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Spindrift

...Scrutinizing The Graphic Arts Industry Since April 2003

News Focus • Opinion
Reviews • Techno-Babble
Attitude

Volume 6, Number 1
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fool • *noun* **1** a person who acts unwisely. **2** (historical) a jester or clown. • *verb* **1** trick or deceive.

– From the Compact Oxford English Dictionary

Dear Reader,

With a mere seventy something days to go, the new product announcements for drupa are already coming thick and fast. We have a whole slew of them to share with you in this issue, the first of our sixth volume.

It should come as no surprise that the company which has potentially the largest clout in the industry has finally decided to use it. HP has declared its intention to capture as much as possible of the professional print market and announced its strategy for doing so. In so doing HP, one of the world's largest companies, is taking the industry mainstream. It has, purposely or not, redetermined the operating parameters of the graphic arts industry.

HP is filling in the missing pieces in the continuum of technologies for printed communications. The goal is to make standards-based digital production and output technologies, from lowly office printers to high speed digital presses, be they inkjet or toner-based, a universal reality. For reasons of space and sanity we will touch briefly on this as part of our second drupa preview. A more detailed analysis will follow next month.

Underlying it all is the second tenet of HP's strategy: that information technology (IT) drives all forms of digital data interchange, including all forms of media communications.

So does this make HP a terrifying competitive force, or is it a power of awesome dimensions that will accelerate digital print adoption? Prepress has long since been an application of IT, but who cares about prepress? Publishing as an IT application has an altogether sexier ring so although HP's announcements won't create an immediate market stampede, they will at least raise awareness and that will benefit everyone, including HP's competitors.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

Shifting gears at drupa

Laurel Brunner continues her exhaustive (and exhausting) preview of all the new goodies likely to be on show at this year's drupa. This month includes a raft of new printers from HP, Canon and Xeikon, as well as new chemistry-free plates and a new version of the Apogee workflow from Agfa.

see page 8

Squaring the triangle

Nessan Cleary finally gets to grips with our series looking at the environmental impact of printing. This month we look at magazine production and find a UK-based printer which has gone out of its way to produce a magazine with zero carbon emissions.

see page 16

Hey big spender

Large corporates face a range of problems in purchasing products and services, which has led many to invest in e-procurement systems. Nessan Cleary looks at a couple of print e-procurement systems and finds that these tools can benefit printers as much as their corporate customers.

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Regular Columns

News Focus

HP Indigo will show three new digital presses at drupa including the Indigo 7000 which will be available immediately. There will also be the new HP Inkjet Web 762 mm press based on a combination of Edgeline printheads, as used in office printers, and HP's new Latex ink which replaces its solvent-based ink lines. There is also a portfolio of new workflow solutions, SmartStream.

Heidelberg will show new large format presses at drupa. The Speedmaster models XL 145 and XL 162 are designed for packaging and commercial printers with formats of 102 x 142 cm and 120 x 162 cm. There will also be a new range of Suprasetter platesetters to go with them: Suprasetter 145, 162, and 190.

Screen has a new thermal VLF platesetter, the PlateRite Ultima 48000, which will be the largest format output in the world. This is aimed at supporting VLF presses which require plates up to 2900 mm x 1350 mm plates, equivalent to 96 A4-size pages. In addition to the ultra-large-format PlateRite Ultima 48000, Screen has also developed the PlateRite Ultima 40000, which takes up less space than the 48000 and supports output onto 2280 mm x 1600 mm plates, for up to 80 A4-size pages. Both will be on sale at drupa, though the 48000 is built to order.

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Goss is to demonstrate its M600 web-fed press with a new sheeter, developed exclusively in partnership with VITS, which will allow web printing on coated stocks with standard sheetfed inks, but without a dryer. It can produce up to 30,000 sheets per hour. Not surprisingly, Goss is touting this as an alternative to B1 sheetfed presses.

EskoArtwork has acquired Gradual Software the company founded by Peter Camps, who previously founded Enfocus, which was acquired by, er, EskoArtwork. It seems that EskoArtwork didn't have the remotest idea of what to do with Enfocus once it bought it, and has had to bring in Peter to take the Enfocus technology forward. Peter is investing "most of his proceeds from the acquisition into the EskoArtwork group". History's sticky fingers!

Punch Graphics has announced the Xeikon 8000 digital press, which doubles resolution to 1200 dpi and prints at 230 full colour pages per minute or 13,800 per hour! See the drupa preview on page 8 for details.

Software company **Bad Joke Rising** has developed a suite of productivity add-ons for digital printers. The Fully Automated Repro Toolkit is designed to automate a lot of the more odious tasks associated with the new generation of gas powered presses.

Canon has announced new presses based on its Imagepress technology. The Imagepress 6000 and 6000VP are entry level versions of the 7000 running at 60 A4 pages per minute and the C1 Plus has an additional station for clear toner addition. Once again, turn to the drupa preview on page 8 for details

Agfa is introducing Azura TS a Thermofuse based chemistry-free thermal plate, Azura V a chemistry free violet plate, new platesetters and Apogee Suite, which is Apogee on steroids. There is also a new addition to the Anapurna line of wide format UV printers and a new high quality synthetic paper called Synaps. See page 8 for details.

Ultimate is launching automated digital print production tools at drupa. This includes connectivity management from web submission through to finishing and job delivery, using XML links between processes.

A new standard is underway to determine the length of time committees should take to resolve matters arising from previous meetings. A committee is currently sitting to trial various temporal options. Committee members measure the options by quietly listening for the sound of possible triggers towards resolution, noting the mean time between events. These include using seconds, minutes, hours, days, weeks and months to measure deliberations. An annexe to the standard using years and decades as the basis is being developed for particularly intractable issues such as the length of a piece of string and the parameters for **Murphy's Law.**

EskoArtwork has introduced Studio and Studio Toolkits for interactive three dimensional design using Illustrator. The Studio plug-in environment has different modules for different types of packaging design, such as flexible packages, cartons and corrugated surfaces. Dynamic Content is another Illustrator plug-in for linking content to package surfaces. See the drupa preview on page 8 for details.

Xaar, developers of inkjet printing heads extraordinaire, has announced audited results for the year ended 31 December 2007. Turnover is up 13% to £47.9 million and pre-tax profit increased 6% to £7.3 million including early stage losses of Xaar's new manufacturing facility. Excluding this charge pre-tax profits increased 35% to £9.3 million.

Epson has launched an eco-solvent version of its 64ins wide inkjet printer. The Stylus Pro GS6000 uses a new 8-colour inkset, UltraChrome GS, which can be used without ventilation. The printer has a resolution of 1440 x 1440 dpi and runs at up to 25m^2/hr.

GMG is to incorporate Adobe's PDF Print Engine technology in its ColorProof 4.5.2 proofing solution. This is a free update for existing users of v4.5. Adobe PDF Print Engine technology will be integrated not only in GMG ColorProof, but also in GMG DotProof, GMG FlexoProof, GMG ColorServer, and GMG InkOptimizer. The new versions will be available starting in March.

PlateScope version 6.1 offers unsurpassed accuracy and repeatability for the latest plate screening technologies, supporting AM, FM, XM and hybrid screen types. PlateScope is designed for customers printing to ISO standards or who are coordinating output across multiple CTP devices.

