memory • *noun* **1** the faculty by which the mind stores and re-members information. **2** a person or thing remembered. **3** the length of time over which people's memory extends. **4** a computer's equipment or capacity for storing data or program instructions for retrieval.

– From the Compact Oxford English Dictionary

Dear Reader,

Following a European summer that can only be described as unspeakable, we are anticipating an Autumn that looks like it will be clogged with preparations for drupa.

Yes, already, it's started. We've received an unprecedented number of invitations to hold dates in the calendar for pre-drupa events. Vendors are even more anxious than usual to get their press briefings on the calendar. Why this is we don't really know, but it might be down to the fact that there are so many vendors clamouring for attention. And there are a surprising number of companies doing advanced, secret briefings.

It's a bit of a paradox that we have continued consolidation, with mergers such as the EskoArtwork deal, plus a host of new names to ponder. Most of these are developing digital workflow and related technologies, and creating tools to help imaginative printers and publishers optimise existing workflows and hardware, as well as develop new business models.

Web-to-print (see story page 8), process automation, colour and data management, performance reporting are all ways to help print media production become more efficient. The good news is that much of it will be on show at drupa; the bad news is that the next few months will be a swirl of distracting and annoying hype. In the interests of sanity, we recommend you plan for the former and ignore the latter!

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

Click and print

There's nothing new about extending workflows to make use of the Internet, for everything from job submission to order confirmation. But, as Nessan Cleary finds out, web-to-print solutions are a lot more ambitious, streamlining both the print buying and the printing processes, which makes short run on-demand digital printing much more economically attractive.

see page 8

Consuming desires

Most of us probably don't think too much about the fast moving consumer goods such as toothpaste and lightbulbs that we use in our everyday lives. Yet a great deal of effort goes into the design of the packaging for such items. Laurel Brunner talks with Deschutter Neroc, one of Europe's leading full service providers for packaging design and print.

see page 13

Secret Agents

The Global Graphics name goes largely unno-ticed though its expertise in page description languages means that its technology is used by everyone from Quark to HP. Nessan Cleary talks with the unsung heroes behind the Harlequin RIP about life as an OEM technology provider and their plans for edocuments.

see page 19

Regular Columns

News Focus

X-rite is set to acquire Pantone in a move which should make it an undisputed leader in terms of colour solutions. The deal is worth $180m, or €132m and should be completed within two months. It cements a close strategic relationship between the two companies and should lead to considerable savings in marketing and admin. The arrangement allows Pantone to benefit from X-Rite's greater market presence, while X-Rite gains a profitable business unit as Pantone earned $42m revenue last year.

The **Esko Graphics** and **Artwork Systems** merger has now gone through. The new company is called, rather clumsily, EskoArtwork. See Expandocs for details.

Gradual Software has released Switch 07, a major upgrade to the whole product line. It features substantial user experience improvements and extends automation capabilities, including those for many additional third-party vendor applications.

AVT, developers and manufacturers of automatic inspection systems for printing presses, is to acquire GMI for $33 million cash. Graphic Microsystems is a leader in the closed loop color control market and a leading manufacturer of pressroom automation equipment. It is also involved in colour management and reporting software, and remote digital ink fountain control systems which are sold direct and on an OEM basis. The acquisition is expected to close this month.

Xerox's total revenue for Q2 rose by six percent to $4.2 billion. Post-sale and financing revenue which account for over 70 percent of total revenues were up seven percent. Colour revenues increased by 12 percent with colour post sales up 16 percent and services up eight percent. The company has raised its earning expectations for the year on the basis of these figures.

Global Graphics has hosted the first meeting of the ECMA International Technical Committee (TC46) formed to standardise the XML Paper Specification, XPS. Microsoft introduced the XPS print and document format with Windows Vista and was at the meeting along with people from some mighty enterprises. These include Xerox, HP, Konica Minolta, Canon, Fujifilm, Panasonic, Toshiba, Brother Industries and Fujitsu, which between them just about cover every angle of the corporate documentation business. ECMA is an industry association founded in 1961 to further standardisation of Information and Communication Technology (ICT) and consumer electronics. Its goal with TC 46 is to help users with document archiving, process integration, print performance and fidelity, and interoperability across technologies.

Xerox's Digital Print Shop in a Box is a new set of tools to help commercial printers set up a digital printing business, specifically on the Web. It includes a CD and Web-based guides to take them through the first months of running a digital business. Topics covered include equipment implementation, sales staff training and ideas for sales and marketing.

Alwan Color Expertise is releasing version 3 of CMYK Optimizer, its technology for colour preflighting and optimisation of CMYK data for output on press. New features include a press calibration option, so that prepress operators calibrate presses according to TVI (Tonal Value Increase), NPDC (Neutral Print Density Curve), or according to ISO 12647-2/3 and GRACOL specifications. New image enhancement technology makes it possible to enhance individual images embedded in PDF files. This technology has intelligent algorithms to improve the

visual appearance of all images based on criteria such as dynamic contrast, sharpness and colour saturation.

Agfa Graphics has announced that ApogeeX 3.5, prepress production workflow software, now provides automatic generation of barcodes. These barcodes can hold all production information relating to a print project and Agfa is supporting the four different barcode standards by WST Systemtechnik GmbH, Müller Martini AG, Nela GmbH and Lehner GmbH press and post-press equipment providers.

Kodak has announced version 5.0 of its Insite Prepress Portal technology, with new features to enhance collaboration and productivity, with a new user interface and a new version of the Smart Review Proofing Client. Users can now customise the user interface according to corporate preferences, and pages can be reviewed using tools such as a Compare function which compares two proofs and presents a third page showing their differences.

Also, Kodak's Insite Creative Workflow System Version 3.0 has enhanced color capabilities based on Kodak's Matchprint Virtual technology, using a new spot color database to define LAB values for spot colours. N-color profiles are also supported for proofing extended colour gamuts and enhancing spot color fidelity.

Congrats too, to Kodak which has won a prize for its Digimaster EX Series and Nexpress M700 Color Press. The machines received the Editor's Choice Award from Better Buys for Business in its annual review of printers, based on their performance and value for money.

Screen has announced a new generation of VLF PlateRite Ultima thermal platesetters: the PlateRite Ultima 36000 SX and 24000 SX. Both are equipped with Screen's newest GLV-X technology which has 1024 imaging channels with two 60W laser beams per head. These machines can image 28 full size plates, or 44 B1 punched plates per hour with no reduction in quality.

Agfa Graphics has been most deservedly awarded an InterTech Technology Award from the Printing Industries of America/Graphic Arts Technical Foundation (PIA/GATF) for Energy Elite. This high speed, high quality aluminum thermal plate is designed for long press runs, providing up to 500,000 impressions without baking or up to a million with it.

Xaar has approved two Chinese ink manufacturers to supply ink for Xaar heads. Wit-Color Digital Science & Technology Co., based in Shanghai produces a range of Wit-Color solvent inks for use with Xaar 128 printheads. Wit-Color ink meets Xaar's standards for digital printing, with inks that produce consistent jetting performance when used with the Xaar 128 printhead. Wit-Color manufactures the Ultra range of digital printers which use Xaar 128 printheads, for domestic and global markets.

Shiny Color has a range of SC-X128 solvent inks approved for Xaar 128 printheads. Shiny manufactures solvent-based inks for its domestic market and for worldwide export. Shiny Color has developed its SC-X128 ink range to provide optimum performance with Xaar 128 printheads (both 40 and 80 picolitre models).

Markzware has announced that FlightCheck Professional v6.02 is now available. This version has an improved QuarkXPress reader, plus performance and user interface improvements. Colours are now reported as used in Illustrator CS3 files, even if they have been placed into an InDesign CS3 or QuarkXPress 7 page. There is also improved image reporting for Illustrator files that use multiple iterations of the same image, and improved Applescript support.

