Digital Dots

Spindrift

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

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...Intoxicating The Graphic Arts Industry Since April 2003

Man is the only animal that blushes, or needs to.
– Mark Twain

Dear Reader,

We're approaching the close of a year fraught with trauma, anxiety and uncertainty. As if that wasn't bad enough, the industry is beset with ignorance. Consider the World Wide Fund for nature and its ridiculous, ill-advised and idiotic, not to mention unprintable, PDF format.

How stupid is that? The WWF think this is a clever way of helping people to avoid wasting paper, but at best it's misguided and at worst damaging. It's daft and counterproductive and it perpetuates the idea that print is inherently environmentally hostile. According to WWF its format "is a simple way to avoid unnecessary printing. So here's your chance to save trees and help the environment." What rubbish!!

Has it ever occurred to these folk that if forests get too expensive to maintain, owners may well choose to cut them down for car parks or shopping centres? And have they considered the resources required to store, manage, deliver and access electronic communications?

The saddest thing about this silly idea is that its originators haven't bothered to understand how the paper industry works. They give it no credit for efficiency gains or consolidation or the fact that trees are sustainable crops. Nor do they seem to consider encouraging people away from electronic media. Not surprising really since it's their primary source of donations.

Ignorance never was bliss, but it's getting downright dangerous.

On a happier note, have a blast over the holidays!! We'll be back with you in the new year.

As ever,
Laurel, Nessan, Paul and Todd

In This Issue

Regular & Special

News Focus

MGI has shown off its newest device, the JetCard inkjet card printing machine. This takes blank cards, with smart chips, magnetic stripes or RFID and offers a full turnkey solution for printing to them in volumes from one to a million. It takes standard ISO CR-80 sized cards and includes a choice of four or six colour UV printing and spot or flood UV coating as well as security inks that show up under black light.

Océ has used the Canon Expo in Tokyo to launch its latest printer, the ColorStream 3500. This is designed to enable customers to make the transition from black and white to very high volume colour digital printing as their business grows. It's a colour inkjet machine with duplex printing and a speed of over 1,000 A4 images per minute

Canon has upgraded its Helix production workflow to version 2. A modular and scalable structure with multiple options enables customers to select and pay for only the level of functionality required. Helix PW has been designed to streamline the on-demand production printing process, add value to personalised short-run printing, integrate print ordering and production, and effectively manage busy print rooms.

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Digital Dots Ltd
The Clock Tower • Southover • Spring Lane
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Publisher – Laurel Brunner – **lb@digitaldots.org**
Editor-In-Chief – Nessan Cleary – **nc@digitaldots.org**
Technical Editor – Paul Lindström – **pl@digitaldots.org**
Contributor – Michael Walker – **michael_walker@dial.pipex.com**
Production/Websites – Todd Brunner – **tb@digitaldots.org**
Subscriptions – Helen Moderski – **subs@digitaldots.org**

Fujifilm has partnered with LithoTechnics to supply Metrix 2010, an automated job planning system, as an extension to Fujifilm's XMF suite of workflow solutions. Metrix 2010 intelligently finds the most cost-effective printing method, press and sheet size before ranking the results by overall production cost, replacing an otherwise manual and time consuming process for printers. It also contains integrated support for XMF, so the JDF layouts created by Metrix flow seamlessly into Fujifilm's print production workflow.

Adobe has a new offering, Search&Promote, a highly scalable site search and merchandising application for businesses that require a high level of marketer control, metrics-based relevance and personalisation. It can handle millions of pages, products and high search traffic volume and offers real-time indexing to ensure visitors have access to the most up-to-date content. It's built on the Omniture service that Adobe acquired a couple of years ago and comes with customer analysis tools to maximise the site's appeal.

Google has licensed Adobe's Content Server 4 software as its ebook content protection solution for Google eBooks. To date, more than 200 publishers and distributors worldwide have now deployed Adobe Content Server, making it the most pervasive Digital Rights Management (DRM) solution for ebooks and other digital publications.

Callas has updated its pdfaPilot program to support all features of PDF/A-2 with respect to validation and conversion of documents. It is now fully 64-bit enabled and can directly convert more file formats to PDF/A and includes support for splitting and merging PDF files in the server version and batch processing of PDF files in the desktop version.

Enfocus has introduced Update 2 for its Switch 09 automation software suite. This release includes a new tool for routing Enfocus Certified PDF files depending on their preflight status and lets PitStop Server 10 automate transparency flattening with or without preflighting.

Quark has partnered with Ixiasoft, which produces DITA CMS, an XML content management solution designed

specifically to manage the entire DITA documentation process. This can now connect with Quark's XML Author for Microsoft Word. This should make it easier to produce technical documentation by making it possible for non-technical people to create structured content without using complicated DITA or XML editors.

Xerox is to invest $25 million in the coming year to expand its EA Toner plant in Webster, N.Y. to handle the increasing worldwide need for chemically grown toner used in Xerox printers and production presses. Construction to expand the plant will begin this month and should be completed by the end of 2011. The expansion will add 10 engineers and union technicians to the current workforce of about 75.

Katun, a third party manufacturer of toner supplies, has acquired the toner cartridge business of Media Sciences International, Inc., a leading independent manufacturer of colour toner cartridges and solid ink sticks for office colour printers. As part of this transaction, Katun will also become the exclusive Master Distributor of the Media Sciences ink stick product line.

Kodak has bought the Tokyo Ohka Kogya company (TOK), which produces plates for the flexography and letterpress sectors. TOK has a manufacturing plant located in Yamanashi Prefecture, west of Tokyo.

Ipagsa has released Activa FPP, a new positive, pre-sensitized offset plate that has been accredited for the complete range of basysPrint UV-Setters. The plate has a high UV sensitive plate coating for fast exposure. It's good for runs of more than 150,000 impressions without baking, and one million prints post-baked, and can be imaged up to a resolution of 3200 dpi, and FM screens of 20µ.

Horizon has launched a new three-knife trimmer, the HT80. It uses icon-based colour touch screen and can store up to 200 jobs, as well as set up for 9 sections, infeed and cutting positioning. It's compatible with JDF, via Horizon's pXnet bindery control system.

Atlantic Zeiser has developed a Track & Trace module that integrates into a new or existing print packaging production line. Users can include all standard product tracking codes on the packaging. The codes include GS1, all types of numeric codes, and 1-D and 2-D barcodes, which are used to check the legitimacy of the packaging and product online. Track & Trace also includes an optical checking system with cameras that automatically read and verify the selected layout and check the digits.

Fujifilm has updated its FLH-Z ZAC range of processors so that customers can develop around 8,000m^2 of plates with just one replenisher bath. Fujifilm claims that for a printer using around 10,000m^2 of plates over a 1-3 month period, chemistry consumption can be reduced to around 216 litres, a reduction of up to 80% (depending upon existing system used).

GMG has officially launched its web-based online proofing option. Users can order a colour-accurate contract proof via an online portal at www.proofr.com, and select a Proofr partner in their area for the job. This partner then produces the proof in the recipient's vicinity, sending it out within a matter of hours. The PayPal online payment system is used for payment.

QuadTech has enhanced its closed-loop Register Guidance System with automated features such as fan-out control, cocking control, anti-embossing, front-to-back register control, and ink guiding. The enhancements answer the growing need for precision measurement, reduced waste and optimum productivity on the latest high-speed, extra-wide newspaper printing presses.

Xennia has completed its deal to buy Cametrics, best known for its ixPressia digital printing software products. This further enhances the integration of Xennia's XenJet module portfolio, making the benefits of digital inkjet technology – reduced costs, increased productivity and just-in-time customisation – available more quickly and at reduced cost.

Fujifilm's Dimatix subsidiary, which produces inkjet printheads and associated components, has launched a materials printer, the DMP5000. This is a large format, non-contact, fluid deposition system capable of jetting a wide range of functional fluids using multiple fluid deposition printheads interchangeably. It can print to

plastic, glass, ceramics, and silicon, as well as flexible substrates ranging from membranes, gels, and thin films to paper products.

Industrial Inkjet Ltd, the UK-based partner of Konica Minolta IJ Technologies, has introduced two new MonoPrint modules – one each for varnish and white inks. They can be integrated into existing printing systems.

PrintFactory, which is distributed worldwide by Four Pees, has been upgraded to v4.1 with JDF support. PrintFactory includes an Editor for preparing and editing jobs, and this now creates JDF instructions that can be passed to the PrintFactory RIP as well as MIS and Web2Print programs. This new version also gains added sign finishing abilities and preflighting.

Epson has teamed up with BioMedia to offer a biodegradable wide format solution. BioMedia's substrate is biodegradable within five years, making it a recyclable alternative to plastic-based media, complemented by Epson's water-based UltraChrome, K3, HDR and its solvent GS inks.

Mutoh has started selling its third generation of mild solvent inks for its wide format printers. The MS Ultra CMYK inks are suitable for the Blizzard, Spitfire 65/90 Extreme and Spitfire 100 Extreme printers. Mutoh claims the new inks will be compatible with a wider range of substrates and will help increase productivity.

Mimaki has released version 8 of its FineCut cutting software as a free upgrade to existing users. This is a plug-in compatible with both Adobe Illustrator CS5 (on Mac and PC) and CorelDRAW.X5 on PC. The software adds sign-making functionality, such as enabling contour cut paths to be created from both bitmap and vector images, automates the print and cut process when used in combination with the Mimaki RasterLink Pro RIP software and provides powerful cutting tools for both coloured vinyl cutting and print and cut workflows.

Quark has updated its QuarkXPress page layout program to version 8.5, a free update available to all QuarkXPress 8 users. The updates include support for the Microsoft Word .docx format for the first time, updated and new Pantone colour libraries, an automatic software updater, and a number of resolved issues.

The Dutch Ministry of Economic Affairs and the **Province of Limburg** has given €1.2m towards the establishment of Océ's Document Services Valley open innovation centre. This itself results from Océ joining forces with the University of Maastricht and Exser, a Dutch institute for service innovation.