Italian hard drive developer **Affooli,** has announced a new offline storage product. High density drives which get heavier as they fill up with data can now be safely moved using the Digi Pocket. The Digi Pocket is made of neoprene with interwoven RFID and semiconductor technologies, so it's flexible and water resistant. The neoprene blocks unexpected data transfer from overfull drives by ensuring that any impact to the drive during transport is absorbed. A special stability processor ensures that all data is kept horizontal, protecting the user from data splash and potential loss or corruption of binary data. The Digi Pocket can also be configured to absorb data leakages, providing temporary interim storage. Once a transported drive is reconnected, the user has only to squeeze out the Digi Pocket to ensure that all splashed data is returned to the drive.

X-Rite's latest plate control systems are designed to improve on-press productivity, through reduced downtime and production waste. They support the latest screening and plate technologies and the FOGRA FMB measuring bar standard. iCPlate2 offers highly accurate plate reading accuracy for standard applications, with high camera resolution, automatic calibration and a very long battery life.

Fujfilm is to add a new plate line to its facility at Tilburg, Holland, for the production of both processless and chemistry-free plates. This investment will set Fujifilm back €96m, with construction due to begin in October 2008 and plate manufacturing expected to start from January 2010.

Atlantic Zeiser, well-known as a developer of personalisation and coding systems, is introducing OMEGA 36 HD, a new 360 dpi inkjet printing system, and Smartcure a series of eco-friendly LED UV curing products.

EFI has announced that its Digital StoreFront web-to-print technology now includes native integration with its PrintSmith MIS, used in more than 8,000 print shops worldwide. Digital Store Front is installed at over 2,500 locations worldwide and provides an e-commerce interface for customers purchasing print over the Web.

Digital Dots is putting together a new ink test and is inviting participants to submit printed samples which will be displayed at drupa. The test compares the numerous invisible inks coming onto the market for security applications and will measure a variety of criteria. These

include invisibility, durability, scratch resistance and of course light fastness. As part of this test we will also be looking at how ink optimisation software packages such as Alwan Color's CMYK Optimiser, helps reduce ink consumption in these special inks.

Atex will add support for the Automated Content Access Protocol (ACAP) on its content management systems. ACAP is a new publishing standard that allows website terms and conditions to be expressed in a standard machine-readable format so that publishers can have a say in how news aggregators and search engine companies use their content. The project is a joint initiative of the World Association of Newspapers, the European Publishers Council and the International Publishers Association.

Canon will be including EFI's Fiery Central PDF-based workflow with its Imagepress workflow solutions program. This adds JDF connectivity with other workflow elements.

Acrobites

(Something to get your teeth into)

APR

Approvinator, or APR, is the recently suggested term to be used in JDF-based workflows, which can be used for describing approving procedures. Additional metadata for the APR-status tag that will become mandatory are; sex, age, IQ, colour discrimination capacity (based on the Farnsworth-Munsell 100 Hue Test) and number of active years in the industry. The CIP4 technical committee for interoperability specifications hopes to get the APR status tag approved in its coming meeting in Wuppertal on the 1st of April.

Spindocs

(Where the spinner gets spun!)

We received this communication from Aprili inks regarding the press conference which it is planning to hold at drupa to launch a new type of ink:

"You are cordially invited to attend our press conference on the 1st April, which will also include lunch. We will be launching our new PassThrough inks. These are based on GM vegetable oils and are completely edible. Full details will be provided in a press pack, which has been printed on rice paper using these inks meaning that the entire press pack is not only edible, but forms the basis of the lunch that we are providing.

The inks have been specially formulated to allow the meaning of the text to be absorbed directly into the consumer's blood stream before being passed to the central nervous system. This will give journalists a complete understanding of our product, without the need to actually read the press pack. And of course, it will also make for a delicious and nourishing lunch which is suitable for vegetarians.

These inks have the added advantage of being an environmentally-friendly solution which will ensure that none of our press releases end up in a landfill, and will help minimise other waste products. And of course it will also cut down on the several tons of paper that we know will be weighing down journalists both as they walk around the show and as they fly home."

Expandocs

(Casting some extra light on a recent news story)

The use of monitor-based proofing, often referred to as 'soft proofing', continues not only to replace much of the hard copy proofing, but also saves time compared to dealing with many rounds of emailed PDFs. One of the veteran companies when it comes to a web- and database-centric approach to soft proofing is the Danish company WebProof. In an effort to further develop its soft proofing solution WebProof (yes, same name as the company), it has taken a supporting workflow solution called WebFlow to a really impressive level.

In our review of softproofing systems some years ago, we listed some features that we felt should be included or integrated with a softproofing system, and among them was integration of quality assurance (preflight) and connectivity through JDF. WebProof has brought its solution in line with this in the WebFlow product.

WebFlow is a hot folder-based solution which ties together a whole range of subprocesses and separate software activities in a particular workflow. Typically it's about organising file delivery, through FTP and/or email, but also preflighting done by the customer's software of choice. Since WebFlow supports AdsML, the metadata in incoming files can be used to route the ads to the correct title, and perform a preflight according to prepared preflight profiles.

WebFlow looks and acts much like the competing Switch suite of automation tools from Gradual (now part of Esko-Artwork/Enfocus). There's a simple explanation for this as WebProof used to cooperate with Caslon Flow before Gradual acquired that company and product. Rather than continuing to use Caslon Flow after it had been remade into the Switch products, WebProof built its own automation

toolset. But anyone familiar with Caslon Flow or Switch, will feel at home with WebFlow from WebProof.

One major reason why WebProof developed its own automation solution is the ability to make it tightly integrated with the soft proofing system WebProof, now at version 6.0. Users of WebProof don't need to have WebFlow, but if they have, WebFlow will show up in some of the menu palettes in WebProof. And 'Projects' – a term used in WebFlow to set up the behaviour of different workflows - will show up in WebProof.

While WebProof can be, and often is, run by WebProof (the company) as a hosted ASP-solution, WebFlow needs to be installed at the customer site. The web portal created for each user is customised so that the customers' own customers feel and believe that they have entered the website of the publisher or printer, and log-in with their own ID and password as usual. No special client software needs to be installed – WebProof (the company) feels very strongly about making it possible for users to be able to use the standard web browsers as they are without any need for special plug-ins.

The move for WebProof into the workflow arena is interesting and logical. In doing so it helps its customers save time in the proofing stage, and also reduces the time for document processing substantially.

It's very difficult to fully explain the full benefit of systems like WebProof and WebFlow in text only. If you want to learn more about how those workflow solutions are supposed to work in practice you should try out the demo which can be found at **www.webproof.com.**

Driftwood

(Useful stuff washin' up on our shores)

Since we introduced the Digital Dots Verdigris Project (see Spindrift no 9 of February this year) we can't help paying somewhat more attention to what is reported in different media about environmentally-friendly print production. One positive report recently came from the Green Press Initiative working together with the U.S. Book Industry, concluding that the US book industry had increased its use of recycled fibres six-fold during the past few years. Close to 45% of the book publishers report having clear environmental policies in place, with concrete goals and timelines.

But there is much room for improvement. While the US book printers seem to be active in this field, the North American newspaper industry can't show equally impressive figures. The Canadian organisation Markets Initiative, founded 1999, reports that while the UK newspaper industry in 2006 used 80% recycled paper, (surpassing the goal of reaching at least 70% in 2006), the North American newspaper industry in 2007 used only 34% recycled fibre.

Even so, there is no reason for the UK newspaper industry to rest on its collective laurels – according to Markets Initiative it still needs to ensure that the 20% of virgin fibre doesn't originate from endangered forests like, for example, the Canadian Boreal. The UK publishing industry also needs to join forces to prevent what is called 'single-stream' recycling, where paper is mixed with plastics, glass and other recyclable material. While this may make recycling work cheaper for local councils, it reduces the quality and usable volume of clean recovered fibres.

