Digital Dots

# Spindrift

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

Volume 7, Number 8 • December/January, 2009-10

...Bamboozling The Graphic Arts Industry Since April 2003

Working together we aim to achieve a number one position worldwide across the entire printing industry.
**– Fujio Mitarai, Chairman and CEO of Canon**

## Dear Reader,

The Canon/Océ deal undoubtedly adds up to more than the sum of its parts. It creates a new challenger for HP, Kodak and Xerox in commercial digital printing. Exciting times!

But opportunities are more interesting than consolidation. An area in need of innovation is the tricky subject of carbon footprinting which we've covered in this issue. This is a hot topic right now particularly for software developers. The printing industry needs tools for calculating the carbon footprinting of media, starting in prepress and measuring GHG emissions from concept to customer.

We aren't aware of any software developments yet in this area for print. Without a standardised model for doing this, we're facing a chicken and egg situation, but carbon footprinting is definitely an opportunity for software developers. Calculating emissions for print products starting in prepress will soon be a must-have for workflow systems.

To paraphrase Mr. Mitarai, the printing industry should be working together to lead the way for all industries, towards a brighter and much less sooty future.

We'll be with you again in the new year. Have a fabulous time throughout the festive season.

Enjoy!

**Laurel, Nessan, Paul and Todd**

## In This Issue

### Seeing Red

*Nessan Cleary talks with a printer that has invested in a new prepress workflow to take advantage of its soft proofing capabilities and managed to integrate its digital devices into the same system.*

**see page 8**

### Kings of Iron

*One of the effects of the recession is that it has accelerated the decline of the traditional offset press manufacturers, while the new digital press upstarts have not been hit as badly as they might have been, as Laurel Brunner finds.*

**see page 12**

### Colour me carbon

*These days everyone is talking about their carbon footprint, but how exactly do you go about measuring how much carbon you are using? Laurel Brunner looks at carbon calculators.*

**see page 16**

### Spectral Readings part 2

*The concluding part of our test of spectrophotometers in which Paul Lindstrom finds a reassuring level of consistency across many devices, albeit with some surprises regarding handheld measuring tools.*

**see page 20**

## Regular Columns

# News Focus

**EFI** has won its patent battle with Durst over the white ink technology used in the EFI Vutek QS series. Durst brought the lawsuit in the Mannheim Regional Court back in 2007, accusing EFI of infringing Durst's utility model DE 20 2005 012 179 U1. However the court agreed that EFI had used the technology before Durst obtained the utility model (similar to a patent).

**Presstek** is to sell its Lasertel subsidiary to Selex Sensors and Airborne Systems, part of Finmeccanica's defence electronics business unit. The deal is for approximately $10 million, comprised of $8.0m in cash upon sale of the business and approximately $2.0m of laser diodes for Presstek's future product requirements. A supply agreement will also be entered into that will provide the currently utilized laser diode product to Presstek at existing prices for a two year period. Presstek plans to use proceeds from the sale to reduce its debt.

**Epson** has increased its share of the UK large format inkjet market by 7.5 percent, giving it a total market share of 71.5% of all A2-A0+ printers sold in the UK in the last quarter.

In Early December Xerox closed on a $2 billion offering of senior unsecured notes. Of these notes, $1 billion will mature in February 2015 and bear interest at a fixed rate coupon of 4.25 percent; $650 million will mature in December 2019 at 5.625 percent; and $350 million will mature in December 2039 at 6.75 percent. Net proceeds from the offering will be used in connection with the acquisition of Affiliated Computer Services.

**HP** has set up a new online directory that enables print buyers to find local print service providers to produce applications from business cards, professional photobooks, POP displays, exhibition signage, vehicle graphics, billboards, labels, flexible packaging and more. Available at www.hp.com/go/pspnetwork, it lists more than 1400 printers across Europe, the Middle East and Africa that are using HP equipment.

The market for digital print for textiles is forecast to grow from €114.6m in 2009 to just under €1bn by 2014, according to a new study by **Pira International,** published in association with **FESPA.** *The Future of Digital Print for Textiles: market forecasts to 2014* breaks down the global market by end-use sector, print process, region and country, with five-year forecasts to 2014. The report also found that eco-solvent printers are replacing full solvent machines.

**Mimaki** has announced a new production printer for the soft signage market. The JV5-320DS is a version of the proven 3.2 metre wide JV5 using water-based dye sublimation inks for producing grand format flags and polyester prints with up to 1400dpi resolution.

**Markzware** has released a content search and extraction engine. PageZephyr has been developed using Markzware's Common Reader Architecture, the high-performance technology at the heart of Markzware's current and future products. This makes it possible to search proprietary documents, and to extract text from the most popular publishing native file formats, such as Adobe InDesign, QuarkXPress, and soon Microsoft Publisher, PageMaker and other document types.

**Extensis** has launched Portfolio NetMediaMax, an add-on for Portfolio Server 9, costing around $3,000. This media-processing software lets digital imaging professionals automate their media workflows for increased

**Spindrift** ISSN 1741-9859

A very special newsletter for Graphic Arts, Prepress, Printing & Publishing Professionals, published ten times a year by:

**Digital Dots Ltd**
**The Clock Tower • Southover • Spring Lane**
**Burwash • East Sussex • TN19 7JB • UK**
**Tel: (44) (0)1435 883565**

**Subscriptions:**
Spindrift is a digital only publication, distributed in Adobe .pdf format. A ten issue subscription costs €190 and can be obtained by going to **www.digitaldots.org** and subscribing. Discount multiple subs are also available.

**Publisher** – Laurel Brunner – **lb@digitaldots.org**
**Editor-In-Chief** – Nessan Cleary – **nc@digitaldots.org**
**Technical Editor** – Paul Lindström – **pl@digitaldots.org**
**Production/Websites** – Todd Brunner – **tb@digitaldots.org**
**Subscriptions** – Helen Moderski – **subs@digitaldots.org**

productivity and faster turnaround times. NetMediaMax is built on the Portfolio Server platform that provides support for Windows and Macintosh environments and utilizes server-side processing, freeing up desktops from media-processing tasks.

**Quark** has launched a web-to-print service in the US for small businesses. QuarkPromote.com lets users create various items such as business cards, brochures and letterheads, from templates built in QuarkXPress 8. These can be printed in four-colour duplex and can be picked up at a nearby neighbourhood printer or received by mail in just a few days. The service is not yet available in Europe though Quark does expect to expand it to other countries next year. Quark is also giving away an additional free license to QuarkXPress 8 to anyone who buys a full copy over the Christmas period.

**Global Graphics** has launched enterprise-level software for free PDF creation. The gDoc Creator software will be available for download by individual office workers and consumers, and be available under a corporate licensing scheme for the enterprise. Gary Fry, CEO of Global Graphics, says: "Businesses should no longer need to pay for simple PDF creation and we hope our disruptive pricing strategy will begin to redraw the lines of this market."

**Screen** has announced version 7 of its Trueflow SE prepress workflow, available early next year. This now features the Adobe PDF Print Engine 2 for processing native PDF files. It also uses JDF files to keep process-related information separate from the design data, eliminating the need for transformation and compensation. The PDF remains unconverted and device independent right up to final output. There's also a new job ticket and imposition engine, EquiosPre4m, which enables the handling of JDF stripping parameters.

**Adobe** claims that more than 100 publishers, book retailers and libraries have adopted its Content Server 4 software to protect PDF and EPUB eBook content and support the distribution to thousands of retail, libraries and other channels worldwide. In addition, nearly 20 device manufacturers have licensed the Adobe Reader Mobile software development kit (SDK) to enable PDF and EPUB support on dedicated reading devices, accelerating eBook standardization on the open EPUB eBook format. This also highlights Adobe's interest in creating rich Internet applications that can exist beyond the constraints of a Web browser.

**Dalim** has launched ES Connect, which adds file preflighting and normalization capabilities to the company's ES product core, introduced earlier this year. This allows the integration of both Dalim's Twist and Mistral with the ES Core, combining technical processes like preflighting or PDF normalization with the ES business automation platform.

**GMG** has released a free tool, RapidCheck Go that lets advertising agencies, production managers and print buyers check the quality of print products and their compliance with required print standards from a single measurement. It's available from the gmgcolor.com website and will work with most popular spectrophotometers.

GMG has also released version 4.6 of its ColorServer and InkOptimizer which harmonise the colour standards used in files, preventing errors and delays when colours are converted. In addition, GMG's profiling and calibration tool SmartProfiler is now available in local languages including French and Chinese.

**Callas** has entered into a strategic partnership with Appligent Document Solutions, which makes PDF solutions for the business and financial sectors. The arrangement is for marketing and cross selling into each other's markets.

**Ricoh** has completed the integration of the Infotec business and brand. Ricoh's acquisition of former Ricoh re-seller, Infotec, in 2007 was a key milestone in a round of high-profile acquisitions – that included Hitachi Printing Solutions in 2004 and Ikon Office solutions in 2008.