Socially responsible online bookseller **Better World Books,** which collects and sells books to generate funds for literacy causes, has launched a new UK e-commerce website. The new site offers free shipping in the UK and over 1 million new and used books for purchase, soon to expand to 8 million. The company, which has operated an e-commerce site in the U.S. since 2003, has already generated over £5.5M for global literacy causes through its online book sales.

News Analysis

Manroland and Océ have announced a global strategic alliance that will allow Océ to sell its inkjet printers to Manroland's offset market, thereby also giving Manroland a range of proven digital printers. The deal also combines print data management and postprocessing and will allow customers to buy both digital and offset from a single source, together with consultation, systems, service and materials.

This agreement is only for inkjet and does not include Océ's toner or other print technologies. Nor does it include any Canon equipment.

But there's more to the arrangement than a simple cross-selling of kit. The two companies have also agreed to pool their research and to develop high volume digital

products, in line with Manroland's stated intention to develop its own digital solutions. Manroland is also to develop folders for the Océ printers and integrate system components such as varnishing.

However, manroland will also continue with its arrangements with Kodak where it has developed the Integrated Inkjet printing system, adding Kodak print heads to its offset newspaper presses. Océ is already a strong player in the digital newspaper arena but Manroland insists that there is no conflict of interest.

Gerd Finkbeiner, CEO of manroland, notes that digital print volumes are growing dynamically, particularly for short runs: "Many of our customers are investing in digital printing. This is the first concrete step in opening up new growth opportunities for manroland and in securing a lucrative field of business for the long term, because the area of digital printing is a business that increasingly supplements industrial printing."

Meanwhile, Heidelberg, earlier this year announced that it too would seek a digital partner, and was in discussion with a number of candidates, promising to announce which one it would partner with around about now. However, Heidelberg has now postponed this, saying only that it will make an announcement by Spring of 2011.

Picture This

Last month Fujifilm sent out these tiny bonsai trees to members of the UK press covering the graphic arts to mark bunkano-hi or Japanese Culture Day, celebrated on 3 November, the official birthday of the emperor Meiji. But the diminutive trees also double as a way of reminding us of our individual responsibility for the environment.

This one is certainly challenging our green fingers but we can assure Fujifilm that at least one of the little trees is still alive (much to our relief), though we haven't yet mastered the delicate art of bonsai trimming. We're still getting to grips with the vexed issue of how much watering the little tree needs.

The word bonsai comes from two Japanese characters: bon means tray or low-sided pot; and sai refers to a planting. There's also a Chinese version, penzai. There are plenty of specialist online shops in most countries where you can order bonsai trees and a shed-load of tools to care for them. The tray pots, for example, are essential in helping to restrict the root growth – it's a tricky business trying to grow a plant without letting it actually grow in size.

You can start a bonsai tree with a cutting from almost any perennial woody-stemmed tree or shrub. The point is to spend time in cultivating and trimming the bonsai so that it appears to develop as a miniature version of the full-sized tree with the same shape and branch structure. It's highly stylised and is really a living sculpture. In theory

all of this delicate gardening work should also promote contemplation and hopefully enlightenment, though for now we're just grateful to see new leaves appearing.

Did You Know?

TIFF/EP

One central aspect of unified and simplified workflows is to find one ideal file format for a certain process, and then optimise its use and settings. In photography, for example, the ambition for a long time has been to come up with one single file format for raw imaging data. But several camera vendors have proven resistant to this so we have an array of different file formats to consider. First there are the native raw formats from each vendor, and then there are some attempts to offer vendor neutral file formats (or non-proprietary formats)

One such non-proprietary file format is the ISO standard 12234-2 called TIFF/EP (Tag Image File Format/Electronic Photography), for development which started back in 1998. While at first not widely accepted in practical, daily use, it has over time inspired several other raw file formats, in particular Adobe's popular Camera Raw DNG (Digital Negative).

Back in 2008 Adobe offered the ISO Technical Committee 42 (Photography) the option to administer the continued development of DNG under the umbrella of TIFF/EP. This is a similar arrangement to what has happened with other de facto standards developed by Adobe, such as PDF (now ISO 32000), and Adobe XMP (ISO Draft at the moment). The difference is that while PDF is a dominant and well-accepted standard, DNG is not.

There are several reasons why camera manufacturers have resisted accepting DNG. For starters, the actual sensor, be it a CCD or a CMOS sensor, may be manufactured by a third party. To complicate it further, professional studio cameras often consist of a camera body from one vendor, and a high-end digital camera back from another vendor.

In such camera systems one of the key differentiators is how well the raw image data is processed. It's not unheard of that one vendor can show clearly better results for the same sensor than another using the exact same sensor chip. So there is some 'black magic' going on, where a common file format for raw image data isn't particularly appealing to this type of vendor.

Another reason is that the development of digital imaging is still so fast that there are some needs in systems solutions that are missing in today's version of TIFF/EP and DNG. So individual vendors may feel that it's necessary to maintain a proprietary file format where such additional features can be added quickly. This could, for example, be metadata for which lens and what settings were used in a particular shoot. If this particular metadata isn't supported in DNG, that vendor will update its own file format, and so offer its customers a slight benefit in the workflow, compared to a vendor that lacks this feature.

So the situation for TIFF/EP and DNG is actually similar to that of ICC profiles – while most functions should be possible in the standard format, vendors are free to use 'private tags' inside the ICC profile, in order to support special features. It prevents full interoperability across systems, and complicates the workflow, but it is what we have to live with for some more years.

A Review

X-Rite Mania

At the IPEX show in the Spring of 2010 X-Rite announced several interesting items of news for those interested in colour management and quality management.

First of all we have the much-awaited successor to ProfileMaker, a veteran in colour management, but now ready for retirement. The new software, i1Profiler, was

A nice feature in i1Profiler is to be able to print out a ColorChecker test chart after having calibrated and characterised a printer. Of course, you need to view it in a viewing booth – you might try using a portable one like this Ott-Lite GrafiLite, manufactured for ColourConfidence in the UK.

finally launched just before Christmas, and we tested it during the last stage of its beta testing period.

Secondly, X-Rite has released its own version of what was GMG Print Control, and which X-Rite called PressOptimizer. While not having a full size printing press at our disposal to test this software properly, we have looked through the options and features in the beta version, to evaluate how and to what effect this can be useful for an offset printer – or even a digital printer who has the ambition to prove compliance to the ISO 12647-2 printing standard.

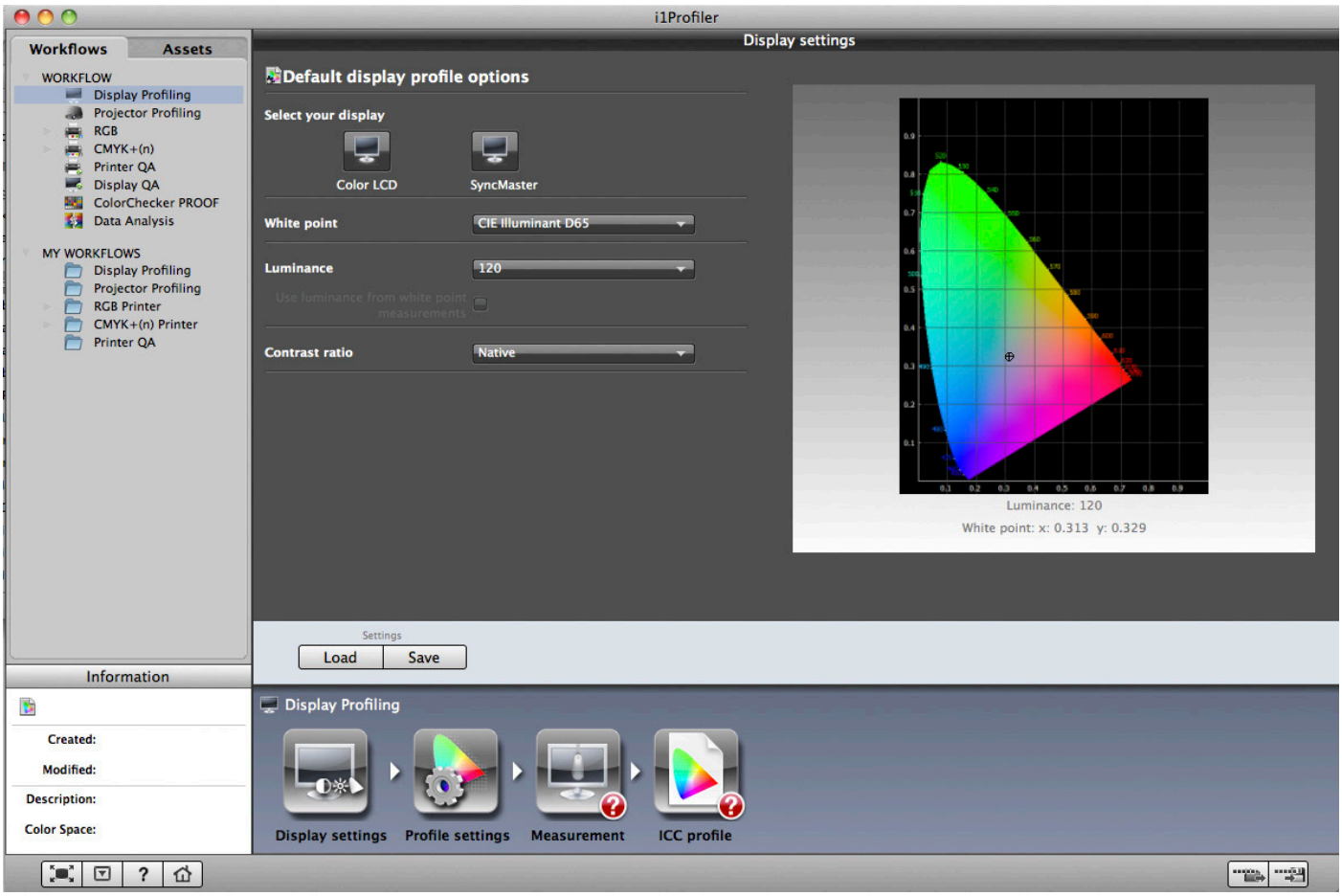
Finally, we want to take this opportunity to mention a little gem for the photographer, the X-Rite ColorChecker Passport. Properly calibrated monitors and digital cameras are the first part of the long production chain, from raw RGB data to high quality CMYK printing.

i1Profiler – new colour engine, new interface

Users of the old ProfileMaker will need a while to get used to i1Profiler – while ProfileMaker in effect consisted of three different standalone programs, the new software has all of these functions included in one single interface. Those of us that have tried the software for the lower priced spectrophotometer, Color Munki, will however recognise some similarities with that software. The idea is to let the user choose one of the supplied standard workflows, which are designed to offer enough for most users. You can also choose between a simplified user interface, and the 'Advanced' mode, which lets you change and add workflows to suit the way you work.

