proper preparation. It has a longer lifecycle because it's more of an ongoing concept and is therefore less topical.'

There is no doubt that Henkel sees QR coding as a valuable tool in its marketing mix for a whole range of consumer products, but one which clearly has a learning curve all of its own. 'In hindsight, we might have been better to pilot it, rather than roll-out across Western Europe simultaneously – it would have allowed us to see how a small sample product and market interact – but we've learned that it's the pace with which smartphone usage is growing that is the most significant factor.'

On the positive side, Douven says QR coding is innovative and a good fit with the rebranding of Pattex, which was the original plan. And, as smartphone usage increases, the acceptance of this marketing technique will allow wider usage, especially on more complex products where extra information is valuable.

'We evaluate each product's suitability for QR coding and focus on appropriate target groups. We have to ask if the brand supports QR and how relevant it is to integrate this type of marketing – if there's no added value, it would probably be less successful.'

And while reluctant to divulge actual sales figures since the adoption of QR code marketing for Pattex, Douven made it clear that Henkel considers the project to have been successful.





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# LAND OF OPPORTUNITY



**The North American market is on an upward curve, so converters operating in the region tell David Pittman.**

**T**he overriding impression from packaging converters operating in North America is that the region's market is on an upward curve.

'The North American market is improving,' says Lou Iovoli, Hammer Packaging's vice president of strategic partnerships and marketing. 'It has been a tough three years, where capital expenditure has been held back.'

'Things are moving forward now though. As capital projects move forward, it opens up opportunities for packaging and decoration.'

Evan Arnold, product development manager at flexible packaging specialist Glenroy, says: 'North America is seeing an upturn. The market is still tough, but our business is based on understanding our customers and working with them to help them find their own niche.'

'More projects are coming to fruition at the moment than they have in the last three years,' Iovoli adds. 'The market is stabilizing and improving.'

## **Flexible packaging growth**

Market research organization Freedonia has issued the Converted Flexible Packaging study, which indicates that US

demand for such products will see the market grow at a rate of 3.8 percent annually to 2015, resulting in a US\$18.2 billion valuation at the end of that period.

Growth will continue on to 2020, according to the report, by which time pouches will provide US\$9.8 billion and bags US\$10.1 billion as part of a market total of US\$21.6 billion.

The demand for shorter, customized run lengths is getting stronger, says Arnold. As a result, customers require greater flexibility from their suppliers, and Glenroy is working to tailor its processes to match this demand.

'We're working to alter the ordering process to cope with the growing demand for smaller quantities and variations, making it easier for our customers to request what they need and easier for us to be able to respond to what they want.'

'It's a challenge to understand how flexible we need to be and be able to meet the demands of our customers from a production and ordering standpoint.'

'You also need robust quality systems to be able to cope with the speed that materials are needed and to make sure the quality of your products is maintained.'

For Iovoli, cost efficiencies are integral to growth. 'There's a lot of focus on controlling costs at the moment. We're doing more





Hammer Packaging is working with its customers to make sure the packaging they are using is the most economical

engineering to help our customers achieve greater efficiencies before projects are even commercialized. For instance, are they using the most lightweight substrate available?’

The environment is another key topic for the packaging market. Freedonia packaging industry analyst Esther Palevsky says: ‘Flexible packaging has always done well because of its environmental advantages. It is lighter weight and uses less material.

‘Flexible packaging is not always the right packaging though, and there will remain rigid solutions, but there’s been so much emphasis on sustainability in the past few years.

‘It has always been an important advantage but the environment is being talked about more and more, and flexible solutions fit in well with the efforts of packaged goods companies, such as Unilever, Proctor & Gamble and Walmart. These packaged goods companies are focusing more on improving all of their production processes and packaging is part of this as they are reducing their material use by putting things in flexible packaging.’

Iovoli adds: ‘In the past, the environment was not a standard component of strategies, but now it is. Some companies weight it higher than others, but it is there.

‘There’s a misunderstanding of the impact packaging has on the environment, as it protects food. It’s a trade-off. We have little food waste in the US from the products themselves compared to other markets.

‘The trade-off is that we have more packaging. We need to find a solution to make the packaging work in this situation.’ (see pp. 37-39 for information on oxo-biodegradable plastics)

For Arnold, chain of custody and traceability is an important part of the environment equation. ‘The market has become so global that you can have a structure that features different materials from around the world. It’s important to be able to trace that and supply that information to clients. Customers want it and, although it’s difficult, it’s possible.’

### Carton potential

Kentucky-based carton converter Zumbiel Packaging sees business in a similarly positive

frame as those handling flexible substrates.

Tom Zumbiel Jr, the company’s marketing director, says: ‘The market is still soft. All markets are soft.

‘Business is good at the moment though. We’re in a unique position as one of the biggest converters in the state.’

He says there has been heavy consolidation in his region in recent times (see p67), and this has reduced the level of innovation in the market due to synergies and standardization.

‘That’s not what brands want to see. They want options and to see innovation. As an independent company, we can provide that.’

Corrugated & Paperboard Boxes, another report by Freedonia, predicts 2.3 percent annual growth in box demand, valuing the market at US\$36.5 billion in 2016.

This will be boosted by overall strengthening of the US economy following the 2007-09 recession, with expanded food, beverage and durable goods output.

Freedonia says gains will be helped by a trend toward more expensive boxes, such as folding cartons that offer high-quality graphics and printing. Demand for folding paperboard boxes is expected to increase 1.7 percent per year to US\$9.8 billion in 2016.

### Market dynamics

New York State-based Island Pro Digital is preparing for growth of its own (see p31). The company has grown from seven employees at the start of 2010 to 13 in 2012, as well as moving to a new facility offering twice as much space.

A full-service media fabrication company that specializes in digital, offset and wide format printing, nearly all the packaging work Island Pro Digital carries out is from trade customers looking for an economical

way to deliver short-run printed packaging to their customers. It is able to produce quantities ranging from 1 to 100,000 pieces.

Island Pro Digital is now in the midst of growing its customer base, having started locally, expanding within New York State and now serving customers on the other side of the country. This growth has been driven by its online presence, but also by the growing demand for its services as a supplier of high-quality short-run packaging.

President Kurt Kubik says: ‘Growth has been good but it has been challenging.’

Warren Werbit, founder of Canadian packaging converter Pazazz, says: ‘The market is good, but how well a business performs is based on how you think and how progressive you are.’

He says a two-tier market is emerging, where larger packaging houses handle the larger volume jobs, while smaller companies and commercial printers moving into packaging soak up the rest of the demand as they are better suited to handling just-in-time orders and smaller run sizes.

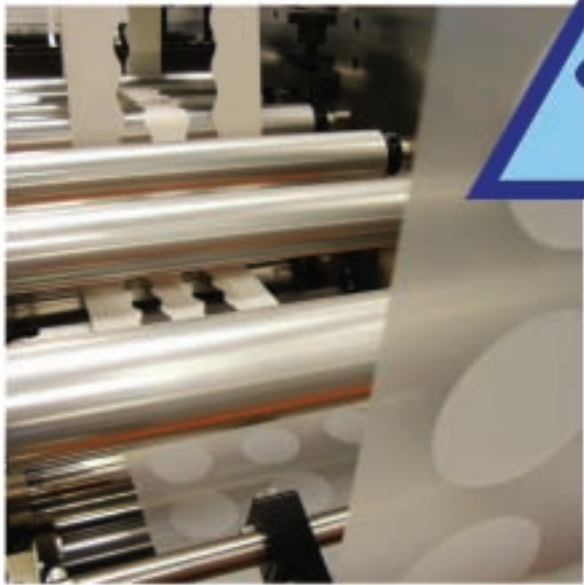
As a result, the market is changing differently for different players. ‘Everyone has to think smarter and invest to increase margins and profits.’

Hammer Packaging has used the downturn to invest in its business, which Iovoli says has put it in a strong position to capitalize now the market is showing signs of recovery.

‘We’re seeing an upturn as the market has stabilized and customers are moving forward with capital projects, at the same time that we have invested in our technology to handle their demands and productivity requirements.

‘It’s a perfect storm as these three things have come together.’





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### Booth 3523 - 2 Machine Demonstrations

Delta will be unveiling their Delta Crusader® Plus web converting system at LabelExpo. Visit booth 3523 to see a live demonstration of this new high capacity converting system. The Delta Spectrum® finishing system will feature semi-rotary diecutting of digitally printed web.

**Laser Workshop - Hall F** - Delta will be running  
4 different laser demonstrations everyday.

**Delta will be demonstrating equipment at the following shows:**



  
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American Association of  
Pharmaceutical Scientists  
McCormick Place, Chicago, IL  
October 14 - 18, 2012  
Booth 3811



McCormick Place, Chicago, IL  
October 28 - 31, 2012  
**PACKAGING  
PROCESSING  
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SHOW.**  
Booth S-2612



**COMPAMED**  
Messe Düsseldorf,  
Düsseldorf, Germany  
November 14 - 16, 2012  
Booth TBD



# Package printing makes its presence felt at **Labelexpo Americas**



**Package printing will have a strong presence at Labelexpo Americas, taking place in Chicago on September 11-13. David Pittman reports**

**P**ackage printing made its official debut at Labelexpo Europe 2011, where the dedicated Package Printing Zone drew crowds to listen to presentations from leading industry names, such as EskoArtwork, Xeikon, Comexi, Gallus, Heidelberg, ExxonMobil and others.

As well as presenting to attendees, Xeikon demonstrated its 3050, a web-fed, five-color, dry toner digital press in the zone at the Brussels, Belgium show.

Package printing will continue this presence at Labelexpo Global Series events during the next leg of Labelexpo Americas in Chicago this September, with dedicated workshops, conference presentations and a masterclass on digital printing all relevant to the market.

## **Workshops**

Package printing workshop sessions being held at Labelexpo Americas 2012 will see digital printing expert Xeikon, origination and pre-press specialist EskoArtwork and die cutting technology manufacturer RotoMetrics provide insight into the production process for folding cartons, plastic buckets and high-quality decorated tubes.

Three sessions will run each day during the show, each looking at one of these applications.

The carton application encompasses a carton wrapper to go around two jars of a My Moments food product, with the presentation carton wrapper printed digitally on a Xeikon 3000 series press, converted in-line with a Xeikon DCoat including RotoMetrics carton cutting dies, and roll-fed through to the finished cartons.

The heat transfer tube workshop will be using a Beaute product design. The product design incorporates a carton box, a seamless plastic tube and the required promotional material communicating the product range expansion. During the workshop Xeikon will digitally print, roll-to-roll, on a wax-coated heat transfer material, finished on-roll for subsequent transfer to seamless plastic tubes.

The plastic bucket workshop sessions will elaborate on the potential types of decoration for buckets/pails. This can involve heat transfer printing or in-mold decoration. During the workshop in-mold labels will be digitally printed by Xeikon from roll-to-roll and finished ready for in-mold labeling of the buckets.

Preceding each of these sessions, EskoArtwork will take workshop attendees through the pre-press stages and use 3D visualizing to show how the products have been created to final format before any printing has been agreed, including rotating through 360 degrees, visualizing the finished product on store shelves and placing jars/bottles inside cartons.

The workshops will be ideal for label converters looking to diversify into other applications, for package printing companies interested in seeing what digital technology can offer, for label and pack designers, and for brand owners and retail groups looking to understand what digital can provide in terms of short-runs, different versions and variations, personalization, faster to market and enhanced supply chain solutions.

Sample folders of all the printed products will be available and a Q&A session will take place after each workshop.

## **Conference program**

Labelexpo Americas 2012 will also feature numerous streams and presentations relevant to the package printing market.

Day 2 of the conference program sees WS Packaging Group chief executive officer Rex E. Lane take part in the CEO round-table discussion, which will be moderated by Avery Dennison's label and packaging materials president Don Nolan. CEOs will discuss topics including differentiating yourself from the competition, addressing capital and employee investment, and job creation.

Later in the day, Steven Haedrich, owner and president of New York Label & Box Works, will address package printing opportunities for label converters. He will offer practical advice on getting started,

explore potential entry strategies for both cartons and flexible packaging, and look at the advantages of a completely integrated workflow for labels and package printing.

Various other presentations on the conference program are also of interest to the package printing market. Flexo printing, ink technologies, security and brand protection, and waste reduction are topics covered elsewhere on the program.

## **Masterclass**

In addition, a three and a half hour digital printing masterclass will take place on the final day of the show, and provide packaging and label converters with a "how to" guide covering technology, materials and performance.

Key industry experts will: analyze the main digital printing technologies, highlight the importance of digital pre-press, evaluate workflow and color management, identify in-line and off-line finishing options, and consider the changing role of management, sales and marketing in a digital environment.

Representatives from HP, Xeikon, EFI Jetrion, EskoArtwork and Labeltraxx will address various facets of digital printing through panel discussions and presentations, while Mike Fairley, director of strategic development for Labelexpo Global Series and *Package Print Worldwide* international publishing director, will provide insight to the overall trends and requirements for converters to adopt digital printing.

## **Exhibition**

A number of exhibitors at Labelexpo Americas will be showcasing technologies and products relevant to the package printing market. Highlights of package printing's presence on the exhibition floor can be read on the following pages (please turn over).

*For more information on Labelexpo Americas, and to register to attend the show, conference and masterclass, visit [www.labelexpo-americas.com](http://www.labelexpo-americas.com). Make sure to read PPW issue 4, 2012 for package printing highlights from the show.*

## PRE-PRESS

### EskoArtwork

#### Booth 5202

EskoArtwork will have its largest ever presence at Labelexpo Americas in 2012, and will show a range of products and services. These include PantoneLIVE support within Esko's workflows, remote proofing and automated production software for hybrid printing environments. On 12 workstations, visitors will be able to experience an array of software solutions for artwork, management, design and prepress, color management, workflow automation and process integration.

### Testing Machines

#### Booth 1650

Testing Machines will introduce the new model 49-56 precision digital micrometer. The system features a comprehensive software program for controlling test speed, auto zero, auto sample detect, selectable opening distance, selectable measurement range, selectable dwell time, built-in auto sample feed option, statistics, multiple languages and calibration records.

### Trinity Graphic USA

#### Booth 5910

Trinity Graphic will be showing embossing plate technology, and talking about how this can improve end products by bringing sculpted embossing into the product line.

## PLATES AND PLATEMAKING

### DuPont Packaging Graphics

#### Booth 5403

DuPont will showcase its new Cyrel DigiFlow workflow enhancement. Designed to expand the capabilities of digital Cyrel and digital Cyrel FAST, this new system delivers superior print quality and productivity. It adds a chamber that allows the creation of a controlled atmosphere during the main exposure allowing one-to-one reproduction of image elements on the plate. DuPont is also showcasing new digital plate

technology that achieves higher solid ink density while maintaining high resolution, low dot gain and excellent run length.

(See Fujifilm also, booth 5621)

## PRESS TECHNOLOGY

### Nuova Gidue

#### Booth 5722

Nuova Gidue will show Digital Flexo 3.0, its latest generation of digital flexographic technology. The new system delivers excellent production output compared with other digital printing technologies, and is ideal for print runs of all sizes. The M5 430mm, eight-color UV flexo press shown will be equipped with three die cutting units.

### Omet

#### Booth 3123

Labelexpo Americas will see the launch of the first Omet Xflex X6 all-in-one-pass multi-process press in 530mm width. Omet said such a press can be highly competitive for packaging printers, and label converters, needing to increase their plant productivity without affecting general costs.

### Roland DG America

#### Booth 6412

Roland DG America will be displaying state-of-the-art printer/cutters from its VersaUV, VersaCMM and VersaStudio product series. The VersaUV LEC-330 UV printer/cutter features DPI, EDP and Label Industry Global award-winning technology for exceptional versatility and stunning matte and gloss finishes, including embossing and other tactile effects. Also on display will be Roland's VersaCMM VS-540 wide format printer/cutter, and the VersaStudio BN-20, an affordable 20in desktop inkjet printer/cutter.

## ON-PRESS TOOLS

### Dover Flexo Electronics

#### Booth 5400

Web tension control specialist Dover Flexo Electronics will demonstrate new devices, including the NW Narrow Web Tension Transducer. This is a robust cantilevered tension-sensing idler roll for label printing and narrow web applications. The new size 0 NW Transducer with a 2.25in roll diameter is the ideal tension sensing device for lighter tag and label applications that don't require the muscle of the

size 1 (3in diameter roll) or size 2 (3.5in diameter roll) NW Transducers.

### Allison Systems Corporation

#### Booth 3125

Allison Systems Corporation will be presenting its new heavy-duty dual head peristaltic pump designed specifically for narrow web applications. This pump will provide precise control of ink flow through the chamber on both the supply and return sides.

