



Digital Dots

Spindrift

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

...Intoxicating The Graphic Arts Industry Since April 2003

I wandered lonely as a cloud, That floats on high o'er vales
and hills, When all at once I saw a crowd

– William Wordsworth

Dear Reader,

Wordsworth's words welcome Spring but like this month's issue, it is definitely slow to arrive. Who know's what's up with the weather, but we're late because of Xeikon's embargo on news of the latest Xeikon 3500 press. See page 13 for details.

We chose this quote as well because it sums up our search for prepress and printing system developers who embrace cloud computing. Unfortunately we can't yet see a crowd which is strange because these days software development, sales and support are a fiendishly expensive business.

The alternative is to offer software as a service (SAAS) leveraging cloud computing to cut costs. Software innovation has played havoc with the traditional scheme of printing machinery and system supply. From composition and page layout, proofing, raster image processing, through to film and plate imaging and processing, the effectiveness of the software and the oomph of the hardware it runs on determine system efficiency. Isn't it better to let someone else carry some of the load?

We're already well used to cloud computing since it's the model of the Internet: think Google, Facebook, Amazon. The model offers a route forward for prepress and printing software developers, service providers, publishers and printers alike.

Enjoy!

Laurel, Nesson, Paul and Todd

In This Issue

Gorgeous Digital

Laurel Brunner surveys the latest news on next month's Ipex show and finds a continuing emphasis on digital print with new ways to deliver software emerging as a major theme.

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Take it to the bank

As Ricoh prepares to formally take over InfoPrint, Nesson Cleary looks at its AFP software architecture and assesses its chances for expanding the customer base, as well as some of the alternatives to AFP.

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Colour veterans

Today GMG is highly regarded as a developer of colour management solutions, having a wide portfolio covering different press situations. Paul Lindström looks at what lies behind this success.

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Hear Them Roar

Laurel Brunner visited the M-Real paper mill at Husum in northern Sweden to see just how far paper manufacturers are going to ensure that the carbon footprint of paper production is minimised.

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News Focus

Canon has taken over Océ having secured 84.65 per cent of Océ's ordinary shares. Canon made an unconditional offer of €8.60 a share, and by 4th March had 71 percent of the shares. Some Océ shareholders went to court in a bid to force Canon to raise its offer price but after a Dutch court ruled in favour of Canon's handling of the deal, it gave the outstanding shareholders until 19 March to decide. In total, Canon now has 87.51 per cent of the total issued share capital of Océ including Océ's treasury and financing preference shares. The first meeting of the new board has already taken place, and Canon and Océ have started cross-selling.

Océ has released its figures for the first quarter of 2010 which show revenues of €614 million and an operating income of €7 million with a net loss of €5 million. Chairman Rokus van Iperen commented: "Although our revenues were still declining in first quarter 2010, the decrease was less significant than in each of the three previous quarters. Some of our key markets are showing signs of either stabilizing or even picking up."

NPM Capital has made a non-binding offer to Punch International to buy the shares that it holds in **Punch Graphix**. Punch International currently holds 66.37% of the issued capital of Punch Graphix. If NPM acquires such

shares, then NPM will be obligated to launch a mandatory public offer in respect of all other shares in the capital of Punch Graphix. In response, Punch Graphix has said that it will take the necessary legal advice.

Anne Mulcahy is to retire as chairman of **Xerox**. Mulcahy, 57, became chief executive officer of Xerox in 2001, and chairman in 2002. Prior to that, she was president and chief operating officer of the company from May 2000 through July 2001. During her 34-year tenure with Xerox, Mulcahy has held senior management positions in sales, human resources and marketing, and led the Xerox business division that sells products for reseller and dealer channels. Ursula Burns, who succeeded Mulcahy as CEO will take over as chairman.

Adobe has introduced a team collaboration tool, Acrobat.com Workspaces. With Workspaces, team members can store and organise project content online, and easily share and manage team access to files – eliminating the need to continually email updates. Acrobat.com users in the UK can create one free Shared Workspace. For those in North America, Premium Basic subscribers can create 20 Workspaces and Premium Plus subscribers can create an unlimited number of Workspaces.

Ferro and Colorobbia have joined **Xaar's** Approved Ink Partner Scheme. Xaar has been working to optimise ceramic inkjet inks for its 1001 printhead. Ferro, a major global supplier of technology-based performance materials for manufacturers, is a worldwide leader of frits, glazes, pigments and inks to the ceramic tile decoration market. Colorobbia specialises in the production and distribution of material and technologies for traditional and advanced industrial ceramics industries.

Sun Chemical has opened a new state-of-the-art manufacturing plant in Frankfurt, Germany, specifically for the printing of food packaging. The plant, which cost €4 million, was built using clean room and HACCP directives. The facility features the most modern mixers and mills on the market as well as process control computers and two new blending stations. One blending station is specifically used for low migration inks; the other, which is housed in a separate building to avoid cross-contamination, is used for conventional inks.

Spindrift

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Digital Dots Ltd

The Clock Tower • Southover • Spring Lane
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Publisher – Laurel Brunner – lb@digitaldots.org
Editor-In-Chief – Nessian Cleary – nc@digitaldots.org
Technical Editor – Paul Lindström – pl@digitaldots.org
Production/Websites – Todd Brunner – tb@digitaldots.org
Subscriptions – Helen Moderski – subs@digitaldots.org



HP has brought out SmartStream Designer 4.0, a software solution that extends the variable data printing capabilities already established in small format printing to a wide range of large format applications. It streamlines prepress processes and helps PSPs create, integrate and preview all versioned jobs with any combination of fixed data, variable text and image elements. It is also an easy-to-use impositioning tool for HP large format printers, whether the job includes versioning or not.

Fujifilm has added web2print capabilities to its XMF workflow solution, integrating EFI's Digital Storefront through JDF, which can be used for both offset and digital print production.

EskoArtwork has updated its ArtiosCAD packaging design software to version 7.6. Highlights of the new version include extended connectivity to other applications and ability to import file formats, new reference POP display standards, automatic registration between graphics and structure, and improved 3D rendering.

Agfa has updated its editorial workflow, Apogee Media to version 6. The new version includes an interactive flatplan that allows users to drag and drop pages and click-through to other modules of the editorial workflow, giving them complete (remote) control of the publication content and layout. It has a new graphical dashboard with direct access to reservation areas, digital assets, page annotation, ad placement, article editing, image cropping, InDesign layout, preflight, soft proofing, print section management and reporting.

Manroland's subsidiary ppi Media has developed apps for smartphones and Apple's iPad. This includes ppi-Tracker for overseeing jobs in the ppi Workflow, and AdX, which allows advertisers to access a central database and view a customer's previous bookings and ad placements instantly.

EskoArtwork has launched a new Kongsberg cutting table. The i-XE10 Automated features a redesigned sheet feeding system stacker that automatically loads and places the printed materials on the table and a new automated stacker that enables non-stop sorting and stacking of the finished parts. The system also automatically removes

waste so the machine can run unattended for automated finishing.

Mutoh has introduced new water-based direct disperse inks. This new zero harmful VOC four-colour ink set has been specifically tuned for Mutoh's existing direct to fabric Viper TX and Viper TX Extreme series printers. These are aimed at the direct printing of soft signage as an alternative to sublimation.

Canon has launched three new large format ImagePrograf printers - the 44-inch iPF8300, the 24-inch iPF6350 and iPF6300. The printers include a new 12-colour LUCIA EX pigment ink system able to produce prints with increased accuracy and an extended colour gamut approximately 20 per cent wider than the previous Canon range. The new inks feature a polymer structure that results in greater scratch resistance and protection from colour fading, whilst reducing bronzing and metamerism to produce more consistent, durable prints.

Neschen has brought out a self-adhesive inkjet film, printlux PVC matt CA adh, its first with a standardised coating from the Color Alliance which ensures a high level of colour accuracy for shorter set-up times. It's an 80 micron film for indoor and outdoor applications.

