Digital Dots

Spindrift

News Focus • Opinion
Reviews • Technology
Interviews • Ranting
Psychotherapy • Fun

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...Bamboozling The Graphic Arts Industry Since April 2003

Let your women keep silence in the churches: for it is not permitted unto them to speak.

– The Bible (Corinthians, 14:35L)

Dear Reader,

Isn't it amazing how far we have come? Not just women of course, but with freedom of speech. That has been in no small part down to the technologies that underpin our wonderful industry, and of course to the people with the vision to use them.

In these days of debt and delusion it's a great thing to be part of an industry that plays such an important role in keeping free speech flowing. And that's just a sliver of what printers and their customers are up to, in print and across media.

But recessions have a way of hastening change, speeding up the demise of one industry and the birth of another. In recent years the print industry has been through enormous change, from a largely crafts-based business to an automated manufacturing process. Print companies have proven adept at embracing a broad range of print technologies so that it is becoming common for one factory to house offset, digital and wide format under the same roof.

And there is every sign that printers are learning to live with the new technologies, going beyond printing, to become media enablers, offering their customers a range of communication systems. And this is important, because while silence may be golden, it is our ability to communicate freely with each other that holds human society together.

As ever,

Laurel, Nessan, Paul and Todd

In This Issue

Champions of ISO 12647

Our friends at Alwan have been busy developing two out-of-the-box solutions to help printers achieve ISO 12647. PDF Standardiser has been co-developed with Enfocus for producing and checking PDF files, while Alwan has joined forces with X-Rite to produce the Print Standardiser to improve colour management on the press.

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Implementing a carbon strategy

Laurel Brunner has visited St Ives, one of the largest printers in the UK, to look at its strategy for reducing its carbon footprint. One of the hardest elements was to find a way to measure the carbon output and then to implement an ongoing program for managing that carbon output.

see page 15

PDF/X-3 – is it any good

This may be confusing, but after repeatedly recommending readers to use the PDF/X-3 standard for creating print-ready files, we now find that we're not so sure about the need for the X-3 standard. Paul Lindström has delved into the different flavours of PDF/X in the light of modern production workflows to look at which standard is likely to be the most useful for printers to concentrate on.

see page 18

Regular Columns

News Focus

The **Fespa** show takes place later this month in Holland, and in the run up to the show its organisers have commissioned a survey of wide format users in conjunction with InfoTrends. Data from 340 companies in 50 countries indicates that the worldwide market for printed graphics is worth more than €58 billion. Quality, rather than price is still more important, both to end customers and to printers. The survey also found that 50 per cent of respondents plan to invest in new wide format digital printing hardware in the next 12 months, with newer or better functionality the biggest driver for investment, and that 40% of expected hardware investments will be in UV-curable inkjet.

In a bid to beat the recession, **EFI** has announced a stimulus package to help its customers buy new wide format inkjet printers. The program provides for zero out-of-pocket costs for the first six months of ownership followed by 50% off of the normal lease payments for the next six months on new qualifying printer purchases, lowering the first full year cost of ownership. It's only offered in the States at the moment, although EFI has said that it will roll out similar schemes in other countries in the near future.

GMG has partnered with Vio to include its ColorServer technology in Vio's new online AdSend ad delivery and management service. Within AdSend, GMG ColorServer performs certain colour transformations of ads that are delivered through the system. It provides users with the ability to adjust Total Ink Coverage and to automatically bring down the ink weights in PDFs. It also has the capacity to convert colour space, allowing AdSend to ensure that the correct target colour space is applied and that the PDF is print-ready when the publisher receives it. The user is presented with the transformed PDF for approval, giving control of the finished document before submission to the publisher.

Xeikon and **Prism** have entered into a joint referral partnership program. This means that Xeikon will be able to offer Prism's management information solutions to key vertical markets, including labels and packaging. Bi-directional, real-time communication between Xeikon's X-800 digital front end and Prism's MIS software will make it easier for printers to manage job quoting and costing through production planning, inventory management, materials ordering, sales order processing and financial accounts.

Océ has announced a number of changes to its supervisory and executive boards. Jan Dix will step down from the board of executive directors having reached retirement age. His tasks and responsibilities will be split amongst the remaining directors. Frank de Wit has resigned from the board of supervisory directors having served the maximum permissible term of office. He is to be replaced by Rudi De Becker.

Meanwhile, in the UK Océ has signed an arrangement with ICS (Integrated Card Solutions) to market and sell the ICS range of card readers and network print management and photocopy control solutions. The two companies have previously collaborated to support integration into a number of existing Océ customer sites.

Canon is about to ship its new monochrome ImagePress printers. Despite most developments concentrating on colour devices, Canon's research indicates that just under a third of all production printing is black only, with 42% of this volume printed digitally. The new line-up consists of: the ImagePress 1110, which operates at up to 6,600iph; the 1125, with a rated speed of up to 7,500iph; and the 1135

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which runs at up to 8,100iph. All three models are capable of printing on uncoated stocks from 52gsm to 300gsm (up to 240gsm on coated stocks) at up to 1,200dpi, and claim duty cycles up to 3 million impressions per month. Applications range from catalogues, booklets, direct mail, presentations, newsletters, financial statements, forms, directories and cross media campaigns, to name a few. All three come with the Helix workflow.

Canon is also ready to launch its Helix production workflow, shown in beta form at last year's Drupa, and developed by software development specialists NT-Ware. It is designed to streamline the on-demand production printing process, add value to personalised short-run print, integrate print ordering and production, and effectively manage busy print rooms. It builds on, and integrates with, Canon's existing uniFLOW Output Manager, enabling a seamless integration with existing users of an office printer fleet.

EskoArtwork has just launched ArtiosCAD 7.4, the latest version of its structural design software for packaging and POP displays. This focuses on much easier administration of packaging projects, along with new design features for curved creases and 'mating' folding parts and multi-component designs to increase productivity throughout the entire packaging supply chain. Best of all, it's a free upgrade for customers with a full software maintenance contract.

EskoArtwork has also introduced a new nesting system for its Kongsberg large format cutting tables. SignUp Auto is a fully-automatic nesting solution which allows customers to more efficiently utilize their raw substrates, eliminate costly designer time, and provides the mechanism as a dedicated workflow tool to accept files from a digital storefront or web2print system.

Screen has a new version of its B1 PlateRite 8800 platesetter, which has the facility to turn off the registration punch. This feature has been specifically developed for plate production for web presses, where punch holes are not required. It means the plate can be imaged 90-degree rotated, which would not be possible with punchholes on the side of the plate. It also allows an extra 3mm at the front grip edge, giving a larger imaging area.

Mutoh has launched a new dye sublimation printer, the Viper Extreme, which can be used with both transfer sublimation paper and direct to polyester fabrics. The printer uses high speed water-based disperse dye inks, making it suitable for environmentally-friendly soft signage. It is available in 1651mm and 2240mm widths and runs at up to 77sqm/hr or 37sqm/hr for print suitable for close up viewing distances. The printer uses Mutoh's Intelligent Interweaving technology for better print quality and has a resolution from 360dpi to 1440dpi.

Mutoh has also upgraded its SC-Pro series of wide format inkjet cutting plotters. New features include a cut through function which allows cutting through both the self-adhesive vinyl and the vinyl's protective backing paper. This will enable users to 'finish' individual contour-cut sticker designs. There's also a new semi-automatic poster trim feature.

