Digital Dots

Spindrift

Confuting the Graphic Arts industry since April 2003

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News Focus • Opinion • Reviews • Testing • Interviews • Brain-teasers • Techno-babbling

A public-opinion poll is no substitute for thought.
– Warren Buffett

Dear Reader,

Not so much a bursting bubble, more a leaky balloon, the recent Facebook travails are instructive. The stock has followed a downward trajectory since the IPO. The Zuckerberg cohort is being sued for misrepresentation and to cap it all, there have been service outages for Facebook users.

A minor drama with data management can quickly turn into a major catastrophe. Poor handling of information can lead to ugly legal wrangles. And not doing what you say you will risks antagonising customers. Facebook advertisers may be the next in line to challenge the company. At least a print advert can't be compromised by excess hits on the page!

Our increased dependence on data means that keeping track of it, presenting it when and where it's needed, and safeguarding it requires its own discipline. The trend to big data increases the urgency: media service providers are responsible for file backups, disaster recovery and monitoring overall data usage. Happily the graphic arts industry has long and robust experience with much of this, an added opportunity for our industry.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

By the Numbers

While many vendors were at pains to stress that their stands at drupa were carbon neutral, some have looked at standardised ways to calculate and offset the carbon footprints of the presses that they sell. Laurel Brunner looks at the steps that Heidelberg and HP Indigo have taken in this area.

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Digital packaging

Many of the new digital machines shown at drupa were suitable for the packaging market, more emphasis than we are used to seeing, either from the digital sector or drupa as a whole. Nessan Cleary surveys some of these new printers and finds that there are a lot of options for anyone interested in digitally printing packaging.

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More on colour and quality management

Paul Lindström continues from where he left off last month's report from drupa, looking at the various colour management and quality control systems that were on show.

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Regular Features & Special Treats

News Focus

Xaar has launched a new version of its 1001 printhead. The new 1001 GS12 runs at twice the speed of the older 1001 GS6 and is chiefly aimed at ceramic tile manufacturers. The new GS12 jets larger 12-84 picolitre drops delivering more ink for deeper colour intensity or faster speeds, but does not replace the GS6, which jets 6-42 picolitre drops for detailed work.

Kodak and **Ryobi** have signed a worldwide statement of cooperation to provide the first fully-integrated hybrid sheetfed press combining offset and digital technologies in a single system. Essentially this means adding Kodak's S5 imprinting modules to a Ryobi 750 offset press, as already installed at Komatsu General Printing Co in Japan. The new hybrid press provides a single step of offset printing, inkjet printing, and an optional inline varnish station.

DirectSmile has launched the latest version of Cross Media aimed at the creation of personalised, automated marketing campaigns across print, online and mobile media. It's designed to be easy to use, with no knowledge of coding necessary. The new version prompts if final touches are needed for a website, such as a link to be assigned. Version 5 now enables straightforward creation of mobile landing pages, sales and marketing apps and automated SMS sending. Another feature, Dynamic Document simplifies the online creation of documents for print.

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Heidelberg reported a successful drupa having gained almost 2,000 orders from over 80 countries, including some 550 sheetfed offset presses. Germany and China ranked first and second among the top markets, followed by the United States, the Middle East, the United Kingdom, and Japan. The most popular press was the new Speedmaster XL 106.

Quark has bought Mobile IQ, creators of PressRun, a cloud-based digital publishing solution, which now becomes a subsidiary of Quark. This is a natural synergy for Quark, which has concentrated on publishing to mobile devices. Mobile IQ's PressRun solution for tablet publishing will continue to support multiple content creation formats, including HTML5, XML, and has just been upgraded to support Adobe InDesign CS6.

FFEI has launched a new version of the Caslon digital label press. It can be installed as part of a traditional narrow-web label press or utilised as a standalone digital inkjet system. Built on the industry proven Nilpeter FA line web transport, it has web widths of up to 420mm, and converts high quality labels at 25m per minute rising to 50m, dependent on application demands. There's a new digital spot colour unit printing white ink, and it comes with FFEI's RealPro Digital Labeller software.

Kodak has set up a new paper rating system for its Prosper presses. Kodak measures image quality using a wide variety of factors and then ranks that substrate using a rating system that ranges from one diamond to five diamonds. NewPage has gained the first five-diamond rating for its TrueJet line of gloss coated digital inkjet paper for its image quality and performance, which equates to "offset quality" within the rating structure.

Twixl has launched a new tablet publishing system for enterprise users called Twixl Publisher Enterprise Kiosk. It is a combination of a stand-alone Mac OS X application and a plug-in for Adobe InDesign CS5/5.5/6 and can be used to create apps starting from interactive designs and from existing print content or to set up an internal

publishing network through the 'in-house iPad kiosk application'.

Finch Paper has added new 14x20 and 14x26ins sizes to its Finch Fine Color Copy range of media to cope with new format sizes introduced with the Xerox iGen4 and Kodak NexPress. The media also works with office copiers and printers, as well as conventional offset presses. It features FSC and SFI certification, and 10% post-consumer recycled fibre.

Agfa has signed a deal to supply Serendipity Software's Veripress solutions to its worldwide Newspaper customers. Veripress is a colour managed press softproofing system that enables press operators to check their publication right at the press console with a combination of a quality LCD display and a touch screen.

It is tightly integrated with Agfa Arkitex Director and Publication Builder ensuring consistent and accurate soft proofing of all pages of any edition and zone.

Dalim has released v6.4 of its Twist automated workflow, which includes a new feature to optimise PDF files for use on mobile devices, confirmed by the Ghent PDF Workgroup and Roularta Media Group. The new normalisation feature helps to convert PDF files, originally intended for print, to high-quality, small footprint files for use on mobile devices such as the iPad.

Pixfizz has launched Cloud-to-Print, a new web to print solution that enables users to create multiple customized storefronts and products for their clients on any web-enabled device. It's based on a SaaS model so there's no need to download software or purchase and maintain servers.