X-Rite will be showing new ink formulation and quality control applications for pressroom and packaging at IPEX. The company will also show the latest line of benchtop, sphere and multi-angle spectrophotometers for plastic packaging applications, and a new version of EasyTrax, a semi-automated colour control solution for smaller format colour presses.

Océ has added full colour abilities to its TrueProof soft proofing system for simulating the way that jobs will print on any one of the Océ high performance printers. It simulates pre-printed forms, permits viewing of recto/verso page registration, emulates Océ CustomTone as well as full colour, and can be integrated with virtually any kind of output management system.

Four Pees, which distributes a selection of software solutions, is now distributing CtrlPublishing's range of creative workflow tools. These are mostly plug-ins for



▶ Adobe InDesign and InCopy that make it easier for people in small workgroups to collaborate together without investing in a full-blown editorial system.

Xerox will present an 'American Idol' style music competition leading up to the 2010 Xerox Rochester International Jazz Festival. Dubbed Jazz Star: The Search for a New Sensation, the talent show will raise money for a local youth program and - perhaps - catapult an unknown musician or group into jazz stardom. Further details from www.RochesterJazzStar.com



News Analysis

Heidelberg restructures

Heidelberg recently announced that it would cut 850 jobs – 400 from its Wiesloch/Walldorf site in Germany and another 450 worldwide mainly in sales and admin positions. This is in addition to 1,500 jobs cut from its German operations last year. Heidelberg has been cutting costs for some two years now, as part of a rolling program to save €200 million prompted by a dramatic drop in orders in the midst of the recent economic meltdown.

George Clarke, managing director of Heidelberg in the UK, points out that Heidelberg has grown its market share in the UK despite making some cutbacks. He says that volumes have declined in some western markets but adds that the presses are more productive and that the company has better knowledge of its customers and so is able to service those customers more efficiently.

The cutbacks are accompanied by a restructuring which will see the company arranged into three new divisions: Heidelberg Equipment, Heidelberg Services and Heidelberg Financial Services. The restructuring also

reflects the way that Heidelberg's market is changing. The European market is a mature, saturated market with a greater emphasis on servicing and consumables. Meanwhile, Heidelberg is continuing to grow its market share in the Far East, particularly China, where it also has a manufacturing plant

Meanwhile, Heidelberg has said that it is looking for a partner to help it make a return to digital printing. There has been much speculation that this might involve Kodak, given that Heidelberg helped found Nexpress before selling its stake. Heidelberg has also been involved in a joint sales experiment with Kodak in Australia and New Zealand which has proven that there are natural synergies between the two.

It should also be remembered that Heidelberg has already been experimenting with adding inkjet printing to its presses and finishing lines, mainly for the packaging sector, through its Linoprint project, which makes use of printheads from different manufacturers depending on the application. Heidelberg also has a standalone version which it calls DriveLine, mainly aimed at label printing.

However, Clarke says that where digital is a useful complement to Heidelberg's business it won't replace the conventional portfolio.





Did You Know?

Over the years (many years) people have argued about just how many colours there actually are in the rainbow. How many would you say? Some, including Newton, say seven, perhaps because this is often considered a holy or magic number. The colours are normally named as violet, indigo, blue, green, yellow, orange and finally red.

The other day my son, who for some reason has started to study colour science, came and asked me if brown was part of the colours in the rainbow. I was about to say no – the rainbow only contains primary and secondary colours.



Image courtesy of Charles Tilford.

But, thinking about it, I realised that I wasn't so sure any more. Perhaps all the visible colours are in the rainbow?

The rainbow phenomena is of course part of both myth, religion, art and science, and many scientists through the centuries have tried to explain how it's generated. Among the first attempt that was published was the reasoning by Ibn al-Haytham, a Persian scientist born circa 965 in Basra (his nickname was Ptolemy the Second). A more correct scientific description was later made by another Persian

scientist Kamal al-Din al-Hassan at around 1300, in parallel with the works of the German scientist Theodorich of Freiberg at the same time (the two scientists didn't collaborate and perhaps didn't know of each other – but both studied the work of Ibn al-Haytham). Much later Descartes and Newton made their famous experiments with prisms and glasses filled with water.

The discussion of naming the colours in the rainbow though, in turn indirectly led to a heated debate among linguists as late as in the 20th century. In the 1969 book *Basic Color Terms* the authors Brent Berlin and Paul Kay claimed that there are seven levels of how a culture's language is developed, and at the first level the language only describes light phenomena as 'Dark-cool' or 'light-warm'. It's not until on the seventh level colours like purple, pink, orange and grey are named.

There are many attempts as well on setting up colour systems, and among the most well known is the Munsell Color System. Professor Albert H. Munsell, born 1858, was an American painter and teacher of art at the Massachusetts College of Art. Munsell used five principal hues as the base in his system, purple, blue, green, yellow and red. He then added five more colours that reside halfway between the adjacent principal hues. The start and the end of this colour wheel is linked, so red links up to purple with a 'purplish red'.

But coming back to how many, and which, colours the rainbow really consists of, we could be witty and say "as many as you can name". Because the spectrum is continuous, and there are no actual, distinct bands in the rainbow. So in trying to answer my son's question properly, I would say that brown is part of the rainbow. It's a dark orange if you like, but all colours we can see are part of the visual spectrum – and the rainbow displays that.





An Interview

There's been a lot of talk about digitally printing newspapers, but so far digital has mostly been used for printing overseas editions in short runs. However, German company Niiu Newspapers has exploited the on-demand nature of digital to come up with a new approach. We asked co-founder Wamja Oberhof to explain it to us.

Wamja Oberhof: We launched it in November 16 of last year and it's available for the moment only in Berlin. Customers go to the website at Niiu.de and then for the first step they select a section or pages from various newspapers, national, regional and even international newspapers, from the New York times to Berliner Zeitung, so a wide range.

And then in a second step they can select various RSS feeds, blogs and all that stuff. For a third step they can personalise their own newspaper so you can give your newspaper your own title, upload the picture of your girlfriend or the logo of your favourite soccer club, select the weather forecast for the city that you are interested in to completely personalise your newspaper. Then, based on this profile, our software automatically combines every single unique newspaper in the night, sends it to a digital printer and then it is delivered in the morning hours around 6 or 7am to the reader's post box.

Spindrift: Where does the content come from?

WO: Right now we have 18 newspapers but it's growing from week to week, and we are doing various negotiations to win more partners. There's no restriction on the content we take. Right now they send us the whole issue as a PDF and we take just pages or sections so we do not change anything in their own page but there are no restrictions.

Spindrift: What about the original adverts in the newspaper?

WO: We use their advertising but we don't yet get any money from those advertisers. If we get a bigger circulation then this should be interesting but right now

it's for free. The newspapers are getting extra advertising revenue. We pay for each page that we are using so we have a contract with the license fee so we are paying for it. We also implement two pages of advertising that we sell.

Spindrift: Who is reading the newspaper, and what are they reading?

WO: Forty-five per cent of our readers are very young, from 19 to 29, that means that we reach a very young target group but we also have 20 percent of companies which are clients so a wide range. Our aim is to reach 5000 readers within six months and I am sure that we will reach this target. We are halfway through the six months and nearly at half the amount.

It's a monthly to three month to six month subscription, whatever you want to do. You could try it for six days for free but most of the readers who try it for longer than this stay with us.

Local news is the most common news. We have three local newspapers in Berlin.

Spindrift: How do you plan to expand the idea?

WO: Right now its only happening in Berlin but the next step we are planning to expand through to other cities. We have a partner, a commercial printer called RT Reprrotechnik Gruppe, and they do the printing for us using the Océ Jetstream 2200 in Berlin but we need such a machine anywhere else that we would go with this project. For now its just printing but we will offer in the future various distribution channels from epaper to iphone and there will be a few things that we will launch in the future but right now we are completely concentrated on the printed product.





