

## A HIDDEN GEM IN THE QUALITY PRINT MARKET

Gravure is an established technique with a quality image second to none - so why has it fallen out of favor?

SPRING 2014



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PACKAGING MATERIALS

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## A positive mood surrounds the package printing industry in 2014.

The technology is advancing to meet the increasing need for short runs and quicker turnaround times. Take Goss International and the work it has been doing on its Sunday Vpak press series, or the interest DG press Machines is generating around its Thallo concept.

That's without even mentioning the developments in digital that continue at pace. HP Indigo's 20000 and 30000 presses, suitable for flexible packaging and folding carton respectively, are now entering the market - as will, we are told, Benny Landa's first Nanographic printing presses, with the folding carton variant to be the first off the line.

Converters are taking the opportunity of an upturn in developed markets to make healthy investments in this new technology.

Package printing is also becoming a central theme in many corporate growth strategies. KBA, for example, has made a number of strategic acquisitions in this area, including Flexotecnica, while Constantia Flexibles has detailed how its acquisition program helped achieve a 29 percent year-on-year growth in sales.

Mergers and acquisitions have been a big talking point. Is continued consolidation in the market a good or a bad thing, and what impact will it have in terms of competition and market dynamics?

All the positivity certainly makes for an extremely interesting working environment and one that is interesting to report on, and hopefully just as interesting to read. Long may it continue through 2014 and beyond.



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# NEWS

## XEIKON TARGETING BIG GROWTH IN CARTONS

**Xeikon is targeting big growth in digital folding carton printing.**

Xeikon has made a number of developments in its technology in relation its folding carton suite, including the launch of the Alpine Fuser drum and Duraclear, which it said has made its technology better suited to folding carton printing. It has also introduced a five-color variant of its 3000 series featuring orange and CMYK, which is being offered as a standard configuration to folding carton printers.

Filip Weymans, business development manager for labels and packaging at Xeikon, said: 'Our strategy is to pursue growth in the folding carton market.

'At the moment, self-adhesive labels account for around 75 percent of our business, with the other quarter attributed to heat transfer, in-mold label and folding carton printing. Our intention is to grow our folding carton market presence, and to make it as big as self-adhesive labels.'

Xeikon's presence at shows has included a strong focus on the folding carton market for some time already, including partaking in the Package Printing Workshop feature areas at Labelexpo Europe 2011 and 2013, and Labelexpo Americas 2012, and its folding carton suite being on show at IpeX 2014, in partnership with supplier companies from its Aura Partner Network. This included Zünd and its S3 digital cutting machine.

The Xeikon Café, taking place May 20-22 May in Antwerp, Belgium, will take this a step further by focusing on packaging innovation revolving around digital printing.

Xeikon itself will have a fully equipped 3000 series digital press running across the three-day event, while partners and other suppliers with an interest in digital folding carton production

*Xeikon is targeting big growth in digital folding carton printing as it prepares to host its next Xeikon Café event, where members of the Aura Partner Network will be present*



will exhibit their technologies to attendees. This is to include: Actega, Argos Solutions, Michelman and Squid Inks from the consumables and tools segment; finishing specialists AB Graphic, Bograma, KAMA and Highcon; print media companies 3M, Iggesund, Stora Enso, Treofan and UPM; software suppliers including CERM, Chili Publish, Hybrid Software and Labeltraxx; as well as RotoMetrics, Meech and ThermoflexX.

The Xeikon Café Packaging Innovations will have three strands, covering both the business and technical aspects of digital package printing, as well as the table-top exhibition. Partners and suppliers will give presentations regarding technical topics, with converters who have already adopted digital to provide a corporate perspective.

'There is a great opportunity in digital folding carton printing, and the Xeikon Café Packaging Innovations will provide an informal knowledge exchange platform covering the different aspects of digitizing print production,' said Weymans.

## MICHELMAN REBRANDS

Michelman has introduced a new brand identity to better position the company as a supplier in the coatings, composites, and printing and packaging markets.

Michelman said it has 'evolved into a proactive, forward thinking company', able to anticipate customer and industry challenges and needs, and 'deliver innovative and optimal solutions anywhere in the world, quickly and efficiently'.

It has unveiled a new logo, which it said 'symbolizes Michelman's evolution', and acts as a signal to customers of Michelman's commitment to forward-looking, agile product development. Bob Poletti, chief marketing and corporate development officer at Michelman, said: 'Michelman is not the same company it was five or six years ago. In the economic downturn of 2008, when most companies were pulling back investment, we continued to push forward'.

## EYEC OFFERING RETROFIT INSPECTION

EyeC has launched ProofRunner Carton Retrofit as an option for packaging printers to extend the capabilities of their existing carton converting equipment.

Modern, state-of-the-art folder gluers are often equipped with integrated in-line inspection systems, EyeC said, although those already installed and commissioned might not.

The EyeC ProofRunner Carton Retrofit is a self-contained unit that converts existing folder gluers. It is integrated between the folder gluer's feeder and the pre-folding section adding only 16in (400mm) to the overall length of the machine.

The EyeC ProofRunner Carton Retrofit inspects the entire carton surface, including the flaps, against approved artwork. It uses the folder gluer's existing ejection device to reject any defective item.





Heidelberg CEO Gerold Linzbach

## HDM OUTLINES DIGITAL STRATEGY

Heidelberg has detailed its plans for digital printing technology, including new presses and partnerships with other suppliers to leverage its capabilities in both the analog and digital markets.

The German press manufacturer's digital portfolio already encompasses printing presses, consumables, software and services, with further expansion in the pipeline. Almost a third of the company's research and development resources are focused on digital.

Late last year, Heidelberg announced a partnership with Fujifilm to develop digital printing technology, with the strategic partnership in the area of inkjet printing and aimed at strengthening existing business and establishing a platform to drive new business in future-oriented markets.

In fall this year, Heidelberg and Gallus are to present a new digital printing system for the label market that incorporates Fujifilm technology.

In parallel with this development, Heidelberg and Fujifilm have initiated a joint project to develop a new industrialized inkjet-based digital printing system for use in commercial and packaging printing.

Heidelberg chief executive officer Gerold Linzbach said: 'Our ability to offer integrated offset and digital solutions for a range of market segments is unique in the industry. This reflects our drive to remain the partner of choice in this sector moving into the future.'

'As part of our expansion in the digital sector, we are investing in technologies such as digital inkjet printing. We are also exploring printing on three-dimensional objects and thus breaking into market segments that are entirely new to Heidelberg. Overall, we estimate that the digital sector offers us sales potential of more than 200 million EUR per year in the medium term.'



ECMA president Andreas Blaschke.

## ECMA REAFFIRMS STANCE ON PLAIN TOBACCO

The European Carton Makers Association (ECMA) has reaffirmed its stance on plain tobacco packaging after the UK moved forward with plans to ban branding on cigarette packs.

UK Public Health Minister Jane Ellison recently told MPs that an independent report found it was 'very likely to have a positive impact' on public health and stop children from starting to smoke if plain tobacco packaging was introduced. Ellison is now set to publish draft regulations concerning plain tobacco packaging.

This follows the publishing of the report of an independent review into standardized packaging of tobacco, undertaken by Sir Cyril Chantler, April 3.

Sir Chantler was asked to look at the potential benefits, particularly to children, of plain packaging after the UK government postponed a decision on the matter last summer.

In his conclusion Sir Chantler stated: 'Having reviewed the evidence it is in my view highly likely that standardized packaging would serve to reduce the rate of children taking up smoking and implausible that it would increase the consumption of tobacco. I am persuaded that branded packaging plays an important role in encouraging young people to smoke and in consolidating the habit irrespective of the intentions of the industry. Although I have not seen evidence that allows me to quantify the size of the likely impact of standardized packaging, I am satisfied that the body of evidence shows that standardized packaging, in conjunction with the current tobacco control regime, is very likely to lead to a modest but important reduction over time on the uptake and prevalence of smoking and thus have a positive impact on public health.'

## EPSON TO DOUBLE SURE INKJET PRESS BRAND

Epson is aiming to launch more than 10 new inkjet printers for a range of professional print applications over the next 18 months as part of a program to enhance its offering for different print scenarios.

Over the last two years, Epson has introduced 10 professional print products under the Sure brand, including the company's first single-pass digital label press and UV technology, the SurePress L-6034V.

The rate of new product launches will continue and by 2016 Epson will offer over 33 professional production printers with dedicated Epson inks to the label and packaging, sign and display, production photo and textile markets.







# Is life imitating art?

If image changes, shorter runs and quicker turnarounds are becoming your new reality, it's time to consider web offset.

The push for more SKUs, faster turnarounds, later image files, and the need to maintain a unit price regardless of run-length are placing margins under pressure. Goss web offset presses offer capabilities that can turn short-run jobs into sustainable, profitable ones.

## **The Goss Vpak™**

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# CONSOLIDATION CONTINUES IN THE PACKAGING MARKET

**Acquisitions and consolidation has continued across the global package printing market in the first semester of 2014, with major tie-ups and deals announced across the supply chain.**

German press manufacturer Koenig & Bauer (KBA) has made acquisitions a cornerstone of its effort to expand into growth markets such as package printing. This includes Italy's Flexotecnica in the flexible packaging market and screen printing specialist Kammann Maschinenbau.

The management board of KBA presented a concept for the strategic realignment of the company at the end of 2013, as well as a package of measures aimed at strengthening the company's profitability in the long term and future development potential.

These changes will start to have an effect in 2015, KBA said, with a return to sustainable profitability in 2016 at the latest.

KBA said its realignment is designed to suit the changing global press market. The worldwide market for sheet-fed presses, for example it said, has been halved over recent years, and the market for web presses has contracted by around 70 percent. This downturn has been led by ongoing structural changes in the commercial print market. Lasting reversal of the slump in web press business is not to be expected, and experts are also predicting stagnation at the current low level for sheet-fed business.

Sustained growth is only discernible in the digital and packaging segments, and in certain special markets, KBA said.

KBA president and chief executive officer Claus Bolza-Schünemann said: 'Swift and radical restructuring is intended to facilitate our development into a decentrally organized and highly flexible press manufacturing company, which, complementing its core business, is active above all in profitable niche markets.'

'With this decision, we have laid the foundations for sustainable realignment and interesting future prospects. The essential basis, however, is initially consolidation of our core business activities.'

The acquisitions of Flexotecnica and Kammann Maschinenbau were announced last year, and more recent deals include Taghleef Industries buying Derprosa Film and the acquisition of Flint Group by the merchant banking division of Goldman Sachs in partnership with Koch Equity Development LLC. The Goldman Sachs merchant banking division and Koch Equity Development are to form a new entity to acquire Flint Group, and will support the strategy developed by Flint Group's management team as it pursues a targeted business mix evolution towards the more attractive and higher growth printed packaging market while maintaining Flint Group's strong position in the resilient print media business.

Antoine Fady, Flint Group chief executive officer, said: 'The management team of Flint Group is excited about this planned new ownership, and the opportunities this now presents.'

'The investment by Goldman Sachs Merchant Banking and Koch is a clear vote of confidence in our vision, strategic plans and 'can do' culture. Flint Group's fundamental dedication to safety, sustainability, integrity and compliance will continue to form the foundation of all of our business activities.'

Further around the supply chain, Bertram Capital has merged the Maxcess and Webex companies under the former's name, although Webex and all of the Maxcess brand will be maintained.

Acquisition and consolidation activity has been just as rife in

the converting and printing market. Amcor announced plans to acquire Detmold Flexibles in November last year for 50 million AUD, and to integrate the business into Amcor Flexibles Asia Pacific, while UK carton printer Benson Group has been acquired by Graphic Packaging. Graphic Packaging had already announced the acquisitions of Contego Cartons and the beer and beverage operations of ÅR Carton, which it said had helped 'create a platform for continued growth and market share gains in Europe'.

The Benson acquisition supports this growth project, allowing Graphic Packaging to broaden its customer base and offer current global customers a wider range of new products and services.

In his prediction for 2014, Nicholas Mockett, head of packaging mergers and acquisitions at Moorgate Capital, said: 'The biggest shake ups in the packaging industry have really been in the cartons and healthcare segments. It all started on Christmas Eve 2012 when Graphic Packaging completed the acquisition of Contego Cartons and followed this deal by buying certain assets in the beer and beverage market from A&R Carton. Prior to the Contego Cartons deal Graphic Packaging had not been a very significant player in Europe but had been the US's biggest carton business and is also vertically integrated, producing cartonboard.'

'Similarly, in healthcare packaging, including cartons, leaflets and labels, Contego Healthcare was sold to Filtrona, which had previously only had a relatively small labels business in its portfolio. Then, in September Carlyle completed the acquisition of Chesapeake and merged it with MPS. This created not only the leading transatlantic player in healthcare packaging but also a leading carton producer for luxury goods.'

'These changes are likely to drive further consolidation as competitors who do not have a multinational footprint may struggle to serve key clients and they may not have the economies of scale, negotiating position with suppliers, or the most efficient manufacturing footprint.'

In relation to Graphic Packaging's acquisition of Benson, Mockett said: 'Graphic Packaging has been building its presence in European carton converting in the last year. This transaction should provide enhanced relationships with the retailer supply chain community alongside its strong position with the large FMCG companies. Benson is a leading UK supplier of cartons to the supermarkets for retailer own brand labels and has experienced strong growth as the supermarkets prioritise their own brands through their multi-channel outlets, as retailers typically earn higher margins than from selling the famous name equivalent.'

However, not all the consolidation activity has progressed smoothly, with ÅR Packaging Group announcing plans to divest its tobacco, specialties and food packaging businesses had been cancelled. ÅR Packaging's tobacco packaging operations and its Russian facilities were to be acquired by Mayr-Melnhof Karton, with the specialties and food packaging operations, consisting of Flextrus and ÅR Carton Lund, to have been divested to Weidenhammer Packaging Group.





A high-performance medium-format KBA Rapida 106 with eight printing units and two coaters will join Typografia Petchatnja's portfolio

## KBA PRESS TO DRIVE GROWTH AT RUSSIAN PRINTER

A high-performance medium-format KBA Rapida 106 with eight printing units and two coaters will be delivered to Typografia Petchatnja in May. The Russian packaging printer specializes in pharmaceutical packaging and is located on the edge of St Petersburg.

This 82ft (25m) press is not the first KBA sheet-fed offset press to go to this printing company founded in 2000 in Vasilievsky. In 2005 a Rapida 74 with five printing units and a coater was installed at the firm, and in 2008 a KBA Rapida 105 with six inking units and a coater went into operation. This was followed two years later by a Rapida 106 with the same configuration.

Under the management of managing director Roman Zagorskij, Typografia Petchatnja has generated an annual growth rate of 20 percent, with the new

press set to pave the way for further growth and fulfill the increasing demands of the company's customers in terms of finishing.

The new press is equipped for carton printing and UV hybrid operation. Automatic plate changing and CleanTronic washing systems ensure fast job changes which is vital when printing small print runs typical in the pharmaceutical industry.

In addition, it is the first Rapida in Russia to feature QualiTronic Professional in-line color control and the high-resolution full-sheet scanner DensiTronic PDF, which compares the printed image with pre-press data.

Following the commissioning of the Rapida 106, the firm plans on expanding its main production hall with a further large investment.



UK carton finishing specialist FC Cartons has installed an Iberica JR-105 die-cutting unit

## FC CARTONS INSTALLS IBERICA JR-105

UK carton finishing specialist FC Cartons has installed an Iberica JR-105 die-cutting unit.

FC Cartons has recently expanded its manufacturing facility by moving into a larger unit on the Langham Park Industrial Estate, effectively doubling its capacity. Building on this growth, the company installed the Iberica JR-105 in February.

The Iberica will be used to allow the company to offer greater flexibility, speed and accuracy to deliver all its die-cutting, creasing and embossing services under one roof.

The JR-105 can die-cut various materials including paper, cardboard, fluted, plastic and corrugated items. It also comes equipped with an automatic stripping unit. It joins various folding, gluing and other carton finishing equipment on the company's plant list.

## CELLPACK PACKAGING ADDS CAPACITY WITH BOBST LAMINATOR

Cellpack Packaging, part of the Switzerland-based BBC Group, has reported a marked improvement in its production capabilities after installing a Bobst SL 1000 laminator.

Cellpack Packaging prints and converts 15,000 tons of flexible material per year from four production sites located in Germany, Switzerland, France and the Czech Republic.

The most recent addition to its lamination equipment is a Bobst SL 1000 duplex laminator, which was commissioned in September 2012, at the production site of Cellpack Lauterecken GmbH in Germany to replace a 20-year-old machine and to increase the facility's solventless lamination capacity.

Rainer Hellwig, plant manager at Cellpack Lauterecken, said: 'The web handling capabilities of the SL 1000 enable to run a broader range of substrates at high production speed, up to 450m/min depending on the web combination and process conditions. And the quality of the finished product we deliver to our clients is excellent.'



