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

In an expanding universe, time is on the side of the outcast.
– Quentin Crisp

Dear Reader,

The last month has been riddled with industry shows and rumours. It seems that drupa is sticking with its 4 year cycle, and going to 11 days instead of 14. The next EcoPrint returns to Berlin to take place alongside Ifra in 2013, and GraphExpo in the US continues to contract. Although traffic at all these events was light in the aisles, in most cases seminar sessions were packed.

EcoPrint is covered in this issue, and GraphExpo was more or less a drupa rerun, which we don't need to repeat. At GraphExpo there was however a surprising level of attendance at two events we participated in. The Standards Forum was sponsored by Idealliance and attracted some 60 fee-paying people who sat through most of the day listening to endless vital stats about standards and their commercial benefit. Astonishing.

The session sponsored by X-Rite also held its crowd virtually until the end. The topic was colour management in the supply chain and it too attracted a keen audience. Are we seeing a change in attitudes to conferences and seminars? Have we reached a point where knowledge and ideas are becoming fashionable again? Let's hope so, because this industry needs a healthy dose of both.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

EcoPrint Echoes

Laurel Brunner was at the inaugural EcoPrint show in Berlin last month and writes about the show itself, and what lessons we can draw from it regarding the future direction of the print industry itself.

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Watching the waterfall

The Memjet printheads have been hailed as being potentially a disruptive technology yet the Memjet revolution has been slow to really have much of an impact on the commercial print industry. But that may be changing, given some of the new machines previewed so far this year, as Nessan Cleary discovers.

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Acrobat XI has arrived!

Traditionally new versions of Acrobat normally arrive just before the Creative Suite update and so we would expect to cover it along with the other programs, but this time around the latest Acrobat update has only just arrived, so Paul Lindström has taken a look at what's new.

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Regular Features & Special Treats

News Focus

X-Rite has a new series of spectrophotometers known as eXact aimed at ink suppliers, printers and converters, for measuring and matching colours on various substrates and surfaces. It offers customers a way to measure true daylight conditions by supporting all the M Standards inclusive of the complete M1. It uses intuitive software and touch screen controls.

EFI has a new generation of front-end software, Fiery FS100 Pro. This includes the HyperRIP that splits individual files so that they can be processed with multiple interpreters simultaneously to reach the print engine up to 40 percent faster than current systems. There's also a new JobMaster, which includes visual tab insertion and design, easy-to-use page editing and numbering, page-level ticketing, chapterisation, ability to import and modify scanned pages into jobs, and late-stage editing features.

Heidelberg has officially opened its cogeneration plant at its Wiesloch-Walldorf Site. The power and heat generated by the new plant will enable Heidelberg to reduce total energy costs at the site by around ten percent. The cogeneration plant outputs 2 megawatts that will generate 12 gigawatt-hours of electricity each year and can cover around 20 percent of the current electricity requirements of the plant by burning natural gas as its primary energy source.

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KBA has reported strong cash flow and high liquidity in the wake of a successful showing at drupa 2012. All performance indicators show a significant improvement on 2011, with a 15.9% increase in group sales to €590.5m, order backlog up by a third at €814.5m and operational cash flow, at €65.7m, comfortably covering payments for investments. KBA attributes this to orders for the new Rapida sheetfed presses.

Xeikon has changed its management line-up, with former engineer Frank Deschuytere taking over from January 1st 2013. The outgoing CEO, Wim Maes, has been given a seat on Xeikon's supervisory board and will remain involved in future strategy.

Fujifilm has set up a new division in Japan called the Fujifilm Global Graphic Systems Company Ltd (FFGS). This has been formed by the integration of three organisations: Graphic Systems Co. Ltd, a sales, marketing and technical services subsidiary for the Japanese market, Simple Products Co Ltd, a development and sales subsidiary of domestic print production workflow software, and Graphic Systems Business Division, responsible for the global development of products for the Graphics market. The new company will be responsible for the sales, marketing and technical support of Fujifilm Graphic System's products worldwide.

Quark has announced its new App Studio which allows users to create customised apps with HTML5, QuarkXPress, InDesign, and XML. This combines the market-leading HTML5 technology from the recent acquisition of PressRun with Quark's existing digital publishing technology. Using HTML5 should make it easier and faster to develop apps. Users can collaborate through a managed cloud environment. This all comes courtesy of an update to QuarkXPress 9.5.

EFI has added two new tools to its Online Print Solutions (OPS) product portfolio. MPrint is a transactional application for smartphones that enables commercial printers to offer their clients a mobile platform for editing, proofing, ordering, and approving jobs. CallTarget is

a module for turning printed items of all types into trackable marketing pieces via unique phone numbers.

Adobe has released Acrobat XI, with the ability to import and export PDFs to Microsoft PowerPoint, Word or Excel, plus new text editing and integrated Forms features. See our review on p21 for further details.

Kodak has a new CtP plate, the ThermalNews PT Digital plate, which gives printers the option to skip the preheat and prewash steps in processing, saving both energy and water, or keep these steps for longer print runs up to 350,000 impressions. Customers can just turn off the preheat and prewash functions but there is also a no-preheat T-HDX Plate Processor that has a very small footprint.

IBIS has launched its latest inline saddle stitcher, the Smart-binder Plus, said to be 30% faster than previous models. It also boasts a higher cycling rate, improved book transport through the trimming operation and enhanced cover feeder capacity and reliability. In addition, there is updated machine guarding and optional selective folding.

Xerox has added two new monochrome printers to its Nuvera range, with the Nuvera 157 and Nuvera 314 EA Production Systems, offering 157 and 314 images per minute respectively. Users can opt for either a single engine or dual engine system to speed up duplexing. There's a new production stacker that can unload finished jobs while the machine is still running.

HP has added new features to its Scitex industrial display printers, including new print modes for higher speeds when producing small text, barcodes and fine details, which can increase productivity by up to 20 percent for the FB7600. The TJ8600 gains a new POP print mode with enhanced image quality designed for printing text, barcodes and fine details, such as quick response (QR) codes for POP signage applications. In addition, the press is now compatible with 20pt thick substrates such as styrene, commonly used for lightbox POP displays.

Fujifilm has added a new wide format printer to its range of UV flatbeds. The Acuity Advance Select now includes eight independent ink channels with additional white and clear ink channels as well as the standard CMYK ink set. It also includes new print modes to further improve print speed and additional vacuum zones, to reduce the need for manual masking.

Océ has a new 3D media, called 3D Film Pure, which has been launched to help customers build new business opportunities through adding value with 3D advertising messages. It's the latest development in the optical art phenomenon – the art of capturing movement, hidden images and illusion – that first gained prominence in the 1960s.

Kodak has awarded the Sword iJet Gloss from Mitsubishi Paper Mills a 5-Diamond rating for the Prosper Paper Rating Program, the highest rating which equates to "offset quality" within the rating structure. Sword iJet 4.3 Gloss is a premium, glossy media designed to run on today's high-speed continuous feed inkjet presses. In many applications, it does not require post printing lamination or liquid UV. It is an FSC-certified media that provides excellent ink adhesion, remarkable drying characteristics, universal ink compatibility, and a wide colour gamut.

Ilford has launched two new medias for its environmentally-friendly Omnijet range. Trans is an inkjet alternative to traditional backlit silver halide products, which leaves a smaller environmental footprint by eliminating wet chemical processing. Without the need of a darkroom, the inkjet product allows for a more efficient and cost-effective workflow. NanoSolvent is a new layer that will be coated onto a variety of PVC-free substrates including clear and translucent film and pop-up display, self-adhesive and banner printing materials. These products will be rolled out during the first half of 2013.

QuadTech has added a Digital Ink System to its suite of colour, register, and inspection controls for web offset printers. This replaces conventional ink fountains with computer-controlled ink injectors. This gives much more accurate density control across the printed image by metering the precise volume of ink required in each control zone consistently, at all press speeds. This eliminates the costs of contamination from open

fountains, resulting in significant and immediate savings in ink, paper, and maintenance.

Videojet has developed a new software solution that helps customers streamline production operations and maximise profitability. Called ClariSuite, this uses a barcode scanner to ensure that the right messages, product codes, logos and barcodes are printed onto packaging and labels. This reduces the margin for error on short run jobs.