Green Shoots

ISO TC 130's task force for the carbon footprinting of media has over 40 participants representing 13 countries. This reflects the fantastic interest worldwide in the work of the group. The usual number of people on an ISO task force is apparently less than 10!

A former paper mill in Inverurie in Aberdeenshire, Scotland is to be turned into a green energy centre. *International Paper (IP)*'s agreement for the construction of the €700 million site will create a 17-megawatt capacity biomass-fuelled energy centre. It will include an integrated wood-pelleting plant with capacity to process 250,000 tonnes of locally sourced timber annually. And for every tree that gets cut down, three young ones will be planted.

According to the UN's *Food & Agriculture Agency* the conversion of tropical forests to agricultural land, has decreased worldwide over the past ten years. Deforestation's still going on but the picture's improving. For the 233 countries and areas monitored between 2000 and 2010, only around 13 million hectares of forests were converted to other uses or lost through natural causes each year, compared to an annual rate of some 16 million hectares during the 1990s.

The *Nordic Ecolabelling Board's* Swan logo is the official ecolabel of the Nordic countries. It covers 66 product categories including print and over 200 printing companies throughout Sweden, Norway, Iceland, Denmark and Finland are ecolabel-licensed. The Swan logo confirms that an entire supply chain meets various environmental requirements.

The Nordic Ecolabelling Board (the folks who control the Swan logo) has approved *EFI's* Vutek QS Series r (the r is for roll) ink. Printers can incorporate use of the approved ink as part of applications for a Nordic Ecolabelling license. To achieve this status, printing companies must agree to follow certain criteria, including the use of approved media and ink including the Vutek QS Series r Ink. This ink is one of the few accredited for this purpose.

It has also added five HP Scitex inks for sign and display printing to the official list of those that meet the Nordic Swan chemical requirements.

Verdigris

Plase take part in the Verdigris Environmental Awareness Survey. We value your opinions!

<http://verdigrisproject.com/survey>



Heroes & Zeros

Heroes

The Illinois Board of Higher Education has approved a new Bachelor of Science degree in Graphic Communications at Illinois State University. Illinois State University is a research partner with the Print and Graphics Scholarship Foundation and has a long tradition of printing education, beginning as a teacher-training program in the 1940s, and, since the 1960s, supporting the industry.

Students have previously majored in either Industrial Technology or Technology Education, with only a concentration of courses in Graphic Communications. This new stand-alone degree program represents a major commitment by the State of Illinois to support the graphic communications industry.

Zeroes

Even though ISO 12647-8 has yet to be published Fogra, the German research organisation, has set up a certification

▶ programme for printing systems that comply with the standard. This is a commercial accreditation procedure where money changes hands in return for a certificate of compliance. As we understand it the content of a standard under development should only be shared with people who might make a material contribution to the work. That Fogra is deeply involved in standards development work puts the organisation in a difficult position, one where conflict of interest and commercial pressures are hard to avoid.

Accreditation is an important part of the steady improvement in processes and quality for any industry, especially the printing industry. Exploiting an ISO standard prior to publication for commercial gain undermines market confidence in ISO and standards accreditation in general. It also suggests that through their positions on ISO committees those involved are gaining an unfair competitive advantage for their employers.



Gorgeous Digital

The latest glut of pre-IPEX press conferences and releases is further confirmation that traditional print industry giants no longer dominate the news agenda.

In the past, different manufacturers provided the various components of a printing system, from creative software to finishing systems. This familiar scenario worked well for many years, supporting a huge range of developers and suppliers, but it doesn't work anymore, as IPEX will show. Replacing the series of discrete links in the print media production chain, we have complete printing systems provided by individual suppliers and an army of software developers with technologies to support both analogue and digital printing. They make tools that bridge system components both local and remote to create single, unified workflows reaching from prepress to business administration.

But despite their digital entrenchment, neither developers of digital printing systems nor software providers have an easy life. Far from it - printing system developers are under constant pressure to stay ahead for all components: print engine hardware, ink chemistry, curing technology, control and workflow software, and high speed raster image processing. Software developers must anticipate and respond to larger IT industry trends, as well as those within the printing industry. The struggle for both is relentless.

Serving Up Software

One of the industry's leading software lights is EskoArtwork, which over the years has absorbed some of the greatest innovators in prepress. Names such as Barco, Purup, Aesthede and DISC are long since forgotten but their legacy of imagination and rigour continues to shape workflow system developments for EskoArtwork.

In common with most of its colleagues in the industry, EskoArtwork has had a rough time of it. However, CEO Carsten Knudsen isn't looking over his shoulder: "This is what it's all about: ... where we're taking the business. We had a bad first quarter, a not so bad second quarter

and in the third quarter things got better." At a pre-IPEX press event in Brussels he also said "2009 was not only bad ... with many bright spots especially in Asia, digital [printing], flexo and end-to-end workflows. Enterprise systems are moving and standalone systems are out."

This is a very important observation reflecting a market perspective that we believe is spot on. The idea of single systems operating in isolation ignores the contribution of the Internet as a force for change in software development, delivery and support. It's taken EskoArtwork sometime but the latest iteration of its workflow technology pulls together the various bits and bobs of systems it has acquired.

Far more significantly Suite 10, due to ship on the 1st May, is "a major step change release of all our software for sign and packaging markets" according to Jan de Roeck, director of solutions management. We believe it's just a matter of time before EskoArtwork and others move their software into the cloud and provide it as a paid-for service.

Suite 10 is a step along this road. It is not just another prepress workflow and data management system but includes all background and workflow management to be "workflow going beyond prepress". Suite 10 is based on the Automation Engine 10 which combines Esko's Backstage with Artworks' Nexus and Odystar servers into a single system, using a Shuttle technology to link Suite 10 editors with the Suite 10 workflow and automation processes. With this technology operators can manage process automation from within their editing utility.

There is also a new online repository of 3D structures called Shapes, which will provide EskoArtwork and its customers with the foundation of an online on-demand package ordering system. Fifteen percent of EskoArtwork's business and installed base is still in commercial printing, so Automation Engine 10 supports both packaging and commercial printing needs.

Suite 10's user interface comes from Odystar and its PDF automation from Nexus, with Backstage providing the bedrock data management and server functionality. In addition, a colour engine provides centralised colour

management, both colorimetric and spectral, an imaging engine supports proofing, screening and output management, and a dynamic content engine supports collaboration and content management.

Suite 10 extends workflow into brand and business management and EskoArtwork is looking to help brand owners to target a 35 – 50 per cent production cost reduction. The entire suite is fully 3D enabled and can support an online open browser-based community. Under development is a Storefront to deliver bespoke packaging for short runs and direct to consumers, who can use the Shapes database as a source of packaging ideas.



Carsten Knudsen, CEO of EskoArtwork.

The suite includes various tools such as the Studio package for visualisation and simulation of the packaging process. Studio works with Illustrator to reduce the number of proofs and so cost and waste. Despack packaging design software is also part of the suite. It all adds up to a powerful but modular framework that can also drive an MIS, for business as well as production automation. This is especially important for short runs where more

prepress is needed more often. EskoArtwork is providing comprehensive migration paths to Suite 10 for existing customers.

At IPEX EskoArtwork will also introduce Studio 10, a set of interactive 3D tools for packaging design, including shrink sleeves (for flexo), labels, visualisation and the Shapes online 3D library. Studio 10 includes full reporting and essentially combines 3D CAD with proofing to provide a dynamic 3D view using PDF.

Activity at the EskoArtwork Enfocus division has been a little patchy of late but the division's vice president Fabian Prudhomme said in Brussels that "2010 will be an important year for Enfocus. We are expanding our influence in the supply chain ... to improve collaboration between designers and printers" We should expect further automation via Switch, more partnerships and tighter collaboration with EskoArtwork and with OEMs. Enfocus has changed its business structure to focus on China and expanded operations in America and Asia, with a hub in Bangalore, India.

