Digital Dots

Spindrift

Snuggling up to the Graphic Arts industry since April 2003

Volume 12, Number 4• July/August, 2014

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

Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.

– Oscar Wilde

Dear Reader,

Oscar was, as always, right in his observation. But when it comes to managing a business it's as well not to take this particular epithet too seriously. Many printing companies and industry consultants seem to believe that they can get away with not keeping up with technology developments and instead rely on their suppliers to guide them.

This is fine up to a point, but it is inherently dangerous because it can lead to blinkered decision-making and dependancy. Far better is to recognise that education is a lifelong process and that networking with peers, participating in conferences and technology seminars will keep you sharp and fuel your creative thinking.

So make it a point over the summer to plan for your next round of knowledge investments. In these digitally fecund days knowledge is even more important than technology. Knowledge is becoming a currency for success.

Have a fabulous summer!

Laurel, Nessan, Paul and Todd

In This Issue

Inky Fingers in Many Pies

The HP behemoth has been quiet for a while, but recently shared a whole raft of new developments, ranging from a new Indigo 7800 printer to a whole new inkjet PageWide array. Laurel Brunner has shuttled between HP divisions to see what it's all about.

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From printhead to printer

Ricoh has opened a new Inkjet Technology Centre, to help its OEM customers get the most out of its printheads. Nessan Cleary has been to see the facility, which is a bit like a torture chamber for printheads, pulling them apart and testing how quickly they corrode with each customer's inks.

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ISO 12647-2 Awareness Survey

ISO 12647-2 has been around for a while, but we wanted to see just what it means to the print industry, so we sent out a survey. Many respondents gave very full answers so the results make for interesting reading, as Laurel Brunner explains.

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Regular Features & Special Treats

News Focus

Xaar has launched a new 501 printhead that uses a new PrecisionPlus architecture for better drop velocity, drop volume and drop placement profiles. There's an option to use Xaar's TF recirculating technology, which reduces sedimentation when using heavily pigmented inks such as white. It can print in binary mode at up to 1440 dpi with an 8 pL drop size or with 4 grey levels at 360 dpi to deliver high productivity with an effective resolution of over 600 dpi. It is compatible with a range of solvent and UV inks.

Altana has invested $135 million, or around €100m, in Landa Digital Printing in the form of an equity financing agreement, giving it a minority stake in the company. Altana develops speciality chemicals for surface protection and refinement, and will also help Landa refine its Nanography printing process.

Heidelberg has bought Gallus, a major player in the labels and folding boxes market. Heidelberg already owned a third of the company but has now bought out the other major shareholder, Ferd Rüesch AG of Switzerland, which will take around 23 million shares in Heidelberg, roughly nine percent of Heidelberg's total shares.

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Heidelberg has already announced a new digital labelling printer, built on a Gallus platform with Fujifilm inkjet printing to be released later this year.

Kodak has updated its Prosper inkjet presses with a new line, the Prosper 6000. This gains newly formulated inks plus improved system monitoring and can print at speeds of up to 300 metres per minute with a duty cycle of 90 million A4 pages per month. There are two models: the 6000C is aimed at commercial print applications requiring high-ink laydowns; the 6000P is designed specifically for publishing applications such as books and newspapers which typically use light weight paper and low to medium ink laydowns.

Xitron has developed a version of its workflow, Navigator F/P, for flexographic and packaging applications. It is based on a Harlequin RIP but includes an Adobe Illustrator plug-in to create film- or plate-ready artwork in logical, steps. The tools include automated step-and-repeat with bleed control, nesting, .dxf import, and custom bearer bars.

Kodak has released a version of its Flexcel NX system that's suitable for printing onto corrugated substrates. This includes a new 5080 system, with a newly designed imaging platform and laminator that enables plate making in formats up to 50 x 80ins. There are two new plates: NXC plates should offer improved ink coverage, reduced fluting, improved highlight reproduction and cost-effective on-press performance; NXH plates allow for long plate life, and photo-realistic print reproduction.

Oris has launched a Flex Pack/Web solution. At its core is a web-based software system that includes Oris' 4D colour management. There's a custom interface for a Roland VersaCamm eco-solvent printer, plus a highly-pigmented XG inkset that includes white and metallic ink as well as orange and green. There's also a new TransferFilm, a mono-layer clear material that can be transferred at low temperatures onto almost any original media, using a standard laminator.

Sun Chemical has announced SunCure Lite, a series of UV curable lithographic inks designed for commercial printing and non-food packaging applications. These

inks have been formulated in collaboration with Sun Chemical's parent company DIC Corporation to absorb the specific spectral output of low energy UV and LED drying systems and offer very fast UV curing times at up to 50 percent lower energy consumption.

CGS has worked with SmileyColor to develop two tools designed to take advantage of the forthcoming ISO 17972 Standard, which uses CxF/X-4 data in PDF documents to help designers and print buyers effectively describe to their printers the colours they want to use. This includes CxF Toolbox, which creates CxF/X-4 data from a measurement file, including spectral data, plus CxF Designer, an Illustrator plug-in that imports CxF data containing a brand owner's specific brand colours or libraries into the Adobe design software colour pallet

Esko has started shipping its Suite 14 collection, which covers design through to converting. There are a number of different modules, including WebCenter 14, which now supports 64-bit data processing and and uses HTML 5 for the Viewer. WebCenter servers can now interact with each other to even better integrate the entire supply chain. ArtiosCAD users gain more realistic 3D visualization when folding corrugated and paper board, setting more realistic expectations for clients when presenting designs.

Canto has announced a new cloud-based system, called Flight, to intelligently handle growing volumes of rich media files. It allows customers to store, capture metadata, sort, filter and share visual content quickly and easily. It runs on the Amazon Web Services Cloud as a subscription, with an Economy bundle package starting at $6,000 per year. There's also an iPad app available.

Xaar issued a trading update that predicted revenue for 2014 to be £130m, or 3 percent lower than the £134.1 million of adjusted revenue achieved in 2013 (2012: £86.3 million). Xaar attributed this to a slowdown in the digitally printed ceramic market, which had been the major factor drivng Xaar's spectacular growth last year. The update then sparked another drop in Xaar's share price.

Woodwing Software has introduced a new module, Enterprise Analytics, for Enterprise, its multi-channel publishing system. It's a cloud-based system that gives authorised users up-to-date information about the progress of their production processes. Woodwing also announced v5 of its digital asset management solution Elvis DAM. The server architecture has been completely rewritten for faster management of up to one billion assets.

Domino has published its figures for the first half of this year, which show a 7 percent jump in revenue from €200m to €218m in the same period last year, as well as profits before tax up from a loss of €5m in 2013 to a profit of €32m this year.

Kodak has updated the Nexpress VII front end, which gains three new print modes: Economy, a halftone screen designed to use significantly less ink and also increase the lifespan of the operator replaceable components; Ink Optimisation, which saves on the CMY inks by using black wherever possible and should also give greater colour consistency; SmartRGB, which improves skin tones by removing grain.

Roland has a new wide format printer, the 64ins wide VersaExpress RF640. There's a new ink switching system that allows users to load a backup cartridge that automatically discharges ink to the printer when the primary cartridge is empty for unattended continuous printing. It uses two sets of CMYK eco-solvent inks, but Roland says that it has optimised the profiles for up to 20 percent savings on ink consumption.

Enfocus has released the second update to its Switch 12 automation program. Enfocus has added colour coding to folders and connections, for easier identification. Other features include a new 'Save Flow' button to avoid confusion when a flow is edited, a 'Revert Flow' button to undo changes to flows, plus the ability to add descriptions to each element to help users understand each flow better.

Xerox has opened a new 8,454 square metre demo centre, the Impika Inkjet Innovation Centre, next to Impika's existing R&D and production facility in Aubagne, France. Xerox has also enhanced its Gil Hatch Centre in Webster, New York, which hosts over 1,200 customer visits annually and, at 100,000 square feet, is said to be the largest graphic arts demo centre in the world.

Masterwork Graphic Equipment has launched a new die cutter, the MK1060ERS, an automatic platen machine with stripping and blanking facilities. It has five processes - feeding, die cutting, stripping, blanking and waste conveying - allowing one operator to turn printed sheets into finished products in a single pass. It can handle sheets from 400 x 350 mm to 1,060 x 760 mm, and a die cutting area of 1,060 x 745 mm with an accuracy of 0.075 mm.

Heidelberg has launched a new range of consumables branded as Saphira Low Migration, for food packaging. The range includes various printing inks, dispersion coatings, dampening solution additives, washup solutions, cleaners, oils to protect rollers, and dispersion glues for folding carton manufacture.

Avery Dennison has added 13 new colours to its Supreme range of wrapping films, as well as four new Chrome materials - Silver, Black, Gold and Blue. These films are said to last for up to 12 years, and to be easily conformable around difficult curves and recesses.

The Italian printing company **Rotolito Lombarda** has taken over the entire share capital of Nava Press, a branch of Nava Milano SpA. According to Paolo Bandecchi, President and CEO, Rotolito Lombarda, this is about pooling complimentary skillsets rather than simply taking over a competitor. Rotolito Lombarda is one of the largest European book and magazine printers, with a consolidated aggregate turnover of approximately €150 million, 50 percent of which comes from overseas sales. In contrast, Nava Press had a 2013 turnover of approximately €50 million.

News Analysis

Adobe has revamped its Creative Cloud offerings, with new 2014 versions for most of its programs. Thus, Photoshop has gained a new Blur gallery to create motion effects. There's also a new Focus Mask for reducing the depth of field in some images. There are improvements to Layer Comps, so that layers can be synched together, and to Smart Objects, where links to external files can be packaged together in a single directory.