Markets Initiative also point to yet another solution to save trees from use in paper production. Each year large quantities of harvest by-products such as wheat and flax straw go unused instead of being part of paper manufacturing. Straw is used in many places around the world with excellent results. This can be part of the solution for the Forest Product Association of Canada to become carbon neutral by 2015.

Boomerangs

(Your feedback fed back)

Dear Laurel,

I want to let you know about a new technology we are working on for remote media delivery. It exploits standards technologies, and offers unprecedented media flexibility. Trials are underway at one of Europe's largest media companies, and we expect to launch the product via Amazon very soon. Anticipated pricing is less than €50 for 4 gigabytes.

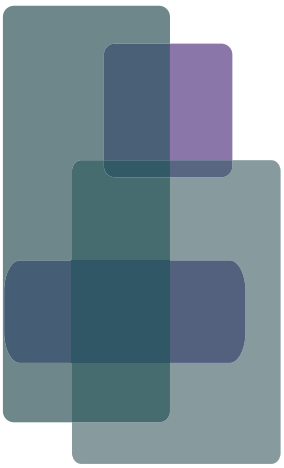
Basically we have developed memory sticks that operate either as a USB device relying on energy generated by the computer, or using energy the users themselves produce. As these new sticks can be configured to operate as Bluetooth devices, they can transmit information to other digital devices a user is working with. This could be a mobile phone, PDA, or MP3 player.

We are also working on a means of using this technology to drive digital spectacles, so that the stick could be used to project media information to tiny magnifiers located on the edge of the frame. This technology could also be located on the surface of a contact lens.

Our patents are pending on this special new orifical stick and we are working on the final stages of energy transfer from the human operator to the stick. The primary limitation is how to get the stick to stay in place when positioned in the user's ear. Hair and wax can corrupt the data signal, and of course there are size considerations to make as well.

Our beta programme is underway, however, we are asking as many people as possible to test out the current technology. Perhaps your readers could let us know how long a standard USB stick will stay in position, during normal use. Any data your readers could provide will help us to progress this research and help drive new applications for digital print. Early adopters can be sure of earning earnest praise from our development team. They are calling the new technology the Earstick, but this is just a project code name.

Ernestine von Schnitzelgrubel



Shifting Gears at drupa

Judging by the latest round of press conferences, this drupa will be the one where IT gets moved to centre stage, and the promise of desktop publishing is finally realised. The introduction 24 years ago of device-independent output of integrated text and graphics, using tools that mimicked professional publishing software, was about far more than process democratisation. The DTP revolution allowed the same file to be output on a desktop printer and a high end imaging device, promising an eventual continuum of digital print production technologies across applications and markets, from simple DTP at home, through to increasingly sophisticated word processing and layout in offices, to corporate reprographics departments through to professional print production.

HP is leading the charge with announcements that could possibly be dismissed as just so much hype, an inevitable response to a truly amazing and exceedingly lavish press trip to Israel. However throughout the following week in Belgium at the Duomedia series of press conferences, came announcement after announcement that made the same assumptions. IT drives the prepress and publishing industries and there is now a continuum of technologies for printed output. This includes all forms of digital and offset printing via direct-to-plate output. We'll present an indepth evaluation of HP's strategy and what it means for the industry in next month's issue of Spindrift. In the meantime here's some more about what's coming at drupa.

The net result of technological refinements means that traditional and arriviste graphic arts suppliers are flocking to provide digital printing engines and the associated data management for all sorts of applications.

Output on the Up and Up

The net result of technological refinements means that traditional and arriviste graphic arts suppliers are flocking to provide digital printing engines and the associated data management for all sorts of applications. HP has announced several new presses, including a web press and three new Indigos. The new web press (for which an entire new division has been set up - Inkjet High Speed Printing Systems), uses a version of the same scaleable Edgeline thermal head technology as is used in HP's home and office products. With a width of 762 mm (30ins) the new press has a unique format and prints up to 122 metres per minute or nearly 2600 A4 pages per minute at 600 x 600 dpi, and 75m² per hour outdoor or 35m² per hour for indoor applications. It leverages the Edgeline pigment ink system, but uses HP's new Latex ink which can be printed on a broad range of surfaces including recycled papers and has improved de-inking.

At drupa this press will be printing 4-up 7 x 10ins portrait book pages creating 16-page signatures, to produce 1000 booklets per hour. It will also be printing 200 full colour double sided 2-up Berliner format (315 - 330 x 475 mm) newspaper pages per minute. Consumables pricing will be less than one US cent per four colour page (A4, with 30% coverage)

printing 4/0 and less than 0.15 US cents per page for A4 black page with 5% coverage printing 1/0. A dual engine will be priced at less than $2.5m and consumables will be sold on an as needed basis so there will be no click charge. It will be available in the second half of 2009 with test placements later this year. We also expect to see a 2.5m wide roll-to-roll version of this technology at drupa, a competitor to the Inca Onset engine.

The sheet fed Indigo 7000 has a duty cycle of three million 4+ colour pages per month and outputs 120 four colour A4 ppm at 600 dpi (240 1/2 colour), which is twice the 5500's speed. Its print area is 14mm larger than that of the 5500, so it has more flexibility in its page layouts. It has a new charging mechanism and a new writing head, and a new high speed paper handling system has been added to keep up with the imaging rate. The press uses 25% less electricity than the 5500, with on-board oil recycling. The 7000 is in advanced beta and will be commercially available at drupa. HP has also announced a new thermal inkjet printer technology that can be added to an Indigo, digital web or analogue press to provide additional variable data such as barcode printing.

For later this year, HP is introducing a label version of the 7000, the ws6000 to double the existing ws4500's productivity. It prints 60 metres per minute for two colour jobs and 30 metres per minute for full colour with a 980 mm continuous print length and will have a dedicated DFE that EskoArtwork has developed for it. This press is the basis for a double edge and roll-to-roll sheetfed press printing at 240 colour pages per minute and 960 mono, the Indigo 7200, which will also be shown at drupa. The Indigo 7200 leverages 7000 and ws6000 technologies and is due for commercial availability in 18 months. It is designed to print books and direct mail, replacing the ws3250 press and its duty cycle is 7.5m colour A4 pages per month.

Agfa Graphics, one of the oldest names in the business, is investing heavily into industrial inkjet, which already accounts for 30% of its business, the balance coming from legacy digital prepress technologies and very high end workflow management.

Agfa wants to become a global player in first generation UV inkjet technology, particularly with its Dotrix line of digital presses which output 952 metres per hour (24m²/minute) at 300 dpi across a 630 mm web, suitable for 3-up A4. This machine will print 30m²/minute by the end of the year and 50m²/minute subsequently. By 2011 Agfa expects Dotrix to be printing 70m²/minute using new head technology currently under development. A duplex Dotrix is available for newspapers, direct mail and transpromo applications printing 484 A4 pages per minute. Dotrix prints on substrates from 48 to 380 gsm and has a cost per page of €0.01 for black or €0.3-4 for colour.

Agfa's Anapurna wide format line is getting an overhaul with 60% of its portfolio renewed. The Anapurna M and MV models add a spot varnish head and the new Anapurna M4F has four heads for outputting up to

14m² per hour. The new Anapurna XLS is a photorealistic printer that outputs 13 m² for top quality and up to 44 m² for billboard output.

Xeikon takes the prize for the most gorgeous looking digital presses, and possibly for the best looking output, although we've yet to test it. At drupa the Xeikon 8000 will be imaging 1200 dpi across a 504 mm imaging width, with no limitation on the length of output. Unlike HP Indigo, Xeikon is not limited by the circumference of an imaging drum and so can print banners, for example, as long as you want. This gives Xeikon an edge in new applications development.