According to Enfocus research, matters PDF aren't improving when it comes to error rates. The number of PDF files received and sent by Enfocus customers has risen from 21% in 2000 to 89% in 2008 and 51% and 93% respectively. However for almost 75% of people receiving PDFs, one quarter of PDF files still fail, mostly for the same reasons as in 2000: low res images, RGB images, fonts not embedded, spot colours and so on. This is due primarily to poor communications between production and design throughout the media supply chain. Enfocus's latest product solves this problem, by linking the disparate parts of the supply chain, particularly design and production.

Pitstop Connect is a desktop based mini application that contains all the details a printer needs for production. It sits on the user's desktop and is available for free via the printer's website. This is a PDF profile plus extra features such as corrections routines, certification, delivery, metadata, branding, and delivery and sign-off controls. Files dropped onto the Connector are preflighted according to the requirements of the Connector's embedded profile including executing tasks in the contained action list. Designers can correct errors and then send the file to a

▶ printer or publisher with Connector handling the delivery. A Connector can support metadata for further process automation.

The printer pays a one off fee of €3999 to create Connectors that customers can download for free and without limit. When files are ready for delivery to Pitstop, the user simply drags the PDF onto the Connector which can be branded. The Connectors are software droplets (self-contained thin client software) that sit on the desktop so there is no installation hassle or risk to a user's system. Connectors have full support for PDF/X and GWG specifications and are bespoke to the printer.

Enfocus will also present its latest versions of Switch, Instant PDF, Certified PDF.net, Pitstop Pro, Server and Extreme at IPEX. Although this is not a particular Enfocus strength it would make considerable sense for the company to link Connect to Instant PDF and integrate it with a web-to-print system.

Sartorial Shifts

Of all the traditional suppliers cutting their clothes to suit their cloth, Kodak has taken the most risks. The company has simultaneously worked to establish a strong position in digital printing and in workflow management across all sectors of print. It is extending its huge reach of activities, from conventional commercial printing and packaging through to digital and data management. And all this while paring the organisation to the bone.

Kevin Joyce, vice president of Kodak, explains that Kodak's current focus is to bring value to the marketplace and help customers maximise productivity, build efficient supply chains and optimise ROI because "companies are not the vehicle to deliver products, but products are the vehicle to deliver a great company".

Kodak is unique in that it is investing in continuous flow inkjet, drop on demand inkjet and electrophotographic digital press technologies. According to Kodak it's what customers want and because each technology has a specific ability to solve problems for customers.

The company claims that its Versamark drop on demand line of presses for direct mail and transactional print

had the number one market share in 2009. Versamark technology is also used to print digital newspapers and is helping companies to grow their business. For instance Miller Distributors is a newspaper distributors expanding its market with a Versamark VL4200 to produce four new titles in addition to the existing eight. The company has seen annual increases in sales of 80-120%.



Fabian Prudhomme, vice president of Enfocus.

John O'Grady regional managing director Kodak EAMER, sums up the company's journey thus: "the new Kodak is a digital business ... offering integrated solutions with a strong focus on the customer". With 70% of 2009 revenues coming from commercial printing, conventional print is still the bread and butter business.

Chris Payne, director and vice president of business to business marketing for Kodak says "Kodak is very, very optimistic about the opportunities for our customers" given the print opportunities that come as a part of multi-channel communications campaigns. Kodak wants to provide printers with the tools and expertise to

produce all kinds of media communications products, print or otherwise. It's touting offset class output, blended conventional and digital production workflows, integrated and intelligent automation, and business services for customers and their customers, for commercial and packaging markets.

Unlike at Print '09 last September, Kodak will have real machines at IPEX. The Prosper press will be there plus a



Kodak will show off its Prosper Press, a continuous stream inkjet machine that might just challenge the offset press market.

Nexpress for photo and direct marketing applications. We've covered these technologies extensively, so we won't repeat details here. More importantly Kodak is starting to install machines and will formally launch the Prosper 5000XL colour press at IPEX. The first European installation will be at Rotomail in Italy in June. (This company is a sister company to Roto Litho which has an HP inkjet web press. What happens once both machines have been up and running for a while will be very interesting indeed!).

Presses aside, Kodak is introducing a new line of digital plates starting with the Trillian SP thermal plate, which according to Oscar Planas, vice president of marketing for prepress, is "only the beginning of a line of plates to be introduced this year". The Trillian requires less chemistry and water than the Excel plate. It therefore produces less waste, and is also simple and user friendly. The plate doesn't need pre- or post-baking which reduces the need for additional equipment costs but is suitable for long run lengths, with excellent stability on press. It also

requires 25% less energy to image Trillian than previous technologies and the plate is compatible with existing plate processors. There will be several new products along the way in the near future.

Other plate developments include a 30% smaller footprint for the Trendsetter News and commercialisation of the Intelligent Prepress Processor for automating, managing and remote monitoring of up to five plate processing lines, including Kodak platesetters and third party processors.

For its packaging customers Kodak is introducing the Flexcel Direct System which includes media, imager and workflow management. Specifically designed for flexo printers this combo will start shipping early 2011 for packaging printers who want to reduce their environmental impact through direct plate imaging.

Kodak is also promoting new custom business development services, including marketing and assessment services, and education. This is in addition to existing consulting services, and is designed to help printers leverage the Kodak Unified Workflow Solutions which include Creo colour servers, Prinergy and Insite portal products. The Kodak Print Practice Consultancy is available to all customers not just the big ones.

Coming Up on the Outside

We speak often of merging boundaries between print sectors and how developers are changing their businesses in order to meet new customer needs. Atlantic Zeiser is one such company, a digital print technology firm with a broad range of substrate flexible engines, and now moving closer to commercial printing. These inkjet printers are based on Kyocera heads and capable of very impressive speeds. Atlantic Zeiser manufactures its own Triton inks, and the Triton subsidiary also supplies inks to others who use Kyocera heads such as Océ. At IPEX Atlantic Zeiser will introduce new water-based inks with internal absorption control for better quality. With its Smartcure curing modules Atlantic Zeiser was also the first company to introduce LEDs for low energy UV curing.

Atlantic Zeiser is showing 11 world premieres at IPEX including five new engines, numerous new UV LED curing modules, new inks and a new mini controller capable of

▶ driving several print engines. This extends the Atlantic Zeiser range to include 18 different models mostly for the label market, and inline digital printing modules for existing press lines.

However, Atlantic Zeiser's Digiline suite includes machines for web and sheet fed as well as single product



Zeikon is launching this new 3500 label printer, capable of printing up to five colours across a 200-508 mm width at 19.2 m/m at 1200 dpi.

digital printing and coding sectors. The web models range from widths of 30 – 280 mm and run at up to 180 m/m, printing mono and process colour. The sheet fed models are available for widths of 30 to 1050 mm running at up to 120 m/m monochrome and colour. They are suitable for mail and transpromo work. The single product is designed for flat and 3D products (packaging and direct product printing) and has a 10–500mm width, outputting up to 90m/m monochrome and process colour.

But perhaps this company's most interesting work is with Sofha, a German developer originally of PostScript clones and now an Adobe source code development partner, focused on high speed RIP'ing and workflows for variable data. Atlantic Zeiser is now a majority shareholder of the company and will shortly present an extended version of PDF/VT developed with Sofha. The version doesn't have a name yet, but PDF/VTx is enhanced to provide more security and flexibility and smaller data streams. PDF/VTx is based on APPE 2.0 and together with Adobe, Atlantic Zeiser wants to propose it as a new ISO standard.

Punch Grafex is also taking steps to improve its profile, particularly for its Zeikon line of digital presses. As CEO Wim Maes says: "Zeikon is the best kept secret in the industry". Yet these engines earn for Zeikon a recurring income that is over 50% of the division's total including inks and services. The goal for Zeikon is "to be the company that understands our customers the best. We want to be the company that understands our customers' challenges the best." Zeikon can't be completely unknown since 80% of all shelf strips printed in the US are printed on Zeikon machines.

