> Ashes to ashes, fun to funky.
> – David Bowie

Dear Reader,

By now you should be aware of our very exciting news. In case you haven't heard, this is the last issue of Spindrift that you will receive as a PDF. The reason for this is not that Spindrift is ending, far from it. There will be no ashes to ashes, but rather a shift, as the delightful Mr Bowie put it so long ago, from fun to funky. We're going for a new and stronger rhythm.

This doesn't mean we no longer take things seriously, but rather that we want to provide you with a better, more flexible information experience. This experience won't be nearly as pretentious as this phrase might suggest. It's pretty simple, Spindrift is breaking free of its PDF walls and henceforth will twist and shout behind a paywall.

Spindrift.click is a subscriber supported journal site that ensures that your content is available to you always. No longer will our readers have to contact us when they forget to download an issue from a dedicated link. The new model allows us to deliver content to you whenever we like. Just think, you won't have to wait for weeks before reading what we think of traumatic events (or not) such as drupa moving to a three year cycle.

What remains is for us to thank you for your continued support and to ask that you let us know, warts and all, what you think of Spindrift. click (**https://www.surveymonkey.com/r/XBYVP9N**). The site will be live later this month, with formal launch on the 7th April. That's six whole days after April Fool's Day, just to be sure we all know this is for real. Fun to funky indeed.

Enjoy!

Laurel, Nessan, Paul and Todd

In This Issue

HIDden treasure

We've been to the Hunkeler Innovation Days, which takes place every two years at Lucerne, Switzerland, just down the road from Hunkeler's base at Wikon. Here, Laurel Brunner looks at some of the front end systems that were driving the digital presses shown at the Hunkeler event.

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Swiss finishing school

Still in Lucerne, Nessan Cleary looks at some of the finishing systems and digital printers that were launched at the show. Naturally, the blue tops of Hunkeler's own modules were liberally sprinkled across the stands but there were also several new inkjet presses with a distinct emphasis on short run book production.

see page 17

Value for money – Epson SureColor P-600

Last year Epson previewed a new photo printer, the SureColor P600, which Paul Lindström has taken for a spin this month. It's an affordable A3+ printer with a nine-colour inkset but just how well does it stand up to our standard battery of tests?

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Regular Features & Special Treats

News Focus

Domino has launched a new monochrome inkjet press, the K630i, which has evolved from the MonoCube that GraphTech developed before being taken over by Domino. It can run at 75m/min or 150m/min with print width options of 333mm, 445mm or 558mm as either simplex or duplex in the same frame. There's a choice of aqueous pigmented ink or a unique high impact UV ink designed for high gloss coated stocks.

Inca has launched a new Onset flatbed printer. The R40LT is aimed at the mid-range market and is designed to be easily upgraded from a relatively basic four colour model to a faster eight colour version. It can produce 265 sqm/hr, equivalent to 40 full-beds sheets/hr. As with the other Onset's, it's distributed by Fujifilm.

Kolbus has acquired the intellectual property rights to produce the Timsons T-Fold finishing technology and will take over the support of the six already installed worldwide. The T-Fold can work with any digital press up to 53 inches wide and will run at up to 300mpm.

Canon has announced the ImagePress C600i, a dry toner printer aimed at corporate print rooms and small print shops. It can run at up to 60 pages per minute and can handle various substrates, including stocks up to 300gsm auto duplex with media sizes up to SRA3. It will be available later this month.

HP has updated its printhead for its Inkjet Web Presses. The High Definition Nozzle Architecture printhead doubles the native print resolution of its current printheads up from 10,560 to 21,120 nozzles, or 2400 nozzles per inch. The new head supports dual drop weight per colour for sharp text, fine lines, accurate skin tones, smooth grey and colour transitions, and enhanced highlight and shadow detail. It will be used on all future HP web presses and existing models can be upgraded.

Heidelberg's figures for the first nine months of this financial year show sales of € 1.552 billion, which is below the previous year's figure of € 1.685 billion mainly due to a slowdown in the Chinese market. Earnings before interest, taxes, depreciation and amortisation, or EDITDA, were €80 million, up from €67 million in the previous year. Heidelberg says that its restructuring is still on course

Langley Holdings has published its figures for the year ending 31 December, 2014. Manroland Sheetfed, the printing press builder acquired in 2012, is the group's largest division in revenue and employee terms and reported a small profit. Piller, the producer of power protection systems for data centres and Claudius Peters, the plant machinery constructor, performed in line with expectations whilst the "other businesses" division, principally Bradman Lake, the packaging machinery specialist, also had a satisfactory year.

Muller Martini has added variable data handling to its SigmaLine book finishing system. Thus, there are three new modules – VariableProduction for data management, VariableImposition, which adds blank pages to the folding scheme, and VariableBundle for smart collating – for the Connex data and process management system so that the same system can now handle both PDF and PDF/VT files.

Hybrid Software has released Packz 2.1. This is a native PDF editor suitable for prepress and packaging applications. The new features include Packz Warp - a non-destructive, deformation solution for making conic

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and in-mould labels, cups, cans and shrink sleeves based on source and destination grids. There's also a new Analyser to check the PDF has the right content and layout.

Callas has launched a new HTML-based PDF program, pdfChip, which can create true colour, high performance and printable PDF documents from HTML, CSS and JavaScript. The need for such a program arises from the sheer amount of content that is now stored in web-based content management systems.

Woodwing has updated its Enterprise multi-channel publishing system to v9.5, which makes it easier to reuse online content in print by automatically applying styles from InDesign templates. The title can be re-written in the style of the print publication, the length of the body text can be adjusted to ensure copy fit, and additional article components and high-resolution images can be added as needed.

Mimaki has developed a new cutting and creasing table for smaller formats up to oversized A2. It comes with tools for creasing and eccentric, tangential and reciprocating cutting. It's meant as a companion for the UJF-6042 table top UV printer, which together can be used for short run production and prototyping of packaging.

Blackman & White has developed a new 3.2m long cutting table, the Versa-Tech. It can be configured with a single conveyorised or flatbed heavy-duty table. There's a choice of tools, including crease, kiss cut, router, drag knife, oscillating knife and driven rotary knife. It allows for dual driven tooling with interchangeable 'drop-in' tools, with both an oscillating head and driven wheel to quickly change beween different cutting types.

Sappi has opened a new paper lab at its Alfeld mill to help expand its speciality papers division. Its state-of-the-art technology and the broader weight measuring range (from 18 to 400 g/m^2) is world-class in the quality testing of speciality papers and carton boards.

Spartanics has developed a new laser cutting module, the X-350, which can be integrated with SMAG Graphique's E-Cut and Digital Galaxie Semi-rotary Converting

Solutions. Xeikon will demonstrate it at its Café event, 10-12th March, working with its X-800 digital front end to produce die-cut files based on the imposed labels complete with name and barcode.

Canon has launched two new wide format printers, the Océ ColorWave 500 dedicated to workgroups and the Océ ColorWave 700, designed for wider graphic arts applications. These both use the latest version of the Océ CrystalPoint technology. These printers are mainly aimed at office and CAD applications but the image quality is good enough for some graphics uses.

