



Reality is merely an illusion, albeit a very persistent one.
– Albert Einstein

Dear Reader,

We all sit in ivory towers of our own making and some are taller than others. But as we complete the latest intensive round of ISO TC130 (Graphics technology) meetings that fact seems particularly pertinent.

Printers and publishers sit in towers that aren't necessarily very high and that have an awful lot of windows quite low to the ground. They are easily and readily accessible, and customers are encouraged in at every opportunity.

Manufacturers and suppliers have towers that are a little higher, with external stairways to encourage people to come in and visit, but down which the path to markets can be pretty precarious. They are accessible but sometimes inward looking.

The towers that consultants and journalists inhabit can be very tall indeed, especially for individuals involved with standards development. Sitting up so high it's easy to forget why standards are developed in the first place. All of us deal with different daily realities, but sometimes we should remember that they are all interconnected.

Enjoy!

Laurel, Nessian, Paul and Todd



In This Issue

Cross-media - potential and challenges

Paul Lindström examines some of the issues with cross media, both in terms of multiple substrates and cross-channel publishing. Print media are well-established but the situation with non-printing devices is far more chaotic and numerous issues should be considered.

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XPress yourself

Quark has updated its page layout program, QuarkXPress, now at v10 and Nessian Cleary has taken it for a spin. There aren't many new features but it's been completely overhauled with over 50 enhancements, including a brand new graphics engine, and is much faster and easier to use.

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Riso ComColor 9150

Riso has made a name for itself with a number of small colour printers that consistently punch above their weight. Paul Lindström has been testing Riso's latest compact inkjet printer, the ComColor 9150 and finds it to be a fast, economical model with good image quality.

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News Focus

EFI has bought Metrix software, best known for its imposition technology. The Metrix team has joined EFI, including Metrix CEO and founder Rohan Holt, who is now director of EFI Metrix products. The technology will be integrated into EFI's MIS but EFI will also continue to develop Metrix's existing reseller arrangements. The terms of the deal were not disclosed but EFI has said that it won't affect its Q4 or end of year 2013 results.

Canon has extended its colour production press range with the ImagePress C7011VP and VPS. Both of these come with a choice of new servers from Creo and EFI as well as Canon's own PrismaSync. The presses are also said to be compatible with more finishing devices than their predecessors, and have a new i1 Process Control tool for built-in colour management. Canon has also added a new model, the 7170, to its VarioStream 7100 range of entry-level monochrome printers. It's a simplex continuous feed dry toner printer capable of printing 172 A4 pages per minute. Maximum resolution is 600dpi.

HP has launched the HP Scitex FB7500/7600 Enhanced Color Pack, a set of new inks that can add spot or full varnish, create embossed text and images, and expand the

colour gamut. HP has gained the 3M MCS warranty for its Latex 881 inks and Latex 3000 printer and announced two new canvas substrates, HP Premium Satin Canvas and HP Everyday Satin Canvas, producing vivid colours, sharp details and broadening the colour gamut.

In addition, HP has updated its SmartStream Production Analyzer with improvements to the job dashboard and job summary report, as well as the ability to set productivity targets.

Esko has launched a new Kongsberg cutting table, the C-series, which has been completely re-engineered and redesigned. It includes the C64, a 3.2-metre wide table and the C60, which has a 3.2 x 1.6m bed. It has a new composite carbon-based traverse beam that lets it handle larger sheets at high speed with great accuracy. It should be capable of running at around 100mpm and should be available early next year.

Mark Andy is to develop a hybrid UV inkjet labelling system called the Mark Andy Digital Series. Rather than a single machine it will be a group of machine solutions providing varying degrees of performance at different price points. It will include automated in-line flexographic printing and converting. It's a 330mm wide system with CMYK plus orange and violet with white available as an option. It will run at 76mpm and will be installed in the US in December with commercial availability later in 2014.

Hollanders has added a 3.2m double-sided printer to its range of textile machines. The DS-320 incorporates two print engines and an integrated fixation unit and can print either the same or a different image simultaneously to both sides of the media. It uses high energy disperse inks and prints direct to spun polyesters, flags and banner materials. It prints at speeds of up to 72 sqm/hour.

EFI has posted its results for the third quarter of this year, with revenue of \$178.8 million, up 16% compared to the \$154.1m from the third quarter of 2012. Third quarter 2013 non-GAAP net income was \$18.7 million or \$0.39 per diluted share, up 41% and 39%, respectively, compared to non-GAAP net income of \$13.3 million or \$0.28 per diluted share for the same period in 2012. Fiery was

Spindrift

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▶ the most successful division, benefiting from new digital presses. America was the most successful region but the company experienced growth in Europe, thanks mainly to several acquisitions throughout the year.

Avery Dennison has launched its TurnLock Laminating System for the European labelling market. This allows converters to protect graphics using a single roll, consuming 30 per cent less material and at 25 per cent higher operational efficiencies. The system eliminates the need for an over-laminate or transfer tape. There are two different pattern coats available and converters can produce white, black and metalized PET colours while on press.

Mimaki has launched a new textile printer, the Tx500-1800B, a variation on the existing Tx500-1800A. The new model includes a specially designed conveyor belt that feeds fabric without tension, enabling high quality printing on elastic materials, even with unattended operation. Print speeds are said to be 1.6 times faster than conventional Mimaki textile printing products at 60m²/hour at a resolution of 600x450 dpi.

Drytac has launched new versions of its Interlam and Protac PVC overlaminates with Class 0 fire protection ratings. They are guaranteed for 3 years outdoors. These films are targeted at public spaces such as hotels, office buildings, and schools, where fire retardancy is important.

Sappi Fine Paper Europe is to raise its SBS board prices by 75 €/tonne effective 15 November 2013. Sappi has blamed this on continuing increases in the costs of the raw materials.

Müller Martini has launched a new gathering machine, the 3692, designed for small and medium-sized perfect binding jobs. Its highlights include the patented book verification system, which automatically prevents production with incorrectly set-up signatures. It replaces the 1571 gathering machine and can be used in the Pantera and Alegro A6 perfect binding lines.

Canon's **Océ** subsidiary has installed the first of its InfiniStream liquid toner printers as the press starts its beta testing. This has gone to packaging printer Joh. Leupold GmbH, based in Schwabach, Germany, which

serves both global brand owners and local German brands. Founded in 1890, Leupold provides folding cartons, point of sale displays and presentation boxes, and has a turnover of more than €30 million. According to Océ, the technology can be scaled up to larger formats. It should be competitive against offset for run lengths up to 3,000 to 4,000 B1 sheets.

Callas has updated its pdfToolbox product line to version 7 in which the core PDF and font libraries in pdfToolbox have been updated to improve speed and reliability of processing troublesome PDF files. The more compact and adjustable preflight report improves clear communication with customers, and the operator checkpoints allow manual intervention in automated workflows.

Cadbury has lost a nine-year battle to trademark a shade of purple - Pantone 2865C. The London court of appeal agreed with rival company Nestlé that such a trademark would be too broad. Sir John Mummery, one of the three appeal judges, said: "The mark applied for thus lacks the required clarity, precision, self-containment, durability and objectivity to qualify for registration."

Videojet has announced three new Ultra High Speed inks for its line of UHS continuous ink jet printers. These new inks – V516-D, V517-D and V530-D – join a family of ten other UHS compatible inks that have been extensively tested across a broad range of print speeds and environmental condition extremes. They are mainly aimed at food packaging environments.

Ipex has teamed up with the BAPC and is offering visitors who pre-register for Ipex 2014 a discount to the BAPC's annual conference in January 2013. In addition, Komori is to sponsor the Eco zone at Ipex, giving it a presence at the show and a chance to demonstrate its 5-colour 40ins press.

Apple has upgraded its iPad tablet with a new thinner iPad Air, and added a retina screen to its iPad Mini. Apple has also released its latest flagship desktop computer, the Mac Pro 2, in an innovative cylindrical design that now meets new EU safety rules. The laptop range has been further pruned, with the retina versions updated and the 15-inch non-retina model dropped. In addition, Apple

has released its latest Mac OS X 10.9, Mavericks, as a free upgrade.

SAI has updated its Enroute CAD program to v5.1. An expanded range of import filters has improved compatibility with a variety of popular CAD programs. A new Block Nesting Engine can nest large rectangular objects much faster and more accurately and there are new texture tools to design and create an unlimited number of possible textures to apply to a 3D surface.

Roland DG has set up a new rental scheme specifically to help users move into wide format technology by renting a printer for a one, two or three year period, without the need for up-front investment or financing. The scheme includes the VersaCamm SP-i and new VS-i series of printer/cutters as well as the VersaArt RE-640 and the VersaUV LEF-20.