Zeikon operates in four markets: industrial (ie labels), documents, books where it has some large customers, particularly in the US, and point of sale. The 8000 press been very successful in document printing (including transactional work) and now has been speeded up to 260 A4 pages per minute (19.6 metres per minute). The 8000 has a capacity of one million A4 pages per day, giving Zeikon further and stronger reach into transactional markets. Other advances are reduced operator maintenance and a wider colour gamut. Also the six-year-old X-800 now supports IPDS data streams and five-colour output. The fifth station on the Zeikon 8000 can also be used for coatings for security as well as spot colours.

Zeikon has launched a version of the 3000 press adapted for label printing. The new 3500 prints up to five colours across a 200-508 mm width at 19.2 m/m at 1200 dpi. It's slower than the HP Indigo ws6000 but prints five rather than four colours and at 340 mm the web width of the ws6000 is narrower. Existing 3000 presses can be field upgraded to 3500s.



BasysPrint will launch its new UV platesetter.

Xeikon claims that this larger format brings the break-even point for the press beyond 4000 linear metres and that it's 50% more productive than its closest competitor. The larger width makes the press more productive and less wasteful, with a 113% productivity improvement according to Xeikon. Xeikon's targeting food applications where 40% of all digital labels are used. The 3500 is also suitable for POS because it can print on vinyl, board, translucent and PET materials for banners price tickets and so on.

The new press launch goes hand in hand with the launch of two new toners, designed for different sectors. Quadruple Adapted Productivity (QAP) toner for the 8000 is due for release at IPEX. It is more suitable for high speed output required for printing documents and books.

QAI (where I stands for Improved) is for industrial output ie label printing. For both toners the ingredients are environmentally benign and fuse at a lower temperatures. QAI is dry food-approved for direct and indirect contact, with more light fastness and supplied with less packaging. It can be printed on paper and other substrates and doesn't need a functional barrier as UV inkjet and liquid toners do.

Both toners have better on-press performance and are based on eco-friendly polymers and carriers and there

are no restrictions on disposal. They are light fast for two years and as they are dry substrates don't require any pretreatment or primer which simplifies production and cuts costs. Recyclability and de-inking of the new recipes are the same as with previous toners, and no VOCs or solvents are used to make them. Xeikon uses 100% green electricity for toner manufacturing. Older presses can be upgraded in the field to use these toners, extending the lifetimes of the presses.

The other string in the Punch Grafix bow is computer-to-plate technology, with Strobbe and Basysprint. Both are developers of digital platesetters, Strobbe however manufactures devices on an OEM basis. The company has extended its deal with Agfa to manufacture Polaris and Advantage platesetters for another four years. The factory has a capacity of 400 units per year and devices such as the new version of Advantage, the NTR, with greater speed and flexibility, are selling well.

Basysprint develops engines that image conventional printing plates for both newspaper and commercial markets. According to Wim Maes, "Our orders have stayed on a good level for the UV Setter. Orders have been in 2009 on the same level as 2008 which is remarkable because we are selling into a very difficult market". These engines are installed in over 40 countries, and the first two months of 2010 have been better than '09. A brace

of OEM partners, Macdermid for newspaper flexo and Kiwo for screen printing also sell these machines. At IPEX Basysprint will show the new 8-up 857 UV-Setter. Expect more news on a processless conventional plate under development and a new generation of Basysprint engines that use violet instead of thermal imaging technology.

At IPEX Presstek is launching its new 75DI direct imaging press. This new press has a larger format and the scope to add two additional towers. It provides high output quality and prints 788 x 600mm at 16,000 sheets per hour on stocks from 0.04 to 0.6mm. It has a new single lens on-press imaging technology for sharper output quality. Commercial availability of four, five and six colour units, plus an optional coater, is expected by the end of the year.

Jeff Jacobsen, Chairman and CEO of Presstek, believes that: "This highly flexible and configurable 75DI press will open the door to production of an even wider range of short-run colour applications than its DI predecessors." He added that "its 6-up format will drive increased productivity. We see the Presstek 75DI press as the ideal complement for shops with larger conventional offset presses who need to extend the range of applications they can produce."

This machine could throw a bit of a spanner in the works for Fujifilm's new B2 device (see last issue) and that of Screen. Like Fujifilm, Screen has been trying to develop new revenue streams to complement strengths in offset platesetting technologies, specifically with a new B2 digital press.

The Truepress Jet SX is a full colour B2 sheet-fed digital duplex press designed for short run work. The press complements the B3 Truepress Jet520 colour inkjet web press and the Truepress 344 digital offset press. The Jet SX is a variable data press with a specially developed duplexing system. Presumably it will include a camera to check variable data elements page-to-page and front to back.

When this press was mooted at drupa 2008, Screen also introduced a new workflow strategy for digital printing. Equiosnet is an iteration of Trueflownet, but optimised

for digital printing processes. There are 6,000 Trueflow systems installed worldwide so it isn't being abandoned, but its evolution will be confined to the needs of the platesetting business, rather than all output paths. The Equiosnet Digital Front End supports variable data output and imposition and has new screening algorithms developed specially for inkjet. It can also be linked to Screen's Trueflow SE workflow or workflow systems from Screen partners. Version 7 of Trueflow is based on APPE 2 which provides the bridge into Equiosnet. In the latest version, imposition and job ticketing are integrated into the client interface.

Where Next?

We strongly believe that the future of software is as a service (SAAS) provided by a developer to a broad base of customers. Consider Adobe for instance with the complexities, overall fatness, cost and upgrade horrors of CS4 and soon CS5. With its hugely diverse customer base and lucrative partnership deals Adobe should move to SAAS. EFI with its nightmare of MIS is another excellent candidate for SAAS. The advantage of SAAS is that it lets customers access and pay for just the bits of software they want. The software gets updated according to the needs of the customer base and the customers don't have to invest in ownership, support or servers to run the stuff on.

This is the direction we'll be looking in at IPEX, starting with companies such as Agfa with its Delano technology and other companies who offer web-based systems. This includes the major players plus providers of web-based approval and quality control systems from the likes of CGS and GMG, and MIS/ERP technologies from EFI et al. For instance, Dims will present four new product suites suited to different types and sizes of company. More interesting than the suites is how they will be packaged and delivered to customers, because software is how we get the most out of hardware, whether it's a digital platesetter or press, or a conventional printing machine.

- Laurel Bruner



Take it to the bank

InfoPrint has been one of the giants of transactional printing, but as it reinvents itself as a division of Ricoh will it be able to move into the commercial print market?

InfoPrint has a long, rich history in transactional printing having grown out of IBM's printing systems division. But IBM's main business is data management and in 2007 it opted to focus on that, selling its professional printing to Ricoh, having already sold the desktop computer business to Lenovo back in 2005.

Ricoh has built its business from office multi-functional printers but Daisuke Segawa, CEO of InfoPrint, says that this is a mature market: "So we focus on the production printing market to invest more to make the Ricoh group grow more." He adds: "Ricoh's stock price rose to its highest point after announcing the joint venture with IBM."

One of the things that attracted Ricoh to the deal was the loyalty of many of the customers who liked the sense of security that came from dealing with the 'big blue' behemoth of IBM. To capitalise on this IBM and Ricoh set up InfoPrint as a joint venture to slowly reinvent the business as a wholly owned subsidiary of Ricoh. It's taken three years but in July Ricoh will finally take control.

They won't cut the ties completely - InfoPrint will continue to base its worldwide headquarters at the IBM campus just outside Boulder, Colorado, in the States, where it has some 700 staff. InfoPrint also has a product development centre in Yamata in Japan, and a software development office in Timisoara in Romania, as well as sales and support offices throughout the world, with around 27,500 staff in total.

