



News Focus • Opinion Reviews • Techno-Babble Attitude

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kindle • *verb* 1. to cause a fire to start, set on fire or ignite 2. to begin to burn, catch fire, burst into flame. 3. To stir strong feelings or ideas in someone.

Dear Reader,

In late February, Amazon launched its Kindle2 e-book reader. It's got a 1524 mm screen, capacity for 1,500 titles, free wireless access to the Amazon online store of 230,000 titles plus Wikipedia, and a battery that lasts for days. Does it spell the end of the printed book business?

No. Not yet at least. The Kindle's a gadget not a book and gadgets come and go. Electronic readers need to be multipurpose tools in order to gain broad market traction. Far more of a threat to printed books are the Blackberries and iPhones (for which Kindle e-reader software is now available), which have sold in their millions compared to the Kindle's measly 500,000 since launch in 2007.

Blackberries and iPhones of course provide much more than digital books, and tell us much more about future directions for the media industry. The concept of a digital equivalent to all things analogue is sound enough, but it must sit in the context of wider media usage trends. The future is multichannel and people will choose the media that suits their purpose.

Buying books and reading newspapers is not just about content convenience. It is about much more, from the practical to the sensuous. Digital reading devices for newspapers and books are part of the future, but the Kindle2 needs to be more than a one-trick digital pony to compete on the digital delivery high seas.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

On a roll

Nessan Cleary has been to the Hunkeler Innovation Days in Lucerne, Switzerland to see some of the latest solutions in paper handling and web-based digital finishing systems for high speed printers as used in the direct mail, transpromo, newspaper and book printing sectors.

see page 9

Kodak & Ricoh Cuddling Up

Laurel Brunner examines the implications of the commercial arrangements between Kodak and Ricoh that will see Ricoh selling Nexpress printers as both companies look for ways to extend their business without incurring additional costs.

see page 13

Steps on the Carbon Ladder

Laurel Brunner visited two newspaper printing plants to see what steps they are taking to reduce their carbon footprint. Newsprinters in the UK is an ultra-modern plant, operated by one of the largest media empires in the world, Rupert Murdoch's News Corporation. La Presse de la Manche is an altogether smaller French operation but there are many similarities between the two.

see page 17

Regular Columns

News Focus	Page	2
Driftwood	Page	5
Spindocs	Page	5
Expandocs	Page	6
Acrobutes	Page	7
Say What?	Page	7
Crossword	Page	23

News Focus

Xaar has launched two new printheads for the wide and grand format inkjet print markets. The entry level, high speed Xaar Electron and the high productivity, wide swathe Xaar Proton are next-generation Platform 1 binary printheads. Wit-color, HiJet, Chiting Digital Technology and RTZ are launching five Xaar Electron-based models and 12 Xaar Proton-based solvent and UV inkjet models this year. Xaar's printhead range now has eight models, each with multiple versions.

The 'spectacularly large' **Océ** Arizona 350 XT has been launched. It can produce rigid prints up to 2.5 x 3.05 metres, which sounds a bit disappointing after the over-excited build-up. It prints on roll-fed media as well.

Océ has also announced that its PRISMAweb 5.0 and Océ PRISMAweb eManager 2.0 products are now available worldwide. Both are based on the Press-sense iWay technology, for multichannel content production and websales. And there's also a fifth colour station for the Océ ColorStream family of digital colour web printers.

Belgian company **DMP** has launched DMP FLO Suite 4.0, now based on CS4, and DMP FLO Web2Print 2.0, with extended feature sets and tools for integrated production. The former adds to its asset component support for image

Spindrift

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manipulation and enhancement, and Callas PDF Toolbox for GWG-compliant PDFs. More important are its HTML, CSS and JavaScript interfaces for front-end customisation and integration with MIS and production systems.

Screen has released PDF Polisher-Pro for enhancing images and PDF files for output on the Truepress Jet2500UV large format printing system. It incorporates Adobe PDF Print Engine and Enfocus preflighting technology alongside Screen's own Image Quality Management technology, to process and enhance files as they come into the workflow. According to the press release Polisher 'separates RGB files'. Presumably they get converted to CMYK using Screen's colour knowledge and experience, and are then output as either PDF/X-1a or TIFF files.

It's unlikely that many people noticed, but during his inauguration festivities, Barack Obama, America's 44th President and his good lady wife danced on a custombuilt circular stage with a faux finish design cut on an **EskoArtwork** Kongsberg i-XL.

NiXPS has released a new version of its cross platform XPS tool. It manages cross-platform XPS (Microsoft's XML Paper Specification) conversion, viewing and editing. Tools include detailed zoom, quick search and text selection, to simplify inspection of XPS files on both Mac and PC. NiXPS View v2.6.1 now also has PDF export, the only product of its kind with this functionality.

Xanté has introduced an envelope press. The Ilumina Digital Envelope Press+ is aimed at small to mid-sized printing companies. It can print up to 60 full-colour envelopes per minute and has a 500-envelope input tray. It can print on window envelopes and is designed to also produce duplex colour pages up to A3+. The single-pass large format laser-based system prints a full colour page at up to 36ppm and monochrome output up to 40ppm.

At **Dalim Software's** annual userfest near Gothenburg, Sweden at the end of the month, the company's new packaging strategy will be presented. Dalim will also present some next generation technologies based on its new ES core technology. This new and unspecified foundation will be the basis of new versions of Dialogue and Twist to be available over the next couple of years with improved job structure, web interfacing and job processing.

Israeli developer **VIM Technologies**, has said that release of its inkjet plate, the VIM JT Direct Inkjet plate is imminent. The polyester version will be released to the market in March and the ramp-up for the aluminium plates will start in April 2009. These plates are imaged on standard high quality Epson Stylus Pro UltraChrome printers, using standard Epson aqueous inks. They require no processing and are fixed by baking in an oven, which hardens the imaged plate for the press. Intriguing.

EFI has released version 4.0 of its Colorproof XF for colour proofing and Fiery XF for production printing. They include the patent-pending Dynamic Wedge for optimising key colours, Intelligent Calibration, and enhanced spot-colour simulation. See Vol 6 Issue 8 for details.

Kodak's Graphic Communications Group (GCG) and Ricoh Europe have signed an agreement for Ricoh to sell the Kodak Nexpress digital colour press, throughout the European Union, Switzerland and Norway. This is in addition to the Digimaster it already offers on behalf of Kodak. Ricoh will provide direct support services to customers. See full story on page 13.

HP Graphics Solutions Business is now offering tools and programmes to improve the sustainability of HP Indigo presses. They include a new HP Indigo media guide for more than 1800 media, with more recycled papers and papers that have earned third-party certification for sustainability initiatives. There is also a new return and recycling programme for user-replaceable binary ink developer (BID) parts.