The 8000 is a single pass dry toner electrophotographic duplex press, with a new LED-based print head called Tiger, capable of imaging four bits per pixel for 240 lpi screen output on 40 to 350 gsm stocks up to 514 mm wide. According to CEO Wim Deblauwe, with this introduction Xeikon "sets a new landmark in digital printing". Two in-line densitometers and high performance algorithms keep colour consistent during runs and over time. The press uses a new generation Productivity Adapted toner designed for very high speed output and recyclability. The press's extra width means it can print 3-up B5 (176 x 250 mm), a popular format choice for books. For A4, the 8000 prints 230 pages per minute (200 gsm max for this speed) and has a duty cycle of 8.5m pages per month, running 24/7. Existing 6000 and 5000 plus users can upgrade their engines to the new head.

Xeikon's latest digital printer, the 8000, boasts 1200 dpi resolution across a 504mm web width.

This press is almost twice as fast as its closest competitor, the Indigo 7000 (120 ppm). Its front end, the X-800, has an additional board for data delivery plus a controller for Postscript, PDF and PPML. An optional board provides full colour IPDS output at rated speed, and the press has a closed loop data control system for quality control at very high speeds.

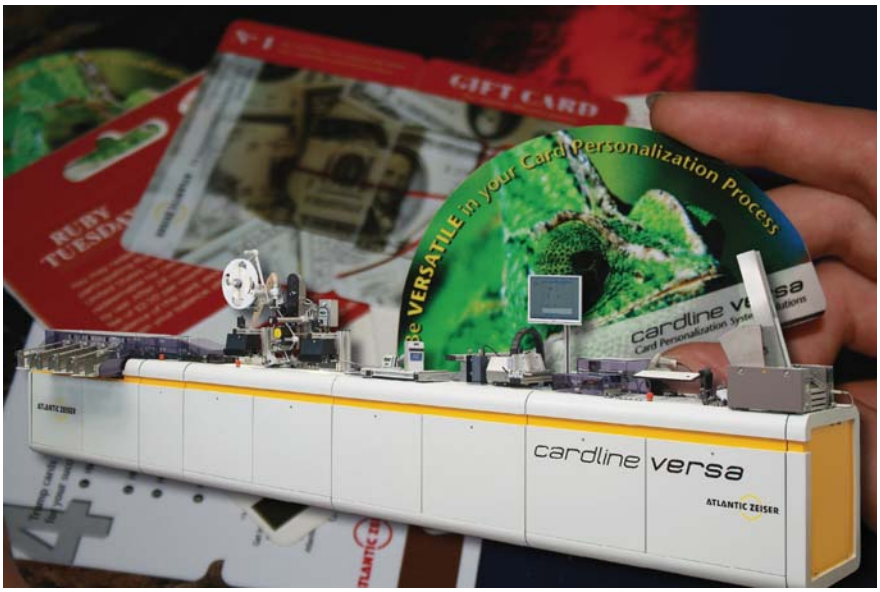
The 8000 will print on an enormous range of substrates, including signage materials and transparent substrates for backlit signs. Xeikon's toner is Oeko-Tex certified so it is safe for use in clothing and Xeikon's customer base includes Fruit of the Loom and Nike which use Xeikon output on textiles. Xeikon also have UV varnishing and diecutting tools for label printing because it can do variable repeat and cut lengths. The 8000 costs €800,000 so it's cheaper than either the Versamark or the Infoprint engines, which Xeikon considers its closest competitors.

Canon has a huge installed base of digital printing devices, with over one million engines installed since its first colour copier 30 years ago and its first colour printer 20 years ago. Since entering the digital printing market in 2005, Canon has sold 300 of the 70 page per minute Image-

press 7000 and over 4000 C1s in Europe since its launch eighteen months ago. Canon is quietly and steadily developing its position and at drupa will announce an entry level version of the Imagepress 7000.

The Imagepress C6000 and 6000VP are 60 ppm A4 presses, with the VP version running at rated speed regardless of the substrate. Both models have in-line finishing and a mono version of the Imagepress is coming too, for printing on coated and uncoated stocks. The new C1Plus engine adds a fifth colour for adding clear toner and so extends applications for this machine.

Although Atlantic Zeiser is more about coding and industrial print systems than commercial digital print, recent announcements suggest this will not always be true. This company sells inkjet heads and inks for mono and colour output. Its new Omega system is a single pass piezo electric inkjet printer for single pass variable data print at 360 and 720 dpi. There will be a 210 mm width version of this 36mm wide technology (five of them stitched together), so it will go from being a labelling system to an A4 format printing unit.



The Cardline Versa from Atlantic Zeiser can produce up to 50,000 cards of various materials per hour.

To go with its new head Atlantic Zeiser has introduced new very high durability inks which are abrasion resistant plus proprietary invisible inks, which may or may not be on show at drupa; we'll never know. The company is also introducing a UV curing ink for thermal printers to replace steam curing, providing greater flexibility for substrates. The technology is LED based so it is less polluting, lasts longer and is constantly improving.

There is also a new gift card personalisation software called Cardline Versa due for launch at drupa. This technology prints up to 50,000 cards of various materials per hour. Atlantic Zeiser has a new OEM programme for interested parties wanting to use its technologies. In the meantime, according to Bernard Thomma, marketing manager: "We will move on colour and wider printers will come."

The IT Word

The second reality of modern prepress is IT. Stefan Vanhooven, Agfa's president, summed up the situation for the entire graphic arts industry when he boldly admitted: "Our company is in rough waters, we cannot deny that … we are transitioning towards [becoming] an IT company". Prepress is of course a highly specialised IT application. Information technology drives output decisions, content creation and design, file production, quality control and management. It is necessary for every digital prepress production technology and publishing application extant in the

market today. Of course having a fleet of blade servers* doesn't do much without specialist workflow management, either for packaging or commercial production. For the graphic arts industry's supplier community this is the basis of value addition.

Workflow technologies

In addition to the EskoArtwork developed front end for the Indigo ws6000, HP has announced a bold but prescient workflow strategy, decoupling the front end from the output engine. SmartStream and Indigo presses will be available as standalone technologies, a move which may seem a bit weird at first glance. It isn't, because just as a networked computer can have access to multiple printers, so should a sophisticated print server be able to direct work across multiple devices.

SmartStream is such a system, with the capacity to drive multiple distributed devices from one location, managing output management for all devices and workflows. Several configurations are available ranging from the entry level SmartStream Designer, a tower server to replace the Yours Truly server, to the top end SmartStream Production Pro Print Server, based on blade technology and which can drive up to 16 output devices from a single front end. This DFE is designed to support all HP graphic arts output paths, including both Scitex and Designjet lines and devices coming from the newly created IHPS division.

HP is also providing a Creo front end for customers who prefer Creo technology. Since blade servers can provide all sorts of added services a rack full of them could also include Creo boards, plus ISP or ASP technology, plus deployments of Agfa Apogee, Creo Darwin, Heidelberg Prinect and so on. You name it, you can have it in a blade server.

As the first company to recognise the significance of PDF for workflow management with Apogee, and of the Internet for project management with Delano, Agfa has a venerable heritage in graphic arts workflow technologies. Agfa's also the workflow system of choice for newspaper production, so has prestigious credentials. Automation is the means through which deadlines can be cut to the bone, along with production costs, so at drupa Agfa is introducing its next generation Apogee system.