The AFP advantage

According to Segawa, one of the most valuable aspects of the IBM business was its AFP workflow architecture. The Advanced Function Presentation, or AFP, production

software was developed at IBM back in 1984, initially as a monochrome solution. But in October 2004 InfoPrint set up the AFP Color Consortium to help develop colour management support. Now renamed the AFP Consortium, it continues to develop the overall AFP architecture as an open standard. Last year it became a non-profit organisation and now counts around 37 members including the likes of Xerox, Kodak and Océ.



The InfoPrint 5000 colour inkjet printer is based on the Screen Jet 520.

These companies represent a considerable growth opportunity as Segawa explains: "AFP is 30 years old but the AFP consortium developed the colour version so that they can get the platform to other competitors so we are very interested in that area."

AFP's great strength is that it was developed to handle transactional printing and so can cope with high speed variable data runs of many thousands with a very high level of data integrity. But InfoPrint needs to grow beyond the transactional market if it is to deliver the level of growth to justify Ricoh's investment. The company is already well-placed to grab a slice of the transpromo market, but it will also have to expand into commercial printing.

This is why the AFP Consortium is so important to Ricoh's plans for InfoPrint, because as companies like Xeikon include IPDS in their digital front ends so a wider range of printers become familiar with the complexities of AFP. At the time of printing, the print server converts the AFP data stream to IPDS, or intelligent print data stream, which is optimised for a particular print engine.

▶ InfoPrint has also added the ability to handle PostScript, PDF and PPML to its AFP version of the Ricoh C900 colour laser mid-volume printer in a bid to appeal to commercial printers, and is planning to support Adobe's PDF/VT format when that is released later this year.

The automated document factory

InfoPrint has fully embraced the concept of the automated document factory or ADF, in which various systems from different vendors integrate to create a single seamless solution for printing and mailing documents. Through a system of partnerships InfoPrint is able to offer its customers everything from document design to preflighting and web2print, as well as integration with most popular inserters and mailing systems.

The AFP architecture contains the basic framework for managing the data streams as Miranda Reeves, product manager for AFP, explains: "AFP is a page level bi-directional data stream so that for anything that a server sends to the printer, the printer has a full conversation back to the print server so that every page is tracked a hundred per cent and we know everything that is printed and everything that is not printed." It is this feedback which gives AFP its reputation for data integrity, and which sets it apart from other variable data formats.

AFP is far more concerned with data rather than pages and so the system keeps track of an enormous level of detail. Reeves says that everything within the data stream is tagged: "There are tags around the actual data, which like HTML or XML are describing the type of text and the fonts, and there's different levels, from the document level, the job level or at the specific data element level. It has descriptors for embedding objects and imagery and it has a certain amount of knowledge about the actual print requirements, something similar to JDF where it can define content about the forms and how it should be placed on the page and what the page itself should look like, whether its rotated, the specifics around how it gets printed out."

AFP can also be integrated with finishing systems such as mail inserters. Reeves points out: "Most of our customers are also mailers so they are putting information out in the post system. And they may be reorganizing their mail so

that they get the best discount. Some customers have built their own system but they are very rarely well integrated across all the different vendors."

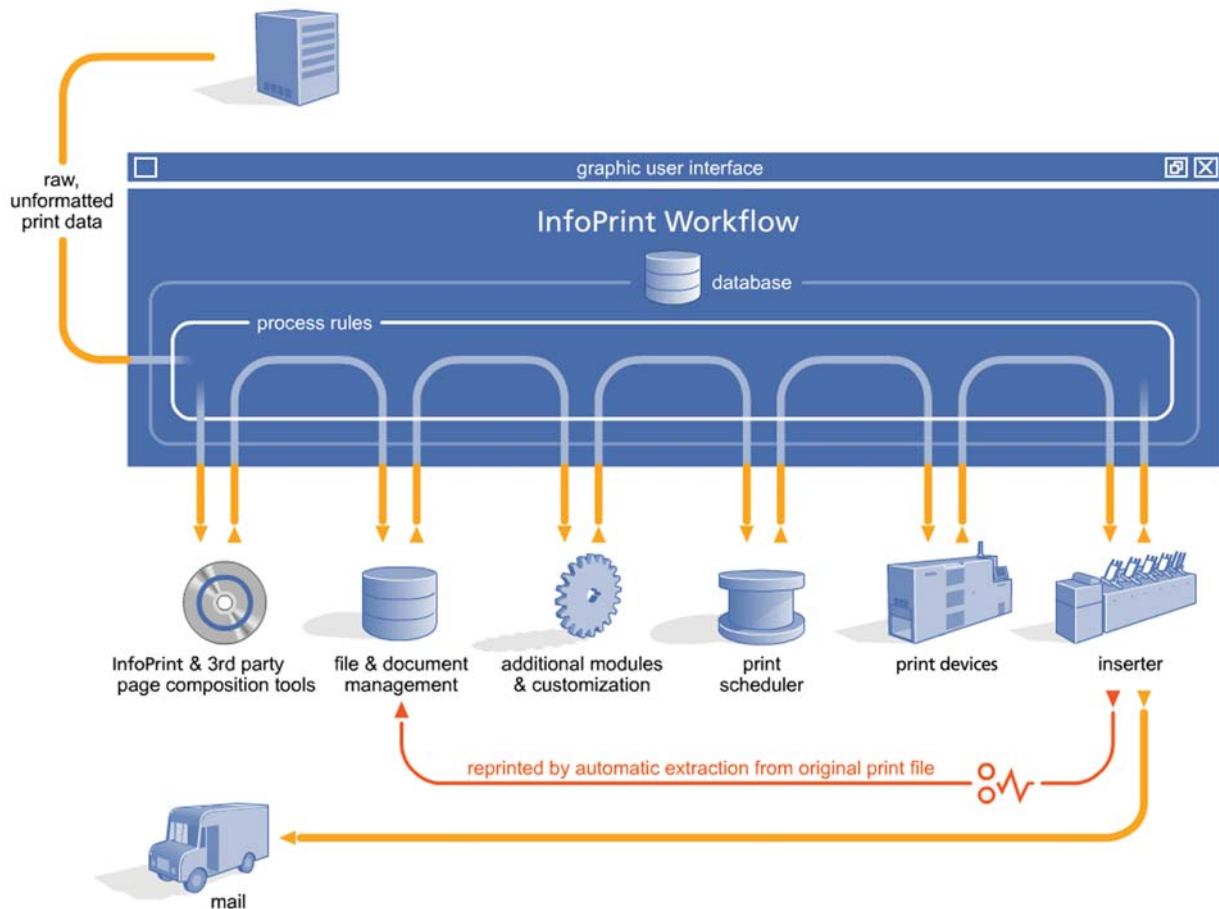
AFP can talk directly with the workflow on the inserter, so that, for example, cameras on the inserter can read barcodes and ensure that every document that should have been printed has also been inserted. If any document is missing then all the documents destined for the same address can be reprinted and added back to the rest of the job.



Miranda Reeves, senior product manager at InfoPrint.

AFP also includes Postal Optimisation, which can help determine the best way to produce a job to secure bulk mail discounts. It's been developed with the US Postal Service, but Reeves says: "We do have an offering that's been built around Royal Mail in the UK and the German postal system."

Although AFP is primarily concerned with printing it is just as much at home with electronic media and can be used to output content to websites or even SMS messages. Reeves says: "It's just a matter of a data stream translation so that it can then be in the right format for delivery and in the right delivery of choice."



Through a mixture of software, rebadged hardware and partnerships, InfoPrint has created a complete workflow for the transactional market which matches the concept of the automated document factory.

Alternatives to AFP

Adobe has been developing its own format for variable data printing, which should be finalised this autumn though it may take a while longer for useful applications to start appearing. The new format is PDF/VT, where the VT stands for variable and transactional and is designed to allow commercial printers to move into variable data applications, such as the emerging transpromo market, while still using the PDF workflows they are familiar with.