HP has launched a mobile app for remote monitoring of the Latex 310, 330 and 360 printers, including job information, print status and alerts. It's a free download from Google Play and the Apple App store. A version of the app designed for tablets will be available in mid-2015.

Color-Logic now supports flexible packaging films for its metallic special effects. Director of Sales and Marketing Mark Geeves explained: "Designs for printing on metalized films, for example, require complex white ink masks which can be generated with just a click of the mouse with Color-Logic software." The software also allows metallic silver inks to be combined with CMYK inks.

Quark has already announced that it will support PDF/X-4 output in its upcoming QuarkXpress 2015. But now Callas has said that Quark will be using its pdfToolbox to certify that the PDF output meets ISO standards, the same technology used in Adobe Acrobat.

Xeikon has opened its first Technology Center in Malaysia to cover the Asia Pacific region. The 450 sqm facility will mainly operate as a demo centre, with Xeikon demonstrating its 3050-series entry level press, but will also allow for testing and benchmarking. Wim Maes, CEO of Xeikon, explained: "Xeikon is expanding fast in this region and we find it very important to build and foster close bonds with our customers there."

K2 Europe has developed several new wide format window films. There's a micro-perforated indoor film for one-way vision applications. It's easily repositioned

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but doesn't use glue, making it a reasonably eco-friendly solution. There's also a range of window decoration films under the WF brand that includes frost and line effects. They use a polymer glue that K2 says can be removed without damaging the glass.

D3D Innovations has designed the FilaFab Plastic Extruder, which can take fresh or recycled plastic and turn it into a high quality filament that can be used with most FFF 3D printers. It can recycle plastics from bottles and cartons to containers and used enclosures and even old 3D prints. There are two models – the Pro 100 and the larger Pro 350 – both of which fit on a desktop.

News Analysis

It's drupa but not as we know it

When Messe Düsseldorf announced that they were moving drupa to a three year cycle instead of holding it every four years, we were decidedly befuddled. Didn't they back away from this idea a couple of years ago, when exhibitors revolted? So we asked around the industry to see what people think about the move and unsurprisingly found two camps.

Those positive about the change are not exhibitors. Exhibitors and potential exhibitors are not positive at all, particularly in the face of falling visitor numbers. At least that is the case amongst those we asked, which included a number of exhibiting companies on the drupa committee. Either way, Messe Düsseldorf believes that this change will benefit exhibitors and visitors alike and that it will reinforce drupa's role as the industry's only truly global show.

The biggest beneficiary of this change is obviously Messe Düsseldorf which will be able to sell its floor space and associated revenue streams more frequently. It will also make it easier to erode international participation in shows such as IGAS in Japan, Print in the US and of course the ailing IPEX in the UK.

However, Claus Bolza-Schünemann, chairman of the drupa advisory board and president of KBA, was spot on when he said that the "print process chain has changed radically because of the Internet and digital technologies". Innovation in digital technologies really does justify a more frequent outing for new graphic arts developments. And those outings can be done quite well online.

That those showings and technology previews should take place at drupa is, of course, in the exhibition company's interests, hence the move to a three year cycle. It is unavoidable however, that a more frequent drupa will have a different flavour which may compromise its significance and overall gravitas. The show will have to be less costly for participants, if their loyalty is to be retained perhaps through shorter duration of, say one week. Exhibitors are likely to opt for smaller stands and lower budgets on site. According to our informal poll such dilution is a very real possibility and this could certainly undermine the show's specialness.

Make it special

But specialness comes as much from the visitors and the atmosphere they create as it does from excessive and expensive wining, dining and leggy dancing girls. A great many visitors we've spoken to welcome a more frequent drupa because it gives them more flexibility to see the latest and greatest all in one place. Smaller stands and shorter duration suits many people, especially as the industry ages. Feet and livers can no longer take a full drupa stint in the way they once could, but still it doesn't take four years to recover!

Money, money, money

Messe Düsseldorf has commercial justifications for this move as well. It eases the schedule for drupa and Interpack which were set to occur in the same year in 2020. It also sees off threats from old and new competitors. With IPEX on its knees and WAN-Ifra struggling to gain traction the threat of the old is less serious. However, InPrint was a resounding success at its first outing and is warmly anticipated for this autumn, and the FESPA shows provide a very real and present threat to drupa. They deliver growing audiences and content-driven experiences for visitors, both locally in peoples' home markets, and at international events that bring in visitors from all over the world, especially emerging markets.

These growing shows offer new takes on the printing industry, from functional and on-demand packaging through to 3D printing sectors that drupa has previously failed to address in a meaningful way. There is also a move in the industry for smaller more local shows that may threaten drupa's hegemony, but which printers and publishers may prefer. All of these various events are potential drains on supplier budgets however, none is as serious as the move towards homegrown hosted events. From innovative approaches to the open house such as the Xeikon Café and Agfa's Red Carpet Events, through to full on trade shows such as Hunkeler Innovation Days, HP

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Indigo's DScoop and EFI Connect, suppliers have plenty of options for their budgets other than spending them with Messe Düsseldorf.

We can work it out

That said, we are confident that this change is in line with what the industry needs. Even though Messe Düsseldorf will have to manage the process of transition very carefully, it is in the interests of the industry to have the show more frequently. As with most things little and often is much healthier than infrequent binges. So drupa is evolving with the industry to meet the needs of new participants in the graphic arts market.

Its aim is to maintain its significance and become the destination space for all players in the graphic arts supply chain. This includes everyone from design and origination, through prepress, to print and alternative delivery models and communications channels including digital media. All of it can be integrated into a fluid and fully automated content delivery model that content receivers can customise according to their channel preferences and the content type.

This integrated content supply chain is the future for society and business and requires networking environments which can show companies and consumers how to achieve successful implementations of the technologies available. If Messe Düsseldorf can help to make this easier in a way that is cost effective and a positive experience for all players, few will remember that drupa was ever anything other than a triannual or even a biannual event. But that is a big if, and a happy ending is by no means assured.

Smooth Operater

Erwin Widmer, Ugra

To qualify as a Smooth Operator in our view, you need to have a proven track record of leading a print or publishing company, or as a manufacturer of graphic art products, through challenges and changes into profit and growth.

This is certainly true for Erwin Widmer, who joined Ugra, the Swiss graphic arts research centre, in 1990 when much of the funding was guaranteed by the government. Despite having established itself as an innovative and influential

Deputy managing director at Ugra, Erwin Widmer, is awarded the 2015 TAGA Michael H. Bruno Award.

force within the international graphic arts community, by 2003 Ugra was told to "stand on it's own legs", and provide it's own funding and revenues.

This is when Widmer took over as managing director, serving for ten years, between 2003 to 2013. During this time Ugra developed a series of digital tools, helping printers to ensure print quality, reduce waste, and improve the print production workflow. Ugra had already been involved in training and teaching, but now it introduced a formal certification, a way for printers to prove that they actually understood and could apply international standards, such as ISO 12647-2 for offset litho printing.