X-Rite stresses that i1Profiler uses the new colour engine called i1Prism, based on the joint R&D effort by former GretagMacbeth and X-Rite development teams. In a way we can regard i1Profiler as one of the first and more visible results of the merger that took place back in 2006. Up until now many of the products have kept their old names; ProfileMaker itself hasn't been updated since 2006. From what we can judge this relatively new colour engine (i1Prism has been offered as an SDK kit since late 2008) produces well-balanced colour conversions with the default settings. A glimpse of the old ProfileMaker can be seen in the alternatives for how the perceptual rendering intent should behave – "Colourful" and "Saturation" are options that are very similar to the ones in ProfileMaker.

But this is more or less where the similarities end. There are several new options, like "smoothness" and "chromatic adaptation", which will take a while to test out over a longer time. A nice feature is to be able to load a certain image to the preview window and see how the settings for the ICC profile might change the appearance of the image. Since so much 'intelligence' about how an image is converted from RGB to CMYK resides inside an ICC profile, it's good to be able to test out the behaviour of the profile to some extent without the need to make a lot of hardcopy printouts (at some stage you need to test the profile on several different images, but this feature gives an indication of the result).



The X-Rite i1Profiler has eight predefined workflows in the advanced user interface – these should cover what most users need in colour management.

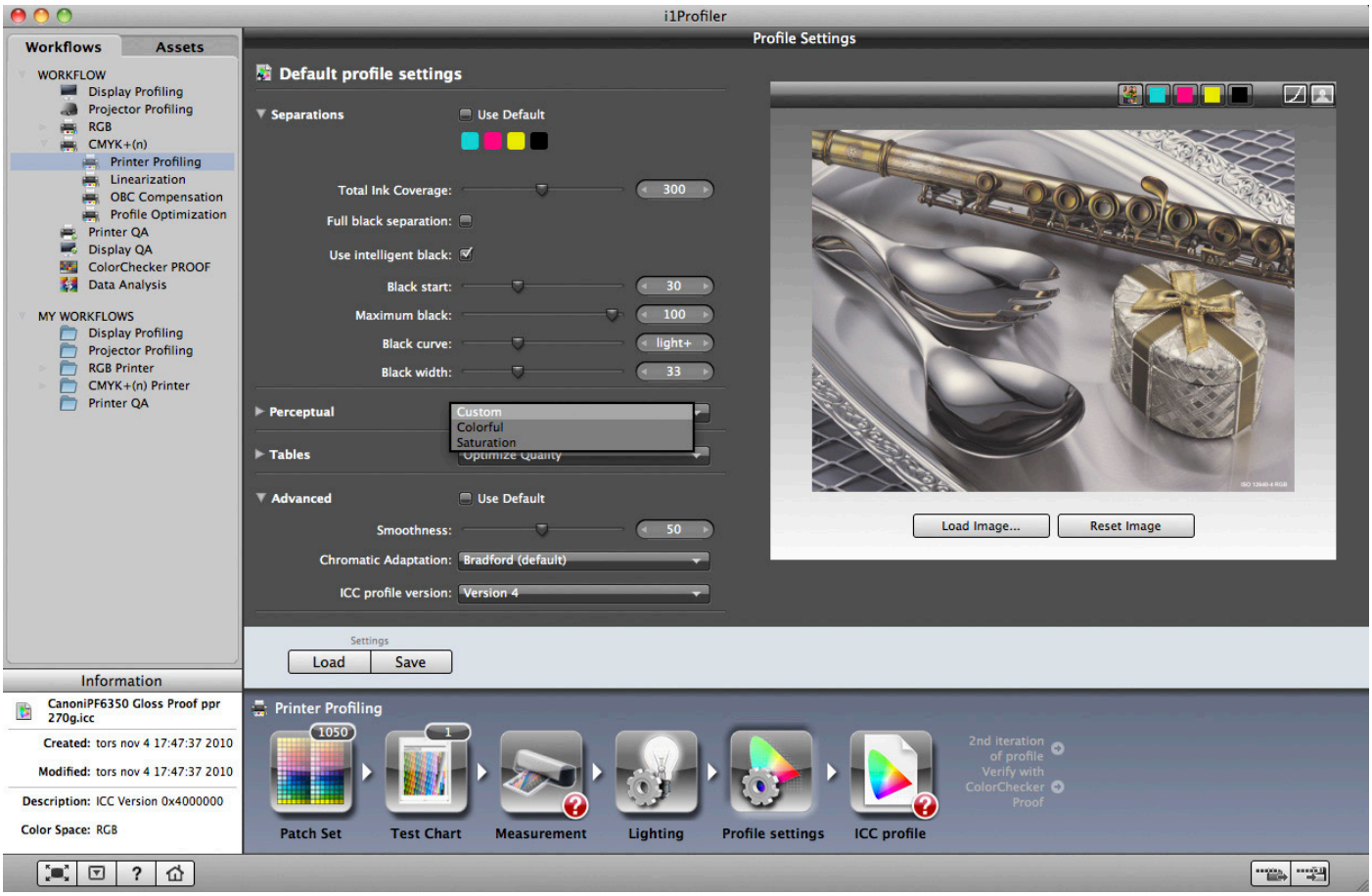
Another cool feature is to print out a ColorChecker test chart immediately after the calibration of a printer, and see if it matches the physical copy (assuming you have a ColorChecker at hand, but if you buy the i1Photo and Publish bundles you will – more about that later).

So who should use i1Profiler? Well, looking at the package options Basic, Photo and Publish, the Basic version could be used for a designer or editor who only wants to calibrate a monitor and check prints through the Print QA Check software (which will show up as one of the workflows in i1Profiler). For a professional photographer the i1Photo package is the obvious choice, with the options to not only calibrate a monitor, but also a projector and a printer in 'RGB-mode' (a colour printer without a dedicated RIP). The third package, called i1Publish, is the only version in the suite that enables the creation of CMYK output profiles, including multi-channel profiles with CMYK plus up to 4 additional spot colours involved.

However, it's highly recommended for photographers and printers to buy a high end RIP for his or her printer, because i1Profiler doesn't include any advanced procedures for ink optimisation or linearisation. Rather i1Profiler can, and should, be used in conjunction with a decent RIP. Ink optimisation and linearisation are key factors for a fully controlled and optimised printed result.

Included with the i1Profiler suite are some other useful components, such as the previously mentioned ColorChecker Proof (part of the user interface in i1Profiler), but also the stand-alone software ColorChecker Passport for calibration of digital cameras. This is a really interesting program, since it supports fine-tuning the camera profiles for Adobe Camera RAW (DNG, or Digital Negatives files).

Also planned to be included is the Pantone ColorManager, a stand-alone software to manage your colour library, in particular the spot colours. We have mixed feelings about



Some of the most important, and most interesting new features in i1Profiler are found in the dialogue box for colour separation settings. A nice feature is to apply the settings to a selected image of your own.

the functionality of the beta version, and wait to comment further on the Pantone Color Manager until it's released properly, which should be in January 2011 according to X-Rite (after the deadline for this issue of Spindrift).

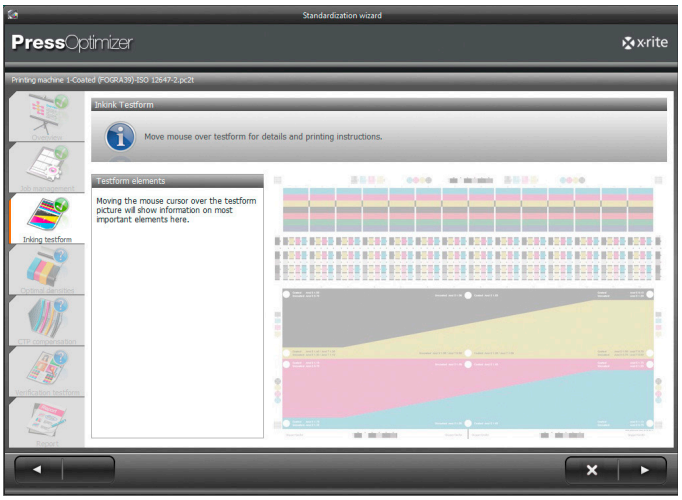
X-Rite i1Profiler is both Mac and Windows compatible. X-Rite offers upgrade paths for previous users of ProfileMaker and Monaco Profiler.

X-Rite PressOptimizer

One program that could work very well hand-in-hand with I1Profiler is PressOptimizer. This is originally a GMG product, but X-Rite and GMG have jointly developed the solution a bit further. It should be a good complement to a printer's press control system. The problem quite a lot of printers face is that there is often a disconnect between the software and tools used by the press operators, and the software used in the prepress department. X-Rite PressOptimizer bridges this gap by offering calibration tools for both the CTP and the printing press. When all the necessary steps have been taken, the software can then be used to check compliance with a range of printing standards, for example CGATS (GRACoL)/SWOP, or ISO 12647. In fact you can combine calibration according to GRACol with aim values for ISO 12647, which some people might think of as being the best of two worlds.

While some of the components in PressOptimizer accept the i1Pro spectrophotometer, like the stand-alone software PrintCheck Review, most of the components demand some of the high-end spectros from X-Rite to start working at all. This includes devices such as the handheld SpectroEye, or scanning devices like EasyTrax or IntelliTrax. PrintCheck Review is meant to be used by designers and/or publishers to get an indication of whether the delivered print is within tolerances or not. For printers to know that it is, the full PressOptimizer package is needed, complete with high-end spectrophotometers.