News Analysis

Connected world

A new Vital Signs Online trend report released by the Worldwatch Institute claims that more than 3.4 billion people, nearly half the world's population, own at least one mobile phone as of 2013. More than 90 percent of people worldwide have been covered by a mobile phone signal since 2010.

In contrast, the number of active mobile accounts far surpasses the number of phone owners, having grown from 1 billion subscriptions in 2000 to a projected figure of more than 6.8 billion by the end of 2013. This discrepancy is because many people have multiple mobile devices or use multiple SIM cards in one phone. As a result, the number of mobile subscriptions is expected to surpass the world's population in early 2014, according to the International Telecommunication Union, an agency of the United Nations. However, the annual rate of growth is beginning to slow.

Therefore it seems likely that the mobile industry will have to adapt, from selling hardware and new subscriptions to becoming more about improving services. In some countries, mobile devices, rather than conventional computers have become the main way of accessing services such as Facebook.

This is particularly true of developing countries, where there is still a high rate of growth. By volume, 2G networks are the most common with around 4.7 billion accounts, mainly because 2G is cheaper and easier to set up than fixed line networks. In these countries mobile phones are often used extensively for services such as banking.

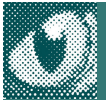
However, this report also highlights the health and environmental downsides of mobile devices, both in their production and disposal, which take a particularly heavy toll in developing countries.

The report draws a couple of conclusions that should interest the printing industries. Firstly, it finds that people read approximately 97 percent of their text messages, compared with only 5-20 percent of their e-mails, making a text message one of the most effective ways to convey important news.

Secondly, some estimates suggest that by 2018, there will be 9.3 billion mobile accounts, with most of this additional growth in developing countries and that mobile-broadband subscriptions will account for 6.3 billion of those devices----roughly two-thirds of the total market.

This should be a sobering thought for anyone in the printing industry, because with that kind of growth amongst the mobile devices in circulation it's almost inevitable that more advertising and more publishing will move to tablets and phones.





Green Shoots

LabelExpo and presentations to various groups about the pros and cons of labels have dominated much of this month's blogging. If you missed the blogs earlier in the month you can catch up [here](#). Your comments and feedback are, as always, welcomed.

The Trouble with Labels

Labels and packaging are amongst the most vibrant of print sectors, one of the few where the Internet is unable to cannibalise the business. Digital printing technologies are creeping into label and packaging printing, invading traditional domains and creating all sorts of new opportunities. Labels are a growth business but environmental impact has not been much of a consideration. And yet at the recent LabelExpo show in Brussels, Belgium, an exhibitor was offering "a new, user-friendly tool to help label printers and end-users understand the life cycle impacts of different label stock products and get credible information on the environmental performance of their labels."

There are several problems with this claim, starting with the idea of what it is that makes ISO 14044 compliant Life Cycle Analysis (LCA) tools user-friendly (not a lot). Environmental science doesn't really do user friendly and LCA is not simple. If it were easy no one would need standards and guidelines in the first place. Environmental impact analysis is difficult and requires a professional approach and profound knowledge. Even if a very clever manufacturer were to come up with tools to measure a label stock's environmental performance, implementing those tools would take commitment and understanding of the process. Average label and packaging printers are unlikely either to care or to be bothered.

We are all too inclined to take an overly simplistic approach to this stuff, from LCA to carbon footprinting studies. It's unwise to present tools that have serious purpose to solve serious problems in a way that trivialises the difficulties. It leads to disappointment and skepticism. In the graphic arts we already struggle to get printers and

Verdigris

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

publishers to appreciate the long term business benefits of environmental management. That struggle is harder if we claim that it's easy and then disappoint the market.

There is also the communications problem. A label is supposed to convey information about the thing it is attached to, such as ingredients, brand name and values or whatever. A label that makes claims about its own environmental performance let alone that of the product it's affixed to would have to be able to withstand some heavy scrutiny from trading standards authorities and advertising watchdogs. And do consumers really care about the label's environmental impact and LCA?

It is great that substrate developers and manufacturers recognise the importance of LCA in the printing industry. But we all need to accept that the printing and publishing communities are mostly lazy and reluctant when it comes to understanding and accounting for their environmental impact. Quite reasonably they see themselves as publishers and printers, not carbon accountants. As an industry we need wider acceptance of the value of environmental accountability and to see broader environmental market communications. Sadly, LCA tools for substrates are too premature to be really valuable.

Preaching Print's Sustainability

Preaching to the converted has always seemed a little self-indulgent. And since the converted already agree with you (mostly), what's the point? In the printing and publishing industries we unfortunately have a fragmented voice when it comes to teaching print media's sustainability

▶ to markets and consumers. Teaching's too heavy a word, raising awareness is better. Whatever we call it, as an industry we should be promoting the sustainability more widely.

There are several groups, such as Verdigris, trying hard to get the message out but we are all essentially preaching to the converted. So how can we change this? How do we expand our message to include people who use print, individuals who can make their own choices to opt for print or an electronic alternative?

We struggle with these questions daily, but don't seem to make much progress with the answers. Promoting paper isn't the way because most of those doing the promoting have a vested interest that is inevitably suspect in this media savvy age. Vested interests are providing the money to promote print's sustainability, but they rather miss the point. Promoting print's sustainability is about

Awareness that pulp and paper industries have made huge progress in cleaning up their businesses, is more important than promoting paper.

promoting sustainability in all its guises. Paper promoters might even have a negative impact if people view their communications as propaganda for an industry sometimes perceived as wasteful.

Awareness that pulp and paper industries have made huge progress in cleaning up their businesses, is more important than promoting paper. Mondi, for instance, has shifted its whole commercial perspective to support sustainability and eco-friendly production and manufacturing. That a massive company can almost reinvent itself to better support sustainability goals should be central to the messaging. For Mondi and others, such as UPM, sustainability is central however, the rest of the pulp and paper cohort should be following suit.

There is a real need for independent and cohesive communications. We would like to see the industry's associations, such as Intergraf in Europe, ABIGRAF in Brazil and India's myriad groups, come up with some coordinated international messaging on the sustainability of printed products. Such a common voice would at least give consumers in all markets and sectors some common facts and messages. Of course this is a pipe dream that will never happen because people are too often afraid to take responsibility, either for ideas or for their execution. Being afraid is no bad thing: taking no risks and responding quickly to potential threats ups the survival odds. But being afraid can also mean being out of position when it comes to shaping change.

The traditional graphic arts industry has seen an awful lot of unpleasant change over the last few years. At the same time media consumers have benefited from amazing innovations in both digital and printed forms. The enthusiasm for media is almost irrepressible in such a climate. Harnessing their awareness of print's sustainability in this context and encouraging responsible choices shouldn't be so hard. But until it becomes a priority and someone somewhere is willing to put in the dosh, a coordinated voice for the industry remains more likely to be a hope than an experience.

A Quick (Very Quick) Guide to Environmental Management

We get lots of enquiries about the value of standards, and some are easier to answer than others. In the case of environmental management standards a common question is the difference between the Eco Management & Audit Scheme (EMAS) and ISO 14001 (Environmental management systems). There is more to it than the one being European and the other international and so having wider relevance.

The two are about helping companies to improve their environmental management, meaning continual improvement of an organisation's environmental footprint. They are compatible and in the EU's view ISO 14001 is a stepping stone for EMAS, which will accept the same

documentation and processes as required for ISO 14001 certification. However EMAS is very definitely a European standard which automatically limits its relevance to the 27 members of the EU and to the European Economic Area (which also includes Norway, Iceland and Liechtenstein), plus EU membership candidate countries such as Turkey and Croatia. For graphic arts companies, ISO 14001 or a local scheme offering sufficient rigour would be more relevant and meaningful to customers.

EMAS requires compliance with environmental legislation and that the certification is overseen by government. EMAS also requires that employees get involved and that the organisation publishes an annual report to provide public

Within the graphic arts industry ISO 14001 is more widely used than EMAS, which is being pushed in Europe, particularly for local government authorities.

information. Both EMAS and ISO 14001 require continual improvements in environmental impacts, although only EMAS specifies the revision timeframes. Both are relevant to all sorts of organisations, regardless of size, and once you make the commitment, relatively easy to achieve.

Both EMAS and ISO 14001 are about commitment. In the case of ISO 14001 particularly these standards are about self-determination with subsequent confirmation from an external organisation. The standard starts with a requirement to have a defined environmental policy for the company. The principals of both have much in common with ISO 9001 the quality management standard that is applied throughout industry, and that is also the foundation of many certification schemes used for print quality control.