Erwin Widmer started his career within the graphic arts industry as a repro and photography professional, but later studied at esig+, the Technical Graphic Arts School in Lausanne, where he got his B.Sc in 1979. He then worked for various packaging printing companies as well as equipment manufacturers, including Gallus, until starting as project manager at Ugra in 1990.

Ugra had already provided tools for quality assurance, like the analogue plate control wedge, but now the need was for digital validation tools. So the Media Wedge was developed. It is used today in almost every proofing system in the world, and co-branded with Fogra, the German research institute, which needed such a tool but didn't have one.

Another validation tool developed by Ugra is UDACT (Ugra Display Analysis and Certification Tool), the monitor validation tool which readers of Spindrift will have seen used regularly in our test of high end proofing monitors.

We asked Widmer what technology, or tool, he was most proud of, or thought was most rewarding to develop. He replied: "Perhaps not the most well-known product from us, but really an interesting research project that lead the way for similar solutions, was our FM-screening technology Velvet Screen. It was started by the initiative from my former boss, the then managing director of Ugra, Kurt Schlaepfer, but it was my responsibility to make it into a working product. The challenge was to use the then not so very powerful Apple Macintosh, but it did work, and we had some success with that product."

In parallel with his work at Ugra, Widmer has also been very active in the work of ISO standards, in the TC 130 technical committee. This is where we at Digital Dots have

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had the pleasure to cooperate with Mr Widmer – always helpful and clearly passionate about teaching and training staff within the graphic arts community and how to apply best practices and standards. This has resulted in a number of articles and conference papers, not least for the TAGA conferences (Technical Association of the Graphic Arts) – another forum where Widmer has been very active. For this work he has recently been awarded the prestigious 2015 TAGA Michael H. Bruno Award.

At the moment, Erwin Widmer serves as the deputy managing director, having early on decided to hand over to younger faces after 10 years as managing director. We think it's yet another example of good leadership, to plan and help with the change of management. Widmer will support the new managing director at Ugra, Mathias Schunke, before finally retiring later this year.

We asked Widmer what he would have pursued in the next ten years, if he were still working within the graphic arts industry?

"I think I would continue with training and education in colour and quality management – there is still a big need for this. Correctly applied, the tools and standards we have in place today should shorten make-readies, reduce waste, enhance the print quality – and so enable printers and publishers to be profitable," says Mr Widmer.

We subscribe to that ambition, and congratulate Erwin for the TAGA Award – much deserved!

Did You Know?

XBRL

Printers that want to make the transition to become a provider of information and communications technology will have to integrate in a much more intimate way with clients than ever before. In order to be able to offer seamless and efficient database solutions it's important to know of,

and be savvy in, standard formats for data exchange. One such standard for business information is XBRL (eXtensible Business Reporting Language).

As the term eXtensible indicates, it makes use of XML, but version 1 was in fact "just" a DTD (Document Type Definition), based on SGML. It wasn't until version 2 that the standard made the transfer to XML, and since then it has been updated to version 2.1.

In typical usage XBRL consists of an XBRL 'instance', primarily containing the business facts. This is complimented by 'taxonomies' (called a Discoverable Taxonomy Set, or DTS), which defines the metadata about these facts.

Despite some reports on lack of accuracy when using XBRL, including a study from the North Carolina State University in 2009, several US states have started to use, and even to require, financial reporting to be done in XBRL. Among those are the Securities and Exchange Commission (SEC) in the US, HM Revenue & Customs (HMRC) in the UK, Companies House in Singapore and the Ministry of Corporate Affairs (MCA) in India.

So it would seem likely that digital printers that offer transactional print would benefit from embracing, and learning to efficiently manage, the XBRL format.

Picture This

Xerox has announced its latest project, the Rialto 900. This comes complete with shops either side and connects the main thoroughfare to the Rialto market. However, operators will have to beware of the many street hawkers and tourists with selfie sticks, which could prove a hazard to efficient production. But the Rialto does provide excellent views of the Grand Canal and is handy for catching a gondola. It is, of course, named after the famous Venician printing device of the same name.

Driftwood

HP has recently announced a new printhead for its T-series Inkjet Web Presses, an iteration of the technology used in HP's PageWide head which we covered last June.

The new head, the High Definition Nozzle Architecture (HDNA) is a version of the 12mm A51 head introduced in 2012 for office applications and to provide the T410 with more speed. It was launched in the PageWide head last year and shown in a prototype machine, a 1016mm wide colour printer for B0 and B1 output configured with a superfast DFE to make it the fastest wide format machine in its class.

Now as the HDNA it has 2400 nozzles per inch per colour on a single colour printhead for 10560 nozzles altogether. There are two independent ink supplies and two lines of nozzles, so 21,120 nozzles in total. They have a dual drop weight per colour, high and low, with specifics to be determined but the low one will be "significantly less" according to Dave Murphy Worldwide Director of Marketing & Business Development for the inkjet business. The high and low weight drops are interleaved so it is possible to place up to eight times the number of pixels or dots on the page which provides substantial redundancy.

This latest version has improvements to the resistors and driving electronics for the nozzles, which are now much smaller. There are six possible combinations of greyscale so halftoning and highlights can be more subtle, although this doesn't currently improve black density. However, the samples we saw looked reasonable. The A51 head also meant a 33% speed increase on the T410 which rose to and is still 244 mpm in production mode and 122 mpm in quality mode printing with only the high drop weight. The press will now print 6,982 pages per minute versus 5,213 when the T410 was upgraded in 2012. HP is incorporating the latest version of the A51 head into all T-Series presses and current customers can upgrade.

This all signals HP's intention to go for a wider range of commercial applications, taking them into Indigo territory. The announcement of Oniya Shapira's installation of two HPT230 colour presses in Israel may be a harbinger of things to come which will surely not please HP Indigo: there are two Indigo W7250s installed at the site producing variable data transactional work. Indigo still has the edge in that it prints seven colours, metallics and can handle heavier stocks so it will take a while before the inkjet technology really encroaches but encroach it will.

HIDden Treasure

You'll be well aware that the Hunkeler Innovation Days (HID) event is rather special. The organisers are one of a growing cohort who don't run exhibitions to make money from space sales, giving the whole event a unique and refreshing credibility. HID is a showcase run for the benefit of customers and prospects, which ultimately buy stuff from the Hunkeler community.

Since the show is not run for the benefit of the hall owners there is no pressure for stands to look glamorous. So where else would you expect to see a cardboard cutout of a narrow format digital press because stand space is so constrained! The HID community grows with each event with this year's show being larger than ever, hosting over 6,000 visitors. Clearly it's an effective model.

We came to Lucerne looking for insights into how the inkjet printing business was doing and for answers to some nagging questions. The most pressing (if you'll forgive the pun) is whether or not the graphic arts industry needs quite so very many choices, especially in this sector. The range of machines available is enormous and, despite acquisitions such as Xerox's of Impika and Canon's of Océ, it seems to keep growing.

