



# Spindrift

News Focus • Opinion • Reviews  
Techno-Babble • Attitude

Volume 1, Number 8  
17th January, 2004

...Serving The Graphic Arts Industry Since April 2003

**xerography** • n. a dry copying process in which powder adheres to parts of a surface remaining electrically charged after being exposed to light from an image of the documents to be copied.

**inkjet-printer** • n. a printer in which the characters are formed by minute jets of ink.

(From The Concise Oxford English Dictionary)

## Dear Reader,

Before we plunge into the 2004 industry issues, let us wish you all a very happy new year. And let's hope it brings an upturn in the books of printers and publishers everywhere.

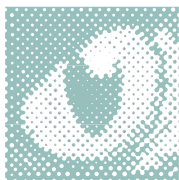
The topic of the new year so far seems to be the goings-on in the digital press market – and things are really beginning to happen now. Until recently, there were two main players battling for the commercial printing market, Xerox and HP Indigo (even this was not a given for those who looked in the crystal ball only four years ago). The press technologies are different, but at the core is electrophotographic (xerographic) imaging of some kind. Pretty much any commercial printer who offers “digital printing” has a press of this type (if not these particular makes).

But now there are stirrings in the inkjet quarter. This technology has not yet reached the upper printing echelons of “offset quality” at decent production speeds, but can, on the other hand print very much faster, in full colour, but at lower resolutions. And, as it turns out, there are believers who have put their money on the development of this technology. First Kodak bought Scitex Digital Printing. And then Agfa, who got out of digital printing four years ago, got back in the game, on the side of inkjet, by acquiring Dotrix. Suddenly there are four potential giants in the digital printing market and two main technologies, albeit still in different markets. Watch this space.

Enjoy the read!

Cheers from the Spindrift crew,

**Laurel, Cecilia, Paul and Todd**



## In This Issue

### *Prepping for the Mai Fest*

*We are proud to say that we actually have subscribers to whom this will come as news: the world's largest graphic arts trade show is a-happening in Düsseldorf, Germany during two frantic weeks in May this year. We are taking the opportunity to publish a number of articles in the run-up (starting now!) to the show, describing the status of various technologies and furnishing prospective visitors with the hard questions (and follow-up questions) to ask of our industry suppliers. We begin, in this issue, with computer-to-plate.*

### *The imaging battlefield*

Writes Laurel Brunner: “Computer to plate production isn't exactly the sort of topic one would expect to stir passion and fervour in the soul, but just try asking a supplier of platesetters about thermal or visible light imaging and then step well back. There's a good chance of fireworks, and a good chance they will be quite spectacular.” Find out what the pros and cons of the two combatants are...

see page 7

### *Pick a plate*

It's the chicken and the egg of the printing industry; do you choose a platesetter and get plates to go with it, or do you let your plate choice determine which platesetter you get? It's up to you...

see page 10

## Regular Columns

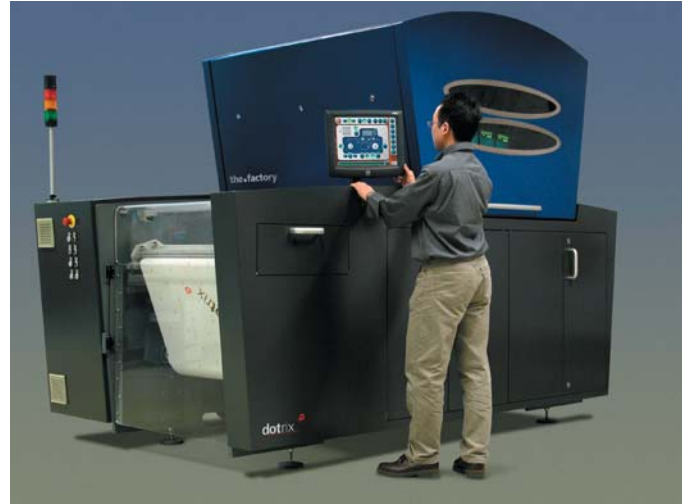
<i>News Focus</i>	Page 2
<i>Acrobites</i>	Page 4
<i>Spindocs</i>	Page 4
<i>Letter From...</i>	Page 5
<i>Driftwood</i>	Page 5
<i>Say What?</i>	Page 6
<i>Boomerangs</i>	Page 6

## News Focus

### *Agfa Back in the Printing Saddle*

Four years after Agfa got out of digital printing by selling its Chromapress activities to Man Roland (who's in fact just dumped the resulting Dicopress/Dicopack range, see separate story), the Belgian giant is now back in the game. The company has reached an agreement with Barco to acquire all assets and staff of Dotrix, a spin-off company of Barco's. At Drupa 2000 Barco showed a prototype of its industrial inkjet press the.factory (read: the dot factory), in September 2001 Dotrix was founded to develop and sell the product, which was then officially launched in 2002.