**Sun Chemical** has released its first sustainability report, which provides data-driven performance measurement for seven key sustainability metrics to help customers and consumers understand the company's environmental footprint. The key sustainability metrics measured in the data include: energy consumption/ conservation at production and non-production sites, the energy carbon

footprint at the production sites, process waste reduction, water consumption, material safety, and employee safety. Customers in Europe and the U.S. can also calculate the initial carbon footprint for their facility operations by visiting www.sunchemical.com/suncare.

**HiFlex** is offering its webshop solution as a plug-in for the Drupal content management system for web applications. Drupal separates the content of a website from its layout, making it easy to change the look and feel of a webshop without extensive, time consuming changes.

**Four Pees** has extended the ProofMaster product line that it sells with a range of Fogra-certified high-end contract proofing papers.

**Xerox** has launched a new range of paper, ColorPrint, designed for the European digital colour market. It's optimised for colour print on office devices, but Xerox claims that costs are similar to black and white printing.

**Fujifilm** is to showcase the EskoArtwork Kongsberg wide format cutting tables alongside its portfolio of wide format printers.

# News Analysis

Since our last issue, Canon surprised the market by making a bid to takeover Océ, a deal that it believes will make it the biggest player in the digital print market.

Canon has made a public cash offer for all issued and outstanding ordinary shares in the capital of Océ of €8.60 per share on 16 November 2009. This represents a premium of 70 per cent over Océ's closing share price of Friday 13 November 2009 and 137% of the average share price over the last 12 months, totalling roughly €730m. Canon has already acquired 21.3 per cent of Océ's outstanding ordinary shares.

There are also a number of depository shares, but some of these shareholders have already agreed to sell their interests to Canon. The cash consideration for depository receipts for cumulative preference shares amounts to €65 million. When you factor in Océ's debts and other obligations, the deal values Océ at around €1.5 billion.

Canon will fund the deal itself. It intends to refinance short and long term debt of Océ, as needed. As per 31 August 2009, the total amount of short and long term debt amounted to €704 million. Canon will finance the offer and debt repayment from internally generated funds. Canon's own shares rose immediately following the news of this deal.

For its part Océ has conducted a thorough review process and its management fully supports the deal with Canon. Océ's CEO Rokus van Iperen says:

"This is the best possible combination in the consolidating global printing industry and will deliver scale in R&D, manufacturing and distribution. The combined organisation provides us with access to a huge sales network in Asia as well as mutual cross selling opportunities in Europe and the United States."

Océ will become a separate division of Canon, retaining its current headquarters in Venlo, Holland, complete with the existing management as well as its own R&D. Canon says that it does not expect that there will be any redundancies following the takeover. However, Canon envisages that it will take three years to fully integrate Océ into its own structure.

There are obvious synergies between the two companies. Océ will be responsible worldwide for wide format, commercial printing and business services. Océ's office activities will be integrated in Canon's Office Imaging Products division. Canon's large format printing will functionally be integrated in the Océ Production Printing Division over time.

Meanwhile, Canon has said that it expects to submit a request for approval of the offer to the Netherlands Authority for the Financial Markets before 8 February 2010. This is the date by which, under Dutch law, a request

for approval must be submitted. Senior management of both companies are working side by side to ensure the process runs as smoothly as possible.

However, Océ could still reject the deal if another, higher value offer is made, though Canon would have the right to make an improved offer.

## An Interview

One of the best-known names in the business is John Charnock, technical director of St. Ives. At least for the next few days. John is leaving the company after nearly 20 years, during which time he has helped transform the business into a lean, mean printing machine, active in all areas of print, including digital printing.

So what does Charnock consider to be the biggest transformation in prepress since 1990? "In 1990 when I started at St. Ives we had 175 people in our prepress departments, and we've probably now got around 20, because of technology. But the most significant thing, apart from fewer people, automation and so on, is the consistency of output. We don't see anything like as many problems with registration or plate accuracy. We take it pretty much for granted that the plate that goes on press is right. And this has been hugely important for the business."

Digital technology has driven these changes, as Charnock points out: "Speed from design to manufacture has seen a big shift. The time taken to deliver print from concept to end user is a fraction of what it used to be, even for complex jobs."

The bastions of traditional prepress have been under relentless, sometimes vicious, assault ever since the desktop publishing revolution started in 1984. Processes and tasks associated with the specialist elite have been steadily democratised and their practitioners undermined. So what is the legacy of DTP? Charnock says: "Desktop publishing, the Mac, QuarkXPress, Indesign, and the intelligence that is now in software is a huge change. There's really nothing to match that … yet. People with a basic knowledge of design and layout tools can produce a document professionally and years ago it took a long time to learn to be able to do this."

*John Charnock has been the technical director of St. Ives for the last 20 years.*

He continues: "Desktop publishing and the Mac built systemisation into the system. Ultimately prepress and JDF integration mean that prepress is now just one component of what happens to produce print."

We at Digital Dots are staunch believers in the idea of the computing cloud but is it realistic for printing companies? Charnock says: "St. Ives has been moving this way, working with Agfa. Delano provides project management tools for St. Ives customers and we've been running our Agfa Delano system in a hosted environment across multiple sites for the last five years. I wouldn't call it a cloud just yet, but it's a hosted service supporting over 300 customers. So it's sort of in the cloud and this saves the manufacturers upgrading hassle because they can do it at a single cloud

computing site instead of coming to multiple locations to load software upgrades. We own these servers so we're not truly cloud [where computing infrastructure is the responsibility of a third party service provider], but it's the first example I know of in the world that does this. It's really a virtualisation of everything, it's just a question of who owns the server."

How can printers and equipment manufacturers use such a model to provide specialist services to customers and how will they achieve dominance in their various sectors? Charnock answers: "There's going to be two components of dominance: intellectual property for high volume inkjet printing, because this affects one's ability to drive workflow systems for variable data printing. And we'll have a combination of digital and offset for a long time, but who's going to be the leader in helping media companies to do this migration and in combining the two? Offset's extremely efficient in some situations such as a run of a million copies with 12 different versions and traditional press manufacturers, such as Manroland, are uniquely positioned to help companies make this migration."

So, we wondered, who most impresses John Charnock and why? "Who has the relationships with purchasers of media, the likes of Rupert Murdoch who spend over £600 million with Manroland? There are tremendous opportunities for traditional heavy metal manufacturers, if they are prepared to adapt and adapt fast enough." Somewhat soberingly he adds: "If the heavy metal guys don't do this they will go the way of Linotype et al".

So what technological focus should printers have these days? Should it be digital printing, process control and automation, web-to-print, or on IT that supports a business model that exploits all three? Charnock says: "The biggest failure of printers is to not communicate with their customer base. Unless you can sell technology investments into your customers you're wasting your time. The secret is finding out what your customers want to achieve and helping them to do it.

"Designers are from Venus and corporates are from Mars. Designers need a distributable product that delivers their ideas, and service providers produce these distributable products in both electronic or physical form; it shouldn't matter what format as long as it's effectively delivered. Printers add that value between creatives and distributors. Service providers have to serve their client bases and printers are well placed to fulfill this role."

So how can the printing industry grow? According to Charnock: "Printers need a number of tools in their arsenal, so we need to use multiple tools, so web-to-print, options for digital printing and how to find partners and understand logistics and supply chains, so that we aren't just one component in the supply chain. Print service providers have to get their heads around how to provide the end result, upstream and downstream."

And finally how about JDF in all of this? Charnock says: "It's take-up has been very poor and I think that's because we've failed as an industry to communicate what JDF is and why it's important … JDF should be about how we make it easy for our customers and their customers to buy print. Its value to the supply chain needs to be communicated to our community."

## Say What?

**We stopped running Say What? some time ago when it was clear that PR companies were tending away from egregious hype.**

**But as soon as we saw the Fujifilm press release about 'Pure PDF' we knew that it was time to bring this feature out of retirement. See if you can make sense of the offending communiqué:**

*"FUJIFILM Europe GmbH today announces the introduction of a new concept called 'Pure PDF' in relation to its XMF cross media workflow. Supported by a new logo, 'Pure PDF' serves as further evidence of Fujifilm's commitment to the Adobe PDF Print Engine (APPE) and is being introduced to help explain how a workflow such as XMF, based solely on the APPE, can*

*help meet the challenges of modern hybrid print production environments and deliver significant benefits."*

So what, we wonder, does impure PDF look like? EPS perhaps? We've already had a lot of fun at the expense of various members of the Fujifilm team, asking them to explain what 'Pure PDF' is, and we can thoroughly recommend this to anyone else who fancies a giggle.