We are covering hardware in a separate story but one reason for the proliferation of machines is the almost constant pressure on developers to come up with innovative printhead configurations to take advantage of a burgeoning array of new head technologies, substrates and inks. Heads are moving towards smaller and smaller drop sizes creating interesting possibilities for developers, such as HP with its High Definition Nozzle Architecture, Xerox/Impika's Rialto 900, which has two lines of jets for drops of two different sizes and Ricoh's use of two 600dpi heads offset by half a nozzle for 1200 dpi output.

This frenzy of innovation is in part due to the fact that inkjet printing is still in its infancy compared to xerography. However, the frenzy is also due to an explosion in print applications, largely driven by low cost origination and prepress techniques, the convenience of web fulfillment, big data and regulatory regimes that want documented proof of all kinds.

Applications growth, AFP/IPDS & PDF/VT

For printers there are plenty of technology and applications opportunities, but also plenty of scope for wrong decisions. With ever tighter production expectations, the demands on variable data and colour quality control tools are rising, especially in transactional applications that use sensitive personal content and are produced in massive volumes.

Since last we looked, AFP/IPDS has substantially improved its colour management and PDF/VT has become more efficient to process. Both can colour manage individual elements on the page however, AFP/IPDS only does so in the datastream, not on the engine so data files have to be colour managed before they are sent for output. The subtlety with which colour can be controlled in such a workflow depends on the composition software's strength, and all of this obviously influences workflow set up and applications. Developers have some innovative ways of getting around the limitations of both formats so we have a rich mix of options for high volume variable data production.

AFP/IPDS still dominates the transactional space and companies active in this sector such as Ricoh and Océ still find most customers want an AFP/IPDS workflow, although they support PDF/VT. This is the expectation for Ricoh's new R600 which drives the VC60000.

Approaches to workflow

The R600 is an online server that can access any VC60000 anywhere so it can drive multiple output sites and devices from a single location via their IP addresses. Access is log-in controlled and the organisation of the user interface is operator-specific, including user defined short cuts. Functionality is organised into Operations, Jobs, Configuration and Maintainence "pods" or tabs with tasks organised according to user preference. So Operations shows the status of inks, the temperature of rollers and blowers and so on. The Jobs tab stores active, stored and

Ricoh had one of the busiest stands at the show, with a twin-engined V60000 inkjet press against the back wall. Photo © Nessan Cleary

invalid jobs, presenting real time low res views of PDFs in production.

Ricoh supports JDF/JMF so imposition data can come from an MIS while virtual printer support allows the use of hot folders to do job set-ups in advance. Operators can add page furniture such as watermarks, headers and footers. PDF, PDF/VT and PostScript (still used a lot in Asia Pacific) are supplied as composed files. According to Nick Fiore, Ricoh's senior product manager for continuous feed inkjet, "most customers deliver fully imposed PDFs as a single PDF file" having composed them upstream.

This is not the case with AFP/IPDS workflows because the data stream stores and caches all common elements and then adds the variable data on the fly as the page is built and printed. To make PDF/VT processing more efficient Ricoh analyses a PDF/VT imposition to track stored content elements so that they are only processed once. Fujifilm takes the same approach in XMF. Nick Fiore says

there is no preflight checking: "We leave that up to the customer … they do that before files get to the engine".

This can make colour management tricky however, Ricoh's customers generally do this within the data stream. On press Ricoh has additional colour controls for front to back colour registration, plus ICC 4 profile support. The DFE is based on Adobe APPE3 running on IBM Blade servers. Ricoh ships six as standard but can go up to 14 if needed. The new DFE provides more bandwidth than the Infoprint 5000 in anticipation of the very large complex files customers will provide. Profiling tools are supplied with every machine shipped. Operators can also run checks for uniformity and alignment of the 1200 dpi drop on demand piezo printheads which have a three year lifespan. Such checks are done for each new paper.

Screen is using the same technology in its Truepress 520HD series but Ricoh is now taking the lead in development:

according to Nick Fiore Ricoh "did everything in the 60000 bar the paper transport [which] Screen [provided]". The crucial difference is in the two companies' DFEs and the fact that Screen is not printing on offset coated papers and so does not provide the coating station in its press.

Colour demons

The most important distinguishing factor for Screen is its Equios workflow system. Equios has evolved over many years with impressive colour management and automation functionalities and is designed to handle all prepress, not just impostion and RIP'ing. The client/server architecture can be set up to drive any kind of workflow, from computer-to-plate production through to variable data digital print, and operates online. Files are fully preflight checked and rejected if they fail, and Equios has all the tools one would expect of a fully featured prepress workflow system.

Colour management is especially strong with powerful tools for substrate profiling and conversion of a PDF's individual elements on the page to different colour spaces. This means that pages and elements in a PDF can be optimised for different conversion methods depending on their content. There are also colour recipes that automatically handle the repro associated with a particular type of image. Specific colour conversions, such as for images of glass and china or different types of landscapes or embedded low res images are automatically fixed for output. Colour adjustments can also be made to production ready PDFs to edit individual image CMYK percentages using tone curves specific to sampled colours.

Equios supports PDF in all its flavours, but not AFP/IPDS at this stage. This is a minor limitation for its sector which is production colour printing of educational materials, books and manuals in the commercial market, where the company has a strong position. More serious is the need for some commercial printers to be able to set up multiple workflows using the same log-on so that an operator can manage output to plate or digital press. This is something Screen is working to fix.

Screen recently added SmartJobGate to its already impressive web interface for Equios. SmartJobGate is a single hot folder that uses naming conventions to instruct workflow for different impositions for different job types. Adding the word "newspaper" or "book" to the job name automatically assigns the job to a preconfigured imposition. If parts of the file are missing the software halts the job and requests an alternative workflow to be defined, so that the correct imposition can be initiated.

Stars in our eyes

Our star pick of the workflow systems shown at Hunkeler is Fujifilm XMF which implements Adobe Mercury, a technology specifically designed to support transactional and commercial print RIP requirements. This is basically a sophisticated load balancing tool for APPE 3. Mercury underlies XMF which drives all Fujifilm output devices

> ### Mercury underlies XMF which drives all Fujifilm output devices with the exception of the company's wide format digital printers.

with the exception of the company's wide format digital printers. For wide format digital printing, Fujifilm works with Caldera and Colorgate to integrate XMF with their RIPs, sending imposed PDF and JDF data. XMF has some efficiency tools for wide format digital printing, such as hot folders for XY positioning on a flatbed device. This generally has to be done manually, but XMF can automate the process, borrowing from Fujifilm's CtP knowledge.

For wide format output XMF outputs to the RIP preflighted and stabilised PDFs, sending vector-based PDFs that are smaller and so less compute-intense than rasterised PDFs, but misses certain vital tools for wide format digital print workflows, such as nesting, tiling, adding eyelet marks. There are considerable opportunities for XMF in the wide format sector, which with rare exceptions such as GMG Production Suite, tends more to single RIP functionality than client server based workflow management. But we digress.