The workflow in PressOptimizer is quite straightforward, starting with an evaluation of the printability of the paper, and optimising ink amounts. Then follows linearisation,



Above: *An important part of the calibration of a printing system is to determine optimum ink settings. The X-Rite PressOptimizer helps with this in a quite straightforward way.* ***Below:*** *After the calibration and linearisation of both the CTP and printing press, it's exciting to evaluate whether you are within tolerances for the printing standard you use. The PrintCheck module is where this is done.*

which means checking that dot gain is within reasonable limits, and creating compensation curves for the CTP. Here the printer can either choose to comply to existing readymade ICC profiles, or create their own, custom made ICC profiles, compliant to the printing standard used. This is where PressOptimizer comes into its own – the evaluation and validation of the print is in general very good and fairly easy to understand and follow.

The exception is where the evaluation of whether the print run's variation is within tolerances – here X-Rite and GMG probably could work on a more complete and somewhat easier to use solution. PressOptimizer is Windows only – at least the PrintCheck Review should be offered for Mac OS, for those who don't have the X-Rite iOneProfiler software, and don't work on a PC.

We have only tested the software by simulating the different stages in the process, but plan to follow up with a case study based on visiting one or several printers who use the software in daily production. We also plan to review other similar software, like Alwan Print Standardizer, Bodoni Systems PressSign, Mellow Colour Print Spec and others.

While you can often find similar functionality in the CTP RIP systems used in prepress, and in the press control systems used in the press room, we think dedicated solutions like X-Rite PressOptimizer complement those solutions in a nice way, and fill the gap between such existing systems.

Heroes & Zeros

Hero

Well it has to be the mercurial Mr Assange, founder of Wikileaks, and his colleagues for their fearless, if possibly ill-advised, defiance of the mighty US government et al.

Some of the stuff coming out of Wikileaks is borderline gossip, but nonetheless Wikileaks is a shining beacon for freedom of speech. The publication of rude remarks by diplomats about their cohorts reminds us that petty minded moaning should always be subordinate to manners, politeness and professionalism. Unless you're a terrorist you're probably not bothered about the whereabouts of oil and gas pipelines, so not a particularly wise Wikimove.

But some of the activities revealed, such as spying on the UN, or the plan to subvert inconvenient elements of UK parliamentary democracy, are probably illegal and merit

further investigation. Any decent society would protect and value whistleblowers as the last line of defence against corruption in the corridors of power.

Zeros

The quite terrifying harridan Sarah Palin has called for Mr Assange to be "pursued with the same urgency we pursue al-Qaeda and Taliban leaders". What is even more disturbing is that this woman is a possible contender for the US Republican party's nomination for US President.

Green Shoots

The UK's *Carbon Trust* has awarded newspaper publishers Guardian News & Media the Carbon Trust Standard. This isn't really a proper standard but it recognises a company's efforts to measure, manage and reduce their carbon emissions. Guardian News & Media cut its emissions by 25% over the last three years through revamped heating and cooling systems, and general upgrading of buildings.

ISO Technical Committee 130 (Graphics Technology) has set up a new Working Group (WG) to author standards relating to the environmental impact of print. WG11 follows in the spirit of commitment to go that little bit further as demonstrated in the Rob Reiner movie This Is Spinal Tap, and the volume control for the BBC's iPlayer. Going that extra bit to reach 11 is what it's all about. WG11's first standard, ISO 16759, defines the requirements for measuring the carbon footprint of printed products and we aim to get it nailed by drupa 2012.

The KTH Centre for Sustainable Communication (CESC) in Sweden has been looking at the environmental performance of media products, comparing print and electronic versions of books, newspapers and invoices. It found that although much still needs to be done to reduce the environmental impact of pulp and paper-making, electronic alternatives also have a weighty impact and that in all cases the system boundaries will ultimately determine the impact data.

In a cooperation with *Rochford District Council* in the UK, *UPM* is to take around 9,000 tonnes of co-mingled waste material including glass, in order to turn it into newsprint, aiding recycling and allowing the council to save money on behalf of its citizens.

The German industry association of printing machinery manufacturers *(VDMA)* has issued a specification for the comparison and estimation of the energy efficiency of printing machines. The specification was prepared in order to provide the press manufacturers with a uniform procedure for measuring energy. This specification is due for formal publication next year and the VDMA is inviting public comment. Let us know if you would like a copy and contact details.

For more green news, check out The Verdigris Project:

Verdigris

http://verdigrisproject.com

Boomerangs

We received this letter from Bernard Kieffer of CPI in response to the story covered in issue SP0805 (September 2010)

Dear Editor,
Thank you for the excellent article on our new HP T300 Color Inkjet Web Press and the partnership between CPI and HP (7 September). It comprehensively sets out the benefits and possibilities of this new technology as well as the impact it can have – and is already having – on our work and that of other publications printers.

I would just like to reassure your readers that in both the areas of optical black density and substrate choice, our HP T300 press fully meets our expectations – and those of our customers – in terms of comparability with offset.

I made this point in my presentation at the event when I said that "Print quality is equivalent to offset" and noted that HP's competitors were unable to reach a black density of 1.40, but that the T300 press could. At the same time, I added that the range of substrates that could be run was "strictly identical to offset or Cameron" presses.

Such is our satisfaction with the press that I can confirm the forthcoming installation of an HP T300 Color Inkjet Web Press at our facility Koninklijke Wöhrmann, and we will make further details known to the press in due course.

Yours sincerely,
Bernard Kieffer
Group Technology & Supply Chain Director, CPI

While we prefer to use CIELab values when comparing colour accuracy, a measurement in density of 1.4 for black is still somewhat low when compared to offset print on coated paper. But perhaps appearance is similar. What is important is that you are pleased with the machine!

Paul

Christmas Song

To the Tune of Jingle Bells

Graphic arts, graphic arts, don't you love this game?
For every year we've been at it, it's never quite the sa-ame
CtP, JDF and standards from ISO
All this stuff should seem to be, just what you want to know

Digital data, with formats not in print,
Makes our small brains hurt, but we won't give in
Faster bigger presses, prints on silk and glass,
Web to print and VDP, it's all just such a laugh

Changing times, shifting sands, the business is quite tight
But we're hanging onto it, because the future's bright
When the New Year comes, we will stay in touch
Spindrift readers are so fine, we love you oh so much

Graphic arts, graphic arts, don't you love this game?
For every year we've been at it, it's never quite the sa-ame
As for you, our readers dear
We thank you from our hearts
Wishing you the best of life
And that we never part.

We'll be performing this for you and will post our effort onto YouTube. Search for the "Digital Dots Christmas song".

Inkjet printer test

We have spent the better (or worse) part of this year testing UV-curable inkjet printers. This technology is used to produce a vast array of graphic products including signs and exhibition graphics, plus an explosion of short and single copy runs on flexible and rigid materials.

UV-curable inks were the first ink formulations that could successfully be printed direct to rigid substrates. They save the cost and trouble of sticking flexible media to rigid backings as is required with output produced on solvent devices. Although worldwide UV-curable inks have yet to overtake solvent inks for non-rigid applications, they may one day do so.

This article is a short summary of our test project. The full version, available soon from our website, includes extensive discussion of the technologies, features, benefits and limitations of UV-curable printing technology.

Our tests measure the maximum achievable colour gamut and resolutions of several leading devices and compare them with the results produced using high quality solvent ink-based machines printing on flexible materials. Image enhancement techniques and multipass printing make the definition of absolute dots per inch and colour gamut difficult, yet manufacturers use both as an indicator of output quality. Our tests are designed to provide reliable benchmarks, giving prospective buyers a reference for objective comparisons for resolution and colour gamut. The next time a manufacturer claims a "wider" colour gamut or "higher" resolution output, we can give those claims some meaning.

A Bit of History

Screen printers were among the first to want digital alternatives to conventional output technologies in the early 1990s. Applications previously impossible to produce digitally, such as bespoke textiles or wall and floor coverings, can now be produced with a digital printer.

Why UV?

UV-curable inks are cured using ultraviolet light and the prints are fast drying. These inks have no VOC (Volatile Organic Compounds) emissions, whereas solvent inks release 80 to 90% of their content into the atmosphere and require extraction systems. UV-curable inks don't so investment cost is lower.

UV-cured inks dry instantly making them suitable for high-speed output. They adhere to both coated and uncoated, rigid and flexible materials, so the technology has a broad application range and market. Our research so far shows that for some flexible applications, solvent-based inks still have the advantage. Highly suitable for outdoor use, solvent inks, when used with cast vinyls, have the edge in applications which require extreme stretching, for instance applying prints to curved surfaces like cars. Although UV inks have been developed for this work, they typically aren't flexible enough and generally require lamination: substrate and laminate need to behave in the same way. There are also adhesion concerns with some substrates, but pre-treatments to improve this are available.

Market overview

We have read unsubstantiated claims that the global wide-format print sector is worth €58bn (£54.2bn) annually and that commercial printers occupy just 3.5% of the market. The primary growth drivers are the large and energetic development base and the diverse markets for products.

Size Matters

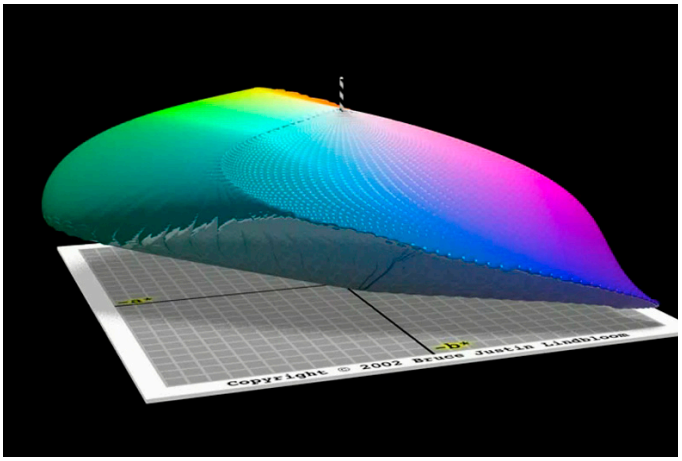
UV-curable printers range in size from A3 to five metre devices. Although UV-curable printers originated as flatbed devices, recent years have seen the introduction of a number of roll-fed designs challenging solvent-based printers for productivity and maximum format, plus some hybrid options with tables attached to roll-fed devices to support rigid media.