Nexus Evo and Nexus Power laminators have been installed alongside a ProSlit S2 DT slitter rewinder at Caihua's plant in Shanghai

## CHINESE CONVERTER INVESTS IN COMEXI TRIO

Comexi Group has installed three new machines in Caihua's new plant, with the Chinese company using the Spanish manufacturer's technology at the heart of the expansion of its production plant in Kunshan, Shanghai.

Nexus Evo and Nexus Power laminators have been installed alongside a ProSlit S2 DT slitter rewinder.

Caihua manufactures flexible

packaging for the pharmaceutical, agricultural and food industries, amongst others.

Comexi Group said the three new machines will improve effectiveness and efficiency in different parts of Caihua's production process.

Jiangliang Xia, president of Caihua, said: 'Having Comexi to expand our plant allows us to obtain high quality standards and offer our customers products quickly and efficiently.'



A Bograma finishing unit was shown as part of a digital carton printing system using a Xeikon 3500 press at Labelexpo Europe 2013

# Managing a successful digital printing operation

**Mike Fairley looks at what converters need to do to successfully implement, run and manage a digital printing operation**

Over the past 10 years digital printing has made a significant impact in both the commercial sheet-fed and narrow web label markets. Indeed, the recent Drupa Global Trends report highlighted the growing importance of digital, with figures showing an estimated 85 percent of all commercial printers worldwide now having a digital print capability. However, the report also pointed out that digital printing has yet to make any significant impact on primary packaging with the exception of label production where its use is much more

This latter finding is also born out in research carried out by Labels & Labelling Consultancy, which shows that over 20 percent of all new label presses installed worldwide in 2013 were digital presses predominately the electrophotographic technologies of HP Indigo and Xeikon. Inkjet is also now starting to find new growth opportunities in labels.

Whether electrophotographic or inkjet, digital label printing is undoubtedly creating new business opportunities, added-value solutions and increased profitability in market applications across the food, health and beauty, wines and spirits, soft drinks, pharmaceutical, and household cleaning and industrial products sectors. In particular, where personalization, limited editions, seasonal or event marketing, variable design or graphics, new promotional opportunities, test marketing, or unique or sequential coding can be offered.

These messages from the world of labels are now increasingly finding their way into the folding carton and flexible package printing markets additionally fuelled by the impact of the wider format digital sheet- and web-fed press technology innovations introduced at Drupa 2012 by the likes of Landa, HP Indigo, Xeikon and Screen Europe. As the production versions of these machines are ramped-up during 2014 and into 2015, it is anticipated that several hundred electrophotographic, inkjet or nanographic digital presses producing printed packaging will be operating worldwide as the industry approaches the end of 2015 and more rapidly thereafter.



KAMA, and others, are looking to speed-up cutting and creasing of folding cartons by reducing the turnaround time between jobs, and not just for digital presses



Complementing the new folding carton digital presses are new technologies for creasing and cutting of printed carton board coming from companies such as Highcon, LasX, AB Graphic/Edale, KAMA and Bograma, all looking to speed-up cutting and creasing of folding cartons by reducing the turnaround time between jobs, and not just for digital presses.

Successful and profitable digital printing however, is not just about investing in a digital press. It is much more than that. Indeed, the installation of a digital press is only one of the first steps required in building a successful digital business. Investment may also be required in the pre-press department, in a more sophisticated management information system (MIS), and in building an integrated and more sophisticated and seamless digital workflow that offers improved production efficiencies, a reduction in errors, faster and more accurate workflow throughput, quicker response times, overall cost and waste reductions, enhanced management information and better customer information.

A seamless workflow and what it can provide for customers needs to become part of the company's sales promotion. It all begins to lead to a different way of working. Certainly one of the key messages that frequently comes across when successful label converters talk about their digital printing operations is that, 'when you make the transition into digital then you should take the opportunity to stand back and re-think how you do business.'

Undoubtedly, the introduction of digital printing into a conventional package printing plant does bring certain challenges – and opportunities. In particular, digital printing will have an impact on the way that sales and selling takes place, on marketing, on artwork and origination, on pre-press and color management, on selecting the best conventional or digital process for a particular job, and on employee acceptance, training and skills.

#### Investing in new skills and abilities

What seems certain is that investing in digital printing involves more than just buying a new machine. It is likely to involve new skills and abilities in the printing plant – abilities which are much more related to IT. Converters and printers moving into digital printing need new people; people who want to work digitally, people that are younger and those able to accept the new technology very quickly. It is not just new skills; it's also a new culture. Different competences are required for running a digital machine and digital printing operation than those needed for running a conventional press.

Indeed, digital printing has more in common with the graphical department – to the pre-press manager – than with the conventional press shop floor manager. However, both types of staff are still required. New people are required for digital, but conventional printing skills are still also necessary because of the finishing unit/operations.

#### Changing the role of sales and the selling operation

In terms of sales personnel, plants installing digital printing have frequently used their same sales people, especially at the

beginning when they are looking to see a new customer. Why? Because it is about understanding the needs of customers: this is the product, this is the quantities you have, this is how we think you should decorate, is it a folding carton, is it a flexible film, is it a sleeve, sachet, pouch, carton?

Only then can the most appropriate printing techniques be chosen – whether digital or conventional. So what makes a successful digital selling operation? Put simply, a quick guide to profitable selling of digital printing is as follows:

- Understand the needs of customers
- Provide better solutions with digital
- Sell digital on added-value service
- Do not sell digital on price
- Develop new business opportunities
- Talk on a broader level than price
- Go direct to brand owners and marketing – not label or packaging buyers

It is certainly important for the sales team to not sell digital by the price. Try and sell it as a service. If the converter or sales person sells too cheap then digital printing will not be profitable. Keep the price high, but sell the benefits of service. Tell the customer they will have it faster, they will have less lead time, less stockholding, rapid response to changes. Try to avoid as much as possible anything that relates to digitally printed packaging being sold purely on price.

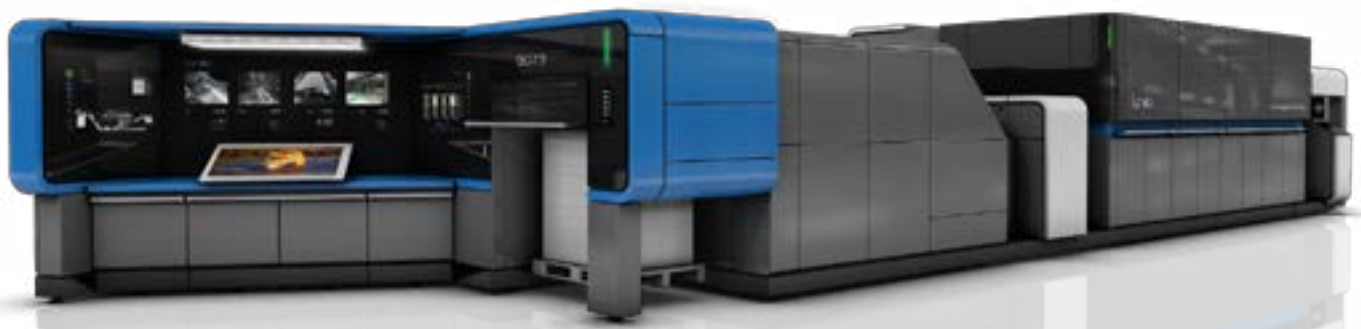
What needs to be understood is that digital printing capabilities are the key for many printers with the technology to open new accounts – big accounts. They can often create a new account with digital and then work with that client to obtain larger conventionally printed orders. The aim for the printer, and sales team, should be to sell a total package.

At the end of the day it really has little to do with the unit price of what is being printed. It is more to do with what the customer gets as a decorative pack that promotes and markets their product and, ideally helps them to add-value and increase profitability. The challenge therefore, is to sell digital on customer service and added-value, rather than on price.

#### More emphasis on marketing

Listen to successful digital label or package printing converters and it becomes apparent that marketing is an increasing part of their success: using direct mail campaigns to specific vertical markets; addressing what the needs may be in a specific market; moving away from the idea of cold calls and of spending a lot of time doing market-concentrated or consultative selling. The aim of most of them has been to move away from a sales model to more of a marketing and solutions model.

It may mean the focus of the printing business changing from a manufacturing function to one that works with customers to better manage and rationalize their supply chain, stock holding, product launches, product variations and varieties, time to market. Digital can have a key role to play in all of this.



*As the production versions of machines such as the Landa S10FC are ramped-up, several hundred digital presses will be operating worldwide as the industry approaches the end of 2015*



*Edale and AB Graphic have teamed up to develop the Digicon 3000 finishing system to support the new generation of HP Indigo presses, in particular the 20000*

### Digital or conventional print – how does the printer decide?

The challenge for printers that already have conventional printing presses but are new to digital printing is to decide where they make the decision (and how and when) between whether the incoming job goes conventional or digital?

Certainly one of the keys to success seems to be in the ability of packaging printers to estimate and quote jobs from both a conventional press standpoint and also from a digital press standpoint; obtaining very accurate costing comparisons for each process that can be compared in the run up to the decision-making process.

The aim should be to streamline the administration processes as much as possible. Look at ways to try and minimise the costs of administering jobs in a digital workflow.

Many label and package printing companies investing in digital printing for the first time may well already have a pre-press system, such as Esko. They are therefore looking to understand whether the same equipment and process can be used for digital printing as is used for conventional. Also, what is the role of pre-press in digital?

Well, in basic terms, pre-press offers a lot of opportunity to drive cost out of the whole process.

The package printer needs to try and reduce the risks of an operator making an error. An error of applying wrong trapping, wrong features or wrong step and repeat, wrong legends and which is good for proofing. All of these things can use a lot of overhead cost in the final product – and that's where margins can disappear. Pre-press is therefore very

instrumental, certainly in a digital world, in keeping costs under control and in ensuring production efficiency.

Workflow automation is an area that is constantly progressing and is undoubtedly an area where a lot of benefit can be found. Certainly if you talk about postponement of the job, the decision to go either conventional or digital, and then digital – what kind of digital, which press – then automation is a very important factor in reducing the risk of the operator making an error, and it should ideally be seamless.

### Color management is critical

Is the origination or artwork that comes from the customer or designer more critical for digital, or less, or no real difference in terms of dpi definition and quality achieved? Well no, that's where pre-press comes in. The whole idea for pre-press is to optimize a design for volume reproduction. And no, to that extent, it is not really any different in dealing with digital pre-press.

Digital is a calibrated system, it's a nice easy profile and the customer's image file will be reproduced very, very accurately. The color matching is absolutely perfect, much better than that usually achieved on a converter's conventional presses. The aim for origination and pre-press for digital package printing should therefore be to:

- Turn color matching from an art into a science
- Hit color targets quickly, reliably and consistently
- Reduce waste and time spent matching color on press
- Implement a color managed workflow that allows the switching of presses whilst maintaining

consistent color

- Implement inkjet proofs where color is a target that can be hit.

### Investing in MIS

Managing a successful digital label or package print plant will almost certainly create more information to be processed and handled, require better customer communication, speedier access to information, a need to work smarter, to enhance consistency from estimating to processing orders and, perhaps most importantly, to cut time and costs for greater profitability. This will all lead many digital label and package printing companies to review and install, or upgrade, their management information systems.

Certainly, when looking at the issues around digital label and package printing the cost of administration is usually seen to be a higher portion of the overall cost. Therefore in order to maintain, indeed improve, profitability, the focus must be to reduce costs by streamlining the administrative process.

At the end of the day MIS and workflow automation in the digital plant should be used to cut time and costs and to work smarter. It should provide quick access to information plant wide; offer better customer communication (from first contact to order to on-going contact; provide more consistency from estimating to processing orders; give access to industry best practices and, above all, provide greater profitability.

### Conclusions

As explained at the beginning of this article, making the transition into digital printing gives a package printing converter the opportunity to stand back and re-think how they do business. Digital printing does indeed involve making changes to the way that the business is managed and run; in who is empowered to make decisions; of increasing administration automation; of investing in MIS; in changing the way that sales and marketing functions.

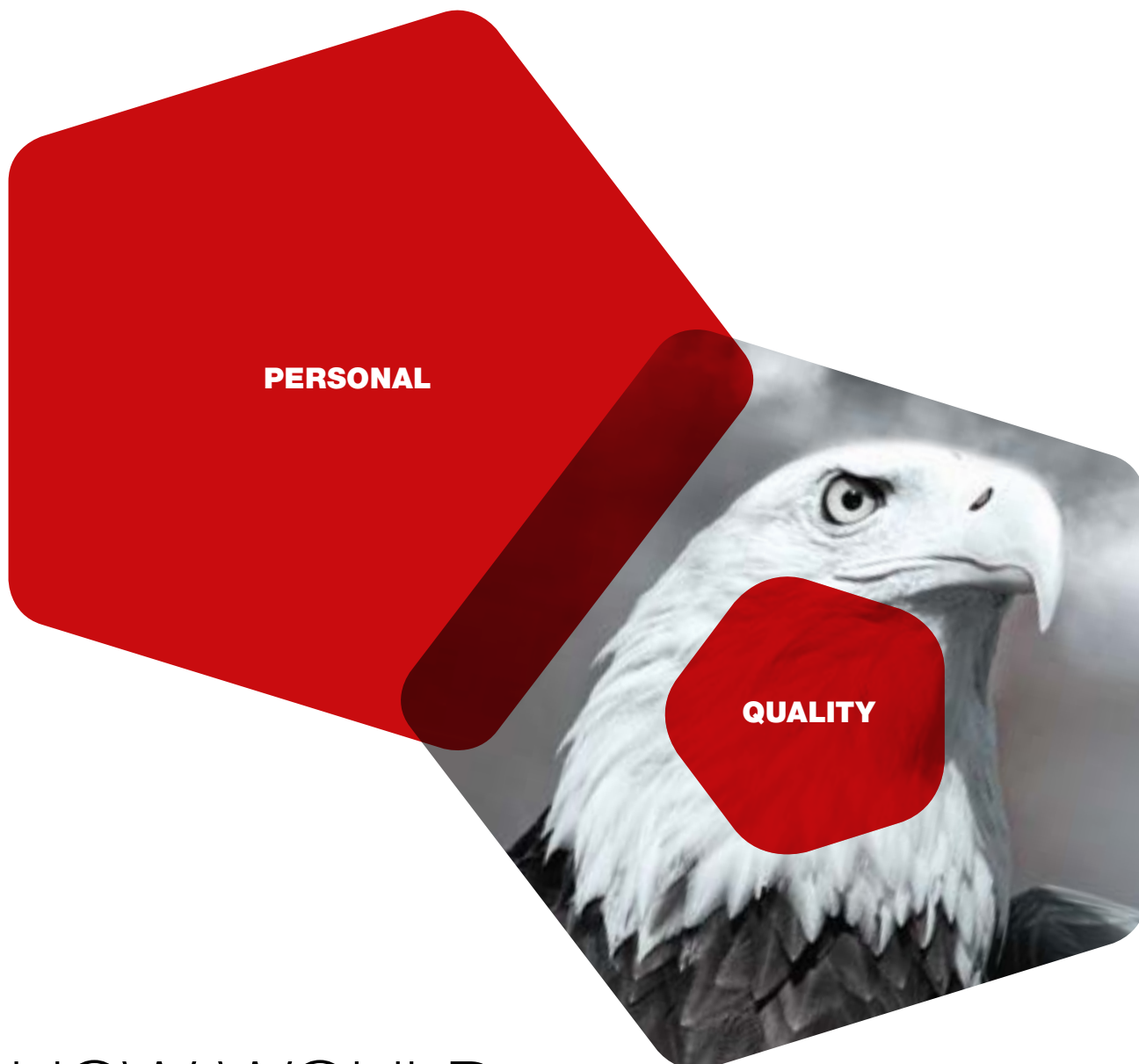
Get it correct, and the digital package printing business will undoubtedly become a more successful – and more profitable – business.



*HP Indigo's new generation of digital package printing presses, such as the 20000, is looking to create new business opportunities for converters*



*Complementing the new folding carton digital presses are new technologies for creasing and cutting of printed carton board*



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Swedish retail chain Coop has used Iggesund Paperboard's Invercote Bio substrate as the base material for new packaging for its own-brand frozen berries

# The evolution of materials

**From multi-layer films to down-gauged cartonboard, material manufacturers across the board are working hard to advance their offering. David Pittman reports**

**M**aterial suppliers from across the packaging market are on a continuous road of evolution, refining and enhancing their products.

For plastic packaging materials, this has largely, and continues to focus on, improved environmental performance. For fiber-based packaging specialists, there is the ongoing need to provide functionality that opens up the application possibilities, such as the use of new ink and coating formulations developed by the likes of Smart Planet Technologies (see pp. 28-29).