EFI has launched a new Rastek T660 UV flatbed printer. This is an entry-level machine which boasts white ink and the ability to produce crisp four-point text. It can print on a wide range of coated and uncoated flexible and rigid media, including glass and aluminum.

Barbieri Electronic has developed a new version of its Spectro LFP, a spectrophotometer which is aimed specifically at the large format inkjet market. The new Spectro LFP Basic is an entry-level model that has the same measuring quality as the existing RT version but with an aperture fixed at 6mm, making it suitable only for reflective measurements. However, it can be upgraded to the RT model with a switchable measuring aperture.

Canon has launched a new range of ImagePrograf wide format inkjet printers for the CAD and GIS markets. These include the 24ins iPF650 and 655 and the 36ins iPF750 and 755. These models boast improved operator panels and the ability to store media settings, with the 655 and 755 printers also able to detect media mismatches. Canon claims that investment in the A1 and A0 technical segments has allowed it to increase market share from 16.1 per cent to 18.6 per cent from 2007 to 2008.

Atlantic Zeiser has launched a full colour Gamma 70 module for the label and print market. This is a high-

speed, single-pass UV solution using Xaar 1001 greyscale printheads. It delivers 360dpi images on a wide variety of porous and non-porous materials including plastic cards and films, metallic foils, cardboard and paper. With a print width of 70.5mm (27.75ins), the Gamma 70 can be integrated in-line with sheet-fed or web systems.

Squid Ink, a division of Engage Technolgies, has introduced a new PZ Pilot Pro inkjet printer for producing high quality barcodes and other product information direct to a carton. This uses a Xaar 380 printhead, with oil-based inks, developed by Squid Ink for the 380 head. Chad Carney, marketing director for Engage Technologies, says that speed and reliability were the main reasons for using the Xaar head: "The 380 printhead delivers the performance that the PZ Pilot Pro printer needs, with online speeds of up to 167 feet per minute at 180dpi, ideal for most secondary packaging lines."

IMI Europe, which runs a number of courses on inkjet technology throughout the year, is holding a Technology Showcase Conference in Switzerland for new products. IMI events usually attract companies developing components such as printheads and inks, as well as system integrators and larger customers and are a useful networking opportunity for anyone involved in developing inkjet printing systems. The event takes place in Zurich, June 2-3, with more details at **www.imieurope.com**

News Analysis

Presstek has won another round in its ongoing battle with Israeli company VIM Technologies. Much to Presstek's annoyance, VIM has been selling its own range of DI plates, which are suitable for use with Presstek's DI systems, but which are considerably cheaper than Presstek's own plates.

The new ruling affects sales in Germany, where the regional court of Dusseldorf found that VIM's printing plates Di-R28, Di-R36, Dp-R28 and Dp-R36 infringe upon Presstek's German part of the European Patent 0 580 393 B1, and rejected the invalidity arguments raised by VIM in a separate nullity suit pending at the Federal Patents Court in Munich.

Jeff Jacobson, CEO of Presstek

As a result, VIM Technologies, its German distributor Reinsch Handel and the owner of the distributor, Andreas Reinsch, have been ordered to cease all sales of these plates. The distributor also been ordered to hand over to Presstek details of the companies that it's sold the VIM plates to, as well as prices and profits, so that Presstek can calculate damages.

VIM has pointed out that, despite this ruling, it can continue to sell its plates in Germany until Presstek deposits a security of €1m, and that its motion to have Presstek's patent declared invalid is still due to be heard in December. VIM has also said that it will appeal the decision in Dusseldorf.

As well as this action, Presstek has also filed a complaint against VIM and its manufacturing partner, Hanita Coatings RCA, with the International Trade Commission in Europe. Presstek is seeking an order from the ITC forbidding the importation and sale of the VIM printing plates in the United States. The U.S. Customs Service would enforce such an order at all U.S. borders.

In addition, Presstek has sued several US-based VIM distributors, including Prograf Digital Service and its principal, Joseph Musgrave. In March this year, as part of this settlement the United States District Court for the District of New Hampshire issued an injunction against Prograf and Musgrave, prohibiting them from the sale of VIM printing plates.

Avigdor Bieber, founder and CEO of VIM, has described Presstek's claims as "baseless", adding: "It is regrettable that Presstek continues to bring this dispute to the public – obviously with the intention of harassing and intimidating VIM's distributors and customers, rather than trying to compete with us fairly in the marketplace."

So, what does this mean for printers? Well, Presstek's DI technology clearly works very well, but Presstek has consistently shot itself in the foot by charging fairly high prices for its plates. Heidelberg has in the past cited this as a major factor in abandoning its DI systems, which used Presstek heads and plates, in favour of developing the Anicolor press. It's also the reason why even relatively new DI presses have a comparatively low second hand value with many users wary of having to buy plates from a single source. For this reason, forcing VIM out of the market may backfire on Presstek even if the courts do finally uphold its patent.

Picture This

This picture actually captures three present trends in one. It shows a stand for free newspapers at Copenhagen central station. The magazines are Metro and Urban. Despite signals that readership and reading is going down (at least in the western world), there are other reports indicating that the total amount of reading is going up, also among the youngsters. One of the contributing factors might be the free newspapers, available in most big cities.

Another trend, which can be seen in action at the upper right corner of the Metro magazine, is the cross media usage. A label is stuck onto the magazine, and the reader can go to a certain website to check if he or she has won a prize. Depending how far this is taken, there is the possibility to setup a personalized section on that website, for continued communication with the user.

A third trend that can be detected in this picture is the interest of ecological solutions. The word "økologi" that can be seen in the top part of the magazine Urban means 'ecological' in Danish, and is supported in several ways by the newspapers. There are special bins all around the city of Copenhagen for recycling paper. This is helping to bring the amount of recycled paper in Danish newspapers close to 80%. In many countries that percentage is almost unheard of, but can be done with a long term strategy for sustainability put in place.

Heroes & Zeros

Heroes

The United Nations General Assembly has designated the 3rd of May World Press Freedom Day. It is celebrated worldwide to recognise the freedom of the press, defend the media independence and to pay tribute to journalists who have lost their lives in the line of duty.

Zeroes

Jeff Gomez who wrote Print is Dead and is bringing out another edition in June. His book is all about how people don't need print anymore. He calls them Generation Download and apart from eschewing print he says they have "no need to go to record stores. Software and websites bring the record stores to them. With their headphones always on, and an electronic device in each hand, there's no need to leave the house in order to escape their parents; they can still stare into their uneaten vegetables at the dinner table and still be in their own digital world." Is this really how the poor man sees the world? Perhaps he needs to try getting out a bit more. Maybe even to a gig or a library. Or maybe talking to people would help!

An Interview

We recently had a chance to catch up with Mike Barnard, deputy chairman of Macmillans. So how, we wondered has digital technology affected book publishing?

