Digital Dots

Spindrift

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

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...Bamboozling The Graphic Arts Industry Since April 2003

...the clouds methought would open and show riches ready to drop...
– William Shakespeare, *The Tempest, Act III, scene ii*

Dear Reader,

Since Windows 7 was launched late last month, graphic arts vendors have been announcing support for it. Why are the likes of Efi and Quark getting excited about Windows 7? It's just another upgrade, right?

Yes, but there's more. With Windows 7 Microsoft has chosen to add fewer features, with the assumption that cloud computing is the future, rather than desktop-centric PCs. Cloud computing is Software as a Service writ massive. It provides Web-based computing services which can be anything from email and social networking such as Facebook or LinkedIn, to web-to-print ordering systems and on-demand publishing.

For printing and publishing cloud computing represents a huge opportunity. It supports the provision of any type of information service: customised publications and print, integrated cross media services, and on-demand print. All of it could be produced in the cloud, output close to its point of use and eventually even delivered via the postal services, had said services the vision to do it. Indeed a happy place economically, environmentally and, as Captain Jack Sparrow would say, ecumenically.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

Another leap forward

Laurel Brunner attended a meeting of the ISO's TC130 committee in Beijing, and found China keen to actively contribute to standards development. This is hardly surprising, given that the Chinese printing industry is growing rapidly, investing in new technology to service one of the biggest domestic markets in the world.

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Down in the woods today

Paul Lindstrom visited the Strålfors plant in Ljungby, Sweden, a beta test site for the Xerox 980 CCF flash fusion printer. But Strålfors is more than just a beta site, having developed a number of its own in-house systems, allowing it to contribute to the development of the 980.

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Between the covers

Nessan Cleary travelled to Cornwall to see TJ International, a UK book printer that has managed to stay ahead of the competition by consistently reducing its carbon footprint, whilst investing in the latest kit, such as Océ's monochrome VarioPrint 6320 Ultra digital printer.

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Regular Columns

News Focus

Manroland GB has stepped out of the post-press arena to concentrate on its core business. Instead, Freidheim International, a well-established finishing specialist, will be the UK distributor for Wohlenberg, which makes guillotines and binding systems, and Baumann, which makes handling equipment.

Kodak has introduced a new screening method, Digicap NX, for its Flexcel NX flexo plates, which it claims will improve print quality throughout the full tonal range and expand the achievable colour gamut. It works by creating micro-texturisation of the printing surface which makes it easier to mix solids and halftones on the same plate, as well as reducing set-up times.

Dims has launched the latest version of it MIS/ ERP solution to the European market. This is based on Microsoft's .NET technology and covers everything from estimating to planning and scheduling, prepress to production, shipping to invoicing, and financials and can handle multiple currencies and multiple languages across several sites.

EFI has launched a new RIP family, with one version for large format proofing and one for fine art photo printing. The eXpress 4.1 RIP is based on EFI's proven Colorproof XF and Fiery technology. The Photo version has an easy to use interface, supports cropping, rotating and nesting, and has various templates, such as for photobooks. The Proofing version has all this plus support for spot colour simulation and uses the Adobe PDF print engine for native PDF RIP'ing.

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Epson has launched two new large format printers. The Stylus Pro 7700 and 9700, at 24in and 44in respectively, build on Epson's established platform for aqueous ink printers. They use compression and decompression technologies to speed up data delivery during printing. These printers work with a five colour ink set, a subset of Epson UltraChrome HDR Ink incorporating cyan, vivid magenta, yellow, photo black and matte black – with the printer automatically selecting which black to use for a given job.

Neolt has launched a new large format printer, the Asterjet 1650. This uses Xaar Proton 360x1440 dpi printheads and INX Digital UV-curable inks. It's a four-colour machine, but can be upgraded to six colours with light cyan and light magenta. With a 165cm print width and a speed of up to 50m^2/hour, this is aimed at the low budget end of the market and is suitable for printing to banner, adhesive vinyl, blueback paper, backlit films and polyester fabrics.

Durst is now offering customers free collection and disposal of all waste Rho ink, and is also supplying inks in five litre single packs to cut down on waste. Furthermore, depending on volume of ink usage, Durst will offer a recycle credit of the waste ink up to a maximum of 5% of the total purchase.

The Flemish research group, **VIGC,** has tested the MyPantone app for iPhone, and found it to be an unreliable colour reference tool. This is mainly because the screen for the iPhone is not calibrated so that the results do not match with the printed guides.

Sihl has launched a new large format coated canvas media for the sign and display market. Both Miro Gallery Canvas white 340 and Fortuna Artist Canvas white 400 have a bright white coating, providing a very wide colour gamut, ranging from transparent colour gradients to exceptionally high colour densities.

Sihl has also launched three new Post-2-Cure papers, for indoor and light box display, which can be used with both HP's latex inks and UV printers.

Epson has a new range of fine art papers. The four new papers, Hot Press Bright, Hot Press Natural, Cold Press Bright and Cold Press Natural, are optimised for use with Epson UltraChrome ink technology. The four new 100 per cent cotton papers are PH buffered and free from linen and acid, with a specially developed coating to give an exceptionally wide colour gamut and high D-Max. To start with, these will be available as cut sheets in A3+ and A2 sizes with rolls coming early next year.

Kodak has added MICR printing to its Versamark VL2000/4000 series of high-speed inkjet printers. Unlike most systems, Kodak's MICR works as a separate unit inline with the main printing unit, which Kodak claims, is more cost-effective.

Kodak has also made a security ink for these printers available worldwide. These inks, which fluoresce under specific types of UV light, can help to reduce fraud and add track and trace capabilities to documents.

Xerox has launched a range of monochrome wide format multi-function devices for the technical drawing market with the 6604, and the slightly faster 6605. These systems offer 600 x 600dpi copying, scanning and printing with an easy-to-use interface. An on-board colour scanner allows for hard copy documents to be scanned to electronic files or can copy existing prints of varying sizes, including the most common wide-format size drawings, E and A0 documents. There are options for a dual paper roll holder and inline folder.