### Mach III Clutch

#### Booth 3801

Mach III Clutch SensiFlex tension control clutches and brakes will be on display, including the new ultra-low coefficient friction facings. With lower torque capacities, the SensiFlex ULOW models provide finer torque control when very light tensioning is required.

### Electromatic Equipment

#### Booth 131

Checkline's new LS-LED fixed-mount, linear stroboscopes feature lifetime LEDs that never need replacement, making these high-performance strobes virtually maintenance-free. State-of-the-art LED technology and custom optics deliver industry-leading brightness and uniform light distribution, while high-quality construction handles the toughest production environments. Three models (LS-5-LED, LS-9-LED and LS-18-LED) can be used singly or combined to accommodate virtually any web width.

## FINISHING AND CONVERTING

### RotoMetrics

#### Booth 129

RotoMetrics' booth will include AccuStar flexible dies. AccuStar flexible dies respond to the challenges of die cutting 23-micron/.00092in PET liner material – and even thinner (.00075in) films. Given the absolute premium on control of liner strike, the die is machined to a tolerance on total plate height of +/-2.5 microns (.0001in). Advanced manufacturing technology also delivers narrower, more durable blade angles, and laser hardening achieves hardness levels of up to 68 HRC, providing long lasting performance in high-volume applications.

### Martin Automatic

#### Booth 811

Martin Automatic will be running demonstrations of the MBS splicer and LRD rewinder. The MBS butt splicer is known for its versatility in running a wide variety of substrates. The latest version comes standard with a package of features, including ultrasonic sidelay sensors and spiral grooved rollers, for unwinding and splicing many clear film structures. The LRD rewinder



Web tension control specialist Dover Flexo Electronics will demonstrate new device





accommodates 800mm diameter rolls in the standard model, with larger diameter models available.

#### **Catbridge Machinery Booth 3510**

Catbridge Machinery designs and manufactures slitter rewinders tailored to each customer's needs. The new Model 900 duplex center winder for 32in rewind diameters offers versatility, speed and simplicity. The Model 901-40, a cantilevered duplex winder for 40in rewind diameters, features a patented dual tray roll discharge system. The Model 140-45, a high-speed salvage winder for 45in diameter rolls, provides splice, inspection and slitting capabilities as well as easy roll loading and unloading.

#### **Karlville Development Booth 158**

Karlville Development is to show wide web slitter rewriter, narrow web slitter and inspection, lamination and extrusion equipment. This includes the K3 seaming machine, ideal for shrink converting at high speeds.

#### **Atlantic Zeiser Booth 6411**

Atlantic Zeiser will show inkjet systems for coding, serializing and individualization of various types of security or commercial labels and flat packages, as well as booklet labels. Atlantic Zeiser inkjet solutions meet a broad range of requirements for security, pharmaceutical and cosmetics print applications. It solutions for high-quality individual coding, identification and additional printing with variable, digital data

#### **Universal Engraving Booth 255**

Universal Engraving will display its world-class graphic arts die products for hot stamping and embossing. A full range of copper and brass engraved dies will be showcased. UEI's engraved graphic arts dies are the premier dies for flatbed rotary stamping and embossing.

### **SUBSTRATES**

#### **Wausau Coated Products Booth 3015**

Wausau Coated Products will show several items from the company's new line of flexible packaging products optimized for use on HP Indigo digital presses. Wausau Coated's packaging product offerings include PVC and PET-G shrink sleeve, peelable coffee web, cosmetic packaging film, co-ex heat seal polypropylene, metallized fractional packaging film, along with 14pt and 16pt folding carton material.

#### **ITW Thermal Films Booth 1455**

ITW Thermal Films will show two new resin ribbons; B325 Flexible Extreme Series Resin for flat head technology printers and P310 Durable Techno Edge for near-edge technology printers. P310 is a high-speed, flexible resin made for flexible packaging applications that require increased smudge and scratch resistance. B325 flexible resin is ideal for a wide array of synthetic materials offering superior adherence and good durability.

### **Infinity Foils**

#### **Booth 255**

Infinity Foils will showcase its lines of foil and make-ready products for use in rotary foil stamping and embossing. On display will be foil for both hot stamping and cold foiling. Infinity's superior foil products are offered in a wide shade range, providing narrow web printers with solutions for any application.

### **INKS**

#### **GSE Dispensing Booth 551**

GSE Dispensing will show how its automated ink logistics systems and management software packages contribute to a waste-free, smooth running ink workflow, under the (Th)ink Lean theme.

#### **Fujifilm Booth 5621**

The show will mark the launch of Fujifilm water-based flexo inks. Fujifilm have leveraged the experience gained from providing high-value UV inks to offer printer-friendly water-based inks with optimized viscosity and pour-and-print characteristics. It will also be showcasing the Flenex DLE computer-to-plate (CtP) system for flexo plates.



*Karlville will show a range of finishing and converting equipment*





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By Ed Hesive

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CPS presses are engineered for high-end folding carton production



# Dedicated to carton **press** engineering



**Canadian Primoflex Systems (CPS) mid-web flexographic presses are designed and engineered for high-end folding carton production, writes Danielle Jerschefske.**

**W**hen CPS purchased the intellectual property of the Impressionist line of flexographic presses, its intention was to fully support all of the existing Arpeco press users, and also to develop new and improved lines of flexographic presses and converting equipment. Exclusively focused on the folding carton market, CPS launched the LP line, which is fully servo driven and available in widths between 22-32in (559-813mm). In 2010, the company developed a second line called the CP series of presses that uses both servo and mechanical drive technology.

One of the unique aspects of the CPS machines is the infrastructure. Each platform is constructed around a 60mm-thick cast base frame and 40mm-thick side frames that give extreme rigidity. Mark Friedrich, CPS president, says: 'Not many presses in the global market are made specifically for folding carton production.'

'The original Arpeco system was the first press designed for this market with good printhead design and ultimate web control that has resulted in superior print quality and

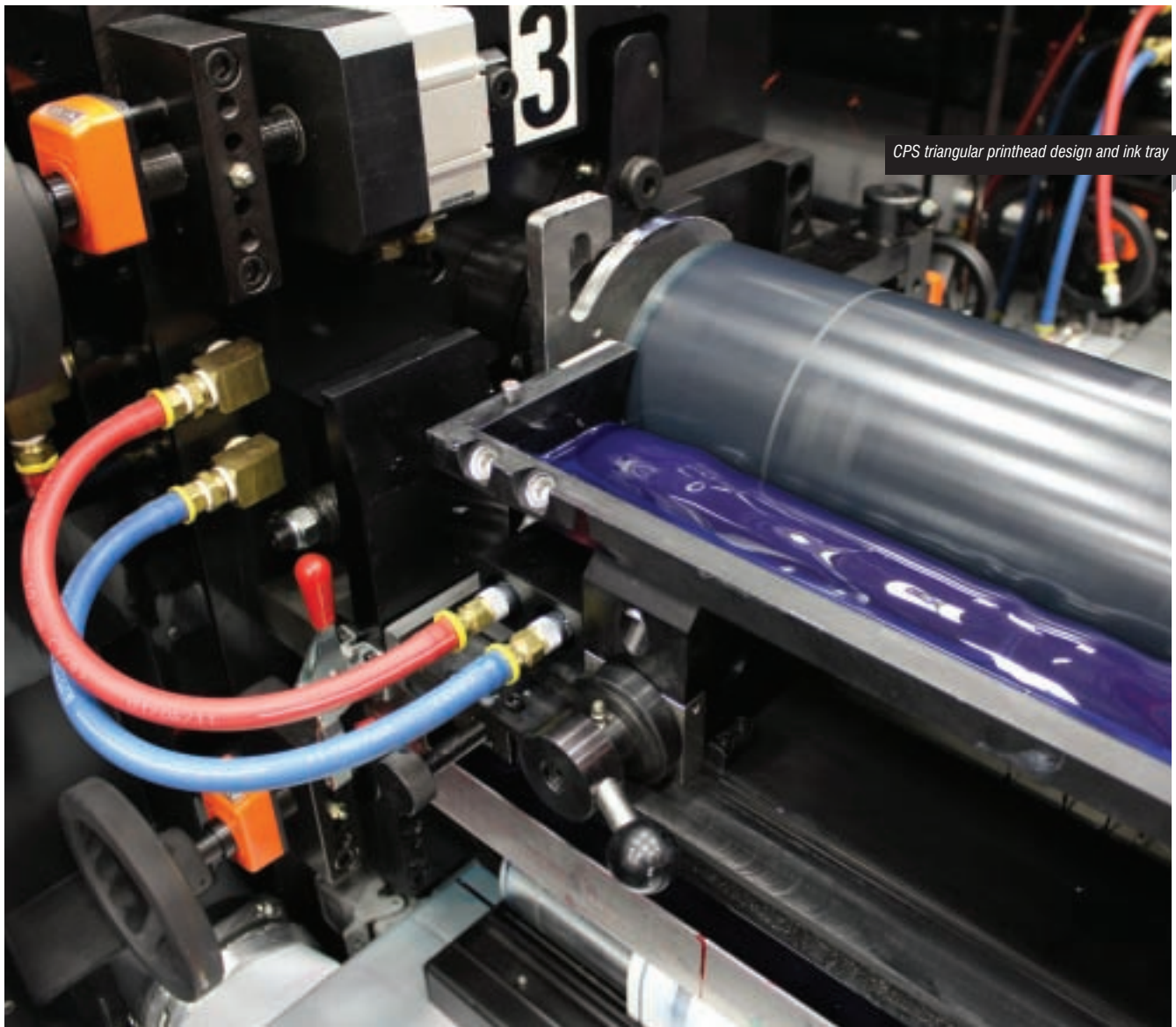
registration. With the design improvements we've made as CPS, other in-line style flexographic printheads cannot offer the same plate cylinder positional accuracy that our machines provide.'

The CPS Primographic print station is a triangular-based system, whereby the plate roll is the only one that moves, held in space with over 2000lbs of mechanical force; this provides a very accurate and consistent pressure to the anilox and impression roll when bringing the print cylinder into impression.

The LP line uses Bosch Rexroth servo motors to drive each roller independently, including the chill and draw rolls, and the drives as well as the PLC controls. The CP line with the same style of printhead uses servo motors to drive each roll, but has a gear interface between the plate and the impression roll. Both models use ECO drives to automate the load and unload of the plate cylinder.

The printhead has a programmable impression setting whereby job-specific profiles can be uploaded to achieve the precise impression requirement for each job. With this triangular design and with a direct drive servo system, the





CPS triangular printhead design and ink tray

operator is able to remove anilox rolls without tooling to change colors on the fly, which is a great way to save on material costs and improve make-ready time. The Masterchange system is a total change of the inking system including the anilox roll and ink. The ink cartridge is designed to be removed using a gantry system and changed with ink in the fountain on a cartridge table that sits next to the press base.

#### Web control

Every machine is equipped with an automatic butt splicer on the front-end for non-stop production. A robust in-feed section provides an isolation point between the printing section and the unwind. This station uses a specially coated 24in (610mm) draw roll to avoid slip. The print out-feed and the die in-feed have a similar type separate draw rolls which isolate any web jostling that occurs during die cutting. The result is consistent, reliable web transport control.

CPS machines have a proprietary automated registration control, which

requires operators to print a mark at the first station only, while optic sensors and encoders read the distance between each station. The registration print mark can be placed anywhere on the web and only requires a 10mm dead zone.

#### Innovative rotary die station

The LP series modular rotary die cutting system is designed to withstand the manufacturing hurdles found in folding carton and liquid packaging converting. This module utilizes a proprietary flexible magnetic die mounting system for easy die changeovers. Many CPS customers have gained an edge in the highly competitive, low-margin dairy market space with their die cutting systems. 'Some are realizing average waste levels of less than 2.5 percent,' says Friedrich.

'The die modules are easily interchangeable and are locked and loaded hydraulically in only 30 seconds. The CPS die cutter supports all types of rotary die tooling – solid and flexible.

'Using our exclusive auto die loader, flexible steel dies are precisely registered

and mounted together in one motion. Using our unique locking system, off-line die make-ready can be accomplished in less than two minutes.'

With a bearer-less system the operator can raise and lower each die to adjust the cylinder gap. A die gap adjust mechanism allows the cylinder gaps to be changed by very small increments in seconds.

In addition, the system has the ability to cut, crease and emboss using a single station, and a servo-driven stripper and specially designed barbs pull inner and side waste out and a comb removes it.

#### Longer lasting dies

Friedrich explains: 'With our system the dies last longer; around five million revolutions, whereas crush cut bearer type dies typically last about one million.

'The other benefit is that with rotary cutting, there is no speed limitation.'

*To see how CPS technology is helping US carton converter Colbert Packaging surpass its production goals, please turn over.*



# Colbert Packaging chooses CPS folding carton press



**Colbert Packaging selects CPS press to increase folding carton production capacity and improve turn around times as the market shifts, writes Danielle Jerschefske.**

**H**eadquartered in Lake Forest, Illinois, Colbert Packaging is an established manufacturer of folding cartons, rigid paper boxes and paperboard specialty products with three manufacturing plants in the Midwest.

It operates two sites in Illinois and one in Indiana, and was founded in 1959 when Charles Colbert purchased the property and assets of Kroeck Paper Box, a Chicago company founded in 1892.

In the Illinois plants, a majority of the business caters to the healthcare market. This market includes: ethical and generic medicines, over-the-counter (OTC) pharmaceuticals and diabetes care products. With a diverse packaging platform, including narrow web label production, the converter also produces high-end custom work for major brands in the pharmaceutical, as well as the health and beauty marketplace.

In 1999 the second of the Illinois-based plants was opened as Colbert Flexographic Packaging for folding carton and label production, investing in two 20in (508mm) 4150 Mark Andy presses within a year. Most recently, in February 2012 Colbert installed a Canadian Primoflex Systems (CPS) CP 585 hybrid servo and mechanical in-line press. Brad Davis, general manager of Colbert Flexographic Packaging says: 'Increased competition and smaller margins have forced our company to carve out a niche. Our focus is to remain lean and flexible. We have found that we're able to complete the manufacturing process faster and with less labor using in-line flexographic production and its ability to produce more with less.'

## Capital Investment

The new nine-color 23in (584mm) CP 585 is a hybrid servo and mechanical press that can print four-color process work



on both sides of the web, is equipped for both water-based and UV, cold foiling and embossing hitting speeds up to 500ft/min. To maintain consistency in tooling for its in-house finishing systems, the converter selected to invest in a Kempsmith flatbed die cutter.

'The CPS is engineered to be a solid machine dedicated to manufacturing high-end folding cartons,' Davis explains. 'And the unique CPS web tension and computer print registration system takes production to another level. We didn't want a press that can do everything. We are a folding carton company very focused on what we do best. We're not looking to print 24pt board and then shift to a thin flexible substrate.'

Not every carton is a good flexographic fit. In the past the main differentiator between offset and flexo has been based on print capability, especially in process and screen printing. Improvements in the CPS press, pre-press and flexographic plate technology have narrowed this gap significantly. Colbert has the added advantage of a full complement of sheet-fed offset equipment. Each carton can be individually reviewed and then placed in the production process in which it fits best.

The triangular CPS printhead design (*read more on pp. 25-27*) allows for rapid color changing and requires minimal set-up time to produce saleable work. Davis continues: 'Run lengths are going down as brands move from a single flavor to variations and more frequent turns on copy. The sheer number of SKUs is unbelievable.'

Colbert is cGMP (current Good Manufacturing Practices) compliant, an FDA process standards system specific to drug manufacturing and related suppliers. It uses a specially designed Nordson (Bobst) glue detection system to insure that cartons produced with the same size and style yet different dosage requirements are labeled, packed and shipped accurately.

The converter is unique in its selection of the CP hybrid series press. Most converters believe direct driven servo is the ultimate answer to print consistency. However, Mark Friedrich, president of CPS, says: 'Having a partially mechanical press with an extremely stiff drive line results in superb web transport control and thus very accurate registration. Our CP series press is able to consistently hold a print to print registration of +/- 0.003in. This accuracy matches our full servo LP series machine, but offers customers a more economical equipment option without sacrificing quality.'

### Design/supply chain

Colbert works closely with its clients' art directors, in-house pre-press technicians and recognized pre-press suppliers to deliver quality jobs. On a global scale, it's not easy to assist brands in matching graphics across print processes, multiple ink/coating possibilities and material options. For this reason clients typically specify virgin paper material to improve consistency.

Colbert is heavily involved with creating the packaging container design. Ideally, at the beginning of the sales cycle, the process often includes structural designers and packaging engineers. These are the people that understand the functional requirements, filling lines and market development processes of a project. They expertly advise clients on what design elements need to be included so that a carton meets all needs and effectively makes it through the value chain. Something as simple as a perforation must be able to last through the supply chain and distribution, yet clients often want the container to tear cleanly and act as a pop out display on shelf when used as a POS in retail.