Illustrator gains Live Shapes, whereby corners of rectangles can be easily modified and scaled. There's a preview for the Pen tool so that you can see where the line of the path is before you drop the next point, and there's more control over the start and end points of paths.

For InDesign, Epub layout designs can now be fixed regardless of the size of the viewing screen, and there are Colour Groups to better organise colour swatches. Documents can also be printed directly to PDF print engine devices without having to convert the file to a PDF.

It is a strange move, given that the main reason for moving to cloud-based programs was for Adobe to be able to push updates to users whenever they were available, obviating the need for large updates en masse.

There's also new tools for use with iPads running iOS7. This includes a digital pen, Adobe Ink, a three-sided hydroformed aluminum stylus that enables controlled drawing and connects to Creative Cloud, giving users access to their drawings, photos and Kuler colour themes. There's also a digital ruler, Adobe Slide, that enables sketching of straight lines, perfect circles, and balanced shapes. These are only available in the US for now.

To complement this there are two new mobile apps optimised to work with the Ink and Slide tools.. Sketch is a freeform drawing tool that includes a graphite pencil, an ink pen, two blending markers, (brush tip, chisel tip), and an eraser. The other new app is Line, which reimagines traditional drawing tools like rulers, T-squares and shape templates for the mobile world, as well as giving creatives access to assets, Kuler colour themes, and the ability to share work.

There's also Photoshop Mix for compositing and masking on iPad. It includes cloud-based imaging, including Upright, Content Aware Fill, and Camera Shake Reduction. It offers non-destructive photo enhancements, selections, the ability to cut-out and mix images, and the ability to open and save PSD files enabling a continuous workflow with Photoshop CC on the desktop.

All three of these apps are free, though obviously you'll need a Creative Cloud account to get the most out of them. Adobe has also extended Lightroom to the iPhone so that images can now be edited across a range of devices.

More significantly, Adobe has also developed a new SDK that enables developers to tap into Adobe's creative technologies to build mobile apps. Examples include, browsing files stored in Creative Cloud and extracting elements from PSD files; Adobe's "Touch Slide" software for straight-line drawing; and cloud image editing services like Content-Aware Fill and Upright. Adobe Photoshop Mix utilises these new APIs and offers some of Adobe's best imaging technology for applying Photoshop looks and compositing images. It is initially targeted at the delivery of iOS applications and is currently being tested by select developers. A beta launch is expected in the coming months.

Green Shoots

Here is our monthly round up of Verdigris blogs. In the last few weeks we have considered China's move towards environmental regulation, how Yale and Columbia universities in the US are measuring corporate environmental performance, politics and how Fogra is measuring the energy output of digital presses. If there are topics you would like us to blog about please let us know. The Verdigris blog gets an estimated 40,000 hits per month and is translated into eight languages and counting.

Game of Rules

Much as we would like to believe that people will do the decent thing, it generally takes the rule of law to make them behave. But the global television phenomena that is Game of Thrones makes it abundantly clear that the rule of law on its own is not enough and nor is compliance. Characters regularly cheat and lie and commit atrocities that are against the rules, even in the most heinous and violent societies. In fantasy and in the real world, how well individuals and institutions fulfil their legal obligations changes from nation to nation and culture to culture. In the land of printing and publishing most players follow the rules reasonably well, but things are getting harder.

Rules governing environmental performance and behaviour are rather like the rules governing the plotlines in Game of Thrones: they are random and meandering with no clear destination. This is probably because no one's quite sure where the various storylines are going. Game of Thrones author, Geoge R.R. Martin doesn't appear to be entirely sure where he wants to go with it. He has two more books in the works and is keeping slightly ahead of a worldwide television audience snapping at his heels. Environmental rules have no such sprawling fan base, but there is a clock tick tock ticking nonetheless.

Not knowing where we are going, or even if we should be en route at all is the problem. Environmental legislation for printers and publishers operating on a global stage might even be an impediment to business. Take China's recent update to its environmental protection laws. They were written in 1989 just about the time when China started to open up and go for growth at all costs. The new priorities lead to unprecedented development all over the country and quite dreadful pollution, especially in large cities such as Beijing. The new and more robust rules put environmental protection, rather than unfettered development, at the heart of Chinese government policy. However, the new rules will also require industries to shape up or have their bosses face the threat of being arrested and detained. This obviously includes printing and publishing companies.

If this was a Game of Thrones script, the arrests would be sudden and probably arbitrary depending on the size of the budget for a given episode: less money, fewer actors on screen. But the new environmental rules in China are real and their implementation will not be arbitrary. Printing companies, like other companies in heavy industries, will have to account for their environmental impacts because environmental protection is becoming a key priority.

All over the world governments are pushing environmental legislation higher up their agendas. Printing companies and their representative associations have a few options. They might prefer to wait for the axe to fall and face the consequences. Or perhaps they want to ignore their environmental responsibilities and run the risk of being caught and penalised. Alternatively they might take a look at their operations, invest in new, greener technologies and hold up a clean pair of hands to the regulators. If this was a Games of Thrones script such a boring response to an external threat would never happen. Fortunately it isn't.

Verdigris

The Verdigris project is supported by Agfa Graphics, Digital Dots, drupa, EFI, Fespa, Kodak, Mondi, Pragati, Ricoh, Shimizu Printing, Splash PR, Unity Publishing, and Xeikon.

Environmental Performance Index

An initiative of Yale and Columbia Universities in the USA, the EPI ranks a country's environmental performance according to how well human health and ecosystems are protected. They use nine criteria including child mortality and access to drinking water, plus 20 additional measures ranging from changes in forest cover to agricultural subsidies. In the latest iteration, which grades 178 countries, Switzerland is on top followed by Luxembourg, Australia and Singapore. Somalia is unsurprisingly at the bottom, mainly because of low life expectancy and high infant mortality rates. The EPI is a useful and informative tool for measuring how well countries protect the environment and their citizens' health, but could such a thing also be set up for industries?

The idea with the Yale EPI is to rank countries and provide a measure of how they look after the environment and the vitality of their ecosystems. The purpose is to provide a way of checking the match between reality and stated policy aims of a particular government. It's a clever tool for making governments more accountable, so could the same idea work for companies? For instance, the world's biggest company is Wal-Mart and it has a comprehensive Corporate Social Responsibility (CSR) policy. Compliance with a stated CSR could be part of the criteria for evaluation of a company's EPI. Having a CSR policy probably matters less than having active environmental impact reductions for the business, for instance, through environmental management and ISO 14001 certification.

The idea with the Yale EPI is to rank countries and provide a measure of how they look after the environment and the vitality of their ecosystems.

This is the approach Quad Graphics, one of the world's biggest printing companies takes. The company has extensive environmental information on its website and provides complete carbon data about the print it produces for clients.

So if we were to have an EPI for the printing and publishing industries, what would the criteria be? Having a CSR or better yet an environmental policy would be a start, with compliance the basis of points. To that we could add waste reduction according to stated targets; reduction of emissions to air, land and water; recycling volumes for aluminium and paper. And then there's the use of renewable energy sources, encouraging the use of electric vehicles, and active water management, such as rainwater capture for use in toilets, or for recycling in the factory.

The list could be endless but what would the benefit be to industry and consumers? As with the EPI for countries, an EPI for companies could provide shareholders and consumers with more information about those companies' environmental performance. This would put pressure on all businesses to improve. Who knows, it's unlikely but it could happen.

The Politics of Green

Election fever all over the world has seen some dramatic results. Moribund governments are getting dumped as voters look to more energetic alternatives in the hope that they can deliver change and growth. Achieving growth while simultaneously improving environmental impacts is the trick new governments all over the world must achieve. For printers and publishers new governments are just so much samey samey, but their ideas and policies at least provide fodder for our industry. Whether we should expect a wave of new environmental legislation to come out of Europe, India, South Africa or wherever, depends on who makes it into government and the interests they want to further.

Environmental awareness is definitely rising. Far from the abstractions of government, the graphic arts industry is seeing a proliferation of tools that help businesses and wider supply chains to manage their carbon footprints. These tools are part of a larger arsenal that helps with environmental footprint management, increasingly a

measure of how well entities are using resources, including their available cash.

The problem isn't the number of tools but the fact that far too many organisations and government agencies are trying to develop them in isolation. Global NGOs, industry associations, standards bodies and governments should be working together to develop frameworks that can be used anywhere in the world. Cooperatively developed frameworks could have the scope and flexibility to allow local interests to add their own twists, according to national and sector-specific needs. For instance, the development

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of carbon footprinting tools within the burrows of the European Union in Brussels falls short because those doing the work lack productive engagement with ISO and other bodies within the EU membership. There seems to be no mechanism for cooperation.

This is all very silly and counter productive in a global market. Having a host of differing methodologies for calculating carbon footprints, is as daft as having a host of measurement systems. Ells, cubitts and quires were all quite useful once, but they've had their day. In printing and publishing we almost have universality in paper sizes; the Americans will get with it some day.

Fragmentation and diversity of methods for calculating carbon footprints and environmental impact undermines progress for all industries including printing and publishing. The sharing of ideas has never been easier, so why not share method development for everyone's benefit instead of letting politics get in the way? Politicians and gatekeepers tend to take a short term view or they are too lazy to look at the facts. In a world of global communications and accountability this will no longer do. Elected representatives, supporting bureaucrats and print industry associations must look beyond national interests and take a collective view for mutually improving environmental impact.

Digital Printers & Energy Efficiency

The Bavarian Ministry of Economic Affairs in Germany is funding a new Fogra project to look at the energy efficiency of small and large format digital printers.