EskoArtwork has opened a new development centre in Bangalore, India, building on the technical resource centre established in 2007. The 6,000sq ft office will enable EskoArtwork's team of programmers, software developers and application engineers to extend the systems integration capabilities and e-support services to customers around the world.

Kodak has released version 6 of its Preps imposition software for the European market – it's been out in the US for some time. This has a new interface that supports drag and drop for most actions, and has a single workspace for ganged and non-ganged work. It also has automatic as well as manual ganging. Not surprisingly, it integrates with Prinergy to allow multiple edit cycles of imposed files directly from the workflow user interface.

Specle has launched a new advertising specification database and industry resource at www.specle.net, along with a new workflow tool, SpecleCreate. The system gives publishers a personalised URL to upload their own specifications ensuring that they are up to date. Some big names in the UK market have already signed up, including BBC Magazines and Guardian News and Media. SpecleCreate helps designers create ads to the exact page size a publisher specifies.

Xerox has released its figures for the third quarter of the year, which, with an operating cash flow of $610m and a $1.2bn cash balance, are similar to the results from the second quarter. The figures are down 16 percent on the same period last year, including a 29 percent drop in equipment sale revenue. However, Xerox does appear to be on track to knock $1bn off of its total debt this year.

Xerox has also launched Enterprise Print Services to help companies manage their office, production and external print production as a single outsourced service. It's particularly aimed at supporting home-based and mobile employees, and gives companies an overview of all their print requirements and costs.

Quark is giving away a free XTension to XPress 8 users. XpressMath enables users to create high quality mathematical equations within QuarkXPress projects. It can be used to associate characters with procedures (such as Sigma with summation), to insert fixed integrals, radicals, and summations and to customise space around mathematical structures. The user interface only works in English, though the program itself will work with other language versions.

Heidelberg has launched a new Process Colour Look-Up Guide to give designers a reference for producing ISO 12647-2 colour. Each page of the guide contains a grid made up of the four process colours - cyan, magenta,

yellow and black. The various percentage combinations of colours can then easily be specified, taking into account whether the work is run on coated or uncoated stocks. It costs £50 but is available free for a limited period.

News Analysis

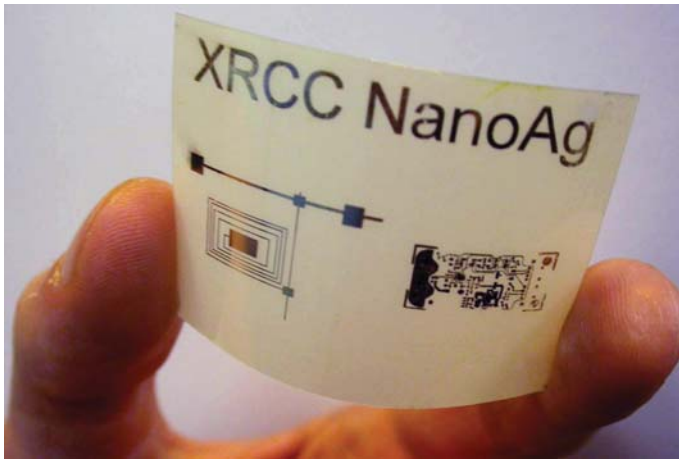
Breakthrough in printed circuits

Xerox scientists appear to have come up with a cheap and effective method of replacing silicon circuits with plastic ones. The key is the development of a new silver ink which allows electronic circuits to be cheaply printed to a wide range of surfaces such as plastic or fabric. The new ink has a very low melting point, which means that the temperature needed to heat it to a liquid is low enough not to risk melting plastic or other materials.

Integrated circuits are made up of three components – a semiconductor, a conductor and a dielectric element – and currently are manufactured in costly silicon chip fabricating factories. But with this new ink these circuits can be printed just like a continuous feed document without the extensive clean room facilities required in current chip manufacturing.

The new silver ink can print the all-important conductor element of a circuit. In addition, Xerox scientists had previously developed a semiconductor ink, but have now improved this, increasing its reliability by formulating the ink so that the molecules precisely align themselves in the best configuration to conduct electricity.

Printable circuits could be used in a broad range of products, including low-cost radio frequency identification tags, light and flexible e-readers and signage, sensors, solar cells and novelty applications including wearable electronics. This discovery could also aid the commercialisation of new applications such as 'smart' pill boxes that track how much medication a patient has taken or display screens that roll up to fit into a briefcase.



"We will be able to print circuits in almost any size from smaller custom-sized circuits to larger formats such as wider rolls of plastic sheets –unheard of in today's silicon-wafer industry," said Hadi Mahabadi, vice president and centre manager of Xerox Research Centre, Canada. He added: "We are taking this technology to product developers to enable them to design tomorrow's uses for printable electronics."

Green Shoots

Norway may be small but after the Middle East, it controls the world's largest sovereign wealth fund valued at $435 billion, and oil revenues keep it growing. According to Newsweek, the fund has a list of environmental measures it expects companies it invests in to take, with a view to reducing global warming. The list includes an obligation for targets for GHG reduction. In addition the fund plans to screen leading companies and send them a score for their performance. Big oil controlling big oil!

The ruling junta in *Yangon,* Myanmar's former capital has banned manufacture and importing of high-density plastic

bags. According to the Myanmar Times English language weekly the ban comes into effect at the end of the month. Yangon is the third city in Myanmar to ban these bags and the government is encouraging people to use natural alternatives such as bags made from banana leaves, lotus leaves or paper.

The PrintCity Alliance is working on a new initiative to research carbon footprint and energy efficiency in the printing business. As it is with ISO TC130 (graphics technology, 12647 etc), the goal is to put together guidance on carbon footprinting. The group plans to work with Intergraf to network with member companies in Europe. And we have offered our full support in the hope that we can cooperate to share work we are doing for TC130 to develop a standard methodology.

Finnish book printer *WS Bookwell,* has published an eco calculator that works out CO_2 emissions and other environmental impacts according to the company's materials alternatives, production figures and book and print run specifications. It works in English and Swedish and was developed in collaboration with VTT (Technical Research Centre of Finland, which recently acquired KCL Forest Industry Research), WWF Finland and others.