Screen is taking its 1500 dpi Truepress Jet2500UV large format printer on tour. The press will be showcased at a string of open houses and exhibitions around Europe during February and March to demonstrate to visitors the machine's high quality output and the wide range of applications to which it is suited.

Adobe's Reader Mobile SDK, for developing delivery applications to mobile phones and handheld devices is now available. It makes possible the easy download, management, and display of PDF content and eBooks. The new software engine delivers support for reflowable PDF technology, Adobe's content protection technology, as well as the EPUB file format. This is an XML-based eBook standard generally supported in the publishing industry. This technology is expected to be incorporated into new devices or applications coming out this year

from Bookeen, iRex Technologies, Lexcycle, Plastic Logic, Polymer Vision Ltd., and Spring Design. This technology is already integrated into Sony's Reader Digital Book.

A wide range of announcements were made at the recent Hunkeler Innovations Days event held in Switzerland. Among them are the expansion of **Kodak's** Versamark VL-Series printing systems with four new models, and the launches of Dimensional clear dry ink for the Nexpress. See page 9 for the full Hunkeler story.

There are now three new Kodak Approval packaging colour donors. These are designed to help users achieve more accurate spot, corporate, and brand colours for a wide range of packaging applications. They expand the colour gamut of Approval systems and can be used to create packaging design proofs and 3-D mock-ups that look like the final product on the store shelf.

EFI has introduced version 8.0 of its MicroPress scalable production workflow system. It has easier-to-use document management tools, a simplified user interface, and enhanced make-ready features for producing complex documents quickly. It is the first EFI RIP that can natively process PostScript, PDF and XPS and utilises 64-bit hardware so it's very fast. The EFI MicroPress can manage up to 12 digital print engines.

HP plans to cut pay by 5% across its worldwide workforce of 300,000 people. The move was taken because of a 1% drop in profits to \$1.9 billion. So far 9,000 of the intended 25,000 staff cuts announced last year have now been made.

WAN, the World Association of Newspapers, is organising two conferences in Barcelona, Spain, this May for newspapers focusing on how to maintain and enhance print and advertising revenues. Topics covered include balancing digital and print offerings and personal newspapers. There will also be a showcase of the best examples of revenue generating and cost-saving innovations at newspaper companies today. Full details of the two conferences can be found at http://www.wan-press.org

Kodak is touring six countries in Europe to take its latest innovative offerings direct to customers. The road show includes demonstrations of its digital printing, CTP and workflow systems as well as workshops and full demonstrations. The idea is to help Kodak's customers 'identify ways to improve their business efficiency and

extend the reach of their present strategies to help create new revenue opportunities'. And to sell Kodak kit of course. The 2009 Road Show starts in the UK and runs throughout the year. Go to www.roadshow.kodak.com for further information.

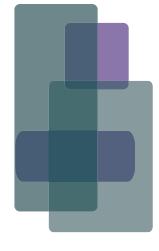
The organisers of **FESPA**, taking place at the Rai in Amsterdam on the 12th to 14th May 2009, want printers to nominate digital 'Revolutionaries' for a prize. Revolutionaries are industry colleagues printers think have produced ground-breaking work, ventured into new markets, embraced cutting edge technologies, or differentiated themselves with radical business models or services to their clients. If you've someone in mind go to www.fespadigital.com and click on 'Nominate', from March 2009. Those who do the nominating stand a chance to win an iPod Touch or one of three revolutionary guitars: The Gibson Les Paul, The Fender Stratocaster or The Classic Acoustic, in a prize draw.

Once nominated, the 'Revolutionaries' themselves "may have the opportunity to participate in workshops or seminar events at FESPA in Amsterdam". Surely the show's organisers can do better than that!

Punch Graphix' sales for 2008 rose from €114.6 million to €163.4 million and net earnings were €16.5 million compared with a loss of €4.9 million in 2007. A glimmer in the gloom!!

Manroland achieved an operating result of €52 million in 2008 down from €125 million in the previous year. Last year's sales dropped by 11 percent to €1,727 million with 80 percent coming from export sales. The company booked 21 percent fewer orders than in the previous year and order intake declined to €1,396 million. The company began the current fiscal year with an order backlog of €701 million.

Fuji UK has launched an online environmental resource for printers edited by independent environmental consultant Clare Taylor. The new website (www.greenprinter. co.uk) is an environmental portal for the UK, with information and practical advice to help the printing industry tackle the environmental issues affecting it.



Driftwood

(Useful stuff washin' up on our shores)

Durst Rho Roll Ink approved for Nordic Swan eco-labeling

The printer manufacturer Durst, based in the Tyrol region (headquartered in Brixen, Italy, but with an inkjet division in Lienz, Austria) has announced that its Durst Rho Roll Ink has been approved to the Nordic Swan environmental standard by the Environmental Test Institute Nordic Ecolabel.



The Nordic eco-label Svanen (The Swan), is placed on printed products that fully comply with criteria set up by the Environmental Test Institute Nordic Ecolabel.

The approval is based on the ink's VOC-free property and other environmentally friendly aspects, such as the recyclability of printed matter and the absence of toxic chemicals. Printing houses, which fulfill all other conditions of the Nordic Ecolabel, can apply the Nordic Swan logo (see illustration) on printed matter produced on the Rho printers using Rho Roll Ink.

The Swan, the official Nordic eco-label, was created in 1989 by the Nordic Council of Ministers for Norway, Sweden, Denmark and Finland, with the purpose of providing an environmental labeling system that would contribute to a sustainable consumerism. It was also initiated as a practical tool for consumers to help them actively choose environmentally sound products. In the case of inks, the Nordic eco-labeling covers classifications regarding environmental hazard, toxicity, problematic substances and volatile organic compounds (VOCs).

Durst decided early on to use UV-curing ink in its pursuit of environmentally friendly printing processes. Durst Rho inks do not contain VOCs and conform to the 'Restriction of Hazardous Substances' (RoHS) Directive 2002/96/EC and Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC, according to the company. This means that Durst's Rho inks do not have to carry the symbol of the 'dead fish' or 'dead tree' (see illustration). Some



Some conventional UV-curable ink contains enough hazardous substances that they are forced to carry this alarming symbol of the dead tree and/or fish.

other UV-inks, especially those containing free radicals, are toxic enough that they are required to be marked with this alarming symbol. For operators using inks containing hazardous substances the most obvious effect is the risk of skin irritation if not handled properly.

According to Durst marketing manager Michael Lackner, many printers are probably unaware of the fact that even UV curing inks with a very low proportion of solvents, or so called 'VOC-free inks', which include photo initiators, can still contaminate the water table and therefore must carry the mark of the 'dead fish' or the 'dead tree'.

According to Hans Molander, Durst distributor in Sweden, there is a growing request from customers, who in general are becoming much more environmentally aware, of ink and substrates that fully comply to the criteria of ecolabels like The Swan.