Esko has signed a distribution agreement with Kemtek in South Africa allowing Kemtek to sell and service the complete Esko product range in South Africa and the surrounding countries of Namibia, Botswana, Zimbabwe, Mozambique, Angola, Zambia, Malawi, Tanzania, Kenya and Mauritius.

GraphicBrain.com has launched four new search engines for the printing and publishing industries. GraphicBrain.com is essentially a branded version of Google and its website has search engines based on sector specific magazine articles, vendor websites, online discussion forums and blogs. GraphicBrain.com basically filters Google results and is the brainchild of the VIGC (Flemish Innovation Center for Graphic Communication). More than 110 different magazines, and over 3500 vendor websites are in the GraphicBrain.com-filter.

Say What?

This month's Say What award goes to the muppets at PR agency Nelson Bostock for telling us that its client Canon UK "today predicted another successful year for Canon and the Professional Print industry by announcing some of the technologies, solutions and applications that it will showcase at Digital Print World 2007."

It struck us that simply showing a bunch of printers at a relatively minor UK trade show for a couple of days hardly guarantees success for the whole year for Canon.

Nor does it seem reasonable that Canon's decision to spend a couple of days sampling the dubious pleasures of the Earls Court 2 exhibition hall could be taken as a 'prediction' of success for everyone working in the professional print industry.

Acrobites

(Something to get your teeth into)

API

Application Programming Interface is the bit within a piece of software technology that lets a computer operating system, data library or other application interact with it. It is the bridge between two separate programs, but on its own can't do much of anything since it needs an application behind it. The API is generally included as part of a Software Development Kit, so it also gets used by developers to create their own versions of someone else's software.

SDK

A Software Development Kit is the underlying code behind a program, or part of a program, which has been broken down into a collection of different tools, so that developers can pick and choose which bits of the kit they want to incorporate into their own programs. The idea is to encourage companies to add technology from a third party to their own products, rather than developing an alternative. A good example is Google's Desktop SDK, which lets users create plug-ins for Google Desktop, and to add Google's search engine into their own applications.

Expandocs

(In this section, we aim to cast some extra light on a particular recent news story.)

Esko + Artwork Systems = EskoArtwork

Esko and Artwork Systems have completed their merger to create an entity with a combined turnover of €180 million and headcount of 1000, without much of a whisper of anxiety over anti-competitiveness. Although the two companies lead packaging prepress development, Artwork is primarily a software developer with a strong Mac bias and Esko concerns itself with both software and hardware. Artwork owns Enfocus and has technology sharing deals with pretty much all of the high end workflow systems companies and more besides, and Esko has a tangle of deals for technology and distribution partnerships. For example, HP uses Esko front ends for its labelling press, and Xerox is a European distributor for some Esko products. These numerous arrangements can easily be knitted into an argument that says the merged companies are complementary.

The EskoArtwork brand is the latest iteration of a long and complex series of acquisitions going back to the beginnings of high end graphic repro with the Aesthedes and D.I.S.C brands, which Barco acquired forever ago. Barco Graphics rapidly evolved to lead technology developments in all areas of digital prepress, pioneering ideas and technologies such as file checking for production fitness, ink management and colour control with all of this in rock solid and secure workflows. As part of Esko, owned initially by Lego and more recently by Danish private equity fund Axcel, the company and its technologies have continued to thrive. Esko's 2006 turnover was €127 million and since then the company has been steadily growing. Axcel's pockets are nearly €900 million deep, so invest-

ment for continued growth shouldn't be a problem, assuming the private investors are willing.

Artwork Systems has been known to be on the market for some time now. The company was founded by disaffected Barco employees Guido Van der Schueren, Bart Denoo and Peter Denoo who struck out on their own to develop software for the Mac in 1992. In 2006 Artwork's turnover was €46.48 million and its year to date earnings are well over €32.5 million.

Over the years, Artwork and Esko have strenuously competed, however they have tended to pursue different business strategies. Artwork has considerable expertise in workflow technologies, including entry level systems, and Esko has a broad range of workflow and related production technologies for high productivity and volume data throughput in the packaging and flexo markets. Esko also develops hardware, such as the Kongsberg sample maker and the Cyrel digital imagers, but Artwork does not. The two have complementary distribution, with Artwork particularly strong in Latin America, and Esko in Asia.

What is perhaps most interesting about this merger is the money involved. Actually there is no perhaps about it, because there is a great deal of money involved, at least on the surface of it. The Artwork shareholders have sold their 76.69 percent holding to Axcel for €196 million, which is about 4.5 times Artwork's turnover. However immediately following the acquisition, Esko launched a mandatory public offer for the rest of Artwork Systems' shares and outstanding warrants (the right to buy shares at a fixed price). Having thus acquired at least 95 percent of the shares, Esko was then able to complete the buyout. As part of the transaction, Guido van der Schueren, through his holding company Parana has reinvested the proceeds from the sale of the Artwork shares to take 'a significant share next to Axcel and management members'. The Denoo brothers have resigned at Esko's request and been replaced by Jean-Claude Deschamps, chairman of Esko Group, Carsten Knudsen its current CEO and Kurt Demeuleneere representing Stylar BVDA, which we think is an investment house of some sort.

So it looks like the shares in Artwork were sold to Esko and then bought back by an Artwork shareholder. The merger therefore might just be a means of Axcel capitalising on its Esko investment. According to the Axcel website it divests companies in which it has invested "… when we have found an obvious better owner of the company, who we think is the right one to continue the company's development." Arguably Parana could fit that description, but the extent to which Parana is such a company of course depends on how much of a shareholding Parana has bought from Axcel.

Current Esko CEO Carsten Knudsen is now the EskoArtwork CEO and Guido Van der Schueren, Artwork's former chairman is now the chief commercial officer of the new entity. Together these two are also EskoArtwork's executive management board, and serve as executive directors on Esko's supervisory board. There are likely to be redundancies as the two organisations come together, however Esko is committed to continued growth so redundancy is unlikely to be widespread.

For customers this deal ought to be good news because it gives their technology provider access to substantial investment resources for further research and development and marketing, plus broader geographic and market reach. Esko has earned tremendous respect in the market, both for its dedication and commitment to customers, for its technologies and proactive marketing and PR, which will considerably benefit Artwork technologies and customers. Hopefully EskoArtwork will maintain its growth and continue to support loyal customers from both camps. We also hope they can maintain their impressive record in technology innovation, and continue to develop their various brands.

Boomerangs

(Your feedback fed back)

From Mattias Hartung at Heidelberg

Hi Paul,

I've seen your great article in Spindrift. Many thanks for that. I've just some small remarks.

On page 17 you write Prinect PressReady. That does not exist. Prinect Printready System would be correct.

On the same page you write that the Prinect Scheduler is ideally working with the MIS. That's not 100 percent correct. The Scheduler is part of the Prinect Integration System, i.e. of the production system. It is also not a standalone product. You'll need the Prinect Cockpit to run it.

That's just for your information. But if you would have a chance to change this in your online edition that would be great.

Matthias

OK, that's a silly mistake on my side. It's the old Adobe proofing software that pops up in my memory now and then.

Paul Lindström

Spindocs

(Where the spinner gets spun!)

We were intrigued to see that European PR agency Duomedia is offering training on PR tactics and practices. Not surprisingly most journalists have quite a lot to say about this subject, though not much of it can be mentioned in polite circles.

Participants to the Duomedia event can "learn how to gain more visibility and awareness in the market for your company, products and technologies by creating valuable content and communicating powerful messages to journalists, customers" and so on.