Within the graphic arts industry ISO 14001 is more widely used than EMAS, which is being pushed in Europe, particularly for local government authorities. The

Europeans want to encourage organisations to streamline their processes to reduce overall environmental impact, for instance in administration, construction, education and health. As with most things EU, EMAS is about changing behaviour, whereas ISO doesn't much care about behaviour so much as deployment.

Whether you opt for EMAS or ISO 14001 what matters most is commitment to continual improvement and pollution prevention. Organisations can cover this in their environmental policy statements, even if a company has no intention to get certified. The benefits of certification by a reputable body are obvious: formal and rigorous recognition of your efforts, and those of your colleagues. And just as important, a management system imposes a discipline that soon leads to better cost control and hopefully profitability.

Chemical Attractions

One of the best television programmes around is a surprising and pretty shocking US offering, *Breaking Bad*. In one of the programme's opening scenes the protagonist, a disappointed and downtrodden chemistry teacher, asks his students what chemistry is all about. The answer he gets is, rather obviously, "chemicals". "No," he shoots back, "chemistry is about change". For the graphic arts industry, which has depended on chemicals for much of its history, this is absolutely spot on but not for the obvious reasons.

Chemicals have been vital for the evolution of print. Among other things chemistry is necessary to change states on a printing plate, removing the bits that aren't required for inking and making sure that plates stay the distance on press. Chemistry is required in fountain solutions, inks, toners, cleaning fluids and so on, either effecting change through interactions or making sure that no change occurs. Chemistry is fundamental to the printing industry, and over the years the use of chemicals has been increasingly tightly regulated in all developed markets. And regulations proliferate as technologies spread to new sectors and geographies. Chemists are hired to ensure that their employers comply with all relevant regulations and that companies can sell their consumables cost effectively,

▶ ideally without risking expensive litigations or killing anyone.

This is all well and good, except that there doesn't seem to be a lot of cohesion in the rules governing chemical use in worldwide markets. Rules relating to their use and application, safety disclosures, handling, transportation, storage, combinations and disposal are all extremely complex and often inconsistent across trading borders. For instance, in some parts of the world there are controls on chemical use in food packaging such as food contact issues and ink migration restrictions. But the rules are far from being fully harmonised.

In some markets there are also initiatives and rules for protecting the interests of downstream users of chemicals and to control specific groups of chemicals, such as biocides (disinfectants) the use of which is controlled for inks and fountain solutions. Once again the rules are by no means universal. It's a complete tangle and one which chemical companies such as Agfa and Kodak have to navigate with extreme caution. Global organisations such as these employ teams of people in order to ensure regulatory compliance wherever they do business.

Compliance increasingly requires a full blown document management system and a barrage of expensive lawyers. Manufacturers, especially of presses, platesetters, prepress consumables, inks and toners, and pressroom chemicals must bear the heavy burden of compliance and the associated expense. Those expenses inevitably end up in the customers' laps however, the costs in some ways reflect the improving accountability of print. This industry is increasingly tightly regulated and accountable, which might perhaps be an added dimension to measures of its environmental impact.

For more green news, check out
The Verdigris Project:

Verdigris 

<http://verdigrisproject.com>





A Review

Capture One Pro v7

There are a number of photo editors around but for much of this year we've been playing with one in particular, Capture One Pro, from the Danish developer Phase One. It was originally developed for use with Phase One's medium format digital cameras but in recent years Phase One has added support for several other cameras, including most of the Nikon and Canon DSLRs as well as some cameras from Sony, Olympus and Fuji. It can also be used to control tethered cameras.

Capture One Pro is one of the few programs around that can genuinely compete with Photoshop. It is used by a number of well known photographers for various disciplines from fashion to landscapes. Its major strength is its ability to open and edit raw camera files. The main advantage of raw files is that they contain unprocessed data which can be easily edited. But this also means that the editing software is interpreting the file so that you can find subtle differences in the image depending on the raw conversion process.

Capture One includes its own raw conversion engine and this is extremely good at getting the best out of a raw file. Results are sharp and crisp and the colour rendition is extremely accurate. Also, it seems more forgiving of high ISO images than Adobe's camera raw plug-in.

Editing

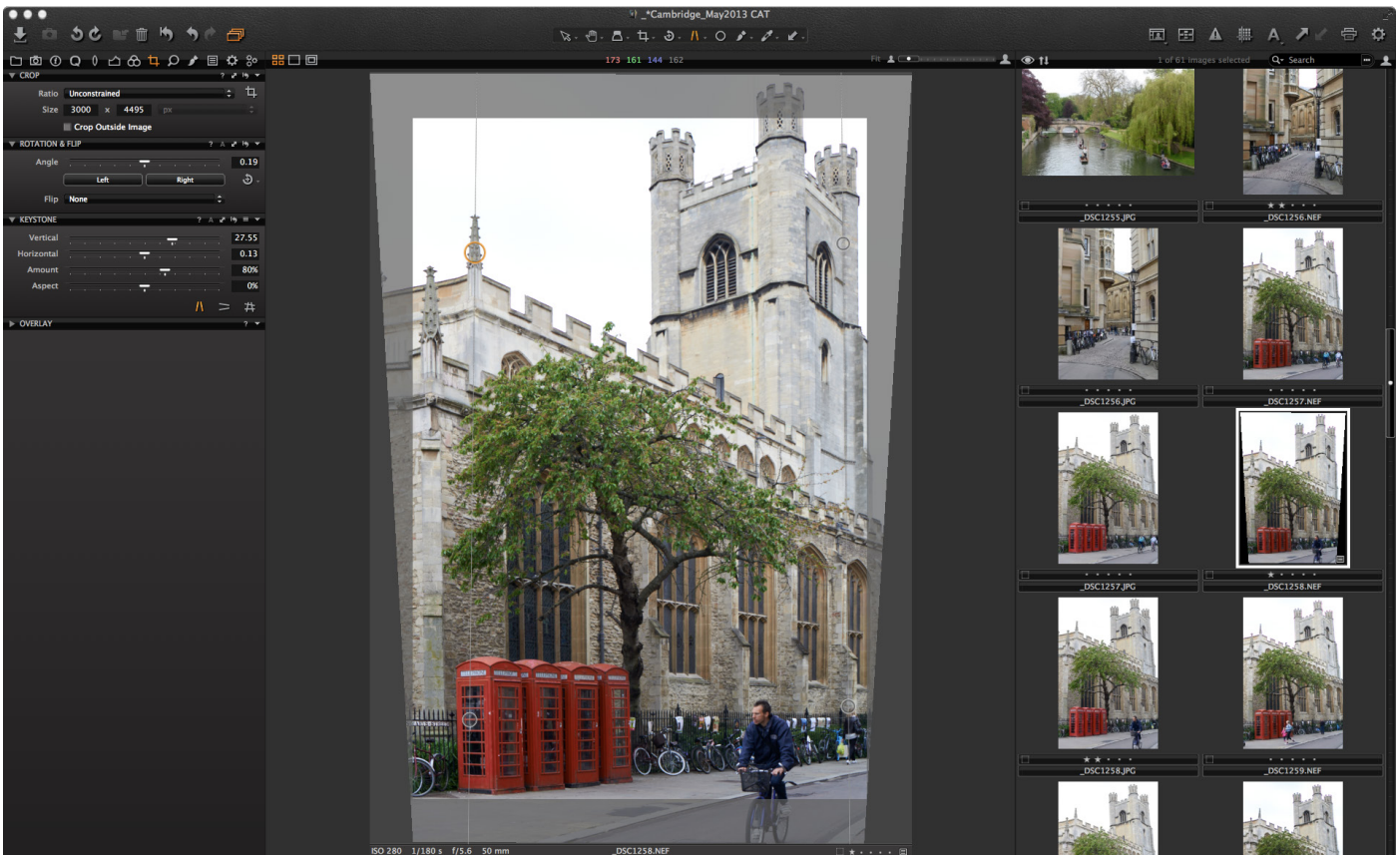
The basic image editing is extremely good. There is a lot of fine control over the colour, tone and brightness. The highlight and shadow recovery tools give a lot of leeway and are particularly good at controlling noise in boosted shadow areas. There's a new clarity setting, with different options including Punch, which boosts the midtones nicely.

The software includes profiles for a wide range of cameras so that functions such as noise reduction are tailored down to the individual camera model. There are correction profiles for a selection of lenses from most manufacturers and there is an option to create your own profiles.

Capture One Pro has a masking tool which is reasonably effective, but not as good as Adobe's Edge Refine technology. There is also a gradient mask for graduated



Capture One has a very easy to use interface. You can step through the various editing steps using the panels on the left, which can be organised to suit individual tastes.