Xanté has premiered its new Impressia digital print system. This is a range of toner-based printers, with resolutions up to 2400 dpi allied to Xanté's iQueue 7 workflow, giving colour control, estimating and file sharing.

FFEI has integrated Enfocus PitStop Technology within its RealPro workflow. This gives highly automated file checking and correction for a late binding PDF workflow. The announcement follows a long-standing collaboration developing third party workflow solutions for OEM partners such as Fujifilm.

Elpical has launched v9 of its Claro automated image editing workflow. The core image engine has been improved for more lively skin tones and better contrast. It's available in a Premedia version for publishers, and incorporates JobClient for Indesign and Inspector for Photoshop. There's also a Single server version that can be integrated into wider workflows, such as Enfocus Switch.

Corel has launched Painter Lite, based on the Painter natural media art software. It has a wide range of brushes including acrylics, markers, impasto and special effects and costs just £55 plus VAT, around €68. Corel has also announced the small business edition of its CorelDraw Graphics Suite X6, which includes three serial numbers, representing a 40 percent saving on buying three separate editions. It costs £699 plus VAT, or around €870.

Markzware has updated Flightcheck to v6.9. This now includes support for the CS6 versions of Indesign, Illustrator and Photoshop, and improved handling of embedded EPS files in Indesign documents, as well as improved rendering of Pantone colour swatches.

Mimaki has updated its FineCut program to v8.04 to add support for CorelDraw Graphics Suite X6. FineCut 8 is plug-in cutting software which is provided as standard with all Mimaki cutting plotters and printer/cutters and provides sign making specific tools within industry standard graphics software such as Adobe Illustrator and CorelDraw.

Xerox has teamed up with McAfee to protect networked printers from malware and viruses. The Xerox and McAfee security solution simplifies processes for IT administrators with software embedded into a multifunction device's controller to provide an immediate alert and audit trail to track and investigate the time and origin of security threats and take appropriate action.

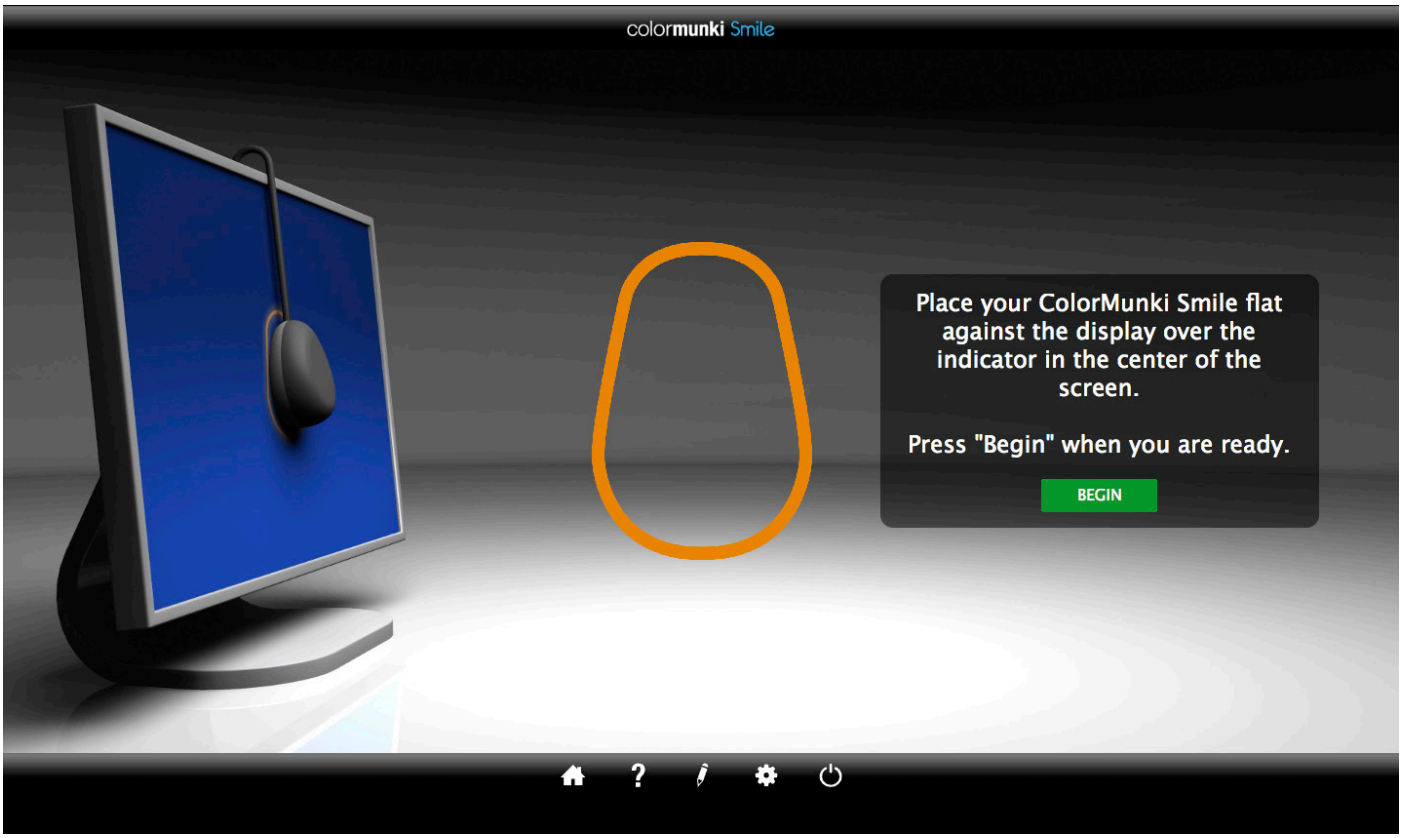
A Review

Calibration with a smile

X-Rite has launched a new, lower-priced monitor calibration device called ColorMunki Smile. From the outside it looks very much like the old Eye One Display, but at a price similar to that of the Pantone Huey, so that it will most likely take the place of both of those devices on the market.

X-Rite has added 'Smile' to the name to indicate how easy it is to perform a monitor calibration. And the user interface is really minimal – no settings to determine and no instructions as to what needs to be done to create good viewing conditions. After calibration the user is presented with a before-and-after situation, viewing a sample image. In the best case the calibration results in a more pleasing image, and the user has a monitor set to the right colour standard. Though quite what standard that means is never fully explained, and there is no feedback as to what luminance level or white point the monitor is now operating at.

While this sparse information and ease of use might be attractive to some, we wonder if it's really helpful for the target group of photo hobbyists and design enthusiasts. The manual tells you nothing about what whitepoint will be achieved, and you need to go to the Help page on the X-Rite site to get some instructions as to how best to set up the monitor. We think X-Rite should finish the calibration with some basic information of what kind of colour standard is achieved, if only for educational reasons.



The user interface of the control software for ColorMunki Smile is really minimalistic. No settings have to be determined, nor is there any feedback as to what luminance level or whitepoint was achieved. Perhaps the target group doesn't care, but we wonder if it wouldn't be a good idea to at least report on some core information, not least for educational reasons.

As it happens it's D65, which is what Adobe RGB and sRGB use, so it's not a bad choice for general photography. But

The ColorMunki Smile is a low priced monitor calibrator from X-Rite which looks very much like the older Eye One Display (shown in the background of the picture).

it's perhaps not the ideal choice for softproofing designs that are intended to be printed. The previously mentioned Pantone Huey had some options here, for the designer to at least consider.

We like the fact that the ColorMunki Smile supports multiple monitor setups, and also detects whether the monitor has an LED backlit panel or not - at least it made the correct choice for our tested monitors. The two monitors had very much the same look and feel after calibration, which is what you want. Without calibration two monitors often show the same image with totally different appearance, leaving you to wonder which one is showing you the truest image. Of course, it's another issue as to whether or not the image looks the same when printed, but calibrating your monitor is a good starting point.

At such a low price, around €75 including VAT, even normal consumers with photo and/or design ambitions can afford to calibrate their monitor. So there is most likely a market for the ColorMunki Smile. But we think X-Rite would serve this user group better if there was some additional information given after calibration, and some guidelines in the manual as to how best to arrange and set up your monitor before calibration. It's good to make things simple, but only up to a certain point.

Green Shoots

In case you missed them, here are the Verdigris blogs from the last month.