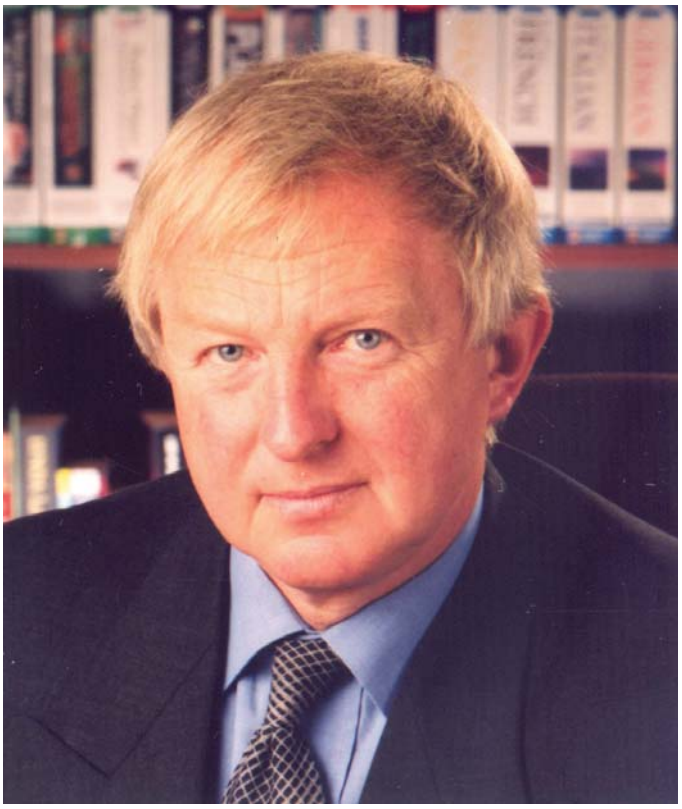
"Undoubtedly the economics of book publishing changed completely when it became possible to take digital files produced by authors and convert them easily to typesetting files. It is difficult to remember now how cumbersome the process used to be in the days before DTP or sophisticated word processing programs but as late as the 1980s keying and typesetting was costing book publishers around £10 a page for 'straight' text (at 1980 prices) and £20 or more per page for anything complicated. A 300-page book with straight text and no pictures was therefore costing £3,000 before it got anywhere near a printer. The printer then had to shoot film and make plates for a conventional litho press which anyway needed a long and messy set-up. The resulting prepress cost was prohibitive in the case of a short-run book unless it could justify a very high selling price."

This isn't just about technology as Barnard explains: "Even after the technology enabled publishers to use authors' files for typesetting there were union restrictions which delayed the introduction of the process for several years. When the way was cleared for a workflow which processed digital files rather than mountains of paper, the immediate beneficiary was the short-run book because the prepress cost shrank dramatically as a percentage of the total investment. When digital presses were introduced, the cycle was complete and as we all know it is now possible to produce even a single copy cost effectively."

And Barnard goes on to say that there's more to digital technology than just workflow: "A similar transition occurred with digital graphics. At about the time that DTP and WYSIWIG were creating a revolution in the world of text manipulation, pictures were still being sent to process houses for scanning, proofing and film-making and a single colour picture could easily cost £80 to process into film. Add the extended make-ready and high paper wastage on litho presses of those days and it is clear that short run books with colour pictures were impossible to print economically. Again, it's difficult to remember a day when the editor or author couldn't actually see a picture in place, on the page, in a program he can access on his own computer – but it wasn't that long ago."

Barnard says that digital workflows have revolutionised the economics of book publishing with shorter runs and more frequent reprints: "It should be added that computer tracking of workflow has enabled this to be controlled. It would be impossible to manage all these short runs and print on demand orders other than through automated systems between the publisher and printer."

He adds: "In the Macmillan group, Palgrave, the academic imprint, has been a major beneficiary. All academic monographs now revert to POD printing after the initial publication, facilitating constant supply of even low-selling titles.



Mike Barnard, deputy chairman of Macmillans publishers.

A few years ago Macmillan was accused of being 'the Ryanair of book publishing' by the trade press, following the introduction of Macmillan New Writing. Barnard says the venture, which was his idea was a completely new list made possible by a combination of computer-controlled workflow and cost-effective digital prepress.

He adds: "MNW was launched in 2006 as a way of discovering new novelists who would go on to have a long-term home with Pan Macmillan's mainstream imprints. It was decided that contracts would be standard and non-negotiable: authors would receive no advance but would earn a 20% royalty on net receipts; rights revenue would be split 50/50; Macmillan would acquire world rights and the option to publish the author's second novel on the same terms.

"The imprint continues to operate on these terms, and remains unique amongst major publishers' imprints in encouraging unsolicited submissions – but only as digital submissions: no paper mss. We have received, to date, more than 11,000 complete novels, of which we have published 36. In the past, mountains of paper would have been involved, but for MNW the workflow from author to finished books is entirely electronic. All MNW titles are now also published in mass market paperback, under the appropriate Pan Macmillan paperback imprint – Pan, Picador or Tor."

And the imprint has gone on to prove the critics wrong, with many MNW novels having been shortlisted for major prizes, including The Orange Prize, The Crime Writer's Association New Blood Dagger and The Texas Institute of Letters Debut Novel Award. And Barnard says that this has been excellent news for the authors: "So far four authors have gone on to sign multi-book deals with Macmillan, with an advance, on conventional terms. More will follow this year. Rights have sold in sixteen international territories."

The MNW model also makes good financial sense because the returns are far lower than conventional titles because the initial print runs are shorter. Barnard says: "All this would have been impossible if we had been unable to process all submissions electronically and convert the authors' files easily into finished books."

Macmillan has been steadily moving to a multichannel publishing model for sometime as Barnard explains: "Across the various Macmillan publishing lists, from magazines through to educational material, multi-channel publishing is now the norm. For ebooks and digital downloads, the original digital files can be converted and of course much material can be re-used in digital form on websites, but there is also a lot of new material produced specifically for new media and one of the lessons we are having to learn is that new media require new publishing and presentational techniques, so staff must acquire new skills and there are new technology companies joining the conventional printer in our mix of suppliers."

He continues: "What has secured the future of book publishing in the gradual transition from one media to others is that the technology has reduced the relative costs of producing lower hard copy runs as we move the

sales emphasis over to alternative media. When we looked forward a few years ago, it was always an anxiety that the higher unit costs of reduced print runs would drain away margin before we achieved the extra sales revenue from ebooks, downloads, audio product, website services and the other new outlets."

Barnard concludes: "It's still a tough transition to manage but a combination of the continuing resilience of the hard copy book and the cost-effectiveness of digital technology for both traditional and innovative media is so far keeping our heads above water."

Green Shoots

Environmental trivia loosely related to print, but readers might want to visit our website devoted to all things green in the print industry, **http://verdigrisproject.com**

Ricoh *uses sweetcorn to make component plastics used in some of its machines.*

Technotrans *has developed a reverse osmosis system for maintaining a stable pH so that the press can run alcohol-free.*

According to **CEPI (the Confederation of European Paper Industries)** *around 83% of the pulp and paper produced in Europe comes from mills with an Environmental Management System.*

Computerworld *has ranked US IT companies for their greenness. Top of the list is IBM, followed by Hewlett-Packard, Fujitsu America Inc., Microsoft and Qualcomm Inc.*

Cleaning product company **Ecover** *uses a reporting service from a UK print management company called Four Corners. The service provides measurable environmental benefits for print jobs, recording the entire lifecycle of a printed item from paper source and print process, to delivery and use.*

The World Bank *estimates that in 2007 the global carbon market grew to €47 billion which is over twice its value in 2006. In the European Union the value and number of allowances transacted under its Emission Trading Scheme (EU ETS) also doubled to reach €37 billion.*

Over 100 million hectares of forest worldwide have been certified to **Forest Stewardship Council (FSC)** *standards, spread across 81 countries. This is equivalent to 7% of the world's productive forests.*

Stove soot *may be the second largest contributor to climate change after carbon dioxide. It is created by small cooking stoves in developing countries, in villages which otherwise have very low carbon footprints.*

Boomerangs

Dear Laurel

This is a tricky one!