We're all in favour of people communicating powerful messages to journalists, because you wouldn't believe some of the dross that is sent to us on a daily basis. However, the best way to communicate a powerful message is to start with something that's worth saying.

The course also promises to cover "leveraging PR efforts with marketing program", and we think it's a mistake to confuse PR with marketing. As journalists, it is not our job to help vendors market their products. Good PR should be about catering for the needs of journalists, and journalists have very different needs to marketeers.

We feel that there are quite a number of topics that should be covered in the spirit of communicating effectively with journalists. But the most obvious is to answer questions, and not duck behind a 'no comment' when faced with awkward situations.

And since we know that all PR professionals are starting to think about drupa, we'd like to add, please don't organise press conferences unless you've got something to say. We won't even start on our feelings about NDAs (see Driftwood).

All too often a vendor's PR strategy is about how to keep journalists at a distance. So perhaps the most important advice we can give to people who work in PR, and their clients, is that not all journalists are the same, and you are unlikely to get good coverage from a one size fits all approach. Instead work with those journalists that are interested in covering your stories, because at the end of the day most journalists simply want to present their readers with good, detailed, accurate information, free of meaningless marketing hype.

Driftwood

(Useful stuff washin' up on our shores)

Last month in the hallowed halls of Xerox's research centre in Rochester, New York, we wandered, not so much lonely as a cloud, but as a host of golden analysts whom Xerox had hand picked in order to present its latest digital press technology, cunningly disguised as a preview of its plans for Graph Expo. We were whizzed around the Xerox facility, celeb-like in a snazzy black party bus fitted with blacked out windows, plush deep-pile carpeting, and black leather seats which curved sumptuous and slippery along the length of the bus's interior. These elongated comfy bends were interspersed with racks of glittering glassware, for ultimate lounging and sipping convenience. We were incredibly well fed and fussed over, which was all extremely flattering. But there was only one teensy problem: the cast iron non-disclosure agreements we had to sign binding us to eternal silence on the matter of the new Fuji Xerox developed digital colour press.

Signing an NDA for us means keeping a secret in return for an insider's view of the secret, to be disclosed at a later stage. When we sign these agreements we try to balance our reader's desire to know about the latest technology, with the vendors commercial needs to release such information at a time that suits them and not their competitors. There was a time when an NDA simply committed us to delaying publication for a short while. But increasingly NDAs have been used to fetter journalists' natural inquisitiveness. These days NDAs have become open ended affairs and a signature from one person binds all journalists in the same organisation from ever writing anything about that company, regardless of whether or not the information finds its way into the public domain.

Of course sometimes NDAs can be extremely useful in allowing vendors to give journalists detailed briefings ahead of publication and we fully support this. But as journalists we work for our readers and our end goal is always to publish the information that we are given. So we hope that companies like Xerox will forgo this foolish bullying in favour of sensible agreements that will stick.

Fortunately for us one naughty journalist has already broken his NDA promises and considerable details about the FX980 continuous feed have been published. Already in the public domain is the fact that HPA, an Australian transactional printer working with various telecommunications, financial and shipping clients, has got the first FX980 and is thrilled to bits with it, allegedly. Xerox's new press has a 495 mm web width and prints 600 dpi at a rate of 35 metres per minute, which is about 980 A4 page impressions per minute. The FX980 might also be around in Europe sooner rather than later, and in America not so soon and rather more later, we think.

The machine achieves its dazzling speed, possibly, by virtue of cold flash fusion technology, which involves light and virtually no heat to fuse the toner to the substrate. Cold flash fusing is a non-contact technology which has been around for years and which allows for huge substrate latitude, unlike the hot roll fusing used in conventional xerography. This uses either a laser beam or multiple LEDs to create the image dots, with the toner generally fused to the paper using extreme heat. This limits the substrate options for printing to materials which won't melt, as plastics do, or go all gooey and clog up the printer, as adhesive labels would. Hot roll fusing technology also involves pressure which can result in dot gain and compromise output quality.

Flash fusing uses high intensity lamps, such as Xenons, flashing at rapid intervals to melt the toner, without adversely affecting the substrate. The toner sticks on the page, and there is no problem with substrates melting or otherwise misbehaving. Cold flash fusing can therefore be used to print on plastic cards, mylar, and of course all sorts of papers and boards. Until recently this technology was used in monochrome applications, both continuous feed and cut sheet, most notably from Nipson and Delphax.

The FX980 is anticipated to be capable of printing on substrates from 40 to 160 gsm, so this will give it a huge range of application flexibility. What is not yet in the public domain is detail as to the device's availability, its quality or price. Looking at the specs the FX980 will be positioned to compete with high speed colour digital presses from

competitors such as Screen and Kodak, but we think it ought to be much cheaper. But such idle speculation is academic to a certain extent, because of course this machine will be presented soon to market. And of course it will do what Xerox expects it to do: provide it with an extremely competitive technology for capturing the continuous feed colour market, and help it to carve out a new niche in the transactional/promotional market.

Xerox has been wonderfully forthcoming about this technology, but for the time being we're bound by the NDA. We'll give you the low down on it and the FX980's importance as soon as we can.
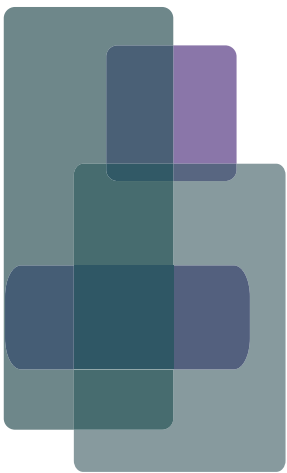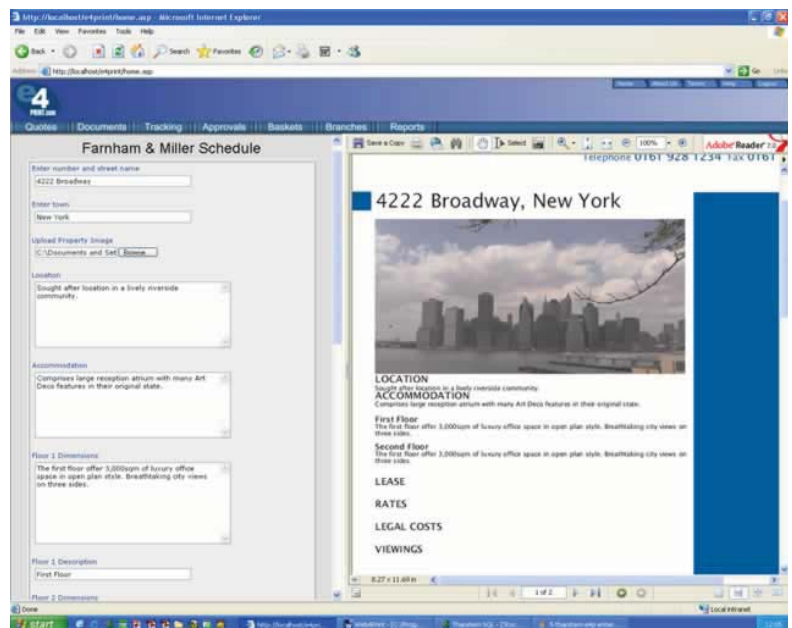
Click and print

Over the last couple of years a new trend has started to emerge, known as web-to-print. Nothing new in that you might say, after all we've been using the Internet to send files and sign off proofs for some time now. Most workflow vendors have optional modules that can, for example, allow an end customer to create PDFs to a printers spec, and then upload those files to the printer's server. Other systems allow customers to view proofs via a browser, and to add annotations and corrections in real time. And many printers already make provisions for customers to request quotations or order reprints over the web.