Paper people *UPM* and *M-real* have both developed carbon footprint calculations for their paper products. The calculators are intended to help customers work out their own carbon footprint, providing details of the carbon footprint of a given product based on its Paper Profile.

The Paper Profile is part of the Confederation of European Paper Industries (CEPI)'s, framework for paper and board products.

For more Green Shoots, go to **http://verdigrisproject.com**

Verdigris

An Interview (not)

David 'Mr Standards' McDowell

The Digital Dots series of personalities within the graphics arts industries took the opportunity to interview David McDowell while participating in the international conference of the ISO TC 130 (Technical Committee for ISO standards for Graphic technology), held in Beijing this September 2009. While David McDowell is well known in this community, he is perhaps lesser known among the broader community of users of hardware and software for graphic arts production.

While at Kodak David McDowell was instrumental in producing reference material for the calibration and characterisation of imaging technology, such as the Kodak Q60 series of reference images commonly used to calibrate colour scanning devices. This was the basis in 1993 for ANSI standards IT8.7/1 and IT8.7/2, which became ISO 12641.

But David's ideas of standardisation of exchange data started much earlier than that. He spoke at a TAGA (Technical Association of the Graphics Arts) conference in 1982, outlining the needs for standards for electronic (digital) data exchange in the offset printing process. At that time imaging companies like Crosfield, Dai-Nippon Screen, Iconics, Hell, and Scitex all used their own proprietary formats for image data storage.

But let's go all the way back to what brought David McDowell into our industry. Born in Nova Scotia, Canada, and growing up in Montreal, there was some way to go before entering into the highest echelons of research in advanced imaging for the US Airforce. He began by studying Engineering Physics at the University of Rhode Island, graduating in 1957 and going to work for Kodak. This was at the start of the era of satellites and high altitude reconnaissance, in which Eastman Kodak was a major player, and McDowell did a lot of work related to high-resolution imaging.

Twelve years later his career took a different turn and he moved to the Kodak research laboratories. One of the

tasks he was asked to take on was a systems study of colour micropublishing to further develop Kodak's colour microfiche production capability in support of its desktop readers. McDowell pointed out that he knew nothing about publishing. But with Kodak's Chuck Reinhart as a guide he spent six months visiting a range of companies involved in publishing, before starting work on the study. This led to a colour microfiche production service by which publishers could add high-resolution colour images on a microfiche as a part of the printed book. This was fairly expensive, but more cost effective than printing the pages in full colour.

Meanwhile, on the international scene, the first steps towards international standards within the Graphic Arts industry were being taken in Sweden. A technical committee within ISO, later on named TC 130 (Graphic technology), which had been suggested way back in June 1968, was finally formed in 1971. Unfortunately the US didn't participate in this work, and after some initial meetings and activities TC 130 fell into a slumber. But standardisation on a national level went on, and as an example the SWOP (Specifications for Web Offset Publications) was published in 1974 in the US.

By the late seventies McDowell found himself to be in the graphic arts business. His next large project was another systems study, this time of film-to-plate systems for companies such as Opti-Copy, where he provided input on topics such as optics and plate exposure using his experience with high-resolution imaging.

The first step into standardisation work for McDowell came when he was asked to write a paper for presentation to the 1982 meetings of both the GAA and TAGA on the data storage needs of the recently announced Colour Electronic Prepress Systems (CEPS). In that paper David proposed that standards were needed to take advantage of these new systems. Because every one of the CEPS systems introduced had its own proprietary file format, Tom Dunn (of Lasers and Graphics) agreed and proposed a standardized data exchange format called DDES.

Between them McDowell and Dunn knew a lot about imaging technologies and graphic arts production, but very little about standards work. They turned to Roland 'Rollie' Zavada of Kodak who was chairman of the Image Technology Board of ANSI (American National Standards Institute). With Rollie's help the ANSI IT8 standards committee was formed and the DDES work was moved under a formal standards banner when the NPES (whose name was then the National Printing Equipment Association) agreed to host the secretariat. This started what would become the IT8-series of imaging standards.

David McDowell, convenor of Workgroup 2 in the TC 130 (Graphic technology) international technical ISO committee. McDowell worked for 42 years at Eastman Kodak.

By the mid eighties standards like TIFF/IT (based on TIFF) were under development. In 1988 the US had also formed a second graphic arts standards committee, CGATS (Committee for Graphic Arts Technologies Standards), to work on standards that went beyond file formats for data exchange.

Seeing the large international interest in these two, by now very active, standards groups, the US initiated action to reactivate the dormant ISO TC 130 committee. In July 1989 McDowell was chairman of the US delegation to the reactivation meeting. From there on David McDowell has worked more or less full time with standardisation related work.

At about this time Adobe had developed the PDF format, and McDowell and Steve Zillis of Adobe developed a concept of building a standard for graphic arts data exchange that would be a subset of PDF. This required that any extensions of PDF needed for graphic arts data exchange had to be added to the PDF standard itself. This subset became the very successful family of standards called PDF/X (eXchangable PDF). Early on it was suggested that a PDF file should be able to support an RGB-based workflow, and this is now possible through first the PDF/X-3 format, and more lately with the PDF/X-4 and 5 formats.

McDowell is the author of numerous articles on imaging technologies, and always tries to explain complex matters in a way that should be somewhat easier to understand for the layman. The term 'virtual CMYK' for example was coined by McDowell, meaning working with RGB data but tagging it to allow conversion to a predictable CMYK later on in the process.

The PDF format was introduced in 1991, but what was also needed was a standard for colour management. When the ICC (International Color Consortium) was set-up Kodak became a founding member. While McDowell wasn't directly involved in the ICC, he followed the process closely and recommended Kodak to support this 'de facto' standard. The IT8-series of colour images was an important part of the test charts used to create ICC profiles and McDowell was the one who developed the arrangement between the ICC and ISO that allowed the ICC specification to also become an ISO standard.

In 1999 McDowell formally retired from Kodak, where he had worked for 42 years. He continued to work part-time for Kodak but also became a volunteer with NPES to carry on many of the standards roles he had started while at Kodak. He estimates that since his retirement he has put in between 10,000 and 15,000 hours of volunteer work dedicated to the development of standards relevant to the Graphic Arts industry! So, it's no small wonder that he has the nickname 'Mr Standards' among colleagues and friends in the industry.