# Seeing red

**When Magenta Print upgraded its prepress workflow, it opted for Agfa's Apogee, chosen as much for the strength of its WebApproval soft proofing option as for the actual workflow.**

One would think that finding a prepress workflow that can drive both offset presses and multiple digital devices, complete with an online soft proofing process, would be a fairly straightforward matter in today's advanced workflow climate. But although most workflow systems are relatively open and able to communicate with other devices, it's still difficult for workflow developers to come up with solutions that will work seamlessly with equipment from other vendors.

This month we've talked with Magenta Print and Display, a UK-based printer operating mainly in the retail sector, which has been working with Agfa to ensure that it can drive output to all of its devices from Apogee, as well as deliver colour managed soft proofing for clients.

Magenta is effectively a fully owned implant for Debenhams, a well-known British department store, with branches in most major towns and cities across the UK, as well as some 51 stores in 18 other countries. Magenta produces everything from point of sale, ticketing, leaflets, brochures and inserts, and because Debenhams has a fairly upmarket reputation, the quality of this work needs to be consistently good. Lee Hutchinson, production manager at Magenta, says: "We do work for other commercial ventures and we could very well be delivering stuff to other stores with Debenhams branding on it so we set up Magenta as a trading name."

Jobs are sent to the studio, mostly as open InDesign files. So Magenta's studio does all the repro work and creates the print ready files. The studio works a normal day, but the factory runs 24 hours, five days a week.

The plant is well equipped with a mixture of traditional sheetfed litho, small format digital from HP Indigo and Xerox and large format UV print in the form of an Inca Columbia Turbo, with an Expedio and Lightjet. It uses an Agfa Avalon N8-50 platesetter with Agfa's Energy Elite long run no-bake plates. Hutchison says: "We've got two SpeedMasters, an SM102 8-colour perfector and a 74 five-colour with inline die cutting. Our MIS system is Optimus 2020 and our prepress workflow is Agfa's Apogee. All of our files, irrespective of device are processed through Apogee, including all the wide format."

Magenta had been running Agfa's Apogee prepress workflow but recently went shopping for a new workflow before deciding to upgrade to a newer version of Apogee. This was chosen entirely because of the WebApproval soft proofing option, part of a suite of Portal, or Internet-based


*Lee Hutchinson, production manager at Magenta Print and Display.*

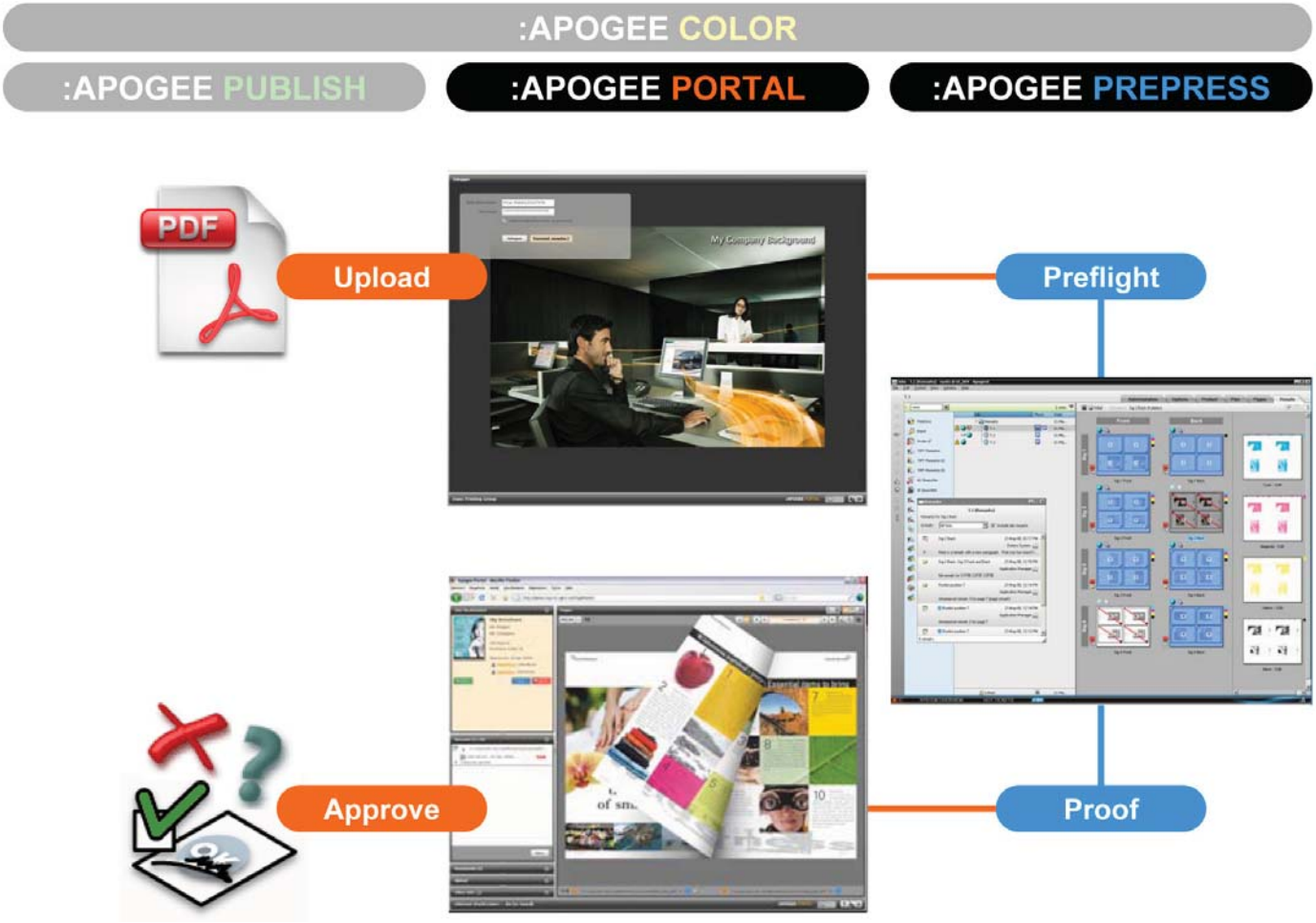
solutions for use with Apogee. Hutchinson explains: "A number of our external customers have asked for us to have soft proofing as an option as a prerequisite to us getting any work from them and they are obviously used to seeing it from other vendors as well, so the majority of our selection process to go for the Apogee workflow was on the basis that the WebApproval was stronger than for the competition."

Magenta did look at other workflows, from Screen and from Heidelberg, and Hutchinson says that in many ways these other workflows would have been a better fit for the company from a production point of view, but that Agfa's soft proofing option made the difference: "I couldn't put

the production needs ahead of the customers perception of us."

## Soft proofing

Hutchinson explains: "We upload the high-res PDF to a web page and the recipient gets an email telling them their proof is ready to view. They then log-in and actually look at the high-res rendered data. The system uses a streaming technology so it only brings down high-res detail when they zoom into that area. So it's totally content-accurate because you are working with a rendered file, but you don't need to have a huge Internet connection to be able to use it."




*Magenta opted to stick with Apogee on the strength of its WebApproval soft proofing option.*

So far so good, but there's nothing new in seeing content proofs via the Web. But WebApproval can also deliver colour accurate proofing, complete with a system for verifying the monitor and the environment of the user. Hutchison says: "The colour accuracy is dependent on how you use it so for the majority of the work that we are doing for point of sale it's just viewed on the desktop monitor of the PC user. For the more advanced user there is a module called ColorTune and that system identifies the monitor that's being used and it feeds back and tells us if its calibrated."

Agfa's customers can distribute the ColorTune display software to their clients free of charge, so that they can use it to calibrate their screens. However, as Chris Burn, systems solution specialist at Agfa, explains: "If you want to hit the tolerances there's only a few monitors that support actual communication to the monitor itself rather than just the driver so it's the top end Eizo range. If you really want to go for a verified colour managed environment then it really does need to be with those monitors."

The system shows the calibration as a percentage. It will work with other monitors but whereas the top-end

Eizo monitors will be nearly 100 percent colour correct, something else such as a MacBook Pro might only be 70 or 80 percent. Burn continues: "So when you log onto Portal to approve a page, that monitor would be registered in Portal, so if you were claiming to be viewing in a perfectly colour correct environment you couldn't cheat because Portal would know if you were doing that."