Ohto Nuottamo, senior packaging adviser at Stora Enso Renewable Packaging, says this will facilitate a healthy relationship between the two market segments, and that packaging material choice is a megatrend shaping the future of the market, with brands and consumers demanding better environmental credentials and improved functionality as they become more aware of their own footprints.

'Plastic is more engineered, and this is something fiber-based packaging manufacturers need to do more of to maximize the value and functionality of their products. As such, it was one area where we will do well to learn from the plastics industry, while it is keen to develop its environmental competencies, which is an area where we excel and have a strong heritage.

'We need to work together and already are to break out of our individual silos, and network and share ideas and developments.'

Yvo van Vliet, executive vice-president of commercial operations

at Treofan, highlights a number of other megatrends important to the materials market, including increasing demands in terms of sustainability, changing demographics due to an ageing population and the growth in own-label supermarket brands.

'Supermarkets are at war with the brands as their own-label products have gone to another level and are taking a bigger market share, so brands need and want materials that can elevate their products to a level own-labels can't reach.'

## Plastic packaging

In terms of plastic materials, the likes of Toray Plastics (America) and Spain's Derprosa have made a host of enhancements to their product portfolios.

Toray has introduced Torayfan PC5, an ultra-high barrier metallized film for tri-lamination applications, as well as a foil replacement or overwrap lamination and wrapper. It says Torayfan PC5 is a 'durable, cost-effective' replacement for foil in a typical paper/PE/foil/PE packaging structure. In addition, it is ideally suited for use as the inner barrier web of a tri-lamination in gas-flushed stand-up or flat pouches. It can also be used as a cold-seal layer and as part of a lamination for high-quality confectionery wrappers and bakery overwraps.

PC5 is designed with an ultra-high-barrier layer resistant to crazing on one side. The other side is corona treated for excellent bond strength in cold-seal adhesive applications and in extrusion and adhesive three-ply laminations. It has guaranteed protection



against oxygen and moisture in gas-flushed applications, so ensures that food manufacturers' products will stay fresh throughout shelf life and brand integrity will be maintained.

For Deprosa, developments have included an anti-microbial material that kills 99 percent of bacteria, so meeting the requirements of the food packaging market and various graphic arts sectors, such as children's books and menus.

Joaquín María López Batlles, marketing and business development manager at Deprosa, says: 'It is a process of continuous development to meet the needs of our customers. As a company, we see ourselves as a 'problem solver', working with customers to find a solution to a problem that they have.

'This is why we have introduced a number of new developments in recent months, with more to come in 2014. For instance, we are working on an oxo-degradable film, which is very interesting and an area of growing interest at the moment.'

Oxo-biodegradable plastics specialist Symphony Environmental Technologies has spoken widely of the growing market for oxo-biodegradable plastics driven by legislation in markets around the world, and reported strong interest at the K'2013 plastics tradeshow, with record attendance on its stand and a record value of orders placed.

d2w was reported as a particular draw for visitors to the show, while d2p and d2t also generated interest, the company said. Symphony Environmental's d2w product makes plastics oxo-biodegradable when added at the manufacturing stage, while d2p is a non-silver based masterbatch designed to combat moulds, fungi, decay organisms, bacteria and algae; d2t is Symphony Environmental's anti-counterfeiting technology.

For van Vliet, BOPP offers massive potential for advancing packaging materials as suppliers continue to work on thinner structures with fewer layers and lower density but at the same time offering improved performance.

Treofan employs a large and dedicated research and development team to drive through innovations, with 20 percent directly related to advances in the material itself and the other 80 percent defined by the needs of the market.

'The market wants to do more with less where possible, and it is up to us as part of the total value chain to make this a reality,' he says.

### Advances in carton

In carton, Metsä Board has launched Carta Allura for luxury end-uses. Carta Allura is said to have 'exceptional smoothness' making it ideal for foil lamination, high-gloss varnish and other special effects. It also has high brightness and an attractive visual appearance that creates the right impression when used for premium products. Carta Allura is most suitable for beauty care, high-end food and beverages as well as graphic applications.

Metsä Board states that Carta Allura is lightweight yet firm, giving more cartons per tonne and enhancing sustainability. Its reverse side is also coated to ensure a good finish to the inside of the carton.

In a similar vein, Benson Group showed its new Delilicious range at Packaging Innovations 2014 (see p.45), which features a coating on the inside surface to permit reverse printing and the use of cartonboard to pack a variety of different food-to-go items, from wraps and salads to nachos and antipasti.

'There is a trend towards using special effects to distinguish packaging,' says Christophe Baudry, commercial director for beauty care and healthcare at Metsä Board. 'Hot-foil stamping and foil lamination work best with an exceptionally smooth surface, and that is exactly what Carta Allura provides.'

Another recent application for carton highlighting its environmental work has been Swedish retail chain Coop's use of Iggesund Paperboard's Invercote Bio substrate as the base material for new packaging for its own-brand frozen berries. Invercote Bio is a virgin fiber-based board coated with bioplastic, which makes the packaging compostable so that the used packaging can go into the same waste stream as any remaining contents. The bioplastic used with Invercote Bio is Mater-Bi from the Italian company Novamont.

Roland Rex, president of Pro Carton, says: 'Sustainability is more than simply a trend, sustainability is the prerequisite for future success. Predictions show that the number of tasks of packaging are on the increase, and thus its importance.'

### Speed to market

Nuottamo says a key to all this development is being swift to market with new products and finding applications for those already being used.

'Bio-based consumerism is growing day-by-day so there is lots to do and many more developments to be made.'

Batlles says that Deprosa's size as a mid-tier company enables it to work swiftly and closely with customers to bring about innovations, and is able to comfortably handle small batches for trialling and testing new materials.

'This allows us to produce tailor-made products for our customers, which we can then take to the market as a means to help it evolve.'

Treofan's van Vliet says his company also benefits from working with the whole supply chain. As a base material supplier, it works closely with suppliers and brands at either end of the supply chain, as well as with converters in the middle to make sure products and developments are suited to printing and converting.

He adds: 'Polyethylene was only introduced as a packaging material in the 1960s so we have already come a long way. Growth might not have been as rapid as the internet or smartphones, which have become ubiquitous in a matter of years, but it has still been a steep learning curve and developments will continue in the years to come.

'Thinner will continue to be a defining element of packaging materials in the future as constant development brings about the next generation of packaging materials.'







*The current canteen is bigger than the initial 5,000 sq ft facility that Great Little Box Company operated out of in the early 1980s*

# Great Little Box Company has big dreams

**Canadian packaging company Great Little Box Company is investing in the future after a decade of evolution. David Pittman reports**

**G**reat Little Box Company is a 32-year-old packaging supplier with aspirations in line with its name.

It is aiming to be 'great', with modern technologies and a one-stop-shop service approach for its customer's packaging needs, while at the same time remaining loyal to its established base of small- and medium-sized customers.

The name Great Little Box Company can be traced back to the roots of the company, when Robert Meggy took control of a bankrupt business specializing in corrugated boxes. Already called Great Little Box Company, the decision was taken to carry this corporate identity forward in order to maximize existing advertising commitments.

Over the next two decades this paid off, with the company growing rapidly. In the years to 1996 it moved to larger premises in Richmond four times and opened a branch in Victoria, then in 1996 it moved to a 140,000 sq ft location in Vancouver, and in 1998 it opened branches in Kelowna and Everett, Washington.

## Food packaging

This evolution continued well into the 21st century with a moving supplies division created in 2004, although Meggy was conscious that manufacturing was moving more and more offshore, and so looked for new avenues for Great Little Box Company to develop through.

This has resulted in it placing a much heavier focus on consumer-orientated packaging in the last decade, which was viewed back then as recession-proof. Its corporate timeline from the last decade includes the opening of a label division in 2006 with the acquisition of C. Davis Enterprises' assets, extended in 2009 with the acquisition of the assets of Parrot Label, and the establishment of a folding carton and rigid box division through the acquisition of Boxstar's assets in 2007. In total, seven companies have been acquired and integrated into Great Little Box Company in the last 10 years, including Vanisle Packaging and Action Box Company. Its

product portfolio now includes custom box printing and product packaging, retail-ready packaging and custom label making.

Moving into other packaging streams has proven to be an astute decision given the global financial crisis over the last few years and the fact that food and beverage, in particular, have remained in demand as much as ever, if not more so.

'We have grown the company's footprint and its intellectual property portfolio over the last decade,' says James Palmer, vice-president of marketing at Great Little Box Company, adding that only for a brief period between 2007-09 did it not report year-on-year growth. Instead, this period saw the company keep its business stable, before growth resumed in the current decade.

'We look to make acquisitions involving businesses that are no bigger than 25 percent of the size of our existing operation in



*The Great Little Box Company product portfolio now includes custom box printing and product packaging, retail-ready packaging and labels*





*Flexo is Great Little Box Company's core competency, although digital is a technology it is keeping a close eye on*

order to make integration and uniting corporate cultures easier. We now operate a 250,000 sq ft facility with multiple technologies producing different packaging products. In fact, the growth has been such in the last 30 years that the current canteen is bigger than the initial 5,000 sq ft facility that Great Little Box Company operated out of in the early 1980s.'

Palmer notes that the Great Little Box Company customer base is likewise made up of smaller stature companies, with many names unfamiliar to consumers but whose products and packaging they may be more readily acquainted with. In fact, Great Little Box Company's biggest customer only accounts for two percent of its sales, he says.

Having a customer base made up of smaller



*Additional services supplement the company's printing activities*

sized businesses has led Great Little Box Company to launch various additional services, such as inventory management. The Store & Release service, for instance, allows the customer to order a larger amount of product and take partial shipments from it over a 60-day period, with each partial shipment invoiced and paid for individually. Contract packaging and fulfillment services see it assemble, pack and ship products directly to its customers' customers in scenarios where products are coming in from overseas and need re-packing for distribution or point-of-sale units need to be shipped already stocked with products.

### Technology investments

Great Little Box Company is constantly looking at its technology portfolio and updating it to keep abreast of the latest technologies and have the capabilities to offer its customers the service and products they need.

Recent investments for instance have included a new die-cutter in its folding carton operations, and the development of an online portal to allow instant quotes to be generated.

'This gives our sales force the tools to win business by being more responsive to our customers,' says Palmer, 'whereas our competitors might take hours to process quotes.'

Digital printing is highlighted as a big part of the company's future too, and it has just ordered a digital label press. Palmer says Great Little Box Company is aware of the rapid development of digital printing so notes the company is keeping a keen eye on the progression of this technology, with major developments such as the commercialization of the Landa Nanogrpaihc Printing presses and HP Indigo's 20000 and 30000 models happening in the near-future.

Flexo is Great Little Box Company's core printing technology and will remain so, even with the next generation of digital presses promising improved economics across longer runs. It also carries out screen printing and litho-laminating.

This combination of printing and packaging products applicable for different end-use markets has allowed Great Little Box Company to carve itself a very attractive and financially sound niche.

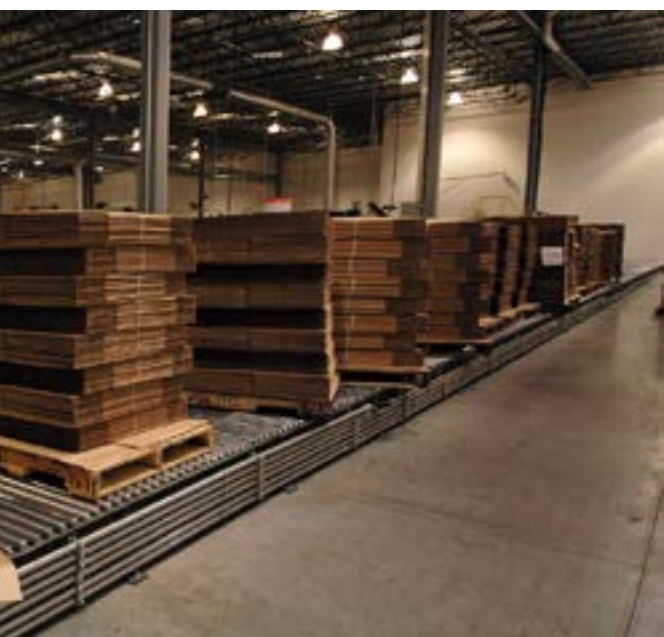
'We have competitors in individual markets but there are very few that can offer the full service portfolio that we can provide for packaging to every point of a customer's supply chain, from shipping and warehousing to the retail environment,' says Palmer. 'The technology alone is a big investment and makes it very difficult for others to match our 32-year history.'

'These are very high barriers to entry that we have spent more than three decades erecting through growth and development, which means we are able to keep ourselves ahead of the game.'

'Our customers also benefit too from this, as we are able to bring together multiple technologies to provide an ideal solution to them. For instance we recently helped one of our craft beer customers produce an advent calendar made of corrugated and paperboard, which would have been hard for others to do.'

He concludes: 'We have a wide and diverse customer base that we work with to help get to market quickly and effectively.'

'A core focus for us in the future is helping our customers achieve better sales results through us being a preferred supplier for all their packaging needs. We are looking forward to the next decade.'



# Independent carton longevity

**Celebrating its 170th anniversary, Zumbiel Packaging competes on independence and flexibility in the US folding carton market, writes Danielle Jerschefske**

**I**ndependent folding carton manufacturer Zumbiel Packaging of Hebron, Kentucky, celebrated its 170th anniversary in 2013. Zumbiel prides itself on being a long-standing, large, private and family owned producer of printed folding cartons for the likes of Dr. Pepper, Kroger, Pepsi, Fram Group and AB Inbev.

The biggest players in the folding carton market are a part of integrated paperboard mills and revolve their businesses around tonnage selling. CPGs that choose to work with these producers must adhere to their demands and commit to long-term contracts for the same material so to realize the pricing benefits involved with choosing them.

For Zumbiel, which was established when the great-grandfather of Tom Zumbiel, its current director of marketing, bought the business in 1876, this is not the case. 'We're not integrated with a paperboard mill, which gives us the ability to deliver innovation in materials and allow customers to have a choice of substrates and structures,' says Tom Zumbiel. 'We offer the flexibility and innovation that brand owners are looking for and deliver the quality at the same time. Customers that work with the integrated suppliers receive very little if any innovation because their business is contractually tied up. There's no

incentive to provide innovation or choice. Therein lies our opportunity.'

According to the Paperboard Packaging Council (PPC), over the past two decades more than 120 carton plants in the US have been shuttered and independent converters' market share has eroded by one-third. At one point, independents held as much as 30 percent share. Today they account for only 20 percent, which 'creates problems for the CPGs in that they have limited options' says Zumbiel. 'This standardization of integrated players is our opportunity for differentiation.'

A 2010 feature in *The Economist* says that the average American supermarket carries 50,000 items, five times as many as in 1975. Consumers demand constant change and intriguing design in order to win their dollars. Zumbiel is flexible enough on its own to provide unique options to fit filling equipment and to help with whatever a customer's objective for distinction might be. For instance, the company's patented Tran-Z-Print lets consumers 'iron on' a chosen image directly from the carton to a t-shirt. The unique process engages users while providing savings to the brand on the costs of promo inserts.

The converter's art department supports this demand for change and new development. Complete with advanced CAD software, two plotter

tables and a blade system die cutter to make prototypes and test new design options, customers can introduce new designs with alternative materials such as certified and PCW recycled content paperboards.

## Manufacturing

Zumbiel's 500,000 sq ft facility is fully equipped with various print and converting machinery. The company culture is strong, and has remained in tact throughout the years. Employees are trained to analyze business processes to uncover where efficiencies can be made. And they're encouraged to share their notions with management to spur improvement.

With sheet-fed offset the converter can incubate new brand launches and efficiently produce small brand work, moving jobs to web flexo if the volume justifies it. The AB InBev brand Landshark is an example of a product line where Zumbiel can effectively compete on scale.

The converter will move in to digital printing, and has, in fact, placed earnest money down on a full color digital printing press. It sees that it must be able to offer clients personalization, regionalization and image variability on their folding cartons, a move that has proven successful in the labels market where the technology is more mature.

While the supplier has mid web capability in offset, an eight-color 67 inch flexographic Fischer Krecke press with rotary die-cutting and a seven-color 50in Kochsiek press are the converter's work horses. The lead operator of the Fischer Krecke press completes regular make ready times of 12 minutes. The machine hits 18,000 impressions per hour running at 1,000ft/min. Copy changes occur 10-12 times over a 12-hour shift.

The converter can run as many as three carton stock rolls that weigh as much as five tons, making up 18,000ft of material, through one of its flexo machines each hour. Both presses have automatic splicers on the front end with huge festoons to keep uptime. Rotary dies are sourced from Atlas.

A total of seven finishing lines measure the length of the cartons, glue, seal and can insert, while counting the number of complete cartons going through the system. Specific glues are used depending on the type of carton and what the end use



*Preparing a die-cutter at Zumbiel in the 1950s*  
packprintworld.com





*Zumbiel prides itself on being a long-standing, large, private and family owned producer of printed folding cartons*



*Flexibility and innovation are cornerstones of Zumbiel Packaging's offering*

requirements are for it to insure product integrity through the supply chain and beyond.