Capture One also includes an effective tool for correcting perspective.

filter effects and you can edit specific areas of an image by creating a mask on another layer. It does have keystone correction to eliminate perspective distortion, which works well and is good at straightening out verticals on buildings without stretching the image unnaturally.

However, there are no compositing tools or any way to remove unwanted elements from an image. For that you have to use Photoshop but Capture One can save images as unlayered PSD files.

Media management

With v7, Phase One has added features from its asset management tool, Media Pro. Images can now be grouped into catalogues but you can opt to leave the original raw files in any folder or external drive with just the thumbnails in the catalogue so you can edit images in the catalogue and synchronise with the raw files later. The edits are non-destructive and there's a master reset to go back to the original state.

You can also organise images into multiple smart folders with the files physically staying in their original folders so

there's no duplication. It also synchronises metadata in XMP files.

Another useful feature is the ability to output multiple versions in one go. For export, you can create a recipe for each type of output, with such things as the file format, resolution, colour space and watermark and save these for reuse. You simply tick the box next to each recipe that you need for output and all versions are saved into their respective folders.

The program is prone to crashing but nonetheless Capture One is highly recommended for editing raw photographs. It costs €172. There's also a cut down version, Capture One Express, that lacks some features such as the tethered capture, Keystone corrections and spot removal but costs around €52.



Cross-media - potential and challenges

Cross-media has been a big buzzword for quite some time now, but there are quite an array of suggested definitions as to what the word really means. For us it means both cross-substrate and cross-channel publishing.

For most publishers and brand owners the decisive moment passed a long time ago as to whether or not they should embrace cross-media. In order to survive as a publisher, and to be able to produce effective marketing as a brand owner, the question is rather 'How do I manage cross-media production in an effective and cost efficient way'? There are challenges on many levels and in many areas, because by nature this is a complex task.

If we start with cross-substrate production, this means effectively managing print production via several printing technologies and on a myriad of substrates. While many people see print as a mature and established technology (read boring and non-innovative), anyone who has tried to embrace the endless opportunities with large format production, for example, knows that just managing colour across substrates as varied as vinyl, metal, glass, wood or fabric is quite a challenge on its own.

It doesn't help that many large format printers come with their own preferred RIP, making a centralised and effective workflow difficult. Carefully selecting a workflow system that can act as an umbrella to the multiple output devices is a good start, and will reduce waste, operator training and job set-up time. In addition, if this workflow system also includes a proper preflight function and advanced colour management, then it should improve print quality.

Another aspect of cross-substrate print and publishing is adopting variable data printing, given that most printers now have some form of digital press in their line-up. Until recently variable data, or personalised printing,

was dominated by the use of PPML (Personalised Print Markup Language), but the PDF/VT format (PDF-based Variable and Transactional data) is slowly starting to gain momentum. Switching to a PDF/VT workflow offers better colour management and a more open standardised graphic user interface, as well as being robust (PDF has evolved from the days when it was seen as fragile and unreliable to become the dominant choice of file format in the graphic arts industry).

However the uptake of PDF/VT has been slow, partly because of conservative and reactive rather than progressive thinking in our industry, but mainly because there are concerns about speed and the availability of tools to manage PDF/VT. But the growing number of vendors that support PDF/VT should address both of these concerns, with Adobe, as well as key players like Canon, Fujifilm, GMC, HP, Objectif Lune, PageFlex and XMPie, just to mention a few.

Beyond print

Cross-media production also includes publishing to non-printing devices and here we encounter something similar to the days of the Wild West and the Gold Rush – anything is possible and up for grabs for those who dare. But even multi-channel publishing on electronic media is now slowly entering a more mature phase, as some formats such as Flash give way to more flexible formats like HTML5. This is an area full of new buzz words like AR, Big Data, Electronic POS, Mobile Apps, Responsive Design, Social Media – and the list goes on.

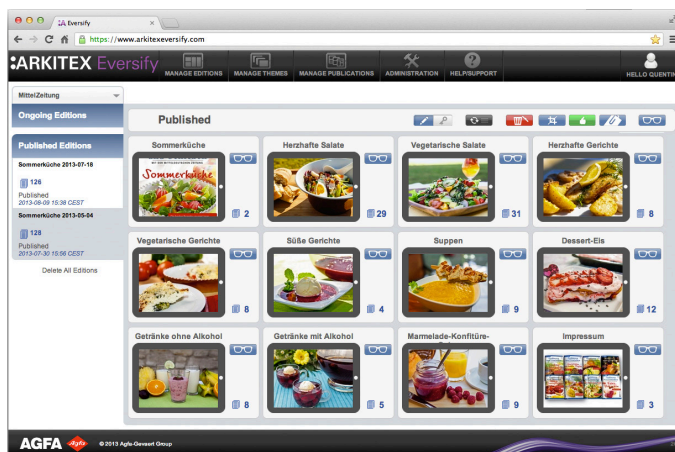
While the opportunities, challenges and choices for electronic publishing in multiple channels seem endless and overwhelming, there are some central areas to pay special attention to, in order to achieve an efficient and cost effective publishing workflow. We would suggest that there are four main areas to concentrate on: proper use of file formats; efficient database management; the choice of authoring tools; and finally – keep the customer in focus.

To start with, choosing your preferred file formats, and using them in a optimum way, should lead to a standardised publishing production workflow. This makes quality management easier, and should streamline



the processes and reduce waste in both time and money. The problem is, of course, that there are so many different devices in this type of workflow, that one file format can't possibly fit all purposes. While HTML5 is becoming more popular, it lacks typographic subtlety so there are situations where Flash or even GIF are more suitable.

But since HTML5 is derived from XML (eXtensible Markup Language) it is by its nature very flexible, and so suitable for an environment with different screen sizes and viewing



Cross-media means being able to prepare design for many different devices, like tablets and smartphones. The use of HTML5 is common, like in the Agfa Arkitek Eversify publishing tool.

modes, letting users decide if they prefer landscape or portrait mode when reading books or magazines on their smartphones and tablets. While Flash was (and still is) a very popular format for rich and animated content, HTML5 combined with CSS (Cascading Style Sheets) simply gives the designer more flexibility for dealing with the different devices' screen sizes and resolutions, as well as giving many opportunities of file conversion to and from HTML5.

Designing for a mobile device is more than a little step up from designing for a fixed page size as in print production. The user interaction is much more complex – you have to test how a page appears when zoomed, and you need to support more than what happens if you click on a symbol on a web page – most smartphones have a touch screen, so you can sweep across the screen to change page or position. When designing for different electronic devices it might be a good idea to start the base design

and template for the smallest device. It's easier to scale up the design for a bigger screen, than the other way around.

In addition to HTML5, there are many other file formats and features which will offer the user a rich media experience. One such hot topic is AR (Augmented Reality) in which a particular part of an image, or a 2D bar code, scanned by the smartphone, will take the user to a website, where more information or functions are available.

While this has been successfully adapted by, for example IKEA, it's time to remember the fourth area mentioned above – keep the customer in focus! It's easy to just implement AR because it's hyped for one reason or another, but if it doesn't add value for the customer, it can backfire. As an example, we recently bought some nice beer glasses at a favourite brewery, but when we unpacked them, we discovered a big 2D barcode on the back. It spoiled the look of the glass, and when we scanned the bar code we were taken to the brewery's website and prompted to download its app. Some customers might appreciate this, but for us it was disappointing and annoying.

Supporters of AR in advertising suggest that using AR in combination with face recognition software and electronic Point Of Sale displays will make this type of marketing more effective. The idea is that a device could identify people passing a billboard, in order to create a personalised ad on that billboard for the passers-by. This is reminiscent of the 2002 science fiction movie *Minority Report* starring Tom Cruise. There is a short scene where people walk through a subway station, and are shown individual, personalised audiovisual ads. This was scary, and reminiscent of George Orwell's novel *1984*, where the state could supervise and control everyone. Common sense should come into play whenever you consider a new medium or technical feature in electronic publishing. Nowadays it's just likely to remind people that the NSA is spying on us all.

Database management

The second focus area is proper database management. This is essential for successful variable data production, but also when evaluating the response rate and uptake

of different marketing activities. Some companies try to create one unified database for the whole organisation (in contrast to having a multitude of fragmented databases spread all over the organisation), but this is a task perhaps easier to talk about than actually achieve.

Instead of focussing too much on the data itself, it's probably better to focus on how the data will be used, and by whom. Again, keep the customer in focus, and choose a solution that will allow you to select and refine the data needed for your, or your customers' needs. One way is to identify key roles in the workflow as to where data is selected and further processed. It should not matter if the data resides in another database – it's the clever retrieval and refinement of the data that matters most. Many databases have been developed for a specific purpose, and it might be best to leave them as is, if you can easily find the data you need anyway.