Spindocs

(Where the spinner gets spun!)

We would like to add our congratulations to Xerox which has been ranked number one in the computer industry section of Fortune magazine's 'Most admired companies survey'.

Xerox has jumped from number four to number one in this category, which according to the press release is down to its

"key reputation attributes including use of corporate assets, quality of management and social responsibility."

Anne Mulcahy, Xerox chairman and chief executive officer is quoted saying: "Xerox's reputation ranks right up there with our people, our brand and our innovation as our most valuable assets," adding, "We invest in it, we nurture it and we know that every single Xerox person helps define how we are perceived in the marketplace."

Now, we like Xerox, we really do, because we know that there are some very clever people there, and some really good technology. But it has to be said that there is a reason why the people at Xerox are universally referred to as Xeroids, and it is not a term of endearment or respect.

Moreover, we are not entirely sure that we agree with Geoff Colvin, Fortune's senior editor at large, who stated: "Any company that can perform well and maintain its good name during the worst recession in 75 years is arguably more admirable than the best performer during boom times." We don't like to sound unduly pessimistic, but it seems to us that the recession is far from over and that we won't really be able to judge which companies withstood it until after it's done.

Expandocs

(Casting some extra light on a recent news story)

Dear readers, let me tell you a tale. Last November we sent the last of our analogue films off to be processed, no more to rely on the ancient Canon camera. The firm we sent them to, in common with many reinvented photographic processing houses, no longer prints onto conventional photographic paper but instead, once negatives have been developed, uses a high-speed scanner to digitise the films.

Once digitised the possibilities are naturally endless: simple prints in all sizes, copies, albums, novelty gift items and so on. The company very helpfully put all of our negatives up onto its website, so that we could log on and order to our heart's content. Wonderful. Perfect. A shining example of how analogue photographic services providers are reinventing themselves for the digital age.

And then the postman delivered the printed photos. Bearing in mind that we knew that the prints were output on a Kodak Nexpress, a press capable of excellent print quality, we were excited. Waiting to be opened, that enticing parcel full of promise. Waiting to be perused, those 15 sets of prints documenting our wonderful summer holiday in California, Easter celebrations, a very boozy midsummer's party, plus reminders of numerous birthdays, jaunts, adventures and misadventures. So much for excitement and anticipation.

That the results were crap is an understatement. That we could look at the images and the negatives and know something was amiss in the printing was a relief. A quick trip to the website and an inspection of our digitised negatives, added swiftly to the relief. A simple error had been made in the scanning, nothing more than that. The black and white points were set so the images were printed with poor contrast and a murky yellow cast.

Great, we thought. A letter, we thought. We'll explain the problem and ask them to fix the black and white points and reprint the lot. Simple enough, except that we were making two fundamentally flawed assumptions, and this is where the story starts to get depressing. It gets very, very depressing indeed, because instead of ringing us to say, yes or no we can or can't do this, or writing to us to ask us to pay something extra, which we would willingly have done, we got a letter back requesting that we send back all of the negatives. Que?

It was very clear that our letter explaining the problem, and the inclusion of a few before and after prints which we had done by way of illustration, wasn't enough. The problem, which seemed fairly basic to us, was impenetrable to the customer services people. Even though the kind and very patient people in customer services tried extremely hard to understand what we were on about, they simply were not equipped to help. They could listen and accept that there was a simple solution to the problem, even though they didn't fully understand it. They are to be commended, but they should be given proper training and support in order to do their jobs properly. This much is basic.

Never mind, we thought, we'll talk to the production people. Soon we got a call from the production boss who assured us that he would be taking care of the problem. He seemed to understand what we meant by "adjust the black point and reprint them", but nothing much happened because he went away on holiday. That in itself

is no big deal, but that no one at the company can do anything at all to get our prints reprinted until he returns, is a problem.

This tale of woe points to two crucial problems facing the digital printing industry as a whole and the photo album business in particular. The first, that people working in the digital printing industry still don't have the most fundamental grasp of the processes involved in producing digital print, is a severe limitation to the development of any digital printing business. We seem to have a disconnect between IT knowledge and printing process knowledge.

Why? Customer services people are the first in line when something goes wrong and they need to have the knowledge and expertise to understand how to get problems fixed. They need to understand the basics of web technologies, basic IT and, of course, what is involved in producing a piece of print on a printing press, digital or otherwise. Without this rudimentary understanding they, and the business, have to rely on arcane, time consuming and inefficient procedures to fix a problem. That probably doesn't matter all that much to the customer services person who's been doing her job well for 30 years. But for the company it adds unnecessary overheads, takes time, and compounds the inefficiencies that result from poor data processing.

And this brings us to our second issue, because for the photo book industry this problem has even more serious ramifications. Producing photo books is a new application for digital presses and photographic service providers, and it ought to have huge potential. Photo books are necessarily tricky to create and produce, but increasingly we are seeing fairly effective template-driven web-based photo book applications that remove most of the hassle and pain. Assuming lovely finishing, a personalised cover and keen pricing there is no reason to believe that customers won't start using photo book services for all their pictures. They are unique and save people the added expense of buying albums and the time and trouble of sticking in the pictures.

But if the pictures are poorly printed, customers will not come back. And if customers take the trouble to complain and point out that the prints are rubbish, digital press owners are lucky to have the opportunity to set things right. Getting customer service people educated about the process, and teaching scanner and press operators how to do their jobs properly is a start. It's not going to gain a business ISO 9001 compliance for quality management overnight, but it's a start that could save money and time in the future, and it's a start towards improved competitiveness and indeed survival. It's also a start towards new ideas for improving procedures and services, which often come from customer-facing staff.

Acrobites

(Something to get your teeth into)

PSO

Process Standard Offset is Fogra's acronym for ISO 12647-2, which is the bit of the standard for Graphic Technology Process Control for the Production of Half-tone Colour Separations, Proofs and Production Prints, dealing with sheetfed offset lithography. Fogra's PSO certificate provides proof, according to Fogra's criteria, of the quality a printing or media company can achieve.

LCH

The Lightness Chroma Hue colour space is the one that most closely models human colour vision. The three attributes are used to define perceived colours, regardless of its source.

Say What?

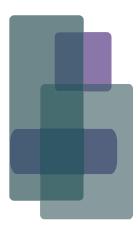
(Iffy Writing Award Presented in the Ether for Obfuscation, Confusion, Misinformation or All Out Pretentiousness)

This month's Say What comes to us from the Printing Industries of America, with a backhanded compliment to President Obama to mark his first address to congress.

Michael Makin, President and CEO of Printing Industries of America, starts off by saying he "welcomes President Obama's effort to inject confidence and hope into the American economy during this time of recession. The President's optimism about our ability to confront the challenges facing the country is a great encouragement to the printing and graphic communications industry, and his faith in the spirit of entrepreneurship is one we share."