This project is evaluating different digital printers (excluding textile machines) in order to quantify how much energy they use. Fogra has based its method on existing approaches to evaluating power consumption in conventional presses. This is intended to provide some sort of control against which the performance of digital printing devices can be assessed. For digital printers Fogra has also included peripheral equipment and specified the measurement cycle. This is a very exciting initiative and, depending on how their testing works and the robustness of the method, it is one that Fogra wants to put forward to be turned into an international standard.

This is important work because different print sectors and production models obviously have different energy requirements. Fogra is basing its evaluation on what it considers to be a representative system configuration, in order to evaluate power consumption and energy usages. This could vary depending on the print mode, for instance, or on the output format. There are also the specifics of electrical and power considerations, including the power connection and connection type, the maximum load a system can take in terms of amps and the input voltage. It is also important to know the distances between power outlets and machines as this will influence power consumption.

Fogra has categorised digital printers according to the applications they are designed to produce. They are considering energy and power consumption for three different print modes: standby, print ready and production.

The basis of measurement is either in A4 sheets per kilowatt hour or square metres per kilowatt hour. Various criteria affect power consumption such as whether the machine is cold when printing starts, substrate weight and passage through the machine, the top printing speed, how much pressure is required to print a substrate, the substrate size and the nature of the inks used. For instance, inks might be very fluid and require immediate drying. There might also be energy usage for pretreating substrates.

Once the project is completed Fogra will produce a guidance document that explains how to measure "operational specific energy consumption". No doubt this document will also form the basis of some sort of testing service that Fogra will offer.

The Fogra work provides printers and publishers with a tool they can use as part of a carbon footprinting study or for Life Cycle Analysis. It has the potential to provide a defined method that can be used in any digital printing scenario, much as the energy consumption of household appliances is measured using the Energy Star rating system.

For more green news, check out The Verdigris Project:

Verdigris

http://verdigrisproject.com

Driftwood

Grade your printing press

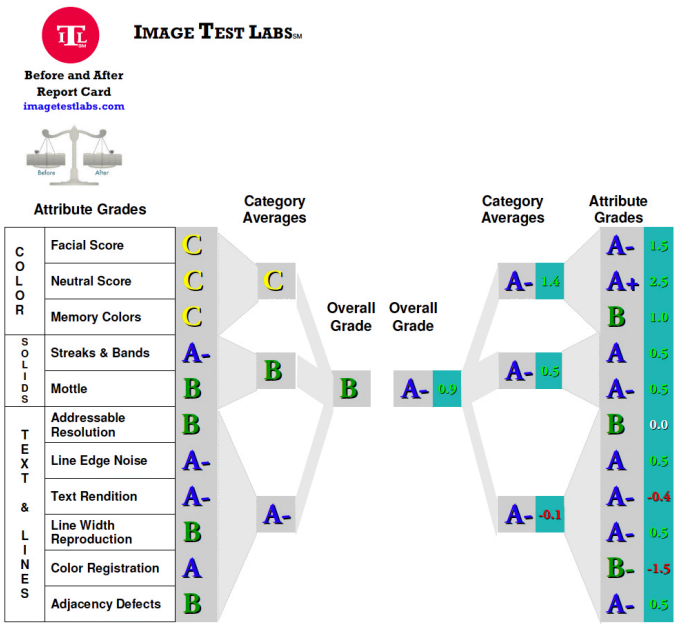
Image Test labs, a division of Technology Watch, has extended its print quality evaluation service outside the US. Since we at Digital Dots have conducted tests of printing presses, both analogue and digital, for a long time, we thought the approach by Image test Labs was worth a closer look.

While there are many factors influencing the perceived image and print quality, a common problem is to convey the test results in a meaningful way. Henry Freedman, developer at ITL, explains: "Instead of reporting test results in complex data such as ΔE, microns, and density, we decided to use an intuitive scale of A to F. Anyone can understand the test reports, quickly and intuitively". And we have to say that the sample reports we've looked at give a pretty clear picture of the performance of a given press or printer. But underlying the simplified report is a whole range of detailed analysis. Factors like Addressable resolution, Line Edge Noise, Colour registration, Streaks and bands, Mottle are all analysed, along with more colour related factors like the rendering of "Memory colors", Neutrals and skin tones (called Facial Scores).

There are several use cases where this type of image analysis can be useful. For a commercial printer the tests can be used to check if a service session of a press reached the desired (improved) result. For a manufacturer of presses and printers the tests can assess where the strengths and weaknesses of an imaging system are. For a print buyer the test can evaluate how different printers perform on similar printing presses and similar paper stock.

And, of course, anyone about to buy a new press or printer can evaluate the different options on offer, and make the final decision not only on economical factors, or subjective opinions, but on hard facts from a third party and independent source.

The analysis is made remotely, by ITL, on test prints made from test documents printed on site, and sent to ITL. The



This sample of the ITL test report shows the grading of a printing press before and after a bigger maintenance service. As expected the scores went up substantially after the service.

test report is then sent back to the ITL customer – a quite straightforward process. Most types of printing presses and printers can be tested in this way – proofers, litho offset (both sheet fed and web presses), digital presses, photo printers as well as large format printers.

An additional benefit from participating in the ITL testing is that the printer can compare their scores with other similar presses and companies, making it into a benchmark test as well. This shared data is of course made anonymous, so it's not possible to identify what specific printing company you compare yourself to. But it should be both useful and interesting to compare your scores with other printing companies.

A Review

CircularFLO – eBook publishing

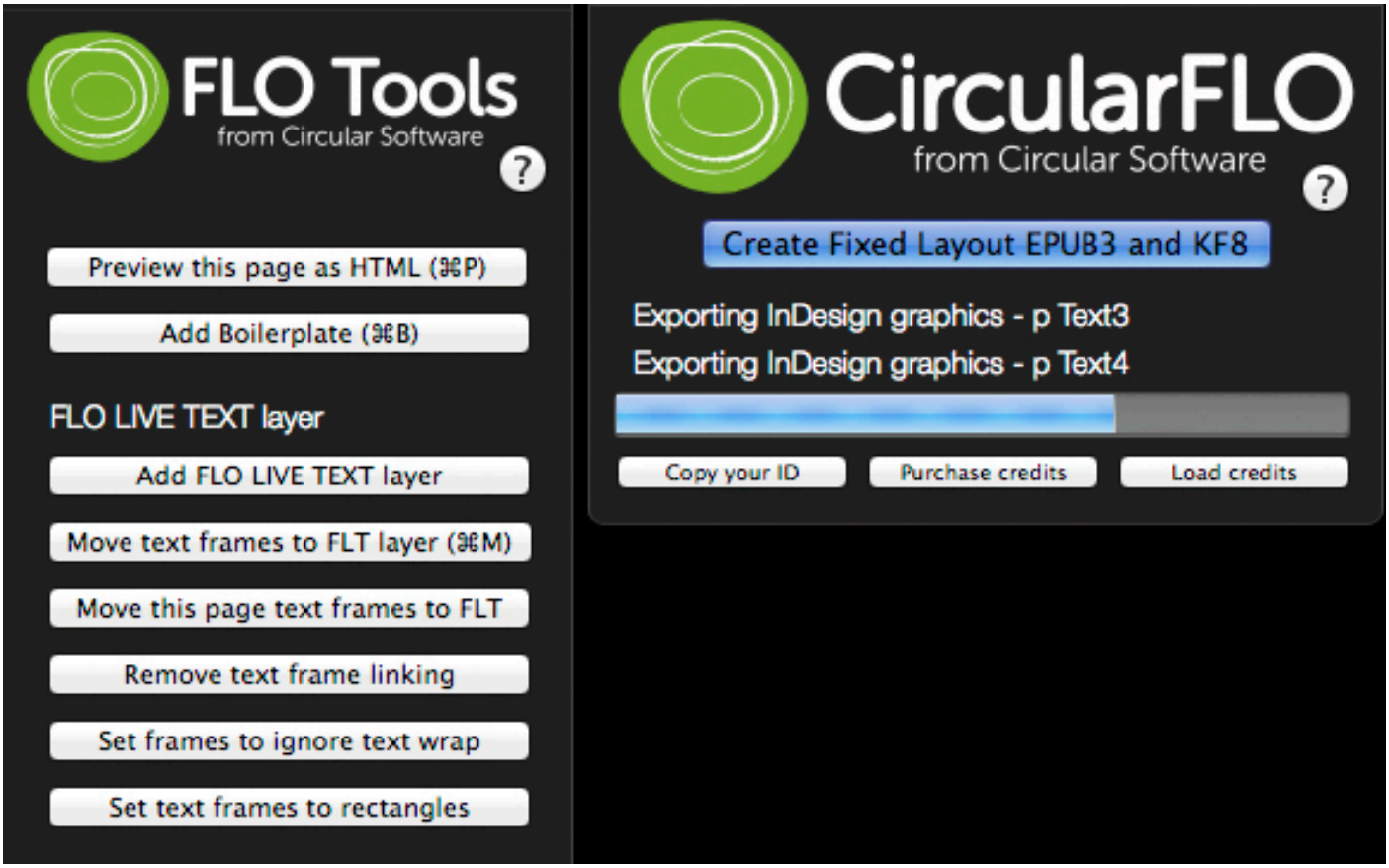
With the increasing sales of eBooks comes the need to be able to either convert existing books and magazines to popular eBook formats, or possibly design and audit eBooks from scratch.

The CircularFlo tool from Circular Software meets the needs of the first category, that is, making it possible to convert existing Adobe InDesign files to two of the most popular eBook formats at the moment – epub3 and Amazon kf8.