We suspect that you may be right, and that our tree may indeed have an interesting history, but we regret that there is almost nothing in our records about it.

The only reference we can find (Myers, R, 2001: The Stationers' Company; A History of the Later Years) mentions "an enormous plane tree in the centre, planted about 1800; it grows on the spot where, it is said, undesirable books were burnt in the 17th century".

There is however no documentary evidence to confirm this assertion.

With best wishes

Sue Hurley
Archivist,
Worshipful Company of Stationers and Newspaper Makers

We're grateful to eagle-eyed reader Michael Jahn for pointing out that readers of Andy Tribute's What They Think column got slightly more than Andy's analysis of flexo printing – it would seem that there is room for growth in the flexo market. Check out the pic on the right.

Champions of ISO 12647

For the last ten years or so, we've been on a rather twisty and slightly uphill path towards standardisation in print manufacturing. The process hasn't just been about ISO 12647, quality control and disciplined procedures. It's also been about making print media production businesses more efficient and so print itself more competitive.

The folks at Alwan have been part of colour management since the early years of the ICC. Over the years the company has moved away from providing colour management implementation and consulting services. This work has given Alwan enviable experience in process and technology implementation, starting with monitors and ending with calibration of all devices in digital colour workflows.

Alwan is now best known as a colour management software developer with tools such as CMYK Optimiser, Alwan's PDF and print standardisation software, and the LinkProfile range for building device link profiles. Since shifting from service to software development, Alwan has established the international KEE Consultants Network to help printers and publishers who want to implement standardisation tools. The company now has over 450 printing and publishing customers worldwide across all sectors, from newspapers to commercial print, and is expanding software sales in all areas. Alwan recently introduced two new products to its range, PDF Standardiser and Print Standardiser.

PDF Standardiser

Alwan's PDF Standardiser has been co-developed with Enfocus, the established doyen of preproduction data management. PDF Standardiser is a quality control tool that colour manages PDFs during preflight checking and correction, using dynamic colour management and quality assurance technologies. It provides quality control for workflows, much as Alwan's CMYK Optimiser product has been doing on press for the last few years.

PDF Standardiser includes the Enfocus FullSwitch engine and Pitstop Server technologies to manage preflight checking and workflow interactions. It uses CMYK Optimiser for TAC (Total Area Coverage) optimisation, GCR (Grey Component Replacement) standardisation, dynamic transparency flattening and colour conversion using dynamic Device Link profiles.

PDF Standardiser is designed for people producing lots of PDFs, for example, when delivering content to multiple printers and publishers. The software is also designed for people receiving lots of PDFs from multiple sources and wanting to standardise their internal workflows and output.

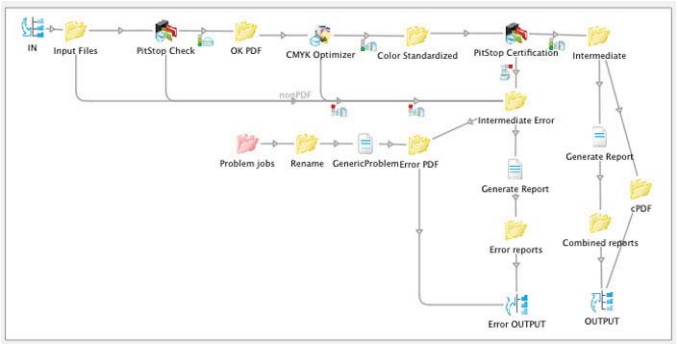
PDF Standardiser is very easy to use thanks to its wizard-driven interface but we felt that some of the questions could be phrased better.

PDF Standardiser is a shrink-wrapped tool for ISO 12647 and 15930 (PDF/X-1 and PDF/X-1a) compliance, including Ghent Workgroup PDF/X Plus files to ensure colour accuracy. It brings quality assurance processes to print workflows, by simplifying production for content creators and service providers. Besides compliance to the 12647 standard, PDF Standardiser provides automated and dynamic colour management, transparency flattening and PDF normalising. At the very least, all this should give printers a handy tool towards greater profitability. Hopefully it will also help move the industry away from

its craft mentality towards automated process control in production.

Where Wizards?

PDF Standardiser uses a dynamic wizard interface to make it very simple for users to configure the software. Using the answers to a series of basic questions posed by one of two wizards (What is the origin of your PDF files? and so on) the software works out the workflow in Fullswitch, the colour setting with CMYK Optimiser and the preflight profiles with Pitstop so that users output the PDF as well as possible. The second wizard handles file retrieval from hot folders, FTP servers or email messages, and subsequent routing.



PDF Standardiser makes use of Enfocus's FullSwitch workflow.

PDF Standardiser costs €8000, and is available from both the Alwan or Enfocus channels, with special prices for existing and service customers. It is an out-of-the-box tool rather than something that needs a consultant to implement, as is the case with CMYK Optimiser. Unlike CMYK Optimiser, it is not possible to control the PDF Standardiser software except through the wizards. A free version is available from the Alwan website for a thirty day trial at **www.alwancolor.com**

PDF Standardiser was developed for designers, agencies, publishers, prepress houses and printers. In order to keep this broad constituency happy it is wise to make technology as idiot-proof as possible. But there are some idiots who have hidden depths and others who are easily confused. We would like to see more clarity in questions such as "What is the origin of this PDF?". A less ambiguous question might be "Where did the PDF come from?".

And also, given the broad church for which PDF Standardiser is intended, there should be a bit more flexibility in how people work with the software. There are plenty of people who will never want to do without it, but there are also plenty who will prefer not to depend entirely on the wizards. Because everything is locked down according to the user's responses to the questions, PDF Standardiser binds them to a fixed process and settings. There will always be situations where colour settings or workflow processes might need a little adjusting, so it would be nice to see a version of this software with that option, perhaps as a professional version.