'This system creates idea generation and innovation,' says Davis. 'We know the rigors of shipping to various global locations, and as an industry we need to be more global in outlook. Yet in terms of service, it's all about location and timing. The cartons have to be on site and ready to run when the customers' filling lines start up.'

### Labels and digital printing

In addition to the three folding carton presses, Colbert is using Mark Andy 2200s to produce labels, which is about 10 percent of the business. Davis tells how the company incorporated label production into the portfolio, 'We had the healthcare business that required labels in many cases, so we decided to free up the purchasing agents and make our business turnkey.'

While Davis feels that digital print technology on the label side is commercially viable today, when it comes to machinery for folding cartons, he says the performance is not yet where the company feels it needs to be.'

### R&D

Catering for the pharmaceutical and healthcare marketplaces requires a strong commitment to research and development. Special functional requirements are commonplace, like child resistant, senior friendly and compliance packaging. Colbert is also involved with incorporating new overt and covert anti-counterfeiting features. Website verification through a printed code is on the horizon. Davis says: 'We have not seen smart and interactive features happen as quickly on the carton side as they have in the publishing and commercial print sectors. But what's been leading edge in commercial, labels and cartons will follow, particularly as more regulations are coming through from government. There's only so much space on a package.'

With the CPS CP series press, Colbert Packaging is poised to effectively tackle shorter run lengths in the folding carton market, while maintaining manufacturing integrity and profitable production. Coupled with its expert consultation, this will help the company to continue finding growth in a highly competitive market.

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# Your short-run packaging friend



**Island Pro Digital president Kurt Kubik talks to David Pittman about the company and its role in supporting the market for short-run packaging.**

**N**ew York State-based Island Pro Digital is expanding its short-run packaging capabilities as a result of customer demand.

The company was formed by Kurt Kubik, a former pre-press operator with over 20 years of experience in the print industry, and his son Kyle.

It's a full-service media fabrication company that specializes in digital, offset and wide format printing, and undertakes work for other trade and commercial print shops looking to outsource short-run packaging work, including cartons and boxes.

Nearly all the packaging work Island Pro Digital carries out is from trade customers looking for an economical way to deliver short-run printed packaging to their clients.

By passing the work on to Island Pro Digital they are able to supply clients looking to diversify their product portfolio and packaging requirements.

Taking on the role of a sub-contractor can prove tricky, Kubik explains. 'I know a lot of the packaging houses from my days as a pre-press operator, and encourage them to give me their short-run packaging work.'

'Some are understandably very protective over their customer lists, and are hesitant at first to share that information with a third-party.'

'Many realize the benefits outweigh the potential costs when they understand that the client is going to go out and look for someone that can do it, who might offer to do the longer run work as well, so you end up losing the business altogether.'

As well as pre-press and package printing services, Island Pro Digital also carries out variable data printing and prototyping, produces hangtags, posters, point of sale displays and tradeshow displays, and has the capacity to do screen printing and embroidery for apparel. Digital audio and video production services are another string to its bow.

However, it is packaging where Kurt Kubik sees future gains for the company. 'We are being rebranded as a short-run packaging and prototyping solution for all industries. We're able to produce quantities ranging from 1 to 100,000 pieces.'

Formed in December 2009 with a workforce of seven, the company has grown quickly to a staff of 13 and recently moved from its previous 5,550 sq ft facility in Islandia, New York to a new 10,000 sq ft home in Hauppauge, New York.

While using only around three-quarters of its size to begin with, the new facility future-proofs Island Pro Digital and give the business the capacity to continue expanding.

Kubik says: 'We built our reputation on delivering short-run, high-quality work.'

'When we first opened our doors our customers were primarily within New York State but thanks to our virtual presence we were able to expand our customer base to other states such as California and New Hampshire.'

It operates an array of equipment to provide its services, from a Heidelberg Quickmaster DI and a wide format press to various die cutting and lamination machines.

Kubik wants to see the company keep expanding, both in terms of the amount and types of job it can handle.

This will see the company invest in new technologies and processes, as well as continue to maximize the equipment it already has.

'We're able to think outside our capabilities, and to take our existing equipment and re-imagine its original purpose.'

He adds: 'I'm passionate about what we do. We're good at it and work hard.'

'Packaging houses trust us because they know we're not going to go after their clients and similarly they know they can trust us to deliver a high quality product at the end.'

'We're focused on high-quality, short-run work, and handle boxes and packaging jobs on almost a daily basis, but have the potential to do even more.'

The possibilities for growth are coupled with an increasing need for its services across the printing industry, although potential customers may not know of Island Pro Digital.

Kubik says: 'To make growth happen, we need to get our name spread further in the industry, as I feel like we're the biggest kept secret out there.'

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# Printed electronics revolution



**A technology innovation center in the UK is demonstrating how converters can create their own smart label operations using standard narrow web equipment. Andy Thomas reports**

**T**he Centre for Process Innovation (CPI) has installed a custom-built, multi-process narrow web Nilpeter as a test bed to develop printable electronics for a variety of applications including labels, cartons and flexible packaging. The press will form part of the Integrated Smart Systems line (ISS) which will enable electronic components to be integrated with printed circuits.

Although electronic circuits are already being printed on flexible webs, these are often located in dedicated and expensive clean room operations using bespoke equipment. The project at CPI aims to demonstrate that any label converter using commercially available equipment can be part of the Integrated Smart Systems supply chain through printing of conductive inks in a standard pressroom environment.

The Nilpeter press is a 16in wide machine specified to handle paper, cartonboard, films, foils and label stocks with thicknesses between 25-370 microns. The modular machine includes two MO4 offset units equipped with UV curing stations; two FA4 flexo units able to run water-based, solvent and UV inks; two screen units for UV inks; and a solvent gravure unit. The press operates in both reel-to-reel and reel-to-sheet modes, and can re-register from unit 1, allowing CPI to simulate larger presses with multiple print stations. Auxiliary processes include de-lam/re-lam, UV lamination, cold foil and die cutting/sheeting.

The process of manufacturing Integrated Smart Systems pieces starts with printing the label or carton's graphic elements, followed by "large area" electronic circuits. After sheeting, the pieces are coated with conductive adhesive on a flatbed DEK screen press with a print accuracy of 10 microns. A commercially available pick and place unit used extensively in the electronics sector then positions miniature components, such as chips, flexible displays, batteries or even tiny loudspeakers, on the printed circuit tracks.

The sheets are cured in an oven to bond the components to the printed circuits, forming both a structural and electrical connection. As a final stage, the ISS sheets are converted into short runs of finished labels, flexible packaging or cartons. Finishing equipment includes an Esko Kongsberg i-XE 10 digital cutting table to cut & crease boxes and kiss cut labels. A Trotec CO2 laser handles fine cutting, engraving and ablation of circuits. The operation is also supported by CPI's wide range of sophisticated analysis equipment to measure material, ink and structural properties.

## CPI team

Running the platform is ISS program manager Bela Green, supported by technical print manager Neil Porter. Porter draws on a wealth of narrow web print operator experience at leading converters including the Clondalkin Group (formerly Harlands Labels).

The CPI team is looking for partners from across the supply chain to take the ISS project forward, from brand owners and designers to suppliers of inspection equipment, substrates, inks and pre-press

equipment. The ISS line at CPI is available for development work, prototyping, scale-up and pilot production. A key task will be assessing the performance of the conductive inks. 'We need to get total uniformity of ink coverage and no pinholing or scratches on the printed surface if we are to achieve the required levels of conductivity,' says Neil Porter. 'So scuff and rub testing will be critically important, particularly when the label is on the applicator line.'

'We will be evaluating print inspection systems to see if they are adequate to detect these kinds of flaws. It is more a question of uniform coating than high print resolutions. Another issue to be researched is how to clean conductive inks in each print process.'

If successful, the Integrated Smart Systems line at CPI could mark a watershed in the history of label production. For the first time, label converters of any size will be able to start up their own smart label operation, tapping into leading edge research into micro-electronics to create entirely new applications for designers and end users across the supply chain.



*CPI technical print manager Neil Porter in front of the multi-process modular Nilpeter press*



# Shaping South and Central America



**James Quirk speaks to leading industry analysts about growth and end-user trends in South and Central America's flexible packaging and folding carton sectors.**

**S**outh and Central America – a region of some 430 million people spread across 19 countries – has seen strong economic development in recent years. Growing economies and a burgeoning middle class have increased consumption of flexible packaging and driven improvements in local production and the supply chain.

According to US-based analyst PCI Films Consulting, the South and Central American flexible packaging market has grown by an average of 5.3 percent per annum since 2005, reaching US\$4.5 billion in 2011. That figure means the region represents just over six percent of global demand, which is estimated to be US\$71 billion.

The consultancy published a regional flexible packaging market report last year, which analyzed data up to the end of 2010. It put the sector's worth at US\$4.3 billion, predicting an upturn in growth in 2011 but then a slowdown in the years to follow.

Paul Gaster, an analyst at PCI Films Consulting, says the prediction has thus far proved correct: the figure increased to US\$4.5 billion in 2011. However, he said, the region's growth rates are unlikely to be sustained at their current levels over the next few years.

The region's largest flexible packaging markets of Brazil and Argentina have been experiencing a steady five percent annual growth in recent years, with smaller markets such as Peru, Colombia and Ecuador approaching 6-7 percent. South and Central America emerged unscathed from the global recession of 2008 and 2009. Internal growth remained strong, and the flexible packaging market grew in turn.

Brazil, says PCI, remains the region's powerhouse – accounting for 48 percent of total demand. If you add Colombia and Argentina, that figure rises to 67 percent. The Brazilian food industry is described as “modern” by international standards, for example, and 40 percent of food supplied to Brazil's 200 million population now comes through the supermarket channel.

Major end-use growth areas include food – especially processed and fresh meat, and particularly in Brazil, where it makes up some 20 percent of the local flexible packaging market. In more general terms, says Gaster, the region has benefitted from increasing relative prosperity and disposable income.

PCI Film Consulting predicts continuing growth in flexible packaging output by regional converters at an average of 4.6 percent a year to 2015, a slight drop on the figure between 2005 and 2010.





The spread of supermarket retailing, growing populations and increasing numbers of single person households, working women and young consumers will contribute towards flexible packaging growth. There are prospects for further consolidation among producers, and environmental considerations will tend to benefit flexible packaging as pressure is applied to manufacturers to reduce packaging volumes and post-packaging waste.

### Materials

According to the PCI Films report, most of the flexible packaging demand is satisfied by internal producers, with only one percent imported and two percent exported outside the region. However, some raw materials, notably PET film, still come in from China and India. There is substantial BOPP and PE film production, though only one regional PET film producer.

As the flexible packaging market has continued to develop, demand for higher barrier, higher specification packaging has increased and local converters have made investments to substitute the volumes previously imported.

Dramatic variations in these regional import and export figures are unlikely, and Gaster says: 'South America does not have the same ease of cross-border trade as Europe. But with regards to the importing of high-quality materials from regions such as North America and Europe, Brazil in particular is seeing growth.'

High-quality machinery has been installed in the country in recent years – particularly thanks to the acquisition of Alcan Packaging by Bemis in 2009 – and the growing economics of the local market means that packaging is increasing in quality.

American group Bemis, through its subsidiary Itap Bemis, is the largest flexible packaging converter present in the region. Strong previously, it was able to take a more dominant position with

the purchase of Alcan Packaging's Brazilian flexible packaging interests, and now the company has sales of US\$280 million in Brazil alone.

'The Central and South American flexible packaging market is now well served by local production,' says Gaster. 'Any multinational converter still planning to grow its business in the region would do well to consider forging alliances with or acquiring local converters.'

The challenges faced by flexible packaging converters in South and Central America are mainly the same as in other parts of the world. Gaster cites bureaucracy – above all in Brazil – as a regional-specific challenge that converters need to overcome.

Though PCI Films doesn't hold specific data, Gaster points to gravure as the most popular print process used by flexible packaging converters in the region – unlike the US, where flexo is most prevalent, and more like the Far East, where gravure is thought to make up 80 percent of the market.

Digital, while making inroads in the US and Europe, has a much smaller footprint in South and Central America within the flexible packaging market.

### Supermarket growth

Pauline Tung, an analyst at US-based research firm Freedonia, paints a similar picture. The consultancy projected the region's demand for converted flexible packaging to increase by 3.8 percent annually in the five years up to 2013. This figure is slightly higher than the global average, but represents a slight slowdown in growth from the 2003-08 period, with the pace of economic expansion and growth in the region's food and beverage output also slowing.

According to Tung, the food market will continue to represent the majority of demand, and advances will be supported by trends toward US-style product retailing practices and the advent of large supermarkets and retail stores carrying a host of packaged consumer goods. This will also include a greater emphasis on packaged single-serving items, snacks, confections, frozen entrees, ready-made meals and microwaveable prepared foods. However, she says, growth in this market will be limited by a deceleration in food and beverage shipments.

The outlook for the region, then, can be described as one of steady, if unspectacular, growth. With the exception of Argentina – whose market has begun to slow in recent months due to the country's economic problems – the flexible packaging market in most countries in South and Central America can expect to witness continued growth in the short and medium term, even if not quite at the same levels of recent years.

### Folding carton focus

According to Tung, the folding carton market in South and Central America is estimated at US\$2.5 billion. Demand, she says, is expected to increase by around six percent up to 2016, with Brazil remaining the region's largest market by some distance.

'Gains will be helped by continued economic growth, advances in personal consumer spending – albeit at a decelerated pace – and expansion of the middle class population. This will boost food expenditures, the main market for folding cartons in the region.'

'However, the region's food industries feature contrasting levels of development, with several countries still having a relatively small food processing sector with considerable growth potential.'

Folding cartons will continue to face competition from both rigid and flexible plastic packaging, says Tung. Pouches, for example, especially stand-up types, have seen rapid growth in food markets such as candy, snacks and dry foods, thanks to features such as greater aesthetic appeal, resealability, freshness protection and portability.



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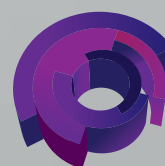
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# Are oxo-biodegradable products the plastics of the future?



**Michael Stephens, technical director of Symphony Environmental Technologies, looks at the potential for oxo-biodegradable plastics, and the role of products such as d2w in making plastics more environmentally friendly.**

**O**ne environmental trend that gained strong ground during 2011 was the adoption of oxo-biodegradable technology around the world as a solution to the accumulation of plastic waste in the open environment.

It has become mandatory in the United Arab Emirates and Morocco and other countries are following their lead.

Supermarkets, bakeries and other commercial users are adopting it to show their practical concern for the environment, and manufacturers of plastic products are seeing it as a low-cost defence against critics who say their products will lie or float around for decades in the open environment.

A product such as Symphony Environmental's d2w can provide a means to control the life of normal plastics and make them oxo-biodegradable. The d2w technology is controlled-life plastic technology designed to control and shorten the life of normal plastic products and packaging.

Symphony Environmental currently supplies d2w through 67 distributors covering 92 countries worldwide.

If all plastic had been made with d2w there would be no Pacific garbage patch.

## **How does it work?**

The fundamental point is that the d2w additive included at manufacture causes ordinary plastic to convert after its useful life by an abiotic process in the presence of oxygen into a material with a different molecular structure. It is not necessary for the material to be in moist or microbially-active conditions such as compost.

Timescales for degradation of plastic products can be set at manufacture as required, but they must necessarily be approximate.

When considering the benefit of oxo-bio plastic when disposed of as litter, the period required for complete biodegradation is not the relevant period. As explained, the biodegradation phase is preceded by the abiotic process of degradation, by oxidation. At the end of that process the material will have

fragmented into small pieces which are no longer plastic. The degraded material will then be hydrophilic and biodegradable. It will no longer have any visual effect on the land or sea and it will no longer be capable of entangling wildlife or blocking drains.

The abiotic phase can be as short as a few months depending on the heat, UV light, stress in the disposal location and on the grade of d2w used. As the fragments are invisible at the end of that phase, it is not important how long they take for total bio-assimilation, and materials such as twigs and straw, which are obviously biodegradable, will usually take much longer than oxo-biodegradable plastic to bio-degrade.

The d2w additive has been independently tested and found to be non eco-toxic. It has never contained "heavy metals." and cannot do any harm if leached into groundwater or ingested by animals or marine creatures. The metal salts used in the additives are trace-elements which are necessary for healthy plant and animal life.

### Two types of biodegradable plastic

There are two principal kinds of degradable plastic: oxo-biodegradable (oxo-bio) plastic, and bio-based plastics (compostable plastics) made from vegetable sources.

Bio-based plastic, like other products made from vegetable matter, uses land and water resources, and consumes fossil fuels in the production process. It is heavier and much more expensive than oxo-bio, and it does not readily biodegrade outside industrial composting.