There is a range of similar tools and solutions on the market, not least the Adobe Digital Publishing Suite. But for designers and publishers with perhaps only a limited number of publications to manage, full-blown eBook authoring and publishing systems might be too big an investment, both in terms of money but also in training. For a designer already familiar with layout software such as InDesign, a straight-forward conversion of a fixed layout through a conversion tool would probably fit the purpose quite well.

The CircularFlo software is just that – a simple to use straightforward conversion of an existing InDesign document to the open epub format or Amazon kf8, used in Kindle Fire. In fact the standard setup exports to both those formats in one go. This means that the publisher can sell the publications through the iBook Store, as well as the Kindle Store and Google Play, and any other store for that matter. The eBooks and eMagazines can then be read on iPhones, iPads, Kindle Fire, Android devices and of course on both Mac and PC.

The epub format was developed by the International Digital Publishing Forum (idpf), in an 'Open Source' manner, with the pros and cons of such an approach. Among the pros are, of course, the open and 'free' nature



The user interface couldn't be much simpler than this – when the InDesign document you want to convert is open in InDesign, just start CircularFlo and click the button "Create Fixed Layout" in the toolbox for CircularFlo!

of the source code, as well as input from a big community in the continued development.

Among the cons is the relatively slow progress of development, when so many interested parties have to agree on the path forward for a range of the technical improvements and innovations needed. In the best case a proprietary format can be updated and improved more quickly than an open source-based solution. But users of CircularFlo have at least access to two popular formats – one open source (epub) and one proprietary, the Amazon/Kindle kf8 format.

We made a simple test of CircularFlo by converting one of our publications, our guide to Standardised Print Production, at the moment sold as a print-on-demand product, which was converted to become an eBook.

There isn't much preparation needed in InDesign, provided the document is well organised in the first place, and page numbering done correctly. For longer documents, over 50 pages, Circular Software recommends using the 'Book' function of InDesign. We were just over this limit, some 52+ pages (if you include the cover), but could process the document without any problems without saving it as a 'Book' project in InDesign. Often the cover is printed separately, and is prepared as a separate document in conventional print production, so Circular Software has prepared a simple solution in CircularFlo to add a cover, saved as a JPEG image, as the starting page for the eBook.

Assuming there are no conversion errors in the conversion process, this works in a very straightforward and easy way, and the new eBook is ready in minutes.

The pricing is also very straightforward – the software (Mac-only) is free, and you buy credits online, depending on how many are needed to create the number of eBooks you need. At the moment the price is €87 for a "short" book, and €188 for a "large book (unlimited number of pages). Updates to the same title can be made free of charge, as well as trying out sample eBooks. Circular Software works with the distribution partner Pigeon Lab, which helps with obtaining ISBN numbers and submissions to Apple, Amazon and other eBook retailers.

We can only congratulate Circular Software for an easy-to-use solution that should satisfy the needs of many publishers of low- to mid-volumes of eBooks and eMagazines.

Did You Know?

Time for new ISO 12647-2 compliant ICC profiles

Late last year, in December 2013, the new version of the ISO 12647-2 printing standard was published, and FOGRA, the German graphic arts research institute, together with the ECI (European Color Initiative) user group is about to launch the first new ICC-profiles compliant with the updated standard.

There are several reasons why it's necessary to update the commonly used ICC profiles for ISO 12647-2 compliant print. First of all, the paper types have been updated to reflect the most popular, best-selling papers according to statistics from the paper industry.

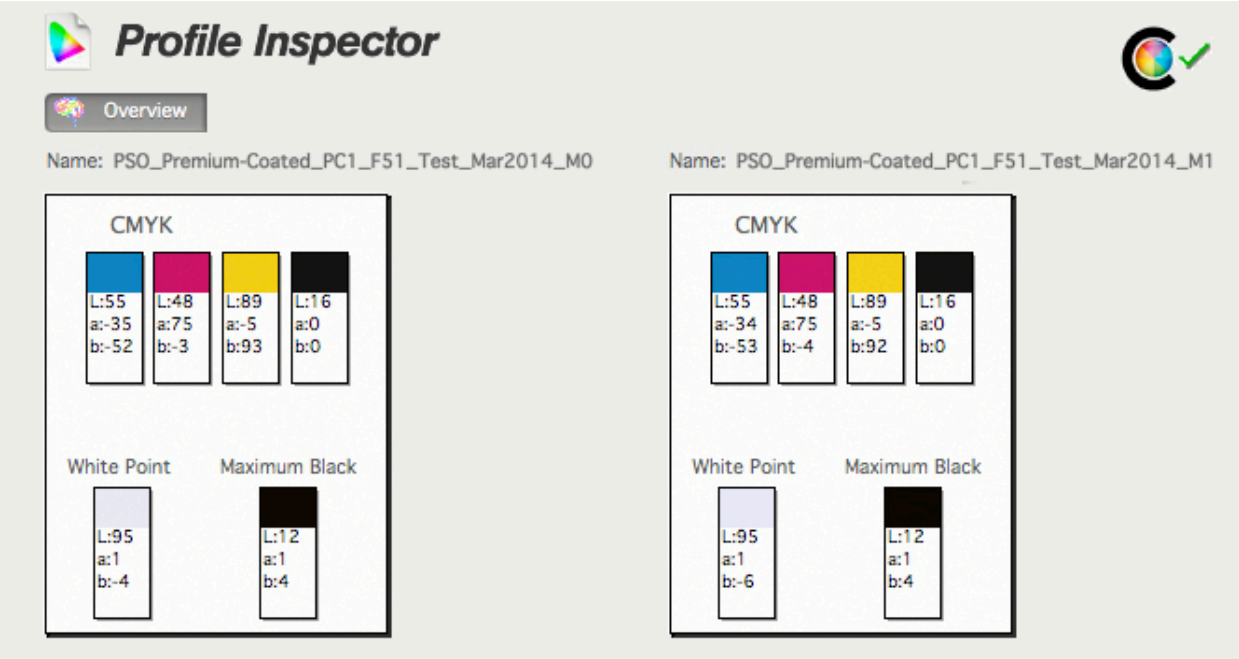
Secondly, the new generation of spectrophotometers that are capable of measurements in Mode M1 (which includes UV light in the measurements) have rendered older characterisation data outdated.

Thirdly, the old ISO standard from 2007 was based on prepress work using repro film, and not CTP, while the newly published standard is, of course, based on the use of CTP. Among other things this affects the expected dot gain in print, so the target dot gain curves, or TVI-curves in ISO-language (Tone Value Increase) have been updated.

All in all this calls for new 'standard' ICC profiles, to be used by both designers and printers in standardised printing processes. FOGRA has kindly provided the market with a series of characterisation data for many of the paper types listed in the ISO 12647 standards, such as the very popular FOGRA 39 data set.

This in turn has been used as the source for many standard profiles, including most likely the ones used by Adobe in the Creative Suite. But in some regions the ICC profiles created by the ECI are the preferred choice, in part because the total ink amount has typically been set to a lower amount than with the Adobe profiles in order to avoid long drying times and the risk of smearing in the postpress operations.

There are eight paper types in total in the new standard, but FOGRA and the ECI have focused their testing and evaluation on two ICC profiles for mainly sheetfed offset: one for premium coated stock (assigned with the new number FOGRA 51); and one ICC profile for uncoated



FOGRA ,the German graphic arts research centre and the ECI (European Color Initiative) user group offer new characterisation data sets and ICC profiles compliant to the new ISO 12647-2 standard. Both measurements in M0 and M1 mode are provided, which results in slightly different target CIELab values, for the same paper stock.

stock, assigned as FOGRA 52. These ICC profiles are still under evaluation, but any printer or publisher that wants to test these beta-profiles early, or create their own ICC profiles based on the characterisation data sets, can download them for free from the ECI's web site www.eci.org.

Because not all spectrophotometers can perform measurements in M1 mode, FOGRA and ECI also provide data sets with measurements in M0-mode (no or very little UV-light present in the light source of the spectrophotometer). As can be seen in the illustration on the previous page, measurements in M0-mode and M1-mode give slightly different results when reading the same IT8 colour chart (the basis for ICC profiles). This mainly affects measurements of papers containing high amount of OBAs (Optical Brightening Agents), typically uncoated papers.

To obtain a good match between proofs and final prints it's important to keep track of which measurement mode was used for the characterisation data for the ICC profile you intend to use. The same is true when validating proofs – measurements of the proofs need to be made in the same mode, M0 or M1, that was used for the data used when creating the ICC profile.

Inky Fingers in Many Pies

We haven't heard much from HP of late, however, recently two different bits of the graphics division of the company shared news with us. HP Indigo has some updates and there are some interesting developments in wide format technologies based on HP's PageWide inkjet technology. The non-Indigo bits of HP are finally working on improved colour management and workflow performance. HP is also trying to make a comeback into proofing "it will take some time … coming in the next couple of months", but no further information was given.

Progress with Series 4

Alon Bar-Shany HP Indigo's general manager says that midway between two drupas the HP Indigo Series 4 technology is "out there, it's printing … we're actually quite proud of that". Indigo's history has a heavy tread so this is very positive news for the new technology. The introduction of the Series 4 presses has not been flawless, however sales are solid despite some teething issues around workflow management and ink adhesion. The US is proving to be the largest market, with China second. Many customers are already buying second units, with the 100th installation of the 10000 at Sun Litho, one of the top commercial printers in the US. Commercial installations are dominant, with most printers using the 10000 for direct mail applications. But customers also include packaging and label printers such as Heret Printing, Nosco and Rako Etiketten.