Print Standardiser

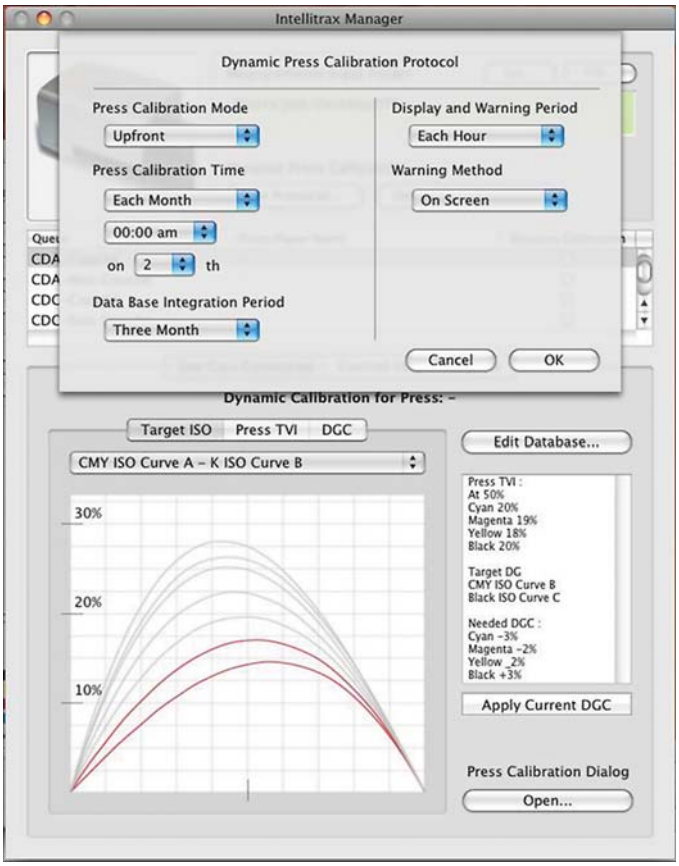
Alwan has partnered with X-Rite to develop the Print Standardiser, which is an automated press quality control and ISO 12647 standardisation product for analogue and digital presses. Based on technologies from both companies, Print Standardiser includes a custom version of Alwan's CMYK Optimiser, Pantone's new GEO colour libraries and Intellitrax. This later is X-Rite's automated colour management scanning technology for colour control on press and measures CMYK and Pantone colour values. The results captured with Intellitrax are directly available to Print Standardiser software.

The Intellitrax technology was selected for Print Standardiser because of its precision. Measuring tools for colour management applications need to be within 10 percent of the tolerances being measured, so for print a Delta E of 5 needs a Delta E of 0.5 tolerance in the measuring tool in order to be truly accurate. The X-Rite Eye One has a Delta E tolerance of 1 while the X-Rite Intellitrax operates within 0.5 Delta Es. Alwan has tested the tools commonly available on the market and has found that only the Intellitrax technology is repeatable and working to a 2% rather than a 4% tolerance.

Print Standardiser has a wizard-based interface so users can set printing standards and output queue settings, regardless of skills. With this software users can match any ISO printing condition including Fogra 39, Gracol and SWOP. The idea is to reduce print preparation time and cut waste paper and ink consumption to improve overall profitability.

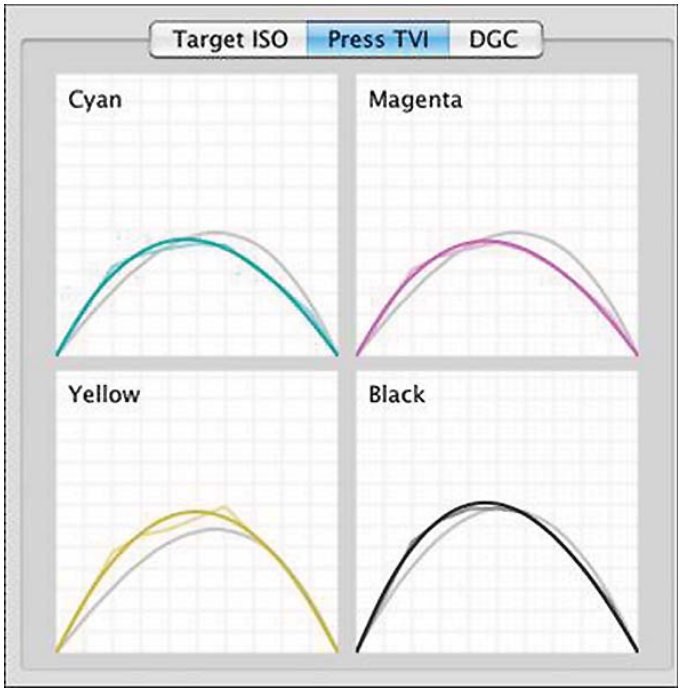
Alwan guarantees to its customers that they will be able to achieve ISO curves using this software which

is now shipping. But matching PDF colours to output device curves for specific press and paper combinations, choosing data sources, press and paper combinations, are just the start. Print Standardiser also lets you set the reference printing conditions for each press, using ISO curves or ICC output profiles and auto syncs between ICC output profiles and the target TVIs (Tone Value Increase otherwise known as dotgain).



Print Standardiser is based around X-Rite's Intellitrax, specifically designed to be robust enough to work in the environment of a press room.

There are also comprehensive dot gain curve models that can be automatically corrected, applied and exported. Print Standardiser also supports dynamic press calibration with 'nearly perfect' TVI matching. This can be managed offline for each press and paper combination, with full calibration and performance reporting on a per press or job basis, daily, weekly or monthly. The data gathering tools for periodic quality assurance are based on automatic measurement and data collection coming from Intellitrax. They provide the basis for statistical analysis and for adjusting TVIs over time as needed. Also, under development and due for imminent completion is support for an ISO compliance report for each job. This will confirm that the job is within tolerances for ISO 12647-2, -3, -7.



Print Standardiser also lets you set the reference printing conditions for each press, using ISO curves or ICC output profiles and auto syncs between ICC output profiles and the target TVIs (Tone Value Increase otherwise known as dotgain).

Although Alwan recommends using its own 12-patch control strip to build dot gain curves, the software supports any patch users want to use. Print Standardiser works by controlling dot gain curves and taking into account press behaviour to ensure ISO 12647 compliance on every job. Doing this in a standard, averaged way depends on presses behaving roughly similarly. This might not be true in printing plants with drastically different presses, for example, mixing very old machines and very new. Print Standardiser gives operators the means of controlling the standardised printing environment to take this into account.

This software is available either as a complete package or in a basic version. This includes just the software and two day's training for around €13,000. This of course will only be relevant for existing Intelllitrax customers of whom there are over eight hundred worldwide, mostly in the US and EMEA regions.

Intellitrax starts at around €15,000 and is available in three flavours. The D model measures only density, the S provides LAB Delta E differences and top of the range ICC version is a full spectrum and patch measuring device for ICC profiling. At the behest of a press manufacturer's contact to Alwan founder Eli Khoury, X-Rite is also working on a new measurement tool for digital printers. Code named Capricorn this device is specifically designed to measure bespoke inks and toners as used on digital presses, rather than the standard ISO inks used on conventional presses.

Alwan estimates that printers can gain approximately ten minutes per job in make-ready and save around 200 sheets (plus ink) using this technology. An investment of €40,000 can be realised in around six months according to Alwan. This is a fast ROI and the savings continue evermore. Alwan is also working on a version of Print Standardiser for the packaging industry that is expected to be ready in early 2010.

Standards and process control are about the industry growing up. With these two introductions, Alwan is providing tools for both prepress operators and press managers, making the company the only organisation providing standards compliance and process automation tools throughout the print media supply chain. A great step forward.

- Laurel Brunner

Implementing a Carbon Strategy

With money getting tighter, now is a good time to look at ways to cut costs. Fortunately for the planet, going green is a great way to do this, but sometimes it's easier said than done. One of the largest printers in the UK is St. Ives, with a group turnover of €200 million and approximately 4,500 employees across its 22 sites, all of which are ISO 14001 compliant. (This is the standard that specifies the requirements for an environmental management system.)