So, there's nothing new about extending a workflow to make use of the Internet. But the term web-to-print has come to have a very specific meaning. Ken Whild of Press-sense explains: "We define it as the ability to submit a job from the desktop through an internal portal and route it directly to the RIP of the press device, be it a CtP or the colour server driving a digital press."

In other words, from a customer's point of view, using a web-to-print solution is very much like using a desktop printer. Once they've clicked on 'Print' there's very little need for anyone to do anything before the pages start coming out of the printer.

Simon Ellington of UK distributors ROI adds: "It's there primarily to reduce the administration, quoting and proofing costs that are associated with print. It's got a number of savings benefits to both the printer and the end client. The end client for instance can allow their sales people to be ordering their own artwork rather than having an elongated process of administration, through to the printer saving a lot of time because all they get is an order confirmation and a perfectly created PDF once an order is placed, so it's all to do with streamlining the process."

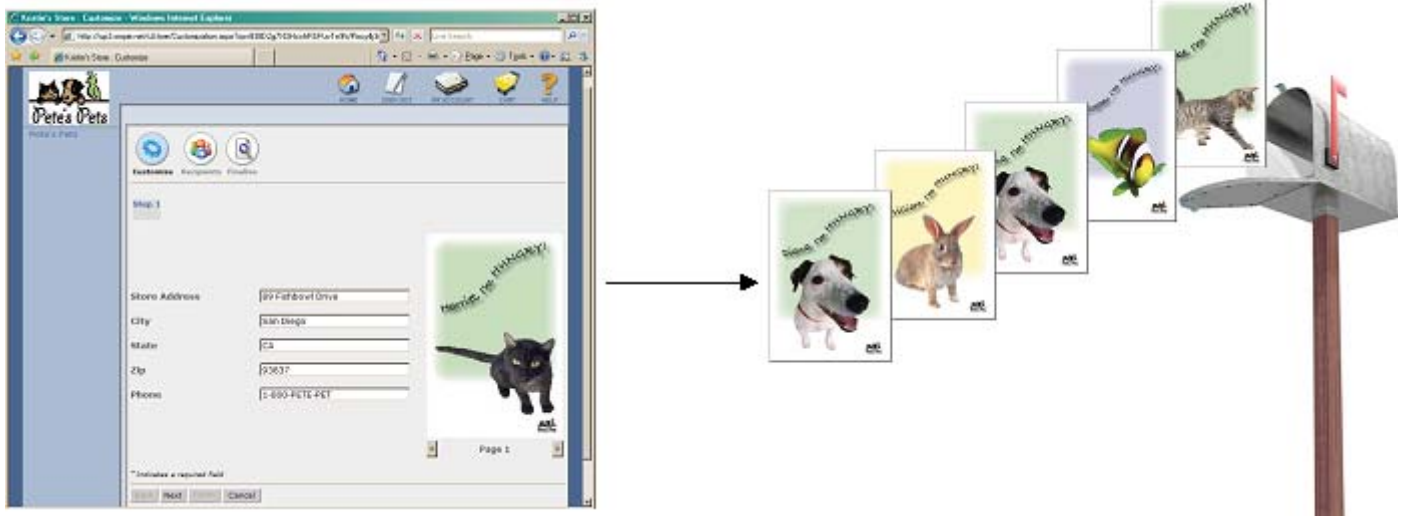*Tharstern has added this e4p module to its MIS to allow it to take orders and drive digital presses.*

Most suppliers are keen to emphasise that their web-to-print solutions can be used for both digital and conventional workflows. However, as Thierry Callot, product marketing manager for Kodak's portal products, points out: "When we think about web-to-print we think about digital printing because it is the most obvious market because there are a lot of small jobs." Indeed, this kind of automation is one of the keys to making very short run on-demand digital work a viable business opportunity as it allows the digital printer to be run virtually unattended with little or no staff intervention needed to administer the orders.

However, there are some differences between the various systems on offer as to what can be printed. Some envisage the printer running a general website designed and set up so that anyone can painlessly order and pay for print jobs. In many cases these jobs can be bespoke jobs, with the customer uploading his own artwork, usually in PDF format. In others, the printer puts up specific templates, and the customer chooses one of these, usually for business cards or similar stationery. And of course there has to be an electronic payment system in place.

Yet in other web to print systems the printer runs a variety of different web portals, each branded and configured for individual customers. Customers can submit work, or re-order from previous jobs in a single

XMPie, which is available through these vendors including Xerox, is better known for variable data, but this uStore module converts it into a web to print solution.

environment that only offers the materials and options they need, with payment facilities to match. Such portals could also include offset printing where the main application as far as web-to-print is concerned lies in reprint work. The key difference is that in this type of set up the customer already has an account with the printer and so there is no need for any additional payment method.

Such systems can help tie a customer to a printer, since that printer has their files and their templates. There is also more accountability, since the customer types in their order and uploads their documents so the printer has some protection if there are errors in the final job. More importantly, much of the kind of work that a customer service rep normally does, such as sending out proofs, confirming approvals and tracking jobs, is all done automatically or by the customer themselves, freeing customer service people up to do other tasks, and giving customers a quicker response. This is what makes short-run low-value digital print jobs a viable option and it's why web-to-print can be so attractive.

These systems also make life much easier for customers, as they don't have the hassle of having to prepare and deliver CDs to the printer, since it's all done online. For this reason, most web-to-print solutions tend to be driven by customer needs in terms of streamlining the print buying process.

And there is good evidence that customers are demanding this kind of service from their printers. As Ellington notes: "A few years ago it wasn't really the norm for a printer to have a web-to-print solution and it was more of an IT thing rather than a printer's thing, but now there's a lot more industry knowledge around about web-to-print, and a lot of people come to us saying that they've already sold the content to their customers, so its certainly a market that is maturing."

A growing marketplace

Web-to-print is still a very new concept and so there are not many truly mature solutions around. Guy Thompson of HP Indigo says: "if you look around Europe as a whole it's a very fragmented market. There are a couple of international players, but also a lot of quite local suppliers." He adds: "There are a surprising number of people that have installed their own home brew creations of various levels of sophistication, and there are a lot of small players that have created web-to-print services and solutions for customers, but that only have small number of customers."

Of the more established web-to-print solutions, perhaps the best known are XMPie (now owned by Xerox), Printable and Press-sense. XMPie has Ustore, a simple web-to-print application, designed for quick set up of branded, e-commerce enabled, online storefronts. This technology is also available as a development platform with APIs, and is the basis of Xerox's recently announced Digital Printshop in a Box.

Printable's solution is made up of three parts: Manager for admin, Dashboard for day to day running of the system at the printer's end, and the PrintOne customer centre, a web interface that can be customised for each of a printer's customers. Press-sense has a scalable product, which can be offered as a service-based model, or as a standalone product, and as a larger centralised product for multi-site companies. In the UK, ROI's Xralle has also gained a good reputation though it's primarily used by print management companies.

Unified workflows

For the moment web-to-print solutions are sold as separate systems which are then integrated with the rest of a printer's workflow. But it seems fairly likely that those vendors that already sell other parts of a workflow, such as an MIS or production management, will develop their own web-to-print offering. After all, an MIS already handles job costing and in some cases scheduling, so it seems obvious that many MIS suppliers will also start to add web-to-print modules to their systems.

Tharstern, for example, already has an online offering called E4Print which has online submission, job tracking and request for quotes. It also has a variable data element so that customers can choose a template, add their own content and then generate a PDF from that for proofing and printing. The MIS can then send this through to a printer without any need for operator intervention. Tharstern has already demonstrated this system driving a Kodak Nexpress.

Given that web-to-print solutions are primarily aimed at digital printers, is it likely that we'll see this technology incorporated into the digital front ends that drive these devices? For the moment most of the digital print vendors are promoting their ability to integrate with third party web-to-print solutions, but several privately admitted that they were looking at ways to incorporate a web-to-print option into their digital front ends.