The key advantage of PDF/VT is that it will handle all the rich graphics content associated with PDF, such as layers and transparency, together with the variable data necessary for personalised print. Users have a choice between embedding all the variable data into the PDF/VT file, or referencing it via a link to a database.

Currently, one of the most common alternatives is PPML or Personalised Print Mark-up Language. This is an XML-

based system set up by PODI, the Printing On-Demand Initiative back in 2000. It was specifically designed to remove bottlenecks by reusing common contents such as fonts, logos and repeated images. It also allows for checking that all the resources such as fonts are available, and can reference these from other sources, thereby avoiding very large file sizes. There's an electronic archiving system and a number of document viewers are available.

There's a subset, known as PPML/VDX designed as a more robust version suitable for use with any compatible printer. It makes use of PDF for page layout, but relies on PPML information to define the document and the way the pages are structured. This has now been established as an ISO standard and is compatible with the JDF job tickets.

Creo, now part of the Kodak Print On Demand Solutions Group, developed an alternative in the shape of VPS or Variable Print Specification. Again, this splits the job into



repeated elements, and those that are unique to each page. It's based on PostScript and supported in Creo and EFI servers.

Xerox has its own system, VIPP, or Variable data Intelligent PostScript Printware. Essentially this is built to exploit some of the programming features of PostScript, including some page composition tools. It uses macro procedures to group several PostScript dictionaries to simplify the PostScript coding. It works with Xerox's Freeflow workflow, and there's a Pro Publisher plug-in for InDesign.

Conclusion

There's more to InfoPrint than AFP, as the company also sells a range of printers, including a number of MFP devices, the 4100 production monochrome series and the 5000, a high speed inkjet printer rebadged from Screen. InfoPrint is free to mix and match kit from different vendors, using its software to distinguish its versions from the original equipment manufacturers'.

But the key to InfoPrint's future success will lie in whether or not it can break out of the transactional sector into commercial print, and for this InfoPrint is relying on its ability to forge successful partnerships with other vendors and their customers. Segawa says: "Our view is that the huge offset market will downsize to digital printing and this will make digital printing bigger. Also the AFP consortium is very important to help grow this market together with our customers and competitors."

But it won't be enough to use the AFP Consortium to gain access to more customers. InfoPrint has undoubtedly mastered the technical and support issues associated with transactional printing, but commercial printers face a whole range of different issues and the company will need to demonstrate that it has the flexibility to cope with these demands.

- Nessian Cleary



Colour veterans

Founded way back in 1984, GMG can look back and realise that it has been around as long as the desktop publishing phenomena and personal computers.

In the beginning GMG was a distributor of equipment for Graphic Arts production (Graphische Maschinen Geräte in German) and not a colour management software company. We spoke to Bernd Staudt, marketing manager, and asked him when GMG started to make it's way into proofing and colour management?

He told us: "One of the products that GMG had on its distribution list in the late eighties was the Iris proofers. While the image quality was better than most other competing products at the time, the machines were quite expensive, and there was room for improvement when it came to colour accuracy. Jörg Weihing, one of the two brothers and current owners of the company, and who were working for GMG at the time, did some programming on the software side to enhance the colour quality and reliability of the Iris proofer. Later when Epson launched its Stylus-series, GMG put together a package at a much lower price than before. GMG has a long history of providing high end solutions for high end users, like gravure printers."

This brings us up to date, since one of the latest projects that GMG has been heavily involved with, is the development of a new standard profile for gravure printers, called PSR v2 (Process Standard Rotogravure).

Staudt explains: "We continuously participate and contribute to the work in both the GWG (Ghent PDF Workgroup), and the ECI (European Color Initiative), to help printers with different aspects of quality assurance, as well as efficiency and accuracy. This is part of our legacy – we couldn't sell proofers to gravure printers without learning how to evaluate if the printing press was calibrated and run under stable conditions. So our PrintControl software is developed to help printers calibrate all of the devices in the print process, not just the proofer."

Print and workflow solutions

GMG has participated in many proofing tests over the years, including the Spot colour Proofing test that we conducted in late 2007, as well as in several other contexts. This has made its ColorProof system, now in version 5.1, well known worldwide, and it often claims the very top position in these kinds of tests. But there is a range of additions and options to GMG ColorProof, so the list of proofing solutions is quite long: like DotProofing, FlexoProof, Remote Proofing, SoftProofing, Load Balancing – just to mention a few.



GMG dates back to 1984, and since 2004 Bernd Staudt has been the marketing manager. He says: "We have gone a long way from mainly selling hardware, like the Iris proofers, to delivering workflow solutions".

Upstream GMG offers a workflow solution called ColorServer, for file preparation and colour conversion. Among the users of GMG ColorServer is Ikea, which works with all images in Adobe RGB, and then prepares output for both gravure and offset, on more than 50 different paper grades, printed at over 40 locations worldwide.

Today Ikea considers proof production to be the most stable and predictable part of the production process! The challenge is to make sure that the printers print according to agreed upon standards, be it ISO or SWOP, with local/national tweaks like GRACol, Japan Color, FOGRA and so on.



The GMG portfolio of software spreads from workflow solutions like ColorServer, to different proofing options, all the way to press control software and including ink optimisation software.

As well as these printing standards there are also national or regional standards for preflight and file submission. This can be according to GWG, 3DAP (Australia) or Pass4Press (UK). In other words – there are lots of standards to fall back on, and a lot of places where things can go wrong. With a workflow solution like ColorServer different named queues help the operator to create output files according to agreed upon specifications, whatever they may be.

For printers, the GMG solutions for print and ink optimisation can save both time and ink, while maintaining colour quality and colour accuracy. This includes digital print, and because toner-based ink is actually even more expensive than offset ink, clever ink saving can make a difference for digital printers as well.

For printers that want to print according to a certain standard, or want to set up a well calibrated and optimised printing process, GMG offers GMG PrintControl. This includes both test forms and software to check the calibration of printing presses. Among the tools are the complete preparation you need to do if you plan to create new, optimised profiles. This includes determining the optimum printing density, analysis of TVI and spread, creating CTP correction curves, analysis of grey balance

(for example, using the NPDC-method, Neutral Print Density Curve), control of ink acceptance et cetera.

In addition you need to create an ink and paper database. GMG PrintControl together with the help software RapidCheck support some standard control strips as well as the ones brought by GMG. The PrintControl software supports some of the most common RIP-systems including Agfa ApogeeX, Kodak Harmony and Screen Trueflow.

The proof is in the pudding, so besides writing about the GMG products, we plan to test them as well. This introduction will be followed by a more in-depth test of, in particular, ColorProof, ColorServer and the PrintControl software.

- Paul Lindström



Paper Tigers Hear Them Roar

Can it really be true, as so many tree huggers believe, that pulp and paper production are major contributors to global warming?

At a UN conference in 1987, sustainability was defined as developments that “meet present needs without compromising the ability of future generations to meet their needs”. This roughly means that we should look after the planet for our children, so in the context of media, is paper-based print really so terrible? There is so much misinformation buzzing around the wires that we thought it might be useful to find out just what the paper industry is doing to protect one of the planet’s most marvellous resources.



The Husum mill uses 3.1 million cubic metres of wood per year, mainly from Scandinavia and the Baltic States.

It turns out that, in Europe at least, the paper industry isn’t evil after all. It’s doing a great deal to preserve trees, which of course makes perfect sense: without trees there can be no paper. Forests are a crop to be planted and harvested and replanted; the general rule is three saplings planted for every tree cut down. To find out more about the implications for print on paper we went to one of Europe’s largest mills, an integrated pulp and paper plant owned by M-Real, one of the best-known names in the paper business.

Verdigris

This article is part of the Verdigris series of stories about understanding the environmental impact of print. The Verdigris project is supported by founder members Agfa Graphics, Canon Europe, Digital Dots, drupa, Fujifilm, HP, Kodak, Ricoh, Océ and Unity Publishing, plus associate members, including Prestek. and Strålfors.