Adobe's Mercury architecture provides multiple processors for driving multiple output engines

The show takes place at Messe Luzern, which has expanded since the last Hunkeler event two years ago.

simultaneously, optimising processes to take advantage of available resources. It can harness multiple APPEs within a single architecture so the operator interacts with a Mercury controller, which in turn assigns tasks to a number of 'worker' RIPs. This gives XMF considerable power however, like Screen with Equios, the system uses artificial intelligence to create PDF/VT impositions. Instead of creating a single massive PDF of PDF/VT jobs, XMF creates impositions on the fly to process variable data PDFs quickly and without creating processing bottlenecks. XMF does the imposition for the first few variable data PDFs and the system learns how to impose the rest of the files to create a single form.

The technology was developed specifically for the Jetpress W and auto detects reusable items. It analyses the first couple of pages in a PDF/VT variable data job using available metadata, so the more the better since this informs the intelligence for the processing. It then looks for repeating patterns to identify what's reusable, focusing instead on what's different. This makes for much

faster processing. Like Screen, Fujifilm is more active in the commercial than the transactional market so XMF has no support for AFP/IPDS. Fujifilm is seeing a slight increase in PDF/VT uptake.

XMF can combine digital and offset output in a single job so book pages and their covers, for instance, can be managed for different output paths. Workflows can combine proofing and remote submissions for cross media output, say to a digital press and to computer to plate.

Remotely going

XMF Remote has been totally rewritten in HTML5 instead of Java and has a new interface and snazzy new logo. The user interface can be customised for every customer from simple to complex, depending on user skills and permissions: no greyed out options to confuse or tempt them, they just aren't there. The only buttons a user sees are the ones they can use, so XMF Remote's functionality is according to user ability.

▶

Job headers, instructed as ready for production in XMF, request users to upload their PDFs into the printer's XMF system via XMF Remote. They are preflight checked and processed, presenting the customer with a print ready proof for approval. Bad files are rejected or not depending on set up; multiple approvals are supported and can be job specific. If a job is split across engines there is no need to wait for all approvals before starting to print.

Users can comment on proof PDFs with comments notified to the uploader(s) via email. Before and after corrected PDFs can be viewed on a single screen with changes highlighted. The latest version adds XMF Remote Express for casual customers for whom a printer might not want to bother with the set-ups required for regular users. Express is based on a template model and customers are notified to upload their new job with a link to the job in XMF rather than a formal log-in. There are also explanations of button functions in the user interface. Fujifilm is providing a three, six, or 12 month subscription service for XMF Remote and XMF Remote Express.

We had hoped to also get a look at Kodak's Prinergy but rather oddly it was not at the show. Prinergy feeds files to the Prosper DFE, which like the Ricoh R600 is basically a powerful RIP that does some workflow tasks, such as imposition. Colour management is either embedded upstream in the workflow or provided on the DFE as part of basic colour adjustments for the output. The Prosper DFE can create virtual printers for specific impositions, for on the fly imposing of PDF/VT pages. But as with the R600, variable data is mostly expected to be handled by the upstream workflow. Kodak supports both PDF/VT and AFP as options in the same DFE which runs on an APPE3 core. Each RIP is configured with 2TB of disk space to accommodate massive PDFs, however the DFE is only RIP'ing static data once.

We came to Hunkeler wondering if there was a market need for so many technologies, and we are still not sure of the answer. It is clear that printers and publishers have some amazing possibilities for realising their application ideas. What's not clear is if there are enough of them to support so many choices. We expect to see consolidation of product lines in hardware and more investment into

front end systems, since this is where the money is for content owners, if not for manufacturers. There is no doubt that output technology can do what we want. What's needed now is front ends that provide integrated quality control both in the workflow and across media, especially for web-driven output paths.

– Laurel Brunner
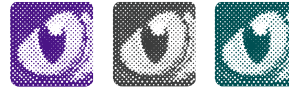
Swiss finishing school

The Hunkeler Innovation Days started off as a showcase for Hunkeler's own finishing products. But the event has grown to be much more than that, mainly through Hunkeler's pragmatic realisation that it needed to show how its products could fit into a production line alongside other vendors' products. After all, if you're in the market for a winder/unwinder set or a new folder then the chances are that you might also need a new printer or an inserter, or at the very least to be reassured that these products can all work together.

The result is a very practical show, a useful platform for Hunkeler to demonstrate its latest ideas from early concepts through to finished products, hard at work

Phillipp Fritschi, marketing director for Hunkeler. Photo © Nessan Cleary

as part of a production line. The event has grown to include printing presses and even finishing kit from other manufacturers. But it has remained true to its roots as a sales event and still mainly attracts visitors that are actively looking to invest in the products on show. Thus Mark Stephenson, Fujifilm's product manager for digital solutions, commented: "The people we have seen here are quite serious and have a business model in mind."

As a result many printer vendors use the event to launch new digital presses, which in turn has helped expand the reach and popularity of the Hunkeler Innovation Days.

Not surprisingly, Hunkeler's own kit was well represented across all the stands, easily distinguished by its distinctive transparent blue covers. The company continues to develop modules for its high speed POPP8 series. Thus Hunkeler's main product launch was the DP8 module for punching and perforating. This is capable of up to three cross perforations and up to eight longitudinal perforations and also includes a punching tool. It's customisable so that customers can buy a basic version and then add further tools up to the full specification.

It can handle variable data jobs. As with most of the Hunkeler kit, it relies on a barcode printed on the sheet, which the device reads to choose the correct perforation and punching pattern. It can handle two independent web lanes and there's a 22ins version due to be released later this summer.

Hunkeler also showed off its HL6 laser cutter, which we first encountered as a prototype at the last drupa show. This is a highly impressive device, capable of cutting intricate shapes, including signatures, as well as basic perforations. It's suitable for direct mail and coupons as well as security applications. It can run at up to 150mpm, but needs to be configured with two lasers for that speed.

Hunkeler also demonstrated its solution for producing book blocks, based around a PF7 double plow folder. This can handle paper webs up to 760mm to produce 4-, 6- or 8-page signatures. It runs at up to 200mpm and can switch dynamically between block sizes. Hunkeler has added an extra glue station to the inner fold so that the block is a

uniform shape with no need for further gluing once the web is split into pages.

Müller Martini launched its new Vareo Perfect Binder. This is a three clamp design but each of the clamps is driven independently by its own servo motor. As a result, the Vareo gains both the high output speed associated with chain-driven devices and the improved binding quality that comes from a discontinous drive. Since the clamps are independent of each other, the Vareo allows for optimal overtravel speeds or longer cover nipping times. It can produce up to 1,350 cycles per hour but is also cost-effective for very short runs so that Müller Martini is positioning it as a cross over device for conventional printers moving into digital printing.