Apogee Suite, for the first time, includes tools to support everyone in the workflow, from designers to pressmen. It leverages Agfa's colour, prepress, portal and publishing knowledge in a single system that can be configured to support all publishing and production tasks. There are numerous impressive subsystems within the suite, such as Apogee Media for content management and workflow. It borrows heavily from newspaper front end systems concepts, but keeps the complexity nicely hidden from the user.

It works via a browser with a plug-in that links live XML content databases to Indesign which provides a page framework and the engine for writing

EskoArtwork will use drupa to show off a range of packaging specific workflows.

*** Blade Server** • a blade server consists of a CPU and memory, nothing else. All other services, such power supply and network management are handled by the blade enclosure. IBM, Dell, Sun and Intel, plus others, also develop blade technologies.

PDFs. Agfa, rather short-sightedly it has to be said, has chosen not to support Quark Xpress in this version. Apogee Suite provides advanced and slick content and editorial workflow management for media professionals. It is positioned for large publishers and corporate customers as well as service providers and an adequately configured entry level system will realistically cost around €50,000.

The Apogee Suite also includes a new 8-bit colour softproofing system, that allows users to view screen dots. StreamProof works via a browser and the Apogee Portal module, the system's production hub with JDF connectivity and hybrid workflow support. This module will be integrated throughout Apogee Suite shortly, obviating the need to use it via the Portal module. Apogee Suite also supports over 25 MIS technologies and seven press control systems. Over 5000 customers are working with the current Apogee technology and the latest suite reflects both Agfa's experience with complex workflow management in both newspaper and commercial print production.

Agfa is also working closely with Canon within its partnership programme. At drupa the two will announce a strategic alliance to integrate the Apogee Suite with the Imagepress range of digital presses. This arrangement will fit neatly with Canon's existing cooperation with Heidelberg to integrate Prinect, and will facilitate multiple output workflows across digital and analogue output paths.

Canon has also developed its own new workflow system called Helix. This system is a production workflow for web to print and variable data applications. Helix is fully JDF compliant and works with other JDF compliant workflow systems. Canon is continuing to work with X-Rite on Process Control and will introduce a new version at drupa with iterative profiles to optimise output profiles and their accuracy.

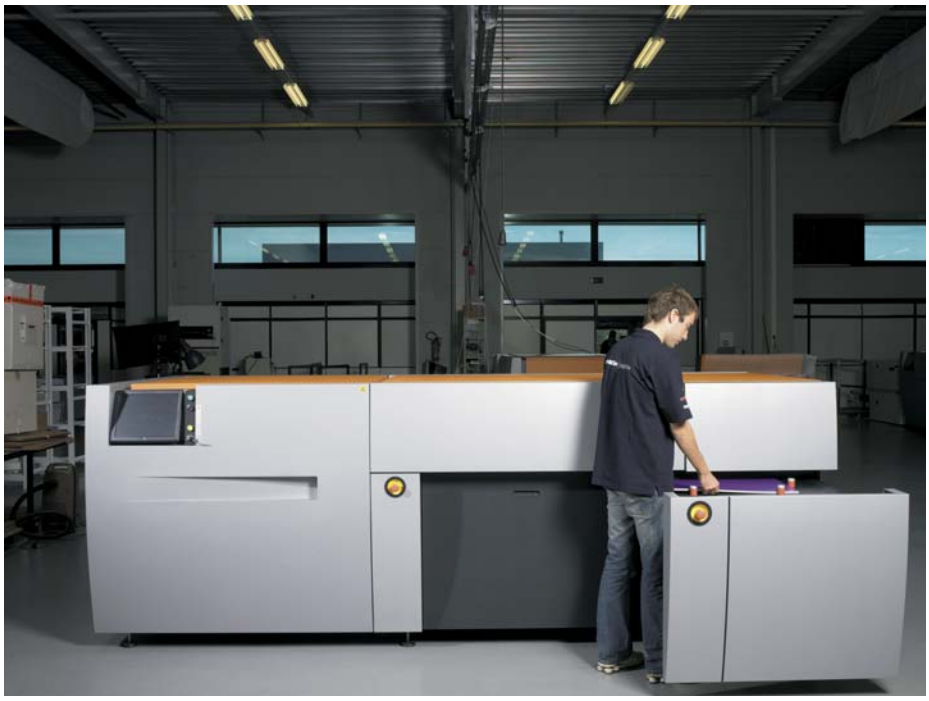
Although drupa is more about commercial than packaging printing, with the absence any real presence in commercial print, EskoArtwork will use the show to introduce new tools to support the packaging supply chain, from a package's design to its placement on the shelf. A new plug-in for Illustrator supports 3D design, and the EskoArtwork Visualiser allows brand owners to benchmark their designs and materials in context in a virtual environment. There is also a plug-in for managing content across brand families and WebCenter has been beefed up to support approvals management and project management. Texts can be placed onto a three dimensional design in Illustrator, but only their format can be changed.

The Neo PDF editing system now has integrated editing of PDF 1.7 files and EskoArtwork is introducing PacVantage for expanded gamut printing which prints special colours in CMYK, for reduced dependency on spots.

But innovation is not limited to the large and mighty. Alwan Color Expertise has announced additions to CMYK Optimiser with a plug-in

for Photoshop 3, a new user interface and RGB output for digital media support. The software has also been configured to work with Gradual, or rather EskoArtwork's, Switch. Switch is essentially a bridging technology, a glue for bringing disparate technologies into some sort of holistic system. One of Gradual's initiatives is Crossroads, essentially a marketing idea that brings together different software houses into a single community. Crossroads is a means of allowing lots of smaller companies to compete with larger system providers. Assuming they have the imagination to recognise it, Crossroads could provide EskoArtwork with an unexpected benefit: a credible entrée into commercial printers.

Proofing technologist Perfectproof is introducing Proofmaster Certified at drupa. This workflow management tool includes prepacked reference profiles and profiles for Fogra certified paper types. It provides a status check and unique identification codes. The Enfocus Certified PDF green tick is written into the PDF to confirm a proof's conformance to a specific target. It will cost €1023 (yes, really) and is dongle protected.



Basysprint has added this UV-setter 440 to its line-up of CTcP platesetters.

CTP Advances

Of course workflow isn't only about driving digital presses. Agfa has announced that it is no longer developing its own computer-to-plate devices, and has wisely chosen instead to rely on its OEM partners for new systems. Its arrangement with Screen for 4-up engines has been extended and there will be new 8-up and VLF models at drupa. The Avalon N series includes 8-, 16-, 24- and 36-up engines. The 80 page Avalon N40 and 96 page Avalon N48 machines will be introduced later this year. The Apogee Suite will be sold with all of these platesetters.

Agfa is introducing some new chemistry-free plates as well: Azura TS is based on Agfa's Thermofuse technology and Azura V is a dedicated violet polymer plate for commercial applications for run lengths of over 700,000 when baked. It is based on the extremely successful N91 plate for newspapers and works with existing violet imagers for easy migration of N91 users to violet, with only slight modifications of existing processing systems.

For imaging conventional plates, Basysprint is introducing two new additions to the UV Setter series. The 400 and 800 are 4- and 8-up engines configured with single or dual heads. The 400 images up to fifteen 680 x 830 mm plates at 1270 dpi per hour and the 800 eighteen 940 x 1150 mm 1270 dpi plates per hour, including interleaf removal. The new engines

can have up to five cassettes for a maximum of 500 plates on-line and are modular, so they can be configured as manual, semi-automatic or automatic machines. According to Basysprint, a printer imaging 4000 plates per year can pay for investment into this technology within one year based purely on plate savings. We think this is a technology that is far more interesting for the access it gives Xeikon to a market for its digital presses.