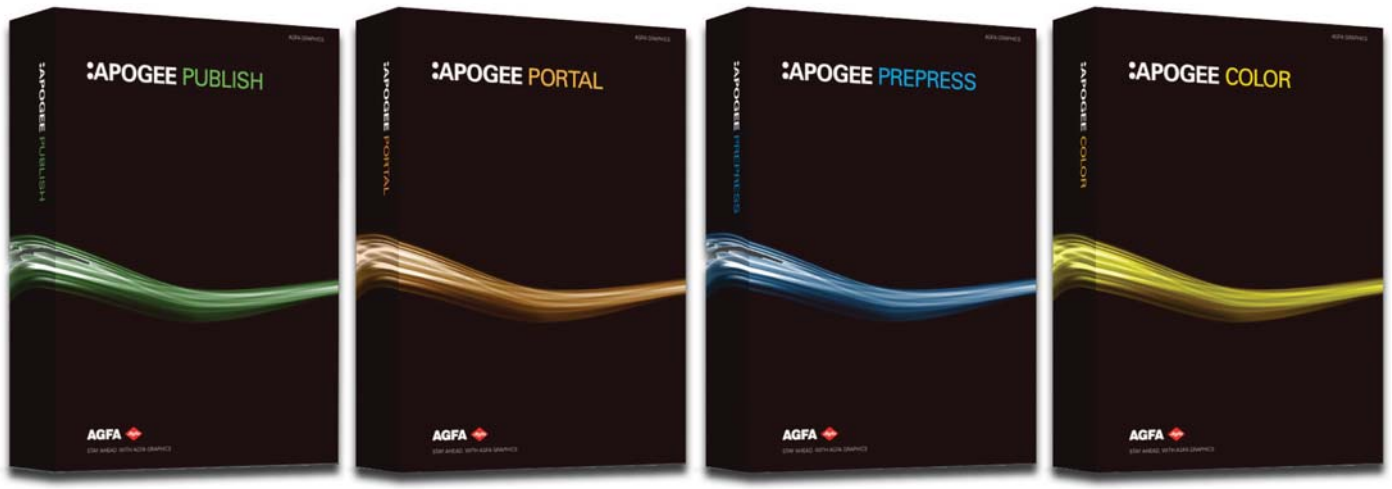
Aside from displaying the page, WebApproval also has a number of useful tools, as Burn explains: "There's a whole range of annotation tools, there's a separation viewer and there's a document box viewer which is the box that is going to be used by the imposition software so you can check the bleed and so on. There is an ink dropper so you can pick up a separation of a colour and then there are various drawing tools to draw rectangles, circles or arrows and then make comments on various items. And an administrator for the system can allocate additional email addresses of people who he also wants to view a particular page and then once he's given them access to his account, multiple people can go on and make their comments and annotations so that everyone can see it."

Hutchinson says that using WebApproval has led to greater efficiency and that clients are happy with it, noting: "The general broad feedback is that the user interface is very intuitive and user friendly."

## Digital workflows

Apogee's strength lies in the way that it handles traditional litho printing, but Hutchinson says that it is not always so flexible when it comes to integrating digital print. Nonetheless, Agfa has worked with Magenta to overcome some of the issues, as Hutchinson explains: "We had to make them make the Incas fit. We first of all went down the route of producing rendered files for the Inca, but the file size was absolutely massive and it brought production to a halt."

Burn says that it's not always so easy to send files to digital devices: "You can send a PDF out of anything to a digital device, but the big problem is where do you colour manage that PDF, and not all systems can do CMYK to CMYK colour management on the export, and certainly that's a relatively new feature within Apogee, to be able to do press repurposing of a PDF file."




*These days workflows are as much about the optional extras as the actual production system.*

He continues: "If you flatten an item, and there's colour management involved then to do the colour management correctly it needs to know what the output profile of the destination device is because if it doesn't know that you can get a difference in background from the flattened area to the non-flattened area. So flattening is easy if it's all in one workflow but as soon as you start sending out to other devices then there are still factors that need to be taken into account."

But Agfa has managed to sort out all of these issues at Magenta. Hutchinson says: "We are popping native PDF to the output devices and getting very good consistency. It's still using the Wasatch RIP with the Inca but the RIP is not really doing anything; there's no colour management

on the RIP at all, its just interpreting a flattened PDF file. All the colour management is now done in Apogee."

## Conclusion

Prepress workflows still belong to an age where each vendor only had to deal with their own equipment. It's quite possible to mix and match platesetters and workflows using JDF and outputting one-bit TIFFs, but few workflows have the level of integration with a digital device that one would expect from the printer's own digital front end. Nor are prepress workflow developers quite as nonchalant about dealing with other vendors as their MIS counterparts who expect to be integrating with other systems as part of their job.

This hasn't prevented workflow vendors from claiming that they can drive multiple devices, but sometimes, in the rush to talk about total workflows covering everything from web ordering to delivery, we forget that its the prepress part of the workflow that is doing the heavy lifting.

***– Nessan Cleary***

# Kings of Iron?

**Last summer when Manroland and Heidelberg were rumoured to be merging, the general consensus was that, given the dire market conditions, this was a good thing.**

But when the bean counters from Manroland looked long and hard at the Heidelberg figures during due diligence, they backpedalled from the deal pronto. Ask many analysts what to do with Heidelberg shares now and overwhelmingly they will recommend selling them. Sadly this loss of faith is not unique to Heidelberg. The traditional heavy metal press manufacturers may be in terminal decline. Perhaps not all of them at the same rate, but the long term picture looks bleak.

Heidelberg, as one of the best known and best loved names in print, is the most dramatic example. The company's shares trade at around €5 these days, a sad cry from five years ago when they averaged at around €30 and even sadder given that when Heidelberg shares were first traded in December 1997 the issue price was about €50. The company now expects a loss for the 2009-2010 financial year of €110 million to €150 million before interest and taxes, on revenues of €3 billion. This is a drop of 18.3% on the 08/09 results. With 18,000 employees that works out to a loss of from €6,111 to €8,333 per person!

The story isn't very much better for KBA, Komori and Manroland. The KBA Group was founded in 1817 and has been a public company since 1985, some 12 years earlier than Heidelberg. KBA's revenue is €1,531.9 million this year compared to Heidelberg's hoped for €3 billion but KBA has only 7,000 mouths to feed. KBA shares trade at around €12 and earnings per share had been rising until 2008 when they dropped to -€6.18. KBA's restructuring and the recession could account for part of that sudden fall but the analysts' recommendation is, once again, to sell.

Manroland is now privately owned however its revenues in 2008 were an unshabby €1,396 million, about €16,000 per head of the 8,656 workforce. These numbers once again are down from five years ago although not by much when revenues were €1,885 million and the company employed 9,026 people.

Komori shares trade at around €7, down from over €10 five years ago. 2009 revenues are 28.1% over the previous year with just over €0.85 billion. There was an operating profit of €0.026 billion, a fall of over 80% over the previous year. The future isn't looking too bright either: for the first half of 2010, the company expects net loss of €0.31 billion on revenue of €0.282 billion. For the year, the company expects revenue of €0.618 billion, a big drop on 2009.

*One of the new Speedmaster XL 162 being assembled at Heidelberg's factory in Wiesloch-Walldorf.*

Komori has managed to pay a €0.305 dividend for the last two years, but this is dropping to a forecast €0.1525 for the year ended March 2010. Until last year's collapse Komori uniquely had relatively stable earnings and steadily rising dividends. The share price has been falling but has more recently started to rise. This may be due to the company's aggressive cost cutting, such as the closure of its UK showroom in Leeds last Spring. Overall Komori has reduced worldwide costs by €0.092 billion.

## Let's Get Digital

On the other side of the printing press coin are the digital players whose number will shrink with Canon's acquisition of Océ. The mighty titans had previously been HP, Kodak and Xerox, the company that has arguably done the most to further the cause of high-end digital colour printing. Even though Xerox products aren't commercial print market leaders, there can be no doubting the strength of

the company's commitment and dedicated investment in market development for its Docucolor and iGen presses.

Xerox, which turned 71 this year, is bigger than the aforementioned heavy metallers combined, employing 54,700 people and generating $15 billion in revenues. The company ranks 147 in the US Fortune 500 a hard won position following Xerox's near death experience a few years ago. Its share price over the last 12 months is up by almost 7%.

HP is the only manufacturer of printing presses to uniquely straddle IT and print. HP ranks 10 in the US Fortune 500 and has been paying the same 8 US cents per share annual dividend since May 1998 despite the company's ups and downs. As Heidelberg and Manroland have dug themselves deeper into their traditional niches, HP has continued to expand its vision for its future and supported that vision with ambitious investment. For instance, HP acquired EDS an operator of corporate computing systems last year.

Interestingly, Xerox is one of EDS's largest customers. With EDS HP is strengthening its services business and gaining access to major and minor corporations worldwide, all of whom have printing needs. Not content with printing and IT technologies the company now wants to acquire 3Com for $2.7 billion. This networking company was founded by Bob Metcalfe, the man who invented Ethernet, and owning it ratchets up HP's rivalry with Cisco, a networking market leader, by a notch or three.

HP is unique in its interest in digital networks and infrastructure ownership, however, it is gradually putting into place the required building blocks to provide integrated information management and print media delivery for any purpose or industry sector. As one might expect, analysts have a strong buy recommendation for HP, despite a drop of 15% in sales in HP's Imaging and Printing Group (IPG).

In common with most press manufacturers weathering the recession, HP has suffered. A fall of £3.9 billion in sales, contributed to an 8% revenue decrease in HP's fourth-quarter results. Nonetheless the year's revenue for 2009/2010 is still projected to be over $117 billion, dwarfing all other players in this business. The mightiness of HP is one of the reasons for Canon's plan to acquire Océ.