Meccanotecnica used the event to show off its new Universe book finishing line. The main element is the Universe Sewing unit, an automated book sewing machine which can take both offset signatures and digital flat sheets. It's designed to work as part of the Universe Inline, a modular system with separate units to apply glue and liners and feed in soft covers that can switch automatically between books of different thicknesses.

New printers

As we've noted, the innovation days event usually includes the launch of several new printers and this year was no exception. Thus Xerox unveiled its new inkjet device, the Rialto 900. This is the first fruit of Xerox's acquisition of the French manufacturer Impika, and also marks the end of the Impika name since it will be sold as a Xerox machine. The printer itself was first seen on the Impika stand at the last drupa show as a concept called Genesis. Since then its gained a new water-based high density pigment ink and a Xerox Freeflow front end.

It's been designed as a rollfed machine and takes a 250mm wide paper web. However, it was shown with an inline sheet cutter and stacker unit and Xerox says that it is working on developing further finishing options. Paul Morgavi, chief operating officer for Xerox's inkjet division, says that this approach means that the printing and finishing can be controlled from the same touch screen, cutting down on the overall running costs of the machine.

Canon brought its new ColorStream 3000Z to the show. This is a compact version of the 3000 series that was originally developed for the Asian market, where space is often at a premium but Canon is now offering it worldwide to satisfy customer demand. The first one to be installed outside Japan is going to MetroMail in the UK for volume direct mail printing for financial services and mail order companies. The smaller size is mainly due to a clever re-arrangment of the maintenance area, with the ink capping and cleaning station now sitting above the imaging area rather than behind it.

Canon Océ also sees new opportunities in sheetfed. It announced the Varioprint i300 which prints 300 A4s per minute up to B3 on uncoated, offset coated and inkjet

Xeikon used the show to launch this 9800 printer, which uses the new QA-CD toner.

stocks. It is continuous feed's "flexible little brother" and a "white paper solution". It was recently installed at T.Systems in Germany to support growing range of cutsheet applications required by their customers.

Canon Océ also announced the ImageStream 2400, a smaller 516mm version of the existing 762mm wide ImageStream 3500. According to Canon 95% of the market wants 516mm wide presses. The 2400 runs at 160 metres per minute to image 2154 A4 pages per minute. The ImageStreams can print to offset papers, which according to Canon, is more cost effective than inkjet optimised papers.

Xeikon also launched a new printer, the Xeikon 9800, which replaces the current 8800 press. Xeikon has

developed a new imaging engine, and a QA-CD toner, which togther deliver resolution of 1200 x 3600 dpi with variable dot density for high image quality. It can run at 21.5mpm and print on a wide range of untreated substrates ranging from 40gsm to 300gsm.

Xeikon also announced a new Leaflet Production Suite, which is targeted at the markets for high-quality pharmaceutical and agro-chemical leaflets as well as for instruction leaflets used in general retail markets. Xeikon claims that its ability to print very fine text at 1200dpi, including microtext and other anti-counterfeiting features will appeal to these markets.

Domino announced a new press, the K630i, though this is really the MonoCube, developed by the Swiss manufacturer Graph-Tech, which Domino acquired back in 2012. There are two MonoCubes in Europe and two in the US, with Domino having made steady improvements to these over the years so that the new K630i is the culmination of this process. Product manager Bryan Palphreyman says that one of the big changes is moving most of the electronics to a separate control station so that the actual printer unit is very compact.

Domino has taken a fairly flexible approach so that the printer can be configured with a web width of 333mm, 445mm or 558mm, for simplex or duplex printing from within the same engine, and with speeds of 75 or 150mpm. There's a choice of ink, from a water-based pigmented ink to a UV ink that's been designed for high gloss coated stocks. Domino also supplies its own Editor front end, which includes support for PDF, and AFP/IPDS data formats.

Staying with the monochrome theme, Kodak has modified its Prosper 1000 monochrome printer to increase its maximum speed from 200mpm to 300mpm. Will Mansfield, worldwide director of marketing for Kodak's inkjet solutions, says that Kodak has modified the transport system and the front end to accommodate the faster speed, but without having to change the writing system or inks. He explains: "We have created a tight web tension where before we had a slack web tension." However, the image quality drops to 133lpi, from the 150-175lpi that the Prosper can produce at speeds up to

200mpm. Kodak calls this the Prosper 1000 Plus, with the new speed bringing it in line with the Prosper 6000 colour machines.

This was book ended by a Hunkeler UW8/RW8 unwinder/rewinder from the POPP8 series – one of the few systems capable of running at the Prosper's new speed.

Kodak has also developed a new offline coating solution to treat papers and render them usable for inkjet printing.
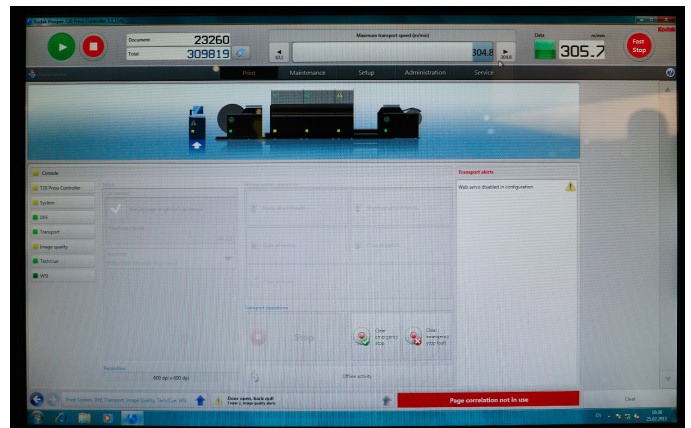

The top right hand of this screen from Kodak's 700 Print Manager front end shows that the Prosper 1000 actually runs at 305.7mpm. Photo ©Nessan Cleary

It's suitable for use with commercially-available regular coated, uncoated and glossy papers between 45 gsm-300 gsm.

The show also provided a useful opportunity to see both the Ricoh VC60000 and Screen Truepress Jet 520HD running. These are essentially the same device, built by Screen in conjunction with Ricoh, which also supplies the printheads. The main difference between the two is the controller, which we've covered in more detail in the HIDden Treasures story on pages 12-14.

But there are also some differences in the hardware. Thus Ricoh has opted to use an inline coater and at the show was printing to offset stocks. Ricoh also moves the head array from side to side to cope with small movements of the paper web while running at higher speeds. Screen has instead opted to map between different print nozzles to deal with this issue, which is slightly less precise but is mechanically simpler. Regardless, both versions produced surprisingly good image quality across a range of different
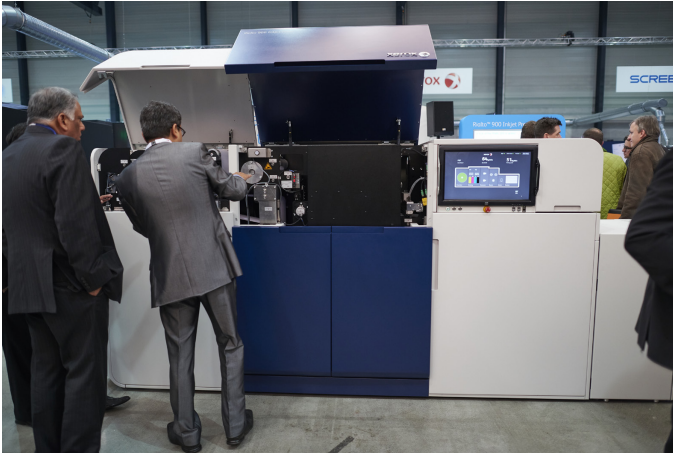
Xerox launched this Rialto 900 printer, building on the Genesis concept that Impika showed at the last drupa. in 2012

paper types and for different applications including books and direct mail.