The Tests

The Digital Dots tests required participants to provide output samples from supplied test files. To test colour gamut, we use a standard IT-8 CMYK profiling chart; for

the resolution test, we use a specially designed chart with line pairs at a wide range of spacings. The participants were asked to print these under optimum conditions onto the substrates of their choice. Participants were allowed to choose any combination of inks and substrates they felt would provide the best results, subject only to the condition that the materials be commercially available.

We did not specify a substrate because different printheads and ink sets are optimised for different types of media,



The number of single visible colours for humans is about 2.4 millions, according to colour scientist Bruce Lindbloom.

depending on the target market and applications. As we were looking for the best possible results in each instance, it was appropriate for participants to make their own substrate choices. The printed results were returned to Digital Dots for measurement and analysis in our digital colour lab.

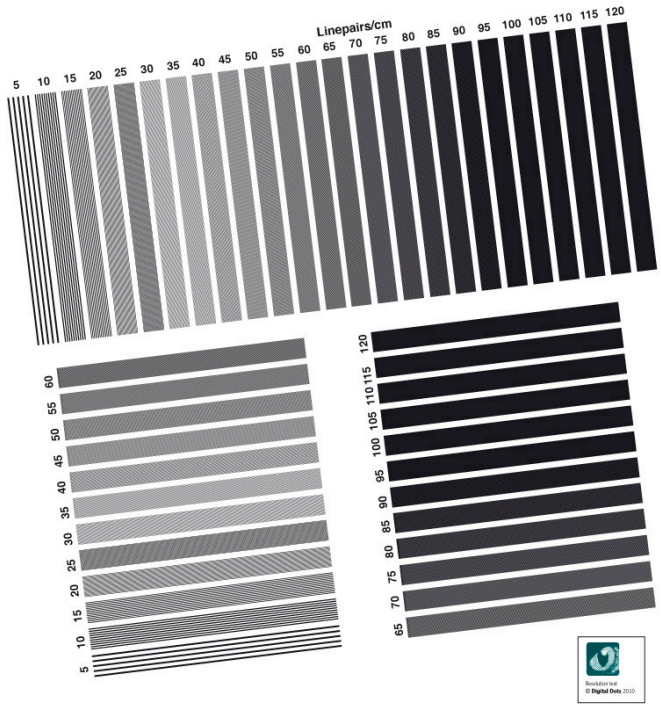
We measure colour gamut by creating a standard CMYK ICC profile from the IT-8 chart data, using an X-Rite i1 Pro spectrophotometer and ProfileMaker Pro professional profiling software. The profile was then analysed with Chromix ColorThink Pro to yield a figure for the total number of discrete colours within the gamut. We define discrete colours as those which are separated by a Delta-E (Delta E 76) value in the CIELab colour space of 1. A Delta-E of 1 is the smallest difference in colour the human eye can differentiate, although this varies slightly with individual and colour experience. Typical results for unskilled observers could be higher rather than lower, and may vary throughout different parts of the colour and tone spectrum. Whether an individual could actually distinguish all 400,000 or so colours included in, for example, the gamut of typical offset print on coated paper, as represented by the Fogra 39 characterisation data set, is not important: the analysis provides a consistent and repeatable metric for comparing the colour gamuts of different devices.

To measure resolution we viewed the prints of the line pairs chart both with a normal loupe and under a digital microscope. We wanted to determine the point at which the lines could no longer be differentiated as distinct pairs, the 'true' resolving power of the system. As the spacing

We used three test forms, a Poster 70x100 cm (above), a resolution test form (2) and also a colour characterisation test form (3).

between the line pairs decreases, the ink dots forming each line become so close, first touching and then overlapping, that they can no longer be distinguished as separate lines.

Participants had the freedom to select the print settings in their RIP/control software. The aim was to produce the best possible results, while recognising that not all types



2. The resolution test chart has line pairs at a wide range of spacings, from 5 line pairs/cm up to 120 line pairs. This can then be calculated to the equivalent resolution in dpi.

of commercial work would require such high quality. For comparison against current solvent-based technology, we had the same test files output on a selection of solvent printers.

Applications and markets

Thanks to the ability of UV-cured ink to adhere directly to a wide range of materials, UV-curable printers are capable of handling an exceptionally broad range applications, including:

- Billboards/hoardings
- Scaffold and building wraps
- Banners, backdrops and signage
- Point of Sale or Purchase (PoS or PoP) and hospitality industry displays, folded and flat
- Posters, both reflective and back-lit
- Window and other retail graphics
- Gaming machine panels and other product decoration
- Packaging prototyping and short-run/custom production
- Novelty promotional items – printing on wood, metal, glass, ceramics and other non-standard substrates
- Wall coverings
- Home and commercial decors
- Industrial
- Labels, stickers, decals

Test commentary

Our tests aimed to quantify two key parameters of UV-curable large-format printer output: colour gamut and resolution.

Colour gamut

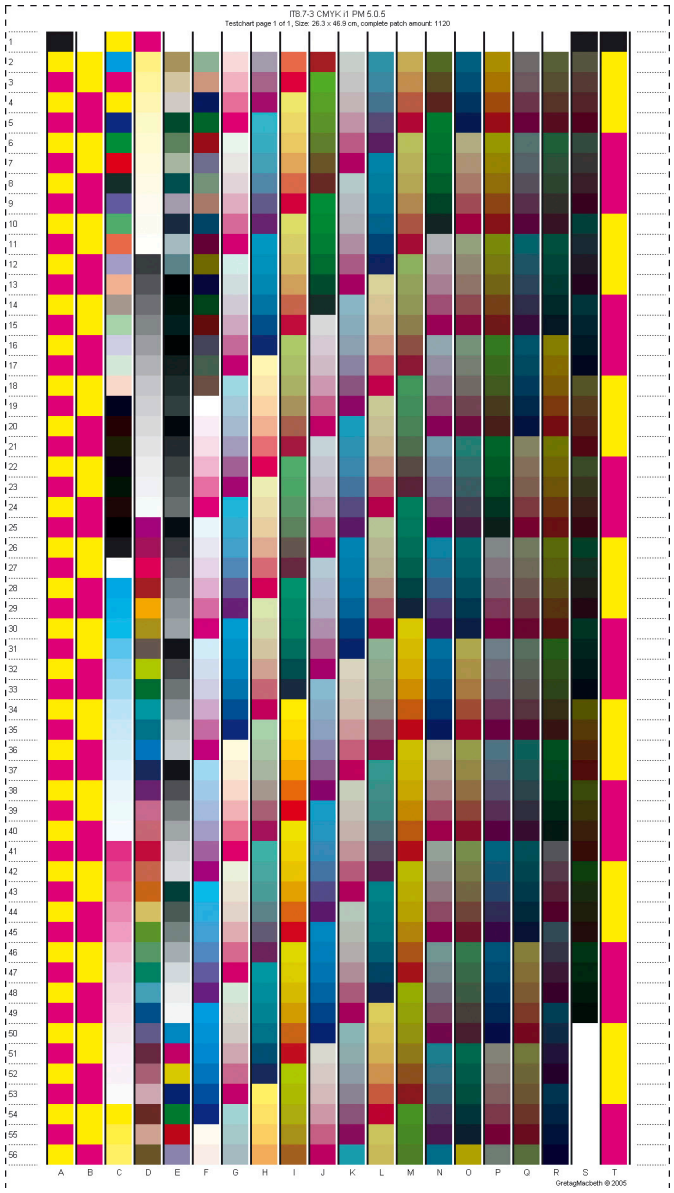
Most large format output is used in a commercial context, to promote, advertise and often physically showcase consumer goods. It's desirable that colour gamut from UV-cured prints matches that achieved with other printing processes, especially for consistency across campaign and marketing materials and to match corporate or brand colours for consistent colour across output locations.

Colour gamut is a function of ink and substrate. Because UV-curable inks form a film on top of the substrate rather than penetrating it, the substrate has less influence over colour appearance than it does in solvent-based printing. The principal parameters affecting colour gamut are the spectral purity of the pigments used and the transparency of each ink, plus the whiteness and gloss of the substrate. The inks are overprinted so it's crucial that pigment particles in the lower layers show through as transparently as possible, when the ink is cured. UV-curable inks are generally optimised for specific printheads and curing lamps.

Resolution

Resolution is a thorny topic. In inkjet printer design and marketing both manufacturers and buyers want to see the highest numbers, but figures without context are misleading and make direct comparison of product specifications difficult or even meaningless.

For most graphic arts professionals, higher resolution generally means better image quality. But the viewing distance comes into play for large format applications. The prints are viewed at different distances in different applications so there may not be the same need for high resolution. On the other hand, some large format output applications actually assume using and viewing the



3. We measure colour gamut by creating a standard CMYK ICC profile from an IT-8 chart, using X-Rite ProfileMaker Pro.

printed matter close up, which requires the appearance of high resolution.

The new generation inkjet printers can print multiple passes and vary dot sizes. This enhances appearance and can disguise quality fluctuations across the format, to ensure consistency across the printed surface. But the native resolution of the printhead is only part of the story.

In most cases, how well continuous-tone images can be reproduced is more important. The more photographic the results appear, the higher the value of the prints. Manufacturers improve appearance using software as well as hardware, with sophisticated colour management and screening algorithms.

We measure achieved resolution in a single colour (black) by printing line pairs with increasingly narrow gaps between them, and viewing them under a digital microscope. To enhance image appearance and tonal range, output can be controlled to use more than one bit when addressing the placement of ink droplets. Three bit output means (2x2x2) eight grey levels per colour channel, and four bit output (2x2x2x2) offers 16 tone levels for a given ink.