Another question to ask yourself is if you have the competency and resources in-house to design and setup a central unified database? Buying this service from a third party specialist might cost a lot up front but the result might be worth it if you can tap in to their expertise and experience. The NIH (Not Invented Here) syndrome has probably caused enormous and unnecessary costs for too many companies. If you can buy a solution off the shelf, then do so!

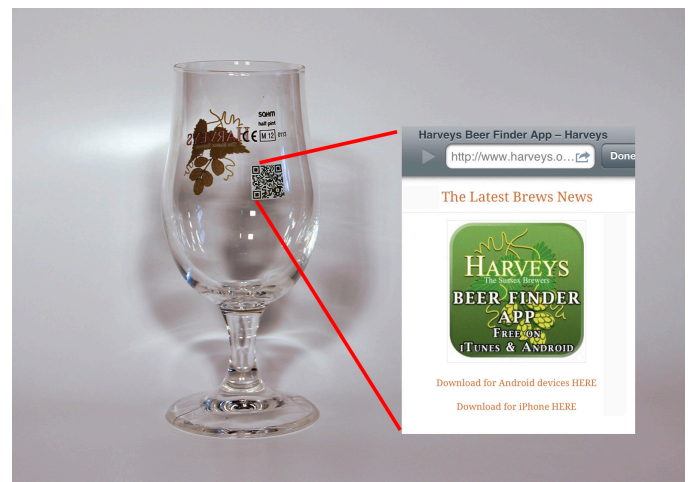
But if you decide to develop a solution in-house, then don't underestimate the need for training and internal support. Even a fairly good system solution will fail if not implemented properly, including proper training. Good database management makes proper use of Big Data possible, sifting through large volumes of data to find the nuggets – what is relevant for you and your customers. It used to be called data mining, but if well executed it can make the difference between a costly and not so successful marketing campaign, to a cash cow.

Rich media content

The third focus area is to choose good and relevant authoring tools. While there is always the need for some manual web programming and tweaking to adopt the design for some particular device, many tasks can and should be done via off-the-shelf software. Both Adobe

and Quark have embraced HTML5, so for designers already familiar with those applications, they are well suited for both print and electronic publishing. There are a growing number of vendors who offer plug-ins to both Adobe InDesign and QuarkXPress that can import and export HTML5.

What we want to move away from is static adoption, or reproduction of pages as PDFs, which are then published on the web or to a portable device. There has to be a true adoption to the device, to give a rich user experience. If



Common sense has to be paired with trying out new technologies, like AR (Augmented Reality). The 2D barcode on this pretty beer glass spoiled more than the value it offered (a link to the brewery's web site).

a publication is struggling to keep the subscribers or buyers of the paper-based magazine, then switching to a flippable PDF might do more harm than good – the prospective user might give up on both editions.

One of the vendors of traditional publishing solutions that has realised this is Agfa. Its Eversify publishing solution can import design from InDesign, via XML, and publish using HTML5 on an array of mobile devices. It's a cloud-based service and part of the Arkitex system. The reader downloads or buys an app to read the newspaper or magazine on their tablet or smartphone.

There are other similar solutions on the market, but the point is that the media is tailored to suite the medium, the device, without compromise. A modern publishing and authoring tool should be able to do just this – adopt



While AR (Augmented Reality) is one of the new buzz words within cross-media technologies, early adopters need to be careful not to provoke negative reactions from the users/clients. We don't want a Big Brother (1984) situation, with our every move tracked.

the design for a specific device, all in an automated and streamlined way.

The fourth focus area we have already touched on several times – keep the customer in focus! Any modern cross-media publishing solution needs to have some kind of CRM module (Customer Relationship Management). This will both help in targeting the marketing activities better, as well as improve customer support and service.

When the Internet was new, some doomsayers proclaimed that print would soon be dead. As we know print on paper and other substrates is far from finished. Cross-media seems to us to be a clever and efficient use of any available media, including print media, in order to communicate effectively with your customers and clients. A challenge yes, but exciting work!

- Paul Lindström



XPress yourself

We've already covered the news of QuarkXPress 10's release but now its time to dig into the new features and ask ourselves if QuarkXPress is still relevant in today's media mix.

Last year QuarkXPress celebrated its 25th birthday – a major milestone in the software world – but in that time the publishing industries have gone through tremendous change. In the beginning, Quark was part of that change, riding high on the waves of the desktop publishing revolution. But in recent years it's clung on grimly, watching firstly as Adobe's InDesign eroded its market share and more lately as internet publishing ate away at the market for printed books and magazines.

But QuarkXPress has also shown its mettle, learning to exploit digital technologies such as XML and, more recently, e-books and the growing tablet publishing market. Indeed, it's major strength has been to cater for the most common elements in all these different publishing markets from within a single program. As Gavin Drake, Quark's vice president of marketing, puts it: "We still have the same number of designers so we have to be more efficient in creating all the different versions, for print, e-books, tablets and so on."

So this new version is more of an evolution than a revolution with very few new features on the surface. But there has been a great deal of change under the hood as Quark has concentrated on making the program more efficient.

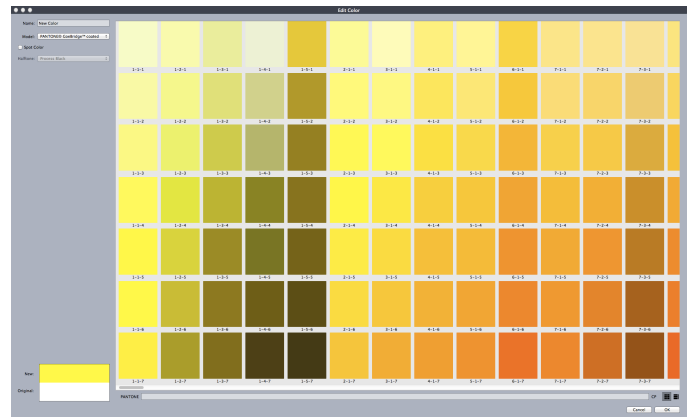
This is particularly evident on the Mac platform where there has been a complete rewrite to take advantage of Apple's Cocoa architecture. Thus QuarkXPress is now integrated with the Mac Finder, giving access to things like the Recent Items list, the file list in the dock, and the dictation feature. It also means better support for fonts as QuarkXPress now uses the same API as Font book.

Xenon Graphics engine

Without a doubt, the most important aspect of this new version is the new Xenon graphics engine. Drake says that

Quark has completely rethought how it handles graphics, explaining: "We now have a native deep understanding of file formats like TIFF and Photoshop so we can map the Photoshop elements directly to our object model. All this gives better performance and you don't have to keep accessing the hard disk."

Xenon supports multi-threading image handling so that there's no need for low res previews. As a result photographs appear to render very crisply with good resolution and image definition. The same is true of vector



There are over 300 additional Pantone colours and new libraries including Goe bridge.

graphics, which are much cleaner, without pixellated or jagged edges and with clean patterns and gradients.

It will now open layered files, including PDFs and TIFFs as well as the previously-supported PSDs and there's a new Advanced Image Control palette that replaces the PSD Import palette. This palette lets you turn the various layers on and off and gives control over alpha channels and paths.

The new graphics engine has also improved the PDF handling and now supports transparency in imported PDFs and objects can now interact with transparent objects in placed PDFs. It also supports transparent PDF pass-through, whereby a PDF with transparency that has been placed on a Quark page which is then itself saved as a PDF, still retains the original PDF settings.

Yet another advantage of the Xenon graphics engine is that it now supports retina displays. A new feature, adaptive resolution, automatically matches graphic elements to the highest resolution available.



The interface has been considerably tidied up, with palettes now lockable to the right or left side, and you can dock the Tools palette to one side, as seen here.

Snappy Interface

Quark has also taken the opportunity to tidy up the interface, which now has a clean, modern feel to it with grey edges and a white pasteboard, though this can be changed via Preferences.

The palettes can now be locked into place where previously they were all free-floating. The tools palette can be snapped to any of the four edges or it can be docked with the default palette set so that you can, for example, move it to the right hand side to give yourself more space for the layout. The default palette set can be docked to the right or left, and the Measurements palette can be locked to the top or bottom edge. You can also hide the palettes automatically, though we wouldn't recommend doing this with the Measurements palette across the bottom if you're using OS X!