Toray has started work on a new printing plate factory at Prostejov in the Czech Republic, which should be operational in early 2014. Encompassing both coating and converting capabilities, the new Czech production facility will meet the needs of printers across Europe, the Middle East and North America. Mr. Matsumoto, General Manager of Toray's Graphics Division, commented: "Toray is investing more than $50 million to respond to the growing demand for waterless plates. We think our commitment will send a clear signal to the newspaper industry and encourage further investment in the best available technology for newspaper and semi commercial production."

Neopost USA has teamed up with Bell and Howell, which will distribute and provide services and support for Neopost's folding and inserting technologies. The Neopost solutions will be added to Bell and Howell's new "Sprinter" series of mailing solutions.

QuadTech, working with ColorConsulting of Italy, has partnered with the Huber Group of Germany and X-Rite to produce a solution that takes inline spectral data obtained from QuadTech, ink formulation data from X-Rite, and ink dispensing technology from Huber Group, based on its consistent high quality printing ink base colours.

Meanwhile, the **Hubergroup** has added a new ink to its Inkredible range of offset inks. Called Quickfast, it is suitable for perfecting presses and is available in both a very fast drying version and a conditional duct-fresh version, for coated and uncoated papers.

Ricoh marked June 5, which is United Nations World Environment Day, by turning off the lights on all billboards, Ricoh logo signboards and night lighting facilities at its plants around the world. This won't include those billboards in New York (Times Square), London, and Sydney, which Ricoh says are 100% eco-powered.

Quark has a free update to QuarkXPress 9 that allows designers to export digital content directly to the Amazon Kindle format. Quark is also giving away the Gluon ProPack 9 bundle of XTensions to anyone who buys a copy of QuarkXPress 9, or upgrades from an earlier version. The bundle contains 14 Mac XTensions (9 Windows XTensions) and adds features, functionality and value to QuarkXPress by automating and eliminating repetitive steps.

HP has added Android support to its ePrint & Share mobile apps to allow customers to print directly from tablets and smart phones. HP's ePrint & Share is a free web service that allows AEC customers to access and print

drawings from their conference room, home or job site using smartphones, tablets, laptops or the touchscreen of an HP Designjet ePrinter. It is designed for architects and engineering firms.

PODi has announced a far-reaching new initiative to define how cloud computing will be used to create, prepare and produce printed work. A working group has been set up for the first steps: to identify and prioritise key production applications most likely to benefit from the cloud; to create a reference workflow and architecture for each production application; define the need for any standards required to enable the reference workflow architectures.

CERN, the European Organization for Nuclear Research, is looking for wider participation across the IT industry for its Helix Nebula European cloud computing project. The project was launched earlier this year to explore the use of commercial cloud computing services within European science organisations with HP, Intel, Oracle and Siemens already involved. Bob Jones, Head of CERN's openlab IT department, commented: "The vision of Helix Nebula is to create a European-wide market for commercial computing services that can be used by the public sector".

An Interview

Matteo Rigamonti, managing director of Pixart

Whilst at drupa we met with Matteo Rigamonti, head of the Italian web to print company Pixart, and talked about label printing, the merits of offset, and his unrequited love for the UK.

Pixart, which has specialised in selling printed products from its website all over Europe, has just launched a new label printing division. The expectation is that the main interest will come from the food industry, where there are a large number of small producers that can benefit from on-demand labels. For this venture, Rigamonti chose an Epson SurePress L4033A label printer, twinned with a laser cutter from Sei Lasers. He explains: "We went to Epson because the quality is the best, mainly because it prints in six colours." He says that the ink is quite expensive but he came to an agreement with Epson "because when we buy a machine it becomes a best seller."

The SurePress is slower than other label printers, but Rigamonti points out that it's also cheaper, adding: "I prefer to have a second machine as a back up." He continues: "We already have the work to fill a second machine but since I don't know Epson or the machine we prefer to try it out first." The laser cutter is fast enough to keep up with four SurePress machines.

Rigamonti rejected the various UV label printers on offer now, saying: "I don't like the quality of the UV label machines." Nor was he any more impressed with the Indigo option, saying it was too expensive for a machine which needs treated substrates, and pointing out that the click charge was higher than with the Epson.

Rigamonti is very clear that customers for labels tend to be mainly industrial users, and that products ordered via web to print must exceed customer expectations because the customer only ever meets the courier.

He has also bought three of Durst's new 3.2 metre wide P10 roll-to-roll printers, which replace existing Durst wide format machines. He says: "We want to give our customers the best quality and now the resolution has gone up." Alongside these, he bought a P10 flatbed printer to explore new applications, explaining: "The resolution allows us to go for new applications, so we want to try the packaging market with 10 picolitres."

He found time at the show to pose for photographs with a Komori press and a Basys platesetter, though the deals were signed six months ago and the machines have

The Epson SurePress L4033A which Pixart has installed to launch its new label printing department.

already been installed at the Pixart factory. He says that although Pixart is a short run on-demand specialist, the offset side of the business is growing much faster than the digital, around 90 percent year on year, against 10-12 percent growth for the digital work. (Despite this, Pixart is one of the largest Indigo customers in Europe, having six of the Indigo 7000 and four Indigo 7500 presses.)

The growth in offset work is because Pixart uses a front end job management system that it developed itself, which is extremely effective at ganging short run jobs on offset plates. It is also because Pixart constantly reinvests in newer, more efficient equipment, now using two GA40P presses from Komori. Rigamonti says: "It takes 75 seconds to change a plate so we can do many more makereadies. From the last sheet of a job to the first saleable sheet of the next is two minutes."

The only problem has been keeping up with the plate output, hence buying two Basys 860X platesetters,

Matteo Rigamonti, president of Pixart printing, with the BasysPrint 860X platesetter at drupa.

capable of outputting 42 plates per hour. Pixart prefers conventional plates to save money.