The.factory is a unique inkjet press in that it has print heads all along the width of the paper web. The technology is called SPICE (Single Pass Inkjet Colour Engine), and is the actual print engine of the.factory. Each individual print head cartridge has a printing width of 52 cm, and is mounted in a frame above the web in a staggered way so that the maximum total print width is 630 mm (12 cartridges). The advantage of the construction is that the print heads don't move, which gives stability as well as speed – the maximum printing speed is 24 m/s, resulting in 907 square m/hr (it's a lot, believe us; though of course you haven't got much to compare with as no-one else we know measures printing capacity in this way).



The.factory inkjet press, now part of the Agfa fleet. The print engine (SPICE) – the top part of the press – has a maximum print width of 630 mm in a single pass.

The.factory is currently aimed at industrial type applications such as wallpaper and floorcovering, speciality packaging, security printing and specialised printing applications such as mobile phone covers. Under Agfa's umbrella the scope for development is huge. It is interesting and no doubt significant that Agfa chooses to invest in high speed inkjet, and it's a fair assumption that they will look to move this technology into the realm of commercial print over the years to come.

### *MAN Roland Focusing on Dicoweb Technologies*

Focus on the Dico technology is now MAN Roland's top digital printing priority, as the company beats a retreat from the toner based sector. The relationship between MAN Roland and Xeikon is over, following the former's four year struggle to find a viable commercial model for the Xeikon engines. Was it ever really going to work given the competitiveness of the digital printing business? It seemed like a good idea at the time, when digital printing appeared to be a logical extension of traditional press manufacturing. However the short history that has followed shows that a good idea is about more than logic.

Despite the exciting potentials we've all been preaching, the economics of digital printing have been more nebular than stellar. The balance sheets of both Heidelberg and MAN Roland are suffering more than a little and both companies' digital printing commitments have contributed to these pains. Both companies are moving away from digital printing at a time when the market is beginning to turn. This is ironic but not entirely surprising. Still MAN Roland does need a digital printing technology to meet variable data market requirements, maybe not immediately but soon. ▶

### **Spindrift**

ISSN 1741-9859

A very special newsletter for Graphic Arts, Prepress, Printing & Publishing Professionals, published monthly (sort of) by:

#### **Digital Dots Ltd**

**The Clock Tower • Southover • Spring Lane  
Burwash • East Sussex • TN19 7JB • UK  
Tel: (44) (0)1435 883565**

#### **Subscriptions:**

Spindrift is a digital only publication, distributed in Adobe .pdf format. A ten issue subscription (our version of a year) costs €50 and can be obtained by going to [www.digitaldots.org](http://www.digitaldots.org) and subscribing. We strongly suggest doing this as it is the only way to legally obtain this publication and we know you all want to be legal, especially at this sort of price. Discount multiple subs are available. If you're undecided and require some high-powered sales encouragement, ring Laurel at the number above.

**Publisher** – Laurel Brunner – [lb@digitaldots.org](mailto:lb@digitaldots.org)

**Editor-In-Chief** – Cecilia Campbell – [cc@digitaldots.org](mailto:cc@digitaldots.org)

**Technical Editor** – Paul Lindström –

[paul.lindstrom@digitaldots.org](mailto:paul.lindstrom@digitaldots.org)

**Production/Web** – Todd Brunner – [tb@digitaldots.org](mailto:tb@digitaldots.org)

**Contributors:** Ranjit Kumarlakshmiaventantarasariji

▼ According to the press release for MAN Roland the toner sector is now “not part of MAN Roland’s core business”. Clearly. But might it also be the case that toner based technologies have had their day in digital printing and that the future belongs to inkjet printing? This isn’t at all logical, but then logic rarely has as much to do with reality as we’d all like to think.

### ***Agfa Delano Struts its Stuff (again)***

Agfa has released Delano, its web based project management system for printers. The software has been hovering on the horizon for a while but Agfa is now selling it. Delano is a means of providing JDF interfaces to the Apogee workflow, and will work with JDF enabled MIS systems. Early specs of Delano looked most impressive, but each installation is custom built so it is hard to know quite how Delano will work in practice.

Delanoue was a French mineralogist who gave his name to the mineral delanovite, a reddish clay-like substance known for its variable appearance and variety of composition. So is Agfa’s choice of name the work of genius or madness? The line between the two is so very thin, and in Delano’s case it will surely be the market holding the pen.

### ***Creo & Xerox Cosying Up***

Creo is to sell a series of packaged print solutions based on the Spire server plus a DocuColor 3535, 5252 or 6060 engine. At the moment the deal only applies in North America and to the channels and Creo’s direct sales force there. This is a means of getting Xerox some visibility and credibility in the commercial print market, and it adds another revenue stream for Creo. There will inevitably be crossovers between the two companies, especially for workflow development and there are plans to show some of this at Drupa.