Any barcodes and unique product details can be printed on the cartons using inkjet equipment when they're pulled from inventory to be boxed and shipped. Details are also printed on the finished goods cases. An automated conveyer system reads these barcodes and distributes the shipment where required. Cartons must be sent to the correct finished loads.

Two seven-color mid web offset presses, a 56in manroland capable of printing conventional or UV inks and a 50in KBA are supported by Bobst flatbed die-cutters. Each press has a station for conventional or UV coating. Flatbed dies have long been manufactured and maintained in-house.

Whether produced using offset or flexo, varnish coating is an extremely important part of the folding carton process, especially managing the proper COF. Standards and quality control is closely managed at each step. Zumbiel uses a customized MIS. Operators log in and enter job details to control waste and track materials.

#### **Additional Value**

Zumbiel was one of the first folding carton companies to obtain the Global Food Safety Initiative (GFSI) certification FSSC 22000 (Food Safety Systems Certification), which was driven by General Mills. The converter can implement any number of security layers including de-bossing/embossing, hidden codes, magnetic and thermochromatic inks, micro printing and more.

The carton supplier embraces sustainability too, with five percent of its consumed energy sourced from wind farms. Zumbiel is an EPA Green Power Partner and an Energy Star partner since 2008 and in 2007 Zumbiel obtained both FSC and SFI chain-of-custody certifications. It shreds PET bands and recycles any other plastic waste found in its operations.

This passion for the environment is extended to its customers with the Zumbiel Environmental Packaging Impact Analysis. In-house experts review existing package designs to uncover ways to reduce their impact on the planet. Light-weighting, packaging minimization, structural and graphic design, paperboard options and manufacturing opportunities are all taken into account. This assists clients in obtaining their sustainability goals, and often improves their bottom line at the same time.

Zumbiel's Z-View multi-pack is one such example. The compact design leaves the carton open on two sides, which increases product visibility. Snapple has embraced the Z-View, using 10 percent less paperboard, and has found it to drive volume sales.

Zumbiel employees are well-trained and are encouraged to participate in the company wellness program. Zumbiel has a very low turnover with some employees working for the business as long as 40 years. The company has a soft skills partnership with a local Gateway school. This empowers employees to make the right decisions at work and at home.

The converter reverts to the International Packaging Group (IPG) for best practices to abide by and looks to the Paperboard Packaging Council (PPC) for guidance on new training tactics. The in-depth training modules allow operators and other staff members to meet the criteria required to receive top pay.

#### **For years to come**

87 percent of Zumbiel customers rank the carton supplier as one of their top three partners for their businesses. The independence, innovation, flexibility and service provided by the company since 1843 does not waver. It produces nearly all of Dr. Pepper's cartons, supported with a dedicated team located near brand headquarters in Dallas, Texas. For more than 80 years the converter has supported Fram Group with its aftermarket automotive supplies packaging.

The converter supports its customers' operations with its Machinery Systems Group, a team of three mechanical and application experts. They ensure that products and parts move into each packaging unit without disturbing production lines. And these partnerships will continue to evolve.

Zumbiel sees food packaging as a growth opportunity and is looking to win more business in this market through its nine person sales team. As the paperboard and carton industry continues to consolidate, Zumbiel Packaging will hold true to its roots, delivering unique carton packaging to brands looking to differentiate themselves at retail.



*Snapple has embraced the Z-View, using 10 percent less paperboard, and has found it to drive volume sales*



# Making a case for stone packaging

Stone Age Packaging is targeting the plastic and synthetic paper markets with material made from stone. David Pittman reports

Stone paper is a paper-like product manufactured from calcium carbonate bonded with high-density polyethylene (HDPE). The process for creating stone paper was first developed by Taiwan Lung Meng Technology during the late 1990s and is patented in more than 40 countries worldwide, where it is marketed under a variety of trade names such as Parax Stone Paper, TerraSkin, ViaStone, Kampier, EmanaGreen and Rockstock.

Stone Age Packaging, with offices in Canada and the US, was formed in 2010 with the aim of promoting stone paper products as an environmentally-friendly alternative to fiber-based materials. The stone paper production technique, it says, differs from the wood pulp papermaking process through the exclusive blend of mineral powder and a small infusion of a non-toxic resin. As a result stone paper production uses no trees and produces no water pollution, and without any harmful gaseous waste being released into the environment.

Sam Farhangi, global sales and marketing director at Stone Age Packaging, notes that the only water used in the production process is a small amount to cool the machines. 'The process to produce stone paper is a dry process, with no water used,' Farhangi says, and which contributes to its 'green' credentials alongside reduced energy consumption, waste production and air pollution.

## At the heart of stone

Available in sheets or rolls from Stone Age Packaging, and in finished and semi-finished varieties for labels and specialty coated for larger format application, Farhangi draws attention to the provenance of stone paper, which is produced from material sourced from government-licensed quarries, as well as waste from the quarrying process, and the natural bright white color and smooth finish owing to the properties of calcium carbonate

"Taiwan Lung Meng technology has also been cradle-to-cradle certified by McDonough Braungart Design Chemistry, a member of the US Green Building Council and originator of the Cradle to Cradle design framework"

that means no chlorines or acids are needed in the production process.

Further key properties of stone paper products include being waterproof, insect and moth-proof, tear- and fire-resistant, grease-repellent, RoHS-certified for electronics and electrical equipment, and photodegradable, as well as being fully recyclable with both post-industrial and post-consumer recycling possible.

Scraps from the production line are reused to produce a recycled range, R-Series, for example, while post-consumer recycling can lead to pure stone powder reused to make more stone paper and residue from incineration used as an ingredient for other purposes, such as construction materials and fertilizer.

This helps create an 'endless loop of material utilization', according to Stone Age Packaging, and fits into the ethos of 'reduce, reuse, recycle'. Taiwan Lung Meng Technology has also been cradle-to-cradle certified by McDonough Braungart Design Chemistry, a member of the US Green Building Council and originator of the Cradle to Cradle design framework that helps companies 'go beyond minimizing harm to the environment and move towards creating a wholly positive impact on the planet'.



Stone paper products are available in sheets or rolls from Stone Age Packaging, and in finished and semi-finished varieties for labels and specialty coated for larger format application



Further applications include FDA-compliant food packaging, such as cake boxes, ziplock bags, sandwich wraps and takeaway food cartons



Stone paper is suitable for a variety of packaging applications, and can be treated with a variety of finishes

### Applications

The properties of a material made from stone and the processing possibilities result in myriad of applications, ranging from packaging, labels and tags to bags, manuals and even waterproof products like maps, charts and notebooks, which are resistant to tearing, stains and collapse when they come into contact with water.

The stone paper portfolio on offer through Stone Age Packaging includes: S-Eco, made from 80 percent calcium carbonate and 20 percent HDPE; S-Board, which is 60 percent calcium carbonate and 40 percent HDPE; S-Film, made in a 70/30 mix; and S-Thermo, which has a composition of 60 percent calcium carbonate and 40 percent HDPE.

100 $\mu$ -thick S-Eco can be laminated with flexible packaging or in a thicker composition of 140 $\mu$  for wine labels, while 300 $\mu$ -thick S-Board is suitable for applications such as cookie boxes. In addition, 50 $\mu$ -thick S-Film can be used for various food wrappers and soft packaging, and S-Thermo for thermforming various products, from lunch boxes and soap trays to chocolate box liners and meat trays.

These four lines are also available as R-Series products, which are produced using 20-100 percent recycled stone paper material and can be recycled through post-consumer processes themselves. This range also includes the new R-Pallet stone paper pellets that can be melted down for injection molding to create 'plastic' products.

Further applications include: FDA-compliant food packaging, such as cake boxes, ziplock bags, sandwich wraps and takeaway food cartons; wine labels, bottle tags and shelf tags; cavity wall insulation; gift wrap, bags and boxes; and wide format outdoor advertising.

'The use for stone paper is only limited by your imagination,' Stone Age Packaging's corporate literature states.

### Printing

Stone paper can be printed using a variety of processes, such as flexo and gravure, although 'is essentially made for offset and UV printing,' says Farhangi, adding that digital printing, while possible, remains part of the stone paper roadmap as work takes place to make the material more suited to the machine and printing specifications related to that process.

The substrates can then be given a variety of finishes such as embossing, debossing, hot-foil stamping and spot varnishing. As such, stone paper products are suitable for decorative printing, often supplemented by coating and corona treatment to mitigate the surface structure and maximize printability. For instance, a double-sided coating on S-Eco is recommended to counter the powdery surface as a result of the high calcium carbonate composition of that product, with corona treatment on laminated S-Film advised to make the surface receptive to inks, as with the normal processing of plastic films.

Depending on the application, stone paper products can also be gusseted, heat sealed, sewn, mounted with grommets, and outfitted with hemp, nylon and rope.

For Farhangi, a key target is to increase stone paper's penetration into the plastic and synthetic paper markets. 'Due to the unique properties of stone paper and benefits, there is big growth potential in the luxury paper, industrial and commercial markets, like wallpaper and insulation for example,' he says.

'Research and development is ongoing, and constant progress is being achieved in the development of new processes as well as extensions of new applications.'

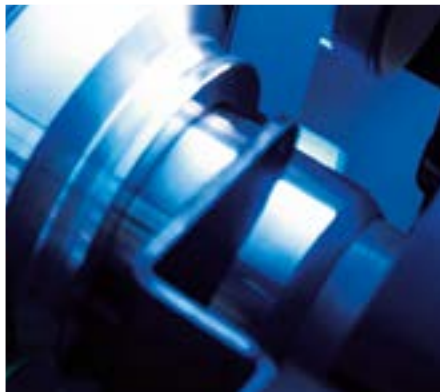
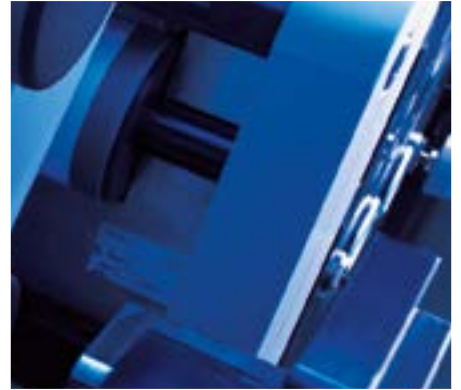
## US demand for pouches to reach \$9.4 billion

Demand for pouches in the US is projected to increase 4.6 percent per year to \$9.4 billion in 2018. According to analyst Esther Palevsky, 'Growth will be fueled by continued solid opportunities for stand-up pouches.' Overall pouch unit demand is expected to expand 2.7 percent yearly to 92 billion. Advantages of superior aesthetic appeal, portability, light weight, reduced material use, and significantly lower shipping costs relative to rigid containers will foster strong acceptance in a broad range of consumer packaged goods uses. Food and beverage markets comprise the majority of pouch demand, accounting for 80 percent of the total in 2013. Nonfood markets for pouches will grow more rapidly than food and beverage markets, based on the further development of new applications in consumer goods resulting from sustainability advantages and strong opportunities for dissolvable pouches for laundry detergents. These and other trends are presented in Pouches, a new study from The Freedonia Group, Inc., a Cleveland-based industry market research firm.

Stand-up pouches will remain a major growth segment in the overall packaging industry, with demand forecast to expand 6.5 percent annually. Advances will reflect rising interest among packaged goods companies based on cost savings due to lighter weight and lower material use compared to rigid containers. Also supporting gains will be the ability of stand-up pouches to differentiate and draw attention to products on store shelves due to their large front panel billboard space and the perception of pouches as a more contemporary packaging format.

Demand for flat pouches is forecast to increase 4.0 percent annually, driven by faster advances for four-side-seal pouches in medical and pharmaceutical markets. Four-side-seal pouches will also experience favorable growth in certain food applications such as meat, poultry, and seafood, and sauces and condiments. Robust gains are anticipated in nonfood uses such as soaps and detergents due to the rising popularity of unit-of-use products packaged in dissolvable pouches. In general, however, flat pouch demand will lag increases for stand-up pouches due to already-high usage in many markets and competition from stand-up pouches.





# Success and security for the labelprinter



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# Narrow web flexo in Chinese packaging industry

**By virtue of its excellent print quality and efficient online processing capability, flexo is gaining more attention from China's packaging printers. Kevin Liu takes the temperature with two leading suppliers.**

**O**met and Nuova Gidue are flexo printing equipment suppliers from Italy, and both have Chinese customers not only in narrow web label printing, but also in carton packaging – and especially cartons for high value-added white spirits and cigarettes.

## Omet

George Li, sales manager for Omet China, recalls that the company entered the Chinese market back in 2003. At that time, Omet sold its first flexo printing machine to the Chinese market to a converter specializing in high value-added cigarette cartons.

Omet's advanced narrow web rotary printing technology met perfectly the requirements of Chinese high-end cigarette packaging manufacturers and today the company has multiple machines installed at tobacco packaging converters.

In George Li's opinion, the Chinese cigarette package printing industry is different from that found in the West. Chinese end users require much higher print quality and more complex converting processes, which is exactly the reason why, up to now, cigarette package printing has mainly focused on sheet-fed offset and gravure, with multiple stage off-line decoration.

'Actually the biggest argument we faced when we promoted our flexo printing in China at the beginning, was the printing quality,' says Li. 'People here got used to comparing flexo with offset quality and tended to the conclusion that flexo printing quality is bad. However, following the increasing improvement in flexo platemaking and press technology, flexo quality is already close to, or equal to, offset printing. Therefore, people can now basically accept flexo as a quality printing process in China.'

Compared with gravure and sheet-fed offset, flexo has a big advantage: it is a multiple process option. For example, Omet's Varyflex flexo press, which has been adopted extensively by Chinese cigarette package printing manufacturers, can also include gravure printing and silk screen printing units depending on the different demands of the end user, and can also utilize in-line application of holographic stripes or cold foil. This brings multiple options to cigarette converters - techniques that they can combine flexibly to address the requirements of different brands of cigarette cartons.

'Moreover, the Varyflex press uses servo technology so that the web transport and tension of each unit, and each process, can be controlled independently, without disturbing the rest of the line, so ensuring a high level of multi-process accuracy.'

Omet also invented some technologies targeted specifically at the particular requirements of the Chinese cigarette packaging market, such as in-line laser composite OVD film. The reward came in 2006, when Omet's Varyflex was awarded the gold prize for cigarette label technology by the China Tobacco Society.

Currently Omet has an assembly plant and flexo demonstration center in Suzhou Wujiang, which is not far from Shanghai, where converters can experience flexo printing hands-on and receive in-depth advice both on the technology and the label and package printing markets.

## Nuova Gidue

Nuova Gidue China was another narrow web specialist to pioneer package printing in the country. Steven Fan, general manager of Nuova Gidue China Ltd, says that although the company is mainly engaged in developing label printing technology, it does have specialized printing equipment for flexible packaging and folding cartons. The M5 630 flexo press can also handle flexible packaging applications; and the M9 modular printing system was developed with carton converting in mind, and already has applications in the Chinese market.

The latest M9 modular printing system was installed in Shanghai No.8 People's Printing Factory. This system is composed of five offset units, six flexo printing units and one gravure unit. One major feature of this system is its ability to produce not only folding cartons but also self-adhesive labels. 'For example, Shanghai No.8 People's Printing Factory is using it to print self-adhesive labels now, and is planning packaging cartons for white spirits in the future,' says Fan.

He regards the Shanghai No.8 People's Printing Factory as a vivid example because many big-name carton packaging manufacturers in China are also engaged in the self-adhesive label business. In the past, such manufacturers would produce adhesive labels on sheet-fed offset presses, or would outsource production; 'now they could do it completely by themselves as long as they have a press like the M9, which essentially provides a link between the packaging and label business.'

The M9 modular press can also meet market demands for high value-added packaging, as it combines multiple printing and processing functions. It can handle both UV- and water-based ink systems, for example. And the M9 is capable of printing a wide range of products, from 38-micron BOPP film to 500gsm paperboard. The M9 is built with servo drive technology allowing it to be configured according to customers' requirements.

## Future development

George Li is frank in explaining that, compared with offset and gravure printing, the cost of flexo printing is still a little high, which is one of the major obstacles facing the promotion of flexo. 'Besides, Chinese people still have an 'offset complex' because they don't know enough about flexo,' says Li. 'But with the improvement of the flexo printing infrastructure and the development of new inline processing technology, flexo will undoubtedly receive more and more acceptance in the Chinese package printing field.'

Steven Fan has similar views. 'Considering the material and labor costs saved by in-line processing, flexo printing has huge competitive advantages in the field of carton decoration. In addition, considering the Environment, flexo printing uses UV- and water-based ink, which is more environmentally friendly compared with the solvent ink used by offset and gravure printing. On this basis, following both the increase in the cost of labor, and the importance in China of environmental protection, flexo printing will undoubtedly applied more and more in the package printing industry.'