Among his tasks in this area he has chaired the US delegation of TC 130, convened the Working Groups 2, 7 and 9 in TC 130, convened Working Group 21 (Densitometry) in TC 42 (Photography), been project leader of Joint Working Group 24 (Viewing conditions) in TC 42, secretary of CIE (International Commission on Illumination) Division 8 (Imaging technologies), chair of ANSI CGATS, president of TAGA, standards editor of

David (sitting to the far left in the picture) at the ISO TC 130 international meeting in Beijing this September, checking that the resolutions from Working Group 2 are correctly added to the Plenary Resolutions list. At the computer: Cord Wischoefer, secretary ISO/DIN; leaning over between McDowell and Wischoefer is Andreas Kraushaar FOGRA, convenor of Working Group 3; next to him Uwe Bertholdt FOGRA, chairman of TC 130; and to the far right Karin Winkelmann, secretary ISO/DIN administration of TC 130, WG 3, 4 and JWG 9.

IS&T (Imaging & Science Technology) Newsletter, chair of IT8 Working Group 21 (scanner and print test charts), and served as Kodak's alternate representative in the ICC committee. The list could go on, but you get the idea.

While there are many people dedicating much of their time to work in the different TC 130 working groups, no single person stands out like David McDowell, considering the number of years he has put in. We at Digital Dots first came across him when we started to test scanners in 1998. When asking around for suitable test charts, we were soon pointed towards McDowell who kindly provided us with a 4x5" Q60 transparency, free of charge, and offered us to help with the tests. This generous attitude, coupled with genuine interest and an inquisitive mind is, we realised later, recognised by many others.

At the moment McDowell is pursuing the concept of 'process agnostic' standardised process control for

graphic arts production, a continuation of the 'virtual CMYK idea, if you like. We at Digital Dots are big fans of this way of thinking, enabling true cross-media workflows, and will follow and contribute to the progress towards it becoming an established and accepted ISO standard. McDowell has seen both IT8, ICC and PDF go from 'de facto' standards to become formal ISO standards, so there is a good chance that this will also be the route for the 'process agnostic' graphic arts workflow.

Boomerangs

Hi Laurel,

Good piece in DD re spectro's. Lots of nonsense being put about at present on this subject which could stop a small printer who could greatly benefit from ISO 12647 looking into the standard!

Have you got the XRite white paper, it seems impossible to get!! If so could I have a copy.

Paul Sherfield
The Missing Horse Consultancy Ltd

Paul,

Glad you liked the piece. The white paper is on the web at **http://tinyurl.com/yav4fvg**. *I've cc'd Paul (L), so hopefully he will read this and give you the reference.*

Laurel

Heroes & Zeros

Heroes

Governor Bill Ritter of the State of Colorado for recognising a printing company in its annual Environmental Leadership Awards. These awards recognise companies and other agencies for efforts that help make Colorado a greener state. Unique Litho uses renewable energy and recycles and encourages the use of FSC and PEFC certified papers. It has a 100 percent alcohol-free pressroom and uses no or low VOC inks and cleaning solvents, low watt light bulbs, and occupancy sensors to reduce energy use.

Zeroes

Dongguan Cheong Ming Press Limited, one of the largest book printing and packaging printing companies in Hong Kong. According to Greenpeace, this company is one of several found to be emptying toxic chemicals into the Pearl River. Over 47 million people get their water from this river. Pollutants included highly acidic waste water, hazardous organic chemicals and various volatile organic compounds.

Another leap forward

The Peoples' Republic of China was gearing up to celebrate its 60-year anniversary as ISO's committee for graphic technology standards met recently in Beijing. The Printing Technology Association of China (PTAC) hosted TC130's annual plenary, and organised a Print Forum which ran in tandem with the weeklong series of meetings. Attended by around 350 printers and stuffed full of middle government dignitaries, this event was China's opportunity to articulate its view of print in general and standards in particular.

PTAC was set up in 1980, affiliated to China's General Administration of Press and Publications (GAPP), which answers to the Chinese Ministry of Civil Affairs. PTAC publicises the science, application and spread of new

China is now a participating member of ISO TC130 and actively contributing to standards development.

technology within the printing and associated industries, providing training, research, consultancy and industry promotion, within and beyond China.

At the Print Forum in Beijing Mr Li Dingdong, the Vice Minister of the GAPP, said "standardisation is a meaningful and a great thing for our industry" and linked China's advances, especially over the last thirty years since it re-established diplomatic relations with the West, to a future based on standards. Li said there are over 100,000 printing companies in China, of which less than fifty percent are privately owned, and of these 25,000 have foreign investment. Altogether the industry employs 3.5 million people and generates 480 billion Yuan.

The association has been heavily involved in developing the printing business and the doubling of print production that occurred between 2003 and 2008. Exports have also grown and Li described China as "one of the world's major printing powers". The focus now is on improving quality and efficiency as well as reducing environmental impact. For all of these the Chinese government and industry bodies recognise the need for standardisation. Implementing standards such as ISO 12647 for print quality will help to push the printing and publishing industries in meeting the needs of social and business development in China. To this end, China is now a participating member of ISO TC130 and actively contributing to standards development.

Coming in Loud & Clear

An apparently perpetual parade of men in dark suits reiterated this commitment, each more emphatically than the last. Fang Xiang, Vice Administrator of SAC/TC170 (Standardisations Administration of China, technical Committee for Printing Standards), spoke for them all: "National standards [are] advancing, with substantial participation in standards development across all areas". He added that SAC's stated goal is "to set the power of the whole industry to speed up the standard system of revision and publicising popularity to promote the standardisation of China's printing industry".

China is now an ISO member which Fang confirms "is a great breakthrough in the development of standards in China". He also said: "It is of great significance that we are doing well in standardisation" adding that China can claim a number of important firsts in standardisation. Typography for instance, which Fang claims is a Chinese initiative is an example of the earliest form of standardisation, with China "the birthplace of typography".