The CEPI Plan for 2050

The International Panel on Climate Change states in its fourth assessment report that "a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit". If ever there was an argument to support paper-based media, this is surely it. Yet relatively few graphic arts industry organisations, or more importantly their PR machines, have picked up on it. The Confederation of European Paper Industries, CEPI has however been paying attention.

CEPI has published a roadmap for growth up to 2050. The paper industry is often perceived as being one of the world's grimiest of industries so this roadmap may come as a bit of a surprise to some. It is however, much to be welcomed because it is based on paper's role in reducing environmental impacts.

CEPI is no lightweight. The organisation represents over 1,000 European paper mills and nearly 700 companies in Europe, so this roadmap will have serious implications for both CEPI members and their customers, as well as the environment. CEPI says the European pulp and paper industry turns over more than €80 billion and adds €18 billion to European Union GDP. The combined industries employ 230,000 people to produce 89 million tonnes of paper and 12 million tonnes of pulp each year. For CEPI, the European pulp and paper industry is a prime example of how sustainability and competitiveness can be mutually supportive.

The statistics are indeed compelling: 69.6% of paper in Europe gets recycled. Wood is, of course, renewable and 53% of it that is used in the paper industry comes from certified and properly managed forests. According to CEPI, there has been an overall reduction of 30% in GHG emissions related to pulp and paper reduction since 1990. Pulp and paper production produce 20% of Europe's biomass and 96% of electricity used is produced through combined heat and power generation (CHP). This is all very encouraging and a strong counter to accusations of wanton polluting. It also provides the foundation for a more sustainable future for CEPI members, customers and consumers.

The world will look very different in 2050 but it is certain that resource demands will have grown, particularly for energy and water. Zero emissions and zero environmental impacts are a reasonable assumption if we are to have a low carbon economy. CEPI wants to achieve this and "unfold the potential of forest fibre" through maximising the value from said resource, both for virgin and recycled fibres, to produce new products and services.

And much of the innovation is expected to come from printed products, from QR code applications to printable paper-based alloys. There are already signs of a new dawn for printed media as workflows start to converge to produce media simultaneously for digital and printed delivery. In future we'll see much more of the wood from the trees.

Benny & the Jets?

The indefatigable Benny Landa is on the road to promote his Nanographic printing technology, an amazing implementation of piezo inkjet. This technology is set (according to Landa) to revolutionise the printing industry, creating a new category of print that has all the benefits of conventional offset, but with a substantially reduced environmental impact. The arguments for short run colour print produced on demand are well established in terms of sustainability. But what is interesting about the Landa technology is the fact that it started life as an energy source.

Landa explained last May that: "We wanted to help the planet reduce its energy use, and we spent the past 10 years

working on that… on the way, we found nanotechnology. It is a true breakthrough that enables our presses to achieve amazing results." But the huge success Landa had at drupa when he introduced his line of six new presses seems to have tsunamied the energy work: "Once we created our own Nanotechnology, I immediately thought about its potential and we started working on Nano-pigments."

This technology is still having a positive environmental impact because of the nature of the inks, which are free from Hazardous Air Pollutants (HAPs) and are water-based. The pigments in Nanoinks are much smaller than conventional inks and yet are able to absorb light extremely efficiently and so can lay down very thin ink thicknesses, around half that of conventional inks. They work on recycled stocks and dry rapidly and because Nanographic Printing doesn't need to heat the stock prior to printing, energy consumption is drastically reduced.

Even the ink containers are environmentally friendly. They hold 15 litres of ink concentrate, which gets added to water as it is consumed on the press, the containers collapsing as they are emptied. There are lower transport costs too because less water is being transported! It all adds up to more efficient production processes and a lower environmental impact.

The question is, will Nanographic printing work? And more importantly, what will the technology mean to print if it does? Obviously this technology will put a substantial wobble in the wheels of conventional press manufacturers, which is why Heidelberg, Komori and others have announced partnerships with Landa. And even if it doesn't work immediately, Nanographic Printing will mark the beginning of progress towards a major disconnect with traditional print methodologies.

Landa is going to be visiting a range of venues in the coming months, presenting Nanographic printing and schmoozing his way around the industry. One of his stops will be at EFI's annual Connect users conference in Las Vegas, the perfect venue to cajole big customers into giving Nanographic printing a go. And with EFI providing front end technology, something that was notably absent at the drupa launch, Landa Labs will be able to improve its odds for this technology's success.

Deinking Myths & Magic

Let's be clear: consumers don't care about how materials get recycled, as long as they can be recycled. The important point for all of us in the printing industry is that anything corrosive to the credibility of printed paper recycling undermines the industry's longterm survival. Challenging the recyclability of digital prints damages the credibility of print's sustainability, in every sense of the word.

Paper recycling is obviously helping print towards an ever lower environmental impact. However as the mix of substrates, inks and toners changes, conventional deinking methods are coming under pressure. New technologies are required to process the diversity of printed papers entering recycling supply chains. This is the difficulty at the heart of the squabble between representatives of the deinking industry and large manufacturers, especially those of digital presses. The squabble boils down to a problem of technology and method.

Deinking plants basically wash printers' waste papers and consumers used prints in order to remove the colourants. When it comes to removing offset inks and toners to produce low grade pulp, as is the case for instance for newsprint, the process is established, proven and profitable. But the industry is changing. Now we have ever higher volumes of prints carrying more recent ink and toner technologies, entering the waste stream and destined for recycling plants.

This includes liquid toners, UV-cured inks, conventional flexo inks and water-based inks. All of these require more robust deinking technologies than are used for offset and dry toners. Ink chemistries are changing continuously, along with substrates, and the volume of digital print entering recycled pulp supply chains is rising. This need for new deinking technologies cannot be denied.

Fortunately there are new recycling plants being built to produce pulp suitable for high quality paper manufacture as well as newsprint. Such plants are leading the way for the future of our industry. They support the increasing need for high quality substrates produced with recycled raw materials, suitable for both digital and conventional printing. They can deink pretty much anything including digital prints. The point here is that fear mongering to contest the deinkability of digital prints et al is misplaced.

With the right technology deinking of digital, flexo and UV-cured inks is possible, although it might not be as profitable. The industry should recognise that confusing the market with erroneous arguments about the deinkability of digital prints undermines the credibility of print's sustainability. It gives consumers a reason to question the environmental impact of digital printing and to turn away from it. This cannot under any circumstances be good for the printing industry. It's time to argue not about what can't be done, but about what can be done.

Deinking Drama

It seems we rather hit a nerve with last week's blog, which isn't so very surprising. That's the trouble with blogging: not much room to develop an argument or adequately cover all sides of a problem. The blog's purpose had been to highlight the dangers of denigrating digital printing on the basis that it isn't deinkable. The fact that some print is suitable for most recycling processes and some isn't, is too nuanced for most media consumers. Consumers tend to look for guilt-free convenience and as a rule don't appreciate the differences of imaging technologies and inks.

But maybe we should give consumers and print buyers more credit, or at least encourage them to think more? After all this is a collective problem, and not just the concern of the ink manufacturers, recyclers or paper makers. There is much to be positive about too: there is no problem with removing toners from digital prints, which can be deinked alongside offset prints. And developers are constantly working to improve deinkability.

More could be done with positive communication. The new Digital Printing Deinking Alliance website (www.thedpda.org) will help educate the market and provide a means of sharing new ideas. Manufacturers' marketing departments could also be making more noise about work being done to improve print's recyclability. We have a collective responsibility because in the end the claim that some digital prints cannot be recycled damages all forms of print, including digital.

Maybe the problem is economic rather than technological? If companies are willing to invest in deinking technologies and people are prepared to pay a premium for recycled papers based on raw materials sourced from inkjet and liquid toner papers, there is no problem. More state of the art recycling plants will come online to process rising volumes as long as consumers are happy to pay the price. Eventually the cost of processing the material should fall in line with the basic rules of supply and demand. In the meantime we may be in a situation where pulp plants are waiting for digital press and ink manufacturers to make their prints totally deinkable, while said manufacturers hope to see more investment in state of the art recycling plants. Not good.

Deinking is ripe for invention and innovation. Its current limitations are leading the market towards a new future. Hopefully it will be one where all forms of print can be successfully deinked. If not, the future for printed matter looks bleak indeed.