Many printer vendors are starting to realise the need for this sort of flexibility. The presses are themselves expensive, but add in the associated finishing and paper handling plus any enclosure that needs to be built around the press and it all makes for a fairly substantial investment, considerably more so than for a digital dry toner press. The result is that these inkjet presses must be robust enough to run across multiple shifts and flexible enough to switch between different applications to justify the investment. This, of course, means producing good image quality across a range of different media stocks so we can expect to see more inkjet presses aiming to compete directly with offset presses rather than the lower quality transpromo market that has been the target market in recent years.

– Nessan Cleary

Value for money – Epson SureColor P-600

We saw this printer in a preview last year, and were impressed by the image quality and general features (A3+, 9-colour ink set, roll-feeding capacity etc). What wasn't clear then was at what price it would be sold. But now that we know that this is just over €600 we think that this must be a printer with a good ROI figure, in the near professional segment.

But the proof is in the pudding, so we put the SureColor P-600 (where "P" stands for Photo) through our normal test suite for photo printers. One of the claims from Epson is that the UltraChrome HD inks, the same type of ink as used in the Stylus Pro series, would render "a very wide colour gamut". We measured the gamut on glossy photo paper, and concluded that the SC P-600 produces around 500,000 colours, which is about 25% more than the gamut for conventional offset print on coated stock.

This is enough to produce photo realistic images, while not entirely qualifying to be regarded as "wide gamut" in our book. For this you probably need to have an 11 or 12 colour ink set-up, using additional Red, Green or Blue/Purple ink to enhance the gamut further. That should allow you to reach up towards 800,000 colours, and this is what we regard as "wide gamut" printing. But the image quality of the P600 should be high enough to satisfy a critical semi-professional, or even professional, photographer.

Another technical statement related to colour gamut and image quality is the deep black produced in the SC P-600, Dmax 2.86 – the "industry's highest black density" according to Epson. We can confirm that this number is correct – we measured the density of black on glossy photo paper to be 2.8. This is especially important when printing in B/W, to achieve a really good contrast. The human eye is more forgiving in colour images, but they too of course benefit from a rich, dark black.

The maximum format of A3+ should suit the target group – amateur and semi-professional photographers. The roll-feeding capacity even makes it a candidate for professional photographers, combined with the professional ink set. There are individual ink cartridges for each ink, not combination cartridges as in many consumer products. This means that you can really use up all the ink in the cartridge before changing it, without wasting precious ink.

There are two types of black ink: Photo Black for coated papers; Matte Black for uncoated papers and similar. Switching between the two types of black ink happens

The SureColor P-600 has in all nine inks, all in separate cartridges. There are two different blacks, and special light grey and mid grey for a smooth rendition of B/W photos.

automatically if you use Epson original papers, but you can also do it manually.

For a smooth rendition of the whole greyscale there are two additional grey inks – mid grey and light grey. The CMY inks are complimented with a light cyan and magenta. This doesn't expand the colour gamut but ensures that the highlights are rendered smoothly.

The resolution is said to be technically up to 5760 x 1440 dpi, thanks to putting down two picolitre droplets. But we found that using the 1440 x 1440 dpi resolution in "Best Quality" mode produced a sharp enough result, while still producing a reasonable speed. Printing in higher resolution didn't produce any visibly better image quality to justify the longer printing times.

The SureColor P-600 has in all nine inks, all in separate cartridges. There are two different blacks, and special light grey and mid grey for a smooth rendition of B/W photos.

The installation and set-up were very easy, which you would expect for a printer aimed at 'pro-sumers'. We used the Network Wizard to connect through ethernet and a fixed IP address, but the SureColor P-600 also supports connection through WiFi, which will be appreciated by those of us tired of all the cables in an office nowadays. The WiFi connection was also easy to set-up, even with a password needed for the wireless connection. Any changes to the set-up are easily made through the touchscreen on the front of the printer.

At first, the image quality was a bit disappointing, with the colours a bit washed-out and not entirely colour-accurate, using the default settings and standard ICC profiles. Having said this, the images would probably be acceptable to many, but we know from previous tests that there is a good chance of improving the image quality by creating custom made profiles and fine-tuning the calibration. So we tested three alternative tracks for this.

One way to fine-tune the calibration is through the free Epson ColorBase calibration software, which uses the existing ICC profile, but updates it with the information from a printed and measured calibration chart. The other path we took was to use a third-party RIP software, with a print driver for the SC P-600. In our case we decided to try some outputs using the Mirage Print RIP from Dinax, a RIP we have tested before and been very impressed with.

Immediately we achieved a far more satisfactory result, using the available ICC profiles included in the Mirage RIP – the images were slightly more saturated while still colour accurate. The Mirage RIP is quite affordable with the base level version called Small Studio at only €118. One interesting feature of the Mirage RIP is that there is a proofing option available, to produce validated proofs. For a semi-professional photographer who likes to check how an image or page will look when printed according to ISO standards, this could be a very useful option.

Technical Specifications Summary

Vendor/Model	No. of Inks	Inkset	Max. Media Size	Resolution	Print Speed
Epson SureColor P-600	9	UltraChromeHD	A3+ (33x48 cm)	5760x1440	2 min 33 sec*

*in Photo mode, standard quality

The third path to customised ICC profiles and an optimised print result is to create your own profiles for the papers at hand. We used the X-Rite i1Profiler for this, which is the software that comes with the i1Pro2 spectrophotometer. It was when we made our own optimised profiles that we achieved the best result on the SureColor P-600 – vivid images with good but not over-saturated colours, and still very accurate and realistic colours. We also tested photo papers from CMA, from their Gal'Art range, with excellent results. So while some say it's not worth the effort to create custom profiles for modern inkjet printers, our experience repeatedly tells us differently. Normally you squeeze out that little extra from the printer and paper, so well worth the time this takes – some 20 minutes or so!