It also emits methane in landfill (which oxo does not) and contaminates the waste stream if recycled with other plastics. It is sometimes said that bio-based plastics are preferable because the crops from which they are derived absorb CO<sub>2</sub> when they are growing, but so did the vegetation which was there before.

A lifecycle assessment (LCA) published by the UK Government in 2011 found that ordinary plastic and oxo-bio had a better LCA than compostable plastic or paper bags.

An LCA written by the same consultancy in 2012 put the environmental credentials of oxo-bio ahead of both conventional and bio-based plastic. Bio-based plastic performed worst in all 11 environmental impact categories.

### Oxo-bio: the sustainable plastic of the future...?

For these reasons, Symphony believes that oxo-bio plastic has become an accepted sustainable plastic packaging material of the future.

Oxo-bio plastic is made from a by-product of oil refining called naphtha, which used to be wasted by being burnt off into the atmosphere as an added pollutant. It is thus made from a fossil resource that has already been extracted to make fuels, so no extra oil is being refined to make it.

### Controlled lifespan

Oxo-bio is a controlled-life plastic with a pre-set lifespan programmed into it during manufacture. In aerobic conditions it will degrade automatically at the end of its life, without leaving any fragments behind. It will do so either on land or in water. It does not need sunlight to degrade, though sunlight and heat will accelerate the process. All it needs is oxygen to facilitate the degradation process.



*A d2w oxo-biodegradable plastic bag starts degrading into fragments, which then disappear completely at the end of the process*

Oxo-bio's controlled lifespan is its outstanding ecological advantage. It is thus almost certainly the best environmental solution for the great mass of plastic which gets abandoned into the environment, as it will degrade automatically until there is nothing left, even if not collected. It will do so much more quickly than conventional or bio-based plastics.

Although you can recycle it with ordinary plastics and compost it, it is not in fact intended for this at all. It was designed to solve the problem of plastic that gets abandoned in the environment and cannot realistically be collected for recycling or other forms of disposal. Its short lifespan ensures that it won't be a waste material for very long. There is no evidence that biodegradable plastic of any kind has ever encouraged littering.

The fact that it is recyclable is attractive to those users looking primarily for a recyclable plastic, but equally concerned with its impact on the environment if it is not collected for recycling but just left lying or floating in the environment.

### Importance of the right additive

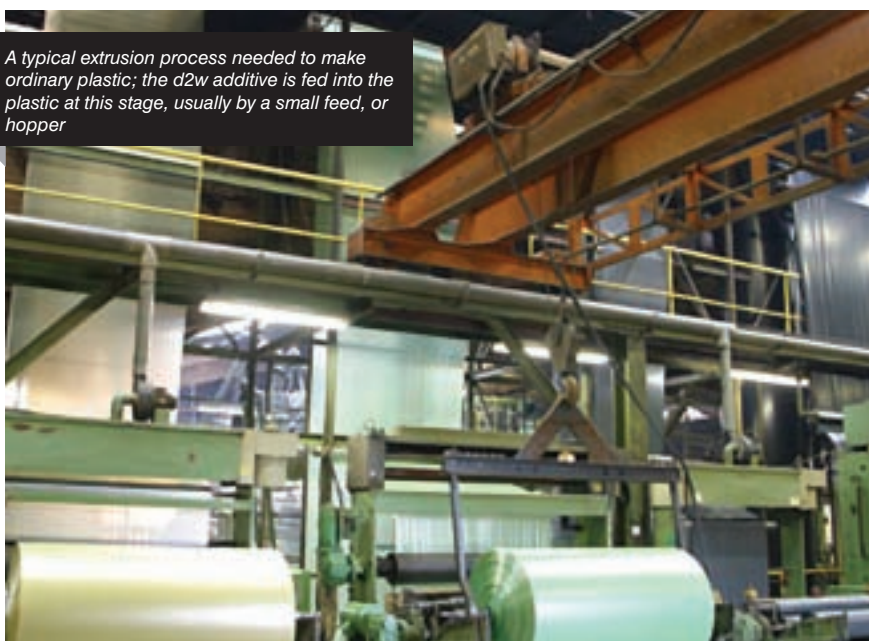
To make ordinary plastic such as polyethylene or polypropylene oxo-biodegradable, you add a prodegradant additive, such as d2w, during the extrusion stage. No re-tooling at the factory is necessary and no alterations to the existing supply chain.

Oxo-bio additives use a transition metal salt as a catalyst. This will be triggered into catalytic action very easily, and this is a great asset when degradation is required. However, premature degradation would be extremely unhelpful.

The solution is to balance special stabilizers in the additive that will restrain the catalyst during processing and use, yet allow the plastic



*A typical extrusion process needed to make ordinary plastic; the d2w additive is fed into the plastic at this stage, usually by a small feed, or hopper*



to degrade when its pre-set lifespan is at an end. These stabilizers can be geared to suit the different applications for which the plastic is intended. They must be appropriate for the processing temperatures and raw material specifications, but also suitable for the envisaged shelf-life and service-life of the finished product. We can pre-set the useful lifespan from as little as six months up to five years.

This is not as easy as it sounds. It is the balancing of these stabilizers that makes d2w so special and this is where the skill in producing an effective oxo-biodegradable plastic lies. It has taken Symphony many years and millions of dollars to perfect.

#### **Technical and safety standards**

Oxo-bio plastics have a number of important safety features built in. They

must pass the eco-toxicity tests in OECD 207/208; BS 8472 and ASTM D6954 to confirm they do not release toxic residues that could harm the environment.

In addition, they must conform to EU and US requirements for direct contact with food if intended for that purpose.

It is well known to science that when the molecular weight falls below 10,000 Daltons the material is no longer a plastic, and has converted to biodegradable substances such as carboxylic acids, aldehydes, ketones, etc.

It is not therefore really necessary to prove biodegradation by the traditional carbon-evolution tests which are extremely expensive and time-consuming.

By that stage the material is in such small pieces that there is little if any visual evidence of them and the

fragments, which grow ever smaller, will join the trillions of other particles in the soil and oceans, where they are bio-assimilated.

Oxo-biodegradable plastics and compostable/bioplastics sometimes get confused. In an attempt to end the confusion, the European Commission has pointed out that it would be deceptive to describe most types of compostable plastic as “biodegradable” because they will readily biodegrade only in the special conditions found in industrial composting.

#### **Oxo-bio popular in developing countries**

Because of oxo-bio's undoubted ecological benefits, it has become widely popular overseas, especially in areas where the amount of plastic waste is sometimes too great or inaccessible for efficient collection and disposal by traditional means or otherwise.

Because of its short lifespan, oxo-bio is highly effective at preventing plastic waste from festooning beaches and clogging up rivers and oceans and blocking vital watercourses.

With growing awareness of oxo-bio's ecological benefits, there is increasing demand for this kind of plastic on a worldwide basis.

More and more companies and governments are specifying oxo-bio as the preferred degradable plastic for carrier bags and packaging, in addition to many other products.

For instance, in the UAE, using oxo-biodegradable materials for plastic bags and packaging is now a legal requirement.

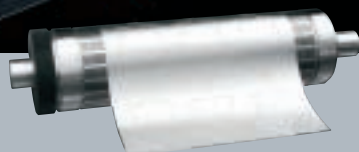
Anyone making or importing conventional plastic packaging into the region will have their goods impounded and will face a fine.

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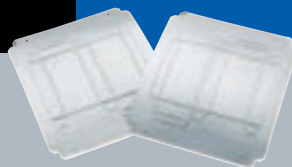
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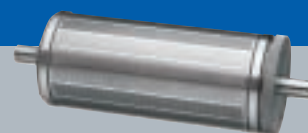
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# Cutting energy use



**Alan Jones, managing director at Universal Converting Equipment, outlines steps to help reduce energy consumption during the final stages of paper and film converting.**

**S**litting machines are no different to many other types of machines with many components that consume energy.

There is not one simple step to take that will make a drastic reduction in energy consumption. Instead, there are several changes that can be made which in total will significantly reduce the energy consumption of the machine.

## **Replace the unwind brake with a motor**

The brake is required to provide the necessary tension for the material to be processed. The brake uses friction to hold back the roll and the friction creates heat which is wasted energy. A motor can perform the same function as a brake but rather than creating waste heat, it generates electricity which can then be used to power other motors on the machine.

## **Use high-efficiency AC motors**

Not all AC motors convert electricity into motor torque with the same efficiency. An IE4 high-efficiency motor can be greater than five percent more efficient than an IE2 standard efficiency motor.

## **Eliminate gearboxes where possible**

Energy is lost in gearboxes and the higher the ratio, the higher the loss. Good design and correct selection of motor and drive belts can reduce or eliminate the need for energy-losing gearboxes.

## **Eliminate motors that run continuously**

Motors on hydraulic power packs tend to operate all the time the machine is running. Hydraulics tend to be used for roll lift and guiding systems. Both can be replaced with electric motor

based systems that only operate when required.

## **Ensure motors are running at the correct speed**

Trim removal systems typically have a fan to generate the suction to blow away the trim. These fans are sized to ensure there is sufficient suction to take away wide trims at high speed – the worst case. If the fan motor is inverter controlled, the speed of the fan can be varied according to the requirements of the product and the speed at which the machine is operating. The power is available when you need it, but you save energy when you don't.

## **Use excess energy**

As already discussed, motors can act as generators as well as consumers of power. Linking the power electronics of the motor drives together ensures that any surplus energy generated by one drive is used by the others.

## **Precise control system**

The latest digital drive systems allow precise control of speed and torque. Older systems build in safety factors to ensure the machine operates satisfactorily – these result in wasted energy. Precise control means you use only the power you need and no more. They also give better finished roll quality reducing the need to scrap or rework material.

Good design, good control and selection of the correct components can result in very significant energy reductions whilst at the same time improving product quality.

To achieve the savings it is necessary to pay more for the equipment outright, but the savings will be seen for 20 years or more. If you buy a machine based on cost alone you will miss the opportunity for ongoing cost savings.

India's changing retail landscape will require the country's converters to invest in new technologies



# India's new dawn



**Changes in the Indian retail landscape are putting pressure on the country's converters to invest and keep themselves at the forefront of innovation. David Pittman reports**

Indian printers and converters are experiencing wide-reaching changes that will shape their future.

One of the main changes is to retail foreign direct investment (FDI), and possible allowances for foreign firms to fully own and operate multi-brand stores in India.

Changes to the law at the end of 2011 allowed 100 percent retail FDI in single-brand stores, but plans to open up the market for multi-brand retail FDI were halted by political opposition.

This kept the likes of Walmart, Carrefour and 7-Eleven from opening up in India cities. However, minister of commerce, industry and textiles Anand Sharma has recently said that the country's government will reach a consensus on allowing foreign investment in multi-brand retail 'very soon'.

Speaking in the immediate aftermath of the original decision to shelve plans for 100 percent retail FDI in multi-brand stores at the end of last year, and as published in the first issue of *Package Print Worldwide* this year, Benjamin Punchard and Lamine Lahouasnia, both from market research and analyst firm Euromonitor International, said the Indian retail market is evolving and moving towards a supermarket/hypermarket model.

## **Retail changes**

'The Indian retail landscape is changing at pace,' said Punchard, head of packaging research at Euromonitor, while Lahouasnia, a retailing analyst at the firm, said: 'Foreign entrants would quicken the move towards hypermarkets, but it will occur regardless.'





Pragati Pack has installed an Omet VaryFlex V2 in-line folding carton converting system

Lahouasnia notes many large foreign retailers, such as Walmart and Tesco, are already operating in India through wholesale arrangements, and that allowing them a direct route to the market would benefit both consumers and India's economy, especially given the requirements to invest and support local suppliers.

Printers and converters operating in India acknowledge that changes are coming. Secunderabad Printed Cartons' executive director K. Lalit Aditya (Lalit) says: 'The market for printed packaging material will continue to grow.

'Organized retail is just entering smaller towns and will drive growth. This trend is going to continue as FDI in retail is around the corner.

'Over-the-counter selling is slowly reducing and packaging is playing a key role in product awareness and selling. The demand for packaging in its true sense is steadily growing and will continue to do so over the next few years.'

Harveer Sahni, managing director at Weldon Celloplast, says changing demographics will help shape the future of the Indian market. 'It will keep growing steadily and consistently in view of the younger population completing education and starting to earn adding to the swelling numbers of consumers.'

'Organized retail will definitely impact this change and if the Government permits FDI in multi-brand retail the packaging market will become really huge.'

Gururaj Kirsur, sales specialist with DuPont in India, reiterated Sahni's view that demographic changes will help shape the future of the India market.

Speaking during an Omet Open House event organized by Weldon Celloplast, the press manufacturer's Indian agent, to promote the installation of a VaryFlex V2 in-line carton converting system at Pragati Pack's facility near Hyderabad, Kirsur said demographic changes, globalization and growing demand for convenience foods are shaping the market.

Sahni says: 'Fast-moving consumer goods are perhaps the biggest market followed by pharmaceuticals, liquor and oil. Packaged food is a market that is likely to emerge as a frontrunner in times to come as consumerism and urbanization takes place.

'Moreover, the Government of India is encouraging the food processing industry by way of grants and subsidy. A bulging population ensures growth of this food segment, which is a basic human need.'

### Technology changes

The Omet Open House event was described by Sahni as an opportunity to empower the market and grow its knowledge base. 'India is ready to modernize and adapt. Stagnation in business is not good.'

He says the country's growing packaging market remains traditional, as seen at Secunderabad Printed Carton's Balanagar facility (see p45).

Omet is working to invest and diversify the opportunities to Indian converters with new technologies, and Sahni says: 'The move to in-line converting has begun.'

Paolo Grasso, Omet's international sales manager, says it is important for the market to look at investing in new technologies, such as the VaryFlex system.

'It's fundamentally about survival,' he says. 'We've taken the initiative to spot changes in the market and react to them.'

### Paradigm shift

'You can't just keep getting bigger, you have to differentiate. It's a paradigm shift.

'Tackling today's challenges with yesterday's technology won't work. You must act now and play a different game, not just grow your business.'

Representatives from Team Labels at the Omet Open House said they had no immediate plans to invest in the short-term, but would be looking at growth in the packaging market over the coming years.

Elsewhere in India, Zircon Technologies has invested in a pair of Omet presses: a VaryFlex and Xflex X6.

Zircon has traditionally produced labels using mostly Mark Andy technology. The VaryFlex offers a combination of different printing processes on multiple substrates, and director Sanjeev Sondhi says it will provide the company with the opportunity to expand into the packaging market, producing both folding cartons and flexible packaging.

Sondhi was present at the Omet Open House also, and Sahni used his company as an example of those that are preparing for the future with new technologies. 'Large companies in India are investing. Zircon has aspirations to be an Indian giant.'

He adds: 'India is still a rotogravure dominated market for packaging. Offset comes next. In-line flexo and digital are still not really employed, and even though they have attracted the attention and interest of converters, there has not been any substantial move in this direction.'

Lalit says an inhibitor to investment is that margins in the packaging market have shrunk in recent years. 'With low margins, expensive equipment investments become unviable as bank borrowing in India is still expensive.

'In-line systems would make sense only for medium or large volumes with value-added features.

'The label industry will probably soon move to digital printing, but digital still has to prove itself in the carton industry.'

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# Investing in India's changing market



**Indian converter Secunderabad Printed Cartons has a clear vision for its future, so the company told David Pittman when he visited its Balanagar facility.**

**H**yderabad-based Indian converter Secunderabad Printed Cartons (SPC) has a bold vision for its future in the competitive package printing market in its native, emerging market and, "to be amongst the top ten folding carton converters by 2015, while working in true partnership with all stakeholders".

The company is an integrated packaging solutions provider operating two facilities with an in-house operations infrastructure including EskoArtwork pre-press, Heidelberg printing and Bobst die cutting equipment. It also operates folding, gluing and finishing systems.

The packaging it converts includes folding cartons, laminated and fluted cartons, blister cards and display boxes, as well as leaflets and labels, while the markets it serves range from pharmaceuticals, fast-moving consumer goods and personal care to food and beverages, electronics, agricultural products and promotional packs.

Pharmaceutical is SPC's historical market says executive director K. Lalit Aditya (Lalit), and is where the company started back in the 1980s.

'We're a conventional sheet-fed operation,' Lalit says. 'We started small with pharmaceutical clients but now cover a much broader market.'

Lalit acknowledges that the Indian market is changing (see pp. 42-43 for more), as the country's retail market heads towards radical change thanks to the loosening of foreign direct investment rules (see *Package Print Worldwide*, issue #1, 2012 for further insight).

Expansion is already occurring in India, with Lalit suggesting 15 percent growth in the paperboard packaging market. Flexible packaging is also on the rise, he says, with both benefiting from changes to the Indian retail landscape, and growing consumer demand for convenience and on-the-go food products.