The strategy is obviously working as, despite the tough economic conditions, the company is still growing year on year, though this growth has dropped from 42 percent last year to around 30 percent this year. Turnover is still around €35m but increasingly this is coming from outside of Italy, where Pixart is based.

However, Pixart has closed its partnership with the British company, Precision Printing, which was unable to improve sales in the UK. This at least proves that the issue was not British prejudice against an Italian company, so Pixart will continue to service the UK market from its Venetian base. Rigamonti remains philosophical, saying: "I love the UK, but the UK doesn't love me. It's not logical because our offers are the best in the UK. But sometimes business is like love."

Rigamonti himself seems relaxed, perhaps because at the end of last year he sold 75 percent of the company to the private equity firm Alcedo, though he remains in charge of the day to day running of the company as president.

drupa Awards

Now that the show is done, and most journalists have more or less managed to control the mountain of notes that we have, we are having to deal with a new, less welcome issue; the post-drupa feedback survey. So, to help our friends in the world of PR, and for our own amusement, here's a quick round-up of what did, and did not, work for us:

Best showman

Benny Landa, who wowed everyone with his new Nanography process and wisely opted to forego the dancing girls for the press conference.

Best press conference

EFI, which started when CEO Guy Gecht introduced himself saying, "My name is Benny Landa," continuing in more or less the same vein, somehow managing to make market share figures seem interesting, no mean feat just before lunch.

Best food

EFI, for eschewing the ubiquitous sandwiches and demonstrating a sense of style, in giving journalists a decent lunch.

Most peculiar food

Print 13, for serving steak tartare alongside less readily identifiable meats.

Least comfortable press conference

Heidelberg's cardboard box stools are awful to sit on when taking notes, and shuffling around the stand clutching bags, notebooks and press kits while trying to keep a headset in place does not for effective information transfer make. That said, the stools are better than standing the whole presentation through.

Best interview

Steve Hoover, CEO of PARC, who discussed everything from print technologies to redesigning the Internet.

Most surreal interview

Antonio Perez, CEO of Kodak, who insisted that we shouldn't judge the poor showing of the Prosper 5000 in Europe on just one customer, but should visit another, totally forgetting that there is only one installation in Europe.

Most coherent message at the booth

X-Rite, presenting advances in both hardware and software for applied colour management.

Least noticed advances in applied colour management

The Techkon suite of new spectrophotometers, including Wi-Fi connectivity and inline measurements of a flexo web press.

Greenest greenwash

Kyocera's Ecosys workflow software needs to do more than be efficient if it wants to live up to its name.

Best new product name

GMG for the CoZone collaborative cloud-based proofing solution. Sounds cozy!

Most touching press/analysts event

GMC's retirement party for the venerable and much loved Andy Tribute who was due to retire at the end of drupa. This date has now been pushed back to Andy's 70th birthday, the 7th October 2012.

Epic fail

Xerox. The moment where Jeff Jacobsen closed a truly dull press conference by offering a round of applause to his

boss, Ursula Burns, was surely one of the most ill-judged actions of any press conference. This kind of thing might go down well with investors but is guaranteed to make journalists feel sick.

A Review

X-Rite i1Pro 2 – dual light sources

Launched in April, and demonstrated live at drupa, the new spectrophotometer i1Pro 2 from X-Rite drew a lot of attention. And with good reason, since this new version is a complete re-design of the old but popular handheld spectro.

First of all, the i1Pro2 has dual light sources to make it possible to detect OBA, (Optical Brightening Agents), if present, in a paper. This is thanks to the secondary light source, which is a UV LED lamp, to complement the normal Tungsten lamp. If you know, or hope, that the paper doesn't contain OBA, you measure as usual in one pass. But if you suspect that the paper contains OBA, you choose the dual scan mode, and make a second measurement using the UV lamp.

The i1Profiler software then helps you analyse if any compensation is needed, taking into account the presence of OBA in the paper. Technically this means that the i1Pro 2 now complies closer to the ISO 16355 standard (Spectral measurements and colorimetric computation for graphic arts images), being able to work in both the M0 and M1 modes as well as M2 which, we'll come to later.

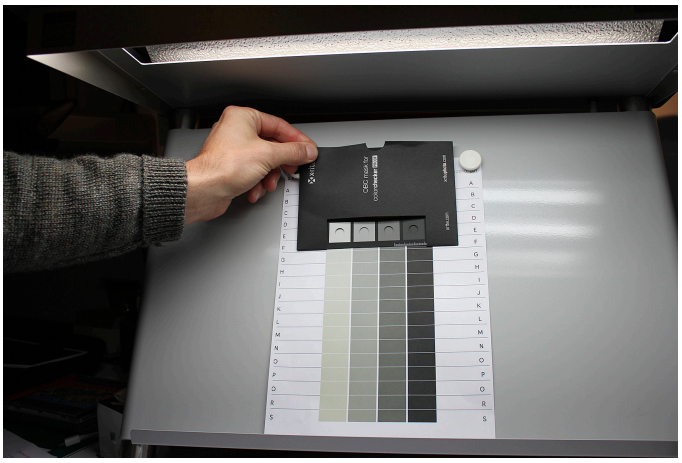
Why all this fuss about OBAs? Well, many years ago, when colorimetric-based colour management was new, few papers contained OBA, and it was easier to match prints and proofs. But starting with uncoated papers, and later also coated inkjet papers, many paper manufacturers now use OBA to make a paper appear whiter. But up till now most, if not all, spectrophotometers couldn't detect the amount of OBA, so the ICC profiles being created weren't accurate. So a spectrophotometer, like the i1Pro 2, which can produce both M0 and M1 measurements, offers the user the spectral data needed to perform an analysis of the OBA content, and if the software supports it, can also compensate for the OBA. This is very welcome in today's applied colour management.