Phoenicians, Greeks, Hebrews and Arabs, may question that, but there's no questioning China's intention to contribute to more recent graphic arts standards development. Since 2006 SAC/TC170 has initiated a

range of domestic standards efforts covering work on paper printability, prepress, ink printability and offset printing. They are expected to "open up a new situation, bring about new atmosphere [and] write a new chapter," according to Mr Fang.

This is not just empty propaganda. The ISO groups working in Beijing were numerous and their meetings long. And at all of them Chinese participants were present; they were very quiet but they were very attentive. During the final plenary the Chinese delegation supported a range of TC130 resolutions from the withdrawal of redundant standards, to the establishment of a task force to look into new work for a carbon foot printing standard. Perhaps the most significant of TC130's Beijing resolutions as a

There was plenty of entertainment in between the committee meetings.

harbinger for the future was the appointment of China as convenor and secretariat for a new working group for postpress standards.

Home Grown

In addition to these international standards development efforts, PTAC is expanding the scope of its domestic standardisation programme. Yu Yongzhan, president of the PTAC clearly understands the role industry associations should play in local development and implementation of standards, both for established developers and new ones. "Standards can stabilise product quality" he said, "and foster cooperation between enterprises and industry … we'd like to transform from imitation, to standards contributor because the one who contributes to standards can seize the market."

PTAC is working with colleges throughout China to develop the best possible knowledge base and the people to help develop standards. He added that the "socialist market economy system has taken place in China" but that there is "still a long way before we can reach success". Acknowledging the scale of the task is the biggest step, and China is putting substantial resources into developing its industry and markets. This will improve domestic delivery of content to consumers and encourage further

…the Chinese printing industry grew by 7.9 percent despite being "pounded by the world economic crisis".

outside investment into China. Internationally, it will help Chinese printers capture and hang on to new customers beyond its ample borders.

The Print Forum was a rigorously formal and tightly controlled affair, so we tried to get some empiric confirmation of what we had heard in the sessions. We spoke with Shelley Yuan, editor in chief of Print China, our Verdigris (see verdigrisproject.com) partner magazine in China. Shelley confirms the numbers and gave us some additional market data: "Of the 100,000 most employ hundreds of people and are state owned. Many printing houses, around 30 percent, are paying attention to standardisation and many have certifications for quality - ISO 9001 and 14001 - because these standards are important for them to go into the international market".

But she says that when it comes to print specific standards such as ISO 12647, there is less commercial awareness: "I think in the research institutes and the universities, they know more than the printing houses about this standard". This is likely to change as standards rise to the top of the agenda and as the industry grows.

According to the Printing and Printing Equipment Industries Association of China (PEIAC) the Chinese printing industry grew by 7.9 percent despite being "pounded by the world economic crisis". This association has 1300 company members and 47 group members, including local printing associations, bridging government and

enterprise, and is responsible for the quadracentenniel China Print exhibition. According to PEIAC research the 2008 Chinese printing market was worth 475 billion Yuan (€47 billion), which is more than double its value in 2003 (230.9 billion Yuan). Just under ten percent of turnover is for international customers, however this number has grown by over ten percent per year since 2004.

PEIAC research states that China is also a net exporter of plate material, producing 279 million square metres of offset plates in 2008 and consuming only 181.1 million square metres. Of the 61 million square metres of CTP plates produced in China only 28 million square metres were consumed there. According to the China Academy of Printing research there are 1417 digital platesetters installed in China with 280 in Taiwan and 150 in Macao and Hong Kong, which is around one third more than the previous year.

These numbers reflect the huge change in the Chinese printing industry happening over the last couple of decades. Yuan says: "In technology twenty years ago there were many old machines and now all use offset printing [instead of letterpress] to print newspapers and magazines. But now in prepress many printers want CTP and publishing industries [are] moving to digital and fewer publishing houses have [their] own printing machines, but print on demand."

China still uses a lot of film however, consuming 93.75 million square metres of the stuff in 2008 of which 13 million were produced domestically. The China Academy cites the cost of plates as the primary barrier to wider uptake of direct to plate production. Kodak is the dominant provider of platesetters in China with 398 installed, of which 108 were installed in 2008. Agfa's got 202 and installed 41 last year, and Screen has the third largest installed base with 190 (52 installed in 2008).

The Academy has also been tracking digital printing closely since 2003. We couldn't find any figures for inkjet that could be even vaguely considered reliable. But as of July 2008 there were 270 toner-based high-end engines from Xerox, HP and Kodak, of which 70 had been installed since June 2007.

Export market activity by printers is not yet very common, however, and there is some concern that carbon tariffs will block Chinese print exports. Speaking for her readers Yuan said: "We learn now in European countries and America they have carbon tariffs and this may affect exports in China. There are different opinions between America and our government about this tariff, and we let our readers know about this in our magazine". As standards for carbon footprinting and emissions trading emerge this will probably change quite quickly.

Discussions of standards for carbon footprinting still tend to be more of a low mumble than a shout within TC130, but China will hopefully be an important contributor to this work. In digital printing, where standards work is gradually moving ahead, China is expected to be a more active player. According to both Shelley Yuan and PEIAC,

Shelley Yuan, Editor in Chief of Print China.

the Chinese publishing industry is moving to online and mobile delivery, and to print-on-demand. Yuan says: "This year the value of digital print and discs in China [will be] 75 billion Yuan" and online content is increasingly to be commercialised. There is also activity in Web-to-Print but Yuan says that just a few factories have this kind of business, adding: "It is of interest to printers, especially digital printers for business to business and business to consumers".

China's 100,000 printers serve a population that, according to the CIA, numbered 1,330,044,544 in 2008.

There are over 18 million people living in Beijing alone. They drive over five million cars and populate an area of around 16,800 square kilometres and both numbers are growing steadily. There's no doubting the hugeness of the market or the opportunities for growth and development. That China is committing itself to standards, signals the maturing of the printing industry and the need to provide more efficient and competitive print services. It also signals a new approach to the country's international position when it comes to the ever less messy business of printing.

– Laurel Brunner

Down in the woods today

Several years of cooperation between manufacturer and customer resulted in an almost custom tailored high volume printer for full colour transactional print. Swedish printer Strålfors and Fuji-Xerox can look back on a successful project, with the Xerox 980 CCF (Colour Continuous Feed) system in full production.