For more green news, check out The Verdigris Project:

Verdigris

http://verdigrisproject.com

Another Review

VIGC RIP tests of PDF/X-4 compliance

VIGC, the Flemish Innovation Centre for Graphics Communication, continues its tests of RIP systems. The focus is on correct interpretation and rendering of PDF files in general, and PDF/X-4 files in particular. VIGC uses a whole suite of sample files in its testing, among them the technical page from the Altona Test Suite version 2, from ECI (European Color Initiative).

"Thorough testing is of the highest importance, as our RIP tests have repeatedly proven," says Eddy Hagen, General Manager at VIGC. Users don't always realise the complexity of actually delivering predictable results - results that look exactly the same on any system.

One of the challenges of a PDF-compliant RIP system is the handling of transparency in multi-layered PDFs. The Altona Test Suite, and other documents in the VIGC test, check this in different ways. Didier Haazen, Senior Consultant and PDF specialist at VIGC, explains: "The correct rendering of a very broad set of PDF/X-4 features is an important part of our VIGC PDF RIP tests. By testing even the smallest details, we sometimes find unexpected problems. These have to be cleared before a certain rendering can be considered correct or wrong. Also, we find that certain work methods that prove to be useful in one way, may cause differences in other ways."

VIGC has decided on two compliance levels for RIP systems - Passed and Perfect. This is because, even between PDF experts, there are sometimes disagreements on what a correct rendering of a certain object inside a PDF file should be. So if a RIP system renders most of the objects and components in the test correctly, but the most controversial elements in a different way than expected, then that RIP system will be acknowledged to have passed the test.

But a RIP system, which interprets and renders the most tricky objects and elements in the test suite as expected, will achieve the Perfect level of compliance. VIGC emphasizes that those systems labelled as 'Passed' are also fit for production as they will render the most common features correctly. So far only the Efi Fiery FS100 Pro RIP system has been granted the status of Perfect compliance. Several systems have achieved the level 'Passed', among them RIPs from Agfa, Esko, Fujifilm, GMG, Heidelberg, Kodak, Océ and Xeikon.

"By conducting these RIP tests, VIGC really aims at making sure that graphic arts companies can output PDFs in a reliable and predictable way – especially PDF/X4 files. This new series of RIPs passing our tests, and even having a first 'Perfect' score, proves that reliability, and therefore predictability, has indeed improved," concludes Hagen.

Driftwood

Apple maps

At first glance, Apple's Maps app is an epic fail but now that it's been out for a while it's time to reevaluate it. Maps are important, not least because they can be linked in to other applications such as guide books. Moreover, digital maps are now starting to threaten the market for printed atlases.

Any good maps app is made up of several parts, and the iOS 6 Maps app is no different. Perhaps the most obvious starting point is the look and feel of the Classic map view, the roads and towns and the overall geography. Here, the map betrays its origins from TomTom's satnav, in that it shows the roads but not other routes such as bridle paths and walking tracks. Nor does it give any sense of wooded or grassy areas, or of inclines and hills. On top of this a lot of the data that is in the maps is just plain wrong, with roads, major train stations and even entire towns just being in the wrong place. There is absolutely no excuse behind this sort of shoddiness. Some people have pointed out that Google Maps also suffered from these issues in the beginning, but Google was offering a unique level of functionality that we didn't have before and was doing it for free, whereas Apple is replacing a robust high functioning app with a half-baked offering, and which is part of a system that people pay a premium price for.

Then there is the Points of Interest, the added layer of detail of places such as hotels, shops, restaurants and so on. In some places, notably North America, this works well. In others, such as the UK, this is so bad as to be unuseable. The problem here is that this kind of data has to be 100 percent accurate to be any use because we only use it in places that we're not familiar with. So 20 percent or even 50 percent accuracy isn't really any good.

Part of the problem for Apple is that it has not invested in the Street View mapping that Google has and so it simply doesn't have that level of detail to draw on. Instead, Apple is relying on crowd sourcing, but although this works well for free software, it's not really on for a program that is supposed to be a flagship element of premium products like the iPad and iPhone.

Apple's alternative to Street View is 3D mapping, which does look visually stunning but only works in the major cities and has not been rolled out universally, and this sort of work is likely to take years. Besides, it would be a useful add on to Street View but is not a replacement because people use maps for all sorts of different reasons and getting directions is only a part of that.

Nor do Apple Maps support transit information, so planning a journey that might involve buses or trains is out of the question. Apple's plan is that the transit companies will write their own plug-ins, but Google simply sucked in the available information with no need to rely on any further development that might or might not happen.

However, there has been an improvement in the satellite views in recent weeks. At first it could barely isolate a small town, whereas Google could zoom into individual back gardens but Apple has now gained a similar level of detail. The Apple satellite view is not as clear as Google at maximum magnification, but it is much clearer than Google once you zoom out a bit. Apple has even been accused of having too much detail in some areas, such as North Korea and Taiwan.

Then there's the actual app itself, which is really good. The maps app uses vector rather than bitmap data, which means that you can be looking at a map at home using WiFi and can continue to look at the same area as you drive around without WiFi with the map continuing to chart your exact location, which is really handy if you are in an unfamiliar city. You can use the map over several square miles before hitting the edge of the area that downloaded when you last had WiFi, which is a significant improvement over the Google maps app.

But it doesn't show enough detail so that you have to zoom in to an area to really see any details, which is very inconvenient as you then have to hunt around at high magnification to find the thing you are after. Google shows more detail at lower magnifications, allowing you to search a wider area.

Eventually, Apple's Maps will be a really useful tool as the underlying app is fantastic. And in practice it does work really well in some places, such as California, with full turn by turn navigation and reliable points of interest. But in other areas, such as the UK, the raw data is appalling and it's likely to take Apple several years before the app gains enough data to be any good.

Apple should have offered this as a free download while it built up the data before substituting its own app for Google Maps. Apple simply has not been proactive enough in developing this app and far from coming out with any sort of plan as to what it might do about this, Apple has merely advised customers to find an alternative.

Google is in no great hurry to develop an iOS app that would let Apple off the hook, and using Google Maps via Safari is not that great an experience. Microsoft's Bing is better, and for UK users it offers Ordnance Survey maps, which is genuinely useful. For SatNav uses, Waze is probably the next best alternative. But the simple fact that we are having to search out these apps is indicative of how much Apple has lost sight of its quality control.

EcoPrint Echoes

Why would anyone try to launch a new event for the graphic arts in today's economic and commercial climate? This was the question many people were asking last year when UK event organisers FM Brooks announced EcoPrint 2012.

Given falling numbers at all print-centric shows in developed markets, the addition of a specialist niche event to the European calendar was a curious folly, especially in a drupa year. Or was it? EcoPrint 2012 in Berlin just about attracted its target audience in terms of numbers and exhibitors and, more importantly, delivered a thoroughly international crowd that cut across print media supply chains. Some visitors were competitors nosing about, but there were plenty of encounters with printers from throughout Europe. EcoPrint 2012 marked the beginning of a new series of conversations within the industry.

And those conversations were the main attraction for most of the people participating in the two-day show. The aisles may have been quiet but the multiple concurrent EcoPrint conference sessions were heaving. The programme covered the environmental impact and sustainability of print media from virtually every angle, and delivered in spades on vision and ideas. With numerous simultaneous tracks it is hardly surprising the traffic didn't feel hefty at this show, but there was a buzz nonetheless. People were cramming into sessions providing basic ideas for improving a business's sustainability, identifying key worries facing the printing industry and offering ideas for helping companies to reduce environmental impacts.

Fortunately this was not a conference series dominated by representatives from the show floor, pushing the greenness of their technologies. Instead the organisers put together a wide ranging and eclectic set of sessions, designed to encourage discussion and argument, and to encourage new ways of thinking on matters green. For instance, audiences were invited to "Think Pink" by a consulting company specialised in using direct marketing and variable data printing to reduce waste and get higher response rates. Gerhart Maertterer, founder of Schwarzspringer-direkt and the "Think Pink" concept (apparently deriving from a sartorial penchant for the colour) estimates that static data print yields a 2% response and generates 98% waste compared to 29% response and 61% waste for variable data print.