Conclusions

The SureColor P-600 performed as expected, and should be a good all-round printer for both colour images and B/W photography. But we don't agree that it produces a "wide colour gamut" – for this it would probably need additional inks, at least special green and orange, possibly also a special blue or purple ink added. But the resolution is very high, and the connection options excellent – so well done Epson!
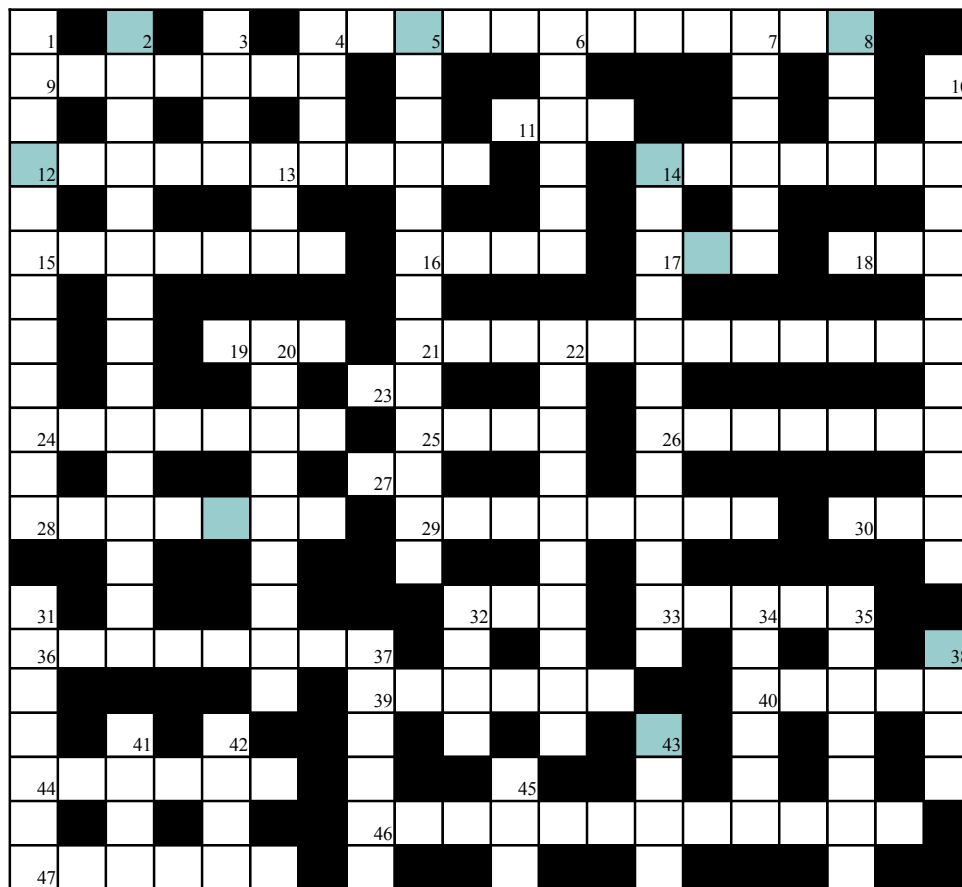
– Paul Lindström

X-word Puzzle

Number 60

As you will all know by now, this is our final Spindrift XWord puzzle. You would think it should be a little more inspired than it is, but inspiration and crossword puzzle creation are not entirely compatible concepts! Inspired or not, we hope you enjoy it and look forward to seeing you soon on Spindrift.click.

17. Industrious colony dwelling insect. (3)

18. Target. (3)

19. Optical Brightening Agent. (3)

21. Several sixty thousandths of a minute. (12)

23. Los Angeles or Louisiana. (2)

24. To place, of hardware or software. (7)

25. 500 sheets of paper. (4)

26. Something that triggers a reaction or automated response. Like a tradeshow? (2, 5)

27. Tickety-boo or adequate. (2)

28 Illustrative. (7)

29. Well-educated but untidy dessert made of strawberries, cream and meringue. (4, 4)

30. Or near offer. (3)

32. Management information systems. (3)

33. Shorthand for technologies that link devices and people. (5)

36. Changing the dimensions or data volume of images so that they fit or load better. (8)

39. Obligations and entitlements. (6)

40. Not fronts and reverses. (5)

44. OR. (6)

46. See 14 down. (12)

47. Opposite of weak. (6)

Across

4. Characteristic of a workflow that conforms to expectations, ISO or otherwise. (12)

9. Edition or iteration. (7)

11. An effort worth four or five points for league or union. (3)

12. Flow behaviours, of inks and other fluids. (10)

14. Keep tabs on that file! (5, 2)

15. Necessary technology for getting files point to point. (7)

16. Destination links. (4)

Down

1. Print too many? Or just on top? (12)

2. Lacking regularity or definition to their contours or external lines. (9, 6)

3. To contain, complete or satisfy. (4)

4. Slight, not aggrieving, glitch. (4)

5. Sector apart from toner. (7, 6)

6. Orderly arrangements or displays or ranges? (6)

7. Narrow stretch of water a place of difficulty. (6)

▶

8. Knock-out on flat surface and collected slides. (4)

10. Process of making something, say the workflow, its most efficient. (12)

13. Optical Character Recognition. (3)

14. It'll crash older RIPs if they can't flatten it. (12)

20. Where or how you go when you are really cross. (9)

22. Quality of a colour which is measured in L. (10)

31. Could be a raw material for hot melt inks? (7)

32. Shorthand for publications that are not newspapers. (4)

34. The next big thing in publishing perhaps. (6)

35. Necessary if you don't want the word to get out. (7)

37. Calories are not enough to achieve this and expand. (6)

38. Necessary for UK visitors to the USA. (4)

41. Well up for sheets that used to prove a newspaper ad had run. (4)

42. Dream and bare your bum. (4)

43. Necessary if you don't want to fail. (4)

45. Zero's binary companion. (3)

Once you've solved the puzzle, write down the coloured letters from the grid in the box below and unscramble to reveal the secret word, which could be the theme for this month's puzzle. Clue: What everyone and every business needs from time to time.

Number 59 – Answers

G	R	E	Y	B	A	L	A	N	C	E	F	O	R	M	U	L	A	S	
R		N		U		A	C		A		O		O		N		C		P
A	U	T	O	M	A	T	E		L	I	G	H	T		S		H	I	P
V		I			E		I				A	S	H		I		I		I
U		R	E	L	A	X		B	E	F	I	T		A	G	E	D		
R		E		A			B	R		O		E		R		V			A
E			Q	U	E	U	E	A		U		D	E	P	R	E	S	S	
		S		N		R	E	T		N									S
T	Y	P	I	C	A	L	P	R	I	N	T	S	E	Q	U	E	N	C	E
Y		R		H			O		A			S							T
P	L	A	N		P	R	I	N	T	I	N	G		E	M	I	T		
E		I		V		E		N		N				R		N			
C	O	N	S	I	S	T	E	N	T		S	C	R	E	E	N	I	N	G
A			S			O		O						R		T			R
S	P	E	C	I	A	L		C	O	O	L	E	R	R		I			A
T		V		O			E		U				O		A	I	D		
E	E	O	N		B	I	N	D		T	E	N		R	O	T		U	
R	U	N			A		T		I		O				E	T		A	
	A		P	R	O	C	E	S	S	C	O	N	T	R	O	L			T
R	E	P	R	O		K				N		E		K		D	Y	E

Acrostic Answer:
GUIDANCE