But then Makin goes on to say: "While we welcome the President's desire to address environmental and energy issues, we are concerned about the possible impact of carbon cap and trade legislation. There is anxiety that such legislation would increase energy costs – something that the manufacturing sector can ill afford at this time. We trust that the President will seek a solution that allows for the mutually beneficial continued growth in the manufacturing sector and a healthier environment."

For those of us living outside of the US, the country often appears to exhibit wasteful energy consumption, and we feel that it would have been better if PIA clearly educated its members that lowering the energy consumption is a win-win scenario for all parties. A systematic long-term approach on Environmental Management, for example according to ISO 14001, should have positive effects both on the environment and the energy efficiency of the production processes. Supporting this course of action would have been a more wholehearted support of president Obama's intentions.



On a roll

Lots of companies run roadshows or one-off events to showcase their products, but very few manage to organise their very own regular trade show. Yet that is exactly what Hunkeler has done with its Innovation Days.

Hunkeler has been running this event for 15 years now. Much of the reason for its success is because Hunkeler has drawn in many of its partners, including most of the major digital printer manufacturers, as well

as finishing specialists such as Buhrs and software developers like GMC. It's a small show with all the vendors in the same hall, but it is extremely focussed, with most of the demonstrations being around direct mail and transpromo applications. It's held every two years, in the rather picturesque setting of Lucerne, Switzerland and attracts a couple of thousand visitors from all over the world.

Hunkeler itself is based nearby in Wikon. It's a family run company, with the third generation, Stefan Hunkeler, having assumed the mantle of leadership since the start of the year. It was set up in 1922 and

specialises in paper handling and paper finishing systems for high speed web-fed printers. The company has around 250 people and subsidiaries in Germany, Italy and the Far East.



Lucerne is a chocolate-box picturesque Swiss town, a short drive from Zurich.

In-house innovations

Most of Hunkeler's own kit are modular units which form part of its Printer Online Paper Processing system which can be mixed and matched to make up different applications. This year's event marked the official market launch of the sixth generation of this system, known as POPP6, which can handle web widths up to 520mm.

One of the POPP6 features is its ability to handle colour printed pages, which Hunkeler has labelled Huncolor. Philipp Fritschi, Hunkeler's head of marketing, says: "We had to make changes to handle colour pages to make sure that the toner isn't scratched. We use a vacuum to transport the paper and some of the rollers are treated."

Hunkeler also showed off some modules from its next generation, POPP7, designed for wider widths up to 660mm. It's functionally the same as the POPP6 generation but will work with wider printers such as the forthcoming HP Inkjet Web Press. Many of the other printer manufacturers have already said that there are no technical limitations on making the high speed inkjet presses that were shown at last year's drupa show in

wider versions, other than the lack of suitable paper handling equipment, so the POPP7 modules will address this issue.

Another highlight was the WI6 Web Inspection Module. This is a high resolution video camera system which can monitor a printed page across its entire width to verify that the right elements have been printed and that the front and back of each page is correctly aligned. Nicola Bologna, product manager for the WI6, says that you can define up to 50 different regions on a page and that it will also read barcodes and look for ink

and toner density on the paper. He continues: "Also the system can evaluate the colour so it can tell some deviation from colour, but it's not intended to be a densitometer."

This was shown on the Kodak stand as a separate unit on the back of a Versamark VL2000 working with a black and white camera. However, it was also shown with a colour camera built into an Infoprint 5000. It can run at up to 300 metres per minute. It can cope with duplex printing simply by adding a second camera underneath the paper path with no drop in speed.

Hunkeler also showed off a rather neat solution for book printing. The LS6-S is

a stacking module which can add a small drop of glue to hold the pages of book blocks together, making it much easier to pick them up without the risk of dropping the pages, and to move the collated blocks through to a binder. This was shown with an Océ Varioprint 6250 which was producing two different book sizes, with the LS6-S switching dynamically between them.

Also on the Océ stand, at the front end of the Varioprint 6250, Hunkeler demonstrated an SF4 sheet feeder. This took paper from a roll, cut it to sheets and fed it to the printer, bypassing the 6250's paper trays. It's controlled by the printer which decides which format the paper is cut to so that it can switch back and forth from cutting the sheets to A4 or A3 size.

Hunkeler also demonstrated some new modules for its Variweb web finishing system. This included the FB 520-W fly-fold belt which was demonstrated with a preprinted paper web, where an address window was die-cut, a longitudinal fold and tear-off perforation was added and the final sheets die-cut before being sent to the FB 520-W for the longitudinal fold, and then onto a buckle folder to create single-page mailers.



The Web Inspection module is a high resolution camera that can verify that the right elements have been printed.

Another Variweb line demonstrated an RFID application. This meant cold-gluing an RFID transponder to the back of a preprinted paper web with an AM 520-W module, and adding silicone paper over the transponder. Once the web was turned, a fold-up smart card and four integrated labels were die-cut with a UM 520-W universal module to finish off the mailer.

Hunkeler also showed off its FM6 Folder Merger, a beta version of which was seen at drupa. This has both a plowfold function and web merging with a longitudinal split cut, and can be switched quickly from one to the other. It can run at 180 metres per minute and was shown in a direct mail line.

New printers

Given that the show is very tightly focussed around high speed digital printers, and that most of the visitors are invited because they are likely to buy some of the kit being displayed, it's not surprising that many of the printer manufacturers choose to launch new models here.

At this year's show Kodak announced four new additions to its Versamark VL2000 series so that there are now six models. Its more accurate to say that Kodak has added two new engines to its original VL2000 and that each of these is available in either a single or twin engine configuration.



This Variweb module cold glues an RFID transponder to the back of a preprinted paper web and then adds silicone paper over the transponder.

The original model used two drop on demand printhead arrays, with each printing two colours. These heads can print across the full web width of 474mm in simplex mode, or they can print a half width web in duplex mode, with the paper being turned around so that the back side is printed from the same array and without any drop in speed. The twin-engined configuration, known as the VL2200 can print the full web width in four colour duplex mode. The original VL2000 engine has a resolution of 600x600dpi and can run at 75 metres per minute.

One of the new printers, the VL4000 is effectively the same arrangement, but with the resolution reduced to 600x300dpi in order to achieve a higher speed of 125 metres per minute.

However, for the second of the new engines, the VL6000, Kodak has added two more printhead arrays so that each head prints just one colour, doubling the speed up to 150 metres per minute at the same 600x600dpi resolution. Kodak also says that it is possible to achieve higher resolution at slower speeds with this model, but won't comment on specific resolutions until after its been through beta testing.