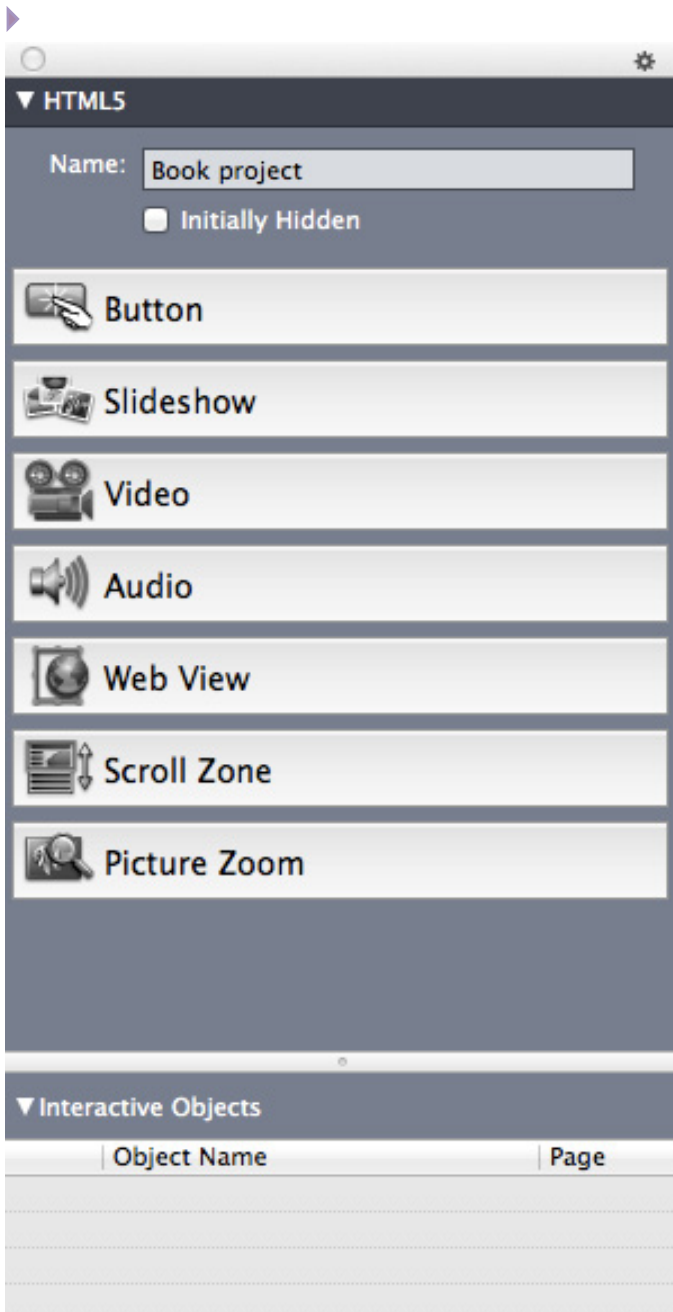
The layout space now automatically resizes around the palettes so you don't have to keep resizing your working area. Palettes can also be grouped by dropping one on top

of another. In addition, Palettes and dialog boxes can now be resized. Quark has also arranged the items under the Window menu in alphabetical order to make them easier to find. It will also support dual monitors with the palettes on a second monitor.

Quark has also finally retired the Modify and Format dialogues. To compensate, the measurements palette has gained extra functionality, which makes it much easier and quicker to find these features. Better still, Quark has mapped many of the keyboard shortcuts from the older dialogues to their replacements in the Measurements palette.

Other features

There's a host of general productivity enhancements like the ability to put objects onto layers on a master page to create master elements such as a text layer, handy for things like page footers. There's a new Flip Shape option that lets you flip objects from a single command. You can also join two bezier paths together simply by clicking



The Flash interactivity has gone but there's a new HTML5 palette for adding rich content to e-books and tablet layouts.

on the endpoint of one path and then clicking on the endpoint of the second path, which will seamlessly join the two together. There's a useful feature to create QR codes from any name, URL, email, phone number and so on. You can easily resize the QR code and even change its colour.

Style sheets can now be automatically applied as they are created, saving time in not having to then apply the style. It's now also possible to reorganise the layers in a QuarkXPress document, which is particularly useful for multi-language projects.

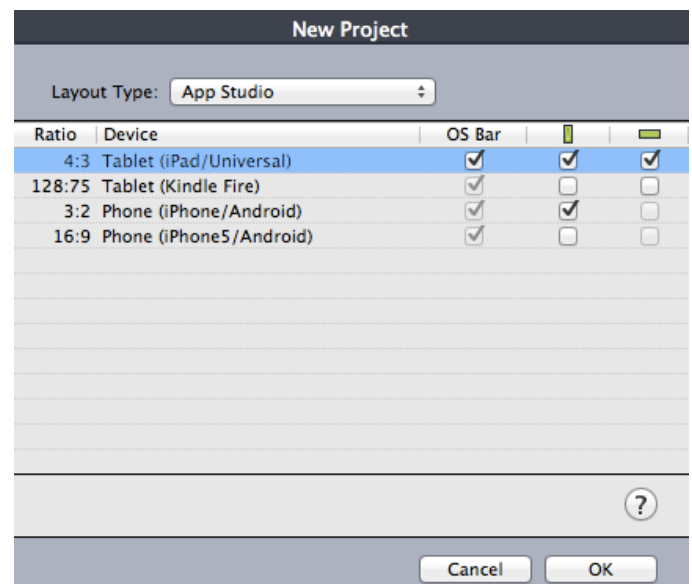
Every edition of Quark now supports East Asian typography such as Chinese and Japanese with no need to buy special editions. Quark has also improved the handling of unicode values for individual glyphs.

Quark has updated the Pantone library with an additional 300 or so new Pantone swatches which make it much easier to choose a Pantone colour, providing you have a properly calibrated monitor. You can also create new RGB colours by entering a value of 0-255 in the Color palette, which saves having to calculate the colours as percentages.

There's a new filter for Microsoft Word which allows for better support for embedded images and hyperlinks and supports the latest DOCX file type.

App studio

You can still use QuarkXPress for multiple media types but the ability to design web pages or interactive elements has gone. Instead the layout options now are for print, e-book and App Studio. There's no support for Flash as Quark has sensibly opted to concentrate its efforts around



The Web and Interactive layouts have gone, replaced by a new e-books layout, while the App Studio continues to grow with support for more devices including the Kindle Fire.

HTML5 and there's a new palette for adding buttons and rich media content to digital media.

Quark has also dropped its support for the Blio book publishing model but there's a new e-book layout and

Minimum requirements and cost

You can still buy QuarkXPress as a perpetual license. The full version costs £799 or roughly €930, while the upgrade weighs in at £299 or around €350, all prices excluding VAT.

QuarkXPress 10 comes with a dual license, which is cross-platform. Support on the Mac starts with OS X 10.7 but by the time you read this there should be a free update to v10.01 with support for the new 10.9 Mavericks. For PC users it runs on Windows 7 and 8. It needs 2GB of RAM and 2GB of hard disk space on a Mac, or 1GB on a PC.

There's no support for Leopard and Snow Leopard, or for windows XP and vista. It will only open files back to v7, with older versions being lost in the transition to Cocoa.

It's also worth noting that Quark still supports v9 and has said that it is looking into extending this to work with Mavericks as well.

Quark has improved its Reflow feature so that hyperlinks and anchors are now converted.

The App Studio continues as a separate service. You can use QuarkXPress to put together the layouts for mobile devices but you have to sign up to the App Studio as a separate service to test and publish your projects. However, since the App Studio supports both QuarkXPress and InDesign and is on a different development cycle, not much has changed here, other than that the Page Flip feature has been extended from InDesign to now cover QuarkXPress.

The App studio will let you target a range of devices including the iPad, iPhone and Kindle Fire. However, it will only let you design for both the portrait and horizontal modes on the iPad - the others are limited to just the portrait orientation.

Conclusion

So, is this new version worth the cost? We think that most users will probably be happy with it. Mac users will particularly benefit from the switch to the Cocoa architecture. The new graphics engine really does make a huge difference and overall, the program feels snappier and just a bit easier and quicker to use. That said, there is

a noticeable lag if you have a lot of images open at once though Quark has said that it is working on addressing this.

In many ways, Quark has played to its strengths with this release, namely document layouts. Thus it's a pleasure to use it for print production and the e-books and the tablet design feels like a sensible extension. But QuarkXPress is lacking when it comes to Web production, which increasingly is the glue that holds all the other media together. The adoption of HTML5 suggests that Quark is readying itself for something more radical - though it's not clear that Quark knows what yet.