Canon has bold ambitions in the printing business. It stated in its declaration of intent for the Océ purchase that it wants to be one of the world's top 100 companies on the basis of key business performance indicators. It also wants to be number one "in all of its current core businesses and working together we aim to achieve a number one position worldwide across the entire printing industry"


*Manroland has seen profits fall, but its figures aren't too bad given current economic conditions, perhaps thanks to models such as this recently launched this Roland 50 B3 press, which it has described as XXL technology in a 36/52 format.*

according to Fujio Mitarai, Chairman and CEO of Canon. The Océ acquisition is about giving Canon the means to establish that position.

Océ started life developing colourants for butter back in 1877 and the company has been publically traded since 1958. Canon's offer for Océ's shares values them at €730 million. Canon, founded in 1933, is the world's largest digital camera maker and wants to make Océ a consolidated subsidiary within the Canon group. Despite the size of Océ it is too small to compete with HP alone, but the combination of Canon and Océ could be powerful.

The deal has many pluses for Canon, apart from the combined revenues of ¥3.2 trillion plus €2,632 million and workforces of 166,000 and 23,000 for Canon and Océ

respectively. Océ has a strong position in office printing and industrial printing applications, such as transaction and direct mail, informatics, digital printing and variable data production and superwide format printers. These strengths are natural complements to Canon's strong position in MFPs and office printing. There are synergies in products, with the Imagepress series offering high quality toner colour and and Océ's Jetstream delivering high speed inkjet output. For the printing and publishing industry there is relatively little overlap, although in office applications the picture is rather more murky.

Canon also gains a distribution channel through Océ's presence in over 100 countries worldwide. Canon is paying a 70% premium over the closing share price on 13th November when the deal was announced and of 137% over the average price over the last twelve months. So Océ is clearly a must-have purchase from Canon's perspective. Canon's share dividends have almost doubled over the last five years at €0.42 in August 2009 from €0.19 in August 2004. The shares trade at around €27.47 and are a recommended buy.

Kodak is the exception in this heady mix, but Kodak has a unique and tenacious history. Throughout the twentieth century Kodak had long and enduring success in the world of analogue imagery, as a consumables supplier to both consumers and for most forms of professional media. It was a massive business but one which digital processes have totally chainsawed. Kodak has spent the last few years wrestling with reinvention, switching to digital products at a cost of €2.3 billion between 2004 and 2007.

The number of employees fell in those years from 64,000 to 26,900, with a further 3,500 to 4,500 jobs going this year. It's a dramatic rethink. In 1988 Kodak employed 145,300 and this year's payroll will be around 20,000. Kodak lost €74 million in the third quarter, with a fall in sales of 26 percent to €1.19 billion for the quarter, following losses of €126 million in the second quarter and €235 million in the first. Revenues for 2009 are expected to be over €4.67 billion. So is this heading in the right direction?

Yes, we think it is. Although Kodak has lost money for the last few quarters and its share price has fallen to around $4 from over $32 five years ago, Kodak has made the severe sacrifices necessary to create a position of relative strength from one of profound vulnerability. It has leading technologies in all areas of the printing industry, from printing plates to high speed inkjet, plus access to an enormous market for conversion to digital. This obviously includes professional printers, but less obviously consumers who know and love the Kodak brand. The only area in which it doesn't offer a digital option is in superwide format printing, a market already crowded with options and for Kodak not worth the cost of entry. Not yet at least.

*Digital colour print is a serious rival to the offset press market, with models such as this Xerox iGen4 delivering good quality print.*

So what does it mean? We've all been happy to sit back and watch as HP, Kodak and Xerox gobble up different components of the information industry, perhaps without fully realising the implications for printing and publishing. The many acquisitions have been about building links between commercial and non-commercial print applications and about control over digital infrastructures and information, or content.

Traditional printing press manufacturers are stranded on islands of outmoded analogue technologies. They are plagued by a digital blight they have only lately come to fully understand and they have neither the resources nor apparently the will to compete with the digital arrivistes.

However that doesn't mean there is no future for them: they have powerful and obviously still highly relevant technologies that leave digital printing machines coughing in the binary dust. They have access to markets and unmatched knowledge, service and support networks. They have key relationships with media magnates such as Rupert Murdoch.

*Expect to see Canon play a larger role in the digital press market following its bid for Océ, building on the success of this Imagepress C7000VP.*

All of these are assets Canon, HP, Kodak or Xerox drool over, assets which are appreciating and which the new generation of press manufacturers need in order to grow their businesses. How long before the new generation printing press companies start looking at traditional manufacturers? Just about as long as it takes for their shareholders to lose patience, state guarantees and loans to run out, and lines of credit to fade.

***- Laurel Brunner***

# Colour Me Carbon

**What's the hottest topic in print these days? Judging by the spate of recent announcements, it's carbon calculators. They're everywhere, from Google's calculator and those of NGOs such as the Carbon Trust and Envirowise in the UK, through to energy companies the world round. Even book publishers are getting into the act. For instance, Finnish book printer WS Bookwell's ecocalculator calculates $CO_2$ emissions and environmental impacts based on materials alternatives, production data and print run specifications.**

It's one of many such initiatives and reflects the growing awareness in the printing and publishing industries to understand and accurately quantify environmental impacts. And therein lies the problem with the growing spate: there are so many carbon footprinting initiatives, that it's impossible to use them without wondering if you've chosen the best option for your business.

Nor are the printing and publishing industries alone in this problem: carbon calculators are proliferating everywhere from energy companies to governments to lifestyle gurus. In complex supply chains, wherein different components use different footprinting models, there is no single, standard way to measure accurately and reliably the total carbon footprint of a given product. Basically it's a mess.

## What is a Carbon Calculator?

There are many definitions of what constitutes a carbon calculator, mostly shaped by the interests of the people coming up with the definition. A calculator works out the amount of greenhouse gases (GHGs) a given activity produces, expressing it in units of $CO_2$. In the graphic arts this could, for instance, be the printing press, paper, electronic delivery, proofing, finishing and distribution. But shouldn't it also include indirect emissions such as the manufacturing processes for the press, paper, computers, and so on?

The basics of what to include are fairly straightforward: energy, transportation and raw materials, but for the most part this is generic not specific. What should or should not be included in the calculation is part of the problem and different organisations take different approaches. Germany's bvdm, for instance, want to avoid, determine and compensate for emissions and include energy and emissions calculations for some, but not yet all, press technologies. The UK's Periodical Publishers' Association wants to provide added value to membership and won't share the details of its calculator. Finnish paper manufacturer UPM hopes to assist its customers to estimate their own carbon footprint using embedded emissions for the paper component and general guidelines for the rest. None of these calculators are supply-chain specific.