Where does this leave companies like Agfa and Fuji, who have workflows that are primarily aimed at conventional offset printing? Agfa's Delano was originally designed to provide web based project management however it has remote approval and online proof viewing, so web-to-print would be a logical development of this technology. The same is true of Esko's Webcentre. Fuji has said that its brand new XMF workflow has been designed to drive all kinds of engines, including digital presses and wide format printers, so that a web-to-print option is a distinct possibility, although XMF's Internet functionality is still somewhat underdeveloped. Kodak already has an Insite Storefront web-to-print module for its Prinergy workflow, as well as a version for customers who have a Nexpress printer but not a Prinergy workflow. Screen has Riteportal as part of the Trueflow workflow suite. In most of these cases however, the transaction engine would need bolting on as they are mostly designed to facilitate distributed production, rather than e-commerce and e-procurement.

At the risk of mentioning the D word, drupa is likely to see a coming of age for the web-to-print concept. There's every chance that we'll see web-to-print becoming an integral part of existing workflows, rather than a third party add-on. In many ways, the only surprise is that it hasn't happened sooner.

Web-to-print is a singularly important concept for printers to grasp, and the technology is only a small part of it. The 'Web-to' idea is about how people purchase goods and services using the Internet. No longer do people have to rely on sales organisations and customer services to help them make purchases, because they can do it themselves on the Internet. For all sorts of things from airline tickets, groceries, shoes, investments, and of course books on demand, the DIY (Do-It-Yourself) model is fast becoming the norm for many people and businesses. This is as much about social and commercial evolution as it is about technology, and of course it doesn't apply universally. However it does apply to many areas of print, such as business collaterals, short run colour, posters and books. Printers must make sure they don't get left behind.

– **Nessan Cleary**
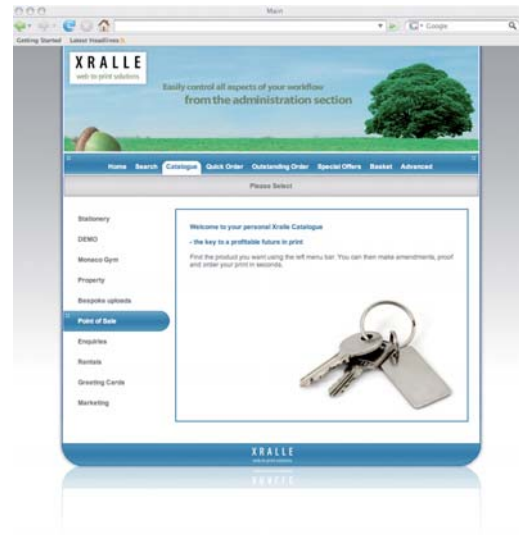
ROI distribution in the UK has gained a good reputation for its Xralle web to print offering.

Consuming Desires

Brand integrity is one of the major issues facing producers and marketers of Fast Moving Consumer Goods, otherwise known as FMCGs. If you look up FMCG on the Web you'll find that Wikipedia says that FMCGs are "products that have a quick turnover and relatively low cost" meaning that they are cheap, but there are lots of them. Consumer products are goods such as shampoo, toothpaste, sweets, soft drinks and cleaning materials, as well as things like light bulbs and DIY goods. FMCGs are just about anything you can think of that doesn't last very long or cost very much.

The packaging for commodity FMCGs tends to change frequently in order to catch peoples' interest and to enhance a product's visibility in a crowded and fickle market. Packaging is increasingly integral to products because it can help sell them. Packaging is a marketing tool which is why FMCGs are the mainstay of the packaging printing industry.

The history of FMCG packaging design is one of increasing sophistication, moving from being purely functional to being part of the product. How many times have you bought cosmetics or luxury chocolates, purely on the strength of the package? The original purpose of a package was to create a protective barrier between a product and anything in the environment that might pollute or damage it, but those days are long gone. Nowadays a package is about marketing, indemnity, instructions, compliance, sales, brand definition, enhancement and management. All of these require careful management.

Brand Protection

Brands are assets which companies spend many years developing. Brands such as Coca-Cola or Unilever sell product, so anything that can be done to enhance brand and protect asset value, will be done. For example burger beasts McDonalds quickly moved into salads because of falling revenues and its negative junk food brand perception. Coca-Cola has made its recent move to lighter plastic bottles from 26 to 24 grams because it wants to be seen to be environmentally aware. These very large companies have a terrific amount at stake so the integrity and use of their brand, corporate colours and logos in the media has to be carefully managed. This requires the right technology, people and workflow design, but matters are made more complex as traditional business models change. Increasingly design studios are expected to take responsibility for brand development and perception. They must work in tandem with production houses to develop the brand plus its extensions to maintain consistent production standards across production locations and over time.

Packaging Development

Packaging projects depend on technology for prototyping, testing and final implementation of a design. Package development involves many ▶

> The history of FMCG packaging design is one of increasing sophistication, moving from being purely functional to being part of the product. How many times have you bought cosmetics or luxury chocolates, purely on the strength of the package?

people charged with different tasks, so it's inevitably complex with convoluted and sometimes tangled supply chains. Efficient development depends on the efficiency of the technology and the people involved in the workflow, plus commercial considerations driving a package's development such as Christmas or summer holidays.

To better understand what's involved from a print production perspective we spoke to Wim Demeestere, director of Deschutter Neroc in Belgium. Deschutter Neroc is present in the Netherlands and Germany as well as Belgium and owns the Elathin flexo printing company. It is one of Europe's leading full service providers for packaging design, repro and print, and uses Artwork Systems technologies for packaging production and workflow management. Deschutter Neroc has also developed its own Packflow technology to allow customers to monitor their packages' production and manage approvals online.

Deschutter Neroc's customer base includes Knorr foods, Douwe Egberts, Hoegaarden, Pickwick Teas, Unilever Best Foods, Sara Lee, Halfords, and Numico. Every year the company processes around 20,000 pieces of artwork, a data volume of some 26 terabytes, which exceeds the data traffic managed by Belgium's national mobile phone company! Deschutter Neroc also provides digital asset management and legal text management tools online. This is especially important for companies selling goods internationally, because products have to be developed for many countries in multiple languages and complying with different laws. Wim Demeestere explains: "For each country there needs to be approval on what can be on the pack and what can be claimed. Since FMCG is also very often linked with food, legal text is a very important issue that increases the complexity of the packs throughout the delivery of the final materials." Deschutter Neroc uses standard content management software customised to support packaging development and linked to an asset library that also supports uploading and downloading to the web.

Wim Demeestere, CEO of Deschutter Neroc.

Weaving a Tangled Web

Packaging for FMCGs is also demanding because it involves so many different and interacting tasks. In a market where goods on shop shelves rotate as often as every six weeks, perhaps the most crucial part of packaging production is time to market. The first product to hit the shelves often becomes the best seller and FMCGs manufacturers like to differentiate products for specific niches. Breakfast cereals for example are packaged to appeal to certain consumers such as children or adults who want to watch their weight. Spin off products such as snack bars are then positioned to complement the mother product and to leverage the brand. Wim explains: "These companies have to have their packs or their line extensions within the shortest time on market once the product or pack has been created because the sooner the pack hits the shelf, the more product can be sold. Additionally since more 'unique' packs are created specifically for a market or customer, things have to go very fast."