Nor does it feel as if time is on Quark's side. We won't bother to compare QuarkXPress to InDesign as both are highly capable and it largely depends on which best suits users individual needs. But it is worth noting, somewhat alarmingly, that many students that we spoke to haven't even heard of QuarkXPress since most colleges have embraced Adobe's Creative Suite. Adobe's change to a monthly licensing fee may also cause publishers to rethink how they pay for their software altogether, given that most of Quark's target market will also be using Photoshop at the very least, if not other Adobe programs. So, while Quark undoubtedly has a very loyal following, it does face a real challenge in how it grows its market in future. In short, QuarkXPress 10 is a good evolution but we would like to see something more revolutionary from Quark.

- *Nessan Cleary*



Riso ComColor 9150

Marketed as the world's fastest sheetfed colour printer, the Riso ComColor 9150 should be seen as a serious challenger to the better known players in this field within the industry.

Riso has taken a rather humble approach in presenting this printer, opting not to focus on the higher volume market and staying below the radar. But while the printer is primarily marketed for office environments, or in-house corporate print centres, it may well find its



The new Riso ComColor 9150 is a 150 ppm inkjet colour printer which prints up to 340mm x 550mm size paper from the standard tray. The colour gamut and image quality is equivalent to that of offset on uncoated paper.

way into digital printing companies. As we will see, our tests show that this printer can actually deliver a colour gamut and image quality at or above that of litho offset on uncoated paper. And the speed? An impressive 150 single sided pages per minute.

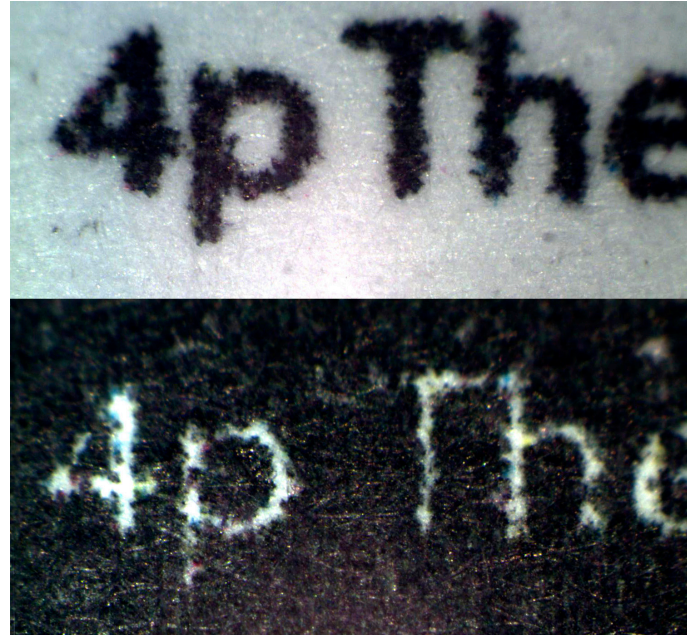
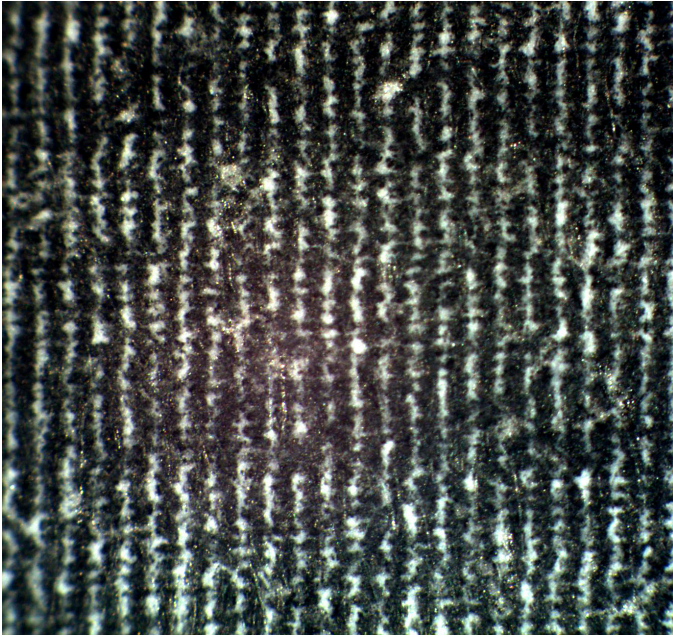
The Riso ComColor 9150 is very compact thanks to the simple paper path and slim design of the inkjet print head array. Being an inkjet, it has relatively low power consumption with the paper coming out cold. It uses oil-based pigment inks that dry instantly, without needing specially coated paper as with most dye- and water-based inks. Another benefit of the oil-based ink is that the image doesn't smear if it comes in contact with water or humidity.

Riso Kagaku was established in Japan as a mimeographic printing company in 1946. For most of its history its focus has been on duplicating machines and related products, however the company has been moving quietly into inkjet for a number of years. Riso now claims to manufacture the world's fastest full colour cut sheet inkjet printer. The ComColor inkjet printer family is a third generation inkjet printer that prints up to 150 pages per minute. Riso claim that it requires half the electricity of toner-based printers and copiers. Now a billion dollar company, Riso distributes its products in over 150 countries.

The ComColor 9150 has a very small footprint even if optional equipment is added like stapling, punching, folding or binding. There is an optional high-capacity feeder, in which you can load 4000 sheets of paper, and which can be refilled without interrupting the print run. There is also a high capacity stacker to match this. Another option is to install a scanner onto the printer, making it into a colour copier or Multi Function Printer.

The ComColor 9150 can print A4 or A3 when fed from the Lower Feed paper trays, or up to 314x548 mm from the Standard Feed Tray. The paper can be from 46gsm to 210gsm plain (uncoated) paper when fed from the Standard Feed Tray, and between 52gsm and 104gsm when fed from the Lower Feed trays. The resolution is 300x300 dpi, with output modes for 300x600 dpi and 300x600 with smoothing. The printheads are piezo drop on demand with eight greyscale levels.

Riso offers three options for output drivers, or RIPs. The first is basically only using the printer driver functions and the GDI (Graphic Device Interface) rendering engine, which will be enough for most users, having functions for booklet printing, FM screening and more. The second option is to use a PostScript RIP, and here there are actually two versions – either the basic ComColor Express IS 950C, or the bigger and more powerful IS 1000C with functions for forms printing and variable data production, including support for PPML. The third option is an IPDS printer controller, with support for the IBM AFP page description language. This is typically used for variable



Left: In the resolution test, the Riso ComColor 9150 showed identifiable line pairs up to the equivalent of 300dpi, in the horizontal direction, and the same in the vertical direction. Shown here is an image of the sample as seen using a digital microscope at about 500x enlargement. **Right:** The ComColor 9150 could reproduce four-point text well, especially as black on white background, while the inverted white on black got a bit thin. Shown here is an image of the sample as seen using a digital microscope at about 500x enlargement.

data production including transactional data processing and integration with corporate business systems.

How the test was done

When we test digital printers we look at six distinct areas, with references when possible to established ISO standards for conformance. The first area is the colour gamut that can be achieved, and since there is no ISO standard for digital printing, we compare with the 12647-2 standard for litho offset. We measure colour gamut by creating a standard CMYK ICC profile from an IT-8 characterisation data chart. This is done using an X-Rite i1 Pro spectrophotometer and professional profiling software. The profile is then analysed with the Chromix ColorThink Pro software to yield a figure for the total number of discrete colours contained within the gamut. We define discrete colours as separated by a delta-E value of 1, using the CIELab colour space as reference.

The first area tested is the printing speed. We print at maximum speed for at least two minutes and compare the achieved number of ready pages with the specified pages per minute.

The second area tested is what resolution can be achieved. We call this the resolving power of the printing system, and this is often different than the stated addressable resolution, as per the technical specification. The resolving power is a combination of the native resolution of the print heads, droplet size (or toner particle size) and mechanical precision when moving the print heads and/or media while printing.

To measure resolution we view the prints of a line pairs test chart under a digital microscope. We want to determine the point at which the lines could no longer be differentiated as distinct pairs. As a complement to the line pair chart we also print text, both positive black on white and inverted white on black, in a small font (down to 4p). This is another way to judge the resolving power of the printing system for practical use.

The third area is to evaluate how uniform the print is across the paper surface. We take five measurements of full tone cyan and then use the SpectroShop software to compare the colour deviation between the first sample and the other four. As a threshold we decided on 2.5 ΔE , the same value suggested in the ISO 12647-2 standard

for when printing solid spot colours, and expect a close match.

The fourth area is to check colour variation of a print run. For this we print a short run of 250 copies and sample every 25th copy, as well as the first print. We then use the sheet in the middle of the print run as a reference, and compare the colour for the other ten copies with this. Again we refer to the ISO 12647-2 print standard for tolerance on this, and set it to be a maximum variation of $4 \Delta E$.