Verdigris

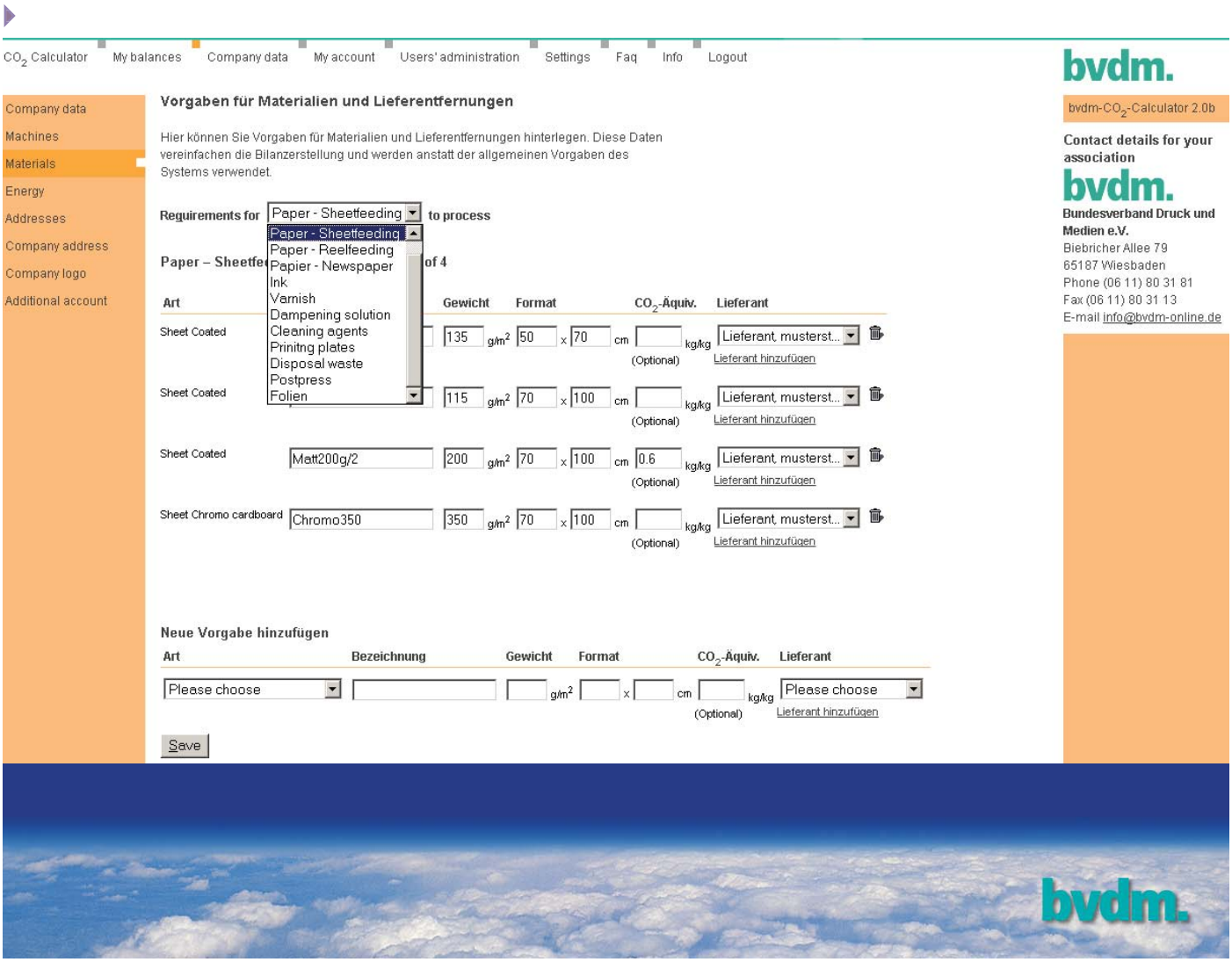
This article is part of the Verdigris series of stories about understanding the environmental impact of print. The Verdigris project is supported by founder members Agfa Graphics, Canon Europe, Digital Dots, drupa, Fujifilm, HP, Kodak, Ricoh, Océ and Unity Publishing, plus associate members, including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

http://verdigrisproject.com

## Who is Doing What?

This huge diversity renders a complete overview of all of the carbon calculators both unmanageable and meaningless, because like for like comparisons are so difficult. It's clear that most carbon calculators have been developed to meet the needs of specific interests.

Paper manufacturers such as M-real and UPM for example, calculate carbon footprints for paper products based on the ten elements of the Confederation of European Paper Industries' (CEPI) Carbon Footprint Framework for Paper and Board Products. This uses calculations based on annual averages of specific paper machine lines. The numbers refer to fossil $CO_2$ emissions, which are the most important GHG emissions for the paper industry, used in conjunction with information on product composition and different environmental parameters.




*The German bvdm association has developed its own carbon calculator which includes some, but not all, press technologies.*

CEPI's Paper Profile framework is a product declaration for paper buyers that presents the details of the environmental parameters for a given paper product. Launched in November 2007, it covers the carbon in forest products, carbon sequestration in forests and GHG emissions from forest product manufacturing facilities, fibre production and those associated with producing other raw materials and fuels including purchased electricity, steam and heat. This framework covers emissions related to transport of the product, and with product use, recovery and recycling. It also covers avoided emissions which, rather like the sequestration ideas, could be somewhat subjective.

At the other extreme, HP has developed a carbon footprint calculator for its inkjet and laser-based office printers and recently announced expanded functionality to support its HP Designjet printers.

The calculator generates estimates of energy consumption during use of a printer, emissions of carbon dioxide from production of the electricity required to run it, and carbon dioxide emissions from production of estimated volumes of paper consumed during printing. As is the case with many calculators, HP relies on embedded emissions, $CO_2$ estimates for energy and paper production. Currently there isn't much alternative other than to make use of data and the models generated by third parties. However, the printing and media industries really need to have absolutes, which requires coordination throughout both the primary and subsidiary supply chains.

Throughout the world industry associations are aware of the need to do something to make print products environmentally accountable and there are various consulting organisations ready to lend a hand. For instance,

Swedish developer Innventia helped the UK's Periodical Publishers' Association develop its carbon calculator. GA, the Danish printers' federation, plans to launch a $CO_2$ calculator for printing plants and printed products and will encourage uptake throughout Scandinavia and develop an English version for everywhere else.

## Crying Out for Commonality

All this work really needs a common framework and fortunately there are efforts afoot to provide just such a thing. These efforts will be coordinated across interests and nations, hopefully before it all gets completely out of hand. The ISO committee TC130, responsible for graphic technologies, is looking at the same landscape as many other organisations, and has been considering developing a standard metrology for the printing industry.

The PrintCity Alliance has also initiated research into carbon footprinting and energy efficiency in printing and packaging. The alliance is working with Intergraf, the European association of printing associations, and ISO, with a view to inviting other European organisations to contribute and to produce a best practice guide in 2010. They want to analyse and give guidance on how to measure and use carbon footprints. This is wonderfully vague, but it will tie in well with the ISO efforts.

## PAS 2050 & ISO 14067

A number of carbon calculators, including some of those mentioned above, are based on PAS 2050. This is a methodology for calculating carbon footprints for product footprinting, rather than organisational footprinting or environmental management, which is the preserve of standards such as 14001. PAS 2050 uses the principles of Product Category Rules (PCR) that define the criteria for a specific product category and set out the parameters for which environmental assessments can be made. There are PCR definitions for pulp, paper and some paper products. This specification is also the basis for a standard due to be published in March 2011, ISO 14067.

ISO 14067 specifies the requirements for the quantification and communication of GHG emissions associated with the whole lifecycle or specific stages of the lifecycle of goods and services. It is basically an international version of PAS 2050. The objective with 14067 is to promote the monitoring, reporting and tracking of progress in the mitigation of GHG emissions. The standard builds on existing environmental management, Life Cycle Analysis (LCA) guidance and assessment standards and relevant carbon footprinting programmes and initiatives.

TC130, perhaps best known for ISO12647 and all its parts, is now working on carbon footprinting and ways that printers can evaluate their environmental impact. The idea is to develop an international standard that can be used by printing and related companies worldwide, and that can be accredited. At a recent meeting in Beijing it was resolved to set up an ISO/TC130 task force to investigate using PAS 2050 and ISO14067 as the basis for a standard carbon footprinting methodology for print products. A liaison officer (yours truly) has been appointed to work with the people developing 14067, sitting on both TC 130 and TC 207 committees.

*The recent meeting of the TC 130 group in Beijing has set up a new task force to use PAS 2050/14067 as the basis for a standard carbon footprinting methodology for print products.*

The goal is to create a carbon footprinting and environmental impact management framework that will be useful throughout the print media industry, independent of sector or application of graphic technology. This work will ultimately provide the foundation for measuring carbon units accurately. This will then allow printers and publishers to participate in the emerging market for emissions trading.

Work begins now, so volunteers will be keenly welcomed. TC130 is also liaising with TC207, the committee

responsible for environmental standards, including 14001. This is a key part of TC130's work because TC207 is working on a universal framework for carbon footprinting and environmental impact assessment for products. Contact Laurel Brunner, lb@digitaldots.org, 44 (1435) 883565.

In the meantime, carbon calculation, by whatever means should be encouraged as much as possible. At this time it really doesn't matter how a business does it, as long as businesses recognise the need to do it and start learning how.

***- Laurel Brunner***

# Spectral readings, part 2

**In our introduction to this test, presented two issues ago in Spindrift number 7-6 October 2009, we outlined some of the challenges for making spectral measurements.**

We also referred to couple of reports that indicated the importance of using the right kind of instrument and settings for the specific type of measurements. While following up with our own actual test of spectrophotometers we were kindly pointed to a report from FOGRA in 2005, that also pointed out the risk of obtaining large differences between instruments and brands.


*The Techkon SpectroDens has a ceramic tile in the stand (which also serves as a charger) for the instrument, and is used in the calibration procedure. Once a year it should undergo a bigger service, done at the factory or by a certified reseller.*

When summarizing our findings from our new test, we have both good and bad news. The good news is that some of the tested instruments show very good agreement between models and makes – not surprisingly it's the top range of instruments from Techkon and X-Rite. The bad news is that it seems that those spectrophotometers connected to the press control systems often give very different values in CIE Lab, than the handheld spectrophotometers. Why this is, and how to handle this situation, will be elaborated on in the course of this report.

First a comment on the very thorough 2005 report from FOGRA called *Correction of Colour Measurement Device Errors*,


*It is recommended to recalibrate the X-Rite SpectroEye monthly through the NetProfiler package. A pre-measured colour sample (measured at the X-Rite factory) is measured with the instrument on the user site, and through a connection over the Internet the values are compared, and a quick analysis of the instrument is made. If the deviation is too high, the user will be warned that something is wrong. Otherwise the instrument is recalibrated, and ready for use.*

written by Dr. Friedrich Dolezalek and Dipl. Ing. Andreas Kraushaar. Since the tested state-of-the-art instrument at that time was mainly the Gretag-Macbeth Spectrolino and Techkon RS800, both instruments now replaced by new models from Techkon and X-Rite, we didn't see that the measuring differences found in the FOGRA report were necessarily valid any longer.