Lalit says SPC is interested in deploying new technologies and systems as it looks to evolve and grow to meet the future needs of the Indian market and achieve its 2015 vision.

'Offering a large portfolio of products requires investment in technology.'

He was part of a substantial industry turnout for an Omet Open House event that took place in Hyderabad on April 20.

The Open House featured presentations from a number of representatives of suppliers to the Indian market, and was centered on the recent installation of an Omet in-line web-fed folding carton system at Pragati Pack (see pp.42-43 for more).

SPC's facility in Balanagar, in Hyderabad, is the converter's

second facility. Its first in Patancheru, a suburb of Hyderabad, was established in 1983 before operations commenced at the Balanagar site in 1990.

The Balanagar operation is home to both modern and traditional printing technologies. A Heidelberg multicolor offset press is running near to a hand platen, used to handle short-run die cutting jobs. Close by to that, a team of workers split blanks away from the waste by hand, and check print quality.

Its current operations are centered on off-line production, although Lalit says he is interested to explore the potential of in-line systems in the future, such as the Omet Varyflex V2 installed at Pragati Pack.

Lalit also states an interest in digital printing, although a number of issues remain barriers to investment for SPC. The handling of various substrates in a digital printing workflow is one such issue.

With growth will come investment in management information systems (MIS). 'With size comes the need to invest in MIS and scale-up our operations to support our customers' needs,' he says.

This investment potential supports SPC's mission statement to "provide comprehensive paperboard packaging solutions and partner customers in their effort towards developing value-added, innovative and cost-effective solutions while adhering to our commitments to intellectual honesty, integrity and fair business practices".

'Packaging is not just about volumes,' he says. 'It represents lower order volumes than labels, although the orders tend to be of a higher value.'

'We work with our customers to develop their packaging products, and to integrate them into their product value chain.'

'Changes will happen, and the market is already changing.'

'It's happening at the right time, and it's a good time to be investing in and growing our business.'



A woman with long dark hair is shown in profile, holding a large orange and black butterfly on her hand. She is surrounded by green foliage. The image is used as a background for the top half of the advertisement.

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# The future of carton



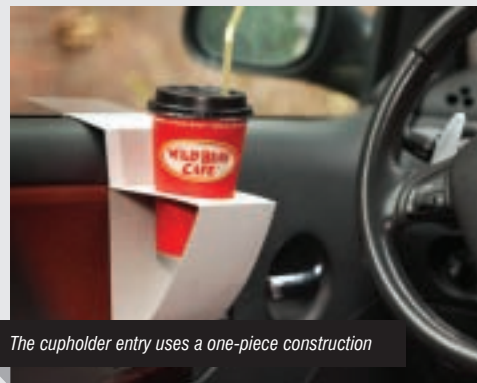
The bi-annual Pro Carton Design Award was relaunched in 2012 after a four-year gap, with around 70 entries from across Europe demonstrating the capacity of students to shape the future of the carton market. David Pittman spoke to this year's winners.



By simply pushing a thumb along the top of the carton, a single dressing comes out



Other finalists included carton designs that integrated sound with the opening mechanism



The cupholder entry uses a one-piece construction

The Pro Carton Design Award is an award for new, as-yet unrealised design ideas in the field of carton applications and is aimed at students.

The best are presented to the public and then realized, so says Pro Carton, the European association of carton and cartonboard manufacturers, which is behind the competition.

The award is all about the future of packaging design, future-oriented ideas and future-oriented designers, according to the association's head of marketing and communications Suzanne McEwen. 'Many are confronted with cartonboard as a packaging material and its design for the first time when entering this competition and see it as a creative stimulus.'

Pro Carton Design Award competitions were held previously in 2004, 2006 and 2008, before the event took a four-year break. Previous years had seen only the winners of national competitions considered, but from 2012 entries from across Europe are accepted.

2012 saw close to 70 entries from eight countries received. All entries in 2012 focused on the needs of consumers.

Judging was carried out by a panel featuring: SiebertHead chairman Satkar Gidda, representing design; Wilfried Duivenvoorden of Unilever, acting on behalf of the branded goods industry; and John de Somer of Van Genechten, from the converting industry.

From nearly 70 entries, the judges selected six finalists, including a clicking carton to add sound to the experience of interacting with packaging, and a carton that becomes a child's dress-up toy after delivering the product.

The two winners of the 2012 contest were Maria Pramberger's Pocket Aid and a cupholder entry from the duo of Joseph Rathkolb and Patrick Schiestl.

Pocket Aid is a design that allows consumers to access a self-adhesive dressing quickly, effectively and hygienically.

By simply pushing your thumb along the top of the carton, a single dressing comes out every time, eliminating the need to search in a handbag or pocket. The jury said this design could easily be adapted for other sizes and is simple to use and easy to carry about.

Maria Pramberger (pictured, top) said: 'My winning design was inspired by my own experience of the problem of opening plaster packaging with just one hand when you have cut yourself on the other. I thought there must be a smarter way to access a plaster.'

The cupholder was praised for the use of cartonboard that the jury had not seen before using a simple one-piece construction.

It can easily be hooked onto a car window and then a cup or bottle placed in it. It can be printed and branded and, whilst many cars have built in cup holders, this design is suitable for passengers in the back seat. It could easily be adapted to take different sizes of bottles or cups and would, the jury felt, have many applications.

Speaking jointly after being named as winners, Rathkolb and Schiestl said: 'We were inspired by the old plastic cupholder from McDonalds.'

'At first, we wanted to design a "holder" for food and drinks, but in the end we decided to realize just the cupholder.'

They see their future in design, with success in the Pro Carton Design Award 2012 helping them achieve this goal: '[Winning] is very useful for the job searching process. We think everyone is impressed when they see that we have won this award.'

First, they must finish their studies, as must Pramberger who is finishing studying industrial design before searching for a job in product and packaging design.

'I am very grateful for the possibilities such awards offer to students,' she said. 'It definitely furthers your career. First of all it is encouraging to see my achievements acknowledged by the business world.'

'Furthermore, companies are made aware of what you do and you get the opportunity to get directly in touch with people from the business world.'

'Carton is an important material for packaging as it has the advantage of being more environmentally friendly than other materials,' Pramberger added.

'I also like the soft feel of paper/cardboard and think it is nicer to touch than other materials. Paper is very versatile as well.'

'You can have it with loads of different textures, different thicknesses and so on, and you can fold it however you like. This enables you to build quick experiments and mock-ups. I think there are still many ways of folding and using cardboard for packaging we have not thought of.'

Rathkolb and Schiestl see carton as the plastic of the future because of its environmental credentials, while Pramberger said 'One day oil might not be available as easily as it is nowadays but I have no doubt that there will always be raw material for producing cardboard or paper.'

'At some time in the future we will have to think of other materials for packaging than plastic.'

'So with the environment in mind, I think carton will get even more important in the future.'

# Be strong or be gone - the future for carton converters



**With the industry at an important stage in its development, the European Carton Manufacturers' Association (ECMA) held a Folding Carton Leadership Summit in Brussels to evaluate the latest trends and innovative technology shown at the recent Drupa exhibition.**

**W**ith all eyes in the package printing sector aimed at Drupa 2012, the four-yearly climax of the Olympic cycle in the printing industry came at a time of business uncertainty.

The twin crises of credit (2008-09) and sovereign debt (2011-12) are having prolonged effects on global business and consumer confidence, and nowhere is this felt more keenly than in Europe.

Drupa 2008 came at the beginning of this, but technology has moved on at a rapid pace in four years – and it's a pace that will only get faster. Nobody can predict what Drupa 2016 will hold for the carton industry, so it must seize the opportunities that are now on offer, and grow into a stronger, more profitable and sustainable business.

When the doors of this year's expo finally closed on May 16, the 300,000 or so visitors had witnessed the greatest display and demonstration of modern technology that the industry has to offer.

For carton makers, perhaps more than any other sector of printing, there had been a raft of new technology and innovation that will change the face of the market. As every element in the supply chain for printed packaging comes under closer scrutiny, the pressure to perform and deliver continues to increase.

ECMA provides the European folding carton industry with a dynamic network of business links, and the aim of the Folding Carton Leadership Summit 2012 was to engage in an industry-wide dialogue on the strategic issues at stake for the industry, and see what lessons could be learned from Drupa. Away from the hyper activity of the exhibition halls, the summit offered an opportunity to assess the current market situation, evaluate what Drupa had to offer, and define the paths that each supplier

to the industry must follow, if a sustainable business is to be maintained.

The summit was attended by carton makers, industry suppliers and other decision makers within the industry, and was moderated by Nick Coombes, editor of *Package Print Worldwide*.

He began the session with a presentation entitled "Innovation and the Future of Packaging", addressing the need for the industry to look at emerging markets, beware of rising prices, contain costs, add value or diversify, consider digital printing and become greener.

Participants engaged in an industry-wide dialogue on the themes and challenges that will dominate folding cartons in the near future. Because customers seldom express what developments they would like to see from converters, a more proactive role from the carton maker is essential.

The general consensus was that carton makers should offer a wider range of services to their customers, and work closely with them in developing new ideas. By being more creative, converters can penetrate the organization of their customers, and establish themselves as the more favored supplier.

Concluding the summit, which was organized in collaboration with the newly established ECMA Suppliers Forum, the platform of the supplier community in ECMA, Coombes suggested that the folding carton industry has a unique opportunity to improve its performance and role within the supply chain – and challenged those present to grasp it.

'The carton industry is at a crossroads,' Coombes said. 'Market forces and innovative technology are demanding new approaches to carton manufacture, and whichever link in the supply chain you occupy, the message is very clear: be strong, or be gone.'



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# CI offset press set to transform flexible packaging



**Mike Fairley visited the Comexi Group in Gerona and spoke to Albert Negre, business managing director, to look at its latest flexible packaging flexo, offset and gravure press and finishing solutions.**

**H**igh-quality printing of packaging is estimated to be a US\$280 billion global market, and growing faster than almost any other sector of printing. Flexible package printing has become the largest sector, with an estimated annual sales value approaching US\$90 billion – an easy market for materials suppliers, press manufacturers and printers to target you would think.

But no, the challenges for all those in the package printing supply chain become more complex every day.

It's no secret that flexible packaging has been faced with rising materials costs, price pressures and cost containment. Run lengths have also been decreasing. Environment, waste and sustainability issues also continue to grow, particularly in terms of cutting down on substrate waste, eliminating solvents, reducing colors, reducing energy consumption and having a smaller carbon footprint.

The demand from brand owners to add value to their packs and have an ever higher print quality that stands out on store shelves is also never ending – as long as they can also meet challenging environmental and performance requirements.

It is in these areas of environment, quality and materials reduction that some interesting changes are taking place.

Traditionally printed by rotogravure or flexo, flexible packaging is constantly looking at other possible printing solutions. Certainly, new developments in digital offset printing are increasingly being considered as a short-run solution for the future.

But, perhaps one of the most exciting innovations that is setting new standards for the flexible package printer is CI offset, variable repeat printing technology, and it looks to be one of the key developments set to transform flexible package printing into a more sustainable future. Initially announced to the world by Comexi in 2011, and shown at Drupa 2012, the Comexi Offset CI8 press is said to be market-led and targeted at the growth in short-run work.

Based on an arrangement of up to eight printing decks around a central drum (CI) – these can be up to eight offset EB print







decks, or the first and/or last deck can be a flexo deck for applying background colors or varnishes – the new offset press uses no solvent-based inks during printing.

Aimed at flexible package printing on plastic materials such as low caliper PE, BOPP and PET, the press reveals the core of Comexi Group's strategic principles: the reduction of costs per square meter printed; the capacity to produce offset plates in the same plant in a matter of minutes; a reduction in environmental impact, thanks to the EB offset solvent-less inks; greater line screen for print quality (in highlights, fine screens, and micro text); and greater energy efficiency.

Comexi's partners, Heidelberg and Wikoff, also support this introduction of offset technology.

'What we have achieved with CI offset,' says Felip Ferrer, commercial director for Comexi Offset, 'is to develop a press that has a fast job changeover, is a much cleaner printing process, is less expensive to operate, replaces solvent inks for short and medium runs, and has a print quality that we believe equals that of gravure.'

'Using servo drive technology, the press offers fast production speeds of up to 300m/min, reduced press downtime with minimum start-up waste, which in turn reduces printed stock. Indeed, it is running in full register within 30 meters of pressing the button, and prints up to seven colors, plus white or a lacquer, on a web up to 860mm wide.

'With the offset process, it is also possible to achieve fast, accurate pre-press, with origination/pre-press and plate making. The press therefore complements an existing gravure or flexo operation.'

On show and operating at Drupa 2012, the Comexi C18 Offset press added to the stable of CI F1, FW, FW – EB, FPlus, F2 FlexoEfficiency and F4 FlexoEfficiency, flexo presses already offered by the company as part of their global range of solutions for the flexible packaging industry.

Even with flexo technology, Comexi has again been taking exciting marketing initiatives to identify the meaning of efficiency in sustainable flexible packaging, to reduce greenhouse gases and to monitor and report industrial carbon footprints. The latest Comexi Flexo F2 press, for example, comes with Cingular modules for managing pressure adjustments and registration, while significantly reducing waste. Furthermore, important advantages such as accessibility, easy maintenance, and energy savings are also keys to sustainable printing.

In line with this message, Comexi has also introduced the latest technology in water-based inks with BASF resins. These inks offer improved sustainability and reduced cost in use while maintaining a high level of printability and print quality.

An additional key Comexi solution for sustainable flexible package production has been the introduction of electron-beam (EB) technology.

After five years of research, and the maturation of the electron beam process as an industrial application, the company's new energy-curable ink system prints with the highest quality achievable today – all without adding cost to the process.

'We believe that the EB process is setting new standards in the converting process for flexible packaging,' comments Albert Negre (pictured, previous page), business managing

director. 'Our in-line configurations and solutions for printing, decoration or finishing of flexible packaging can improve performance and subsequently time-to-market.'

It is not only flexo and offset where innovation is being introduced. At Drupa, Comexi ACOM presented a demo unit for the latest rotogravure printing technology.

This unit featured the electronic innovations, such as Siemens Sinamics Simotion, with controls built into the Comexi ACOM software. All of these features are aimed at improving registration control during the transition and start-up phases, minimizing waste and stabilizing quality to perfection during the printing process.

The new solutions for drying units offer better performance as well as full accessibility and ergonomics for tool-less cleaning and maintenance. In addition to the new drying units, new ventilation technology has been applied to the rotogravure lines, which dramatically improve energy efficiency.

Added to the latest innovations in flexible package printing technology by the Comexi Group are the whole range of laminating solutions, both with and without solvents, under the Nexus trademark, as well as the most modern slitting and rewinding equipment for plastic film, paper and aluminum foil that are offered by Proslit.

There seems little doubt that the Comexi Group is fully committed to leading the flexible packaging printing and converting industry into a much more sustainable and environmentally friendly setting for the future.

Negre adds: 'The aim of all the technology solutions offered by the Comexi Group is to be the world and/or brand leader in the market place.'



# Smart thinking about tomorrow's packaging



Dr Martin Schmitt-Leven is Heidelberg's senior manager of technologies for future business. Nick Coombes talked to him at the conclusion of Drupa 2012 about the company's Innovation Gallery.

**NC: This was quite a different venture for Heidelberg at Drupa, wasn't it?**

**MS-L:** Yes, the Innovation Gallery attracted a constant stream of future gazers – printers who wanted to see what new ideas and concepts might alter the way we view and implement communications going forward. The area was quite distinct from the 60 equipment and workflow innovations unveiled by Heidelberg at the show. We wanted to take a glimpse into tomorrow's world with the Innovation Gallery.

**NC: Is this all part of the company's growing commitment to the market for printed packaging?**

**MS-L:** Heidelberg has been able to offer equipment to packaging printers for some time and has become a key player since the creation of the VLF range of products, and the "Heidelbergization" of the die cutting and Diana converting range. The evolution and integration of its Prinect packaging pre-press and workflow products is important too. It wants more packaging market share, and is committed to this more future-proof sector of print.

**NC: Speaking of the future, are you referring solely to digital technology?**

**MS-L:** The company's announcement of a partnership with Benny Landa for nanography and its use of inkjet technology on the Speedmaster XL 106, as well as the Linoprint L and Flexomailer, shows that it has embraced the potential for more hybrid technologies in future. But the Innovation Gallery takes us into an even more "concept" world. We had a tantalizingly vague display of 3D products on one wall in the zone that hinted at non-contact inkjet technology for printing individualized decoration onto 3D-shaped surfaces. This could open the way to many new packaging shapes and eye-catching products, including plastic bottles, but we will have to wait and watch for this one to unravel.