But the re-design of the i1 has also touched several other aspects. The instrument itself is more solid – polished aluminium and a rubber grip. The ruler for scan mode has also been improved. It's more robust and a pattern has been added which the i1Pro 2 detects through the Positioning Detection Sensor, which increases the quality of readings in scan mode. It's also said to improve measurements on low resolution printers.

In terms of user friendliness the i1Pro 2 now has status LEDs at the top which can change colour: Green light means a successful measurement; Pulsating red light means unsuccessful measurement; and a blue light means the instrument is ready for a measurement using the UV LED light source. In general this is very helpful for the user, and speeds up the measurements. At least until you see a combination of green and red lights flashing, and you need to look up the manual – it actually indicated that while the measurement was successful, the software expected a different result –warning you that something might be wrong here. As before you can also have an audio guide when measuring.

The i1Pro2 has two light sources; here the UV LED lamp is used for a second measurement made to detect the possible presence of OBAs in the paper.

Another improvement is that the i1Pro 2 is supposed to have better temperature stability and a higher density range, suitable for measuring, for example, LCD monitors with very high brightness. The built-in calibration



If OBA is suspected in the paper, the appearance can be determined with the help of the ColorChecker PROOF reference.

technology also helps with this, since it allows for self-diagnosis when performing white calibration. Talking about white calibration – a small but welcome detail is that the ceramic white calibration tile now has a protective lid that can be slid over the tile when not in use. This is a well-known dust trap on the old i1!

But it's not only the i1 itself that has been re-designed. All of the utilities that go with it, whether included in the Base version or as options, have also been upgraded. There is a new stand for projector calibration, which also can be used when measuring the ambient light. We also have to mention the new case itself – it's much more compact and useful than the old, rather large and bulky suitcase, much appreciated!

So how is it to work with? Initially we had some problems with the software, but this was when testing the prototype and the beta software. Most of those problems seem to be gone in the final release, and overall it's a nice device to work with. We have made some limited tests of the OBC function (Optical Brightener Correction), which in fact is the second generation OBC from X-Rite. Already introduced with the i1iSis spectrophotometer, the OBC function has now been further enhanced and made easier to use.

In order to detect OBA you need to have a light source that produces a reasonable amount of UV light. Real daylight does but, for example, tungsten lamps have barely any UV light in the spectral distribution. Going back to ISO 13655, the M0 mode assumes tungsten light, and is very far from the spectral distribution of daylight. M1 mode however is supposed to simulate daylight at 5000 K, also called D50. The i1Pro 2 can combine the measurements using the Tungsten lamp and the UV LED to produce both M0 measurements, and M1 measurements. The ISO 13655 standard also describes the M2 mode, when the UV-part of the light is blocked. The i1profiler software can create a digital UV filter in the signal processing, if needed, by combining the data from M0 and M1 readings.

But detecting OBA is one thing; creating ICC profiles with a good correction is another. Here X-Rite combines software analysis with visual evaluation. The physical reference called ColorChecker PROOF is compared with the printed samples, in the viewing booth or ambient light where the prints will be used. The step-by-step approach

The new compact suitcase for i1Pro 2 with all components and utilities. We like it. Very handy!

in i1Profiler helps even the inexperienced user to correctly compensate for the OBA's effect in a particular paper and viewing combination. Sometimes the first analysis in i1Profiler judges that there is no OBA, or so little, that no OBC is needed. Then the user can create an ICC profile as usual.

If a higher degree of OBA is detected in the paper, three steps are taken to correctly manage this. First of all a

temporary ICC profile is created (but not saved), and a printout of a series of grey tints is made. Which ever set of grey patches matches the ColorChecker PROOF is keyed into the i1Profiler software when this first visual evaluation is finished. The data for the ICC profile is now fine-tuned to compensate for the amount of OBA in the paper, and a final ICC profile is created.

A digital version of the ColorChecker is then generated and printed, to validate the ICC profile. This file is also printed out and assessed by comparing this proof with the real, physical ColorChecker. If this is satisfactory, the ICC profile is ready for use. If some additional fine-tuning is deemed necessary, an iterative process can be started to achieve an even closer match. Our limited tests show that the OBC function actually works, and should be a good tool to achieve, for example, a better match between proofs and prints, if OBA is present in a particular paper.

Is there something that we miss in the i1Profiler, to use with i1Pro 2? Yes. For some reason the possibility to measure single patches in spot mode has been forgotten in the development of the software. The manual talks about measuring in spot mode, and the i1Pro 2 has a special holder for spot measurements. But users search in vain for the function in i1Profiler! While i1Profiler and i1Pro 2 are a delight to work with in most respects, we'd like to see spot mode re-appear very soon in the control software!

By the Numbers

It has taken a long time, but we are finally beginning to see progress in carbon footprint calculations. Two of the leading press manufacturers are now calculating their carbon footprints accurately and accountably. More importantly they appear to be doing so with some consistency. Heidelberg and HP Indigo each have invested substantial sums into this work, and are using their numbers as the basis for offsetting so that they can deliver carbon neutral presses to their customers.

This work is extremely complex and expensive to do. It requires specialist knowledge and experience with environmental science. Fortunately both Heidelberg and HP Indigo recognise this and are making the necessary human resource investments. For instance, all HP Indigo facilities and Heidelberg manufacturing plants are ISO 14001 accredited. In all industries the need for investment into environmental knowledge can only get more urgent.

But it is especially important in the printing industry where printing companies have been driving carbon footprints steadily lower for many years. Without certified numbers calculated in a consistent fashion for their capital equipment, printers cannot measure the carbon footprint of their businesses or the products they produce. Without consistency in methods and reference data sets, the industry's collective effort is handicapped.

The Same But Different

One of the hardest parts of calculating the carbon footprint of print media is the availability and reliability of data. Heidelberg and HP Indigo have each approached the problem from their own perspectives, but have conducted their work following some common principles. Both, for instance, work as much as they can with primary data. This is data that can be directly collected at the source of the emissions. Both have sourced their secondary data from the EcoInvent database for emissions factors.