But one outcome of that report was that the authors strongly suggest a common reference material for the calibration of spectrophotometers. We think this is a very good idea, and one that is still missing in the market. It would probably help quite a lot if all spectrophotometers, or at least the top-level instruments, could be base calibrated against the same material. The problem is, of course, money – who should pay for the research and development of such a set of standard reference materials? Perhaps the bigger printing federations could pool money to make this happen, in the interest of their members worldwide? Ho, ho ho!

## What was tested?

We knew beforehand that our limited resources wouldn't allow us to test all the press control systems on the market, or very many handheld spectrophotometers of the same make. So we asked some printers to participate,

in order to get data from 'live' production, from systems in daily use, and not just laboratory test samples. We have samples from Heidelberg Prinect Image Control, KBA

*The X-Rite iSis is a scanning spectrophotometer for fast readings, suitable for workflows where different substrates are tested out, and new ICC-profiles are built regularly. Perhaps less useful in an offset press environment, more likely to fit in the prepress department, or for wide format printing.*

Logotronic/Densitronic S and Komori K Station/PDC-SII. We also have measurements with the top-of-the-range instruments from Techkon and X-Rite, mainly the Techkon SpectroDens and the X-Rite SpectroEye.

But the scanning device X-Rite iSis is also included in the test, and three different versions of the X-Rite EyeOne handheld spectrophotometer. We used one brand new instrument in the Revision D-series, one older EyeOne from the Revision B-series, and one very old EyeOne from the first Revision A-series. We included the EyeOne because it's by far the most common and popular instrument for everyday colour management, and is also one of the cheapest solutions for quality control within prepress, and possibly to some extent, in the press room. We invited the Italian manufacturer Barbieri to participate in the test, but despite several reminders and phone calls, it never provided an instrument to test. As we understand it Barbieri mainly focuses on proofing and large format printing applications, and not so much offset production, so this might be why it choose not to participate.

## How was the test done?

We asked for a printed and fully dry sheet (drying time at least 24 hours), on coated stock, to be measured in the pressroom, using the spectrophotometer connected to the press control system. We then measured the same sheet using handheld spectrophotometers, mainly the Techkon SpectroDens and the X-Rite SpectroEye, since the control strips seldom can be measured with, for example, X-Rite's EyeOne. The size of the single patches are simply too small for an EyeOne – it needs patches of at least 8-10 mm in size, and the patches on press-control strips are often much smaller. The X-Rite iSis is a scanning device that normally needs to be fed specially designed test forms, so we couldn't use the iSis to read any of the sample press sheets.

We measured samples of solid patches in cyan, magenta, yellow and black, but chose to only show the result for solid cyan. The results were similar for the other colours. The prints were random, out of production, not supposed

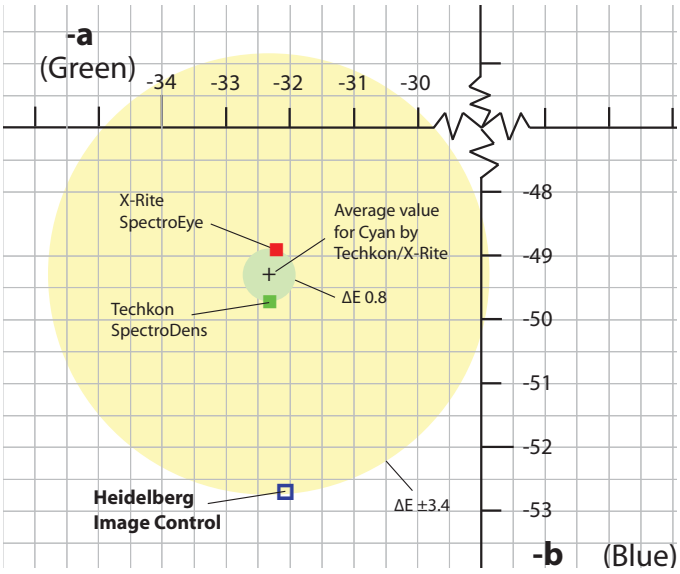
*The X-Rite EyeOne is by far the most common and popular spectrophotometer on the market. It's used mainly for prepress work, but also for building ICC profiles for offset printing. It may not be suitable for high-end validation of offset printing according to the ISO 12647-2 standard.*

to be within ISO 12647-2 tolerances. If the press control systems measured with black backing, we did too, using the hand-held spectros.

A test form specially designed for X-Rite iSis was used in that part of the test, and measured with all the other tested spectrophotometers. This test form was printed on a Canon iPF 5100 inkjet printer on coated glossy stock.

Finally, a sample printed on uncoated stock was measured with The Techkon SpectroDens and the X-Rite SpectroEye, at 0 and 90 degree angles. This was because the

SpectroDens and SpectroEye have a quite different design of the light source, which may effect the measurements, especially on uncoated papers.




*The single measurement using Heidelberg Prinect ImageControl versus repeated and averaged measurements with Techkon SpectroDens and X-Rite SpectroEye showed a deviation of ΔE 3.4 compared to the CIE Lab value computed from the averaged values from Techkon and X-Rite measurements. The illustration is simplified in 2D, and doesn't show the L (Luminance) coordinates, and it's influence on the deviation ΔE.*

## How to calibrate, and how often?

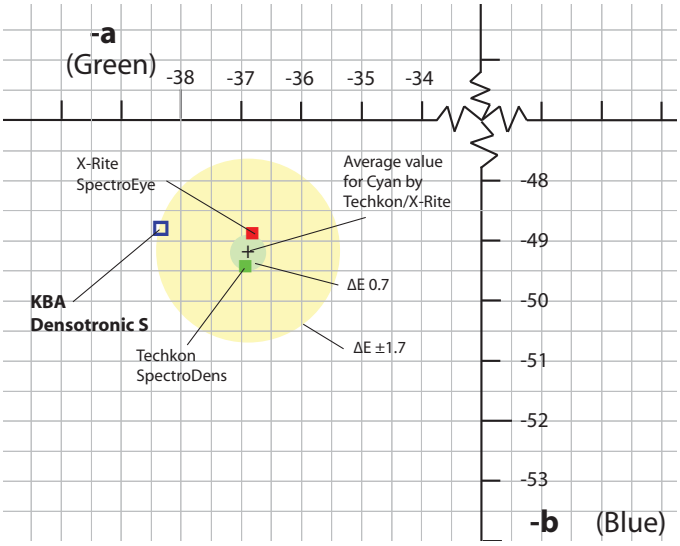
We were careful to calibrate the instruments beforehand according to their instructions and manuals. We asked the printers how often they calibrated the spectrophotometer connected to the press control system, and when it was last serviced. Generally it seems to be advisable to service a spectrophotometer once per year, and calibrate it either before every new series of measurements, or at least once per month. Some instruments have built-in self-calibration, others need to be manually calibrated.

The Techkon SpectroDens has a small white ceramic tile on the holder for the instrument that can be flipped out and used for calibration. A factory re-calibration is recommended once per year, and can often be done locally by the distributor.

X-Rite recommends users buy the optional calibration kit NetProfiler for the SpectroEye. This consists of a reference Calibration card that is valid for one year and 12 readings, so after re-calibrating once per month the card can be thrown away, and a new one ordered.