**NC: How close are you to introducing some of the technology and products?**

**MS-L:** We are quite close to making use of intelligent surfaces. We showed three types: touchcode applications

with paper-based cards to be read by the touchscreen of a tablet PC; Printed OLED; and a Smart Shelf concept. Touchcode applications are based on market-ready technology allowing electrically functionalized paper cards and the surface of an iPad to interact in a way that makes paper and e-media go hand-in-hand.

OLED (organic light-emitting diode) is a film-based lighting element that takes the form of a "printed light". The lighting effects of printed OLEDs might in future be applied to point of sale displays or maybe even to folding cartons, either as a surface area or as an informative detail in the form of numbers, text or logos. Printed electronics in print products constitute the lighting elements of the future. It's really a bright idea.

How cartons are displayed in future could also change. The Smart Shelf opens the door to a much more interactive experience for the retailer and shopper. By using printed electronic components in both the folding carton and surface of the shelf, there can be an automatic alert when a particular product is sold out, so the shelves can be refilled.



**NC: How will this affect the marketing mix in the future?**

**MS-L:** I can see that there will be much more cross marketing and cross selling at the shelf. If someone chooses to buy some Adidas shoes, they might be offered other similar or complementary products. We might see product bundling and means of measuring customer interest, and interest-to-sales conversion rates. The Smart Shelf could also offer a means of brand enhancement.

**NC: How was it developed?**

**MS-L:** The Smart Shelf is one of a number of our development projects with the University of Darmstadt, and the sensory device is produced on a Gallus flexo press. Heidelberg is also a member of the research cluster Forum Organic Electronics, a joint research initiative that is looking at OLED, RFID, organic thin-film transistors (OTFT), organic photovoltaics (OPV) and sensors to find ways of making new types of electronic devices for new markets. But that's all in the future. More immediately available is the potential for creating new effects, a development of existing Drip Off

technology to enable gloss and matt finishes to be applied easily together on one sheet. This relies on clever prepress technology, with the angle of application and direction of viewing determines the specialist gloss look.

**NC: So, it's all about visual impression, is it?**

**MS-L:** Not exclusively. We demonstrated how geometric shapes, textures, ornaments, contone gradations and typographical effects can be used to produce clever and eye-catching results, by creating an old fashioned record with the look and feel of a real 1960s disk for the turntable. These effects are commercially available and will open up opportunities for unusual and value added packaging products that will be less easily copied. This is a major concern in a world where counterfeiting is big business.

**NC: What are the key elements that create the visual impact?**

**MS-L:** Drying and curing are critical. The drying and structuring surfaces section of the Innovation Gallery showed new dryer technologies and systems, including en-

ergy-efficient UV LED dryer modules (see pp. 12-13 for more on UV LED technology from the UV LED Curing Association), and a laser drying technology that heats only the ink and not the substrate. This is very advantageous from a process engineering perspective. The major benefit is that it is possible to cut the waiting times dramatically between press and post-press. The display also featured a special laser module concept that enables the partial drying or structuring of surfaces. This digital multi-channel module opens up further potential future applications in the area of digital imaging.

**NC: It appears like a whole new way of thinking...**

**MS-L:** Yes, hybrid technology was a key theme seen at this Drupa. We wanted to demonstrate that Heidelberg has a very open mind, and in addition to developing added value and cost-reducing options to its offset litho technology, is thinking outside the box at ways of communicating differently and more effectively in the future. Some will be with paper and board, but we're extending into new materials as well.

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# Springtime for flexo in China?



**The acceptance of flexo printing in the Chinese package print industry has taken another step forward, as Kevin Liu reports.**

**F**lexo printing is still at a relatively early stage of development in the overall mix of package printing processes in China.

In labels, letterpress and offset remain strong, and in package printing, sheet-fed offset and gravure are predominant. At the same time, in Europe and the US, flexography has become the dominant package printing process.

Although manufacturers of flexo printing presses never stop promoting their equipment, most package print converters still take a wait-and-see attitude, fluctuating between hesitation and negative opinions.

So, is flexo printing appropriate for the Chinese package printing market? Does such technology have future prospects in China?

## Early success

Two Gidue UV flexo presses have recently been installed at converting houses in Suzhou.

The Italian machinery manufacturer completed the installation and commissioning of the two flexo machines within one week at Suzhou Jantan Packaging and Printing (Jantan) and Suzhou Tianjie Printing (Tianjie).

Jantan was established in 1992 at a plant located in Wujiang city, Suzhou, close to Shanghai. Now it has become one of the largest professional label and packaging print converters in the East China area.

Jantan is an old supporter of flexo printing technology, and used to import Gallus flexo machines. At that time, after extensive investigations, the managers of Jantan affirmed that flexo printing was superior to relief printing and offset

print in many aspects – hence Jantan became one of the first enterprises to enter the flexo printing market.

In 2008, Jantan decided to import more flexo machines. They chose an 11-color Gidue E-Combat machine – the first machine installed in China by the Italian company.

Although seen by many as an “adventure”, it has brought benefits including better performance and an increase in business for Jantan. Soon the original flexo machine could not meet the increasing business demands of Jantan.

In 2010, it decided to purchase more flexo machines and the second Gidue was installed – a 12-color combat M5 flexo. These two Gidue presses are running continuously 24 hours a day.

Two years later, Jantan imported the third Gidue flexo machine, a Combat M1-370 10-color flexo UV press. In order to increase the efficiency of the machine, Jantan equipped the M1-370 with processing units including in-line IR, cold foil, die cutting, stripping and waste removal, so all the processing steps can be finished in one pass.

The new Gidue Combat flexo press was installed in the new plant of Jantan in Wujiang Economic Development Area. Together with the previous Gallus eight-color flexo machine and two Gidue presses, they compose a powerful flexo proposition.

Today, Jantan maintains a comparatively high market share in the sectors including chemicals, foods, health and beauty, and electronics.

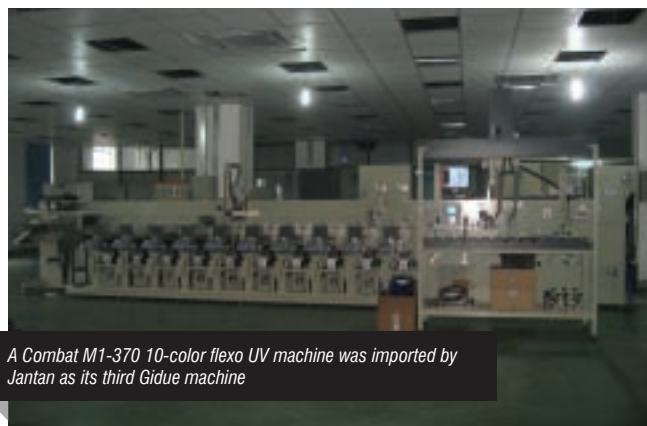
## Growing force

Unlike Jantan, which has already learned to control the power of flexo printing, the installation of a Gidue press is the first time Tianjie has imported a flexo machine.





A Gidue M5-370 11-color flexo machine has been installed by Tianjie



A Combat M1-370 10-color flexo UV machine was imported by Jantan as its third Gidue machine

However, it did not start from a low base point. Tianjie has previously imported one of Gidue's most highly specified presses – an M5-370 11-color flexo press, containing 10 flexo printing units, one intaglio unit and two in-line process units including cold foil, die cutting, waste discharging, stripping, laminating, and the ability to turn the web.

This highly advanced, integrated converting line greatly increased the production of printed packaging in the high-end cosmetics sector.

Before the installation of its flexo machines, Tianjie owned more than one imported press – intermittent and full rotary letterpress machines and high-precision roll-to-roll screen machines.

In the arena of cosmetic and electronics labels and packaging, Tianjie has abundant experience and is a long-term partner of many famous enterprises including L'Oreal, Canon and Tianmei Cosmetic.

Fan Simin, general manager of Gidue China, said: 'For many, knowledge about flexo printing is very rare.'

'Actually, current flexo printing technology has huge advantages in the printing quality and speed as well as in-line processing. At the beginning of our contact with Tianjie, they were suspicious whether a Gidue machine could assure high printing quality and overprinting precision consistently during high-speed printing at 180m/min or not.'

'It was questioning if overprinting precision could be controlled within 0.1mm? Could the in-line die cutting be precise under high-speed printing? In case of a sudden malfunction, how long would it take to solve?'

However, such questions disappeared at the time the machinery was commissioned. Fan said that during this process, when Tianjie press operators saw the print rollers turning and paper going slowly through the machine, they were interested to see how this would affect make-ready time and waste.

When the operation speed of the machine increased from 80m/min to 180m/min, while the overprinting precision remained the same, both the managers and operators of Tianjie were smiling with satisfaction.

After the commissioning, Tianjie's factory manager, Mr Yang, praised the efficiency of Gidue. 'Gidue finished the machinery

installation and commissioning as well as training of our operators within merely one week.

'This time, they really changed our views of flexo printing. The Gidue flexo machines are highly automatic. During printing, we need not adjust the pressure or stop the machine to change plate registration, because these adjustments are realized automatically.'

'This not only assured the precision of overprinting but makes the printing itself simple, highly efficient and more consistent.'

'After training, our operators could grasp the operation skills required and we could put them into production immediately - much earlier than we expected.'

The person responsible for direct production at the Tianjie workshop, also called Mr. Fan, said: 'Gidue has moved really efficiently and the machine has good quality. Our printing speed can achieve up to 180m/min.'

'On this basis, we estimate that our yield could be double this year.'

### Flexo lessons

Why does flexo printing have such a high performance? To take the Gidue flexo press as an example, each printing unit is controlled by a full servo motor.

There is no traditional driving axis so the machine runs more steadily without vibration, which increases the precision of overprinting and quality of printing. At the same time, Gidue equips its machines with an automated tracking system, which controls the processing precision of both the printing unit and die cutting unit within 0.1mm.

In addition, the Gidue flexo press can store job data and read it back when the same product needs to be produced again, when the machine automatically adjusts itself to the status of the last production job. It is very simple and the operator feels it to be both convenient and easy.

Potential malfunctions are handled by remote diagnostics via the internet – as if the senior engineer in Italy is sitting on site.

These are common advantages of modern flexo printing equipment, and as the example of these two Gidue flexo machines installed by local converters shows, the springtime of flexo in the Chinese package printing industry could well be arriving.

# Selecting the best MIS to boost performance and efficiency



**When Qualvis Packaging chose Shuttleworth MIS technology to maintain its competitive advantage, Nick Coombes spoke to managing director Jason Short to find out why.**

**Q**ualvis Packaging Solutions, based in Leicester, is one of the leading manufacturers of printed folding cartons in the UK. With over 30 years of experience, the company supplies the food and non-food sectors, and is an approved supplier to leading supermarkets like Tesco, Sainsbury, Waitrose, Asda and Morrisons.

Qualvis has always prided itself on the way it looks to ensure that clients receive the highest levels of service supported by excellent communications.

This ethos is fully supported by the company's on-going commitment to utilizing the latest management information system (MIS) technology, and why it chose Shuttleworth Business Systems as its preferred supplier.

Jason Short, Qualvis' managing director, said: 'Qualvis has been using the Shuttleworth system since 2008, and we have developed a superb ongoing partnership that gives us the most up-to-date systems and tools available in today's market.'

## Favorite features

Short outlined the challenges that face Qualvis, and explained why it is critical to his business that he constantly upgrades its MIS system. 'My favorite feature of Shuttleworth MIS is the customer relations module (CRM).

'Without customers you have no business. With CRM, we have the right tools to impress and strengthen our customer base.'

The CRM package establishes each individual customer's buying habits and helps keep accurate records of all communications with all customers, and has assisted Qualvis to deliver a top class customer service. 'We are able to respond to the needs of our customers in a quick and professional manner, which is vital for the success of any customer facing business.'

Qualvis uses CRM for ongoing marketing activity, including regular mailing campaigns, and for gathering sales enquiries at events and exhibitions. This information is analyzed and evaluated, giving Qualvis an accurate response to customer requirements and assisting targeted marketing activity.

Another challenge for Qualvis is to look at ways it can improve efficiency and reduce costs without compromising customer service. Shuttleworth's MIS provides a suite of packages all aimed at improving and speeding up the way information is processed and shared throughout the entire company.

## System integration

'Shuttleworth is fully integrated across the whole business. It allows us to integrate our estimating, sales order processing, costs, invoicing, shop floor data collection, customer relations

and account information, all of which improve workflow and information sharing throughout the business.

'Everyday tasks such as estimating, stock control, dataflow and accounting are made as efficient as possible to reduce unnecessary and costly human input and intervention,' said Short.

The Shuttleworth MIS allows Qualvis to monitor and amend job profiles and information on a day-to-day basis, and to study costs and areas of expense so that efficiency can be improved. For example, the shop floor data collection has helped to record press running speeds accurately, which has made production planning and delivery scheduling more precise, and tightened up the estimating process by retaining this historical running information.

Qualvis said ongoing Forest Stewardship Certification (FSC) accreditation is imperative for keeping existing clients and winning new business. Initially gained, with the assistance of Shuttleworth's MIS, in 2009, ongoing compliance of stringent regulations and the process of traceability and accountability are still made possible by the MIS system.

It is fundamental to track the use of FSC board throughout the production process, ensuring that all the correct FSC information is highlighted on documents and labels. Shuttleworth MIS automates this entire process, even encompassing the production of the annual FSC report.

Short explained: 'The MIS compiles and stores vital information throughout the year, automating the production of the report. This provides the auditors with a comprehensive trail, ensuring they can tick all the boxes, at their annual inspection.'

## Reaping the rewards

'Shuttleworth has helped Qualvis to reduce its production costs and improve workflow and data collection, and it has been vital in achieving certification targets such as FSC,' said Short.

'Without doubt, the CRM package has proved an invaluable business tool. It has helped our account executives to build relationships with potential as well as existing clients. After all, the most valuable asset in any business is knowledge.'

Speaking for Shuttleworth, joint managing director Paul Deane said: 'We installed a bespoke carton estimating template, which has been customized to meet Qualvis' requirements.

'They are also using the imposition software that works out the laysheet for cartons.

'Once estimated, they raise a job, and when complete, they deliver most items into stock, and use sales order processing to call off and deliver and invoice customer orders.'





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**manroland**

*DGpS was born out of Drent Goebel when it went into receivership*



# Breathing new life into an old name



**When Drent Goebel went into receivership in July 2009, close to 800 users worldwide were left without technical and service support. One month later, a select team of former employees, under the leadership of Peter Kloppers and Remko Koolbergen, had acquired the company's intellectual property and set up in business as DGpS. Nick Coombes visited Eerbeek, in the Netherlands, to track the success of the new venture.**

'We began with 12 people from the 150 who were made redundant by the closure, and cherry-picked those for the key roles we knew we had to fulfil,' says Peter Kloppers, director at DG press ServiceS (DGpS), who brings both sales and production experience to the new company.

'It takes technical know-how and skill, but also the right personality to move from a large company mentality to a small hands-on operation, but we did it and have now grown in number to 30.'

The intellectual property included the location of all machines sold in the past 20 years, including exact specifications, service history, parts drawings and software programs – data that not only helped DGpS get started, but also provided great reassurance

to Drent Goebel customers. Of the 800 or so users, the company now has 500 as active customers, and is working to secure as many of the remaining 300 as possible.

Co-director Remko Koolbergen takes up the story: 'We can only grow the business with existing users if we can add more value than they are receiving from whoever is currently servicing their press – sometimes, in the more remote areas of the world, we cannot compete with local service engineers, especially on the simpler Gazelle series, but there are many opportunities out there for us to develop our customer base.'

Beginning life in a small industrial unit some three kilometres from the Drent Goebel factory has given DGpS



immediate access to a local pool of skilled labour. And the success of the past three years has enabled the company to buy back the original factory site from the bank. The 15,000 sq m plot, which has 5,500 sq m of production area and 2,000 sq m of office/admin space, is way too large for the new operation, but along with the local skilled workforce, offers huge potential for growth, and in the meantime the opportunity to sub-let to other local and complementary businesses.

Scheduled for occupation in January 2013, the renovation project required to restore the semi-derelict building is budgeted at €1.5 million, and is a sign of the company's confidence in its ability to sustain growth and profitability. Koolbergen adds: 'We are fundamentally a service operation, which gives us positive cashflow and allows us to tailor our overheads to our earning capacity. We can grow the business this way without incurring too much risk.'

All technicians are based in Eerbeek and make international service calls on a batched basis for cost sharing. Unless it's an emergency, the company does not send service support on an "out-and-back" basis, and many problems can be solved by phone and e-mail. With all the records and machine drawings at their disposal, and access to the same engineering companies that supplied Drent Goebel, DGpS can quickly supply replacement parts to the original pattern. This prompted a demand for machine refurbishment and rebuilding almost from day one, and now constitutes a significant part of the company's business.