The company has recently undergone a carbon management and reduction exercise that could provide other printers, large and small and in all geographies, with a roadmap towards carbon footprint reduction for their businesses and for their clients.

It all begins with measuring carbon footprints, but deciding how to do this and whose carbon calculator to use is complicated. St. Ives chose to use a British Standards Institute's specification as a starting point, and have since developed their own carbon calculator that largely follows the PAS 2050 standard.

PAS 2050 is a Publically Available Specification available from the BSI website (www.bsi-global.com) for free to anyone who wants to use it. PAS 2050 describes a method for measuring the carbon footprint of goods and services across their lifecycle, and 'to deliver improved understanding of the GHG (Greenhouse Gas) emissions arising from their supply chains, and to provide a common basis for the comparison and communication of results'.

There are many companies keen to promote their own carbon calculators, however for the most part these calculators reflect the vested interests or bias of their developers. The PAS 2050 methodology is the only thing we have come across that is generic and relevant for all aspects of print media supply chains.

It is also supported by the UK's Carbon Trust and DEFRA (department for the Environment, Food & Rural Affairs) even though as a PAS it is not an officially recognised standard. If it gets put forward as an international standard it will be withdrawn as a free download, so now is the time for anyone interested in following this methodology to get with it.

Geoff Court, St Ives' safety and environmental officer.

Central to developing a programme of carbon footprint reduction is overall carbon management, rather than a focus on specific footprints. However the complexities of this for large organisations can be pretty daunting. The British government set up the Carbon Trust to provide a partner to industry to help the country achieve its targets as outlined in the European Emissions Trading Directive and which helps individual European countries achieve their commitments as outlined in the Kyoto Protocol.

An investment of £25,000 has yielded St. Ives savings of £157,000 in its first year, a saving which should continue to grow over coming years. So how did they do it?

Working with the Carbon Trust

St. Ives has worked with the Carbon Trust to come up with a plan to help reduce the group's environmental

impact. The Carbon Trust Carbon Management plan for St. Ives cost around £50,000 altogether, provided 50/50 by the two organisations. The £50,000 was mostly spent on consultants from ICF International, referred by the Carbon Trust to help St. Ives reduce energy and CO2 emissions in 2008 by 3% over the previous year.

The St ives marketing suite.

The consultants measured energy, raw materials and vehicle mileage, and saved St. Ives some 1821 tonnes of CO2. The programme followed the WRI/WBCSD (World Resources Institute and the World Business Council on Sustainable Development) GHG (Greenhouse Gas) Protocol, which is a standardised protocol for voluntary corporate greenhouse gas inventories.

There are three parts to this protocol. Scope 1 refers to a company's direct emissions, Scope 2 refers to energy purchased offsite and Scope 3 is anything else, from individual employee travel, through to transport and recycling. Working with ICF International, St Ives has implemented all of Scope 1, some of Scope 2 and a bit of Scope 3. The net result is that gas and energy usage are down by 4,834,141 kilowatt hours across all sites and St. Ives has saved £157,000 in energy costs based on July 2008 UK energy prices. The calculation today would show far high savings given the fall in oil prices from a high of $147 to $41 per barrel since last summer.

The tool developed by ICF for St Ives calculates emissions on a lifecycle basis, so for each printed product it takes into account a wide range of criteria. Top of the list are emissions arising from the transportation of a printed product from the production site to the client. This calculation is based on the transported weight and the distance travelled, using average assumptions for the transport vehicle's overall carrying capacity compared to the actual load, empty returns, and truck diesel consumption. St Ives does not use rail for any print deliveries.

Obviously, all non-transport related energy consumption emissions make up the next big number, and these are based on actual gas, fuel oil, and electricity consumption at each St Ives production site for the previous fiscal year. The St Ives calculation assumes that each square metre of printed paper coming out of a given site has a correlating figure. For each site ICF calculated the average input of gas and electricity per square metre of paper printed. This was equal to the ratio of annual energy consumption for that site's annual square metre usage of paper.

This assumes that all print products have the same energy consumption, which may not be true. In order to clarify this ICF could improve their data accuracy for a specific print product by monitoring the time required for a given print run, or measuring the energy consumption for individual presses.

Embodied Emissions

The calculation includes what ICF and St Ives describe as 'embodied emissions in the paper used, resulting from manufacturing processes and transport'. This means emissions associated with the manufacturing and transport of the paper, up to the point of its entry into a print factory. These calculations are not product specific, but could be made so in cooperation with a paper supplier.

The same principle applies to what the ICF calls 'embodied emissions in materials used', which includes how much aluminium is used for a given print product based on the number of plates required and their dimensions, plus the plastic, paper, cardboard and wood packaging. It does not include a calculation for inks or coatings.

The primary source for working out these various emissions factors is the GHG protocol. However, it is increasingly clear that the problem with carbon footprinting is that it always seems to include some

intangible or subjective value. Unavoidable as this may be it has the effect of reducing the relevance of these calculations for other applications. Clearly we need some broadly accepted basis for calculating the emissions factors for different presses, papers, inks and plates if we are truly to get to the heart of this.

That criticism aside, the St Ives calculator is a huge step forward because it can be used to provide print buyers with print facts that they can use in their media purchasing plans. And what about St Ives' customers? Has the carbon calculator been well received? Geoff Court, St Ives' safety and environmental officer, says: "Yes it has – we have had interest from our customers who've asked us to use it. We can tell them the carbon footprint of individual products." Progress indeed.

Meeting Objectives

Customer confidence is obviously a key driver for a project of this kind, and it gives St Ives some competitive edge. However, once the company is happy with how the tool is working, it is considering sharing its work with the rest of the industry. Court says: "There is still some concern with credibility of the tool so we're not making it public yet, because we want to be sure we've done it right."

Having achieved its primary objective, which was to establish a functional carbon management programme, St. Ives is now looking for a 12% year-on-year energy consumption reduction. This ought to be readily achievable as the company's 22 sites are now consistent in how they measure and manage energy efficiency. Each site operates as an autonomous entity within the group, responsible for its own profit and loss and for going beyond the corporate emissions guidelines, should it so choose.

St Ives is now at the end of its programme with the Carbon Trust. It is working independently to build on the work it has done with ICF. As Geoff Court explains: "St Ives is going forward alone to develop our own carbon footprinting tool which will be PAS 2050 compliant."

The St Ives work with the Carbon Trust marks an important step forward for the printing industry. It obviously helps provide media buyers with information they can use as part of their media planning and purchase. It's also a great example of what can be achieved when companies start thinking about their carbon footprint and environmental management in general.

These 3D printed items, constructed from cardboard for Marks & Spencer's Plan A campaign, are a good example of St Ives' environmentally-friendly approach to problem solving.

– Laurel Brunner

PDF/X-3 – is it any good?

We have repeatedly recommended to printers and publishers that they use the PDF/X-standard for safe and predictable document exchange. We have also tried our best to explain what the different flavours of PDF/X have to offer. For common CMYK-based print jobs the PDF/X-1a standard will suffice, while PDF/X-3 might be a better choice if the designer wants to make a PDF that can be used in different publishing scenarios.