# GMI grows its global footprint

**Quality management specialist Graphic Measures International recently opened a UK service operation in order to expand its global footprint. David Pittman speaks to its president Tim Curtin about the reasons for this move, and where it might lead.**

**G**raphic Measures International (GMI) hosted a press conference in central London earlier this year where it confirmed the opening of its new European operation, and quickly made clear its intentions to make the most of a direct presence on the continent.

Justin Lewis, GMI's business development director (Europe), said at the time: 'The opening of the European office is the first step in bringing GMI's services directly into Europe. Brand is king and print buyers need to know that wherever in the world their packaging and related print is produced, quality does not need to be compromised.'

GMI is a supplier of quality management to brands, and certifies, monitors and measures the performance of their packaging suppliers in order to deliver brand consistency around the world. This business model was born out of work to develop a packaging quality management program that would satisfy the requirements of Target Corporation, a 75 billion USD general retailer in the US.

'Target was experiencing some difficulty in controlling the

quality of the packaging they received, in particular from product vendors in Asia,' says GMI president Tim Curtin. 'GMI implemented a process to certify packaging suppliers capable of meeting the minimum demands of Target, and evaluate samples of printed packaging as close to the source as possible.'

This has resulted in a suite of services to suit the needs of its customers. Primary activities include working with customers to establish minimum printer requirements, and then to draft and publish specifications and tolerances for their packaging, as well standards for brand colors.

Once these procedural activities have been conducted, GMI specialists conduct print facility certifications, on-site press checks and production run sample measurements. It also conducts testing and analysis of packaging in-store to make sure print quality is monitored across the supply chain, even when it has entered the retail environment.

Print facility certification goes beyond the act of printing, also taking into account training, operator competencies, and health and safety. Production run sampling looks at various aspects

of the print, such as process colors, spot colors, coating, barcode readability, registration, trapping, die-line accuracy and brand content, to the pack structure itself – substrate weight, thickness, brightness, format, fit and finish. In-store analysis 'closes the loop on a true end-to-end program', GMI says, by ensuring what was produced and measured matches what has shipped.

To facilitate such extensive analysis, GMI employs specialists in litho/offset production, flexo production covering both the use of process and spot colors, gravure and flexo poly bag production and vinyl bag production to oversee and lead its certification programs.

GMI's client base now includes Walgreens, Best Buy and Lowe's, as well as Target, all big-name retailers in the US, with 'active discussions' ongoing with further major retailers in the US, and its effort to evaluate samples as close to the source as possible has resulted in it establishing sales and evaluation centers in Central America, the Far East and India, and now the European sales function operating out of the UK.

In terms of its actual footprint, the number of certified package printers around the world is already above 500 and predicted to grow sharply in the near-future as more and more brands and retailers join its network, with 1,200 product vendors serviced worldwide.

'We are already in late-stage discussion with two major UK retailers,' says Curtin, 'and we expect to be evaluating samples of their packaging within the next 2-3 months. Further prospects have responded positively to our recent move into Europe and we are arranging meetings with them as we speak. Increasing our presence is driving this process.'

'We already know from vendors and printers there is a strong demand for improvements in packaging quality and reductions in waste.'

Target, Walgreens, Best Buy and Lowe's have all worked with GMI to develop bespoke print quality management programs, with a 'hand-in-glove' approach ensuring the processes and data collection methods deliver the results they want, says Curtin. This must factor in quality management on a global scale, with Curtin noting: 'For major retailers, a global footprint is critical to take advantage of cost-effective production and the changing tastes of their customers. GMI's infrastructure has been put in place to support this.'

'Where the products lead, so the packaging will inevitably follow,' he adds. 'In order to offer testing close to the source, it is important that we invest in operations, equipment and staff in all

major production regions. The US, China, Central America and South and South-east Asia are already covered. Europe is the next step – we expect to have an evaluation centre here shortly.'

#### GMI Prime

As well as an expanding global presence, GMI's future rests on the continued evolution of its service. Digital printing, for instance, is firmly on its roadmap as the technology establishes a foothold in the package printing market.

'We are conscious that digital packaging is certainly one facet of the future retailers will demand,' says Curtin. 'There are many aspects to digital printing that need to be considered. We are currently holding discussions with both retailers and major digital press manufacturers to consider how best to move forward.'

It has also developed GMI Prime, a quality assurance program designed to allow brand owners, product vendors and packaging professionals to find, evaluate and foster business relationships within an online portal. This, GMI says, offers many benefits, including greater quality control for brand owners, more competitive pricing for product vendors and increased visibility for suppliers.

Curtin says: 'Our new GMI Prime service builds on these strong foundations, taking advantage of an extensive pool of certified packaging suppliers and a database of 750,000 packaging projects we have measured.'

'GMI Prime enables retailers and brand owners to achieve the benefits of GMI's print quality management programs immediately, in a cost-effective way. By leveraging the databases of suppliers and sample evaluation results from the past few years, we can deliver entry-level print quality management program quickly, avoiding much of the time and costs associated with developing custom program.'

'New clients can also benchmark their current packaging with GMI Prime, study the results and then adjust test requirements to suit their needs or 'bolt-on' additional options if necessary.'

All of these offerings permit GMI to offer a suite of quality management services that are essential in the modern climate. 'As product supply chains stretch ever further, process management for packaging becomes critical to ensure brand integrity,' says Curtin. 'Retailers are aware that own-brand products return excellent margins, but extending their range demands they take greater responsibility for the look and feel of on-shelf packaging. They are also under increasing pressure to reduce waste and to demonstrate higher levels of corporate social responsibility. GMI programs go some distance to support these activities.'

'Typically, our clients are in a position where up to 20 percent of their packaging is known to be of substandard quality. By sourcing from certified printers, and demanding sample evaluations be made before packaging is delivered, we have demonstrated this figure can be reduced to 3-4 percent or better. This greatly reduces waste and saves retailers considerable amounts of time and money. Over time, a genuine and often substantial return-on-investment can be achieved.'

'We believe all packaging could be, and should be, of a consistent high-quality standard,' Curtin proclaims. 'Over the past five years we have demonstrated the value of our programs to a number of multi-billion dollar corporations in the US.'

'We hope to deliver these same messages to retailers and brand owners in the UK, Europe and elsewhere. GMI Prime is key to this expansion – enabling print quality management programs to be implemented quickly and cost-effectively, raising standards on a global basis.'



GMI president Tim Curtin



Justin Lewis, GMI's business development director (Europe).



# Giving a hand to material handling

Material handling equipment has a key role to play in efficient and safe converting operations, writes David Pittman.

**T**he material handling market is an integral part of the packaging converting supply chain, from the manufacture and delivery of materials through to the shipment of goods to retailers.

This often entails the movement of large rolls and stacks of material both before and after printing and converting, so can cause bottlenecks in production as well as posing a healthy and safety risk to employees engaged in the movement of such materials if not carefully considered.

## Corporate gains

'Safety is often the first point of contact for us,' says Mike Shannahan, owner of Cynergy Ergonomics. 'Converters want to operate a safe working environment and avert unnecessary risk.'

As well as mitigating risk, safety has potential financial ramifications for converters, whose insurance premiums can be impacted by things such as its insurance experience modification rating, or EMR, in the US, which measures a company's past history of workers' compensation claims against other businesses in the same industry, with insurers basing their compensation premiums on a company's EMR.

'In this context, material handling technology can provide a tangible financial benefit to employers,' says Shannahan, who adds: 'Alongside their efforts to manage risk, they are looking at ways to enhance their production processes, and how to make their staff more productive. Lift assist technologies are a great way to speed up processes in a safe and responsible manner, and open

up an entire workforce to a wider gamut of tasks.' Older workers, for instance, are able to be used for activities that might otherwise have been tasked to those deemed to be fitter and more capable of strenuous physical exertion.

Wouter Verhagen, international account manager at Dutch supplier Dotec, says the ability to optimize and speed up production can be felt up and down the supply chain, with it providing technology to material suppliers and converters through to end users, who are all looking to capitalize on tools to do more with less.

## More with less

The idea of doing more with less is prevalent in many parts of the supply chain, from the down-gauging of materials (see pp. 14-15) to faster flexo press set-up, with material handling machinery no less impacted by this corporate demand. Linking back to the idea of allowing a greater percentage of a company's workforce to undertake business-critical tasks, this opens up large-scale potential benefits to converters who can use augmented physicality to their advantage.

'Companies buy big and beautiful machines to produce products in a quick, effective and high-quality way, but their value is quickly diminished if materials and products can't be handled correctly at either end, so causing a production bottleneck,' says Verhagen.

'Converting is a recession-proof market, and so is a good industry to be involved with,' he continues. 'But people still want to optimize their processes and streamline work activities to maximize their potential. This is why such developments are a core

focus for us, as our systems can facilitate such gains and speed up production.'

## Advancements

As part of the effort to help converters do more with less, suppliers are investing in the next-generation of lift assist tools to move loads in new and more productive ways.

Atlas Converting's new generation of Titan SR9 slitter rewinders feature an optional reel stripping device that enables the complete set of reels to be removed from the rewind shafts at the same time and not reduce the SR9-DT's maximum rewind speed of 3,300ft/min (1,000m/min).

DCM Usemica has developed a range of different products for different handling needs, including a one-spindle trolley to move rolls throughout a printing plant, and two-spindle beams for unloading heavier rolls onto a pallet or conveyor. It also has an optional pusher to transfer rolls onto the unloading system.

Dotec is likewise developing trolleys for the loading and unloading of materials, and enhancing its lift assist technology with new pneumatic options. The roll doffing trolley (RDT) can remove a full shaft of rolls from the unloading shaft and the rotary action roll handler (RH90) lifts, tilts and places the rolls on the pallet.

Going forward, Cynergy Ergonomics is working with new electronic technologies which couple servo-drive motors with a load cell and PLC controller to provide custom zero-gravity lifting systems.

'The trend is always to provide better and safer working environments, which is only a good thing and will continue to be at the heart of material handling technology,' Shannahan concludes.



Mike Shannahan, owner of Cynergy Ergonomics, says 'converters want to operate a safe working environment and avert unnecessary risk'



Wouter Verhagen, international account manager at Dutch supplier Dotec, says the ability to optimize and speed up production can be felt up and down the supply chain

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# More than just ink on paper

**Suppliers working with inks and coatings tell David Pittman what the future holds for a fundamental component in the package printing process.**

Inks and coatings, an integral part of the package printing supply chain, are evolving to meet ever-more complex end user requirements in a fast changing legislative and retail landscape.

Recent developments have included new formulations for food contact applications, a move towards UV-LED curing technology, and functional applications such as a thermochromic ink system for an award-winning flexible packaging product produced by Printpack. A similar ink was used in the label of a concept medical product that won the International Council of Societies of Industrial Design (Icsid) 2013-2014 World Design Impact Prize.

Sun Chemical has now teamed up with T+ink to form T+sun, an organization developing conductive ink technology to make packages and objects communicate, engage customers and manage inventory systems.

An ongoing topic in the market is that of migration. Migration was the cover story of the very first Packprint World from 2011. This saw Sun Chemical's CMO Felipe Mellado outline the legislation, responsibilities and options available to the packaging market in relation to migration and food packaging.

Since then there have been numerous corporate and technical developments in this space. The likes of Flint Group and Sun Chemical have developed new formulations offering reduced rates of migration, such as Flint's Ultraking XCURA LED and SunJet low-migration UV inkjet inks for the non-food contact side of primary food packaging.

At the end of 2013, Chesapeake and Paragon Inks took the issue of migration to a new level with Chesapeake Bristol, part of Chesapeake's Branded Packaging division, becoming the first self-adhesive label manufacturer in the UK to introduce an 'ultra-low migration' ink system as standard for all its customers.

And in recent months, a group of narrow web supplier partners, including Zeller+Gmelin, have joined forces to share their knowledge and provide content specifically relevant to narrow web label converters looking to move into flexible packaging, including issues related to migration. Adare Advantage has also detailed its switch of all UV production at its Haverhill site to Zeller+Gmelin Uvaflex Y71 low-migration inks, adhesives and varnishes. The decision to move to a full conversion of UV print operations to low-migration inks, complying with EU standard EC1935/2004, anticipates what Adare believes will be a general move by end users to demand low migration inks.

## Low migration (LM)

'There is lots of discussion about what 'low migration' actually is, and there is lots of confusion in the market,' says Niklas Olsson, Flint Group Narrow Web global brand manager. 'What does 'low migration' or 'food-grade' really mean?

'The truth is that different products in different packaging have different migration levels and issues, so the type of ink and its migration properties vary depending on the application and scenario.

'All inks have migration characteristics so need to be tested to make sure they are fit for purpose. At Flint, we adopt a 'worst case' position when testing our products, such as 95 percent ethanol at an elevated temperature for 10 days. This is the worst case scenario for our technicians and can be equated to six months on a store shelf.'

Jonathan Mack, proprietor of Solar Inks, adds that, 'low migration is still not 'no migration'.

'The best option is that which does not pose any risk either to consumers, printers or their brand owner customers' reputation.'

It is in this light that Solar Inks launched Earthinks as part of a desire to remove mined raw materials from its inks, and has developed a range of products based on various 'natural' ingredients such as soy, starch, sugars, dextrin, tree resin cellulose and other polysaccharides. Natural waxes replace synthetic grades, and natural oils are used to defoam in place of mineral oils and silicones. As such, amines and coalescing solvents used in water-based inks are not used at all in Earthinks, while siloxane type surfactants are replaced with natural/renewable surfactants and acrylic resins are replaced by natural/renewable resins.

'Our core philosophy is to promote environmental best practice,' says Mack.

Despite the company's hefty focus on environmental issues, Mack adds that it remains conscious of other factors important to its customers. 'Environmental concerns are being more heavily pushed by brand owners and consumers, whereas printers and converters remain concerned with more practical topics, such as price and service.

'As a smaller company, we are able to readily make service a bedrock of our operations, alongside innovation, as work on product development will suffer if you're unable to back it up with support and service.'

Solar Inks is also launching Planet Earth, an online ink management portal which also helps its customers reuse leftover ink. The management tool covers online ordering, color



matching, reporting, order history and stock control. The ink recycling element provides a database allowing companies to mix their own inks, so reducing delivery volumes and inventory.

Future developments at Solar Inks will include copper-free blue, and 'natural' inks and coatings with antimicrobial properties.

Another young company making advances in environmentally-sound products is Smart Planet Technologies with its EarthCoating product.

EarthCoating is a high-performance mineralized coating alternative to 100 percent polyethylene as a barrier to moisture, oil, grease and fatty acids. It can be used with both virgin and recycled fibers, and is FDA-compliant for direct food contact. A collaboration between Smart Planet Technologies and Newark Recycled Paperboard Solutions is also working to evaluate the use of EarthCoating in recyclable barrier-coated paperboard.

Chris Tilton, Chief Technology Officer at Smart Planet Technologies, says: 'The chemistry of EarthCoating means that during re-pulping, EarthCoating easily separates and breaks down into smaller, more dense particles than a polyethylene coating, so it processes very differently as a recyclable material. It is very rare to have a system to remove coatings at recycling facilities, so the potential environmental benefits are huge.'

Other benefits highlighted by Tilton include enhanced barrier properties due to the dispersion of resin throughout the coating, application speeds at existing levels, a rougher surface structure than polyethylene, so increasing the wettability of surfaces coated with EarthCoating, and easy integration into existing operations via a running change without specialist equipment.

### Supporting the chemistry

Ink dispensing and flow management systems are also undergoing development. 'Key trends include increasing productivity, reducing waste, the use of process colors and low-migration inks,' says Maarten Hummelen, co-owner of GSE Dispensing.

'For us, we started looking at lean ink management a long time ago, and to help our customers reduce the volume of ink they use and increase their profits.'

'If you look at the electricity industry, the model used to be purely to sell more and make more money, but now suppliers are looking to help their customers use less energy and save money. It is a similar scenario for printing inks, whereby the market is looking to help printers conserve consumables and use less.'

'It is a change of the business model, but promotes higher efficiency and recognizes that printers want to reduce their own waste levels and environmental footprint.'

The company is integrating its dispensing systems directly into MIS workflows to allow printers to more accurately predict and control their ink use, and more precisely track stock levels. Leftover inks can also be better repurposed.

'Inks are a big cost in the printing process,' notes Hummelen, 'so having a better handle on them is key to reducing the job cost and increasing profits.'

For Kim Regin-Sustmann of Tresu, innovations in water-based inks and trends towards decorative effects with varnishes and foils are big.