'We buy to order and for stock. All machines pass through our factory here in Eerbeek and are test run prior to shipping,' said Kloppers. 'We sell three grades of used machine: those that are sold as seen; those that we clean and check; and those on which we undertake a complete rebuild.'

In fact, based on the success of the rebuilding operation and with all the necessary suppliers in place, the company has also moved into the manufacture of new presses – based on the original designs but with upgrades and improvements to specification, especially state-of-the-art electronics.

With a large pool of machines in the market, sourcing examples for interested customers is relatively easy, and Kloppers claims he always knows of two or three machines that are available for purchase, depending on the specification required. The design principles of the Gazelle, Vision, and VSOP series make them easy to adapt. 'For example, we could buy two four-color presses, rebuild them as a six-color, if that's what the customer wants, and have two units spare for use elsewhere, either complete or as parts. We have all the know-how we need to create whatever the customer needs – and he gets a press to his exact specification at a fraction of the price of a new one.'

A particular favorite of the company is the servo driven Vision series, for which it offers an upgrade to Vision SP (stepless printing). Essentially a separate motor to drive the impression cylinder and improve web tension on extensible substrates, the upgrade makes this offset press fast to make-ready and ideal for flexible packaging, wraparound labels and security printing, with its vast array of 40 in-line processing and delivery options that can be tailored to customers' specific market requirements. It handles from 12- to 300-micron stock at speeds up to 400m/min on a 520 or 850mm web.

The sophisticated VSOP (variable size offset press), an original Drent Goebel design taken up by Muller Martini who acquired the patent in 2009, provides DGpS with possibilities in the folding carton as well as flexible packaging market.

In the early days, the company worked under an agreement with Muller Martini to service the VSOP presses

in the market until such time as the new manufacturer acquired the background knowledge required for service.

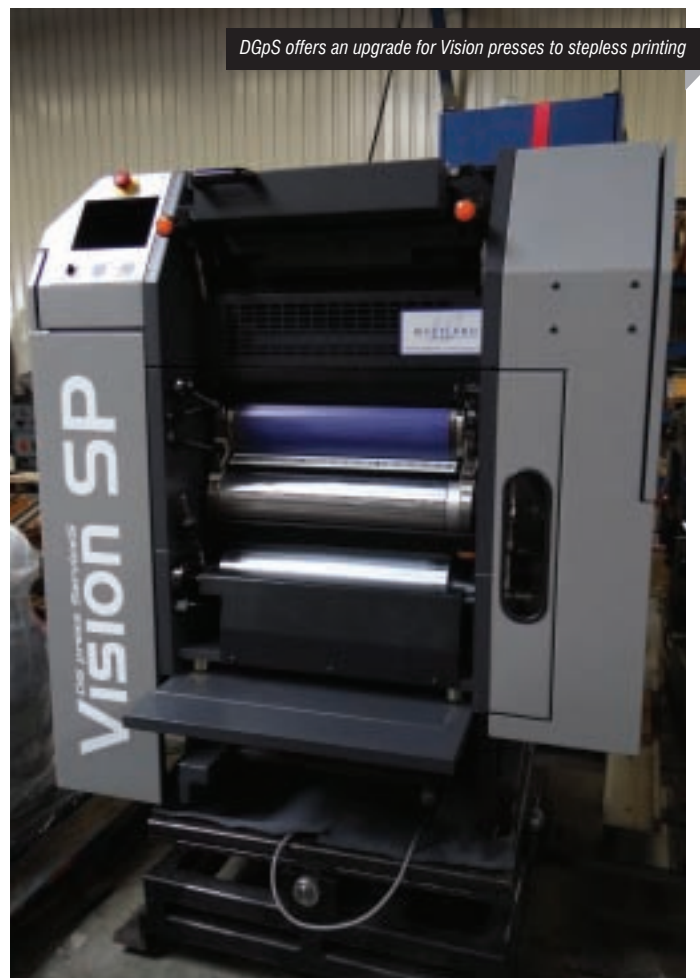
Kloppers estimates there are around 50 VSOPs running flexible packaging, including wraparounds, shrink-sleeves, and in-mould labels, and five or six running cartons, along with 20 Visions. Currently, DGpS provides service to the majority of the installed VSOPs, and now has two in its workshop for executing large extensions and refurbishment.

An example of the bespoke work carried out at Eerbeek is that done recently on a Vision press, which a customer was using to run 320gsm stock, but suddenly needed to have the capability of handling papers as light as 35gsm and board up to 420gsm. The solution was to grind down the impression cylinder to a smaller diameter, and fit it with a removable sleeve that can be used when handling the lighter stocks. This Vision press is one of three rebuilds sold recently to Georgia, Russia and the Netherlands.

Moving from solely a service provider to a machine supplier encouraged DGpS to exhibit at Drupa 2012, and the company is delighted with the 10 serious enquiries from visitors to its stand. Further stands have been booked at GraphExpo 2012 in Chicago, LabelExpo Europe 2013 in Brussels and Ipex 2014 in London (see p6), but according to Kloppers, these are the only sales and marketing tools the company will use for the foreseeable future, as it seeks to protect its cash liquidity.

'Although our focus will remain on service, we will have the ability to manufacture up to 10 new machines per year when we move into the larger premises in January, which along with the refurbish and rebuild work will be sufficient,' said Koolbergen.

The company is predicting that global sales of all new technology is unlikely to increase significantly before the next Drupa, and believes its policy of organic growth will by that stage have put it in prime position to take advantage of any upturn in demand. 'For now, we're right size,' he concluded.



# Mixed & Matched



**Control is critical in the modern pressroom to optimize quality, speed and cost efficiency. Nick Coombes visited Technotrans at Drupa 2012 and uncovered two new products – a UV drum-to-duct ink pumping system, and an ink mixing device – which claim to do just that.**

**T**he recent Drupa show provided Technotrans with the ideal launch pad for its new UV ink pumping system.

Called “ink.supply UV”, the company believes it will help packaging printers to produce quality results safely, whilst minimizing waste and downtime.

As a global press ancillaries company, with more than 30 years’ experience in producing ink application and pump systems, as well as temperature control, water treatment and filtration expertise, Technotrans is in an excellent position to make that judgment.

UV inks have been available since the 1960s and, despite their price premium, have gained ground because of their high-gloss, quick drying capacity, and ability to print on a range of substrates. They are also chemical-resistant, eliminate the use of solvents and bring production benefits in that the substrate receives little or no heating. UV inks also reduce cleaning time because there is less drying in the inking unit and on the rollers.

The inks are cured by exposure to UV radiation, in which the prepolymers/oligomers react with the monomers in the ink to form three-dimensional cross-linked polymers. Energy in the UV wavelength spectrum triggers the reaction of the photoinitiators, which absorb the UV light and disintegrate into free radicals.

These free radicals are highly reactive molecules that are taken up by the unsaturated double bond of the UV vehicle components (acrylates) and cause them to polymerize.

There are low-migration UV inks for food packaging as well, but even with the right ink, care has to be taken in its application, and factors like substrate, press speed and UV lamp output will affect results. Handling UV is a science, and handling and applying them involves precision technology.

‘Ink pumping has become almost a standard for high volume industrial printers in developed markets,’ explains Peter Benton, managing director of Technotrans Graphics in the UK.

‘Cost pressures, shorter run lengths and the demand for faster turnaround means printers have to be able to produce efficiently and reliably, without any compromise to quality. That means every aspect

of production has to be predictable and consistent, and inking is a key part of the process.

‘Our latest UV pump addresses issues specific to this type of ink which is more viscous and sensitive to pressure than conventional inks. Key UV markets like the UK, Italy, France and the US should sit up and take note, because our “ink.supply UV” device is easy to use and maintain, reduces waste and manual intervention, and enables users to take advantage of bulk purchasing. These are major benefits.’

Oil in standard vegetable and mineral inks provides lubrication, but is absent from UV ink with its light sensitive photoinitiators, and this means the ink lacks flow and is sensitive to too much heat, friction and pressure – factors that change the chemical structure of the ink, commonly causing hardening.

These were the challenges that Technotrans had to address with the development of this latest generation UV ink pump. The material used for the system is the same as for a conventional ink pump but the control valves and moving parts have been replaced with special solutions. The pipework is bigger in diameter, and the seals are made of a UV resistant material.

Ulrich Meitinger of Technotrans has been closely involved in the development. ‘Normally, the releasing pressure for conventional ink is 100 bar. With UV, the pressure has to be kept much lower to prevent the polymerization.

‘Our control device means that the pump works only when all the valves in the system are open. In other words, it uses dynamic, not static pressure. This closed and controlled system means that there is no impact on the UV ink in the system – a big help in feeding ink to the press.’

Seals need to be changed regularly, but will last at least six months, and Technotrans recommends users take out



a maintenance contract with the UV ink pump, enabling expert engineers to change the seals as part of the upkeep of the system. Good maintenance enhances productivity, quality and equipment life, and the seals are positioned for very easy access for quick and easy switchover.

Day-to-day maintenance is minimal, and having ink supplied to the ducts in a necessary volume takes one more headache away from the operator. An ink agitator moves across the duct in both directions and keeps the UV ink flexible and fluid. The ink supply system is tailored to the customer's specific requirements from the 200kg drum to the positioning and planning of pipework, right through to where the system connects to the printing press. The UV pumps will supply the four process colors. Technotrans expects printers to continue to apply specials manually or from a cartridge.

Another launch at Drupa, and one that really completes the company's range of inking solutions, is its new "ink.dos manual" and "ink.dos auto" automatic ink mixing systems. These can mix special conventional or UV inks simply and to predictable standards. Printers can use the ink.dos systems to mix Pantone color in-house and the use of Pantone scales means it can hold up to 30,000 recipes for special colors.

The manual version uses 14 different base colors in 2.5kg cans as standard, although use of 5kg cans, 25kg canisters or 200kg barrels are options. The automatic version uses up to 20 base colors in 25kg canisters or 200kg drums. Both dose with extreme accuracy to within  $\pm 0.1\text{g}$ . Clearly the more automated version

has the advantage of minimizing operator time, reducing manual error and providing accurate results more quickly. Pneumatically operated dosing valves provide a two-stage operation for rough or fine dosing and pulse dosing.

'In packaging, specials are critical for product branding – it's the color that buyers see, recognize and immediately associate with the USPs of the supplier,' says Benton.

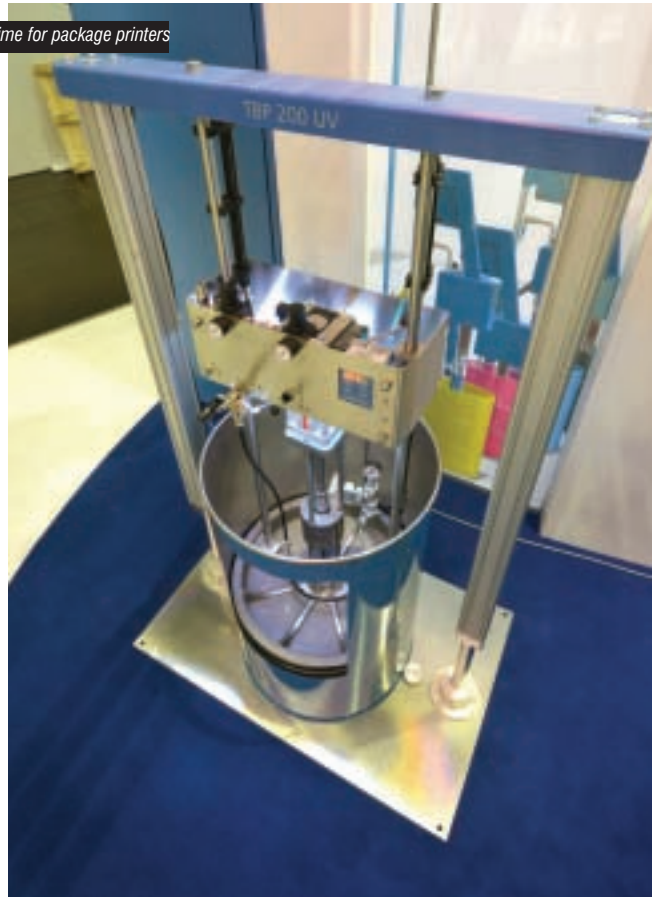
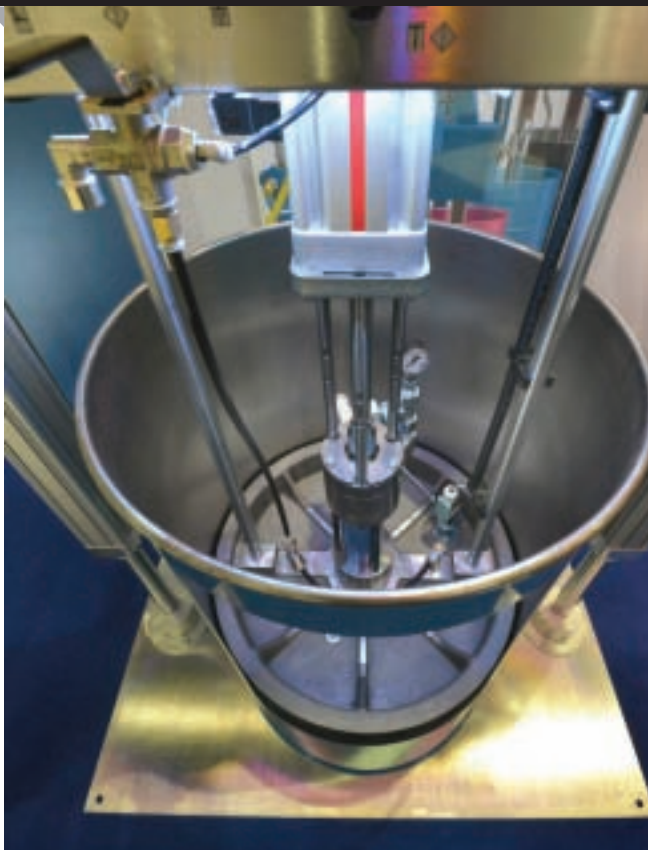
'Branding is so critical, and being able to mix the inks in-house means that the printers can control the color match reliably, provide fast response and call-off ink in the quantity that is actually required. This minimizes waste.'

Technotrans offers customers a pressroom audit (or Blue Check) that reviews how ancillaries might be used to improve productivity or quality issues, or enhance the company's environmental credentials. It is a free service, and has helped many printers enhance their efficiency in a move towards leaner manufacturing.

'The recession has been kinder to the packaging sector than many other areas of print, but even here there has been a need to focus on producing more cost-effectively, without compromising quality, while operating within legislative restrictions and meeting the swell of demand for more environmental practices,' says Benton.

'Printers and suppliers must work together to increase understanding of the key issues, and ensure future product development helps to arm our industry for growth and profit in future.'

*The "ink.supply UV" ink pump is engineered to minimize pressure, as well as waste and downtime for package printers*





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# Sustainability – should package printers be doing more?



In this second analysis of the findings of the recent PPW survey, Mike Fairley looks at how readers responded to the questions on environment and sustainability.

**R**ead through any of the packaging trade press, national newspapers, press announcements, or watch television news programs, and it soon becomes clear that environment, sustainability, and waste recycling issues are at the forefront of much of the global brand and retailer agenda.

Almost all the major international retail groups – from Walmart to Tesco, Sainsbury to Carrefour, Ahold to Lidl – have environment and sustainability programs and policies aimed at reducing the carbon footprint of their products, their packaging and their supply chains.

Carrefour for example, has said that it 'places sustainable development at the heart of its business strategy', and Walmart states that 'being an efficient and profitable business and being a good steward of the environment are goals that can work together'. Ahold's ambition 'is to reduce the environmental footprint of its supply chain'; Sainsbury's goal is to 'reduce its packaging weight by half by 2020 compared to 2005'; Lidl wants to 'be taken seriously as a company that truly promotes sustainability'; while Tesco aims to 'slash its environmental footprint by 30 percent by 2020'.

Much the same approach is being taken by the global brands. Unilever's chief executive officer Paul Polman, says: 'Businesses like ours no longer have a choice.'

'Sustainable, equitable growth is the only acceptable model of growth. It is also a very effective one. Growth and sustainability are not in conflict. There is no inherent contradiction between the two. In fact, in our experience, sustainability drives growth.'

At Procter & Gamble, the company is working toward 'a long-term environmental sustainability vision that includes: using 100 percent renewable or recycled materials for all products and packaging; having zero consumer waste go to landfill; and designing products that delight customers while maximizing the

conservation of resources'.