Heidelberg and HP Indigo both want to offset all of the carbon footprints of their presses, starting with each machine's Bill of Materials, ie the raw materials required to build the press. They are both calculating emissions cradle-to-gate, which means that the calculations include all materials and processes required to build the press. The cradle to gate model is supposed to take into account absolutely everything necessary to build a machine. This includes raw materials, freight of raw materials to the factory, sub assemblies, energy, media (paper, plastics and so on) waste generated during manufacture, consumables used in the manufacturing process, freight materials and final press assembly, right up to the point when the press is packed and ready for shipping.

Perhaps the most significant commonality in the approach of Heidelberg and HP Indigo is their use of the EcoInvent database. This is the world's leading database of generic Life Cycle Inventory (LCI) data. Now at version

Heidelberg has built up considerable expertise in carbon calculation and is deeply committed to minimising waste. This is one of many reindeers used at previous tradeshows. Waste not want not!

2.2, the EcoInvent data is a list of over 4000 LCI datasets. These datasets cover a range of industries but the bits of interest to the printing industry are energy supply, transport, chemicals, materials, packaging materials, ICT and electronics. The data has been compiled by world renowned research organisations and consultants. The data belongs to the Swiss Centre for Life Cycle Inventories and is available in the curiously named EcoSpold format. Based on XML, this format has become the most widely used and complete format for LCI data exchange.

To purchase EcoInvent data costs €2500 for the first year for a single user. The data is available either direct from

EcoInvent or through resellers, such as Pré Consultants, the Belgian developers of SimaPro or GABI a German developer. Both of these companies bundle the EcoInvent license with their software, which is designed for modelling systems and products from a life cycle perspective.

The EcoInvent data provides a common reference point for the Heidelberg and HP Indigo studies, which means that both companies are using common data as the

The footprinting studies include Heidelberg's new XL106 press.

basis for their calculations. This is important because it provides the printing industry as a whole with a common point of origin from which to build up data sets, so over time carbon footprinting studies should become more comparable.

It should be kept in mind however that comparison is not recommended by environmental standards boffins, because carbon footprinting is still so very nascent. Comparison is only possible with like for like carbon footprinting studies, and rarely are carbon footprinting studies identical in every respect. And differences in any carbon footprinting study mean that the studies should be evaluated independently, rather than in comparison. Carbon footprint values are complex and cannot be treated in the same way as dots per inch or metres per minute.

The differences between Heidelberg and HP Indigo's approaches will inevitably have influenced the two companies' calculations. HP Indigo includes, for instance, the office energy required for the R&D of the particular press under study. But HP Indigo doesn't include the transport of the press to the customer site.

Heidelberg does rough material assessments of supplied materials and has developed its own calculation method in compliance with ISO 14040/14044 for Life Cycle Analysis (LCA). Its programme has been certified by TUV Sud, an international technical services company that provides auditing and certification services. Heidelberg uses the GABI calculating in conjunction with EcoInvent datasets and according to Harold Woerner: "Heidelberg is at its heart an environmentally friendly company".

HP Indigo has preferred to follow PAS 2050, the publicly available specification that is the forerunner of ISO/DIS 14067. PAS 2050 and ISO/DIS 14067 are framework methodologies for calculating the carbon footprint of products and services. That Heidelberg and HP Indigo appear to be taking different directions with respect to the standards they are following, is not worrisome since ISO/DIS 14067 follows the principles of ISO 14040/14044.

HP Indigo has been busy with this project since 2009 and has six people working on it. They prefer to use existing software rather than to develop their own calculation tools. SimaPro provides the LCA model while the impact of raw materials and consumables is calculated based on EcoInvent Software. This information is available to customers who request it. According to Yossi Rosen, Environmental Leadership Program Manager for HP's Graphic Solutions Business: "All materials information is based on our Pro-E cad system, MFG-Pro (E-Rip system) and HP Smartbuy system."

There are other differences too. Heidelberg does a bespoke calculation for every press leaving its factories, because no two machines are the same. They vary in their electronics, the number of units, and features. HP Indigo on the other hand does not have to contend with so many variables and can do a single calculation for each press model in its programme. Carbon footprinting studies have been done for the HP Indigo 7600, the ws6600, and the w7250. These presses have differences in weights because of the variations in the amounts of materials used in their construction. However the types of raw materials are similar across models.

Sharing

As more companies start calculating the carbon footprints of their products, it becomes tempting for competitors to boast about their achievements. However communication of carbon footprint is not the same as communicating engine speed or colour gamuts. There are several standard forms that carbon footprinting studies communications can take, depending on the purpose of the communication.

But despite the existence of these standard forms for communicating carbon footprints, environmental scientists are reluctant to encourage labelling and claims about carbon footprints. The science is so young and relatively untested that fair comparisons are not easy to make because these calculations involve so many factors.

Also, the carbon footprint is only one dimension of environmental impact, which means that these values could be misrepresented. However, as much as possible companies such as Heidelberg and HP Indigo want to communicate their numbers, even if it is just to demonstrate performance improvements. The values are of course the basis on which carbon credits are worked out and paid.

Offsetting

Heidelberg's offset payments are going to Project Togo in West Africa, a project to bring trees, water, sanitation and education to remote villages in the country. So, for instance, Heidelberg expects the offset from its stand at drupa, which produced nearly 7000 metric tonnes of CO_2 to provide a well. Heidelberg is also working with CarbonFix, a nonprofit German organisation established to develop forestation projects. CarbonFix has defined a standard set of criteria for sustainable forest management and CO_2 fixation. CarbonFix is also contributing to Project Togo to reforest over 1,000 hectares of land. Around 90 percent of the funds Heidelberg invests in these programmes reaches target benefactors.

With its offset funds HP Indigo has set up and manages its own local scheme, which complies with the Israeli government's climate change mitigation programme. The cost of carbon credits is used to purchase and install solar panels. These panels are provided to poor households in villages in the area surrounding HP Indigo's factory in southern Israel.