Scanning technology is one of the reasons why manufacturers' quoted resolutions can be several times higher than the values measured in our test, which measure the achieved, true resolving power. The results of the resolving power test are most directly relevant in the context of line art and text reproduction, and to a lesser degree to screened photos.

For most buyers of digital print, the critical factor is perceived resolution rather than a printing device's ability to resolve line pairs on the page. The former can be shaped through clever colour management and screening, dot placement and manipulation. However a clear and unambiguous way of measuring and describing resolution in large format inkjet output makes the comparison of different devices fairer. We believe the resolution test provides a first stepping-stone towards a clearer understanding of the significance of stated resolution for these devices.

The tested printers

EFI Vutek GS3200

EFI submitted test samples produced using the eight-colour (CMYK plus light versions) ink set in the 1000 dpi mode on Avery M2 pressure-sensitive vinyl with the light smoothing option selected. Our gamut test indicated a total of around 416,000 colours.

In the resolution test, which was printed on the same Avery vinyl and with the same resolution and smoothing

Efi's Vutek GS3200 is a 3.2 metre wide roll-to-roll printer that can also be adapted to image rigid media up to 50 mm thick.

The HP Scitex FB7500 is designed for industrial printing environments. It prints up to 3.2x1.65 m media up to 25 mm thickness.

Inca's Onset S20 has a 3.2 x 1.6 metre bed and is rated for up to 250 square metres per hour (m2/hr), depending on print mode and finish choices.

The Mimaki JFX-1615 Plus was launched in October 2010 and can print 1.6x1.5 m media up to 50 mm thickness.

settings as the colour gamut chart, distinct line pairs could be seen at up to 65 line pairs in the horizontal direction and at up to 35 line pairs in the vertical one. These equate to 390 and 210 dpi respectively.

HP Scitex FB7500

HP Scitex submitted test samples produced using the 1000x1000 dpi mode on matte coated paper. Our gamut test indicated a gamut of around 594,000 colours. In the resolution test, printed at the same resolution and on the same matte paper as the colour gamut chart, distinct line pairs could be seen at up to 65 line pairs in the vertical direction (at the correct orientation of the test chart). The limit in the horizontal direction was 50 line pairs. These figures are equivalent to 369 and 299 dpi respectively.

Inca Onset S20

For the colour gamut test, Inca printed the IT-8 CMYK target on Buchanan Westland Silk 250/245 paper in 16-pass gloss mode with addressability set to 400x739 dpi. Analysis of the ICC profile for the S20 yielded approximately 453,000 colours.

In the resolution test, also printed on Buchanan Westland Silk 250/245 with the same RIP settings, the Onset S20 showed a clear image of distinct lines at spacings of up to 40 line pairs in the vertical direction (at the correct orientation of the test chart). The limit in the horizontal direction was 30 line pairs. These figures are equivalent to 240 and 180 dpi respectively.

Mimaki JFX-1631

Mimaki submitted test samples for the JFX-1631 produced using the 1200x1200 dpi mode on glossy vinyl. Our gamut test indicated a total gamut of around 547,000 colours. In the resolution test, which was printed with the same resolution and glossy vinyl as the colour gamut chart, distinct line pairs could be seen at up to 90 line pairs in both the horizontal and vertical direction. This equates to a resolving power of 540x540 dpi.

Mimaki UJF-3042

Mimaki submitted test samples for the UJF-3042 produced using the 1440x1200 dpi mode on glossy vinyl.

The Mimaki UJF-3042 is marketed as the "Compact UV LED flatbed printer", and can image up to 30x42 cm.

The Océ Arizona is the latest and fastest printer in the Arizona series, with a print area of 1.26x2.5 m.

The Polytype SA Virtu RS35 is a hybrid UV-printer able to print up to 3.5 m wide media, and up to 95 mm thickness.

Our gamut test indicated a total gamut of around 452,000 colours. In the resolution test, which was printed with the same resolution and glossy vinyl as the colour gamut chart, distinct line pairs could be seen at up to 100 line pairs in the horizontal direction, and 90 line pairs in the vertical direction. This equates to 600x540 dpi.

Océ Arizona 550 GT

Océ submitted test samples for the Arizona 550 GT produced using a variable drop size of 6-30 pl on matte poster paper. Our gamut test indicated a total gamut of around 550,000 colours. In the resolution test, which was printed on the same matte poster paper as the colour gamut chart, distinct line pairs could be seen at up to 75 line pairs in the horizontal direction, and 100 line pairs in the vertical direction which equates to a resolving power of 450x600 dpi.

Polytype SA Virtu RS35

Polytype SA submitted test samples for the Virtu produced using the 1200x1200 dpi mode on glossy vinyl. Our gamut test indicated a total gamut of around 426,000 colours. In the resolution test, printed with the same resolution and glossy vinyl as the colour gamut chart, the output was done in CMYK and with some kind of screening so it was impossible to accurately distinguish the narrower line pairs to determine the resolving power.

Price comparison

Make/Model	Price (€)
EFI Vutek GS3200	Undisclosed
HP Scitex FB7500	Undisclosed
Inca Onset S20	777,000
Mimaki JFX-1631	115,000
Mimaki UJF-3042	25,000
Océ Arizona 550 GT	Undisclosed
Polytype SA Virtu	300,000

Comparison of stated addressable resolution versus achieved resolving power

The native resolution of the printhead, the addressed resolution at the front end, and the actual resolving power on the substrate are all important. In our view the actual resolving power is the most important of all because it reflects the whole system's performance and the precision with which ink droplets are placed onto the substrate.

Make/Model	Max Resolution (dpi)	Resolving Power (dpi)
EFI Vutek GS3200	1000x1000	210x390
HP Scitex FB7500	508x500	369x299
Inca Onset S20	400x739	180x240
Mimaki JFX-1631	1200x1200	540x540
Mimaki UJF-3042	1440x1200	600x540
Océ Arizona 550 GT	Variable drop size; 6-30 pl*	450x600
Polytype SA Virtu	1200x1200	Unestablished

* Océ do not claim a specific resolution, preferring instead to make this statement.

Comparison of Colour Gamut Test Results

Here for comparison are the numbers of colours contained in the gamuts of tested devices, in black, and of various popular colour spaces, calculated via the same method, shown in green:

Device	Ink and Stock	Number of Colours
Offset printing	CMYK on glossy coated paper **	402,000
EFI Vutek GS3200	UV-cured ink, CMYKlclmlylk* on glossy vinyl	416,000
Polytype SA Virtu RS35	UV-cured ink, CMYKlclm*, on glossy vinyl	426,000
Mimaki UJF-3042	UV-cured ink CMYK on glossy vinyl	547,000
Inca Onset S20	UV-cured ink, CYMKlclm on semigloss coated paper	453,000
Roland VersaArt RS-640	solvent based ink, CMYK ***	503,000
Mimaki JFX-1631	UV-cured LH100 ink, CMYK on glossy vinyl	547,000
Roland VersaCamm VS-640	solvent ink, CMYKlclm on glossy vinyl ***	548,000
Océ Arizona 550 GT	UV-cured ink, CMYK on matte coated poster paper	550,000
Mimaki CJV30	SS21 solvent based ink, CMYK on glossy vinyl ***	556,000
Mimaki CJV30	ES3 solvent based ink, CMYK, on glossy vinyl ***	577,000
HP Scitex FB7500	UV-cured pigmented ink, CMYKlclm*, on glossy vinyl	594,000
Epson Stylus Pro GS-6000	solvent based ink, CMYKlclmOG on glossy paper ***	658,000
Wide-gamut printers	dye based ink, 8+ colours on glossy photo paper ****	~800,000
sRGB working space		832,000
Adobe RGB (1998) working space		1,200,000

* lc, lm = Light Cyan, Light Magenta

**Represented by the FOGRA 39 characterisation data set. This gamut is for reference only.

*** The solvent based printers are included for reference only. The main focus of the test is printers using UV-curable ink.

**** The dye-based printers are included for reference only. The main focus of the test is printers using UV-curable ink.

Conclusions

All the UV-curable inkjet printers tested can reproduce more colours than a standard high quality offset CMYK press. Given correct colour management throughout, reliable colour matching can be achieved between their output and offset-printed materials. When there is no need to constrain the colours to an offset gamut, the image quality of most of the UV-curable printers tested surpasses standard offset's gamut!

However it seems UV-curable printers do not yet quite match the colour gamut of solvent-based alternatives. The differences in gamuts are at least not as dramatic as has sometimes been suggested. If vendors use our method of defining both a numeric value, and a unit (ΔE1) for the achieved colour gamut on a certain substrate, we hopefully will be able to reduce the somewhat confusing and unclear references to a "large colour gamut" or "wider gamut than ever" in technical documentation and brochures. We hope our test of resolving power complements today's use of stated addressable resolution in dpi, or possible droplet size.

Next Steps & Future Developments

Two powerful forces drive this market: web to print and variable data technology, which are becoming intimately intertwined. In both cases software must combine ease of use for print buyers, with the necessary features to support PDF workflows and fully exploit the output devices. We're working on additional tests and will publish further results and technology evaluations in 2011.

***– This article is extracted from the* Digital Dots Report on UV-Curable Large Format Inkjet Printers**

Riding the hurricane

Italian company Pixart Printing found success after reinventing itself as a B2B web to print operation and is now looking for further growth into other European markets

We all know that the last couple of years have been difficult trading years, with most parts of the world experiencing some form of recession. Yet, some printers have done very well, particularly those that have engaged with digital technology and a more streamlined approach to data management. One such example is the Italian company, Pixart Printing, which is on course to record a 55 percent growth in this year's revenue over that of last year.

Indeed, the company is so successful that managing director Matteo Rigamonti jokes that he has to put prices up to stem the tide of incoming work. Such is the pace of growth that the company recently moved to a new, much larger facility and has already earmarked a site for a new factory three times the size of its current location.