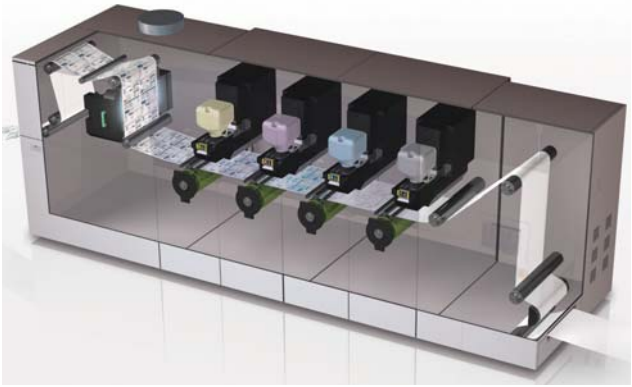
We met Håkan Larsson, technical director within Information Logistics, at the Strålfors production site in Ljungby – a tiny village deep in the Swedish forests, which

Håkan Larsson, technical director Information Logistics, Strålfors, at the production site in Ljungby where the prototype of Fuji-Xerox CCF 980 was tested and further developed.

prompted the question of how did Fuji-Xerox come to place its prototype of the 980 in such a remote part of the world? Larsson told us: "We at Strålfors have a lot of development in-house, both of software and hardware. At that point in time we owned Lasermax, a manufacturer of finishing solutions, which catered especially for digital presses, and could add a lot of know-how to the postpress solutions for the web-fed, high-speed colour printer. We have an IT-department of about 80 people, of which around 20 are entirely dedicated to the development of new system and software solutions. So, all in all Fuji-Xerox realised we could contribute a lot in the development of the 980 machine."

Match the matrix

When Strålfors made a market overview some five years ago it couldn't find any print solution that could justify investing in a new printing system to replace the existing workflow using preprinted forms and black and white high-speed digital presses. Those expectations included achieving equal or better print quality with the either



The Fuji-Xerox 980 CCF has a straight paper path, and a low-tension web feed. It's a toner-based printing technology, with an extremely low fusing temperature.

the same or higher printing speed. Strålfors also felt that postpress functionality should include perforation and punching, that the system should be capable of both transpromo and direct marketing applications, and that the front end should be fast enough not to require pre-RIP'ing of the data.

But representatives from Xerox claimed that a system capable of meeting these requirements was under development by Fuji-Xerox. Larsson was interested and so the project got underway.

One of the challenges was to achieve what Larsson calls 'business colour quality', that is, web offset quality on uncoated paper. Strålfors had its eyes on high volume inkjet based systems, but didn't believe that they could reach this level of colour quality, or at least, not on cheap uncoated paper. The Fuji-Xerox 980 uses a low temperature flash fusion technology to make the toner fuse with the paper at about 35° Celsius. This extracts much less moisture from the paper than most other fusing technologies, and makes it possible to use a large range of substrates and produce output within narrow tolerances. The web is also fed with a low tension, and this too ensures a minimal change to the integrity of the substrate. But the low temperature fusing technology had it's own challenges.

"The yellow toner especially was less sensitive to the light produced in the flash lamps, and might not fuse as stable as requested, which of course would have meant variations in colour densities. But by including a similar chemical as used in glass covers on plasma monitors, the light sensitivity of the yellow toner was increased," explains Larsson. But all in all there is still a much higher

In order to make the toner fuse with the paper at around 35° Celsius, a low temperature flash fusion technology is used. This affects the paper to a much lower degree than most other conventional fusing technologies, and preserves the characteristics of the substrate better.

demand on colour management knowledge in this type of workflow, than Strålfors was used to with its well defined offset workflows, using preprinted stock and only adding black and white variable data print. Larsson adds: "But our notions that toner based digital print technology would yield a larger gamut than inkjet based, on uncoated paper, was correct. We achieve offset quality, or the business colour quality as we were hoping for, in the 980."

The need for speed

Strålfors uses the AFP (Advanced Function Printing) page description language, for speed reasons. Håkan Larsson explains: "While we follow what happens with Postscript, PDF/X-VT and PPML (and other formats for variable data production), we have found AFP to be the only format to provide the processing speed we need." AFP used to be a proprietary IBM file format, but in 2006 its further development was handed over to the AFP Consortium (the format is now called Advanced Function Presentation format), a group of about 30 software and hardware vendors, including Xerox. "Using AFP is about 10 times faster than trying to use Postscript in the workflow," estimates Larsson, adding: "But as I understand it the AFP Consortium intend to move the APF format towards Adobe PDF, or at least achieve a higher degree of compatibility with PDF."

Strålfors also uses Océ's Prisma job management system together with design tools developed in-house at Strålfors. "We don't create our own software or system solutions unless we absolutely have to. But to keep a high enough speed, and integrate all the components necessary in a quite complex workflow, there is rarely a third party solution that can manage all this 'off the shelf'. It's also because we want to meet specific customer demands fast that we keep a perhaps unusually large IT-department," muses Larsson.

Web-to-Print

There is much writing and talk today about Web-to-Print and transpromo, but Larsson is somewhat surprised that this is still seen as a new phenomenon. "We have done transpromo type of printing for as long as I have been

Strålfors has a long tradition of developing postpress solutions of its own, and the manufacturer LaserMax used to be part of Strålfors. Here, the on-line perforator that can keep up with the 980 at full speed.

at Strålfors, and I started here in 1997," he says. "And we have had Web-to-Print solutions for several years now. There is so much more to WtP or transpromo than meets the eye", continues Larrson. "For example, we have developed what we call SRM, the Strålfors Reliable Mailing system. It includes development of both hardware (inspection units of the print), software programming, material development (plastic cards with magnetic strip or chip, as well as RFID cards), combinations of printing technologies, logistics solutions et cetera.

"This R&D is needed to offer customers solutions matching their existing needs, or requirements that we see that they will have in an extended workflow. There is only so much we can expect vendors to contribute in this. We at Strålfors know that we need to continue with our own R&D to meet and exceed customer expectations, and keep costs down, while maintaining or enhancing quality. We can offer solutions for customers that have a quality and security level that I think few of our competitors can match. Several of our methods are patented, or in a stage of patent pending, including SRM."