The Rest

The Series 3 with the 7000 and ws6000 models are also doing well with sales approaching 2000 units. Bar-Shany says the "7600 is the workhorse of commercial web to print printing and photos" and he sees it as a "backbone product". For the Series 4 engines hopes are high so HP Indigo is following the same growth strategy as it has followed for the Series 3 technology: establish a sheetfed machine in the market and then introduce derivative presses.

Thus the general purpose 7000 was followed by the ws6000 for labels and packaging, and there are various iterations of the 7000 and ws6000 with models differentiated by speed, substrate flexibility and colour management capabilities. For instance the 7800 has an inline spectrophotometer and improved colour management controls; the ws6800 label press has a 3mm wider frame and automated colour management. HP Indigo plans for derivatives of the 10000 based on customer feedback and is already enhancing the 10000 as well as the 7800.

7800

With the 7800 HP Indigo wants to increase its application range and improve colour control. Thanks to updates to Indigo's One Shot colour technology the press can now print on heat sensitive plastics and synthetics. An inline spectrophotometer eliminates the need for manual

The new Indigo 7800 gains better colour control.

colour calibrations. Bar-Shany and his colleagues are confident that this enables fingerprinting of the press to get it up to colour faster than before, and that along with fingerprinting of new substrates on press, profiling will only need to happen once because the device and substrate profiles will work across machines. This may be wishful thinking. They also reckon that the new colour management controls will help the device to comply with international standards.

Questioned on this there seems to be some confusion within Indigo as to the difference between an ISO standard, such as ISO 12647-2 for offset process control, and certification schemes that confirm compliance to the standard. This uncertainty isn't helpful for the market and customers who want to attain formal certification

to a demanding scheme, such as that of the BPIF or the Swedish Printers Federation. The 7800 is now shipping, with upgrades to Series 3 7000 machines commencing 01/2015.

On A Jet Plane

Far away from toner printing at the opposite end of the technology scale is inkjet. HP has had a very long and fruitful life in the inkjet fast lane, with office printers such as the ThinkJet introduced in 1984 and the more recent OfficeJet line, which uses HP PageWide technology. A brace of new DesignJets has now been launched. The Designjet T3500 and T7200 eMFP are claimed to print with up to 50% lower costs per page than their predecessors.

Over three million DesignJet large format printers have been shipped since introduction in the early 1990s. According to François Martin, HP's graphic solution

Over three million DesignJets have been shipped since the early 1990s.

business's worldwide marketing director, 80% of AEC (Architecture, Engineering and CAD) projects are printed on HP DesignJets. He says this is because of the technology's ubiquity which is down to HP's ability to anticipate market needs, and leverage its technology. He claims HP is changing "the way printing is operating" because it recognises that everything these days has become a service. People don't necessarily care about owning technology as they used to, only that it satisfies their needs. HP also understands, probably better than most, that we inhabit both virtual and physical worlds, and that print is well placed to exploit that cohabitation using open systems and mobile services, all supported in the cloud. The move to beef up its DesignJet offerings is part of HP's attempt to capture more of the $1.3 billion reprographics market which Martin says is "a significant market opportunity that we don't address today". Plenty of others do address it, but not with inkjet technology.

T3500 & T7200

The new T3500 is "today's most productive colour MFP" for reprographics, a single device that can support multiple workflows and prints D/A1 mono and colour in 21 seconds. This roll-fed machine prints its first page immediately on start up and can have two media rolls, printing up to 200 metres each (it prints sheets too) for unattended operation. Compared to multicolour LED printers, the T3500 has a lower energy requirement, is faster for both mono and colour output and has a faster scanner. Productivity is due to the Intel Core i5M-260 processor and 2.5GB of RAM. An optional stacker can hold up to 100 pages/sheets.

The T7200 is HP's top of the line DesignJet. It is based on the €11,500 T7100 with more memory and prints up to four D/A1 sheets per minute. With three rolls and high capacity ink cartridges the T7200 can be left unattended to print up to 600 metres. The T7200 is available now in Asia Pacific and the Americas, but for EAMER HP is rather curiously working on special features such as "folding and high capacity stackers" so it won't be available in this region until November.

Perhaps more important than the print engines is the workflow that drives them, and workflow hasn't really been HP's strong suit. That could change with the introduction of a new Universal Print Driver (UPD) for the whole DesignJet fleet. Given that printing only accounts for around a third of the time it takes to produce a job, productivity throughout the workflow is crucial. Preflighting, processing and finishing all take time, especially in hybrid reprographic environments where mono and colour pages have to be manually combined for a single job, because they are output on different dedicated machines with different print output settings: CYMK vs a dedicated black and white printer. It all requires management time and effort to support multiple output streams so the new UPD should make a big difference

The DesignJet T3500 supports multiple workflows and prints D/A1 mono and colour in 21 seconds.

to productivity. This single driver uses PCL5, PCL6 or PostScript emulation so it can drive multiple engines.

Productivity is also improved through HP DesignJet SmartStream, a PDF-based workflow that HP claims cuts job preparation time by 50%, but doesn't say what this value is compared to. It is based on the "latest" Adobe PDF Print Engine (APPE) and costs €1500. HP has also introduced the HP DesignJet HD Pro CCD scanner for data capture across a 1,016mm width at around 15cm per second colour and 33cm per second black and white, which is twice the speed of the previous model. It costs €15,900.

PageWide, PrintJet, ImageJet, JetPage or PageJet?

Far more exciting is HP's PageWide technology, a version of which is already used in the OfficePro series of desktop printers. It is being introduced for the AEC market and it will surely find its way to the T series of inkjet web presses soon. In the iteration we saw the PageWide technology had 200,000 nozzles on a stationery print bar printing across a whole 1,016mm page width. Martin says that PageWide technology means twice the speed and half the cost of colour laser printers. When it was introduced for office applications PageWide technology took 12 points of market share within a year.

With its PageWide thermal inkjet technology HP wants to disrupt the status quo in reprographics, by unseating the established players (Canon/Océ and Epson). HP is going after any company or corporate department that uses inkjet and LED printers with page-wide LEDs instead of lasers. Albert Serra who is responsible for worldwide research and development for HP's large format design business says that "colour is the new black" and that HP wants to disrupt reprographics market, making colour mainstream and providing greater productivity.

Even in stable markets such as LED printing for reprographics, change can come. HP wants to push the shift to inkjet and pigment-based inks to provide the benefits of colour and mono printing, with low running costs and high productivity. Dye-based inks are easiest to work with, but the dyes sink into an uncoated paper's surface which is a constraint on applications and adds to costs. Pigments sit on the surface and have a high black density, light fastness and resistance to smudge. HP's pigment inks are water-based, so wet on wet drop placement is accurate with no feathering or colour bleed, and they can support a wide substrate range. The first product is the as yet unnamed large format PageWide product due for launch in the second half of 2015. For convenience we'll call it the PageJet.

The new HD Pro CCD scanner can capture data at twice the speed of its predecssor.

The new HP "PageJet" delivers colour at twice the speed of LED with lower running costs. When it is released next year the "PageJet" is expected to be the fastest colour printer in the market without downtime to deliver "sustained productivity". HP's new generation pigmented inks are suitable for every type of output from maps to posters. The samples we saw had very nice, crisp blacks, but the CMY was less impressive, though it was hard to tell under the less than ideal lighting. This is a 1,016mm wide printer for B1 and B0 output. Hot swapping of ink cartridge changeovers mean the machine doesn't have to stop for ink replenishment. It is integrated with the new DesignJet Smartstream and includes a scanner and will be available in high and low volume versions. A high capacity stacker or folder is optional.

HP's impressive prototype combines a superfast writing system with superfast processing in the DFE and printer, to ensure that it runs at rated speed. The internal electronics process 690 million pixels per second versus the 90 million per second for LED printers. They handle 1100 operations per pixel, versus 80 for an LED printer. Various dedicated ASICS and FPGAs handle 150 billion operations per second so they can handle extremely complex documents. Data stays in PDF throughout production which gives a compression factor of 500+ compared to sending raster data to the print engine. There is an Adobe APPE RIP built into the printer as well as in the DFE for data rendering. The additional APPE is there for reasons of performance, scaleability, data integrity and tellingly to provide a foundation for the future.

Each 129mm printhead module comprises six staggered thermal inkjet chips or dies each with 25,334 nozzles, with 6,336 nozzles per CMYK channel for 1,200 nozzles per inch of native resolution for single pass printing. There are four ink ports and these modules are user replaceable. The modules are S shaped so they can be clicked together into print bars of any length: the new 1,016mm machine will have eight modules. Even more interesting is the idea of putting multiple print bars together for high speed colour and mono printing for commercial applications such as books or brochures.

HP has also given thought to maintenance to improve uptime. On the new "PageJet" it takes barely a minute to clean the print bar using a scanning carriage to purge 203,000 nozzles. Six vacuum belts hold the media in place, and an inline three-channel densitometer measures print for die to die colour density calibration. The densitometer also handles print head alignment on the sheet, overlapping adjacent dies by 48 nozzles.

One of the difficulties with thermal inkjet is head maintenance. The bane of pigment inks is water loss when the nozzle is exposed to air and the printhead cannot be cleaned. The ink becomes viscous and hard to eject so drops can get misdirected, undermining quality. Avoiding this problem is referred to as decap performance. HP's new inks have a film forming agent and so a longer decap time. The film forming agent has special molecules and a chemistry holding droplets together with one side hydrophilic and the other hydrophobic. The ink itself caps the nozzle internally when not printing and unzips as soon as printing starts.