HP Indigo's core environmental team have been working on the carbon footprints of Indigo presses since 2009.

Heidelberg and HP Indigo are making some very bold investments despite the harsh economic climate. They are breaking ground for the printing industry and this will encourage other companies to invest in similar programmes. This is the beginning of an important transition for the media industry, not just for print. Heidelberg and HP Indigo should be lauded for their efforts. They push the industry forward towards an environmentally accountable and sustainable future.

– Laurel Brunner

Verdigris

This article is part of the Verdigris series of stories about understanding the environmental impact of print. The Verdigris project is supported by Agfa Graphics, Canon Europe, Digital Dots, drupa, EFI, HP, Pragati Offset, Ricoh, Splash PR, Unity Publishing, and Xeikon.

http://verdigrisproject.com

Digital packaging

Drupa is not traditionally seen as a packaging show, yet many of the digital printers on show were clearly aimed at the packaging sector.

There was a lot of interest in digital packaging at this drupa, probably because this is the last major sector still holding out against the charms of short run and personalised printing. Perhaps there was also a recognition that the demand for commercial printing will eventually decrease as more and more documents are handled electronically. But as Benny Landa said: "so long as we still need food, we'll still need packaging."

One of the reasons that we have not seen more digitally printed packaging is that the current digital devices are only really economic at very short run lengths, far shorter than the typical packaging run lengths. Another reason is that most of the current devices are not wide enough, and in any case many of them can't cope with anything as thick as folding carton.

But at drupa we saw a number of B2 sheetfed devices that will be ideally suited to packaging. Indeed, it's difficult to see where else these machines might fit. Most of the sheetfed printers are considerably slower than their webfed counterparts, relying mainly on their higher image quality. The economic arguments are largely untried so it remains to be seen as to how well they can compete against either the established electrophotographic printers or offset presses.

Yet packaging would seem to provide an obvious niche appeal for these machines because of the B2 format size, providing they can handle the thicker folding carton materials. Several vendors specifically mentioned packaging as a target market. Benny Landa, for example, stressed that his new Nanographic printing process would work with different substrates, because of the way that the NanoInks sit on the surface of the media. The NanoInk is said to be FDA-compliant for food packaging.

Landa's S10 sheetfed press can handle media up to 400gsm and there's a simplex mode capable of using folding carton at speed up to 6,500 sph on virgin and recycled carton board, as well as metalized stock from 200 to 1000 microns in thickness and plastic foils. As for Landa's web presses, the 560mm wide W5 and 1020mm wide W10 are said to be suitable for packaging, handling films and shrink sleeves up to 250 microns, and papers up to 300 microns.

Fujifilm has developed a version of its Jetpress 720 inkjet printer, specifically for the folding carton market. Known as the Jetpress F, this is based on the same chassis and uses a new generation of Samba printhead, developed by Fujifilm's Dimatix subsidiary, and new water-based UV

Landa has packaging in his sights for his new Nanography process, including this webfed W5 press.

inks. It offers 1200 dpi resolution and the print samples are quite impressive. Fujifilm claims it will be competitive on runs of less than 100 cartons and up.

Screen has added the ability to handle boards up to 0.6mm thick, as well as offset and inkjet papers, to its Truepress Jet SX. Brian Filler, managing director of Screen UK, says: "I think there are some niche opportunities where the size of B2 will be in demand. There is an application in cartons because we can get to 600 microns and there are applications that didn't exist before such as gifts and personalised boxes".

Konica Minolta and Komori have joined together to develop a new B2 Sheetfed machine, which Konica Minolta showed as the KM-1 while Komori calls it the IS29. Komori has provided the chassis, while Konica Minolta has contributed the print heads. It runs at 1650

sph duplex, or 3300 sph simplex, at a resolution of 1200 x 1200 dpi. It uses UV inks and will print to most substrates. However, UV inks are likely to be more expensive than the water-based inks used by Landa, Fujifilm and Screen, and will not be suitable for food packaging.

MGI also announced a B2 sheetfed machine, the AlphaJet. It's a six-colour machine but unlike any of the other printers it incorporates UV spot coating technology

This B2 Indigo 30000, seen here sitting in the Indigo factory in Israel, is designed specifically for folding carton.

borrowed from MGI's JetVarnish. It should run at up to 3000 sheets per hour, with resolution of 1200 x 1200 dpi, but would appear to be at least another year or two away from production.

Liquid toner

Much of the premise behind the B2 inkjet machines has been seriously undermined by HP's announcement of its B2 Indigo press, the 10000, which should ship by the end of this year. There are two further iterations, the Indigo 20000 for flexible packaging and the 30000 for folding cartons up to 600 microns in thickness. The 10000 can produce 1,725 A4 duplex sheets per hour, double that in simplex, and will handle around 2.2 million sheets per month. The 20000 is a roll-fed device and runs at 34 metres per minute, while the 30000 can produce around 3450 sheets per hour.

The Indigo technology is a proven performer, with an extremely good image quality and up to seven colours, so it will be tough to compete against.

Epson is developing its own UV curable single pass label printer, the SurePress X.

But Indigo is no longer the only player in the liquid toner market. Océ has developed a new machine, the InfiniStream, though this wasn't at drupa. This is a simplex machine mainly aimed at the folding carton market. It's a web-fed four-colour machine, running at around 120 mpm with a 28ins width. We'll cover this in more detail when we manage to see it.

Xeikon has also unveiled its liquid toner technology, Trillium. It uses high viscosity toner, which is essential in achieving good image quality at high speed. The toner particles are suspended in a liquid carrier, which for now is a pharmaceutical grade white oil though this can be replaced with bio resins and vegetable oil for a more sustainable approach. This will hold very fine toner particles, down to two microns, four times smaller than with dry toner, which allows for very high resolution

with low toner consumption. The first version of this will be for document printing but Xeikon has said that it will develop a packaging version as well.