Maths doesn't seem to be Herr Maertterer's strong point but he is right when it comes to the juicier return rates of VDP. These obviously vary according to the health of

Pretty much all of the multiple concurrent EcoPrint conference sessions were heaving with noisy interactions between presenters and audiences.

the data. Increasingly data is becoming more localised and the means of delivering it more diverse, from email attachments to keyfobs. Reduced waste, media relevance and improved response are what eco-friendly print is all about.

In this and in other EcoPrint presentations the message is that reduced environmental impact depends on raising return rates on media and cutting waste. Waste reduction isn't just about cutting unneeded excess on press but in improved process efficiency, in other words the effectiveness of data. There are ample examples of digital printing businesses whose success is based on this principle, using well-maintained data fully leveraged across channels with print at the heart of campaigns. As Gerhart Maertterer put it at EcoPrint: "Printers do not earn enough on printing; printers need additional earnings beyond print".

Same Old Tune, Different Key

This much we know. The problem is identified but how can printing companies live up to their potential as all round media providers? We have been banging on about this for years, and it still comes down to proactivity, education and

communication, not things that many printers are good at. According to Eric van den Bruel, marketing director for Sappi, print must not make the same mistake as paper did and needs to listen to its customers. He reminded EcoPrint audiences that "we never communicated enough with our customers" and this has lead to more than occasional near death experiences for the paper industry. To that we would add that print needs to look beyond its own little yard to get up to date with what is happening in the big bad world beyond.

Mr van den Bruel had a mass of stats to support his main argument, which was that (yawn, yawn) print on paper is sustainable. We may be inclined to yawn, since print's sustainability is one of the central tenets of our Verdigris project and we live and breathe it daily. Yet more always needs to be done because the message still isn't getting out there. Many people in the EcoPrint audience were unaware that paper and printing contribute only 0.6% of total European emissions. Or that 540 million tonnes of CO_2 are stored in wood and paper products per year and that the paper industry generates 27% of European biomass energy. We learned further that 45% more trees are planted every year than are cut down and that only 11% of trees felled in Europe are used for paper. It is this sort of information that needs to be shared and that printers need to be telling their customers.

Also important is that the industry operates as a more cohesive whole in order to move forward. One option is to achieve reduction through initiatives such as Ricoh's Carbon Balanced Printing Programme or HP's carbon neutral presses. Another is for the industry to establish some long term goals of its own, such as a 10% reduction per year in emissions. However this requires common direction, coordination and accountable data collection, plus strong leadership.

EcoPrint might be positioned to provide that leadership, but it needs to reach down to the grass roots of the industry and to work closely with industry associations. Organisations such as Intergraf, the international federation for printing associations, and to work with local print industry associations. Perhaps they can develop member programmes to assist with environmental impact reduction? This of course has an economic benefit as well, so it is baffling to understand why such efforts haven't yet been made.

The Man with a Plan

By far the most powerful presentation at EcoPrint came from Dr Hans Joachim Schellnhuber, founder of the Potsdam Institute for Climate Impact Research. And this man has the most impressive CV ever (nearly): Nobel Peace Prize 2007 as part of the Intergovernmental Panel on Climate Change and a CBE from the Queen of England. He is also an advisor to German Chancellor Angela Merkel

This debate on the importance of standards and labels for environmental impact reporting and compliance gave participants much food for thought.

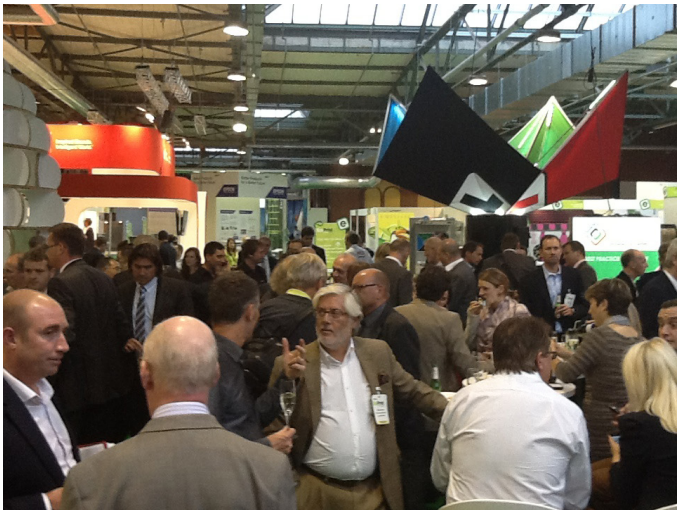
and the Obama administration. Dr Schellnhuber's calm and lucid explanation of what is going on with our planet was unequivocal and scary, but he has some ideas for how catastrophe might be avoided. A man with a plan indeed.

The Potsdam Institute's researchers work exclusively on understanding environmental impacts and modelling worldwide sustainable development. Dr Schellnhuber's presentation explained why the year 2020 is so important for target emissions reductions: this is when emissions are expected to peak and the point at which matters become critical if not irreversible. Dr Schellnhuber, who also steers an annual Global Sustainability meeting of 20 past Nobel winners, says that we need "an industrial revolution that changes everything in life". The group has come up with Seven Cardinal Innovations that are the possible basis of this revolution.

The Seven Cardinal Innovations

1. *Integration of renewable energy sources* based on supersmart grids as a means of substantially reducing fuel emissions and of making sure that energy is delivered as needed with minimum waste. This requires development of renewable energy sources such as wind, solar and tidal power, as well as some means of storing the energy.

The ultranet is a renaissance of Thomas Edison's Direct Current (DC) power generation. DC flows in a single direction rather than alternating ones (AC) and is used



The inaugural EcoPrint event generated a decent audience with solid international support as well as local traffic.

to power all sorts of digital devices such as iPads and iPhones. Because it is unidirectional it flows through things such as semiconductors, which provide the basis of High Voltage Direct Current or HVDC. This is also used to transmit power in high quantities from remote generation sites and to link alternating current power grids using existing as well as new routes to interconnect them. The supersmart grids make sure that energy generated from, say photovoltaic cells in the Sahara, is available to the frozen wastes of Finland as needed.

2. *Plus Energy houses* are buildings that produce energy instead of consuming it. The very fabric of a building is an energy generator, for instance solar panel windows based on transparent organic solar cells. Roofs and facades can also be painted with photovoltaic materials for energy generation.

3. *Modular e-mobility* is an idea to get away from having to plug in electric vehicles. They can get their energy from alternative sources such as their wheels or Inductive Power Transfer (IPT) in flooring, or from solar cells on roads. This is already being tested in Turin and Genoa in Italy where minibuses are being charged with IPT. Solar roads turn highways into decentralised self-healing power grids that can generate energy, keep themselves clear of snow and ice, and manage traffic flows.

4. *Systems-optimised industrial production* takes a cradle-to-cradle approach to industrial production. This is familiar territory for the printing industry, which has a long history of recycling paper to produce pulp for new paper products. The concept also applies to textiles, for instance, with fabrics such as bio cotton made from recycled cotton materials, or tee-shirts made from old plastic bottles.

5. *Holistic urban planning* blends rural and urban planning principles to reduce overall environmental impact. Multifunctional architecture uses buildings as convection towers in addition to providing housing, offices and retail outlets.

6. *Sustainable biomass management* is a means of decarbonisation, essentially planting more trees in order to capture carbon equivalent to emissions. Pulp and paper producers are already very active in this area. In Australia the government has set up the Carbon Farming Initiative to provide economic incentive to landowners who reduce carbon pollution either through emissions reduction or carbon sequestration through planting and rangeland restoration.

7. *Regenerative water supplies* and using turbines to turn wind into water are the last of the seven. Solar desalination is an established technology that uses solar energy to desalinate seawater. The Miracle Turbine developed by Eole Water harvests energy from wind and also extracts its humidity, with a condenser that generates condensation collected to produce fresh water. This technology is being trialled in the Nager desert in Israel and in Qatar.