The latest generation of HP's PageWide technology is a foundation for a range of formats and applications. The printhead and drive electronics, ink delivery, and data processing are all modular so drop generators can be customised to suit purpose, media and inks and to use different water-based pigment inks. We look forward to hearing more about how HP's development partner/customers such as O'Neill Data Systems (ODS) in Los Angeles are getting on with this technology. ODS worked closely with HP on the development of its Inkjet Web Press series and has several T series inkjet web presses printing books and newspapers.

Whatever Next

According to Dr Ross Allen HP's senior technology specialist for printing technology platforms, the "PageJet" technology 2014 is "the culmination but not the end of 30 years of innovation". In the next five years we can expect to see further innovations, with increased speed and lower production costs and writing systems capable of delivering 10 billion to 100 billion drops per second.

– Laurel Brunner

From printhead to printer

Ricoh has recently set up a European Inkjet Technology Centre to better support printer manufacturers using Ricoh printheads.

Although there are a quite a number of vendors developing large format printers, most take their printheads - arguably one of the key components - from just a handful of suppliers. One of these suppliers is Ricoh, which has just opened a new European Inkjet Technology Centre in Telford, UK, to help its OEM customers develop their printer solutions. It's a fitting location, given that the area was home to an earlier industrial revolution, with plenty of signs en route for Ironbridge Gorge, site of the first iron bridge of its type built in 1779 to help transport raw materials.

Ricoh itself dates back to 1936 and is involved mainly in office copiers and multi-function devices, but with an increasing focus on production printing and, more recently, wide format. It aims to be the top company in its market sectors as far as possible. Thus it has 20.2 percent of the European office market. It currently has 107,000 staff worldwide, including 18,229 in the European, Middle East and Africa region, or EMEA. The Ricoh group is made up of 227 individual companies spread over 200 territories. Last year it earned ¥1924.4 billion (€14bn), with EMEA accounting for ¥421.7 billion (€3bn) in revenue.

The European HQ is in London for production printing and corporate office products, while there's also an HQ in Holland for office and MFP products. There's a local UK supply hub at Wellingborough.

Not surprisingly, Ricoh's main R&D centre is in Japan, but there are facilities in the US, and now the UK, which are mainly to enhance and interpret the core technology. Graham Kennedy, business development manager for Ricoh's industrial print division, explains: "One of the driving factors behind us setting this facility up was the number of customer enquiries that we had.

To test how customer inks might react with the adhesives used in the construction of the printheads, this device pulls the layers apart, while measuring the amount of force needed. Photo © Nessan Cleary

We didn't want to turn those customers away so we have made the investment to enable us to service those customers."

Ricoh has many customers in the EMEA region so this should make it easier for the company to help them, if only because they will now be working in more or less the same time zone. Kennedy adds: "We do think it's going to help customers realise their development far quicker than in the past."

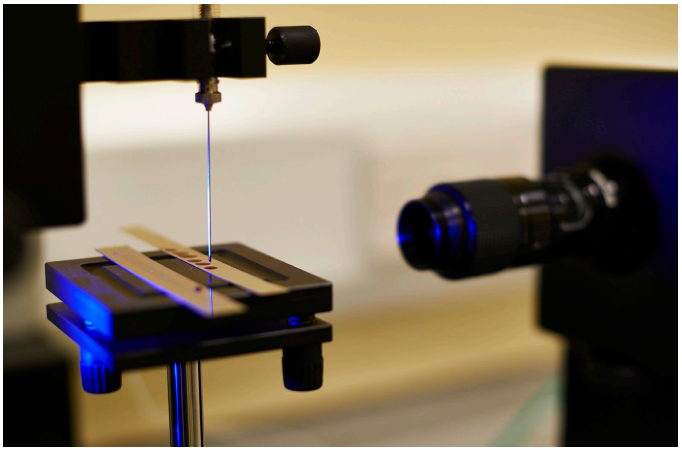
Stainless steel printheads

Ricoh can trace its involvement with inkjet back to 1978 through companies it has acquired. At this time Exxon Data Products developed an inkjet head for phase change

inks. The product never came to market but elements of it still exist in Ricoh's current line up.

In 1990 Hitachi bought EDP and built a stainless steel printhead, using an internal thermometer to change the phase. Hitachi went on to set up the inkjet component business, which Ricoh has continued since acquiring Hitachi in 2004. Today Ricoh has over 200 patents for inkjet technology.

The Ricoh printheads are essentially stainless steel units that are bonded together with laminates to form the fluid chamber and ink channels. Using stainless steel means that the heads are compatible with many different types of



Here, customer inks are dropped onto a nozzle plate to test how they react with the coating on the plate. Photo © Nessan Cleary

ink, including UV, solvent, oil and water. They are used in various markets, including wide format, which accounts for over half the uses, as well as 3D, textiles and ceramics.

Masohiro Yagi, senior sales engineer says: "Steel is expensive compared to silicon but then we would need photo lithography equipment for which we would have to invest a lot of money so I think that our manufacturing method is a more stable one for industrial uses."

Yagi himself has come from the printhead development team in Japan, where he worked with the visualisation and measurement group to come up with a new method of measurement. He explains: "I created a glass nozzle plate so that we could see through the ink chamber as it is always a problem to see what's going on in the head. I put a tracking particle in the ink and measured the flow rate inside the head where it's jetting."

Up to now Ricoh has named its heads according to their generation, with the current heads being called Gen5. But Ricoh is changing this to MH (for Metal Head) 5420 for two colours and MH5440 for four colours.

These latest printheads are a lot bigger than the previous Gen4 models, having 1,280 nozzles spread across four rows, which are staggered, giving roughly 600 nozzles or dots per inch. They produce a native drop size of 7 picolitres, but can produce larger ink drops by stretching them into long tails and splitting them to different sizes which can then combine in flight to form bigger drops. This process can produce up to four different drop sizes from 0-21 picolitres. They work with high temperatures up to 180°, which means that high viscosity ink can be heated up to a high temperature to be jettable.

There are two versions of the Gen5 head, one for water-based inks and one for UV and solvent, which use different adhesives to hold the head together. Kennedy explains: "We need more strength than the previous adhesives because the new head is bigger so we had to develop new adhesives." There is also a larger version with recirculation for high pigment ink types such as ceramics and white ink.

The Inkjet Technology Centre

Naturally Ricoh wants to work with as many customers as possible and across many different industries, some of which might have conflicting requirements. Kennedy explains: "We have teams that look at specific customer requirements. A large global account might need a specific function and our local teams can look at the implications of this technology." So, for example, label or textile printers might want low viscosity inks while a 3D printer might be looking for a high viscosity ink.

So part of the Inkjet Technology Centre's role is to talk with customers and to feed their requirements back to the printhead development teams, as well as to work with those customers to tailor their solutions around the printheads' capabilities. Much of this involves testing customer inks, as Kennedy explains: "It's important that we understand the chemistry that our customers are looking to put through the head, so we qualify and grade the inks for use with our head technology."

Thus Ricoh carries out a number of tests to see how the inks react with the heads, such as soaking the heads within the inks and leaving them for a set amount of time before measuring the effect on the adhesive used within the printheads.

Another test involves the way the ink reacts to the coating that Ricoh puts on the nozzle plate to ensure that waste ink will sit on the surface and can be easily cleaned away. Keeping the nozzles free of ink that might otherwise dry and cause them to become blocked is a key part of prolonging the lifespan of a printhead. But some inks can react adversely with the coating. Kennedy adds: "We can change the type of coating but some customers use it without a coating."

The lab at the Ricoh Inkjet Technology Centre in Telford, UK. Photo © Nessan Cleary

Ricoh also tests for whether or not the inks will cause corrosion within the heads, which is a particular cause of concern with water-based inks such as latex inks. It's not normally an issue with stainless steel but can affect the metal diaphragm, which is a nickel alloy. The actual corrosive penetration can be measured to give a value of mm/ year of corrosion, with samples from the past that have failed in the field that are used as references.

They also measure the viscosity of the inks in order to see how well the droplets form and when the tail breaks off. This involves dropping 0.5 ml of ink and measuring it. A water bath is used to control the temperature but if the ink is too viscous to flow properly then the temperature can be increased to reduce the viscosity range. But Yagi points out: "Sometimes UV ink will cure thermally so we have to be careful, but most inks are fine below 60°C."

Ricoh also supplies the electronics to drive the printheads, which are analogue and so need a digital signal to fire the ink, though some customers prefer to supply their own. Ricoh develops a standardised waveform to fire the heads, but most customers will adapt this as it's a key element in ensuring that a given ink can be jetted through the printheads.

The Inkjet Technology Centre has only just opened, but Ricoh is expecting around 30-40 OEM customers a year to make use of it. The company is already looking at ways to expand its scope. Yagi says: "We are thinking of making a universal flatbed demo printer so that customers can see their ink with a particular media. They usually do the jetting evalution and then make their own prototype but we want to help them shorten their development time."

Ultimately, of course, the main aim behind this facility is to help Ricoh sell more printheads to its OEM customers. But it's reassuring to see the effort that is put into ensuring that the inks and heads do work together, to prolong the life of the printheads and avoid costly replacements.