This, he says, is making in-line flexo presses more suitable for flexible packaging applications. 'Flexible packaging is almost entirely printed by CI flexo, the dominant process, and in-line rotogravure. In-line flexo at present makes up a niche of perhaps a few percent. But the in-line flexo configuration is



likely to become a more advantageous proposition for flexible packaging because of improvements in the performance of water-based inks on film, specifically by making the ink bond better to the substrate.'

This is being driven by environmental concerns, Regin-Sustmann says, as well as the explosion risk and the expensive chamber cleaning process associated with solvent inks. These innovations are at an early stage but already successful trials have taken place.

'In-line presses have the flexibility to apply coatings, including those with heavy lay downs, without disruption to the printing sequence in one go, and can accommodate the large drying units needed to circulate the air to remove the evaporation. The longer distance on the line between coating and drying unit allows the medium to achieve the necessary smoothness and settle.'

### LED-UV for flexibles

'There is lots of talk around LED,' says Adrian Lockwood, founder and managing director of Integration Technology Ltd (ITL). 'We have been involved in LED for about 11 years, and are seeing around about a 40 percent increase in the LED curing business on an annual basis. There are environmental gains from a move to LED and the technology makes sense for heat-sensitive materials as it is effectively a cool curing process. For this reason we are seeing a lot of interest coming from the flexible packaging market.'

Continues Lockwood: 'Traditional lamps can heat the drum used in CI printing, for example, and influence the material, and LED can be switched on and off near-instantaneously and be easily integrated into any existing system. As a result, there is a lot of interest and a lot of opportunities.'

Lockwood notes that this might not be true for all package printing scenarios however. 'The folding carton market is less concerned about many of these issues so is happy with the current set-up using UV lamps, such as our Arc range, so it doesn't necessarily make sense to switch from one technology to another just because you can.'

'Packaging is evolving so the technology is evolving to suit the market too,' adds Lockwood. 'We see LED as a valuable option alongside standard UV curing.'

Flint Group has conducted a lot of work around LED-UV inks. Says Niklas Olsson: 'It is a constant cycle of development as the brands look to make runs shorter and shorter. We are working to make production easier and simpler so we can support this change by being flexible and allowing printers to be as productive and efficient as possible.'



The new Goss Packaging Technology Center will serve as a resource for press demonstrations, testing and cooperative programs for packaging producers, brand owners and equipment suppliers



Precision Press has been 'extremely pleased' with its Sunday Vpak 500 model, including in-line flexo coating unit, along with UV and EB curing capabilities

# Goss goes marching on

**Goss International has continued its growth into the labels and packaging markets with a number of strategic developments. David Pittman reports**

**G**oss International has 170-plus years of history in commercial and newspaper offset printing, but the slowdown in these traditional markets has highlighted labels and packaging as offering big opportunities for the company to diversify its operations and safeguard them for the future.

Goss's move into these markets was cemented at Drupa 2012, where it gave the world the first glimpse of its Sunday Vpak press platform, a variable sleeve offset printing system available in web widths from 20.5in (520mm) to 75in (1,905mm) for flexible packaging, folding carton, pre-print and label applications. Quick-change sleeve technology allows variable repeats, while advanced inking, dampening and process control systems used in existing Sunday presses for high-quality commercial offset printing have been incorporated, along with Goss automation and workflow technologies, to reduce make-ready requirements and waste.

Since Drupa, Goss has continued to develop the Sunday Vpak and plot its market penetration. This has included a number of key appointments, a first-time presence at Labelexpo Europe last year and the launch of a demonstration centre to allow potential customers to see the Vpak in action first-hand and to test their products.

Key appointments reflecting Goss engagement in the packaging sector have included that of Mike D'Angelo as general manager of Goss International America along with the addition of Matt Adler and John Kulak to its packaging team in North America.

David Muncaster, the company's business development director for packaging in EMEAR, says Goss CEO Rick Nichols has been at the forefront of moving Goss into new territories. 'He knows the potential of packaging and wants to see it become more central to the business. It's a key part of our corporate strategy to grow that area.

The recent appointments only strengthen this commitment and vision.'

## Technology center

The opening of the Packaging Technology Center is another key development in the eyes of Muncaster.

The 7,000 sq ft (650 sq m) Packaging Center will be equipped with a Goss Sunday Vpak 500 press system configured for printing on film and paper substrates. The press line will feature seven web offset printing units with a web width of 33.5in (850mm) and a repeat range of 16-32in (406-812mm). The system will be equipped with flexo capabilities as well as both UV and EB curing, and will accommodate substrates with a tension range between 175-525N/m including film substrates from as low as nine microns thick and paper products up to 100gsm and beyond.

Muncaster says: 'We have seen a lot of interest in Vpak technology but to date we have not really had the means to capitalize on this. The Technology Center alleviates a bottleneck, whereby sales and customer support operations have previously only had limited access to the company's lab machine to perform customer specific testing and to promote and train customers. With a dedicated Sunday Vpak press specifically for this purpose, we now have a facility to better serve our customers, prospective customers and our third party partners.'

Training will also be more readily available to Goss sales and service staff, as well as customers thanks to the Technology Center.

Muncaster says flexo and gravure printers are paying close attention to the development of the Sunday Vpak series as they are seeing their run lengths declining dramatically, particularly with the increase in SKUs, and are struggling to make the economics of their current technologies viable.

'Variable sleeve web offset is the way forward for 'short-to-medium' runs, as

many 'short' runs are still too long to be economically viable with digital, while many of the 'medium' runs are now too short to be economically viable using conventional flexo and gravure press technology.'

## Future developments

To further this appeal, Muncaster says engineers at Goss are working on a number of additional features for the Sunday Vpak series. This includes the integration of digital printing units to make variable data printing a possibility.

Goss already has experience of integrating digital into commercial and newspaper press lines where its customers are under pressure from digital media and have integrated digital as a means of 'mass customization'. 'Training and education about the Sunday Vpak platform amongst our sales teams and agency network is now ramping up, and with interest growing, it is in everybody's interest to learn more and push the Goss package printing technology forward.'



Industry experts have joined the Goss packaging team in North America, including Matt Adler and John Kulak

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*Cosmo Films participated in Labelexpo Asia, where it finalized an agreement to set up a distribution center in China*

# Cosmo Films sees good business opportunities in China

India's Cosmo Films is laying down roots in China as it sees opportunities for growth in the market, writes Aakriti Agarwal.

**C**osmo Films is a manufacturer and supplier of packaging and specialty films, including BOPP, coated films and thermal laminating films suitable for food and industrial packaging applications, self-adhesive and in-mold labels and various graphic arts markets.

Though Cosmo Films supplies about 60 percent of material in volume to Indian companies, 60-65 percent of its turnover comes from exports to countries throughout Europe, the US, the Middle East, West Africa, South America, Australia, New Zealand and Japan. As such, from manufacturing plants in India, its reach is truly global, extending from Brazil and Taiwan to Madagascar and the Dominican Republic.

This is now being extended further with a recent agreement to establish a distribution centre in China.

The company has been exporting 100 tonnes of material to China every month, leading Cosmo Films to identify good potential in the country. 'We are targeting a particular segment which is confined to a certain area and amongst a few large business houses,' says Sandeep Kumar Dutta, general manager, marketing, global head – speciality films, Cosmo Films. 'We see growth coming in the PSA segment, and there is business in cities such as Shanghai, Guanzhou, and Gengsu. The Chinese are working around the commodities segment but we don't see much competition here in the specialty segment.'

Cosmo Films participated in Labelexpo Asia at the beginning of December last year, where it displayed some of its new products targeted at the international market and reported

a good response. This included innovations that, as a manufacturer of filmic substrates, it is capable of adding to its products.

'This product is water- and chemical-resistant,' says Dutta while highlighting one product on its Labelexpo Asia stand. 'There are only four to five manufacturers in the world of such products so we received a very good response. It is a niche product and extremely expensive. But we want to take this technology to market and make it available to masses.'

Labelexpo Asia was also where Cosmo Films finalized an agreement to set up a distribution center in China. Cosmo Films is a technical company and dominates the Indian market in wrap-around films. 'But in China, we were taken down by prices because there are products available here at much lower prices,' Dutta says. However, he adds that, 'we have been able to find out pain areas in China and there have been encouraging results.'

'Niche products and those with value will sell in China.'

Talking about the trend in films, Dutta opines that the companies have made as films as thin as they could, saying: 'Different technologies and innovation will be more and more involved in reduction of cost.'

Cosmo Films has four plants in India manufacturing films. For future expansion of manufacturing facilities, it will look at locations which are not a cost centre. 'We may evaluate China when we plan to open our next plant. Any location where it's reasonable for us to manufacture and ship out the products will be considered.'





# Innovations in packaging

**Packaging Innovations 2014 provided a good opportunity to view some interesting developments in packaging structures, design and performance. David Pittman reports**

**T**his year's Packaging Innovations exhibition provided a good opportunity to look at a few macroscopic trends in the microcosm of the UK tradeshow. The exhibitor list included the usual array of suppliers and partners to the package printing market, from the likes of digital print specialist Xeikon and HP Indigo and material supplier Iggesund, to printers and converters such as Rako Group, Glossop Cartons and CS Labels.

Printing hardware does not form a big part of the show's floor, although first-time exhibitor JM Heaford was showcasing its FTS moulder, and Afinia and Intec showed the R635 digital printer and LCF215 finishing unit respectively. Fujifilm had the Acuity LED 1600 on its stand, which was being used to showcase its use in producing packaging prototypes, especially as part of a digital workflow utilizing FFEI's RealPro Toolkit. Fujifilm and FFEI shared a stand as part of their growing relationship, centered around FFEI's Graphium digital narrow web press for which Fujifilm is an exclusive distributor in key European markets, including the UK and North America.

Both Glossop Cartons and CS Labels used the event to promote their investments in other digital technology, such as Xeikon presses at CS Labels and Glossop Carton's Fujifilm Acuity LED 1600 and Highcon Euclid investments.

For Glossop Cartons, the Highcon Euclid remains a big draw as it continues to grow its reputation and market penetration. As an early adopter, Glossop Cartons has been able to capitalize on this growth. It has also allowed for the creation of interesting marketing tools, and one-year on from its exhibition debut at Packaging Innovations 2013 was handing out Easter themed cartons with an intricate die-cut and curved structure, alongside a host of other examples that have been produced in the first few months of the unit's installation.

Both companies were also talking augment reality (AR) to attendees (*read more about smart and intelligent packaging on pp. 42-43*).

For CS Labels, this included its new AR application developed in collaboration with ooh-AR for use on labels. The CS Labels AR app is able to recognize photographs and logos on labels and other packaging to trigger interactive content, with an award-winning label for the Gladness alcoholic beverage, developed by Growler Brewery in collaboration with English ska band Madness, linking to a video of the band launching the drink.

Glossop Cartons shared its stand with Nth Degree Imaging, with whom it has partnered to offer customers an even more detailed AR experience, including the use of 3D imaging and interactive features to bring packaging to life. On show were three examples showing the potential of the technology,

including a carton produced for luxury car manufacturer Bentley that revealed a 3D render of a new model when scanned, and a confectionery box that displayed chocolates and their contents, and allowed for the creation of a voucher through on-screen interaction with consumers.

Another carton converter drawing plenty of interest was Benson Group. Its recent acquisition by Graphic Packaging as part of a growing European presence (*see p. 6*) including Contego Cartons and A&R Carton's beer and beverage business, will open the door to the next stage of growth for a company previously acquired in a management buy-out at the end of 2011. Any corporate developments will be supported by ongoing technological advances, such as its recent investment in a Heidelberg Speedmaster XL 106 B1 format perfecting press, and developments in its product portfolio, such as the Delilicious range.

Aiming to target the growth in food-to-go, the Benson Delilicious range includes 14 different packaging structures designed to offer convenience and functionality to consumers. This includes two-sided printing and food-contact approved coating to allow packing of wet foods.

Pouch specialist Tyler Packaging was keen to talk about its innovations in closures and seals to those at Packaging Innovations, including a new hook and loop system and its hooded slider system.

It is targeting the new developments in closures at its core market of pet food, but also at other product categories, such as food, where there is latent demand for sliders and easy sealing and resealing of packaging. The hook and loop closure option is suited to this growth, with the added benefit that the system allows closure even if the male and female elements are not properly aligned.

Technical developments aside, the 2013 Pro Carton/ECMA Award winners were on show as part of a European roadshow that commenced in the Package Printing Workshop feature area at Labelexpo Europe 2013.

This included Twinkle Box, named Carton of the Year in the annual awards program, which has been designed to replace conventional metal or plastic bottle coolers when chilling champagne. It features two grades of cartonboard with metallized surfaces laminated together.

The award-winning cartons were displayed on the BPIF Cartons stand, where Cartonville was being showcased. Cartonville is an online, interactive education tool to promote the various facets of carton packaging, with the viewer able to follow a folding carton through its journey from the forest to the retail environment via board mills and carton factories, and then onto recycling.



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AUTOPACK has 110 employees and is one of the leading label converters in Argentina

# Baumgarten creates Latin America network

**With a deal for Argentine converter Autopack swiftly following its acquisition of Mexico-based Etiquetas Rodak, Baumgarten has created a regional network that allows it to serve clients in multiple Latin American markets. James Quirk reports**

With two acquisitions in quick succession, Brazilian label and packaging converter Baumgarten has created a network of Latin American operations similar in breadth to international printing groups such as Multi-Color Corporation and CTI Invest.

As reported in L&L issue 1, the company acquired Mexico-based Etiquetas Rodak at the beginning of January. This was swiftly followed by a deal, announced on February 24, to acquire Argentine converter Autopack. The financial details of the transactions have not been disclosed.

Etiquetas Rodak, founded in 1974 in Mexico City, has around 80 employees and specializes in self-adhesive labels and shrink sleeves for the cosmetic, food and beverage, pharmaceutical and homecare product industries, among others. The company's name will be changed to Baumgarten Mexico in the coming months.

Autopack, based in a 5,000 sqm facility in Pablo Podestá, 30km outside Buenos Aires, has 110 employees and is one of the leading label converters in Argentina. The company, founded in 1990, specializes in packaging and promotional labeling and has a large export business. Autopack's name will be retained for its promotional and safety label business, while 'Autopack, a Baumgarten company' will be used for a transition period in the packaging label market.

'This second acquisition abroad is part of our internationalization strategy for the improvement of our presence in the worldwide market,' commented Ronaldo Baumgarten Jr, company president, of the deal for the Argentine label converter. 'Our goal is to become a global supplier for multi-national customers and a stronger supplier for domestic customers by offering them the most updated and efficient resources available in the printing business.'

'We are very confident with the acquisition of Autopack because it already is a well-known supplier in the market, an exporter, and very quick and creative. In addition, it has a corporate and management culture very similar to

Baumgarten's, and these aspects – allied to its excellent technological structure, competent staff and space available for investing in more machines – have been determining factors in its selection as Baumgarten's entry point into the Argentine market.'

## REGIONAL NETWORK

Baumgarten's expansion reflects the trend of large converting groups creating regional networks of facilities through acquisitions. CCL has operations in Brazil and Mexico; Multi-Color Corporation last year added Mexico-based Flexoprint to its Collotype facilities in Chile and Argentina; Austrian group CTI Invest, under its Viappiani brand, has accumulated label converters in Argentina (Adhepel), Brazil (Bic Label Technologies) and Colombia (Tann Colombiana).

The ambition of these groups is logical: create a portfolio of converting operations that can offer identical products, quality and service to the same multinational brands throughout the region. The trend is a result, too, of the strengthening in Latin America of middle classes with rising disposable income – consumers who are more likely to buy quality products from global brand owners like Unilever and Procter & Gamble.

'Many of our most important customers in Brazil – most of our top ten – are demanding labels in Argentina and Mexico too,' says Ronaldo Baumgarten Jr. 'We need to be where our clients are.'

Baumgarten's acquisitions stand apart – uniquely among the international groups listed above, it is a family owned business native to the region.

Indeed, managing director Fernando Gabel told L&L, Etiquetas Rodak and Autopack's own backgrounds as family run businesses, allied to their 'similar management culture', were crucial factors in their selection for acquisition. In a further parallel, Baumgarten and Autopack, while remaining family-owned, both took the decision to professionalize their





BAUMGARTEN'S facility in Blumenau, southern Brazil

respective management teams some years ago, bringing in executives from outside the industry.

'Both companies are well-known in their local markets for high quality and excellent service,' says Fernando Gabel, who has previous experience in mergers and acquisitions before he joined Baumgarten in 2009. 'We are a Brazilian company. We don't want to walk into an Argentine and a Mexican company and say: "Now you must do things differently". It is very difficult to come in from afar and implement a new company culture. So their having a similar management culture to ours was very, very important.'

As well as a focus on quality and service, both Etiquetas Rodak and Autopack bring complementary technology and product portfolios to their new parent company. 'With two digital presses compared to Baumgarten's one, Etiquetas Rodak has more experience in digital printing, for example,' says Gabel. 'Autopack's experience in export is far greater than ours, but we can now use our infrastructure to help sell their promotional labeling products in Brazil and Mexico.'