Dr Schellnhuber's most important point is that in the post-fossil world we need a new contract between science and society. To that end the Potsdam Institute has set

Some of What We Learned at EcoPrint

- Sustainability, recycling, environmental impact reduction and carbon footprinting is everyone's problem.
- The print industry needs leadership and grass roots engagement if it is to fully exploit its sustainability strengths.
- Printers must transform themselves into media providers.
- Labels such as the European Union's EcoLabel are only valuable if they have robust and accountable measurement criteria.
- Successful manufacturers put recyclability and environmental impact improvement at the heart of product design.
- Standards are a means of improving business performance.
- Environmental policy and its communication should be at the heart of the business.
- Printers and their customers need education and awareness of environmental standards and labels.
- Listen to customers and respond to their needs.
- The environment and the print industry's economy go hand in hand.
- Cutting costs through waste reduction and improved efficiency is the first step towards environmental impact reduction.
- International industry associations are well placed to take the leadership initiative.
- If we continue to ignore global warming the planet will start to collapse by the end of the century.

up an Artists in Residence programme to get artists and scientists to interact. Author Ian McEwan, he of Atonement and Enduring Love fame, is the first artist to participate in the programme.

EcoPrint's Next Steps

FM Brooks' intention with EcoPrint 2012 was to create something different, a new space wherein media professionals could learn more about print's environmental impact. Instead of the usual and highly profitable sprawl of stands and technology presentations, the EcoPrint emphasis was on ideas and debate. It reminded us of the early Seybold Seminar days, when there were literally no people looking at kit for hours on end because everyone was in the seminar sessions.

As now, thirty years ago print and publishing professionals were in a state of confusion, unsure as to what questions they should be asking. Today the prepress and graphic arts technology questions are largely answered, and the industry is focusing instead on its sustainability and indeed survival. EcoPrint 2012 was a landmark event, a solid foundation on which the questions can keep being asked and the conversations continue.

– Laurel Brunner

Watching the waterfall

One of the more interesting inkjet technologies around is that of Memjet. Essentially, Memjet sells a thermal printhead which is very fast, has quite good image quality and is significantly cheaper than most of the alternatives. The technology has been around for a few years, mostly in cheaper desktop label machines, but now we are starting to see some more interesting commercial printers emerging.

The Memjet technology was developed by Silverbrook Research, headed by Kia Silverbrook, who had been the head of Canon's R&D in Australia. He began working on the project in 1994 and in 2002 Silverbrook set up a separate business, Memjet Companies, licensing the technology to this company to commercialise it. But the technology took longer to fully develop and gain traction in the market place, and Silverbrook fell out with his investors leading to a series of legal actions. These have now been settled, leaving Memjet in control of the patent portfolio and its own destiny. Silverbrook remains as a consultant to the board and he continues to run Silverbrook Research as an entirely separate entity.

The Waterfall printhead

The current Memjet printhead is a thermal drop on demand design, codenamed Waterfall. It's built using MEMs technology, or Micro Electro Mechanical Systems, a way of manufacturing very small devices of just a few millimetres. The head itself is 222mm wide and contains 70,400 nozzles, significantly more than most other printheads. It can fire up to 700 million drops per second, which makes for a very fast system. Each droplet is just 1.1 picolitre in size, which Memjet claims reduces the amount of ink used and helps reduce drying time. Resolution is 1600 x 1600 dpi at 9 metres per minute, or 1600 x 800 dpi at 18mpm. However, Memjet isn't just selling the head – it has developed a complete print engine, comprising the head, all the associated electronics, and the ink channels, making it extremely easy for any OEM to get started.

The Memjet printhead is designed as a page wide array, 220mm wide, and containing five ink channels. It's a consumable unit, but it's easy to snap replacement heads in.

The major weakness of the current head is its relatively short life span, in common with other thermal solutions. This obviously depends on various factors, from the type of applications and ink coverage to how well maintained the machine is. Jeff Bean, Memjet's marketing manager, estimates that each head should last 18 months or 50,000 pages under typical office use, based on ISO standards (20% colour ink and 5% black ink). He adds that for label printers, each head should be good for five litres of ink, based on 70% nozzle utilisation. It's more difficult to determine head life for wide format use, because some

implementations are aimed at CAD users, while others are designed for production graphics.

Memjet is developing a second generation head, which should be available by the start of 2014. This will still be a thermal head but will take pigment inks and offer a longer lifespan. There is a third generation head in the pipeline, though this could be another five years or more away. This third generation head will be a mechanical printhead so that it should take a broader range of inks, including solvent and UV.

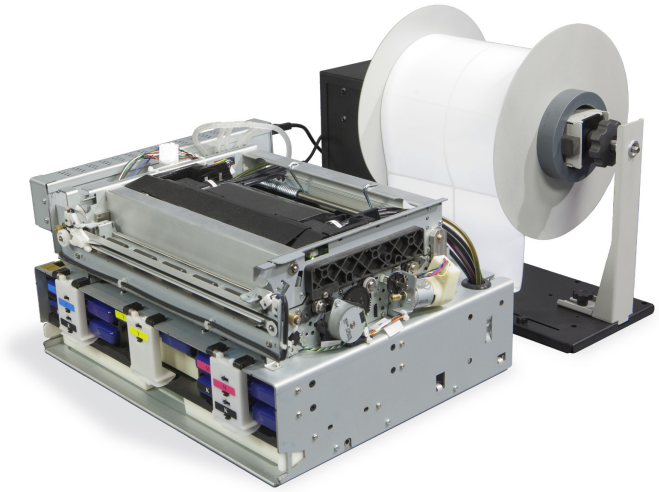
Memjet also supplies the ink for its head, which is currently a dye-based aqueous ink. The inks are optimised for the application, based around drying, brilliance characteristics and optical density. For now all of the Memjet implementations print CMYKK, but the fifth channel could be used for spot colours, or even for a clear ink for varnishing. CEO Len Lauer says that it's not hard to produce spot colours but adds: "We havn't had a high demand for it yet."

Label and envelope printers

Currently, Memjet is split into two main divisions, office and commercial, which is further subdivided into labels and wide format. Each division takes the basic print engine and builds a solution around that. The early products were mainly aimed at the office and label sectors. Lomond, for example, now has a second generation of its EvoJet Office, which has a new manual feed tray. Print speed is 60 ppm in 1600 x 800 dpi and 30ppm in 1600 x 1600 dpi resolution. There will also be an EvoJet Office Pro, which is a multi-functional device with a 20ppm automatic document feeder and a 1200 dpi scanner.

Memjet has also announced an agreement with Toshiba Tec to develop a range of MFPs capable of outputting 60 pages per minute. Toshiba Tec has also said that it will evaluate the Memjet technology for labels and logistics printing.

Memjet has also demonstrated the AstroJet M2 from Astro Machine Corps. This builds on the earlier AstroJet M1, which can print up to 3,600 letter size pages or 9000 envelopes per hour. The M2 is a standalone colour page printer that features a 5,000 capacity sheet feeder.



This is Memjet's standard label print engine, which uses a 220mm single page wide Memjet head, containing all five ink channels. This unit also contains all the electronic controls and the ink channels needed.

Memjet and wide format

The office and label printers use a single head, but for the wide format market Memjet's print engine involves stitching five of the printheads together, giving a single array with a print width of 1067mm and delivering around 3.5 billion drops of ink per second. However, because Memjet uses water-based inks it's only really suitable for indoor applications, though the bulk of the wide format market is for outdoor graphics. Nor is the image quality quite up to the level of the top Epson and Canon wide format machines that are used in photographic and proofing applications.

Nonetheless, Océ has worked with Memjet to develop an entirely new wide format device codenamed Project Velocity. First shown at drupa, this borrowed heavily from Océ's CAD portfolio, but Paul Whitehead, Océ's international business development manager, says that following feedback from the show, it's now more focussed on the graphics market. Whitehead explains: "The graphics market appreciated that even though it used a different input than they were used to it could still output to a sheet and could still produce over 500 A0 sheets per hour."

Velocity uses Memjet's standard wide format configuration, with five heads stitched together in a row, giving a 106cm print width. It has five colour channels, with Océ using the standard CMYKK inkset for now,

but Whitehead says there's no reason not to offer spot colours, or other combinations of colours in the future, depending on market requirements. It can print up to 500 A0 sheets at 1600 x 800 dpi, or half that number at 1600 x 1600 dpi.

Fuji Xerox has also demonstrated a wide format Memjet solution in conjunction with Caldera as it uses a Caldera RIP. It's scheduled to be launched in the Asia Pacific market first by the end of this year. It uses the standard

Océ's Project Velocity was shown as a prototype at drupa, primarily targeting the technical drawing market. But following feedback from the show, Océ is now commercialising it and focussing it on the graphics market.