- Nessan Cleary

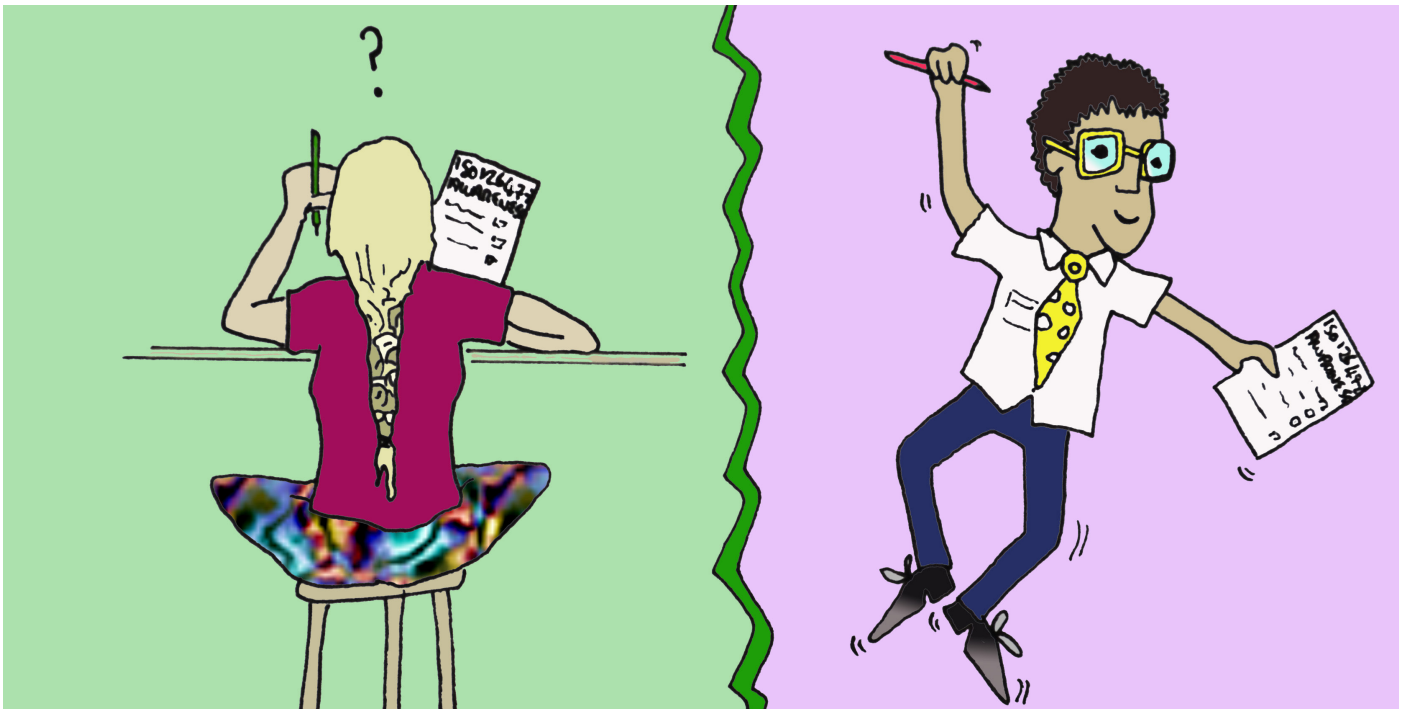
ISO 12647-2 Awareness Survey

We recently conducted what was meant to be an informal survey of ISO 12647-2 awareness.

The project started out as an attempt to understand peoples' perceptions of ISO 12647-2, the part that specifies process control parameters and target aim values for offset printing. It is the part for which printers most commonly crave certification and without a viable alternative, narrow and wide format digital printers also go for it when they want their production expertise confirmed. We wanted to get some idea of the market's awareness of the standard and what could be done to improve its profile.

We were also motivated by a commercial imperative: should we at Digital Dots continue to devote precious resources to standards work in this area, where the returns are paltry. The survey was intended to provide us and interested colleagues with a better idea of market perceptions. However, the results were so interesting that we think they are worth sharing.

Our survey presented ten questions with multiple choice answers, including the opportunity to provide additional information. We thought print industry associations might also want to be involved and undertook to provide them with the data, if they would send members the link to the online survey. But surprisingly (or not) organisations such as the UK's BPIF and FOGRA as well as the bvdm in Germany were not interested in participating. This meant that the pool for our survey was limited to our own and some associated contacts, plus members of the French and Brazilian printers' associations. Our hopes for a big response were not high; however, we were confident that we had the right profile and that we were asking the right questions.



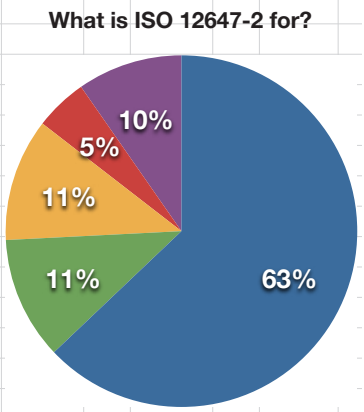
How clued up are you about ISO 12647-2 and its value? If you haven't already done so you can complete our awareness survey here: ***https://www.surveymonkey.com/s.aspx?sm=vPQ6KF4plnJR7Rzz0nktkw==***

We had a surprising 97 responses altogether, and respondents provided us with a mass of additional information in answers to the 'Other' option for many of the questions. There was considerable polarity in the responses, and clearly a substantial cohort were printers who already worked to ISO 12647-2 specifications. At the

What do you think ISO 12647-2 is for?

	All responses
a) Print buyers who need guaranteed colour accuracy and quality.	78
b) Consultants looking for lucrative work.	14
c) ISO committees with egos to massage	14
d) Printers who want to charge extra for what they already do.	6
Other	12
	124

- Answered: 97



We asked this question because it is a problem we come across both as consultants and as auditors.

other extreme were the printers who think they know what compliance with ISO 12647-2 is, but whose grasp of the facts is meagre at best. In between were a few surprises.

What We Found

Obviously all respondents were interested in ISO 12647-2 and many had strong opinions about it and its contribution to the industry. The clearest trend is the need for more evidence in terms of financial returns, cost/benefit analyses and case studies to encourage uptake of the standard. There is also a woeful lack of understanding of the nuts and bolts of it and its contribution to process control.

Q1: What do you think ISO 12647-2 is for?

Most participants are aware of ISO 12647-2's purpose, but an alarming number think it is for consultants looking for work and with egos to massage. Only a handful recognise that the standard is a means of charging more for their services.

Q2: Why is certification to ISO 12647-2 valuable?

This question elicited a reassuring number of sensible responses with fully 64% agreeing that certification to ISO 12647-2 gives them a competitive advantage and helps them to manage business and equipment utilisation. That 32% believe that it isn't necessary because customers don't value the standard, suggests that printers may not be considering the possible returns or even be aware that they exist. Only one respondent stated that ISO 12647-2's value lies in the enhanced profits it can deliver.

Q3: Does your company have the necessary competence to achieve compliance to ISO 12647-2?

The bulk of printers who took this survey run regular training sessions to maintain their colour management expertise; however, nearly 30% reckon that training and competence aren't important because their customers have not asked for it. In some ways this is indicative of a lack of initiative and proactivity within some sectors of the printing community. Let's hope that print buyers follow the Charterhouse lead and start encouraging their service providers down the ISO 12647-2 route.

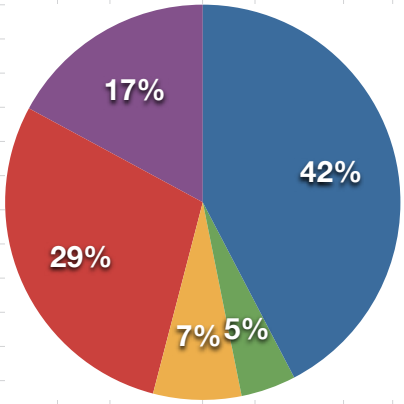
Q4: What would it take to get your company to embrace ISO 12647-2?

We had no idea what to expect for this question, but it is clear that an overwhelming number of printers want to see tangible proof points for compliance. Only 4% said

Does your company have the necessary competence to achieve compliance to ISO 12647-2?

	All responses
a) Yes we run regular training sessions to maintain our colour management	47
b) No because we print much better than ISO 12647-2.	5
c) Yes because we read the trade press.	8
d) No because our customers haven't asked us.	32
Other	19
	64

- Answered: 97



a) Yes we run regular training sessions to maintain our colour management knowledge.
b) No because we print much better than ISO 12647-2.
c) Yes because we read the trade press.
d) No because our customers haven't asked us.
Other

One of the most costly aspects of ISO 12647-2 compliance is education and training. However, this is also one of the quickest routes for a business towards increased profits.

they would never bother with it, but several multiple answers stated that they would consider ISO 12647-2 if they could see some case studies and an illustration of the costs, time and overall requirements for compliance.

Q5: Is your equipment up to scratch for ISO 12647-2 compliance?

The responses to this question were encouraging in that 47% said yes. However, 19% had no idea if their equipment was able to meet the standard's requirement or not. There is an opportunity here for manufacturers to improve awareness of their technologies. Associations could also do their bit to promote the need for quality control and business efficiency in the printing sector.

Q6: What is the biggest barrier for you to get ISO 12647-2 compliance?

The time and resources required to achieve compliance to the standard is easily the biggest barrier to adoption. But this problem should be easy to overcome, if there were some means of demonstrating the return and benefits of business and production management improvements. A large number of respondents cited a lack of customer interest as a barrier; however, 29% are hampered by old equipment and a lack of staff and management competence. Another opportunity for manufacturers and associations.

Q7: What is the biggest barrier to certification (as opposed to simple compliance) for your company?