Packaging development must therefore be constant and consistent. Consumers respond to novelty packaging buying spontaneously almost on the basis of the package, even though they may not really want or need its contents. Toothpaste in a pump for example, is no different than toothpaste in a tube, but people like to think they are getting something special so they buy the pump even though it's more expensive. We might not approve of this kind of manipulative marketing, but many consumers respond to it as Wim confirms: "Studies have shown that consumers are willing to pay more for the same product if the product is packed in a 'sexy' pack … many FMCG companies are reinventing the packs structure to increase convenience and so to be able to sale it for a higher price. As you can imagine, this increases the complexity of the packaging tremendously both in the packing industry and graphical area. New packaging formats are constantly introduced on the market to actually sell more of the same or by changing people's habits."

This places a considerable onus on packaging designers and production workflows. FMCGs sell brand in advance of contents, so production and print consistency have to be managed. For many of Deschutter Neroc's customers, packages are produced in numerous locations with different printing technologies because different consumer markets respond to different packaging design criteria. Wim says: "Taking into consideration that printing capabilities in different countries are not the same and that specific markets are even more complex than others, this is a very difficult topic to handle."

In the Middle East and Africa he says that "packaging for an 'A brand' needs to have gold or silver on the pack to sell, [although] printer capabilities are most often not so advanced as in Europe. It is therefore that companies like Deschutter Neroc are actually specialised in handling and managing the consistency across the different stakeholders, techniques and capabilities involved. And additionally by doing so, we enable FMCG companies to have at all time the availability of their latest brand assets for re-use or to use for other purposes."

Consistency across the product portfolio is vital and, because all of these considerations interact, they can seriously influence production budgets. According to Wim: "Each and every packaging has most often its own complexity, right the way from the marketing names and claims through to managing the graphical complexity throughout the product portfolio." Controlling budgets in such a complex environment requires proactive and dynamic workflow management throughout packaging ▸

Deschutter Neroc serves its Dutch customers from its offices in Amsterdam.

development and supply. Budgets and cost controls must reflect the different design requirements for a given line of FMCGs and the production constraints imposed by different printing techniques.

Because packaging is inherent to product presentation, many FMCG companies have their own design and development departments and their own costing models which need to be complementary to those of their outsourced service providers. Without tight coordination and process management of all of this, there is substantial risk of redundancy, re-working and error. It can add up to a negative impact on budgets.

The Deschutter Neroc Business Model

Managing all of this is fundamental to Deschutter Neroc's business model. The company specialises in production workflow optimisation. Wim explains: "We see this is the area where FMCG players are quite often struggling to get things organised or optimised within their own setup. We have built our own project management system in combination with data gathering - content management support - and extensive KPI (Key Performance Indicator) reporting on all aspects and gates within the process. This enables our clients to have a close and detailed look at areas for improvement and to proactively drive costs down. For example, if the legal text task causes reloops during artwork production, we can flag where the issues are and what the reasons are behind this. This itself enables us and the clients to optimise the process to avoid having reloops or rework so that our work can be Right First Time and On Time."

Deschutter Neroc is not just a production house for the packaging market. Wim describes the company as brand visualisation specialists. "Our product is just an intermediate step in the process, however a very crucial one as all elements are coming together for the first time in a graphical file or view. It is essential that we have a close communication with stake-holders and printers … [and] we have to make sure that what we supply out is correct and directly usable, without any additional work and that we can manage the expectations."

The Technology Base

And in amongst all of this is the need to manage technology and its operability across a variety of environments. There is huge diversity in data formats, language and jargon, whether it's simple document management such as using .txt or .doc files through to design formats such as .cad or .obj. Output specific prepress must be able to support anything and everything, regardless of the context. This is why colour management and automation based on standard data formats like JDF are so important. It's also why Deschutter Neroc has such a dependence on technology and has invested so heavily into automation.

Deschutter Neroc's production system is based on Artwork Systems' Nexus production system, linked to Deschutter Neroc's client administration systems and MIS to automatically share client information. Wim says: "In this way we hit one of our objectives - helping our clients in ▶

Because packaging is inherent to product presentation, many FMCG companies have their own design and development departments and their own costing models which need to be complementary to those of their outsourced service providers.

structuring the data gathering and to collect the right information at the right time. This is most often the most difficult part of the process as it implies that existing way of working sometimes needs to be questioned and/or their IT departments need to be involved to structure processes."

Deschutter Neroc has also developed its own project management system, Packflow 2, for packaging project development. Packflow works with any client's internal system to monitor and track all aspects of package development and production, with a task-based model to collect information according to specific tasks, processing stages and project milestones. People can design their own projects and associated development paths based on templates of varying complexity. Wim explains: "A task management assigning process starts in order to be able to collect the necessary data directly via the system. Content is uploaded and can, prior to releasing it, already be going through a pre-approval task. Once all data is available, we start producing the final artwork and/or prepress and will upload a PDF file for approval via the Online Approval System. People are invited to the system to approve their packs online. Annotations can be visually made via the OLP client and will be sent directly to the concerned parties. After the necessary loops, final approval will come in and files will be sent either via FTP or via CD to wherever in the world. Also here, the back-end, will be monitored via the system as also printers are invited to sign off on receipt and after checking the files if necessary. When the printer/converter finally sends out, again he flags this in the system which allows complete tracking from the beginning until the materials are available at the production facilities."

Deschutter Neroc works with a direct costing model, so that everyone has an overview of cost lines here at its offices in Antwerp.

Organisation & Method

Production is set up so that dedicated units serve different clients. This business unit based organisation is the basis for highly focused services and for managing costs. Wim says: "For each dedicated unit, we work with a direct costing model which allows us and our clients to have an extensive overview of the different cost lines. Experience has proven that by doing this, we can bring costs down while increasing services aspects as required."

So where in all of this does JDF fit? As we have found in discussions with other forms of publishing JDF seems to be more attractive in theory than in practice for packaging production. For many companies technological harmonisation predicates JDF implementation: if there is a single element in a workflow that cannot handle JDF files, any automation promises are

scuppered. For Deschutter Neroc Wim says that: "We are mainly looking at optimising how JDF and XML already can give us internally benefits and standardisation. JDF is also set out to give visualisation already from the very beginning. This implies that all parties have to sign-on [and] that interpreters will be needed to interpret the additional information which is stored." He also believes that as the nature of traditional pre-press workflows change, JDF could become redundant, saying: "Where JDF for packaging fits to provide traceability in the chain, is becoming less relevant since most of the files will be produced internally and [go] directly to the printers."

Many technology developers, particularly of digital printing systems, have highlighted the packaging market as one of their target destinations. However, as dynamic and exciting as this sector may be, getting into it is not as easy as it looks. The workflows, relationships, legal matters and development considerations are perhaps more complex than in any other print production sector. Companies such as Deschutter Neroc have the knowledge and expertise to implement digital workflows that benefit their customers, and leveraging that knowledge provides a value add that overshadows technical advantage. More than ever success is about understanding the business, rather than shrewd technology investments.

– **Laurel Brunner**

Secret agents

Imagine that you've developed a really fast digital printer, but are having trouble processing incoming files fast enough to keep up with the print engine? Or you've built a brand new platesetter, but don't have a software division to provide the RIP? Or what if you need a set of PDF tools but don't fancy paying through the nose for the Adobe offerings? Step forward Global Graphics, which has built a highly successful business out of dealing with exactly these kinds of problems.

The chances are that many people reading this won't have heard of Global Graphics, though many of us regularly use its technology, from the PDF engine in Quark, to the Harlequin RIP. So what exactly does Global Graphics do, and how did it manage to slip beneath the radar?

Global Graphics first appeared on the scene back in 1996, though the roots of the company as it is now can be traced back 20 years to the advent of the Harlequin RIP. We saw the first version of this driving a monitor in 1989 at Harlequin's offices in Cambridge. Global Graphics has developed by acquiring other companies. The first of these acquisitions was in 1996 with Photomeca, a French-based company which specialised in flexographic prepress equipment. In 1998 Global Graphics acquired a US flexo maker, Kelleigh, followed in 1999 by Heights and Technigraph, both of whom manufactured prepress equipment.