Memjet wide format print engine, so it's a 42ins wide machine, running at 300mm per second in 1600 x 800 dpi, or 150mm per second at 1600 x 1600 dpi. It's a roll-fed device, primarily targeted at the technical and production graphics markets. It's a four-colour machine, using Memjet's standard dye-based aqueous inks.

Hungarian company Own-X also has a wide format machine, the WideStar 2000, with the standard five-head Memjet engine for a print width of 1067mm. Own-X also has a Memjet roll-fed label device, the Speedstar 3000, which uses a single head with a print width of 220mm. Both this and the WideStar run at 30cm per second with a resolution of 1600 x 1600 dpi in black or 1600 x 800 dpi in colour. There's also an envelope printer, the Pagestar that can produce one A4 page or two envelopes per second.

Xanté was the first wide format OEM to use Memjet heads, showing the Excelagraphix 4200 at Graph Expo last year. It's a sheetfed device, with a manual sheet feeder. It has the same speed and resolution as the other devices.

Commercial presses

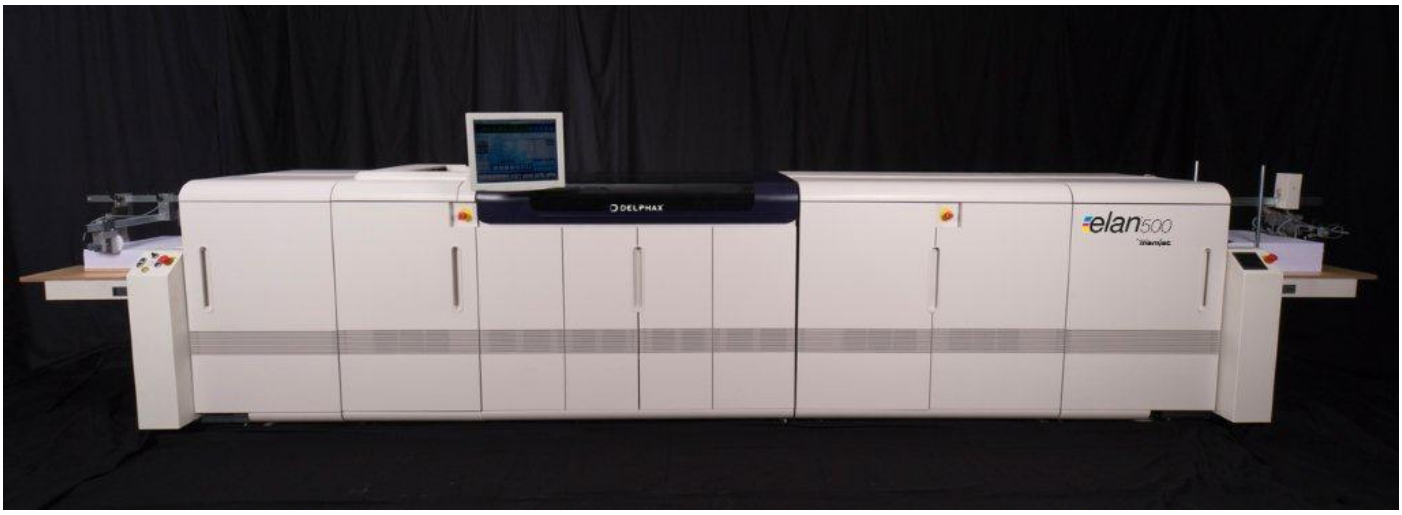
But this year Memjet has started to move into the commercial print market. At this year's drupa, Delphax showed off the Elan, a high speed SRA2 printer aimed firmly at the direct mail, transpromo and book printing markets. The Elan uses 16 of the Memjet heads, using eight heads per side for duplex printing. It takes a maximum sheet size of 450 x 640mm, which it achieves by stitching two of the Memjet heads together and then stacking this arrangement four deep. It can produce up to 500 colour A4 pages at 1600 x 800 dpi or 250 pages at 1600 x 1600 dpi.

Unusually for a Memjet printer, it has six rather than the usual five colours, giving CMYK plus two spot colours. Delphax has also developed a MICR ink for it, which Memjet is currently testing. It includes an optional inline primer and can print to a range of substrates from 60 to 350gsm. It's likely to have an extremely low price, under €500,000, which is going to seriously challenge the entrenched players in this area where the printers typically cost over €1 million.

The Élan should be available early next year, at which point Delphax will go on to develop other Memjet printers, including a B1 version of the cut sheet Élan and a continuous feed printer. Delphax also sells Colordyne's Memjet-based label printer and Colordyne has a reciprocal agreement to sell the Élan.

Colordyne has taken the Memjet printhead a stage further for its latest device, the CDT 1600 PC Sprint, a roll-to-roll narrow web printer. It's a full colour machine with one spot colour. This uses five heads, but with the heads stacked one after the other across a 220mm web width. The internal code name for this configuration is Hammerhead and it makes for a high speed of 48.7 mpm. Delphax could also use this arrangement for its printers. The resolution is 1600 x 1200 dpi.

The most recent company to announce a Memjet powered device is SuperWeb Digital, an American company that



The Delphax Elan is one of the most striking printers shown at drupa – a production class inkjet press targeted at the transactional and direct mail markets, for roughly half the price of most of the competing products.

makes web presses. It has a new DCOMM series that will be aimed at direct mail, label/ flexo and commercial print markets. There are four models, starting with the base DCOMM 100. This prints four colours plus an optional spot on a single side. It runs at a speed of 48.7mpm at 1600 x 1200 dpi and takes an A4 sheet size up to 216 x 355mm.

There's also an A3 version that takes a sheet up to 430 x 558mm and there are duplex versions of both of these. There are various options including an inline coating unit for UV or aqueous coatings and inline hole punching and die cutting. SuperWeb will also fit a Memjet head inline to its existing offset presses for a hybrid solution capable of colour personalisation.

Conclusion

Inevitably, since all the OEMs are using the same basic printhead, all the devices in a given class have similar specs in terms of productivity and resolution. The main differentiator has been that each OEM develops its own media transport system. However, we are now starting to see some further variation as the OEMs play with the number of heads in use, something that Memjet is actively encouraging. Lauer says: "We would like to make less and less print engines and just make the head unit."

Clearly, we are going to see a lot more vendors make use of these heads, if only because they offer a relatively cheap way of developing devices and getting a toe hold on the inkjet market.

– Nessan Cleary

Acrobat XI has arrived!

It feels like it was only a few months ago that we reviewed Acrobat X, but it's actually nearly two years ago. And true to its policy of updating its software roughly every 18 months, Adobe has been busy adding quite a range of features to an already rich application.

Adobe's support for cross media publishing continues in Acrobat XI. The coming Acrobat Reader XI will support smartphones and eReaders, like the Apple iPad.

While Acrobat X presented the user with a radically changed user interface, the look and feel of Acrobat XI stays more or less unchanged this time (probably to the relief to some). We have identified at least three major areas of either new functions, or significant additions or improvements to existing functionality.

The first area is the extended way to edit not only text but also graphics from within Acrobat itself. Previously you had to switch to Illustrator for changes of vector graphics, and to Photoshop for changes of bitmap graphics. Now many smaller edits can be made from within Acrobat XI Pro and Acrobat XI Standard edition.