In addition, Kodak has also announced dye-based inks and a new MICR unit for the VL-series machines. Kodak also showed off a Nexpress with its new Dimensional toner which can be used to give text a raised or embossed feel, and to simulate a textured effect on images, giving them a 3D feel.

Infoprint also took the opportunity to announce that it would be selling a faster variation of its Infoprint 5000 printer. This was hardly unexpected, since the printer is based on the Screen Jet520, and Screen had said at drupa that there would be a faster version, up from 64 to 128 metres per minute, achieved by reducing the resolution to 720x360dpi.

There was a 5000 on the Infoprint stand, together with a Hunkeler PEM520 unit which allows for contact-free cleaning of the paper web to prevent the build-up of static electricity in the web and to help increase the print quality and lengthen the cleaning cycle.

Infoprint showed off a twin-engined 4100 together with a Hunkeler LS6-28 unit for handling large sheets and lengths up to 711mm. Infoprint also demonstrated its latest printer, the Infoprint Pro C900. This is a cutsheet colour printer aimed at mid-volume commercial printers and data centres, having the ability to cope with up to 240,000 pages per month.

Océ announced that it was adding a fifth colour to the ColourStream, which gives it the ability to print custom spot colours as well as CMYK. At the show Océ demonstrated a ColourStream 10000 working with a Hunkeler WM6 Uneven web-merger module. This allows merging of split webs, with each half of the split web having independent advance for jobs with uneven sheet counts.

Conclusion

The Hunkeler Innovation Days proved to be one of the most interesting shows that I've been to for a while. It's a relatively small show, but it's well laid out, with enough room to see a number of working applications and a good enough mix of vendors to ensure that there's something to interest most visitors.

As a company, Hunkeler is extremely well-placed, because as high speed digital printing matures and comes of age there's going to be a lot more focus on the finishing and the ancillary systems that go around the printers. And since we are bound to see more of these printers launched at Ipex 2010, it seems a pretty safe bet that the next Hunkeler event in 2011 will be worth going to.

- Nessan Cleary



As a company, Hunkeler is extremely well-placed, because as high speed digital printing matures and comes of age there's going to be a lot more focus on the finishing and the ancillary systems that go around the printers.

Kodak & Ricoh Cuddling Up

There's been a lot of fuss in the press of late, regarding Kodak's intentions with its Nexpress business. According to a report in the Wall Street Journal: "Kodak says it can't afford to keep such businesses as Kodak Gallery and its high-end digital press business, Nexpress". The implication of this is that these businesses would be sold. It turned out to be a mistake and the paper printed a retraction, with Kodak hosting an impromptu conference call with the trade press to set the record straight.

Much subsequent airing (hotly) of opinions and commentating by consultants and analysts, some egregious, some swaggering, didn't do much to clarify matters. Kodak responded quickly to fix the problem though. What Antonio Perez, chairman and CEO actually said was: "We are very happy with the digital portfolio we have created". But for all that Kodak is unable to invest across it. Kodak is in a position of strength at the very high and very low ends of printing, but as Perez noted: "to be successful it needs to scale down, go into other areas of electrophotography. We can't do it by ourselves at this time".

And then a few days later Kodak announced its plans to get closer to Ricoh. Why it didn't make this announcement at the press conference where the WSJ got the wrong end of the stick is strange. Anyway, this deal with Ricoh is obviously important because of what it means for both companies' futures. But it's also yet further confirmation that the foundations of the printing industry continue to shift.

So what's going on? The deal is for Ricoh to sell Nexpresses and Digimasters in Europe, including Switzerland and Norway, with Ricoh providing direct support through its Infotec organisation (previously known as Danka). Ricoh already distributes the Digimaster presses in Europe, so this adds colour to its armoury. It also extends the arrangement announced in September 2007 for the US market, to marry Ricoh's office strengths with Kodak's graphic arts access, customer base and colour expertise.

Details of how cosy the relationship will be are scant, however there will have to be quite considerable knowledge and resource sharing if Ricoh is to be able to adequately support its new customer stream. According to Graham Moore, director of Ricoh's production printing business group, work is already underway to build this infrastructure: "We are continuing to grow the infrastructure, create business development programmes and enhance support services, both centrally and in the operating companies, in support of digital production printing."

Under the terms of the deal, Ricoh will sell the Nexpress S range of S2100, S2500 and S3000 presses (as well as the forthcoming S3600) and the

Details of how cosy the relationship will be are scant, however there will have to be quite considerable knowledge and resource sharing if Ricoh is to be able to adequately support its new customer stream.

complete Digimaster line including front ends and upgrades. This takes it into largely new territory where high-end commercial colour, workflow and variable data management are concerned, and it cannot do this without support. According to Mark Clark, Kodak's regional business manager and vice present of digital printing solutions for Europe, Africa and the Middle East: "Infotec have the option to support, but Kodak will work closely with them until they are happy to go it alone. We will work on an account by account basis for larger accounts".

Also, according to Graham Moore: "Ricoh is driving synergy between Ricoh and Infotec in countries where both exist, and continuing to develop the operating companies and channels in other countries throughout the rest of the family group, and its development to form the production printing group as a strategic business unit, moves us towards a more focused, resourced and structured organisation". This group is also aligned with the appropriate resources in individual countries in Europe.

Ricoh has been cautiously spreading its wings in the commercial printing industry for over four years now. It has acquired both Hitachi Printing Solutions and Danka/Infotec as well as setting up the Infoprint joint venture with IBM, of which it is due to take full ownership in June 2010. The relationship with Kodak is not a new one, so given Kodak's recent lack of emphasis or overt focus on Nexpress, this alliance is unsurprising. But where will it lead?

This is a simple reseller agreement that should exploit mutually supportive strengths to good effect. On the one hand, Ricoh needs to offer customers something better than its C900 colour press if it's to be taken seriously in the commercial colour market. On the other, Kodak needs to sell more engines while cutting back its spending, and it needs access into the corporate markets where Ricoh is strong. What better way then to expand the sales channel for a high-ticket product with substantial annuities and consumables revenues, through a partnership that opens the door to new markets, without the need of direct investment.

As Mark Clark puts it Kodak can "add more feet on the street". Quite whether the added feet will make up for staff losses in the pipeline is unclear. Kodak will not say how many of the planned 4500 positions will come from GCG. Mark did confirm that although Perez expects a 10% drop in GCG's sales this year, in his region things won't be that bad. He said: "In 2009 we do not expect a decline in the combined digital print businesses, and are planning for some growth in the total digital business (inkjet and electrophotography). Nexpress will be consolidated in key regions and our participation in channels such as Ricoh will be increased."

For Ricoh, which is now selling C900 and more recently C900S presses at a rate of about 100 units per month, the priority will still be this machine, spread around 50/50 between commercial and corporate applications.