Based in Marghera, Venice, Pixart dates back to 1994 but was forced to reinvent itself in 2002 to stay in business. Most of its business, around 90 percent, comes from selling to resellers, a mixture of printers, advertising agencies, designers and copyshops. Roughly 87 percent of the work is repeat business from existing clients. It was, until recently, a purely digital operation, and crucially, most of the business comes via its own home built web2print system.

The typical work includes everything from flyers and corporate brochures right up to large format signs and packaging. Jobs can be ordered online so that everyone can see upfront what the cost of the job will be, with no hidden extras, and no need for any further negotiation. Customers can choose to pay more for jobs that are delivered in 24 hours, or less for jobs that take from 48 hours up to a week for delivery. Rigamonti says: "Only 10% of customers want the job in 24 hours. The rest are happy with longer delivery times. If you say to a person that we will deliver a job in two days or one week then you have to stick to what you said."

Pixart takes its customer support very seriously. Rigamonti explains: "A traditional printer would have a direct relationship with the customer and could defend his job if there was a mistake. But in our case the customer is alone once he has received the parcel and we can't support the product."

Consequently, if a customer is unhappy about a job then Pixart will reprint it without any quibbles regardless of where the fault might lie. Marcello Libralato, head of customer service, says: "We want to make sure that the customer feels comfortable. It means a lot to the customer but doesn't increase our costs by much."

Matteo Rigamonti, managing director of Pixart Printing

Expansion into Europe

Despite its success, Pixart is still looking to grow further. It has been offering its services across Europe for some time from its Pixart.it website, albeit with mixed results. But now it is in the process of rebranding itself to Pixartprinting with country-specific websites for its main markets including Spain and Portugal, with a German site to follow in February 2011. These sites will be backed-up with telephone support manned by a native speaker for each country but the websites and phone support will still

lead back to Pixart's factory in Italy, where the jobs will still be printed and dispatched.

The exception to this is the UK market, which has so far proven resistant to Pixart's charms. Pixart has teamed up with Precision Printing, based in Barking, East London to

Pixart is one of the largest users of HP Indigo, with six of the Indigo 7000 printers.

run the Pixartprinting.co.uk operation. Precision Printing will be able to print and dispatch most of the orders itself, enabling Pixart to offer UK customers the same 24 and 48 hour delivery options enjoyed by it's European customers.

Gary Peeling, managing director of Precision Printing, says it's all to do with trust: "When we purchase something over the Internet it's a leap of faith. We have to encourage the client to order for the first time to experience the service, to establish that trust and to maintain it".

Precision has spent over €5 million on new kit this year, including HP's latest Indigo 7500 and a Oneflow job management system. However the wide format orders will still be printed in Italy for now though Peeling says that he expects to order wide format printers early next year if the demand is there.

Lean management

The Pixart factory is a vast operation, a huge space with islands of printers and finishing lines and plenty of space for further equipment. The production area is some10,000 m^2 with a further 2,000m^2 for office space. It employs 120 staff working three shifts, 24 hours a day, seven days a week.

Rigamonti says that using brand new, state of the art equipment is one way to ensure the quality of work. The bulk of the document work is handled by six Indigo 7000 presses, making Pixart one of HP Indigo's biggest customers in Europe.

On the wide format side there are three Durst Rho 700 HS PAC and a single Rho 700 PAC, as well as two roll-to-roll Durst Rho 320 printers. There are four 2.5m HP DesignJet LX600 latex printers, with a 3.2m LX800 latex printer undergoing evaluation. Rigamonti says the company will order five more of the LX800 latex machines if the tests are satisfactory. These are backed up by four Mutoh plotters with sublimation inks for flag production, six Roland printers for adhesive vinyl printing, and two KIP 80 Color

Rigamonti believes that its Uragano system will help make its Komori press more competitive against the digital printers for runs over 200 A3+ sheets.

systems for posters and billboards and an Océ Arizona 350XT. There are also eight Zund cutters.

Uragano software

The backbone underpinning the whole Pixart operation is the management system which combines MIS, administration, workflow and web2print in a single unified system. Pixart couldn't find a single system that could handle all of its requirements so instead hired its own programmers and developed the system entirely in-house.

Alessandro Tenderini, production manager, explains: "The products are very customised so we had to create a software that would allow us to process the order from

the start of being ordered on the web to the moment of dispatch. So we have created a software backbone, a kind of virtual assembly line to make the order flow."

The project cost €400,000 and initially took two years. On average the system handles up to 7000 quotes per day which go on to become around 2000 jobs per day.

The management software also includes a very sophisticated load balancing. So, for example, by scheduling long run jobs on one Indigo and short run on a second, Pixart has found that it's possible for one operator to manage two of the Indigo machines at the same time, thus cutting down on costs.

This year Pixart has added a new workflow element to the system, known in Italian as Uragano, which translates to Hurricane. Uragano is designed to make Pixart's production as lean as possible. It runs the complete prepress workflow for all the printers, including the Komori, the Indigos and the wide format, with colour management, preflighting and so on, but not the final RIP'ing. Instead Rigamonti says: "But we use their RIPs as slave because any worksheet or cutsheet comes already composed. We mainly use hot folders."

Uragano promises to transform Pixart's production much in the way that the rest of the system has already maximised the online ordering, delivery and payment side of the business. Rigamonti claims: "In wide format jobs it outperforms a human operator by 25% in terms of waste reduction."

Digital v offset

However, where Uragano really comes into its own is with the offset side of the business. Pixart started as a digital-only printer, but it has been working with offset for the past year. Pixart is currently running a 10-colour Komori Lithrone SP29 offset press, although Rigamonti says that it's only ever used as an eight-colour press. It's backed up by a Basys UV platesetter and uses Ipagsa plates.

But whereas most companies see their digital devices gradually taking more and more work from their litho presses, the Uragano software has altered Pixart's breakeven point so that it is the litho side of the business that is growing at the expense of the Indigos.

This is because the Uragano software automatically calculates the optimum way to nest jobs to maximise the space on a sheet. As a result Rigamonti says that the breakeven has come down from 700 sheets to 200 A3+ full colour sheets.

To a large extent, this is also because offset presses, under pressure from digital printing, have become considerably more efficient. According to Rigamonti, nothing has happened to digital printing in the last ten years: "The speed has increased but not by enough and digital printing machines are still too slow to really meet the needs of industrial printing customers." He continues: "The quality is unchanged. Run length is reduced but not by enough that we can print everything through the digital equipment. Not many customers want 50,000 leaflets but very many want 5000 leaflets and not many want just 50."

Uragano promises to transform Pixart's production much in the way that the rest of the system has already maximised the online ordering, delivery and payment side of the business.

More to the point, Pixart is paying a huge bill in click charges to HP, having racked up some 21m clicks in October alone. Given this, Rigamonti believes that moving work to the Komori press, and cutting down on the click charges is a more efficient way of working.

Conclusion

So, is Rigamonti correct? For the last couple of years we've all operated on the assumption that all the momentum for further technological invention and all the future growth in the print market would come from digital printing. But although run lengths are dropping, and there have been some improvements in the speed and quality of digital

Pixart prides itself on having the latest state of the art kit, but some equipment has been around for a while.

printers, there's still no answer for the fundamental problem that it's too expensive to produce longer runs on a digital machine. This is partly because the click charges are so high and there's a good argument to be made for costs to come down.

At the same time, offset presses have become much more efficient at handling lower run lengths. Even so, Pixart's breakeven point is much lower than one would normally expect, thanks to its Uragano software. But there's no reason why other printers couldn't achieve this, using, for example, Lithotechnics Metrix imposition linked to a web2print-driven workflow.

Another factor is that Pixart has tried variable data and found that there wasn't much demand for it so the decision to route jobs to the Indigos or the Komori depends entirely on the breakeven point. Given that Pixart's main problem appears to be the need to keep building larger and larger factories to cope with rising demand, Rigamonti is clearly doing something right.

- Nessan Cleary

ISO, ISO Baby

The wheels of ISO, like the wheels of God, grind slow but they grind exceedingly small. Consensus-based committee work can often take years to get much of anything done, but the results are usually very robust.

Happily, the latest meeting of ISO TC130, Graphics Technology, which took place in São Paulo, Brazil, was an outstanding exception: we moved quickly and notched up a series of very strong achievements. The week long meeting, kindly hosted by the Brazilian printers federation, was attended by over fifty people from a dozen or so countries. The week was lively, intense, exhausting and most definitely fruitful.

Probably the topic of greatest interest to the worldwide printing community is progress on updating the ISO 12647 series. This standard dates back to 1996 and was originally written for film-based workflows. But it is regularly reviewed to make sure all parts reflect modern digital working methods. It is a process-specific standard covering all print methods and people from all around the world are contributing to keep the whole series current so progress has been good. Mostly, that is. Progress on the as yet unpublished part 8 continues along its meandering, repetitive, slow way and is still plagued with reluctance on the part of many committee members to see it published at all.

Part 8 applies to systems to be used for the preparation of content proofing documents, referring to such pages as 'validation prints'. The part is being written ostensibly to help users to be confident in the rough colour match they might get from a digital printer, although this is far from a proofing standard. The idea is that you can trust the colour on your digital copier to sort of match what you will get in print. It seems to put manufacturers' interests very much to the fore, all in the name of good service to end-users of course.

12647-8 has met with considerable objections throughout its oft-maligned existence, largely on the basis that its only real use is as a reference for certification of vendors' equipment. A number of manufacturers including Canon and Ricoh have somewhat misguidedly boasted that Fogra has certified their engines' compliance to this standard. That the standard is unpublished doesn't seem to matter to them. Eggy faces all round it seems.

Proposed editorial changes to 12647-8 are currently out for review after which the members of TC130 vote on moving it to pass for ballot in order to create a Final Draft

An ISO Working Group beavering away in Brazil.

International Standard (FDIS). The FDIS voting period is five months, and then the draft has to be agreed and finalised by enough countries to publish it. By then the industry will hopefully have moved on to more interesting matters.

Let's Get Digital

Much of the updates required for the 12647 series reflect the industry's move to digital workflows. There are however two other standards in the works, both of which may turn out to have a broader relevance than any of the 12647 parts, including the dreaded part 8. The first of these, ISO 15311 for digital printing defines parameters and measurement methods for digital output devices. It outlines image and print product quality criteria relevant to specific usage cases.