The Strålfors Reliable Mailing system, SRM, includes both hardware development (readers of Data Matrix 2D barcodes) and software to keep track of print and rejects in the workflow.

Larsson concludes: "Our transpromo solutions integrate with our customers' database solutions, and at the moment this is somewhat of a bottleneck. Many systems that our customers use are becoming outdated, and it's a surprisingly slow process to replace or update them."

The future

Strålfors was bought by the Swedish State Postal Service in 2006, but continues to be a separate entity within the organisation. At the moment the Swedish and Danish postal services are about to merge, and Strålfors, which already has production facilities in Denmark, will continue to develop solutions in information logistics that include distribution in an efficient way.

Larsson says: "The Postal services is not allowed to favour Strålfors in any way in regard to price and treatment, but within that framework we will of course continue to strengthen our portfolio of services that combine print and distributions in a time and price efficient way."

Larsson says: "In regard to production, our existing production lines using the Fuji-Xerox 980-machines in Finland and Sweden are already saturated. We will expand with more machines and more parallel workflow configurations that will increase flexibility and capacity. A streamlining of our systems in all nine productions sites, in Denmark, Finland, France, Norway, Poland, Sweden and the UK, will also extend our portfolio of services to our customers."

The cooperation between Strålfors and Fuji-Xerox is just one example of how Strålfors keep customer demands in focus when developing new solutions. We have a feeling that we will see more examples over time, where Strålfors combines its own R&D with joint projects with vendors and third parties, to push productivity, security and quality to new levels. Strålfors also works systematically on sustainable solutions, but that's a completely different story that we need to come back to in another article.

– Paul Lindström

Between the covers

In general, book printers were suspicious of digital printing when it first came on the scene, wanting nothing to do with this new-fangled technology. But there's been somewhat of a revolution in this sector in the last couple of years with the result that most book printers now have their own digital divisions. This month we've visited one of the most successful of these in the UK, TJ International, to see its the Océ Variostream 6320 in action.

TJ International has carved out a successful niche for itself as a book printer that concentrates on producing scientific and academic books as well as instruction manuals, in both hard and soft cover editions, in colour and monochrome. It has been based in the picture-postcard town of Padstow in Cornwall, in the UK for over

As one would expect, there are book blocks everywhere.

35 years, having started in Camberwell in South London. Stretching out into the tip of southern England, Cornwall is a hub of cottage industries. So with around 130 staff, TJI is a major employer in the area, keen to support other institutions from the local lifeboat to the chamber of commerce.

TJ International had been part of the Ulverscroft publishing group for 25 years, but a management buy out in 2005 saw chief executive Angus Clark and commercial director Andy Vosper take over the company. The deal has left Clark, who has been with the company for around 25 years, free to concentrate on building up the business. The company doesn't have a sales force so a lot of the business comes from established customers, including Ulverscroft. Today, it has an annual turnover of €9.85 million, of which €1.3m is from the digital division.

TJI was one of the first book printers to get into digital production, starting back in 1999.

The main factory houses two very large format KBA Rapida 142 presses, bought two years ago to replace Heidelberg B1 Speedmasters. Clark says that the bigger plate sizes mean they can produce more pages in the same time, without needing any extra staff. Next door, several finishing lines snake around the bindery room, intricately coiled around each other so that books can be diverted from one line to another depending, for example, on the binding or cover needed.

TJI's digital division operates from a separate building close by to the main factory, and Clark says that they have tried to replicate the set-up from the main building as far as possible. But he adds that it's unlikely that the digital division will move into the main factory saying that there's a different mindset from litho to digital.

TJI was one of the first book printers to get into digital production, starting back in 1999. The plan then was for digital production to grow to five percent of total turnover within five years but by 2004 digital printing actually accounted for ten percent of total sales. In terms of volumes, TJI currently produces 6.5 million books a year of which 500,000 are digital.

The average litho run is 1200 books, while the average digital run is 125 copies. However it's not such a straightforward business to calculate where the cross over between the two lies because the KBA presses can cope with runs as low as 170 while the new VarioPress can cope with runs up to 350 or more. Clark says: "Customers can't tell that it's digital so it's a case of whatever suits production planning. It's not just the printing that makes a job go digital because the finishing and load times also

play a part." Another factor is that many multi-volume sets are better done litho.

The litho side of the business is still growing, thanks partly to the investment in the KBA presses, but the digital division is growing at a faster rate. Clark says "Digital will generate around 25 percent of total sales within the next two years."

Variopress

Last month Océ presented TGI with a special award for innovation, recognising that the company has consistently been one of the first book printers to adopt new equipment. TJI was the first UK book printer to invest in a DemandStream 8090 in 1999, the first to buy a VarioStream 9210 colour press in 2004, and it has been the first to install a monochrome VarioStream 6250 in

Several finishing lines snake around the bindery room.

2006. TJI is also just about to upgrade the 9210 to a 9710 which is a bit wider and faster and has an enhance graphics package.

Recently, TJI became the first UK printer to put in a VarioStream 6320 Ultra monochrome printer. Clark says: "We wanted to improve capacity and increase our market share." Currently this is the fastest production monochrome printer on the market, producing over 300 A4 pages per minute or around 10 million pages per month.

The 6320 is one in a series of 6000 Ultra machines offering different speeds. However, each machine is physically capable of reaching the top speed, but the slower ones are limited so that it is an easy fix to upgrade them to the faster speeds. So easy in fact, that Océ lets owners with the slower versions buy short term licenses to run at the faster speeds if there's a production bottleneck or a particular job that needs it.

At the heart of the 6000 Ultra series is Océ's Gemini duplexing system which uses two print units to print both sides of a sheet at the same time, obviating any need to send the paper through the system twice, and guaranteeing perfect registration. This simpler paper path also contributes to the high speed of these printers, and means that the paper moves at a constant speed, rather than stopping and starting which degrade the paper stock.

Another factor with the Gemini engine is the fusing heat, which at 120° is not as hot as some other digital engines, and is therefore easier on the paper. In the Gemini system the image is 'printed' to a transfer belt, which is heated so that the toner behaves much like a liquid before it is then applied to the paper, which immediately cools it back to a more solid state.