<http://verdigrisproject.com>

Located at Husum in northern Sweden, the M-Real example demonstrates just how far the paper manufacturers are going to ensure that the carbon footprint of paper production is minimised. M-Real’s Husum factory employs around 1,000 people, many of whom come from the village of Husum, population 1,700, as well as further afield. The factory was built in 1919 but it wasn’t until 1972 that it started to produce paper as well as pulp.

The plant sits at the confluence of two rivers which flow into a deep harbour. It uses 1.5 cubic metres of this oxygen-rich water per second to produce paper that is then ready to ship off across the Baltic. The wood arrives by ocean, rail and road; such is the volume required that if everything arrived by lorry, then one would need to pass through the gate every six minutes. The plant runs continuously to produce coated (26%) and uncoated (51%) papers, plus market pulp (23%), which is dried, and baled pulp that is sold on to other paper manufacturers. M-Real’s annual turnover in Husum is around €602 million.

Every year this mill turns 3.1 million cubic metres of wood into pulp and paper. The wood comes mainly from Scandinavia and the Baltic states, and consists of long fibred pine and spruce, and short fibred birch and aspen. The main product is copier paper of which over 240,000 tonnes is produced here each year: three reams of 500 sheets each leave Husum every second! The plant is ISO 14001 (since 1997) and 9001 accredited, and Energy Management System certified (2006). In 2005 M-real received FSC and PEFC Chain of Custody certification

and the aim is to continuously increase the volumes of certified wood. These management systems and COCs are audited annually by Det Norske Veritas (DNV).

The Trees

Paper manufacturers and other buyers of wood products cannot afford to strip forests which would force them to search ever further afield for their raw materials. The cost of transportation alone makes such a business model ridiculous, so forests are carefully managed to support customers who use this renewable and sustainable resource.

Organisations such as the FSC and PEFC are working hard to ensure that forests beyond developed markets such as Scandinavia are managed in a sustainable way. The objective is to ensure that wood harvested from the world's forests is replaced and managed, sustaining the forests and their ecosystems for future generations and of course for future use. Only 9%, primarily in the USA and Europe, of the world's forest is certified. However, in markets like Scandinavia responsible forest management has long been the norm. Developing markets must start managing their forest resources responsibly or they could find themselves with no local raw materials for paper making, and dependant on producers of market pulp shipped in from Europe or America.

All over Europe forest areas are expanding and fortunately people are starting to understand the role that trees play as consumers of CO₂. The forestry industry has worked hard to improve its competitiveness and profitability with more efficient harvesting and replanting of trees. This means more trees and more effective management of the forests. Contrary to popular myth not using paper could result in fewer trees planted, and a net overall fall in the number of trees and forests. If people stop using wood-based products such as paper, there is no incentive for forest owners to continue in the business of growing and harvesting trees. Instead of replanting they might just as well turn the cleared land over for other purposes, such as oil refineries perhaps!

In Sweden, where forestry is one of the country's biggest industries, there is a total wood stock of 3,000 million cubic metres, while industry fells 70 million cubic metres a year.

There is, however, annual growth of 100 million cubic metres. That is an awful lot of trees. They get harvested at a rate of one tree per minute, and trees have to be thawed, debarked, chipped to specific sizes and screened before being mechanically and chemically treated to turn them into paper. The bark is sold for reuse, for instance, in landscaping or it is burned to produce energy. At the M-real plant in Husum a wood chip pile of 45,000 cubic metres lasts around three days. Every twenty-four hours this plant chews through 8,700 cubic metres of debarked



The main product from the M_Real Husum mill is copier paper, with over 240,000 tonnes produced here each year.

logs and 100,000 cubic metres of water (around 1200 litres per second), to produce 2,000 tonnes of pulp. The M-real Husum mill produced its 25th million tonne of pulp in 2005.

The life cycle of paper-based products such as print is fully integrated: the resources used are constantly renewed and carbon emissions minimised. The trees are obviously consumers of CO₂ and print products are arguably CO₂ sinks. Paper can be recycled up to five times, and once its component fibres are too short to be used as paper, they can be used as fertiliser, for insulation or in worm farms. The water used in paper manufacture is cleansed and returned to the rivers whence it came. M-real, for instance, installed a biological effluent treatment plant in 2004/2005 and the water returned to the sea is pure enough for salmon to swim and breed in.

Of the energy used at Husum, 95% comes from renewable sources, including the waste from the pulping process, which contributes to all steam energy and 30% of the

electrical energy needed. Most energy used is biogenic, meaning in this case that it is produced from wood waste, although a small proportion of fossil fuels is still required. In working out its carbon footprint for the Husum plant, M-Real only includes fossil fuels in calculations because



A gas cleaner installed in 2008 has reduced nitrous oxide emissions to air from burning sludge by 200 tonnes per year.

only fossil fuels have direct and immediate impact on global warming. Biogenic carbon is part of the natural carbon balance on the planet, and doesn't affect concentrations of carbon dioxide in the atmosphere.

M-real Husum has environmental permits for its air and water emissions control and is continuously evaluating everything at the plant that could possibly have an impact on the environment. The biological waste water treatment system has decreased oxygen consuming substances by almost 60% since 2004/2005 when it was installed. A gas cleaner installed in 2008 has reduced nitrous oxide

emissions to air from burning sludge by 200 tonnes per year.

Since the mid 1990s carbon dioxide emissions at the Husum factory have fallen by almost 50% because of increased bark burning capacity, improved evaporation and energy savings which have significantly reduced oil consumption. M-real ran an internal climate programme between 2005 and 2009, to reduce 10% of the plant's total steam energy need. This saved 4,000 cubic metres of oil, equivalent to about 12,000 tonnes of CO₂. Electricity usage fell between 2005 and 2007 by 23,000 MWh, a fall of 2.5% and during 2008/2009 by around 20,000 MWh. The target for 2010/2011 is to decrease the electricity needs by 17,000 MWh and the need for steam by ten tonnes per hour.

And there's more: in 2008 a railway was introduced to bring in wood by train instead of lorries, and hot water produced by the plant is piped to Husum village for heating buildings and the village football pitch. Waste to landfill has tumbled from 80,000 tonnes in 2000 to virtually nothing now. M-real is actually digging up and reusing old waste because now they have the technology to do this benignly, so waste to landfill is now a negative number rather than positive one.

Paper Profiles

The Confederation of European Paper Industries (CEPI) is a non-profit organisation that represents some 800 pulp, paper and board producing companies and 1,200 paper mills from 18 European member countries. Together they represent 27% of world paper production. In 2007, the organisation launched a framework, CEPI's so called Ten Toes, for carbon footprinting paper products. This model for creating paper profiles is used by many paper companies including UPM, Sappi and Stora Enso, which owns M-Real.

A paper profile is an open declaration of a paper's environmental credentials, written using a common format. The idea is to describe the environmental details on a product-by-product basis using CEPI's framework. The model has ten parts including the obvious elements such as measuring greenhouse gas emissions from forest product manufacturing facilities and carbon



M-Real's Husum plant produces both coated and uncoated papers, as well as pulp which can be sold on to other paper manufacturers.

the misinformation and ignorance abounding within environmental organisations. Now is the time for paper tigers to wake up and growl.

- Laurel Brunner



sequestration, as well as less obvious ones such as avoided emissions.

Deforestation accounts for around 12% of GHG emissions, however, most of it occurs for reasons other than paper manufacturing. The work M-Real and many of its competitors are doing has drastically reduced the print and paper industry's GHG emissions. The CEPI framework is designed to reflect the interests of CEPI's members and doesn't get the attention it deserves, but it's an important support to what the manufacturers are doing.

More significantly it's a valuable start to the carbon footprinting of print products. Paper is a holistic medium for communications and it isn't the demon it's often made out to be. Companies such as M-real and its competitors, along with CEPI, have plenty of ammunition to counter