Mark Clark, Kodak's regional business manager and vice present of digital printing solutions for Europe, Africa and the Middle East.

According to Graham, sales of the Nexpress will be "significant though probably still many times less than we are expecting than C900s".

For Kodak the weight of history, its size and the rapid decline of traditional cash rich markets has made reinvention painful. The company's present situation with regard to the graphic arts market place has been characterised by lack of cohesive PR and a struggle to pull together diverse sectors, in order to maintain returns to Kodak's shareholders. Kodak is also expecting a \$3 billion contraction in its GCG sales for 2009, a decline of around 10%, which will continue into 2010. According to Perez: "The key is how effective we are in the partnerships," and fortunately the company is in a strong cash position.

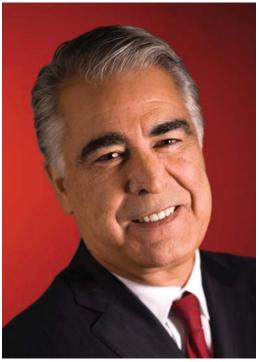
In a crowded and very hungry graphic arts marketplace, is Kodak getting left behind? Sales of Nexpress are undisclosed but we estimate a worldwide installed base of around 500 units mostly of the 2500 and 3000 models. HP Indigo in contrast has an installed base of over 5000 engines and Xerox has many thousands of Docucolors and iGens installed around the world. However Mark Clark says: "If you purely look at the applications where we compete our position is comparable."

Despite almost a fifty percent drop in revenues this year, Ricoh is in a less vulnerable position, if only because it is relatively new to the graphic arts and has no history or customer base to speak of. Ricoh expects sales of 2.15 trillion Yen (\$22 billion) for the year ended March 2009 and by virtue of its Infotec deal and distribution arrangements with Océ and others, is in a relatively strong position. The move into the commercial printing industry has, however, not been particularly energetic and since its launch at drupa and Graph Expo over 200 C900 digital presses have been sold in Europe and the USA.

Ricoh is building new toner plants in Japan and Thailand but for the graphic arts business Ricoh appears to be largely operating blind in a market that doesn't really need more suppliers. Its strategy to straddle office and professional markets is sound: data processing and output expertise are the twin strands of press manufacturers' and the customers' future, something which Ricoh appears to get. But no strategy can work without a sound go-to-market plan, something that Ricoh has been steadily working on for the printing industry. The relatively quiet voice may have been due to the fact that the company lacked a truly credible high end digital press, and the infrastructure to support ambitious sales targets, so with the new Kodak deal, we expect to see more marketing activity from Ricoh.

What does this mean for their competitors?

Kodak has deals with several press manufacturers including Canon and Océ in some countries. Perhaps competitors will be alarmed, but we rather think not. Even though it broadens Kodak and Ricoh's reach in the market, this deal is a reaction to external threats, rather than an action to extend a position of strength. It could be taken as a sign that both companies are getting their collective acts together to tackle the high-end digital



Antonio Perez, chairman and CEO of Kodak.

printing sector but, if so, they will have to move at a pace that is other than glacial.

In the inkjet business, which is so close to Kodak's heart the company, faces a new tranche of competitors, with Screen, Agfa, Fujifilm et al, scrabbling for a toehold in an unstable and unpredictable market. And in markets where electrophotography still dominates, whatever those clever analysts predict, it is by no means certain that consumers will respond as hoped to new applications such as transpromo and photobooks. It could be seen that the one is intrusive and the other a hassle, or that one is informative and the other convenient. It's really not possible to say yet, but to make a market that can sustain so many press manufacturers out of such ephemera requires substantial market heft, patience and money.

This deal allows Kodak a means of sharing the costs of supporting its toner based interests and lets it focus on defending and developing its position in the inkjet business, specifically bringing Stream to market earlier than first anticipated. As Perez said: "The strength that we have lies at the intersection of material science and digital image science".

For customers this deal has to be great news because it gives them yet more room for manoeuvre in discussions with suppliers. There will be more people paying attention to their needs, although that might not necessarily translate into action, given the complexity of the Kodak/Ricoh machinery. We think this could be the next step in a slow and stealthy process whereby Kodak moves out of high-end toner-based digital press development and Ricoh moves into it. It's a curious choice to add complications and costs in the depths of recession, unless this is part of building for a future that recoups it.

- Laurel Brunner



For customers this deal has to be great news because it gives them yet more room for manoeuvre in discussions with suppliers.

Steps on the Carbon Ladder

Eco-warriors just love the printing industry: all those dead trees, all those stinking solvents. And because of the high volumes and the fleeting value of their content, newspapers are an especially popular target. After all, newspapers are printed on polluting paper, on massive high-speed, energy-hungry presses. Their distribution relies on extensive heavy duty road and air transport. And because time is of the essence, everyone involved must rely on a maelstrom of electronics.

It should all add up to an environmental nightmare. So, with that in mind we recently visited two newspapers, and discovered that it's not that simple. There's a good deal more to understanding the carbon footprint of a newspaper than just measuring a newspaper's individual footprint.

A carbon footprint is the sum of all greenhouse gas emissions an entity generates. The calculation includes electricity used to produce and support the entity, plus direct and indirect emissions. If we want to work out how to measure a newspaper's carbon footprint, we need to know much more. We need to start gathering lots of objective data.

Newsprinters, in Broxbourne, UK and La Presse de la Manche in Cherbourg, France operate at the very opposite extremes of newspaper production, yet both are striving to reduce their business's carbon footprint. Newsprinters is the newspaper printing division of News International, the main UK subsidiary of one of the world's great media companies, News Corporation, which has annual revenues of \$48.7 billion. Its Broxbourne site produces 22 million newspaper copies per week for an average daily national readership of over 20m. La Presse de la Manche is a subsidiary of Ouest-France, a privately owned French regional newspaper capitalised to the tune of €300,000. La Presse de la Manche serves a region of some 200,000 people and has a daily circulation of 36,000 copies.

Newspapers Reinvented

The nature of newspaper production makes it one of the publishing industry's most resource-intensive producers and over the last few years the sector has been struggling. It has had to compete with alternative advertising channels and newspaper owners have had to invest in reinventing themselves as crossmedia content publishers. Collapsed ad revenue models and related economic pressures have forced traditional newspaper publishers to cut costs to the bone.

They've had to maximise resource effectiveness without compromising the basic premise of a newspaper, which is to gather, produce and deliver content as fast as possible to readers. However the same economics that forced the newspaper industry's back to the wall, have also helped it to



Allan Wain, group manufacturing director for News International.

substantially improve its carbon footprint with investment in energy efficiency and modern production technology help cut costs.

The development of News International's 40 acre site at Broxbourne has been well publicised. The Broxbourne site houses the world's largest newspaper press and is the largest of Newsprinters' three new facilities in the UK. According to Allan Wain, group manufacturing director, the objective of this one billion dollar project, which was completed in just over three years, is "to be the best newspaper manufacturer in the world".