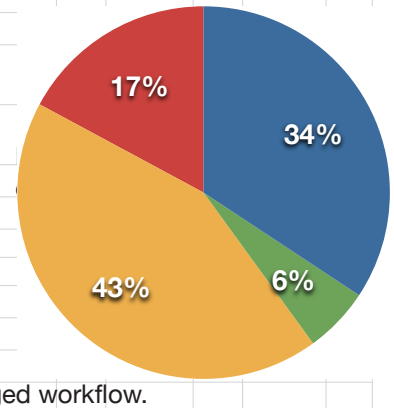
Certification rather than compliance indicates commitment and confidence to allow an independent auditor to judge how well the standard has been implemented. In the case of demanding certification schemes such as those of the UK's BPIF and the Swedish Printers' Federation, certification is a reality check that can provide data for additional quality control improvements.

Certification is also a requirement for many print buyers looking to cull bidding lists down to a reasonable and manageable size. So it came as a bit of a surprise that 29% don't want to bother with certification because customers don't care about it. Companies are either complacent

How often do you have to sell the print you produce to unhappy customers?

	All responses
a) Never because we have a reliable fully automated and colour managed workflow.	24
b) About 50 percent of the time, with tricky colours or substrates.	4
c) Less than 25% of the time because our customers submit files in the way we want.	30
d) Whenever new customers are having to learn about how to create print ready PDFs.	12
Other	0
	70

- Answered: 97



a) Never because we have a reliable fully automated and colour managed workflow.
b) About 50 percent of the time, with tricky colours or substrates.
c) Less than 25% of the time because our customers submit files in the way we want.
d) Whenever new customers are having to learn about how to create print ready PDFs.
Other

At least we've been getting awareness levels up, even if compliance is still not assured in the market.

or shortsighted, if they believe that certification isn't worth the cost. Equally alarming is the fact that 34% lack awareness and understanding of certification procedures. Time and budget are also big factors, which comes back to having empirical proof points.

Q8: Do you believe that certification to ISO 12647-2 can improve your margins and profitability?

Responses to this question came as another surprise in that 64% said yes with around a half of these expecting the investment to take many years to deliver a return. Around 29% reckon that the standard is expensive to implement; however, several respondents reckon that customers would not be prepared to pay extra for certification. This suggests a lack of confidence or understanding or both, because people generally accept a higher cost for premium products.

Q9: Does your company have a dedicated colour expert?

One of the requirements of more demanding certification schemes is that a company has a dedicated colour expert. This individual takes responsibility for colour management within the company and keeps up to date with technology developments and day to day implementation. 69% of respondents said yes to this question, with a further 20% stating that all departments work on getting colour management right. Several respondents said that colour management is in the hands of their technical director and 19% rather alarmingly don't seem to bother about colour control at all, printing only what customers provide.

Q10: How often do you have to sell the print you produce to unhappy customers?

In our role as auditors and consultants we have come across printing companies in this position surprisingly often. The problem is usually customer disappointment, because the print doesn't match the proof or some such reason. Printers who print by the numbers are rarely in such a position, because they work with customers on file preparation so that jobs print according to expectations and those expectations are realistic.

In our survey nearly 50% of respondents have to convince their customers that the print they produced is worth

paying for! This surely is reason enough to consider getting processes under control. Yet 17% of respondents are in this awkward situation when working with new customers, another opportunity for process improvements.

What Can We Learn?

This little survey was never intended to be a definitive evaluation of market perceptions of ISO 12647-2. However, the relatively high number of respondents and the completeness of their answers has given us some vital pointers. Some of these were already clear, but some were not. Printing companies are either very engaged with technology and process management or they are not. Those already engaged are aware of ISO 12647-2 and are either already certified to it, or are on the way towards compliance at least.

Those who are aware of the standard but view it as a cynical effort to part printing company owners from their cash, belong to the cohort of businesses who wait for customers to prompt them towards change. These are the companies who put a price tag on everything, but are unable or unwilling to measure its worth. They consider standard implementations and certifications expensive and unlikely to yield a return. Their opinions are based on distorted perceptions and a lack of facts, however they are sadly characteristic of much of the print sector.

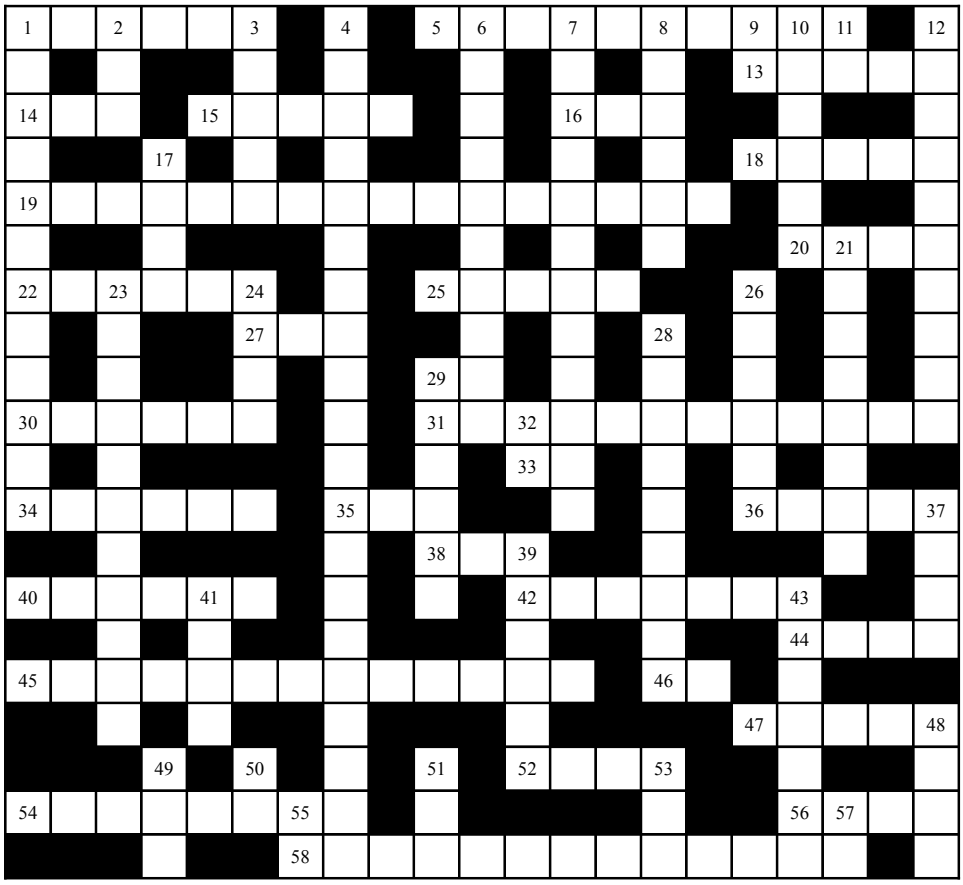
Summaries of all responses are available to subscribers for €135 or €175 for non-subscribers. Please email admin@digitaldots.org if you want a copy of the data.

– Laurel Brunner

X-word Puzzle

Number 54*

Summer's beckoning those of us in the Northern hemisphere so this puzzle is longer than usual. If you get stuck you will have to be patient. We will be back when the leaves are starting to turn and the nights are drawing in. Seems a lifetime away, but to coin a phrase "winter is coming".



Across

1. One of the two additional colours for Hexachrome printing. (6)

5. Technology that extends workflows to the internet. (3-2-5)

13. When women are wrong. (5)

14. A small child or quantity of rum. (3)

15. Preflight verdict for rubbish file. (5)

16. Estimated Time of Arrival. (3)

18. Secret store. (5)

19. Establish a set of control points? In Photoshop perhaps? (4, 6, 6)

20. Subsequently, what Steve did after Apple. (4)

22. Collection of things working together in a linked way. (6)

25. Lachrymose rips and hurries? (5)

27. Pub?(3)

29. Politically correct copper? (2)

30. Not offline or nearline. (6)

31. Necessary for banner makers who want to hang stuff effectively. (6, 6)

33. Who is it all about? Not you. (2)

34. Not a letter to count them all. (6)

35. Old person, state supported. (3)

36. Necessary step for removing memory sticks. (5)

38. Alternative to lasers in reprographics and means of UV curing. (3)

40. Not passive. (6)

42. Not legal. (7)

44. Source of energy for drying. (4)

45. The digital application for images. A boom that may be on the wane? (5, 8)

46. Depart. (2)

47. To collect or gather. (5)

52. What you get, depends on what you sow. (4)

54. Turn on the computer, click on an icon and what? (4, 4)

56. Truthfully and certainly, so be it. (4)

58. Depend on these to do a good job, at a price worth paying. (13)

Down

1. Process of making all processes as perfect as possible. (12)

2. Creative expression of ideas. (3)

3. Rub out or delete. (5)

4. MFP? (5, 8, 7)

6. About being productive and unwasteful. (10)

7. Whose difficulty if it's not yours or ours? (5, 7)

8. Brought in gradually. (6)

9. Not out. (2)

10. Discovered gravity. Apple lover. (6)

11. Television. (2)

12. Lovers of building design. Keen users of LED and inkjet printers. (10)

17. Music and poetry movement. Hit it. (4)

21. Go to these for ultimate thrills and exceptional results. (8)

23. Process of vaporising dyes in textile printing. (11)

24. Copy or interpret soundlessly. (4)

26. Small group of text, speech or musical elements. (6)

28. Forming characters green tilt. (9)

29. Us. (6)

32. A big dash. (2)

37. Between a walk and a canter. (4)

39. After tea and before supper. (6)

41. Like a cello or viola, but a Renaissance instrument. (4)

43. An inkjet technology you'll warm to. (7)

48. Drooping lonely for a type of wood. (4)

49. Missing a waltz… two, three … two, three. (3)

50. Hello! (2)

51. Not on. (3)

53. Print Standard Offset. (3)

55. Record (2)

57. Manuscript. (2)

***Answers in the next issue**

Number 53 – Answers

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