Certainly, there can be little doubt that the packaging and package printing sectors will continue to face many calls and pressures to become more sustainable and environmentally friendly. Increasingly, brand owners and retail groups expect their packaging suppliers to have an environmental management system (EMS) and an environmental management policy that sets out the company's commitment to continuous improvement in managing environmental issues, including minimizing waste, reduce carbon footprint, improving the use and sourcing of raw materials, improving recycling, establishing a clean manufacturing environment, reducing pollution and emissions, and improving the efficiency of energy and water usage.

The EMS also needs to set out the organizational process for implementing the system, creating an environmental review and planning process, documenting how the policy will be implemented, and establishing procedures for checking and improving environmental performance, and then reporting these (see Fig. 1).

So, where does the package printing industry stand in terms of its commitment to the environment and sustainability? Perhaps, not too well, if the results of the recent *Package Print Worldwide* survey are to be believed.

It questioned package printers worldwide about sustainability, EMS, environmental responsibility and what they feel are their main concerns regarding sustainability.

Some 46 percent of those polled saw sustainability as extremely or very important, 31 percent saw it as only of some importance, while 23 percent thought that sustainability was not very important at all (see Fig. 2).

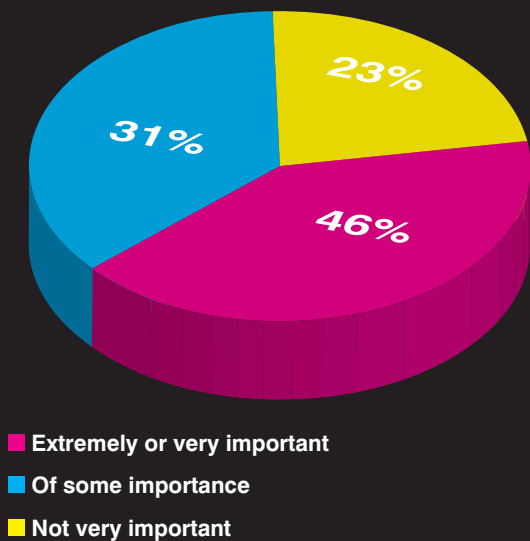
When asked whether they had an EMS in their business

Figure 1 The process of attaining continual environmental improvement

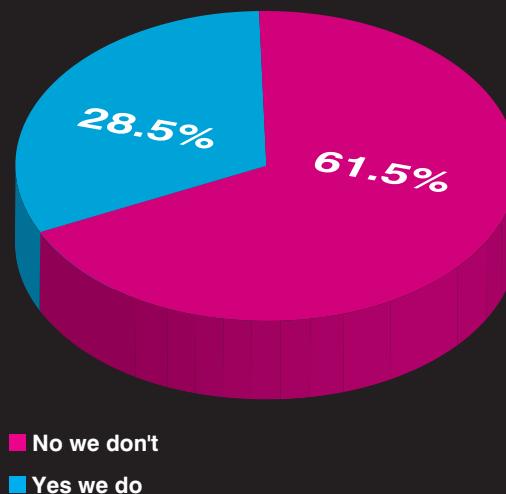


**Figure 2**

Level of importance of sustainability to your business

**Figure 3**

Do you currently have an environmental management system (EMS) in your plant



(see Fig. 3), only 38 percent responded positively. This is a disappointing result, particularly when there are well documented case studies showing companies that have introduced an environmental management and audit system – such as ISO 14001 or EMAS – into their plants have been able to significantly reduce materials wastage, improve their manufacturing facility, reduce downtime, and reduce water and

energy usage.

This has helped their customers to reduce or lightweight their packaging, created a better partnership with their customers and found new solutions for waste disposal or recycling.

In short, meeting environmental guidelines and standards has proved to be a good cost-effective business decision. Some companies have even been able to provide well-documented

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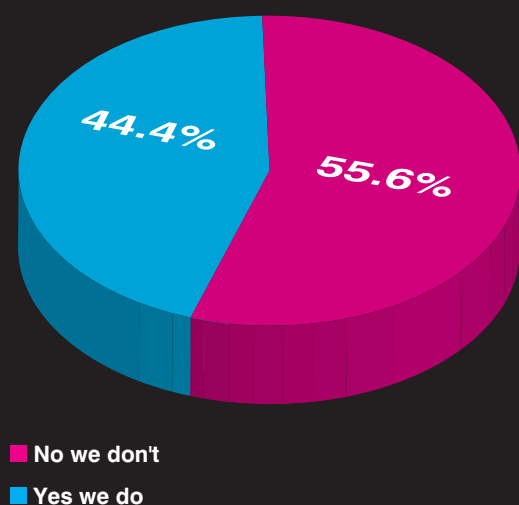
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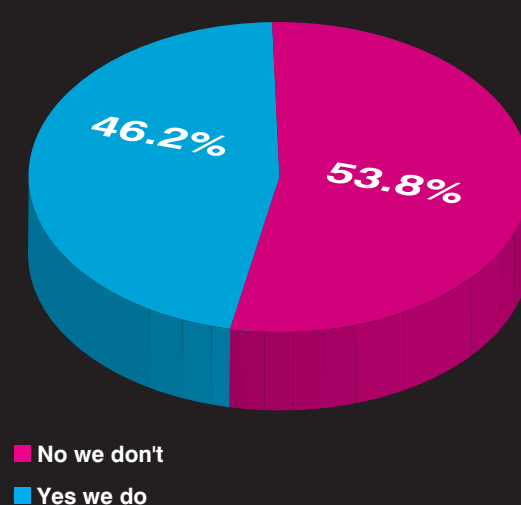


**Figure 4**

If you do not have an EMS in place, do you have plans to introduce one in the next 12 months

**Figure 5**

Do you have an employee team dedicated to directing sustainability initiatives for your business



and substantial cost savings – even more of a reason to invest in an EMS. Yet, even looking ahead, some 55 percent of package printers surveyed said they still had no plans to introduce an EMS in the next 12 months (see Fig. 4).

Looking at what package printing companies are doing in terms of sustainability, it is encouraging to find that 46 percent do have an employee or employee team in the company that is guiding or directing sustainability initiatives (see Fig. 5). Hopefully, even more companies will find this a worthwhile action for the future, especially if it can also help find cost saving and efficiency solutions within the company.

The survey also asked package printers what they regarded as the most important factors of sustainability, and how these relate to their business (see Fig. 6). More than three-quarters indicated that this was “customer demand”, followed by the opportunity to introduce lean manufacturing and reduce waste. Over 50 percent highlighted the benefits of cost savings.

So, why aren't more package printing companies already involved in sustainability and environmental initiatives? To address this issue the survey also asked companies to identify their main concerns about becoming more sustainable.

Perhaps, not unsurprisingly, the main concern was in relation to obtaining a return on sustainability initiatives. Yet there already existed well-documented case studies that show there are

substantial savings to be made.

Many companies also highlighted the cost/quality of alternative, more sustainable materials, and this is perhaps something that the major film, cartonboard and ink companies still need to address. Equally, the cost of certification to SFI, FSC, ISO, EMAS, LEEDs and other standards, is a key concern for many.

This need not be a barrier, because companies can still implement an EMS using guidelines published in various handbooks and manuals, such as “Environmental Performance and Sustainable Labeling”, which is available through the labels and package printing bookshop.

The time needed to address sustainability issues, and the inability to source viable recycling options were perhaps slightly lesser concerns, but nevertheless still important.

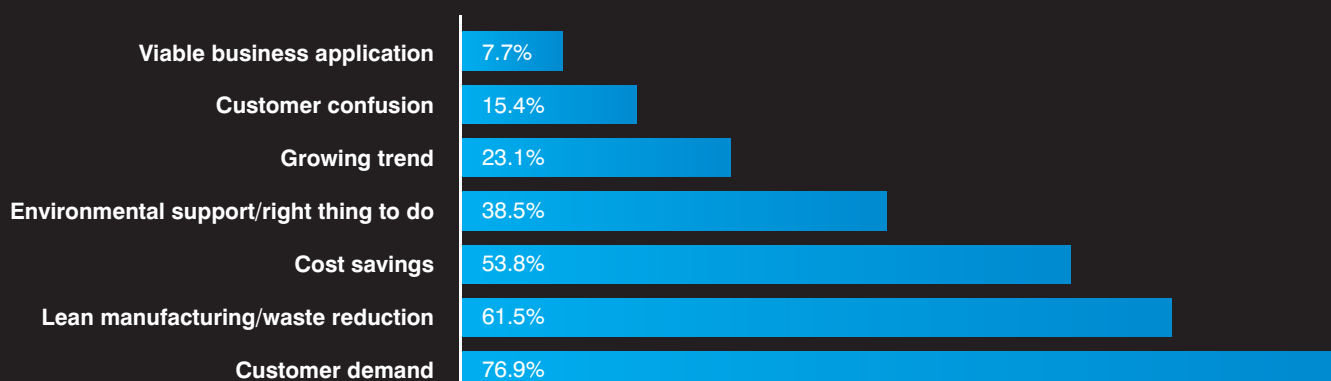
Sustainability and the environment is of concern to many package printing companies, and a good few are already taking steps and implementing schemes and programs for improvement, but some are lagging behind.

All the time the global brand owners and international retail giants are driving the sustainability program, package printers will be under increasing pressure to improve their performance.

As such, more package printing companies will follow suit and reap the benefits of being not only more sustainable, but of improving their bottom line and profitability too.

**Figure 6**

What are the most important factors of sustainability and how it relates to your business



# PM&A activity in the packaging, coating and converting industry



**Where is today's packaging, coating and converting industry in terms of merger and acquisition activity? Corey Reardon, Alexander Watson Associates president and CEO, reports from the company's recent Mergers and Acquisitions Executive Forum.**

**T**he Alexander Watson Associates (AWA) Mergers and Acquisitions (M&A) Executive Forum is a focussed annual event reviewing the changing landscape in the resin- and fibre-based packaging, coating, and converting market.

AWA is a research and analysis organization for the specialty paper, film, packaging, coating, converting and printing industries.

The 2012 M&A executive forum proved to be an indicator for opportunities, trends, challenges and threats. It brought together senior executives from companies within the sector; private equity firms, investment banks, lenders, financial intermediaries and other experts to discuss, debate and share strategic insights.

M&A activities are set to continue to pick up in this sector – for both strategic and financial reasons, for succession planning and through globalization. With the broad field of package printing representing one of the most buoyant facets of today's printing industry, growth and profitability across its supply chain are proving particularly attractive.

M&A activity has doubled during the past five years, and continues to expand despite the economic slowdown.

At the forum, Thomas Blaige, chief executive officer (CEO) of specialist investment bankers Blaige & Company, presented strategies to help company owners understand how to survive and thrive in this increasingly-competitive market.

He showed how, with globalization the central driver, plastics packaging – both flexible and rigid – has proved a continuing focus for strategic M&A investment in recent years. Some 55 percent of the 2001 top 50 US companies across all relevant segments had, he showed, merged or been sold as of 2010.

In today's sellers' market, where capital is now readily available, he advised a strategy of 'lead (acquire), follow (merge) or get out of the way (sell, divest or recapitalize)'.

A review of the overall performance of the top 100 companies in the global forest, paper and packaging industry was the topic addressed by Ian Murdoch of PricewaterhouseCoopers.

He said that many CEOs – expecting a decline in the global economy, and already in cost-cutting mode – are concerned about financing any significant investment, and expect major divestments and retreats from leading markets this year. The BRIC economies, he observed, still represent the greatest potential markets, with China still at the top – but Germany and the US are now nearly as popular.

The lack of CEO confidence was a starting point for an analysis of M&A trends in 2012 from Maryann A Waryjas, partner at Katten Machin Rosenman, who examined key transaction value drivers in both buying and selling. Buying is an opportunity to complement organic growth, she said, with acquisitions to grow the customer base and capture extant synergies. Sellers need to 'deliver a ready-to-run business' with a well-prepared offer platform.

Financing considerations for a consolidating industry were addressed by Paul Wren, director at Wells Fargo. Borrowing costs, he said, are at historically low levels, as banks 'have an appetite for lending and deploying the balance sheet', investors continue to flood into the bond markets and packaging is viewed by both as a credit-worthy industry. The availability of low-cost financing will, he observed, continue to facilitate growth and M&A activity in the sector.

Otti Ervasti, managing director of Vision Hunters, provided an overview of recent industry trends and M&A developments in corrugated, carton board and specialty papers in Europe. With Russia the only area showing positive growth, he said, restructuring – driven by the economics of survival – will continue, and M&A activity will increase.

A key requirement of European companies in this sector is to solve the challenge of increasing their presence in Latin America and Asia in the current climate.

Conversely, in the US, there is a resurgence in domestic manufacturing in the face of the shrinking cost differential between China and the western markets. Elisha Tropper, president and CEO of T3 Associates, focussed on the key factors driving the acceleration of domestic US production, with particular reference to the strategic ramifications for packaging and plastics – for example, the need to embrace technologies to create a low-cost/high-value business model, and the emerging export possibilities. Current low interest rates, he said, are ideal for financing investment – both in acquisitions and in property, plant and equipment.

Such growth strategies in the extrusion coating, release liner and consumer packaging markets were examined by Wolfgang Berger, head of strategy and business development at Mondi Europe and International, in the context of the macro features of our society, with an ageing population, changes in traditional eating habits, a growing middle class in emerging economies, and the growing popularity of flexible and intelligent packaging all to have an impact.



# Inside Innovia



**On a recent tour of its Cumbria facility, David Pittman sat down with Innovia Films' research and development director Andrew Bayliff to discuss innovation and what goes on inside the company's R&D labs.**

**P**ackaging films specialist Innovia Films has a strong research and development (R&D) ethic, with an Innovation Center at the heart of its UK facility in Wigton, Cumbria.

It employs over 70 people in R&D roles, with chemists, chemical engineers, physicists, material scientists, project managers, regulatory experts and IT specialists working in the pursuit of continual innovation.

They are tooled with machinery and equipment, designed and built in-house in many cases, to fuel specific research, development and testing requirements. This includes laboratory equipment to test most printing process, chromatography and coating.

Innovia strongly believes in R&D, according to Andrew Bayliff, research and development director at Innovia Films. Around 1.5 percent of sales are reinvested by Innovia, equating to around €6 million, he suggests.

Recent innovations pushed out by the R&D side of Innovia include: Propafilm NC, an uncoated, co-extruded clear collation film for the tobacco market; compostable snack bags which mimic traditional, non-compostable chip bags; and Rayoface NB, films suitable for linerless label applications.

There's also the NatureFlex family of compostable packaging films. Recent times have seen the launch of: NatureFlex NKM, a high barrier metallized compostable film; NatureFlex NKW, a high barrier white compostable film; NatureFlex NKC, colored compostable film; NatureFlex NKA, with a non-heat sealable surface on one side to prevent sealing in the bottom pouch gusset; and NatureFlex NKR, with an enhanced heat seal jaw release wash on one surface.

More innovations are on the horizon, with a new chemistry to blend cellulose with other materials to combine compostability with additional benefits one of those being worked on.

'There's a lot going on,' says Bayliff. 'The gamut of scenarios is enormous, with one platform providing countless opportunities.'

'We're also working on developing more sophisticated surface print technologies. We're pushing the envelope by developing materials with inherent printability.'

The future will also see increased crossover between Innovia's different market segments, particularly packaging and security.

'Brand protection is increasingly important, especially in the pharmaceutical and tobacco markets.'

'We have a lot of experience in security through our development work on technologies for banknotes and legal documents, so technology transfer will happen. Security options are already coming into the mainstream.'

Securrency is an Australian manufacturer of polymer-based banknote materials, formed in 1996 by Innovia and the Reserve Bank of Australia (RBA). The Guardian banknote substrate it produces is issued by more than 30 countries worldwide.

Innovia also collaborates with universities and the wider scientific community to develop new ideas and next-generation products.

'We have a new technology group that develops platforms and ideas to the point of principle. We've 15 collaborations happening at the moment.'

'It's good to interact with the scientific community and universities, as well partners and clients, as it allows us to spread awareness throughout the supply chain, which can help the development and adoption of new products further down the line. And it helps pull ideas through to make them commercial available.'

Aside from developments in packaging films, Innovia's R&D structure is involved with various other projects. For instance, it is in a partnership working on developing solar cells in Australia.

'A key to such developments is blocking moisture and oxygen. This will see further technology transfer as we already possess those capabilities through our developments in films.'

Innovia's capabilities have their roots in technology developed and honed across three centuries, starting with the discovery of the cellulose viscose process and development of cellulose films, through to polypropylene and its unique biaxially-oriented polypropylene (BOPP) "bubble" production process, which stretches the polyester film through both the mechanical and transverse planes.

The "bubble" process imparts a simultaneous orientation compared to films produced using the Stenter method, which imposes mechanical and transverse orientation sequentially and creates a less stable film.

'We're investing for success, and putting our money where our mouth is. What we do is not just about producing packaging films; it's polymer engineering.'

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## Commitment to the planet

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