The plants at Broxbourne, Glasgow and Liverpool are all now up and running. All Newsprinters' sites are carbon neutral, using energy from

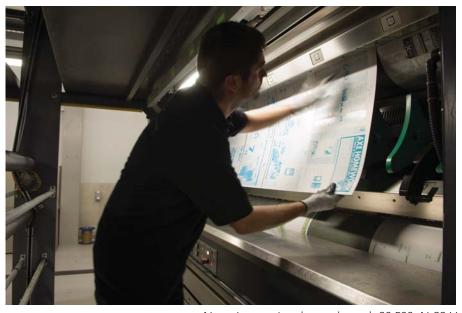
renewable sources and offsetting the rest, currently some 46,567 tonnes. The balance is offset with a direct investment into a wind power project in India. At Broxbourne carbon trading is a dedicated function and all sites have regular auditing of staff transport, providing free staff shuttle buses from local stations according to traffic needs.

The Broxbourne plant has been fully operational since the end of April 2008, and News International's previous facility at Wapping is now closed. Broxbourne employs a handful of Wapping's 550 people, where 460 preferred to take redundancy. The Wapping site was

opened in 1986 and is to be redeveloped. By 2012 it will be News International's hub for all of its UK businesses, including the newspapers, plus Harper Collins, MySpace, Dow Jones and Fox. Newsprinters is a great fan of outsourcing and of the 400 people employed at Broxbourne, 200 are subcontractors, a proportion that applies for all Newsprinters' sites.

At Broxbourne, newsprint trailers have direct access to the plant for paper delivery and waste paper removal, minimising the number of empty trucks leaving the plant and maximising all loads. Apart from basics such as sensor-driven lighting in all areas and insulation, the company has soundproofed its press halls and has built an acoustic tunnel to reduce noise pollution. Lorries use this tunnel late at night when they collect newspapers for transport to 100 distribution depots, (the furthest being Bodmin and Redruth in Cornwall), which serve 55,000 sales outlets throughout Britain.

For Broxbourne, Newsprinters has invested in 12 triple width, Manroland Colorman presses with two presslines. These presses are 50% more efficient than standard presses and can print colour on all pages, with up to six sections per press, so no inserting machinery is required. They



News International gets through 38,500 N-92-V plates per week in Broxbourne where it pays Agfa for all plate and workflow related facilities management.

produce 86,000 copies per hour running straight, printing two editions a night starting at 22:45 and finishing by 04:00 at the latest. Newsprinters has the world's biggest folder, handling everything from 12-page tabloids to 144-page broadsheets, without slowing down the presses.

The site produces all of News International's titles and since August 2008 prints 600,000 copies of the Daily Telegraph and Sunday Telegraph. It also prints 140,000 copies of thelondonpaper, Rupert Murdoch's answer to The London Evening Standard. Newsprinters will print all 500,000 copies of thelondonpaper once the road outside, with News International funds, has been widened to carry more traffic and reduce congestion.

Paper and production

Broxbourne chews through 3500 reels of paper every week (300,000 tonnes a year), and because of the 2.21 metre size of each press, News-

printers has had to build special fully automated reel handling systems. As much as possible the company uses a mix of virgin and recycled papers sourced primarily from Aylesford Newsprint, Norske Skog and Stora Enso. However the Newsprinters site in Knowsley uses 100% recycled paper and the Eurocentral site, at Motherwell near Glasgow, prints 50% recycled. At peak times reels are delivered every 15 minutes with up to one week's worth of paper reels automatically unloaded and moved to store in a high bay. They are moved automatically for preparation, which involves automatic removal of their end caps

At peak times reels are delivered every 15 minutes with up to one week's worth of paper reels automatically unloaded and moved to store in this high bay.

and wrappers, and adding the splice tape before moving them to a low bay ready for delivery to a press's reelstand when needed.

The editorial departments at the various titles are responsible for page pairing and sending RIP'ed files ready for output at Newsprinters's various sites. Newsprinters has outsourced plate imaging to Agfa Graphics, so instead of investing in platesetters and consumables themselves, Newsprinters purchases imaged Lithostar N91-V plates from Agfa, an industry first. The company pays Agfa to produce around 38,500 imaged N-92-V plates per week in Broxbourne where Agfa is responsible for all plate and workflow related facilities management. It has installed four Polaris XCV-3 violet imaging platesetters there and provides all consumables, as well as the Arkitex workflow technology. Agfa and Manroland work together so that Agfa Arkitex and Manroland's Printnet production workflow and monitoring system together manage all aspects of production.

Given the number of plates involved and Newsprinters' commitment to minimising its carbon footprinting, processless plates would seem a logical step. Processless or chemistry-free plates do away with the chemicals, equipment and time required for plate processing. Sadly the current generation of N-92VCF plates cannot yet be imaged fast enough for the required 200 plates per hour output, nor are these plates robust enough for the number of page impressions required, even though some can image up to 200,000 copies. Newsprinters is happy to use processless or chemistry-free plates, if they can do the job and is relying on Agfa to make this transition when its processless plate technology can meet Newsprinters' production demands. The two companies have a 15 year contract which includes five-yearly reviews, so at some point a transition to processless is likely.

Does it Pay?

We asked Allan Wain if this massive investment in print has managed to halt the decline in the company's printed newspaper circulation. It isn't yet clear that it has, but it has yielded other benefits. For example printing in full colour gives scope for higher ad income and editors greater scope for newspaper design. Wain explains: "It gives the editorial and commercial people the opportunity to maintain circulation. These presses give us the opportunity to use colour on every page and to give readers more colour and better layouts". Substantial savings in staff costs and quality assurance systems being put in place across all three sites are expected to further protect and enhance News Corporation's print revenues.

Au Contraire

La Presse de La Manche has not invested one billion dollars to improve its competitiveness and carbon footprint. But this far smaller newspaper in Normandy is perhaps more typical of the wider industry. Absent the Murdoch fortune, it is perhaps taking even bolder steps.

La Presse de la Manche was first published in 1944. It is now part of the Ouest-France group, a private company with an undisclosed turnover, which includes four other regional newspapers, a multimedia company, various local magazines and a leading publisher of freesheets as well as a bookshop, ad agency and local television and radio interests. The Ouest-France title mostly serves Brittany and has a daily circulation of 762,400, higher than any French national. Unlike many other dailies, the Ouest-France readership, like that of La Presse de la Manche, has held steady over the last few years.

La Presse de la Manche serves a population of some 200,000 people in Normandy and has a daily circulation of 36,000. It is a tabloid newspaper published in a single edition with an average pagination of 32 requiring approximately 70 broadsheet plates per night. The newspaper employs 127 people and La Presse de la Manche is the first newspaper publisher in France to go processless.