In July 1999 Global Graphics moved into software when it bought Harlequin. This was followed in 2000 by the digital publishing arm of 5D solutions which had developed a number of PDF tools that later became the Jaws product line. The company also bought the MaxWorkFlow product line in 2000.

In 2001 Global Graphics combined all of these various companies together into two divisions, Global Graphics Hardware and Global Graphics Software. But by 2002 the Hardware division was sold off to a management buy-out team. It still trades today under the Heights name and continues to develop the ICG scanner technology it acquired in 2001. This left Global Graphics free to concentrate on its software solutions, which revolve around page description languages, such as Harlequin and Jaws.

Global Graphics does have a truly global approach to its business, with offices and staff spread around the world. The company numbers some 125 people, of whom around 80 work in R&D. The main R&D focus is in the lego-like village of Camborne in the heart of the Cambridgeshire countryside in the UK, which houses some 80 staff, including the Chief Technology Officer, Martin Bailey. The main sales office is in Virginia, USA where the CEO, Jim Freidah, is based. There's also an office in Japan,

Paul Collins, Product manager for Harlequin RIP technologies.

established mainly as a springboard into the emerging digital print market in the Far East, and an office in India, mainly for QA and testing and development.

The parent company, Global Graphics SA is still based in Nancy, France, in the original Photomeca offices, although today the only person who works from there is the Chief Financial officer, Alain Pronost. Global Graphics is quoted on the Euronext exchange in Brussels, which is also home to the chairman of the board, Johan Volckaerts.

OEM business model

Global Graphics produces almost nothing under its own name. Instead it sells its technology on an OEM basis to other companies including Agfa, Screen, Kodak and Hewlett Packard. Because these companies like to brand their products as their own, Global Graphics has largely been banished to the back office. This is a shame, because Global Graphics does have some great technology, and would clearly like to be able to show it off to more people.

However, Martin Bailey is adamant that Global Graphics has no plans to sell any of its technology direct to end users, saying: "A number of OEM suppliers have found that you have to be very careful in selling end products to avoid competing against your OEM products, so we think that you either have to sell OEM or end-user products."

The core technologies revolve around page description languages such as PostScript and PDF, and it works on everything from embedded RIPs to complete workflows, though each job brings its own challenges.

Bailey explains: "Each OEM is different. Many people I speak to don't realise the implications of an OEM sales model in terms of customisation, in terms of volume. There are something like 100 to 120 direct customers, and half take the Harlequin RIP and some take multiple technologies. We try to ensure that our technologies can be used well together. When someone comes to us and says we would like to take the Harlequin RIP because we have got a rendering requirement that we think the Harlequin RIP is good for, we sit down with them to understand if they mean the complete RIP or just the rendering SDK which is aimed at a subtly different way of working, or a Jaws RIP."

He continues: "Sometimes people need something a little different, like the date in a different format or need to handle colour management in a way that we don't support, so we will work with them to be sure that we can deliver what they need, when they need it, at the right price and figure out who's going to do the development work. It could be us or the OEM, because sometimes it's something that the OEM is going to do with support from us. Over the years we have worked with so many OEMs, each with very different requirements so we have added a lot to each of the APIs, so for any OEM 90 per cent of the API is irrelevant but we need it all to satisfy all of the OEMs."

Martin Bailey, chief technology officer.

However, there is an exception to the OEM-only rule as Global Graphics does sell its Jaws PDF line up as a boxed product direct to end users. The range consists of PDF Creator and PDF Editor, available as standalone desktop programs, or in various server-based suites. It's a direct competitor to Adobe's Acrobat products, but whereas Adobe has crammed many different features into Acrobat, the Jaws products have been stripped down to the basics of making PDFs, which is reflected in a much lower price, and aimed primarily at corporate users.

Change to office products

Indeed Global Graphics is increasingly looking at the corporate market, developing solutions for office-level printers, copiers and so on, as well as its better-known graphic arts products.

According to marketing manager Jill Taylor: "The percentage of revenues has changed over the past five years, and we are growing in new markets and are less dependent on graphic arts." Last year's figures reveal that 43 per cent of the revenue came from the graphic arts, with the rest coming from e-documents and digital print. However, there is some overlap as some digital printers, such as HP's Indigo printers are also counted as graphic arts.

Bailey adds: "As an OEM supplier our emphasis is on the technology that is being used, rather than the use cases. Obviously the use dictates the technology, but if you look at what the products are doing, they are all very similar. So our OEMs can take pretty much the same code base and put it in different things."

XPS

At the start of this year Microsoft released its Vista operating system, complete with a brand new print subsystem and a new file format, XPS, the XML Paper Specification. Microsoft contracted Global Graphics to provide consultancy on the XPS print engine, to make sure that people understood that Microsoft could implement it and that it could cope with the demands of commercial printing. As part of this, Global Graphics wrote an XPS print reference RIP, which is on the Microsoft website, and carried out a first implementation to prove that it works.

XPS has the potential to be a very widely used format, as it is the native file format for two of the most widely used programs on the planet, Word and Excel. It's been designed from the ground up to be suitable for archiving and printing, which has led many people to compare it with Adobe's PDF format.

Paul Collins, Product Manager for RIP technologies, says: "There's no disadvantage of XPS over PDF. It has the same colour capabilities, the same metadata and so on technical merits I think it's too close to call." He also points out: "XPS is very good as a container format. For example, Autocad created images in Autocad, and saved them as XPS so the same files could be opened on Vista with no special software. Since they are using ▶

Jill Taylor, corporate communications director.

their own format within XPS, other departments such as the accounts could see the same file as the specialist CAD people, so it's a common media that you can pass to anyone without installing a viewer."

Collins and Bailey acknowledge that the print industry has invested a great deal of effort in developing RIPs around the PDF format, and so XPS is unlikely to supplant PDF as the format of choice for commercial printers any time soon. Nonetheless, most of the major RIP vendors are working on XPS solutions.

Bailey adds: "In our initial involvement with XPS, the target was very much on the home and office printing space. But over time we have been looking at how we expect XPS to impact on graphic arts and realise that there is a need for it, particularly in sectors where Harlequin has had a high penetration. Harlequin is quite widespread in commercial printing and newspapers, and we've got a reasonable number of users in publishers, wide format, packaging and so on."

The XPS format is fully cross platform, including Windows, Mac and Linux. Microsoft has said that it will release an XPS viewer for Mac and that some of XPS will be in Office 2008 for Mac. Perhaps surprisingly it is already included in Adobe's Acrobat 8.0, albeit as a read-only format.

Microsoft has now handed over XPS to a standards committee, ECMA for further development. Not surprisingly, Bailey has been appointed chairman of ECMA.

Own products

As we have seen, Global Graphics' core expertise revolves around interpreting, converting and rendering page description languages – all the functions normally attributed to a RIP. Bailey points out that: "What the word RIP meant 20 years ago is not what the word means now. Many people will talk about their RIP meaning a bit of hardware plus some software and often it's different these days. Harlequin used to do interpreting and rendering. We have added colour management, trapping, imposition, and so on."

Global Graphics has organised its work into a number of products. The best known of these is probably the Harlequin RIP, of which v8 is due out at the end of this year. The same core RIP handles Postscript, PDF and now XPS.

Collins explains: "Because of the work that we had done with XPS we had to look at our core RIP and to add this third PDL. We took the opportunity to add things that we have found from our markets so we have added technology to make it a far more scalable solution for different markets." Some OEMs already have beta versions of this and so we could conceivably see the first RIPS that are able to handle XPS before the end of the year.