HP's decision to use the model of output management that prevails in home, office and corporate output management may have been coincidental, but it really doesn't matter. Inadvertently or deliberately, in decoupling output management from printed output, HP has set the scene for a new IT-driven production and publishing environment. This could be a terrifying prospect, given HP's size, but as happened with the use of standard platforms such as the PC and the Mac, the market gains plenty of scope to compete, plus a booming loud voice promoting digital print. Introducing an IT mentality into this industry will help the graphic arts industry exploit its position, especially when it comes to new web-based on-demand business models.

– **Laurel Brunner**

Squaring the triangle

Earlier this year we announced our intention to look at the environmental impact of printing to try and understand what those of us working in printing can do to clean up our act, and if indeed we need to. Commercial printing covers such a multitude of different types of work that we felt that the best approach would be through a series of articles, each one looking at a different aspect of printing.

We elected to start with a magazine, as most magazines have a fairly straightforward publishing process, and many of the issues that affect the printing will be equally applicable to other print jobs. One unexpected problem that we ran into is that although many printers have looked into their environmental responsibilities, not too many publishers have. This may be because some printers are under pressure from their clients to demonstrate that they are doing something about the environment, whereas the majority of magazine publishers don't seem to be under the same kind of pressure from their customers.

Another issue is that those companies that have looked at their environmental costs have done so for the business as a whole. Carbon labelling – assessing the carbon footprint of individual products – is a relatively new idea and means that companies have to take into account their suppliers' carbon output as well as their own. In the UK, the Carbon Trust is working on a carbon labelling scheme, but has started with Walkers Crisps. Most other organisations are waiting for the outcome of this project, in the hope that it establishes a working methodology for how to relate a group of resources and their resulting carbon output to individual products.

Triangle Norwich

However, we did come across several magazines claiming to have zero-rated carbon emissions. One such title, Triangle Norwich, is a good example of the sort of things that should be taken into consideration. The magazine is one of several published by a local printer, Anglia Printing Services. John Popely, who is both editor of the magazine and a partner in Anglia Print, explains: "The magazine is there to promote positive issues in and around the local community. We decided there was enough grim news out there and not enough coverage on individuals and groups that were doing positive things for the local community, be it environmental, social or economical and so it's just a promotional voice for anyone who is doing anything different that we like."

Not surprisingly, the magazine covers the Norwich area in the UK. It has a healthy circulation of 12,500 copies, 10,000 of which are delivered door to door, with a further 2,500 put into prominent places in the city. There

The Verdigris Project

This article is one of a series we are writing over the coming months, looking at the carbon footprints of different publishing workflows. It is part of our Verdigris project. Verdigris is about develop a greater understanding of media workflows towards an improved awareness of the printing industry's holistic impact on the environment.

This project is supported by the following companies.

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SCREEN MEDIA TECHNOLOGY

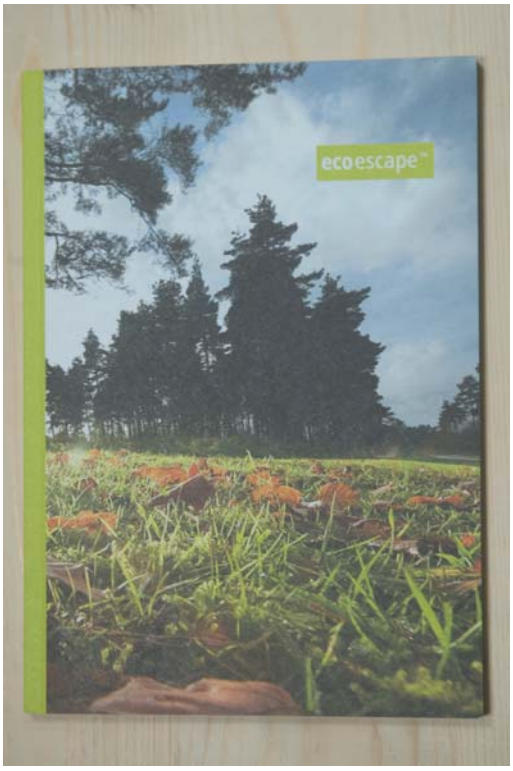
are no figures for how many people read each copy, but the industry standard assumes that each copy is read by three people, giving a readership of around 35,000.

The magazine is produced by six people in total, including Popely as editor, a sales team of two, plus one person on design, one on press and one on finishing, with each person having their own computer terminal. The magazine is funded entirely by advertising, with the ad sales all being done by telephone, although there is a website to come soon. It's an A4 colour magazine, printed on 100 per cent recycled paper, with 24 pages in total, and published monthly.

Normally, the publishing part of a magazine would have its own carbon footprint, which would primarily be made up of office services such as heating, lighting, and power for the computer terminals, phone system, coffee machines and general office paraphernalia. Added to this there would also be overheads for proofing, and for getting the proofs from printer to publisher. However, in this case the publisher's and the printer's offices are one in the same.

Anglia Printing Services

Anglia Printing Services is a small commercial printers based in Suffolk and Norwich, UK. It's run by John Popely, in partnership with his father, Fred, who founded the business in 1978. It has a turnover of £250,000. Five years ago the Popelys decided to manage the business in an environmentally-friendly manner, and have since won a string of accreditations and plaudits for doing so.



Ecoescape, printed by Calverts, uses 100 per cent recycled paper, and vegetable oil-based inks.

John Popely admits that converting the company to be environmentally-friendly has added to the running costs of the business, but says: "Basically as a business we make a profit, we make less of a profit running the way that we do, but we still make a workable profit. If I didn't go this way I would be competing like everyone else just on price and quality. I've worked in the printing industry all my working life and I wanted to run my own company my own way, and that was to make my business as environmentally friendly as possible. I wouldn't have most of my customer base if we weren't the way we are. We have local and national authorities, we have interested pressure groups, political parties, businesses which have the same environmental and ethical interests as us."

For many companies the biggest source of waste carbon is the energy that they use. Anglia Print only uses electricity, and buys this on a green tariff from EDF Energy, which was the only company that would supply a business of this size at the time. As part of the green tariff, EDF provides Anglia Print with a certificate that the company is climate neutral and therefore exempt from the UK's climate charge levy.

However, green tariffs can be complicated. Since 2002 all energy suppliers in the UK have been required by law to use renewable sources to generate some of their energy, in an attempt to increase the amount

of energy generated from renewable sources. However, most suppliers buy in their electricity from a variety of sources such as fossil fuels and nuclear power. Those that are able to generate electricity from renewable sources can earn renewables obligations certificates, which they can then sell on to other companies who are not able to use renewable sources to generate their electricity. Mary Taylor of Friends of the Earth says the system is not working as well as it should do: "In certain types of green tariff the company is simply slicing and dicing the energy mix. You may be paying for what you think is greener electricity but it could simply be that another consumer is getting browner electricity out of the same energy mix. It's not a great system."

The suppliers, including EDF, normally charge their customers a premium for green tariffs even though they are legally required to generate this green electricity even if no one takes up the option. Several organisations, including Friends of the Earth, have tried to assess which of the suppliers were greener than others, but have abandoned this because the system is too complicated to monitor effectively.

John Popely, director of Anglia Printing Services, examines a proof for Triangle Norwich, next to his Presstek DI press.

Taylor notes: "Some companies are really trying to stimulate the market, like Good Energy and Ecotricity. They try to buy sources of green electricity and they try to help customers install generating equipment themselves and to buy back the electricity, so that seems to be an example of good practice. To be absolutely certain that you are adding to the amount of green electricity you probably need to install some micro generating equipment. That would be a very good and very tangible contribution to green electricity but there is of course a capital cost there."