The second, ISO 15339 is a standard for process agnostic output, meaning that it doesn't matter what technology is used to produce a piece of print as long as the output matches the requirements of the standard. Like 15311, 15339 assumes only digital data. It uses seven sets of characterisation data, with different colour gamuts and substrates. For both the idea is to tweak the data so that the printed sheet will match the required characterisation

data set. It sounds simple enough but it is far from easy to do because it assumes an understanding of the colour capabilities of the output device, characteristics of inks and toners, and of substrates, and that it will be possible to match characterisation data consistency.

Both 15339 and 15311 are tackling a single problem: controlling digital data so that it appears in print as accurate colour information. Both want to simplify the complexities of current and future digital workflows. Both assume digital data interacting with colourants substrates and different imaging processes to meet target characterisation data. And both, crucially, lend themselves

The new Working Group 11, following their first meeting where it was resolved to work on the environmental impact of print, rather than just its carbon footprint. Convenor Laurel Brunner in a state of shock.

to certification. We believe that the market will dictate these two should come together into a single standard: they have considerable overlap and too many standards are confusing. And a multiplicity of standards make certification processes unmanageable and expensive.

TC130 has also formed three new Working Groups (WGs) all of which are inviting participation from industry. WG11 is convened to write standards relating to the environmental impact of print; WG12 is working on post-press standards; and WG13 is developing a single international certification scheme for ISO 12647-2.

We in Digital Dots know most about what's going on in WG11 as it's work that is closely aligned with our Verdigris project. The group is working on ISO draft 16759, the requirements for measuring the carbon footprint of printed products. The authoring process is well underway and we have a first draft out for comment. We are encouraging people with an interest in the environmental impact of print to join the group through their national bodies. Our goal is to finish this standard by drupa 2012, a completely arbitrary timeframe, but it seems like a reasonable target!

Postpress standards have been lacking for many years, so WG12 is currently framing its plans to develop some. The first step is to create a standard explaining the general requirements for finishing and bindery systems. The Chinese delegation is leading this work with active participation from the US and Europe, particularly the UK.

The work of WG13 is also dear to our hearts, since it deals with certification. Over the last couple of years Digital Dots has contributed to the development of ISO 12647-2 certification schemes in Sweden and in the UK. There are around ten Swedish printers who have achieved certification, and one in the UK where the scheme has been enmeshed in bureaucracy and severely hampered by the total absence of any funding. What WG13 hopes to achieve is a single international scheme that in broad terms follows the same model used in Sweden and in the UK.

Standards work is time consuming, unforgiving, unrelenting and unpaid, so it's no surprise that printers and publishers are reluctant to do their bit. However the work has a profound and long lasting impact on the industry's competitiveness. It's important because it provides a mechanism for constant improvement in print production means and methods. End users may not see the wheels turning, but they surely benefit from the fact that they are well-greased, functioning and of course get the results they want and the price they want to pay. That's what standards are really all about.

– Laurel Brunner

Deal or No Deal?

We recently participated in a climate change event sponsored by HRH the Prince of Wales' Corporate Leaders Group on Climate Change. Apart from being completely baffled as to why we were invited, we were even more shocked that not a single printer or publisher was present amongst 200 business leaders. How can this industry hold its own against stiff competition from alternative media and against charges of environmental hostility, without engaging with government and NGOs?

At the gathering at St James' Palace last July, the objective was to debate the need for, and route to, an international agreement on how to deal with climate change. The point

Is this man really thrilled that ISO is working on standards to measure the carbon footprint of print, or is he just flirting?

was to come up with a position representative of British business interests, so that that position could be included in discussions running up to and at the Cancun sessions. The meeting was stuffed with some very big names including HRH the Prince of Wales, the EU Commissioner for Climate Action Connie Hedegaard, economist Lord Nicholas Stern and Richard Kinley, Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC and parent treaty to the 1997 Kyoto Protocol), plus a shedload of CEOs from across the globe.

But why no printers? Is the printing industry so completely deadminded and apathetic? It seems that whatever country one looks at, our industry has a share of enthusiastic green fanatics, plus a tranche of truculent disinterest. This tranche, unfortunately the bulk of the industry, includes many companies struggling and intently focused on making a living, but there are still plenty of high margin businesses who can well afford to take a more proactive interest in what is happening to our industry. A head-in-the-sand mentality is threatening industry atrophy on a massive and unprecedented scale. Now is not the time to lose our passion for print!

Quite how we engage a broader and more active interest is at the heart of what Digital Dots is struggling to achieve in a small way with Verdigris and our ISO efforts. Supporters of this work such as Agfa, Kodak, Ricoh, Canon and HP are also doing their bit with specific initiatives to educate the market about the environmental impact of printing. But printers really do need to take up arms and fight for their corner; the alternative is to watch the industry crumble under the weight of electronic alternatives.

A lack of environmental impact awareness is obviously not unique to printing. However, with a few exceptions, printers and their industry associations are deeply reluctant to engage or counter misrepresentation and unfair criticisms, particularly in mature markets such as the USA and the UK. In the UK especially, there is glaring absence of active involvement in initiatives to represent the sector's interests at the national level. There is a total a lack of educational initiatives or industry leadership both in the trade press and from national trade bodies. When it comes to engagement with matters environmental, the printing industry is almost moribund.

The Customer's View

But what did those customers of printers, those buyers of print on massive scales think about Copenhagen, when last they met at the palace of St James? Do the likes of Virgin Atlantic and British Telecom really care? Does it matter to Allianz Insurance or EDF Energy that business has a vested interest in climate change? That they pitched up at all says they do, for these are businessmen who can rub elbows with HRH pretty much whenever they fancy, and who run huge enterprises. According to Tony Tyler, CEO of Cathay Pacific, too much time in Copenhagen was spent with NGOs and not enough with business

representatives. What was perceived as China's blocking in Europe was seen in Asia as an articulation of China's intent. As Tyler sees it "for China the overriding policy objective is the need to ensure social stability … they're not going to do anything in any area that jeopardises that".

Although it got a mostly ragged press, Copenhagen did achieve some progress: it was the first time that nations representing over 80% of global carbon emissions met and agreed to take action to reduce them; commitments were made to mobilise money to cut emissions arising from deforestation; and most important richer countries agreed to provide $30 billion between 2010 and 2012 rising to $100 billion per annum by 2020 to poorer countries to help them tackle climate change, via the Copenhagen Green Climate Fund.

In Cancun one year on from Copenhagen a series of agreements have been reached, including:

- official recognition of industrialised country targets for developing low-carbon strategies
- registry of mitigation activities and finance for developing countries, with requirements for these countries to publish progress reports every two years
- strengthening of the Kyoto Protocol's Clean Development Mechanisms, to drive more funds and technology into sustainable emissions reductions projects in developing countries
- a Green Climate Fund for raising and delivering the $100 billion to support climate action in the developing world
- agreement to push for further emissions reduction from deforestation and forest degradation in developing countries
- establishment of a Technology Executive Committee to increase technology cooperations for action and mitigation

Apart from a few mutterings on frameworks and achievable targets from yours truly, the closest the printing and publishing industries came to making a contribution to this session was through Peter Goldmark, an ex-newspaper publisher. Now Director of Climate and Air at the Environmental Defence Fund, he believes that Europe is driving action on climate change and that the US position is weak because of the continuing lack of legislation. He says: "There is going to be a deal for a low carbon/high efficiency economy at some point soon in the EU and the US [will] have to forge a common position". It's possible that there will be progress on legislation at some stage but it will be difficult for an economy in tatters and a culture that considers rampant consumerism a divine right. So not much hope for change there!

The EU financial crisis has clearly influenced US perceptions, but it doesn't help that Europe rather than America is the global leader on climate change mitigation initiatives. Europe, not the US, has a functioning carbon market plus the geopolitical size and readiness to move forward with a publishing framework system. Europe is also driving standards to help more companies to reduce their environmental impact, such as ISO draft 16759 for measuring the carbon footprint of print media.

Although many people felt that Copenhagen failed, in part this was down to the excessive hype and heightened expectations for some sort of massive result. But global initiatives take time and process, something that Copenhagen definitely aided. Nani Beccalli-Falco, President & CEO of GE International saw Copenhagen as a process for enhancing peoples' awareness and understanding of the problem of climate change: "Copenhagen was a step and this is going to be an evolution so for me, Copenhagen was not a failure".

As world leaders from over twenty countries return home from their meeting in Cancun, we have to ask is a deal still possible? Yes, but we need to overcome barriers of diversity and timidity and printers and publishers need to do more to ensure that their interests are truly represented. This has to be an organic development

but industry, including printing and publishing, must participate and attempt to demonstrate progress.

What's needed, most will agree, is a coalition of the willing, one that has to include governments, NGOs and industry voices, from all regions including the emergent economies in Asia, the Middle East and South America. A government representative said, under Chatham House

This little slice of rainforest os São Paulo is safe; efforts are underway to protect its cohort elsewhere in Brazil.

rules (the quote can be published, but not who said it), that "the only way you can make a coalition of the willing is with sticks". Surely market pressures are a hefty enough stick for the worldwide printing industry?

But printers should also be pushing their associations to take a louder more proactive stance. They should push for initiatives, as the Japanese Printing Industries Federation has done, to educate members and print buyers and to provide a communications channel to events that shape future policy and carbon commitments. It's a matter of political will to get a deal but businesses, including printers, can also apply their own pressure. The argument is not between free trade and protectionist barriers; it's between protecting interests and inertia.

The general conclusion for the participants at this event was that a deal is necessary because the move to a low climate risk economy is inevitable. A deal must not be rushed, and objectives such as developing a common language meaningful to citizens and developing a global carbon market, can only be achieved once a framework is established. Businesses, including printers, can start by developing processes and programmes that set an example for customers and suppliers and demonstrate what the law should enshrine. For printers and publishers this means moving from the sidelines and becoming active agents for positive change.

– Laurel Brunner