Miyakoshi also showed off a liquid toner printer developed in conjunction with Ryobi. This is a B2 sheetfed machine, with 1200 x 1200 dpi resolution, producing 8000 sheets per hour, though no one on the Miyakoshi stand was very forthcoming about the machine itself.

UV labels

A number of new UV label printers were also shown off at drupa. Thus, Epson has a new version of its SurePress label press with white ink. Epson also demonstrated a new single pass UV label machine, the SurePress X. Epson won't reveal any details about this other than that it uses Epson's Thin Film Piezo printhead.

Screen has also announced a new UV inkjet label printer, the L350UV. This runs at up to 50 metres per minute, taking media up to 350mm wide, for a print swathe of 322mm wide. It includes white ink and will print to most substrates including foil, with Screen planning to add lamination and die cutting units inline.

Founder also showed off a new label printer. The L1400 label press uses Xaar 1001 heads and produces 48 mpm using UV ink, including white.

Xeikon has shown off a 3030Plus, the fifth model in its 3000 Series of digital label presses. Featuring a top speed of 15m/min (49.2 ft/min), Xeikon claim that it is 50% more productive than competing machines. It combines true 1200 dpi resolution at 4-bit per spot for high image quality and prints to a wide range of substrates including Bopp, PVC and PET, paperboards, paper with weights ranging from 40 to 350 gsm and transparent and opaque PET films. As with other Xeikon models it comes with the X-800 front end.

FFEI has launched a new version of the Caslon digital label press. It can be installed as part of a traditional narrow-web label press or utilised as a standalone digital inkjet system. Built on the industry proven Nilpeter FA line web transport, it has web widths of up to 420mm, and converts high quality labels at 25m per minute rising to 50m, dependent on application demands. There's a new digital spot colour unit printing white ink, and it comes with FFEI's RealPro Digital Labeller software.

Finishing

Highcon showed off an interesting device, the Euclid, a digital creasing and cutting tool aiming at the digital packaging sector. Essentially the Euclid creates a die on-demand by laying a polymer substance to a special sheet. The process takes about 15 minutes and is said to be about a third of the cost of producing a conventional die. The machine can then use this die to crease, cut or even perforate onto folding carton in runs up to 10,000. It handles materials up to B1 size up to 550gsm. Not surprisingly, a number of digital press manufacturers have partnered with Highcon to demonstrate their packaging credentials. This includes Presstek, which used it in conjunction with the B2 75DI at Drupa, as well as HP Indigo, Screen and Xerox.

HP Indigo showed off this range of packaging at drupa to indicate the sort of market they have in mind for digital work.

Xerox has also worked with Stora Enso to develop a packaging solution for its iGen presses to exploit their ability to handle folding carton. This system includes a buffering stacker and a custom die cutter from Stora Enso together with an Epic CTi635 inline coater.

Xerox also showed a new faster version of its flagship press with the iGen150, capable of producing 150 A4 ppm, with resolution also increased up to 2400 x 2400 dpi. It will be available later this year.

Komori has partnered with Konica Minolta to build this KM-1 B2 sheetfed printer, that uses UV inks.

Conclusion

It is also worth remembering that a number of wide format production printers are also being used for packaging. Most UV flatbed and hybrid wide format printers are capable of printing to packaging materials, usually taking media up to 50mm thick. However, we will cover these printers in a separate article.

As far as the sheetfed printers are concerned, only the Screen SX is currently available, though Fujifilm's Jetpress F should ship shortly and the Indigo 10000 should be out by the end of the year, with the other models to come later next year.

Of course the real issue is whether or not there is enough of a market in very short run packaging to make these digital devices a viable investment. They will have to compete against conventional presses, which are now very good at handling short run jobs. A lot will come down to the sort of media they can print to and the cost of the inks. HP has clearly put a lot of thought into this, and believes there is enough market to justify its Indigo 10000. Whether or not there is also enough market share for the other digital printers remains an open question.

- Nessan Cleary

More on colour and quality management

Because we left drupa half way through the show, and our first report in the previous issue of Spindrift was sent while the show was in full swing, we need to update readers with some of the things we saw after our first report.

One of the most interesting technology demonstrations was the one made by Fujifilm on its cross media colour management solution called ColorPath. It's a cloud-based solution for hybrid print, meaning all printing devices at a site, or in multiple sites that cooperate in print production, can be calibrated to produce virtually the exact same printed result. Within the limitations of substrates, it doesn't matter much if it's a xerographic toner-based digital press, a large format inkjet printer, a flexo press or a offset litho press – ColorPath brings them into set tolerances for colour accuracy.

In a way it is like treating all printing devices like proofers, and defining what printing conditions they should simulate. The idea isn't new, but it's the first time we have seen this put into practice by a prepress systems vendor. It builds on Fujifilm's other colour management solutions, like Taskero Universe, but makes it a more dedicated solution.

In a rather quiet corner of the Konica Minolta booth we found the section for the Sensing division. We were curious to see the relatively new spectrophotometers in action, and particularly the FD-7 spectrodensitometer. This has two light sources built-in, and so can produce measurements corresponding to both M0 and M1 in the ISO 13655 standard. This is particularly useful when identifying OBA in a paper, and correcting for it. The FD-7 can also make density measurements, and be used in scan mode. Both light sources are used in the same measurement, by rapidly switching between the white LED lamp and the UV LED lamp, so there is no need for two scans when performing M1 measurements.

The control software has good support for managing ISO 12647-compliant print production. Konica Minolta Sensing also demonstrated an affordable spectro-radiometer, called Illuminance Spectrophotometer CL-500A, to measure and evaluate light sources.