Nik Stanbridge, product manager for eDocument technologies.

Global Graphics has re-used much of this core functionality to produce solutions tailored for the various classes of printers, from desktop inkjet devices up to network office printer/copiers and high end digital printers. As such Global Graphics recently introduced the Host Renderer SDK, now at v1.2, for developing drivers for smaller, office type printers. Collins says: "The first takers are for XPS so that's led us to new customers in desktop and MFP markets."

There's also an Embedded SDK, which has a similar core to the Harlequin RIP, but with a different skin for uses where the footprint is an issue. Collins notes: "These are interesting because each project is specific to each thing and so you can form very good relationships with customers."

Global Graphics is also about to launch its Enterprise SDK, which Collins describes as an ongoing iteration of previous products, including the Cortex workflow architecture for standard tasks like file management and job ticketing. It includes a wealth of products that people could take and add to other solutions such as preflighting, much of which is already included in the other SDKs.

E-documents

Earlier this year Global Graphics announced another initiative, e-documents, which includes an electronic document library based on an extensible architecture to which other page description languages, such as XPS and PDF can be added. This can be used both for manipulating documents and for converting between different file formats. This is also useful for printing more demanding documents on less capable devices, which Global Graphics refers to as scalable consumption.

All smile! Some of the Global Graphics team: Jill Taylor, Nik Stanbridge, Martin Bailey and Paul Collins.

Perhaps the most immediate application is for allowing low end desktop laser printers to handle XPS files. Bailey explains: "Many vendors have devices that are a little bit underpowered for XPS, so the goal of scalable consumption is to enable a device which might only be able to take 65 per cent of files that are sent to it and to be able to say if you print through our printer driver we can guarantee to print 100 percent of the files that you can take from the print subsystem." Collins says that this is in part because XPS has a very malleable structure: "We can simplify elements, such as flattening transparencies or re-order the assets without affecting the file to help the printer consume them."

Nik Stanbridge, Product Manager for eDocument technologies, says that the technology is very flexible so that other PDLs can be added in future, and partners, can develop their own proprietary PDLs as some governments already do. He notes: "One of the drivers was to enable the technology to be PDL-neutral."

He adds that the e-document technology can also be used in other areas like document management. "We wanted to develop something that could provide us with more functionality during the conversion. We wanted the ability to access elements in a document individually. So rather than downsampling all the images down to 72dpi we wanted to give people the ability to access individual pictures, pieces of text and so on. People want to be able to repurpose smaller components to a document than the document itself and store these so that they can be used in different ways."

This kind of flexibility can help to future proof both documents and print devices. It's also helping to future proof Global Graphics, strengthening its position amongst digital printing vendors, as well as giving it an introduction to the growing office printing market. The arrangement with Microsoft, and the work that it has done on XPS, has enabled Global Graphics to leave behind the impression that it merely offers a cheaper alternative to Adobe's technologies so that it can be seen in its own right as a leading player in all of the various page description languages. And yet one can't help but feel that, as with Intel, the company would benefit from a 'Global Graphics inside' badge, if only to raise its profile a little.
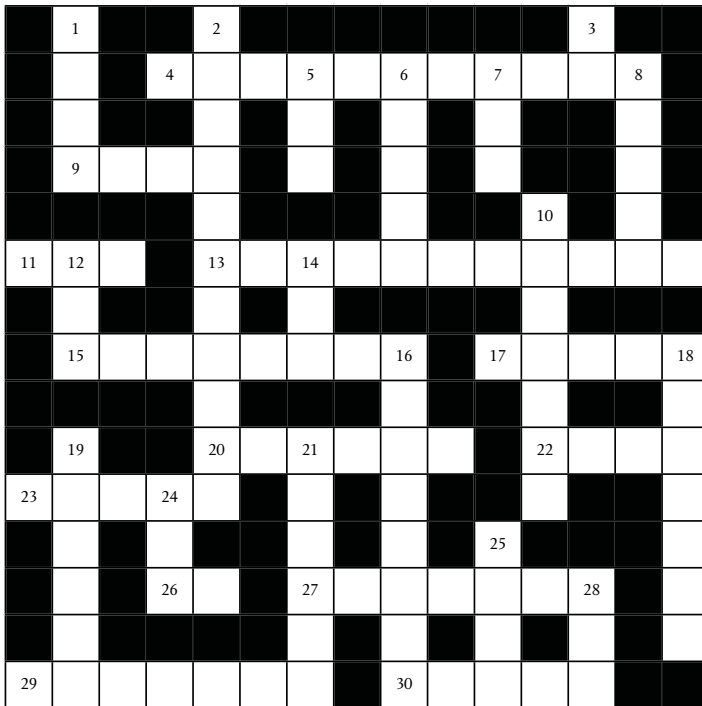
– **Nessan Cleary**

Graphic Arts Crossword Puzzle   Number 3

If you get stuck, go to the **IGAEF** website for some hints. For those of you that really get lost, answers will be in the next issue of Spindrift. **The answers for last issue's puzzle are on the next page.**

Across

4 It happens in between prepress and make-ready. (11)

9 What gets added to metal to help it melt, and this industry is in a constant state of it! (4)

11 The tube technology used in old fashioned monitors. (3)

13 The industry we all know and love so well. (7, 4)

15 Along with fluorescents, this kind of colourant is very hard to make using toner. (8)

17 Something which is not unknown. (5)

20 A particle of dirt or paper dust that shows up in the printed image. (6)

22 A special coloured ink. (4)

23 The kind of logic that isn't clear. (5)

26 The summary of a commitment to purchase. (2)

27 Where teenagers spend too much of their time. (2, 7)

29 A designer does this for a living. (7)

30 Another word for brands or types of something. (5)

Down

1 Fifty percent of a full-tone. (4)

2 The art of printing with soft and resilient printing plates. (11)

3 What is it when it's not off? (2)

5 You add one of these each time you mark up content for subsequent processing. (3)

6 To gradually change from one digital image to another. (5)

7 What K really stands for. (3)

8 A word for allow. (5)

10 The clear stuff that comes out of a coating unit. (7)

12 Random access stuff we always want more of. (3)

14 Which CMY colours together make black? (3)

16 The number that file transfer software uses to make sure that the data sent and the data that arrive are the same. (8)

18 Worthy of note. (7)

19 If it's not a line, a letter or an image, it's a what? (6)

21 Large yellow metal things, much beloved of nasty traffic wardens. (6)

24 A data compression and archive format. (3)

25 Front to what alignment, is tricky to do? (4)

28 PDF's precursor. (3)

Answers for Graphic Arts Crossword Puzzle Number 2

■	L	I	N	E	C	A	S	T	E	R	■	R	O	I
R	■	■	■	■	■	■	T	■	■	■	■	A	■	N
A	D	O	B	E	■	■	Y	E	L	L	O	W	■	K
S	■	E	■	B	■	■	L	■	■	■	L	■	■	■
T	■	C	I	E	■	■	E	S	P	■	D	O	W	N
E	■	R	■	Z	■	■	T	■	B	■	■	■	■	I
R	■	E	■	I	■	■	O	I	L	■	■	■	■	N
I	■	L	A	B	E	L	C	■	A	N	G	L	E	■
S	■	T	■	R	■	■	H	■	N	■	■	■	■	■
A	N	T	I	■	G	C	A	■	K	N	I	F	E	■
T	■	V	■	■	C	■	S	■	E	■	S	■	■	■
I	N	T	E	R	P	R	E	T	A	T	I	O	N	■
O	■	O	■	■	I	■	■	I	■	K	■	I	■	■
N	■	N	■	■	L	■	■	C	■	O	■	P	■	■
■	R	E	N	D	E	R	■	■	F	I	N	I	S	H

A Special Message

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