EDF is only generating the amount of renewable energy that it is legally required to. However, EDF has used the premium which it charges its customers to establish a green fund, with the company matching the payments from customers. This is then used to fund a variety of eco-friendly community projects such as installing solar panels on a church roof.

The only other form of energy that Anglia Print uses is the diesel and petrol in its vehicles, for which it uses a carbon offsetting program, as there isn't a supply of biofuels locally.

Printing process

Using the green tariff power supply effectively renders the office and all of the printing equipment climate neutral, but the company has also looked at all of its other processes. A year ago Anglia Print replaced its prepress and press equipment with a Presstek DI press, which Popely estimates

reduced the energy consumption by 40 per cent and the chemical usage by around four tons a year. "We chose that press because it was waterless, but also I liked the fact that it made redundant all our prepress machinery, got rid of all the need for the development of plates and film that we had previously, and replaced eight other printing and prepress machines in one go. The only chemistry that we still use is blanket wash, which we recycle on-site and use very little of to be honest. We are just starting trials on a biodegradable blanket wash."

As for printing inks, Anglia Printing Services uses non-GM (Genetically Modified) vegetable oil-based inks, in this case based on castor oil. This is especially useful to note, as although many offset ink companies are now turning to vegetable oil-based inks, most of these use GM vegetable oil sources simply because that is what is most commonly available. This can cause problems for some environmentally-conscious customers, such as the Soil Association which is ethically opposed to GM products.

The paper that Anglia Print uses comes from a variety of sources, including recycled paper, and paper sourced from sustainable forests. Popely continues: "We recycle all of our papers and our rags. We have a 100 per cent recycling record so everything that we have is recycled one way or another. Any chemistry we use we recycle on-site, we have low energy lighting, low energy screen use on the computers, low energy computer usage, our heating system recycles its own heat, and we recycle ink sludge as well by gradually mixing it into low grade publications. We offer commercial customers a service whereby we will go and collect their print when it's no longer in use, at our own cost, and put it through our recycling system."

All other waste is separated into its various components, such as glass, plastic and cardboard, and goes to Tech Energy, a recycling and reclamation company handily located opposite Anglia Print. The only exception to this is the Presstek plates, as Popely explains: "The cores can be recycled because they are aluminium. The plates can be recycled in the States. We are waiting for Presstek to open up a recycling facility in the UK, so at the moment we are storing those and waiting for recycling to be up and running."

In short, Anglia Printing Services does appear to have thought through all of its processes. It has offset its energy supplies, removed most of the chemicals involved in the printing process, been careful in the consumables that it sources and gone out of its way to recycle both its and its customers' waste. The result is a magazine which is zero-rated for carbon use, and which should offer a good example for the rest of the magazine industry.

– **Nessan Cleary**

SEE Potential

One of Anglia Print's more recent accolades is to win accreditation from SEE Potential, an organisation which tries to promote social, environmental and ethical policies in the belief that a truly sustainable business needs to consider more than just the environmental side. Accreditation is via a fairly rigourous questionnaire with the idea being that companies should be transparent about the policies that they are pursuing. This is a route that several printers have been down.

Calverts, for example, is a co-operative design and print company based in London. Calverts recently printed a 96 page A5 booklet for Ecoescape, which lists environmentally-friendly places to go on holiday within the UK. Obviously, it is important for such a guide to maintain its green credentials right the way through its production. As well as having green tariff energy, Calverts only uses biodegradable vegetable-oil based inks, and the booklet was printed on Cyclus Offset paper which is made with 100 per cent post consumer recycled paper. Using this paper has in itself saved 1288 Kg of carbon as a result of the material not being sent to landfill.

Arthur Stitt of Calverts also points out: "The designers can have an influence, such as in the inks they use. If a job is to be recycled at the end of the process, then if it's got a lot of ink on it more energy is required to then take that ink off to make it a clean paper again. This influence can continue up to the way that the job is bound and finished, so that it's easily updatable. If you are producing a directory for instance, is it done in such a way that you can take individual leaves out rather than something that can only be used once and has to be printed again?"

Hey big spender

The world wide web has become an important market place for the buying and selling of print, one which encompasses many different types of print services. In previous issues we've looked at the emerging web-to-print sector, and this month we felt it was time to address e-procurement for printing.

Many vendors will claim that there is no distinction between web-to-print and e-procurement. But whereas web-to-print solutions are about reducing the cost of buying print for both the printer and the customer and are generally carried out on a one-to-one basis, e-procurement is more about the way that large organisations do business, purchasing from a closed loop of preferred suppliers. Consequently many e-procurement systems can be used to purchase everything from staples to airline tickets, although there are several which are designed purely for purchasing print.

Many vendors will claim that there is no distinction between web-to-print and e-procurement. But whereas web-to-print solutions are about reducing the cost of buying print for both the printer and the customer and are generally carried out on a one-to-one basis, e-procurement is more about the way that large organisations do business, purchasing from a closed loop of preferred suppliers.

A good example of a pure print e-procurement system is Equator, which has been developed by Telekinesys. This is a modular system which can handle campaign management, digital asset management and on-demand ordering. It evolved after the company, which was originally set up to create bespoke software solutions, had designed a print management system for one company and found that others were also interested. James Evanson, business development director, explains: "We couldn't sell the same system but we took the ideas of a group of these companies and put together a package for each of them. So in the early days we were all about e-commerce as far as stock management was concerned. But we've expanded it into a suite with separate benefits." Most of the clients tend to be print managers or printers who have decided to do some print management. "Our system helps them spread their coverage, give them more ordering points, more capability to acquire orders without increasing their sales force, by e-procurement."

According to Evanson, there are two distinct reasons why corporates like to use e-procurement. "One level is the flotsam and jetsam of little things they use in their business, some of which are going to be printed, like business cards or comp slips." He says that this type of work tends to be high volume but with very low margins: "Traditionally these sort of things have been a real fag to get right, involving lots of time by the guy that's setting the artwork on the Mac, and then sending back copies for approval. If you can make that whole ordering process completely streamlined so that the end user gets to see a low res proof of how it will actually look, they can do their own proofing, and see what they are going to get. There needs to be some rules and guidelines which will protect the brand of the organisation, but it can still produce a pleasing business card or whatever, and you end up in a situation where there isn't any Mac operator time, or delay, or faxing of images for approval. Instead it's

just log-on and order and expect it to be delivered pretty quick because there's no one between you and the printer."

He adds: "The other and far more fruitful end of the e-procurement scale would be an organisation purchasing its marketing-based print through some sort of e-procurement system. So, for example, the AA use us, and spend something beyond £5m a year on marketing with print."

Toma Habashi of Polestar Applied explains that there's more to e-procurement than just buying print: "Purchasing is obviously the major part of it in terms of cost efficiency but of course the auditing and the transparency of the whole process is another key part because it allows you to manage consistently and also to track the behaviour of your buying staff and allows you to ensure that corporate governance is being adhered to. Then you've got the reporting thereafter to be able to monitor and change your behaviour to gain long term efficiencies by constantly improving your processes."

Polestar Applied has developed its own e-procurement system, HTTPrint, a browser-based system which can handle requests for quotes, supplier management and reporting tasks. Habashi says: "E-procurement systems like HTTP allow you to procure from your preferred suppliers in a closed loop environment. It brings efficiencies associated with online management of information and the reporting of it thereafter. There are other procurement packages available and various auctioning sites that allow you to do different types of e-procurement but HTTP embodies the closed loop model for a customer to effectively tidy-up their procurement processes."