Etiquetas Rodak specializes in flexo and digital printing, while Autopack runs letterpress and flexo presses. Aiming to create similar printing platforms throughout the facilities, Gabel says that offset presses will be installed at both companies in the near future. (In Brazil, Baumgarten runs eight Nilpeter offset machines among a fleet of 30 presses.)

Baumgarten's award-winning – and impressively far-reaching – sustainability program (see L&L issue 4, 2013) will be rolled out in both new operations. 'It is a fundamental part of our business,' says Gabel. 'You cannot separate it.'

Employees at both companies have been retained following the acquisitions, as well as the respective owners: José Quinzaños of Etiquetas Rodak; and Norberto Fridman, Angel Bonavera and

Enrique Szafir of Autopack. A financial controller has moved to Mexico from Baumgarten's headquarters in Blumenau in southern Brazil, and a further staff member will relocate to Buenos Aires in the coming months.

In Mexico, Baumgarten was supported by Fabian Silva, whose extensive experience in the local market includes running label converter Etiquetas Anro and a term as president of association Ametiq. After advising Baumgarten during the acquisition process, Silva now joins Baumgarten Mexico as sales manager for global end users, Mexico.

#### EXPANSION

Ronaldo Baumgarten Jr says that the decision to expand into other Latin American markets was taken two years ago. Throughout this time, the company has been preparing itself. 'We have been readying the company internally for these acquisitions for quite some time,' he reveals. 'It was important that we began to position ourselves early for international expansion, rather than purely focusing on our local market.' Initial expectations were that the

#### FROM THE ARCHIVE: AUTOPACK IN L&L ISSUE 3, 2009

Argentine label converter Autopack was founded in 1990 by Norberto Fridman and Enrique Szafir, whose experience was in offset printing, and Angel Bonavera, who came from a pre-press background. Beginning with three Ko-Pack letterpress machines, internally reconfigured to suit the company's needs, Autopack established itself as a converter of specialty products, particularly for security and promotional applications, with 90 percent of its output entering its local market.

With the onset of Argentina's economic crisis of 2001, so began the need to export. What had been local innovations now became international successes, with the company's multi-laminates and promotional products aiding the creation of a client base spread across 30 countries. Autopack now exports around 45 percent of its labels.

An MPS EF 330, an 8-color servo-driven flexo press equipped with silkscreen and hot stamping units, was purchased in 2006 – the Dutch press manufacturer's first installation in Latin America.

More than half of the company's production is in promotional labels. A dizzying array of novelties are available, from hidden messages and thermochromic inks to tiny chewing gum labels and a shampoo bottle whose label acts as an exfoliate. Autopack divides its remaining 45 percent of production between security products, pharmaceuticals, food and wine.

acquisitions in Mexico and Argentina would be finalized some six months apart; after prolonged due diligence during the Etiquetas Rodak deal, it was something of a coincidence that the acquisitions were announced within just seven weeks of each other.

'We have been very happy with the reaction of our customers,' says Ronaldo Baumgarten Jr. 'Now our focus is on the integration of the new facilities.'



BAUMGARTEN'S managing director Fernando Gabel (l) and president Ronaldo Baumgarten Jr





# A hidden gem in the quality print market

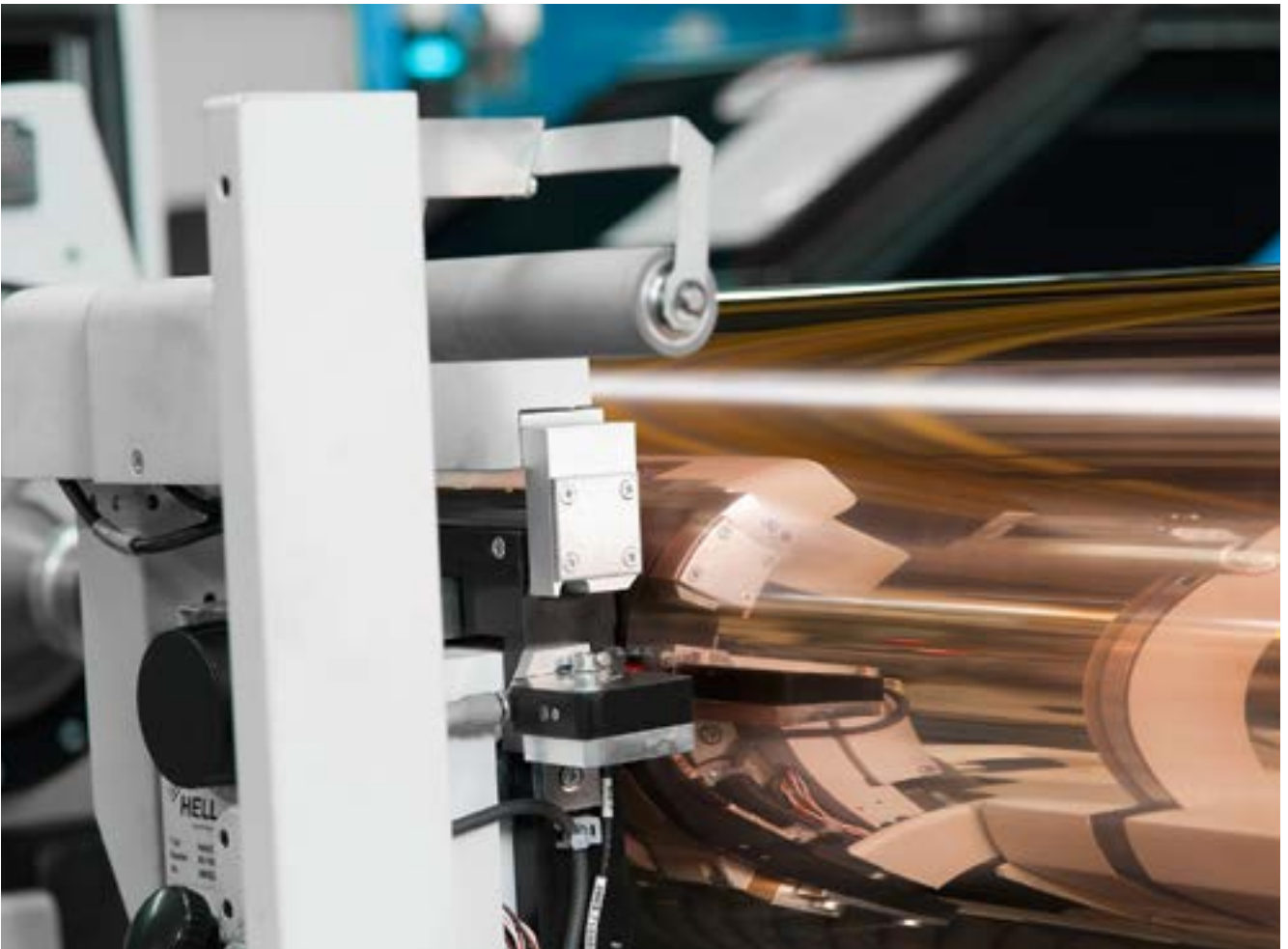
**In a quest for the highest impact in package printing, much noise is being made about the capability of high-definition flexo in a market where an established technique has a quality image that is second to none, but has strangely fallen out of favour. Nick Coombes looks at what today's gravure industry has to offer.**

If, as a package printing converter, you were offered a technique that provided speed, color consistency, infinitely variable cut-off, excellent repro and halftones, and all of these across a wide range of substrates, would you turn your back on it? Yet seemingly, this has been the fate to befall rotogravure in recent years, at least in the developed markets of the western world. Or has it? Is the real situation one where a more pro-active and aggressive marketing program by major rival, flexo, has created a perception of gravure's imminent demise?

Certainly, statistics available from the European Rotogravure Association (ERA) suggest that the global market for gravure is actually growing, albeit fastest in Asia where presses tend to have simpler specifications, but also in the leading gravure markets of Europe: Germany, Italy, Russia, France, Spain and the UK. In the case of the UK, a recent survey highlighted 26 companies printing packaging by the gravure process. According to John Gilmour, managing director of Apex Cylinders, the UK's leading supplier, this represents a major decline in capacity in recent years, at a time when the demand

for high-quality printed packaging has continued to grow.

So, what's the problem? Certainly, for many years the pre-press and investment costs associated with gravure were higher. Cylinder engraving was, and still can be, more costly than platemaking, and the structural rigidity and physical size of a gravure press made it an expensive process to maintain. But that has changed with the advent of more sophisticated CI flexo presses, which in certain cases now exceed that of a gravure press in investment terms, and while modern techniques of cylinder and sleeve production have made significant savings in pre-press costs for gravure, those for the new high-definition (HD) flexo have seen sharp rises. The message is that quality costs money, however you achieve it, and Gilmour believes that gravure is now very competitive, saying: 'One leading European converter, who provides traditional flexo, HD flexo and gravure printing, thinks all may not be as it first appears. On the face of it, HD flexo is a substantial step forward in printing technology, because it maintains the innate benefits of flexo printing, but also outputs to a far higher quality standard. No arguments there – but, that's where the technology starts to unravel in



**"So, what's the problem? Certainly, for many years the pre-press and investment costs associated with gravure were higher"**

comparison to the costs and quality of gravure printing.'

He adds: 'Gravure is still unarguably the best solution for ultimate quality. The reduced costs and the significantly shorter delivery and press set up times now available make gravure barely more expensive, even on shorter runs.'

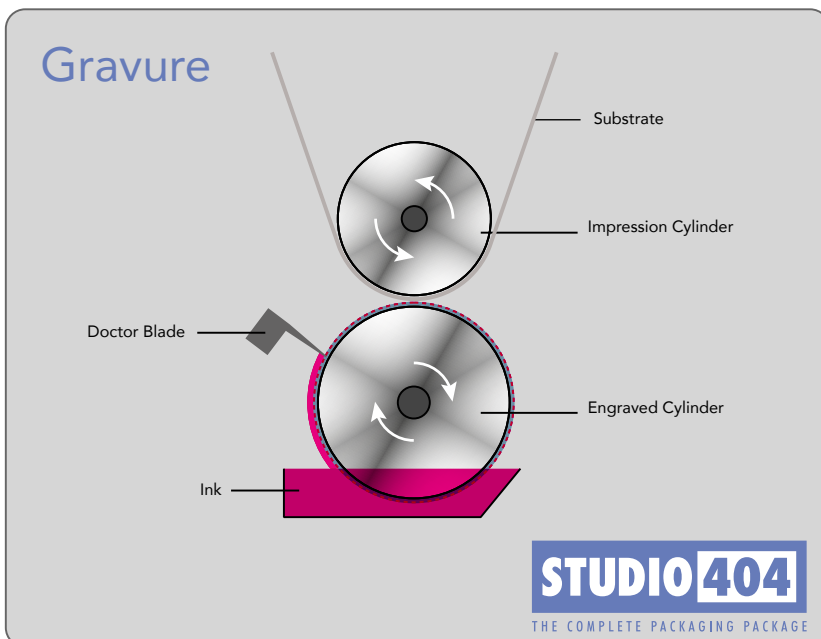
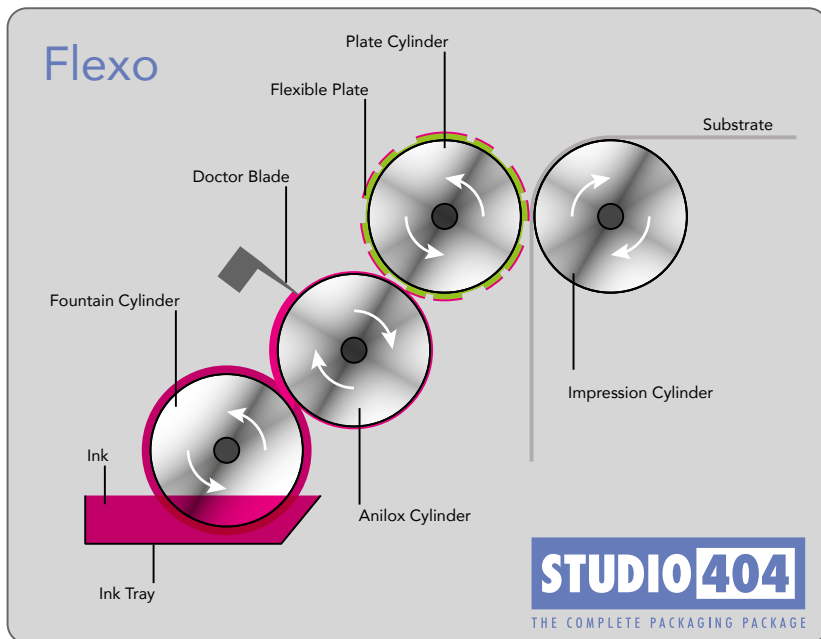
The pressure on gravure to up its game has come from the change in market dynamic that combines the demands of shorter runs, greater variation and just-in-time delivery. Traditionally the supplier of long and very long run work, which existed for many years in certain markets (think confectionary and tobacco), gravure fell into the trap of resting on its laurels. Press designers and manufacturers of auxiliary equipment were not alive to the rapid change brought about by the advent of the Internet and more recently social media, and the effect these have had on changing the buying habits of consumers, and the resulting effects of the retail supply chain. Where buying habits change, production methods must change too. Where flexo, with its inherently cheaper costs adapted, gravure was initially left behind, and is only now responding. With a battery of older and more expensive machines in operation around the world, gravure needed a major rethink, and fast.

At a recent ERA conference, three leading press manufacturers, Cerutti, Bobst Bielefeld (formerly Fisher & Krecke) and Windmüller & Hölscher, highlighted their latest developments to meet demand for short-run work. These include more automation to reduce changeover times, shorter web paths to reduce material waste, improved drying to cut energy consumption, and smaller footprints to facilitate installation and operation. With a significant number of these new generation gravure presses already installed, packaging converters looking to invest in print technology have an installed base of proven performance on which to base their comparative tests between gravure and flexo.

There have also been key improvements off-press for gravure converters, with the advent of lightweight cylinders that are not only easier to handle but cheaper to ship. Some manufacturers have solved the problem of bonding between copper and aluminium and now offer 1.2m cylinders that weigh only 20kg, while others have continued to use steel, but have developed foam filling to reduce weight and storage space requirements, and allow traditional copper plating and engraving techniques to be used. Doctor Blade technology has also advanced, with the need to accommodate new inks and varnishes with their inherent chemicals, abrasive substrates, down-gauging and new cylinder surfaces. All of these improvements have been driven by the need to respond to changes in market demand.

According to Gilmour, 'the set up times and costs, which have long been the weak point of gravure, have been greatly reduced in recent years, to the point where they are now much more comparable with those of HD-flexo'. He believes the issue now is less related to real cost, but is one of marketing.

Acknowledging the impact that HD flexo had when it first appeared on the market, Gilmour believes it was only intense pressure from brand owners that forced the flexo industry to respond, and driven by new and more accessible pre-press



cylinder cost. Try calculating plate life compared to that of a cylinder, especially when costing repeat work, build in anilox costs for flexo, compare ink and substrate costs for the two processes, and you can see that gravure costs are falling, while flexo costs are rising. Added to which, gravure as a process offers greater consistency with its simpler ink transfer, and continuous image printing with no plate gap.

Market research indicates that the UK alone has lost around 70 percent of its gravure capacity over the past 20 years. Most, it would appear, has gone to other European countries where production costs are lower, rather than the common perception of everything moving to Asia. The major traditional gravure market of tobacco products has been hit much harder in the western world by pressure from government health lobbies, and there is no doubt this had had a detrimental effect on gravure investment in additional or even replacement capacity in these areas. But, according to ERA secretary James Siever, the global gravure market continues to grow, with more plants and presses in operation last year than in 2011.

Which leaves me with reason for optimism that this well-established and well-proven technique will continue long into the 21st century. It offers unique qualities, and with the advances made in gravure technology in recent years, needs to be seen as a vital element in the printing world.

Look upon it, if you like, as the opposite end of the spectrum to digital printing – both have important parts to play as complementary print techniques in today's package printing mix – because both can offer something that the other processes can't. Gravure has great credentials – but it needs to be more pro-active in selling them.

technology, the quality benchmark was raised. 'If the gravure industry had been more pro-active at the time, it could have stemmed the tide of HD flexo by convincing brand owners that the higher quality they were demanding was already available.'

In the UK, where it is estimated that the ratio of gravure capacity to flexo in package printing is around 1:4, Gilmour questions the reasons for such heavy investment in HD flexo. Clearly, the respective pre-press and press investment levels and ongoing costs between the two techniques are closer now than they have ever been, and in the eyes of most, gravure still holds the edge on print quality. 'I believe much of HD flexo's success is down to marketing hype. Many print buyers are unaware of the quality that is available from traditional flexo and are

allowing themselves to be 'up-sold' into more expensive HD work, that is more profitable for the converter. But, they're actually spending money they don't need to.'