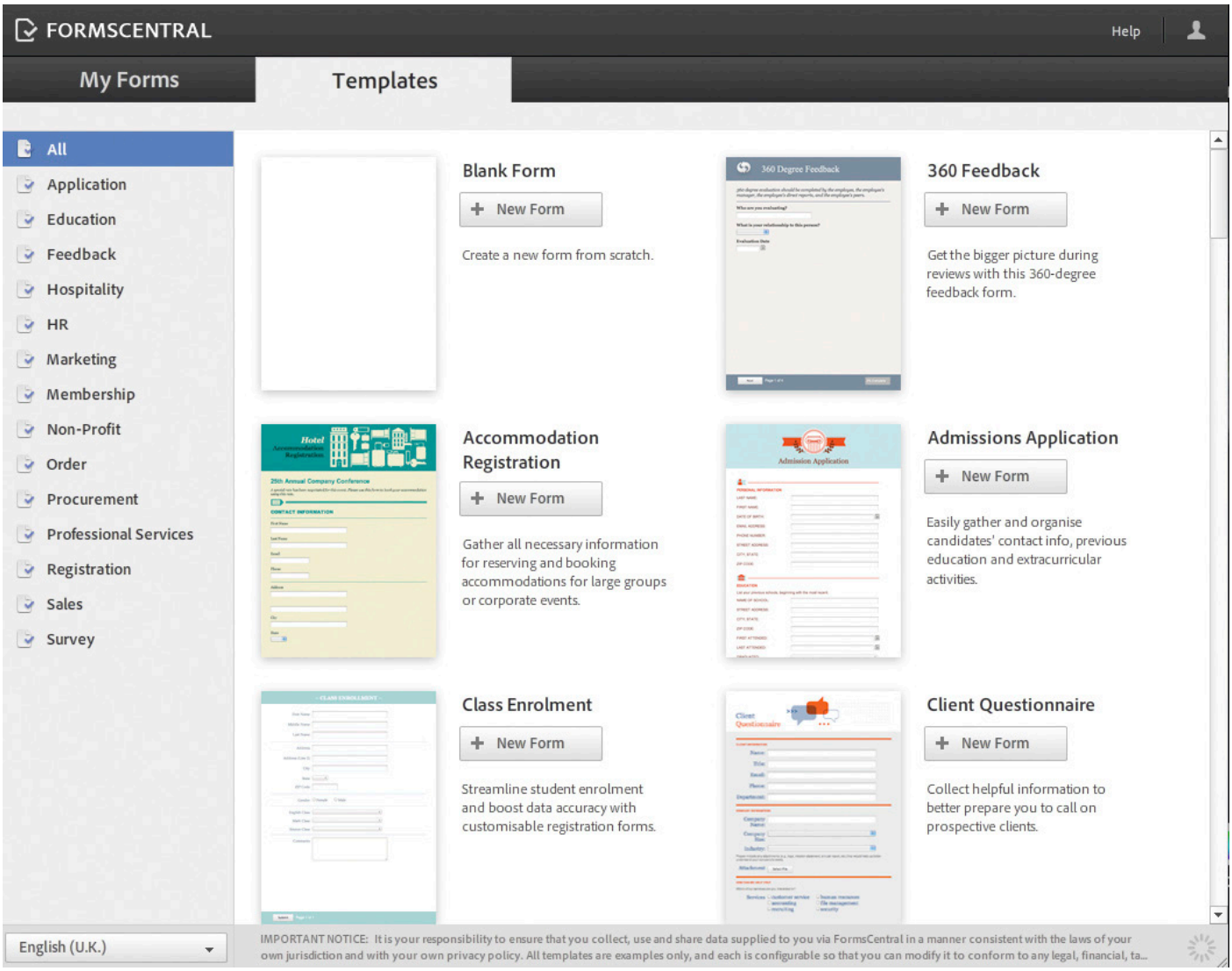
The second area of additions and improvements is related to the Microsoft Office product suite. Acrobat XI can now import documents such as PowerPoint presentations and convert these into PDFs. Single objects can also be merged to be part of a multiple page document, originally composed of different types of files, from different applications. The reverse process – converting PDF documents to Excel, PowerPoint or Word documents – can also be carried out.

The third area of improvements, and perhaps the most extensive, is the integration of Adobe Forms Central in Acrobat Pro. Forms Central is Adobe's solution for creating intelligent forms, meaning that the data can be both easily transported to and from the person filling out the form, and later analysed at the receiving end. We have tried the Forms Central in a limited way and the experience so far is impressive. It's reasonably easy to create a new form or survey and the data inside the forms can be routed into a database for analysis and reporting. There are a lot of templates available to choose from when planning a survey, so even with limited experience in this type of work it's fairly easy to create an electronic form that is fit for purpose.

Linked to the Adobe Forms Central is a new tool called Adobe EchoSign, designed to manage electronic signatures inside forms. Adobe EchoSign supports physically signing a form on a touch screen or smartphone. Possibly this might be the key new feature in Acrobat XI which causes corporate decision makers to embrace this upgrade. Almost every organisation and corporation uses forms of one sort or another in their everyday business. Acrobat XI is Windows 8 ready, so this should fit in with many corporate IT departments.

When this review was written the Acrobat Reader XI app for iPhones and iPads wasn't available, but this was said to be down to Apple's process of testing apps before accepting them to the iTunes store. But the underlying file format in Acrobat XI is the same as for Acrobat X, so in terms of functionality the delay of the apps for iPhones and iPads shouldn't be of too much concern.

Finally Acrobat XI is promised to be faster overall in action, and we must say that this is actually noticeable in everyday use. And it seems to be stable, at least on the



We think that one of the best new features in Acrobat XI is the tight integration with Adobe Forms Central, the solution for managing electronic forms and surveys.

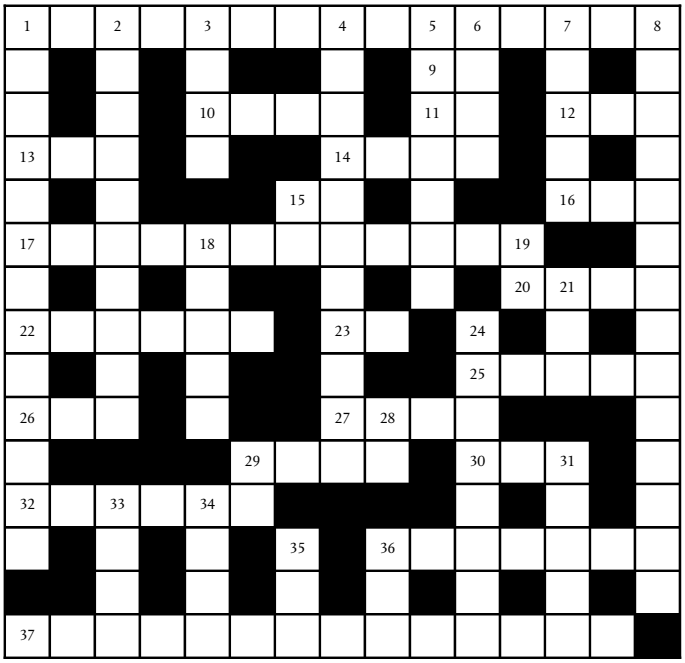
Mac OS platform, with no crashes since installation! It's nearly 20 years since it was first launched, so Acrobat can definitely be regarded as a mature product.

- Paul Lindström

X-word Puzzle

Number 40*

This month's puzzle is not meant to be easy, even though all those short words suggest that it might. See how you go.



Across

1. Prepress shops once offered output services for these. (8, 2, 5)

9. The? Que? (2)

10. Join one of these at your peril. Catering lousy unless borrowed. (4)

11. Territorial Army. (2)

12. To droop. (3)

13. Not pigment. (3)

14. To put into a logical order. (4)

15. 3.14 (2)

16. You can never have enough of it apparently. (3)

17. What eco-warriors must at all times avoid. (12)

20. Register the front to this for colour accuracy. (4)

22. Creator or provocateur in oils, clay, sound, words or whatever? (6)

23. Smaller than an Em. (2)

25. Repeat. (5)

26. Or all? (3)

27. Varnish? Laminate? (4)

29. Required in heatset printing. (4)

30. Enterprise Resource Planning. (3)

32. Straight, correctly aligned. (6)

36. Into this, things disappear. (4, 3)

37. The goal for business, people, planet. (14)

Down

1. Decompostable through natural process. (13)

2. Must be followed to gain access. (5, 5)

3. 2.57cm (4)

4. Bare existence. (11)

5. Probably needed to pursue a new career. (7)

6. A planner used to work to produce one of these. (4)

7. Light amplified etc? (5)

8. Bread and butter for large format digital printers. (4, 6, 4)

15. Public address in Pennsylvannia. (2)

18. Overly inquisitive. (5)

19. Great Britain. (2)

21. Swedish stove much beloved of middle England. A gorgeous accessory. (3)

24. Real stuff needed to perform or produce. (8)

28. Not off. (2)

29. Either? (2)

31. Equipment to place? (5)

33. Delivered fastest online now everywhere showing. (4)

34. Total coverage 400% not good. A really excessive addition. (4)

35. To fix or fasten. (3)

36. A marker. (3)

***Answers in the next issue**