The Equator website.

The printer's point of view

So, what's in it for the printer? According to Evanson: "In print, if you are competing heavily for lots of small ticket jobs then you have a high cost of sales and low profitability. If you can organise a long term relationship with a corporate buyer who spends millions on print then your costs will be lower. One way to do that is to sync in to their corporate approach to procurement."

Habashi explains how it works: "The printer has to provide their information back to the publisher with their preferred best product work and preferences from a print process and product level. It's fed into the system and a print buyer selects the product they want, and the list of printers that come up will be all those that have said that is a product they are set up to produce. So it won't bring up a stationery printer to produce a 50,000 run magazine."

Habashi was himself a user of HTTPrint before joining Polestar. He says: "Initially as a printer we were frightened of it but we found that we were pitching for more suitable work and as a result the cost efficiency from a suppliers' point of view was based on the fact that we weren't wasting our time churning out loads of quotes that we didn't really want to be doing

but were trying to keep the customer happy. And we were putting quotes in for jobs that we were specifically set up to do and were able to put in our most efficient prices because it was a best product scenario."

And he says that this is not simply about squeezing printers on pricing: "You do drive print prices down to a level by purely selecting the correct printer for the correct job. The prices are more competitive because it's the printers' preferred work so it does drive the cost down but through a process of organisation and tidying up. You put your best quote in, and a price that you are happy with so you are not forced to put in a pre-defined price. And you still have the opportunity to speak to your contact at the customer's to bargain if necessary and continue all those normal work patterns. There is a misconception that it's purely about driving costs down. It's more about driving costs down across your whole business as a print buying company rather than squeezing your beleaguered printer anymore on margins."

Evanson adds that printers that can keep up with this will be very important: "If they can provide a system which gives their clients these types of systems then they will look like the good guy and it will be very difficult to switch away from using them. Because you as a printer provide this kind of e-commerce channel to the desktop of 5000 of your client's employees and they rely on it then chopping you off is going to chop that away as well and they must therefore find at least as good a system or better from any new suppliers they are going to use. And that means you've got a lock-in."

The Polestar website.

Evanson says that corporates can also use e-procurement to address other issues: "One of the things that is definitely emerging is the issue of environmentally-friendly practices. One of the things that we can do in our product is to ask the suppliers how much material they are going to use. The cost of material is a large part of the cost of any print job, and all of the paper mills and suppliers are telling us that they are growing more trees for those that they chop down. So there is no compelling need for anybody in the chain to do anything more than to say 'well where we bought the paper from there is an approach there that says there are new resources being planted there for those that we are using'. So our software can indeed ask the supplier how many tons of material will you use for this job, and since that information is exposed to the buyer, the buyer could opt to go for a more expensive but lower material. That information could then be backed up so that, for example, the chairman's annual statement could say, we have spent this much more but in order to yield this much less paper consumption."

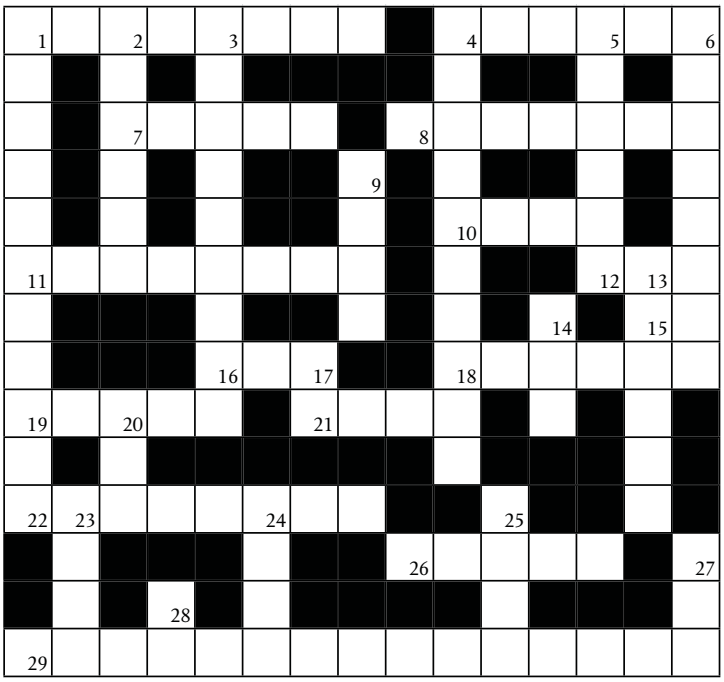
So, for most corporates, e-procurement is not only about running their business in an efficient manner, but is also about being able to demonstrate to their shareholders that they meet the ethical standards that many consumers and investors now expect. This will become increasingly important as shareholders start to expect greater transparency in how companies do business and support their media needs. As such,

e-procurement tools can also help printers become more valuable to their corporate customers by providing them with the kind of print supply chains that will allow those customers to meet their corporate social responsibility imperatives.

– **Nessan Cleary**

Graphic Arts Crossword Puzzle Number 9

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

1. For keeping warm or transferring ink to substrates? (8)

4. Beat it to get a higher level of business. (4, 2)

7. A screen dot does this if it gets larger. (5)

8. The intrinsic nature of anything comes down to this. (7)

10. European Free Trade Area (4)

11. If you add an E to systems you get the French equivalent. (8)

12. Layout Parameter Extract (3)

15. Top grades? Not Bs, not Cs. (2)

16. The purpose of an NDA is to do this. (3)

18. What we all love to get and what we all love to resist. (6)

19. The cheapest form of telephony delivers this over IP. (5)

21. VOIP has voice and IP about it. (4)

22. RO memory. (4, 4)

26. When all ideas are exhausted, put on your cap and do this. (5)

29. The technology that makes sure completed projects come off of a digital press. (6, 9)

Down

1. A dedicated electronic system that slices through tasks. (5, 6)

2. Separations must be differentiated by these. (6)

3. The path to wisdom leads one from data and information, via this route. (9)

4. The city on the Rhine famous for its Alt bier. (10)

5. A simple platesetter with no automation can be described thus. (6)

7. A term to describe everything that happens before the plate reaches the press. (8)

9. A quick output device can be described in this way. (4)

13. The type of binary digit that gets added to a bit string to make sure that the value of one in a set is always either even or odd. (6)

14. The opposite of even. (3)

17. The word that sets everything off. (2)

20. International Publishers Association. (3)

23. The opposite of 14 Down. (4)

24. Not one is left when all the bits are imaged. (4)

25. Million Instructions Per Second. (4)

27. This is the analogue holder for everything to do with the job. (3)

28. 3.14592653589793238462643383279502884197 1 (2)

Answers for Graphic Arts Crossword Puzzle Number 8

K	N	O	C	K	O	U	T	S	■	■	F	S	C
■	■	■	O	■	K	■	■	■	A	P	I	■	O
■	■	■	N	■	■	U	■	■	■	■	N	■	P
S	U	S	T	A	I	N	A	B	I	L	I	T	Y
U	■	■	I	■	■	I	■	R	■	■	S	■	T
B	U	R	N	S	■	T	■	O	■	■	H	■	A
S	■	■	U	■	R	■	■	C	■	A	■	■	K
T	■	M	O	N	O	■	S	H	I	N	G	L	E
R	■	■	U	■	S	■	■	U	■	T	■	■	R
A	S	P	S	■	E	■	■	R	A	I	D	■	S
T	■	■	F	I	T	S	■	E	■	■	■	G	■
E	■	■	E	■	T	■	■	S	I	N	G	L	E
S	A	L	E	■	E	N	D	■	P	■	■	U	■
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