But when we reviewed Jan-Peter Homann's book 'Digital Color Management' (see Spindrift February 2009 issue), it came to our attention that using PDF/X-3 might not secure the printability of the files in the way one would have hoped, after all. In fact, Homann makes it very clear that he thinks using PDF/X-3 often is a really bad idea, and suggests using PDF/X-1a whenever possible. When reading Homann's argument we realised that it might be good to listen to some more experts on PDF/X to try and learn what the problems might be, and what their recommendations are.

What's the fuss about – a recap

First a little recap on why PDF/X came about in the first place, and why it is particularly useful when trying to define a 'foolproof' and predictable workflow for print production. When a designer is about to send documents to a printer, classically there are three options.

Firstly, they can send the original layout, whether it be saved as an InDesign or QuarkXPress document, or created in some other layout software. While the benefit of these native document formats is that there is a possibility to edit and adjust the documents, if necessary, this very advantage will turn to a disadvantage if there are changes made to the document that were unintentional. Often the problem with native files is that for some reason they lack some of the fonts or images that were supposed to be attached with the files.

The second choice is to create Postscript files when the proofing is done, and send this to the printer instead of native files. This was the favoured option before using PDF was considered safe. The problem is that uncompressed Postscript is voluminous, and often the publication is broken up to a page-by-page state, when exporting to EPS.

Jan-Peter Homann, in his book Digital Color Management, argues that the PDF/X-3 format has more disadvantages than advantages, and recommends using PDF/X-1a instead.

The third choice, of course, is to create PDFs, in order to use all the benefits of this format – such as images and fonts embedded and near lossless compression - if setup correctly. And at first it was thought that PDF would solve all the problems of sending electronic documents. But it didn't take long before both printers and publishers found that it was fully possible to create PDF that wasn't suitable for print at all.

Enter PDF/X. The X stands for exchangeable, and the objective for PDF/X is that it offers a means of securing printability of the PDFs. All the PDF/X formats, except PDF/X-2, are meant to be suitable for what is called a 'blind' exchange, meaning basically that nothing can go wrong in the process from designer to plate. Since all the images are converted to CMYK according to the ICC profile which, for safety, is embedded in the PDF itself, following the principle of 'early binding' (to use programming terminology), it's no wonder that PDF/X-1a is by far is the most used and most popular version in the PDF/X-series.

So why PDF/X-3, when PDF/X-1a work so well? Well, the idea is to be able to use the PDF for different print technologies, or paper types, where the printer can change the final output specifications in the last minute. While PDF/X-1a demands that all images shall be colour separated to CMYK beforehand, PDF/X-3 allow images (and vector graphics) to be in RGB or CIE Lab.

We must admit that until Jan-Peter Homann pointed out the possible risks with this, we too favoured PDF/X-3 over PDF/X-1a, being a more flexible format, allowing In-RIP colour conversions, or 'late binding'.

Olaf Drümmer, Callas, believes that PDF/X-3 works fine in controlled workflows, but suggests that those who favour PDF/X-3 should test PDF/X-4 in their workflow.

What's wrong with PDF/X-3?

So where can you go wrong, when using PDF/X-3? Well, the PDF/X-3 file should contain an output profile, for the assumed print technology and paper, and this may also actually be used for the final print. But it's fully possible to change this to a similar output profile that the printer thinks is a better choice for a particular paper. This should work fine for the images that are saved as RGB in the PDF, but if any images, or vector graphics, are defined in CMYK, there could be a nasty surprise, when converting from one device-specific CMYK, to another. The classic problem is that what was pure black, is changed to a CMYK mix of black. Or for that matter – where a specific CMYK-number has been used for a logo colour, this could be changed to something else.

Homann suggests, for safety, to always convert all colour data to the agreed upon printing condition, when creating the PDFs. And for common CMYK work this then means saving as PDF/X-1a. This doesn't mean that the original images, as used in the layout, should be in CMYK. They could very well be in RGB, to allow for greater flexibility, as when using PDF/X-3. Going back to the native documents, it's then possible to save different types of PDFs for different types of publishing scenarios.

In his book Homann urges the German printing organisation BVDM to change its recommendations, from favouring the use of PDF/X-3, to instead suggesting PDF/X-1a. And he seems to have got their attention. In the 2008 version of 'MedienStandard Druck' (German text only) the recommendation is to use PDF/X-1a for 'early binding', and PDF/X-4 for late colour conversion ('late binding' scenarios). Whereas, in the 2007 version both PDF/X-3 and 1a are suggested, but PDF/X-3 is mentioned first. If we go back to the 2006 version, which is available (for free) on the BVDM website (and is available in English under the title 'Media Standard Print 2006'), only PDF/X-3 is mentioned. So something has changed.

Martin Bailey, Global Graphics, is chairman of the ISO working group responsible for the continued improvement of the PDF/X ISO standard. He sees a growing interest in PDF/X-4, where users want a flexible workflow that supports the full capacity of the PDF format, including features like live transparency and layers.

One thing that is new is that PDF/X-4 is in the picture, and recommended by BVDM for those who want a flexible format for late binding type scenarios. Another thing PDF/X-4 supports is live transparency and live layers.

But now we move in to a pure PDF-based workflow, PDF version 1.4 (transparency) and 1.5 (optional content, aka layers) or higher. This is not supported by older Postscript-based RIPs, and actually not supported in full by all of the layout programs. While Adobe InDesign, of course, supports direct export to PDF 1.4 through 1.7, and so PDF/X-4, QuarkXPress 8 doesn't. That is, QuarkXPress supports transparency and layers, but not exactly in the way that can be exported to the PDF 1.4 format (or higher). This in turn means that at the moment it's not possible to export, or create, PDF/X-4 files directly from QuarkXPress 8.

We decided to ask some experts for their view of this situation, and reached Olaf Drümmer at Callas first. Callas is a member of the Ghent PDF Work Group (GWG), and Drümmer is active in the technical group for packaging print production. As chair of the European Color Initiative, Drümmer has contributed to a large degree in designing the test forms in the Altona Test Suite, published by ECI, where among other things PDF/X-3 compatibility of PDF files can be checked. So we asked Drümmer if PDF/X-3 was unnecessary or obsolete, and if PDF/X-1a was to be preferred?

He replied: "PDF/X-3 is still valid, and has been successfully implemented and used by many printers and publishers over the years. You can of course use PDF/X-1a, but you should be aware of the flattening of the composition that takes place, and if you don't know how to control this in a way that leads to the desired result, you may be in for some disappointments. Best case this flattening should be done in an advanced and modern RIP system, by an experienced operator.

"But today the PDF/X-4 is the natural candidate for the late binding approach, and in the Packaging Workgroup within GWG we are currently testing using PDF/X-4 in quite demanding and complex packaging workflows. I would say we are very close to being able to suggest best practices for PDF/X-4. Using live layers, for example, in different language versions, as well as for dye cutting information, can be very useful. Regarding the Altona Test Suite, we are working on a version that will test PDF/X-4 compliance, among other things. It will be a useful tool, but we need some more support from the graphics arts community to support this work – it's quite time consuming and expensive to produce real print samples on the different paper types. But hopefully we can launch the new version in the near future."

We also spoke with Martin Bailey, chief technology officer at Global Graphics. Global Graphics is one of the few alternatives to Adobe when it comes to RIP systems, and actually offers two systems – the Jaws RIP, and the Harlequin RIP. But Bailey also works inside the GWG, and is the chairman of the technical committee for PDF/X ISO standard. We asked Bailey the same question: is PDF/X-3 obsolete, and should printers use PDF/X-1a instead?