The 6000 series has proved so popular with the book printing industry that Océ has tweaked the paper size for the Ultra machines, which helps to explain the massive jump in productivity. The slightly larger paper size makes it easier to get more 'royal' sized pages per cut sheet than

TJ International is rooted in its local community and this has driven its environmental stance.

with other competing printers and this alone makes the 6000 Ultra machines around 60 per cent faster than the competition. Small wonder then that Steve Wilson, director of Océ UK's production printing group, estimates that Océ has 65 per cent of the digital book printing market.

Océ has also improved upon the print quality of the original 6000 machines with a new screening technology, called ScreenPoint, which allows operators to tweak the print quality for individual jobs.

The 6000 series use Océ's Prisma workflow at the front end. There's also new DPLink and KDKLink software to integrate with legacy Xerox and Kodak applications.

Environmental aspect

Being part of a local community has also made TJI more aware of its environmental responsibilities, and over the years the company has won several awards for its efforts in promoting environmental standards. It was the first UK book printer to be accredited with ISO14001 back in 2000, and has also achieved FSC and PEFC accreditation in 2006 and 2007 respectively. It is also a member of the Climate

Angus Clark, CEO of TJ International.

Change Levy scheme and receives an 80% reduction on its Climate Change Levy charge in exchange for meeting energy reduction targets.

To help maintain these environmental standards the company has set up an environment committee, made up of members from all departments, who meet quarterly to come up with solutions to environmental issues facing the company. All staff have undertaken basic environmental awareness training and there are various targets in place focussed on energy, waste and solvent reduction.

The litho part of the operation uses two Agfa Avalon VLF platesetters, which are fed Agfa's chemistry-free plates, eliminating waste developer. TJI has also persuaded Agfa to supply the plates without the wrapping, which would otherwise have gone to landfill. On top of this, the inks are soya-based giving lower VOC emissions than with petroleum-based inks, and those inks are supplied in large drums which are re-used obviating the need to recycle large numbers of tins. The company has also cut down its use of alcohol from 11 percent to just three percent.

In addition, 98% of the waste is recycled, which includes aluminium plates, paper, cardboard and plastic, with only two percent now going to landfill. Scrap cloth and foil from case making is given to a local scrap store and is also reused by school children. There are recycling bins located throughout the factory and offices, including bins for waste batteries and printer cartridges.

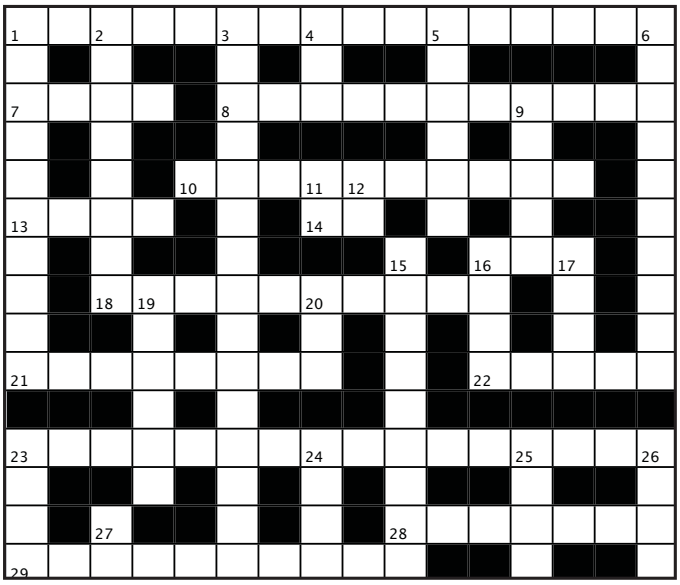
TJI has also cut down on its power consumption, installing a Power Perfector in 2006 to optimise and improve source voltage. This has led to a 15 percent reduction in energy use. All those machines that use compressed air have automatic shut off valves to ensure that the air is not left on when the machinery is not in use. Lights in the toilets and corridors, and in some offices, are fitted with motion sensors so that they will only turn on when there are people moving around. Other equipment, such as vending machines has been fitted with timers so that they automatically turn off when the factory closes. TJI has even installed Save-a-Flush bags in every toilet, which saves 0.3cm^3 of water per day, and replaced old taps with push taps. Another ongoing project is to look at ways to re-use water on site.

In conclusion, TJ International has built a successful business by consistently investing in the latest cutting edge technology, while simultaneously continuing to reduce its environmental impact. As a result it is well placed to deal with whatever challenges the future holds.

- Nessan Cleary

X-word Puzzle

Number 20*



Across

1. SRA0 is an example of one of these. (5, 5, 6)

7. Inks made from colloids. (4)

8. Fundamental need of a colour management champion. (6, 5)

10. Basis for measuring GHG emissions. (6, 4)

13. To gain access through telling loud fibs and boasts. (4)

14. Indefinite article preceding an noun that starts with a vowel. (2)

16. Writing implement that requires ink. (3)

18. Transactional promotional print application. (10)

21. What the speakers did and why you don't go to seminars? (6, 2)

22. A slight burning. (5)

23. A favourite application for inkjet presses. (6, 4, 6)

28. Makes certain. (7)

29. On roads, in Photoshop, on canvas and paper a shared activity. (5, 5)

Down

1. Without this your computer is useless. (5, 5)

2. All print should be this, really very anti-waste (8)

3. A label, string, wrapping, it's just a one of these. A little thing. (9, 6)

4. Not well. (3)

5. Why bother with a hobby? (3, 3)

6. One or more repetitions of a picture. (5, 5)

9. It's got a blade and it's used to cut things. (5)

11. Bachelor of Arts? (2)

12. Not off. (2)

15. Favourites for Delta E, not high priorities? (3, 6)

16. Colour that jumps of the page does this. (4)

17. Poles apart from Midnight. (4)

19. Another word for spreads. (6)

20. Is a registration without this pointless? (3)

24. The last word in prayer. (4)

25. Not false. (4)

26. Put any high cost purchase to this. (4)

27. Hello? (2)

* Answers at www.igaef.org