## Our findings

We were pleased to see that the inter-instrument agreements between the top range spectrophotometers, the SpectroDens and the SpectroEye, are satisfactory in our view. A ΔE difference of up to 0.8 is below what the human eye can detect, and since the ISO 12647-2 printing standard allows for up to ΔE 5 deviation, this minor difference between instruments shouldn't be a problem.
We wanted to test if there was more deviation between instruments when measuring uncoated stock, and particularly to compare measurements with the Techkon

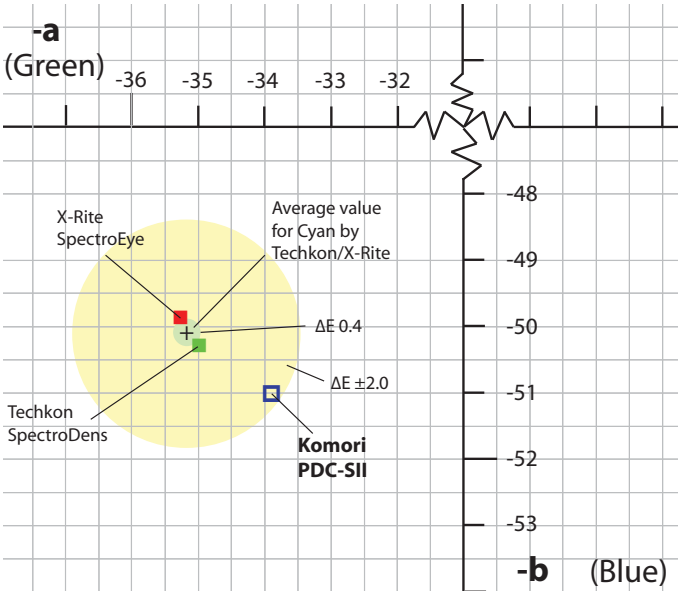



*The single measurement using KBA Densitronic S (manufactured by Lithec) versus repeated and averaged measurements with Techkon SpectroDens and X-Rite SpectroEye showed a deviation of ΔE 1.7 compared to the CIE Lab value computed from the averaged values from Techkon and X-Rite measurements. The illustration is simplified in 2D, and doesn't show the L (Luminance) coordinates, and it's influence on the deviation ΔE.*

SpectroDens and the X-Rite SpectroEye, since they have quite different lighting technologies. On uncoated stock this might have some influence due to the orientation of the grain in the paper. So we made a series of measurements at angles of 0 degrees and 90 degrees to the first series. The result of this limited test actually indicated a slightly higher deviation, expressed as ΔE, between the two series made with the Techkon SpectroDens. The X-Rite SpectroEye lighting technology has a circular structure, and should reduce this phenomenon. But again the deviation found is

less than ΔE 1 (ΔE 0.8 for the Techkon SpectroDens and 0.5 for the X-Rite SpectroEye), so can be ignored in practice.

When it comes to the EyeOnes, it's a different matter. First of all they are seldom a suitable instrument in the press room since they often need a larger colour patch than what is normally provided in the control strips used for the press control system. There can of course be workarounds for this in test situations, but we found the measurement

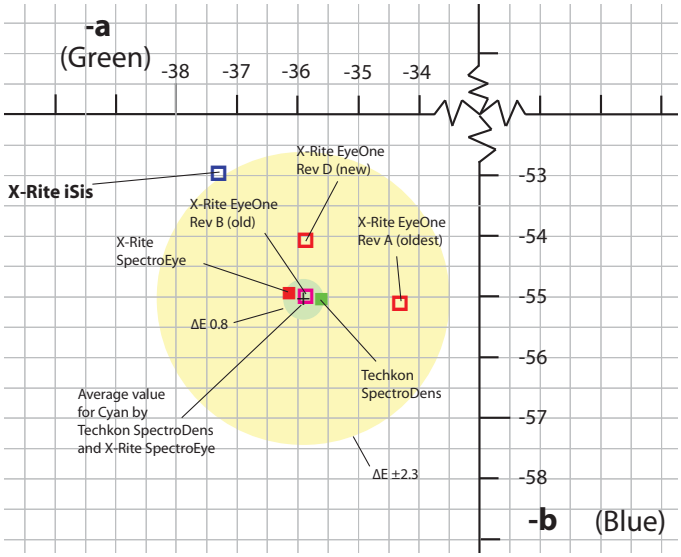



*The single measurement using Komori PDC-S II versus repeated and averaged measurements with Techkon SpectroDens and X-Rite SpectroEye showed a deviation of ΔE 2.0 compared to the CIE Lab value computed from the averaged values from Techkon and X-Rite measurements. The illustration is simplified in 2D, and doesn't show the L (Luminance) coordinates, and it's influence on the deviation ΔE.*

deviation to be slightly too big between different EyeOnes, to dare to recommend them for validations of ISO 12647-2 compliant printing.

The more troublesome finding is that there seems to be a quite large deviation between the readings from a spectrophotometer connected to a press control system, and the handheld top quality spectrophotometers. This needs to be addressed, but doesn't necessarily mean it's such a big problem as one might think. The press control systems are built to help the press operator come up to correct colour settings fast, and then maintain a stable result over the whole print run. Often the press operator doesn't use the CIE Lab values for this, but translates them into aim values for density. Once the internal aim values are determined for a particular paper type, and checked so that the resulting dry sheets are within the ISO standard, the actual CIE Lab or density values are less crucial.

What is important is that there is minimum variation in play. We haven't been able to check if there is much variation between measurements in the press control systems – such a test could be a continuation of this one, or taken up by a printing college or graphic arts research centre to do. But it leads us to strongly recommend printers to do all they can to service and calibrate their spectrophotometers in the press control system according to the manual, and double check the CIE Lab values obtained with a secondary reading using a high quality handheld spectrophotometer. Better to do this in your internal quality management procedures, rather than having a customer find out for you that you seem to be outside the defined tolerances for the ISO 12647-2 standard!




*A series of repeated and averaged measurement using X-Rite iSis versus repeated and averaged measurements with Techkon SpectroDens and X-Rite SpectroEye showed a deviation of ΔE 2.3 compared to the CIE Lab value computed from the averaged values from Techkon and X-Rite measurements. Also marked are the measurements with the three different Eye Ones. The illustration is simplified in 2D, and doesn't show the L (Luminance) coordinates, and it's influence on the deviation ΔE.*

We know our findings in this test may not be statistically backed up with sufficient measurements, and instruments used, in a scientific sense. But we think the conclusions are reasonably well founded, and at least point to the need to check this matter even more thoroughly in the future. We welcome feedback from others with experience in the

field, to either confirm or dispute our findings. It's all about identifying sensible ways of establishing best practices for obtaining high quality and stable print results – something we believe print buyers want, and that printers are happy to deliver.

***– Paul Lindström***

Special thanks to the printers that helped us in this test; CA Andersson, Danagårds, JMS, Ljungbergs and NP Tryck. Also a special thanks to the product specialists that helped us during the test, especially Per Marklund at Sun Chemical, Mathias Apelklint of Heidelberg Nordic and René Becker at Lithec.

# Quiz

If you plan a quiet festive season and find yourself at a loss for something to do, you may enjoy this quiz. If you're fed up with eating and drinking too much and need something more peaceful, this quiz could give you some respite. And if television has overloaded your senses with other peoples' realities, this quiz could give you some reassurance to cling to.

**1. Which two press manufacturers recently cosied up to each other, only to find their liaison nixed by the moneymen?**
a) Heidelberg & KBA
b) MAN Roland & Mitsubishi
c) Komori & Heidelberg
d) Komori & Shanghai Printing Presses
e) None of the above

**2. What fairly new thing do Apple and Adobe have in common?**
a) AIR
b) PDF
c) XMF
d) APPE
e) All of the above

**3. Who launched a fully managed, internet-based control system called MyPressXpert to provide press calibration data across presses?**
a) Heidelberg
b) Quark
c) Target Colour
d) Fujifilm
e) Adobe

**4. Who manufactures the Spectro LFP spectrophotometer for large format inkjet customers?**
a) Barbieri Electronic
b) HP
c) EskoArtwork
d) Screen
e) X-Rite

**5. Besides Kodak, who else has the rights to sell Nexpress in Europe?**
a) Canon
b) Xerox
c) Agfa
d) Ricoh
e) Screen

**6. Which European country's printing federation is leading the way in certification to ISO 12647?**
a) Germany
b) Sweden
c) The Netherlands
d) Spain
e) Finland

**7. Which company designs and manufactures the Rho series of superwide format printers?**
a) EFI
b) Océ
c) Durst
d) Agfa
e) HP

**8. How many parts to ISO 12647 have been published?**
a) 6
b) 8
c) 4
d) 1
e) 7

**9. What does the VT in PDF/VT stand for?**
a) Variable Tiles
b) Verbal Transactional
c) Variable Tables
d) Very Tight
e) Variable Transactional

**10. What is Chrome OS?**
a) An operating system Google is introducing.
b) A means of adding gloss to matt images.
c) A code name for the next Windows operating system.
d) A compression utility for Photoshop for outsized files.
e) A PDF processor for outstanding files waiting to enter the workflow.

**11. What version of QuarkXPress is the latest?**
a) 7.9
b) 8.0
c) 8.1
d) 9.0
e) 8.3

**12. Which large system developer recently opened new facilities in Bangalore?**
a) Kodak
b) Xerox
c) EskoArtworks
d) HP
e) Agfa

**13. Who did the International Trade Commission confirm as victor in a dispute over plate technology patents?**
a) Fujifilm
b) Ipagsa
c) Kodak
d) Agfa
e) Presstek

**14. What is Kodak Digicap NX?**
a) a PDF RIP
b) a screening technology for flexo
c) variable data content management software
d) an inline finishing system
e) ink management tools for inkjet presses

**15. Who is Agfa in the process of acquiring?**
a) Kodak
b) Konica Minolta
c) Gandinnovations
d) Inca
e) EFI

**Answers**
1. e
2. e
3. c
4. a
5. d
6. b
7. c
8. e
9. e
10. a
11. c
12. c
13. e
14. b
15. c

# X-word Puzzle

## Number 20 – Answers

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