It is true that, up to now, flexo as a process and an industry has been more agile and responsive to market change. But global pressure has forced gravure to respond, and converters have seen cylinder production times reduce from typically six weeks to six days, and show up to a 50 percent price drop. Add this to job change times on a modern gravure press that have fallen from one entire shift to under 30 minutes in some instances, and you can see the case for gravure grows stronger.

You also have to question the comparisons made between gravure and flexo in pre-press costs. It is far too simplistic to judge plate cost against



John Gilmour, managing director of Apex Cylinders in the UK, says the decline in gravure capacity has come at a time when demand for high quality printed packaging has continued to increase





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NTH Degree Imaging creates detailed graphics for brands and their packaging via its AR platform

# Something smart this way comes

**Smart packaging can take many forms, as David Pittman finds out.**

'Smart' as a term can have many uses. It can be used in the English language to define something that is high-end and desirable, or to define something that has caught the eye. And 'smart casual' is an increasingly common term at corporate events.

The most common use of 'smart' though is to define intelligence, and in the world of printed packaging this is a growing field. As previously reported in this publication, the likes of barcodes, QR codes and augmented reality (AR) are a key part of modern packaging and how it connects with consumers and, more importantly, how consumers connect with it.

Market research organization Freedonia recently published a report on active and intelligent packaging in the US, which it predicts will grow above the market rate. Demand for active and intelligent packaging in the US is forecast to grow at an annual rate of eight percent to 3.5 billion USD in 2017, well above total packaging demand growth. Within that, intelligent packaging demand will record double-digit annual gains, reaching 1.3 billion USD in 2017. In addition to growing product protection and food safety requirements, increases will be propelled by rapid advances for newer and emerging technologies such as quick response and other mobile marketing codes and printed electronics on packaging. Strong gains are anticipated for time-temperature indicator labels, based on growing cost competitiveness coupled with the heightened presence of temperature-sensitive drugs and the significance of food safety during supply chain distribution.

## Supporting technology

The growth in AR, for example, is being supported by advances and accessibility to cutting-edge technology. The recent Mobile World Congress event in Barcelona showcased many of these, including the launch of the new Sony Xperia Z2 with integrated AR functionality, with fellow mobile telecommunications specialists set to follow suit. And with the advancement of other technologies, such as the Google Glass optical head-mounted display and the Optinvent ORA-S see-through mobile AR display platform, it is likely that AR will become even more accessible to consumers, making its integration into the packaging of the future ever-more likely.

In this light, CS Labels has worked with developer ooh-AR to launch its own AR app that allows printed labels and other graphic arts to be directly linked to interactive content that offers consumers additional content to illustrate and enhance their understanding of a brand and its products.

At the Packaging Innovations 2014 show in Birmingham (see p34) it highlighted a beer label for brewery Growler and its Gladness product that detailed the involvement of English ska band Madness in developing the beverage.

Also at Packaging Innovations 2014 was Nth Degree Imaging, which was showcasing its work with Glossop Cartons to offer brand owners an even more detailed AR experience, based around 3D images and high-resolution graphic rendering, which brought printed cartons to life via a mobile interface.

This included the creation of marketing collateral, detailed and interactive product information, and data collection/customer reward steps. The relationship between Glossop Cartons and Nth Degree Imaging covers the creation and embedding of the AR trigger in the client's existing artwork for use with a free mobile app, Onvert, to a





Nth Degree Imaging is working with UK carton converter Glossop Cartons to offer brand owners a detailed AR experience, based around 3D images and high-resolution graphic rendering

fully bespoke white label service, covering everything from idea and content creation to delivery via a custom-branded app.

Nth Degree Imaging sales director Ian Prosser and Glossop Cartons director Jacky Sidebottom both described the possibilities as 'endless', with Prosser noting: 'The only real limit to what this technology can do is your imagination.'

Paragon UK has developed an interactive label utilizing QR technology as a means to replace user manuals, whereby consumers scan the logo on the front of a product to be taken to a microsite, which features all the information needed, including simple videos, step-by-step guides, warranties and any further details. Paragon interactive print specialist Tim Webster notes that new concepts may be progressing too rapidly, with too much attention being paid to 'sexy new devices' and not enough to how they can be used to benefit the end user.

'Digital is an exciting marketplace and with the launch of world changing equipment such as the 3D printer, it's easy to understand why taking a step back can be difficult,' he says.

This will benefit brands by adding value to the consumer experience to drive loyalty and repeat purchasing. 'With so many new products on the market it is difficult to create real brand loyalty with the consumer. Price points are the most obvious marketing tool but this doesn't necessarily lead to loyalty, this is more likely to result from the overall customer experience. If, as a manufacturer, you are able to pass on benefits to the customer at no extra cost, making their life simpler, it leads to a win-win.

'The businesses who choose to use interactive print will gain benefits including



Medica Packaging, the healthcare packaging specialist company within Benson Group, adopts a multi-layered approach employed where a number of both covert and overt anti-counterfeiting measures are used together for added

making the instructions easier for consumers to use and follow, which in turn will reduce the number of calls and complaints received following the purchase of a product. Not only does this lead to happier customers but also less resource and reduced costs.'

### Smarter than the counterfeiters

As well as providing an enhanced consumer experience, smart technologies can provide brands with a tangible method of protecting their intellectual property, so playing an important role in anti-counterfeiting endeavours.

Holograms have long been touted as an effective overt security device, allowing consumers a near-instantaneous way to authenticate a product, with Holoptica working to move this technology forward with holoQR, a system that creates a holographic QR code (see p. 45).

Medica Packaging, the healthcare packaging specialist company within Benson Group, adopts a multi-layered approach employed where a number of both covert and overt anti-counterfeiting measures are used together for added security.

The tools Medica integrates include printing with coin-reactive or UV fluorescent inks, up to 'top of the range' techniques such as unique tagging or hidden graphics that require special lenses to locate a specific element within the print. Some techniques require additional print runs to add further ink layers, whilst others add an additional process into pack production, such as foiling, tamper evident labels, cold transfer films, or integrated security labels.

Mark Bradley, sales director at Medica Packaging, says that, with a global black market in counterfeit goods estimated to be worth some 545 billion USD annually, 'there is a huge value in spending money on as many of these techniques as can be reasonably afforded to protect the consumer and the reputation of the brand'.

'Widely known markets that are targeted include pharmaceuticals,

tobacco, spirits, and high-value food products, but evidence shows personal care and healthcare are now also very much on the counterfeit radar, with virtually every country in the world being involved in one way or another', he says. 'There are more than a dozen individual techniques that we regularly offer customers. A wide range of combinations of these can be employed on the packaging to create very sophisticated security. It all depends on the level of security that the brand owner requires and the project budget.'

At the third annual IP Protect Expo in London earlier this year, a host of suppliers showed their offerings with regard to anti-counterfeiting technology and discussed a host of topics related to the role of 'smart' packaging in protection of intellectual property.

This included Securikett, Luminescence and uFaker, respectively talking about security labels and inks, and brand protection through a new online portal to report incidences of counterfeiting and track illegal activity around the world. Other technologies on show to the IP market included AlpVision's Cryptoglyph and Fingerprint technologies, printed electronics from ThinFilm and OpSec Security's product authentication systems, which are used in the consumer goods, pharmaceutical and apparel markets, amongst others. During a presentation, Steve Ablett detailed these measures as a brand protection and authentication tool, as well as making clear the connection between these as tools used by brands and their effectiveness in engaging with customers, be it as a means to collect data, offer added-value to consumers or increase market penetration.

Whether overt and consumer-orientated, such as QR and AR developments, or covert, through inks and designed-in features, smart packaging in all its forms is sure to be a big part of the future of packaging and help pave the way for brands to better interact with their consumers, while at the same time protect their intellectual property.



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# Beating the counterfeiters

**David Niven, managing director of Holoptica (UK), outlines the impact of counterfeiting on businesses of all sizes, and details a new product bringing together two established anti-counterfeiting techniques to provide next-generation protection.**

**F**akes of any kind, from counterfeit pharmaceuticals to forged documents, are there. Hundreds of billions of dollars every year are taken from an unsuspecting public that, in good faith, buys the status symbol piece of clothing, merchandise or a medicine, which at best can be nothing more than a placebo. Statistics and studies are showing that it is a growing global problem and affects everyone.

Counterfeiting is big business

Big and small companies alike can see it on their bottom line. In the US alone, business lost to fake goods in 2012 amounted to some 80 billion USD. We can also add the large losses to licensors and licensees in royalties and uncollected taxes by governments. It all adds up to huge numbers.

Just some of the most profitable counterfeit segments include food, cosmetics, pharmaceuticals, electronics, toys, clothing and identification documents.

In the fiscal year 2012, the US Department of Homeland Security seized counterfeit goods valued at over 1.25 billion USD at US borders. Unfortunately, we also know that this represents only a small percentage of the total market for counterfeit goods. Globally, the trafficking of counterfeit goods is considerably larger, and growing.

## Education

Growth is driven, in part, by consumer demand. Counterfeiters often prey on consumers' desire for low prices, but consumers should recognize that there is a real difference between a cheap price and a bargain. Cheap prices offered by counterfeiters often come at a very high cost to others.

So what can we do to make life difficult for the counterfeiters? Educating brand owners and the public in original product overt/covert protection is a sure way to go. Government's role is to educate the public on how currency or documents are protected and what security features a banknote or your ID carries. They do it, so there is no reason why this cannot apply to products as well.

For many years the originality mark of many products was, and still is, a simple and rarely complex hologram. Although it is – as everything else – being counterfeited, there is no substitute for a great quality, complex and well originated hologram that includes overt and covert security features.

This must be the case because many banknotes, ID documents, passports, tax stamps and security documents have such a holographic element to them. But there is one fundamental problem with a hologram. In most cases it is quite hard for anyone

to identify and verify if the hologram itself is genuine or a fake. However, smartphones can offer an answer to this.

## Smartphones

There are some 3.6 to 4.1 billion mobile phones in the world today and the number is growing. In higher income countries about 66 percent of the population has a smartphone. Let us use this widely available technology to instantly recognize and verify goods as fake or genuine on the spot. Let us use smartphones, holograms and clever apps to combat counterfeiting.

Holoptica has introduced holoQR, a holographic QR code, for these very reasons. It is a high security hologram of e-beam origination that is instantly verifiable by just a few touches of a smartphone screen.

At the heart of holoQR is a holographic QR code. This feature is embedded in the hologram and is actually one of the embossed holographic elements. It is not printed, laminated or otherwise added to the hologram – it is the hologram. For additional added protection and security, holoQR also contains synthetic DNA and a unique PIN code which is printed or lasered into the hologram. The rest of the holoQR hologram features other holographic security features, some overt optical and some covert for forensic inspection and verification. These combinations make holoQR impossible to replicate.

Consumers simply scan the holoQR, enter the PIN and the product is verified as original or exposed as a fake. When original, one more click and the product details are displayed. This provides a safe, unique, simple and cost-effective tool for protecting any product or document that is fully verifiable online and in real-time.

We know it works, as since its introduction in late 2013, more than 20 million products have been protected by the holoQR system, with more products and documents being marked every day. Not one counterfeit of the protected products has been reported. And in December 2013 the holoQR system was also adopted as part of the World Customs Organisation IPM program to have customs officers in more than 180 countries intercept as many fakes as possible. Any participating company, brand owner, manufacturer, exporter, importer or government body has the peace-of-mind that customs officers are able to instantly intercept and shipments of that particular product or brand fake. In cooperation with the participating company or brand owner, customs all over the world have so many details of the goods and shipment, that identifying fakes is a quick and decisive process.



*Holoptica has introduced holoQR as a high security hologram of e-beam origination that is instantly verifiable with a smartphone*



*In December 2013 the holoQR system was also adopted as part of the World Customs Organisation IPM program*





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Focus Label Machinery has partnered with Bosch Rexroth to integrate automation deeper into its flexo press portfolio



Focus Label Machinery itself sees automation aiding the integration of non-flexo technologies, such as digital print, with increased automation to be used increasingly across its model range

# Deepening automation in flexo

**Focus Label Machinery has partnered with Bosch Rexroth to integrate automation deeper into its flexo press portfolio.**

Consistency has always been a key consideration for printers and as a result, the industry is constantly on the lookout for ways to automate processes and remove human error. When Focus Label Machinery wanted to incorporate further automation into its latest flexographic printing press the company approached Bosch Rexroth.

Focus Label Machinery has been a leading manufacturer of printing presses for more than three decades. Having identified market demand for a value-added machine incorporating increased automation, the company began looking for a partner who, as well as providing the right technology for the job, would also offer the ongoing in-depth technical support required as part of a new product development program, including the e-Flex, d-Flex and Reflex press models.

Bosch Rexroth's track record of delivering automation systems and in-depth knowledge of the printing industry led Focus Label Machinery to choose it to take the project forward.

Having received the brief Chris Nevin, industry sector manager for printing and converting at Bosch Rexroth, began designing a system that, as well as increasing automation and consistency, would reduce energy consumption and provide increased flexibility for end users.

'By implementing a proven combination of Bosch Rexroth software and technology solutions we were quickly able to meet Focus Label Machinery's demand for a high-quality automated printing machine,' says Nevin. 'By incorporating intelligent servo drives, we were able to share load specific demands between motors and drives ensuring the press operates at optimum efficiency and as a result, reducing energy demands.'

'It also meant that we could minimize set-up input allowing more consistent, repeatable results and provide end users with greater flexibility to meet the demands of different customers, no matter what the substrate.'

'By using Bosch Rexroth's Indramotion for Printing software, in collaboration with the servo drive hardware, Focus Label

Machinery is able to use commissioning visualization to help customers' move programmable logic controllers (PLC) towards parameterization instead of programming. In-built screens further allow all the advanced control concepts to be visible alongside representative graphics, further easing the commissioning phase and simplifying fault finding.'

Nevin continues: 'Using scalable hardware with intelligent software means lower cost hardware can be used for simple applications and high-performance hardware can be included as and when required without having to completely rewrite the application code. This is thanks to the software's modular design.'

'For example, if a customer has been printing using just four colors decides to upgrade to eight colors, this can be easily accommodated with the existing software. Also, from the customer's perspective the print stations themselves remain the same, allowing for efficient production process when manufacturing.'

Customer reaction has been positive to the changes, with more automation meaning less operator intervention and minimal downtime, with many clients viewing the technology as being more 'future-proof'

Focus Label Machinery itself sees automation aiding the integration of non-flexo technologies, such as digital print, with increased automation to be used increasingly across its model range, wherever there is a benefit to the customer at an 'acceptable premium'.

David Lee of Focus Label Machinery adds: 'For our customers the ability to serve and quickly adapt to a wide range of markets, whilst maintaining high levels of productivity, cost-efficiency and quality, is key. By incorporating Bosch Rexroth's servo drive technology with software that the company has developed specifically for the printing industry we have been able to create a value-added product that meets all of our customers' needs. Bosch Rexroth's high level of technical support was key to the success of this project.'

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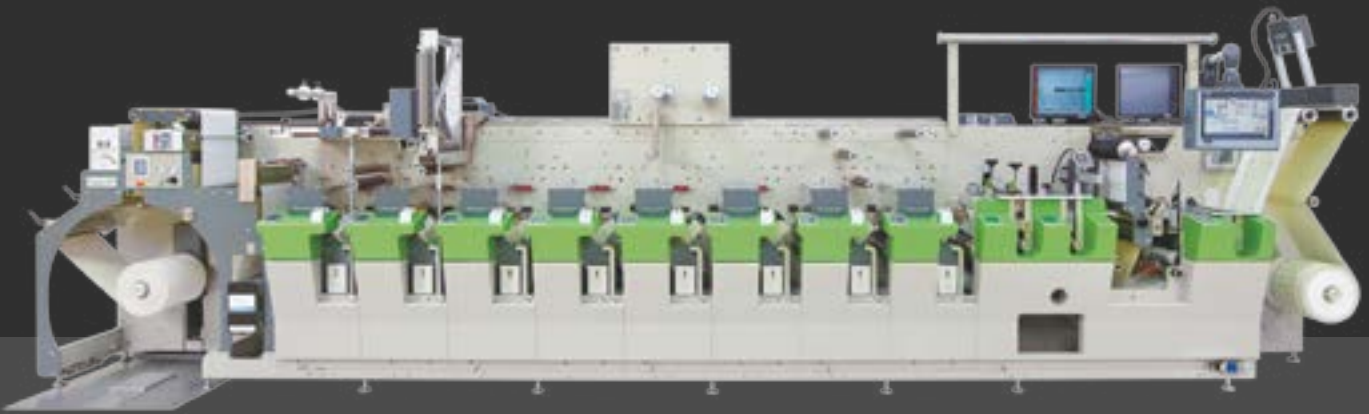
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