Hervé Pannier, technical director, La Presse de la Manche.

20

According to Hervé Pannier, technical director, La Presse de la Manche chose Agfa technology "because it offered the possibility to install the same chemistry-free and processed plate lines". The system was installed within two hours and up and running the same evening. The newspaper ran parallel lines initially with two manual platelines using Advantage XS platesetters. The newspaper has now switched over entirely to

chemistry-free platesetting. Apart from the green benefits, the primary driver was cost savings, as Pannier explains: "For ecological reasons and to lose a processing stage and for reduced waste. With the old processing system we cleaned it weekly and so had extra cost and less simplicity." Agfa also supplies the newspaper with technology for colour management, plus Sublima screening and Arkitex output management.

La Presse de la Manche has nine aged Solna presses, printing two and three colours and one monochrome. The eight webs produce 32 pages. The newspaper plans to change to three new towers within the next six months and is considering presses from Goss, Solna, Tensor

or DGM Manugraph. Price, energy, ink and consumables usage will be the deciding factors, as La Presse de la Manche continues to improve its carbon footprint.

Recycling is obviously a key part of the newspaper's philosophy. Pannier says: "We try to say to people in manufacturing to be green for lights and office waste, which gets recycled. But it's harder for other things, such as electricity, because the newspaper is open all the time with 361 editions a year". They do recover all waste ink, solvents and cleaners which are all sent off for recycling, and they shout to their readers about their investments in green production.

Rather than selling waste paper to paper recycling businesses, this newspaper passes it for free to Emmaüs. Emmaüs is a worldwide secular social organisation present on four continents and in 41 countries. Emmaüs is dedicated to countering social exclusion, providing services to the homeless. Emmaüs sells on La Presse de la Manche's waste to raise revenue for its organisation.

The newspaper is looking into ways of improving its internal energy usage, however, this will not be straightforward. The newspaper is located in the centre of Cherbourg and therefore subject to planning restrictions on solar and wind power installations. It is also subject to neighbour hostility, because of the damage such installations might do to Cherbourg's very pretty skyline. France has committed to renewable



There's quite a contrast between these ancient Solna printing presses and the mess of reels and mechanics, and the clinical efficiency money has facilitated in Broxbourne!

energy with an approach based on feed-in tariffs and a tendering procedure for large energy intensive projects. It should be possible for the newspaper to buy green energy from suppliers such as EDF, however it would have to be at a premium.

That renewable energy's price premium is justified, ought to be part of our thinking as an industry, however, it's not likely to be for some time. So La Presse de la Manche is trying to develop green awareness internally and within the larger Ouest-France group. The decision to go green was originally made because Pannier believes it is "interesting for the readers plus we want to be in the avant garde for green".

Where Are We Now?

It is pretty much impossible to come up with metrics for measuring a newspaper's carbon footprint at the moment. Apart from the fact that no two newspapers are the same, there are still too many subjective variables involved, many of which, such as socio-political value, are intangible.

Both La Presse de la Manche and Newsprinters have started to quantify what can and should be measured. Taking it further depends on how much money the newspapers can save, and how willing they, their shareholders and their customers are to support more environmentally-friendly production models.

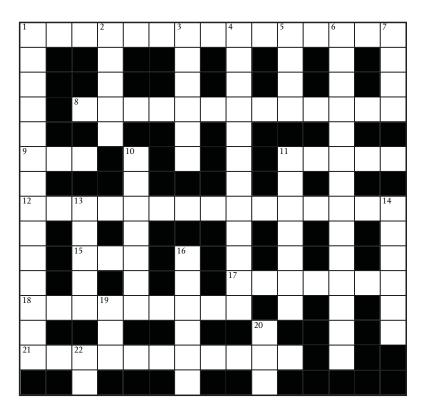
The Newsprinters project was designed to be as efficient and as environmentally benign as possible, because News International estimates that 1% waste in its newspaper production is the equivalent of \$1.8 million per annum. It doesn't really matter that money is the driving force for Newsprinters's energy efficiency. What matters is that these newspaper printing plants are striving to reduce their carbon footprints.

- Laurel Brunner



Graphic Arts Crossword Puzzle Number 16

Our crossword this month deals loosely, but not entirely, with computer to plate imaging. As usual, there's crib on the IGAEF website (www.igaef. org). The answers for the previous puzzle are on the next page.



Across

- 1. The foundation of any metal printing plate. (2, 9, 4)
- 8. The kind of plate that is almost processless. (9, 4)
- 9. A liquid with pigments, dyes or other colorants. (3)
- 11. Fussed about it? The toner's stuck. (5)
- 12. An unaffirmative response, removing what's unrequired to visualise. (8,7)
- 15. Everything? (3)
- 17. These agents stabilise liquids and are used in some plate coatings. (7)
- 18. An increase gains and decrease loses. (4, 5)
- 21. You need a single plate for each one of these. (11)

Down

- 1. They involve removal, yet they are candidates for processless plates or direct to cylinder imaging. (8, 6)
- 2. It's used to burn an image in a plate's surface. (5)
- 3. Violet, thermal in site stats not uncertain? (6)
- 4. Is it what every plate manufacturer wants his plates to give to customers? (7, 5)
- 5. Definitely the number of plates manufacturers want customers to use. (4)
- 6. Baking a plate can help it resist corrosion by these on press. (10, 4)
- 7. Convenience is all about this. (4)
- 10. A type of plate with a solid customer base. An upstart, verifiable? (5, 2)
- 11. Is this the balance between water and ink? (7)
- 13. Its shape on the plate's surface makes a difference to quality. (5)
- 14. Jobs that exploit ultrawide format platesetters are thus grouped. (6)
- 16. To remove. (6)
- 19. Entered radical addition in time for CTP. (3)
- 20. When it's all over. (3)
- 22. Pleased over the receipt of one. (2)

Answers for Graphic Arts Crossword Puzzle Number 15

Е		L		D			U	С	A			A	P	Т
L	О	A	D	I	N	G			R			L		A
A		В		N		R			Е			Т		С
S		О	N	С	О	A	Т	Е	D	S	Т	0	С	K
Т	A	R		О		С			С			N		
I		L	A	N		О		F	0	G	R	A		
С		С		Т	A	L	K		L	I	F	Т	Е	D
V		Н		R					0	N		Е		0
A		S	P	О	I	L	Т		U			S	U	N
L	I	Р		L			0		R	Е	S	Т		E
U		A		S	N	A	P		С			S		
E		С		T				D	A	Т	A	U	S	Е
S	Т	Е	Е	R	I	N	G		S			I		A
	A			I		I			Т			Т		S
R	G	В		P	I	Х	Е	L		S	С	Е	N	Е



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