Another vendor of ISO 12647-compliant software is Bodoni, which demonstrated its new Softproofing module in the PressSign suite. The soft proof window shows what the print will look like if the tonal curves were to be changed according to the suggestions from PressSign. Those changes can either be based on 'classical' TVI-based adjustments (the FOGRA method if you like)

Ian Reid, Managing Director at Bodoni Systems, demonstrated the new softproofing function in the press control system.

or grey balanced-based adjustments. Bodoni calls the latter 4CX technology, and it is a fast and straightforward way to achieve grey balance in production. This is similar to the GRACoL approach, which is also supported in the Bodoni software.

We managed to sit down with Dr Francis Lamy, Executive Vice President and Chief Technology Officer at X-Rite, to get his view on where there is still room for improvements of colour management. After a long period of relative quiet, X-Rite has suddenly become very active with product launches, and we wondered if there is more to come in the near future.

"It's probably true that it may have looked like we didn't launch very many new solutions in hardware or software the first years after the merger between GretagMacbeth", comments Dr Lamy. "But you have to realise how much work it is to align two different R&D cultures. It has taken longer than we perhaps thought or wished, but since

Dr Francis Lamy, Executive Vice President and Chief Technology Officer at X-Rite, says that X-Rite will direct much of its R&D to achieve better simulation of the appearance of softproofing, and not only for printing applications.

some time back we have been able to really focus on new projects and developments. At drupa we show the new i1Pro 2 spectrophotometer, but also a demonstration of the Exact, which will replace both the SpectroEye and the 500-series of spectrodensitometers. And Pantone Live, announced earlier this Spring, and demonstrated here at drupa, is just the beginning of a development of better press calibration and proofing," continues Lamy, adding: "The ColoriQC Print solution which we show

Alessandro Beltrami, Italian colour management expert, helped Konica Minolta Sensing Europe demonstrate its range of spectrophotometers in the booth at drupa.

here ties in with Pantone Live, and makes what we call 'site calibration' much easier than before."

Turning to the future, Lamy then went on to say: "Today's approach to proofing actually leaves a lot to wish for. It doesn't really take into account for example fluctuation (or variation) during the print run. What we learn daily from the ongoing experiences when applying Pantone Live, is that there are several aspects of printing that still needs to be better resolved. Take for example if you laminate the print – what happens with the colours, the appearance? We at X-Rite will focus a lot of work related to better prediction of appearance than before, and not only within print production, but also within other publishing scenarios."

This sounds like we have a fascinating time ahead, but is there more that we can watch here at the show, in action already?

"Yes, when it comes to enhanced press control I suggest you look at the products from BST. We have cooperated closely with them to develop the inline inspection system QCenter, not only for colour control, but also quality

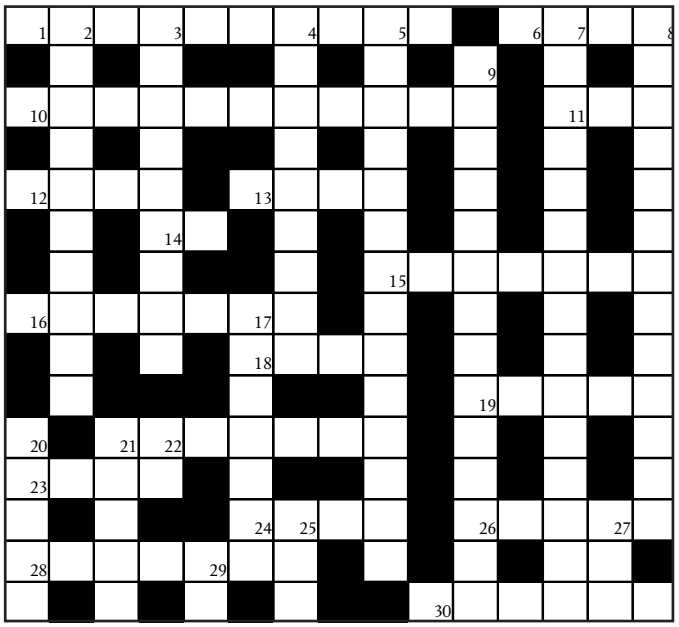
control. It means that the system can detect defects in the print over the whole web width, on every printed page. This is an area of development that moves very fast, and shouldn't be missed," stresses Dr Lamy.

We did indeed have a brief look at the BST International press control system, and also saw other inline inspection systems at the show. This is an area where the development seems to be very fast, and we will certainly come back to the topic. Quality management is a wide subject, and identifying defects in the print is certainly one area that is of importance.

– Paul Lindström

X-word Puzzle

Number 37*



Across

1. Once added to Quark Xpress for instance to provide additional functionality. (10)

2. An expression? (4)

10. A tool for statisticians or gamblers. (11)

11. An even longer time (see 12 across). (3)

12. A very long time. (4)

13. Gripping but unavoidable frailty? (4)

14. Sales Ledger (2)

15. A way to appease a customer disappointed with their print job. (3, 4)

16. To divulge, confess, that first step for working on your laptop? (4, 2)

18. The best kind of black on press. (4)

19. Not often used in the digital age, slide slang misspelled? (5)

21. That command that generally starts the working day. (3, 4)

23. To entice or trap. (4)

24. One of a pair and rhymes with rain. (4)

26. What an italic font does, sort of slopes? (5)

28. Methods that are not old. Unknown paths forward. (3, 4)

30. Not liabilities. (6)

Down

2. Electrophotogaphy writ shorter. (10)

3. Creating a raised effect in print. (9)

4. First. (7)

5. Can create artefacts on a CtP plate or digital press. Think aloud connector or golf? (5, 2, 3, 4)

7. For difficult customers with bad history, do it always, chronically, calmingly. (5, 4, 7)

8. We are all subject to them, and so are customer data. (13)

9. Means of comparing sets of information side by side, often boxed. (8, 6)

17. The best kind of data, captured at source. (7)

20. Totally without companions. (5)

21. A dot does this in a film based workflow for instance. (5)

22. Electrical Engineering (2)

25. Extra Sensory Perception might help with incalcitrant customers. (3)

27. Opposite. (3)

29. @ (2)

***Answers in the next issue**