Last but not least we check the registration between front and back of a page in duplex mode. Again, there is no directly applicable ISO standard defining the tolerances for this, but we use the postpress standard ISO 11800 as a guide here, and the tolerance for different register issues is often defined to be ± 1 mm.

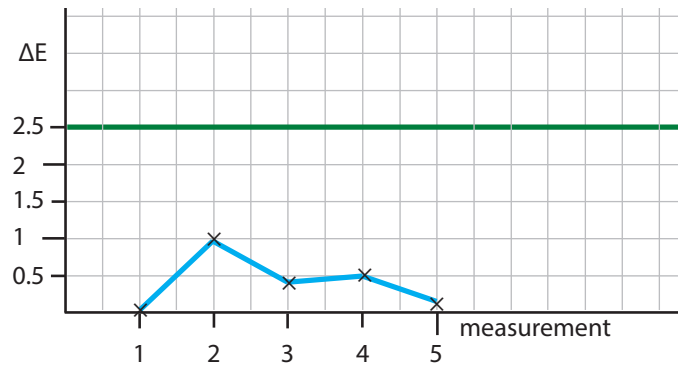
Results in numbers

Since the RISO ComColor 9150 only prints on uncoated stock we compared the colour gamut with that of offset on uncoated (plain) paper as well. For offset the colour gamut is around 172,000 colours when using a standard ICC profile based on the FOGRA 27 characterisation data set. On the 9150 we reached 187,000 colours, so actually a slightly larger colour gamut than for offset.

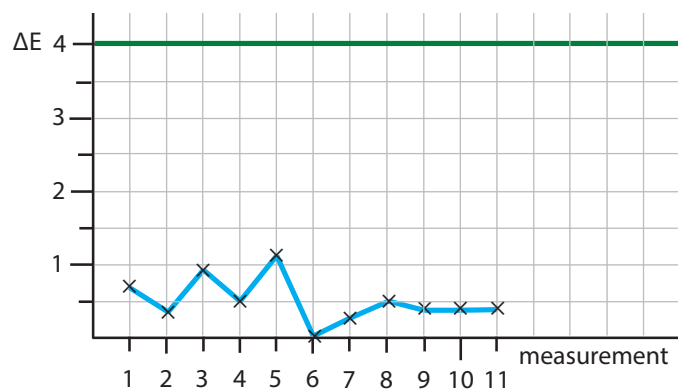
The resolving power, where distinct line pairs could be seen, was 300 dpi, exactly as promised in the technical specification. The small text was clearly reproduced down to 4 point, for both the positive text and also the inverted text with white on black background, but here the white text was a little clogged up by the surrounding black areas, but still readable.

Regarding uniformity, the ComColor 9150 showed a maximum deviation across the page of $1.0 \Delta E$ (and an average of $0.4 \Delta E$). A colour deviation below $\Delta E 1$ is impossible for the human vision to detect, so the results for the 9150 have to be said to be more than satisfactory in terms of good uniformity.

What about variation? Well, here the 9150 surprised us even more. The colour variation over the print run was maximum $1.2 \Delta E$ (and an average of $0.5 \Delta E$), which again



When measuring five samples of solid Cyan across the height of an A3 sheet, the uniformity of the ink density was very good. We use a threshold of $2.5 \Delta E$, as suggested in the ISO 12647-2 standard, when printing solid spot colours. Any colour deviation lower than $1 \Delta E$ is invisible to the human eye. The first sample is compared with itself, so will give a zero colour deviation.



When measuring a colour sample for every 25 copies printed in a print run of 250, the colour variation was very, very low, which is excellent. We use $4 \Delta E$ as the tolerance, as suggested in the ISO 12647-2 standard. Any colour deviation lower than $1 \Delta E$ is invisible to the human eye. The middle sample, number 6, is compared with itself, so will give a zero colour deviation.

has to be said to be very good. It is well under $4\Delta E$, and close to $1\Delta E$, which can't be detected.

Regarding printing speed we clocked the ComColor 9150 to produce exactly 150 pages per minutes, exactly according to specification. Finally the registration in duplex mode was judged to be satisfactory, under ± 1 mm on average in the four corners of the page.

Conclusions

The oil-based pigmented ink in combination with true 300 dpi output with eight grey levels offers both a good colour gamut, and smooth tone reproduction. While 300 dpi would be seen as rather low resolution on a



Technical specifications, summary

Vendor	Model	Ink Set	Max Media Size	Resolution (dpi)	Max Print Speed (ppm)*
Riso	ComColor 9150	CMYK (Oil based pigment)	A3 (tray) 340x550mm	300x300 (alt 300x600)	150

* A4 single sided

toner-based system with no grey levels, Riso achieves a surprisingly good image quality in the ComColor 9150, especially using the new X1 ink formulation, which has reduced see-through while improving the density of the black ink. As can be seen on the output sample of small text, the 4p font is reproduced sharply and clearly.

Since we deal with output on uncoated stock, the structure of the paper itself doesn't support much more than the equivalent resolution of true 300 dpi. While many printer manufacturers present a much higher addressable resolution in the technical specification than can be delivered as real resolving power, Riso has delivered exactly what it promises – the stated addressable resolution is also the resolving power, which is the native resolution of the printheads. This to us means that the ink droplets are put down with very high accuracy, and bond well with the paper.

So with all this praise, isn't there any room for improvements? Well, actually there is no particular area where we can see any serious limitations. There is a 1-3 mm white border on the page, but this is true for most digital printers. For pages with bleed a larger paper needs to be used, and for booklets or books with many pages the creep of the paper needs to be trimmed for thick book blocks, but this isn't unique to the 9150.

This means that for many types of print production, the Riso ComColor should be a fast and relatively cheap (and economical) printer, which offers an image quality similar to that of conventional offset on uncoated papers. Riso estimates that the cost of the oil-based ink, the actual usage, is about half that of most toner-based systems, so

this will have a real impact on the total cost of the prints. The relatively low power consumption, stated by Riso to be 0.15 Wh per sheet, will also contribute to a favourable cost calculation, as well as give a low CO₂ emission value. We are impressed!

- Paul Lindström





X-word Puzzle

Number 47*

A bit (but not much) of a wide format theme going on here this month. Possibly because we're thinking Fespa Awards for which the judging takes place next March. Get your entries in! In the meantime enjoy the puzzle.

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												41		42		43	
44			45						46								47
							48									49	
50												51					

Across

1. Exceptional, a job or an ink that's out of the ordinary? (7)
4. French field a concerted effort to achieve a tangible result. (8)
9. Not fake. (4)
10. A specially mixed ink, mostly beyond CMYK. (1, 4, 6)
11. Produces energy mostly using a rotor. (7)
12. Place of education or system of thought. (6)
14. Alternative to a paddle? (3)
15. Add. Total. Net. (3)
16. Large and magnificent. (5)
19. Continuous feed. (3)

20. A portable round Mongolian tent. (4)
21. Spaces in between lines of type. (7)
24. Intellectual Property. (2)
25. Laughable. (7)
26. Poorly spelt image. (4)
27. Paper measure, per square metres. (4)
29. Take Note in Latin. (2)

31. Device on the move? (6)
33. A very long time. (3)
34. Someone in learning role at work. (7)
36. Type of steak tickles me I see. (6)
37. Secret store or temporary memory. (5)
38. Where would computers be without one? (2)
39. Plans or machines? (7)
45. Judgement beckons on the telephone? (4)
46. Materials on which one prints. (10)
49. One up from A1 but use the letter equivalent! (2)
50. Chase the jobs, what any business does. (6, 4)
51. A staple of wide format digital print. (7)

Down

1. Long term plan supported by short term tactics. (8)
2. In colour management, conversion or characterisation useless without it. (11)
3. Not what a good business wants to sustain. (6)
4. The mythical land where printers are expected to remake their fortunes. (5, 5, 7)
5. Images captured with light. (6)
6. Initial Public Offering. (3)
7. Often used for printing labels. (6, 3, 6)
8. The technology to choose for wide format digital printing. (2, 7, 6)
13. Leans but necessary for organisation and planning. (5)

*Answers in the next issue



- 17. Newspaper advertising placed at the discretion of the publisher. (3, 2, 5)
- 18. Emergency Room. (2)
- 22. It's necessary for converting energy into motion. (6)
- 23. Having grain. (7)
- 28. Modus Operandi. (2)
- 30. Where the rubbish goes. (3)
- 32. To forcefully expel. (5)
- 35. Take an index and multiply. (7)
- 40. Worth. (5)
- 41. As soon as possible. (4)
- 42. Not all of something. (4)
- 43. Let not one fall, rip and shred. (4)
- 44. Raster Image Processor. (3)
- 47. A mayday call. (3)
- 48. Make. (2)

Number 46 - Answers

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