Gavin Drake, Quark, is aware that QuarkXPress at the moment doesn't support PDF/X-4, but points out that it does support PDF/X-1a and PDF/X-3 directly from within QuarkXPress 8.

Bailey told us: "The profile in a PDF/X-3 file identifies the output device and therefore tags all device colour spaces in the file. It also carries information regarding gamut & tone-scale compression and separation (GCR/UCR) for device-independent colour data. The risks associated with re-targeting a PDF/X-3 file therefore vary depending on what you've used device-dependent and device-independent colour spaces for.

"It's very common to use device-independent colour for images, and device-dependent spaces for vector objects. If

your vector objects are just black text and pure primaries and secondaries for highlighting or design reasons then you'll be safe with those. If they include corporate identity colours (such as for logos) or there's a need to match a vector colour with something in an image, then using a PDF/X-3 unchanged on a different print process or stock may not lead to an acceptable result."

This a section of the ECI Altona Test Suite, which makes it possible to test if a workflow supports PDF/X-3, among other things.

He continues: "An alternative is to colour-manage the PDF/X-3 file to the new print characterisation. That can work, but runs the risk of leaving you with 4-colour blacks or scum dots in what were originally primaries and secondaries, depending on how you do it.

"If your images are all marked for relative colorimetric or perceptual rendering intent then most of the time you should be OK if you re-purpose, unless the creator deliberately chose an unusual profile for some special reason. I've heard of cases where a near-neutral image was used in an advertisement and therefore a profile with a very short black was selected to ensure that the appearance of rosettes was fairly uniform over the image. If a longer black had been used then some areas would have been dominated by the black dots and others would have shown clear rosettes, which would not be as attractive a result. So, as usual, the answer is ... it depends ..."

We also wanted Bailey's view on how and if PDF/X-4 could be used. He replied: "I know a few people are starting to experiment with PDF/X-4. If you don't need to carry transparency (or layers) and don't need to do anything else that was new between PDF 1.4 and 1.6 then I'd recommend that you make PDF/X-3 files instead. That recommendation is also set out in the PDF/X-4 standard itself. We've been shipping PDF/X-4 support in Harlequin RIPs for a while now, so I don't hear anything like as much about it from the field as I might otherwise have done; I only usually hear about problems, not plaudits!"

We take that to mean that PDF/X-4 works well in a modern RIP system with full support for a pure PDF workflow. But why does Quark not support PDF 1.6 or higher in QuarkXPress 8? We asked Gavin Drake, marketing manager for Quark UK, about how and if Quark supports the PDF/X-format in QuarkXPress.

While designers need and use the possibility to set transparency for different objects in the layout, the visual end result might not be carried through correctly in all workflows, both because of the RIP used, and the way that the flattening of the design is performed, and at what stage, in the workflow. Illustration from the Adobe guide Getting Started with Transparency.

Drake told us: "As of today QuarkXPress 8 has PDF/X-1a and PDF/X-3 verification using the built-in PDF export without the need for Adobe Distiller. This is thanks to the Jaws PDF Engine from Global Graphics that Quark has licensed since QuarkXPress 6. While QuarkXPress 8 has excellent transparency and layer features as well as direct JDF export, we currently produce our PDFs via Postscript (although this is hidden from the users) and as such the transparency and layers are flattened as part of the PDF export process according to the settings the user selects.

"That said, enabling output providers to control things like transparency, layers and colour further downstream

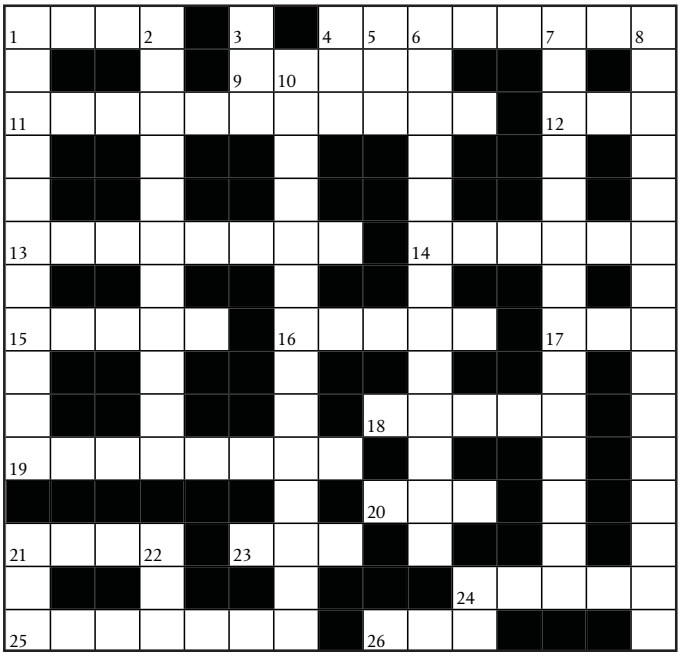
through native transparency and layer support within PDFs is a priority for us. For many of our customers, PDF/X-1a and PDF/X-3 exported directly from QuarkXPress 8 meets their needs but the market is moving fast towards workflows with native transparency and layers and this is something we plan to support in the near future."

We at Digital Dots conclude that PDF/X-1a seems to be the obvious choice for most of the common standard CMYK printing, for example, according to the ISO 12647 standard. But if this doesn't suffice, there is good hope for success when experimenting with the PDF/X-4 standard, for a more flexible and late binding type of workflow, including demanding packaging production.

- Paul Lindström

X-word Puzzle

Number 17*



Across

1. Colour looks like this when there's not enough saturation or contrast. (4)

4. Things that slide or otherwise move to reduce friction. (8)

9. Another word for paper, particularly heavy ones. (5)

11. Individual tonal value making up a halftone image in America. (5, 2, 4)

12. Non-carbon reading (3)

13. Special substrate that can be read electronically. (3, 5)

14. When you have to pay nothing? (3, 3)

15. They follow a jetted droplet. Are these stories?(5)

16. Stacked? It's a build-up of ink, paper or coating on the blanket? (5)

17. Enterprise Resource Planning (3)

18. A measure of character size or spacing. Get it? (5)

19. Is this what you get with heavy handed UCR (UK spelling)? (4, 4)

20. Not highlight or shadow, but tones in between. (3)

21. Serial or parallel a place of safety, on the left. (4)

23. Stick or support, a means of registering? (3)

24. Cut and what? (5)

25. Cutting, dicing sounding soft like ice continuing? (7)

26. Dots per Inch (3)

Down

1. The thin surface layer applied to paper to improve inking. (4, 7)

2. Another way of describing a computing landscape or architecture. (3, 8)

3. Management Buy-out (3)

4. Something to put a job in. (3)

5. Make a mistake (3)

6. A kind of reconfigurable computing where a logic chip can change its physical circuitry on the fly. (8, 5)

7. Mostly black inks used for printing characters for OCR devices to read. (14)

8. A company that does stuff and sends a bill for the work rendered. (7, 8)

10. The most common form of getting commercial ink on paper. (6, 8)

21. Point of Sale (3)

22. Total Area Coverage (3)

24. 3.14159265 (2)

* Answers at www.igaef.org