### ***Kodak-Scitex Deal Done***

Kodak has announced that its acquisition of Scitex Digital Printing is now complete. Eastman Kodak Company has bought the American Scitex Corporation subsidiary for USD250 million, paid with available cash. Scitex Digital Printing will now operate under the name Kodak Versamark Inc – Versamark being the name of the Scitex digital inkjet presses.

### ***Markzware Markztools 5.5 Utilities & Pragmatism***

Markzware describes Markztools as a “content integrity Xtension for Xpress 4.11 and 5.0.” The extension protects said files from corruption and in version 5.5 there are also tools for verifying saved documents, so that suspect files can be backed up before they get too dodgy to be trusted. Markzware has added a tool to as the company puts it “scavenge text”. This means that if a layout file is

wrecked Markztools can still sift through the data and pick out the text from the mess.

Markztools 5.5 is a godsend for anyone who wants to resist pressure from the likes of Apple and Quark to upgrade. Amongst other things the software converts XPress 6.0 files into version 4.11 or 5.0 for OS 9. It seems Markzware is more in touch with print production reality than either Quark or Apple.

Software that provides backwards compatibility to XPress should be well received in the market, particularly for companies hesitating to step off the cliff into a major XPress and OS upgrading project.

### ***Xerox and Dell Pool Patents***

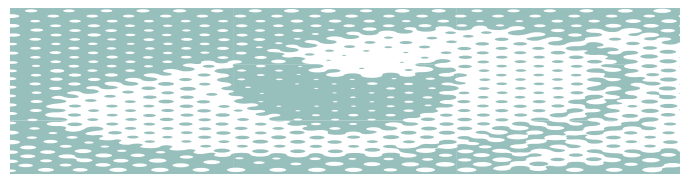
Xerox International Partners (a majority-owned subsidiary of Xerox Corp), Fuji Xerox and Dell announce that they have entered into an agreement that will “leverage Fuji Xerox’ imaging technology and expertise and accelerate the growth of Dell’s printing and imaging business.” Basically, the companies are to develop joint products based on the technology of Fuji Xerox and built for Dell’s market. Dell will acquire the products through Xerox International Partners, a US-based joint venture between Fuji Xerox and Xerox Corp. What the products might be we are not told, and any implications for the publishing industry can as yet not be discerned.

### ***New Automation Tools from Xinet***

Xinet is bringing new automation tools to Drupa, extending its FullPress, WebNative and WebNative Venture products. New developments include triggers and actions for database driven workflows, PDF/X-3 support, various extension modules and XMP/XML export from WebNative Venture.

Although Xinet is not trumpeting JDF compliance, the company’s support for XMP and XML will provide a sound basis for building such systems. XMP is a lot less scary than dealing with thickets of JDF modules.

The triggers and actions tools are intended to draw asset management and production closer together, so that changes to metadata values in the database can trigger subsequent actions. Approval cycles in a workflow can for example use this technique to automate progress from stage to stage.



## Acrobites

*(Something to get your teeth into)*

### RSS

The full name of this web content syndication format is Really Simple Syndication and it is a dialect of XML. The specification conforms to XML 1.0 and an RSS document is basically an XML element, pointing to subordinate elements or channels, the metadata about the document and/or services to which an RSS file points. The pointers remain live even if the thing they point to does not. It maintains a content trail even if the content has disappeared. It sounds like something only lawyers would come up with.

RSS requires some channel elements and makes others optional. Required are the name of the channel which could be a website plus a link to the RSS content or service. There has to be a description of the channel as well. Optional channels include defining the natural language in which a channel is written, lists of allowable values for a particular element, copyright information, the email address of the web manager, you get the idea.

It all sounds pretty messy even though RSS is supposed to provide for simple content management. Each channel can contain any number of items which can be individual stories, images and links, or single aggregations. Written in XML this specification is flexible and extensible but essentially RSS seems to be a pretty unrestrained means of categorising information structures with little consistency in implementation. There are efforts underway to clarify the specification before new features are added, so it might be best to wait a while before doing the RSS quickstep.

### ICRA

The Internet Content Rating Association is a non-profit organisation for labelling content. The group's declared goal is to "protect children from potentially harmful material and to protect free speech on the Internet". ICRA seems to have missed the conflict inherent to this statement.

Their goals are still laudable though, and in order to achieve them ICRA has designed a system whereby web authors complete an online questionnaire to explain their site content. ICRA use this information to produce a digital label for the site. The idea is that people can set their browsers to control web site access based on the label. The ICRA claims that it makes no value judgement about sites, but of course this is a silly thing to say. Basing the labelling on the responses in a questionnaire has to be value driven, and requires a judgement as to how a set of responses compares to the values required

for this or that label to apply. The questionnaires ask about language used on the site, the nudity and sexual content of a site, violence depicted, drugs, gambling and so on, none of which lend themselves to objective definition.

The group is trying to help protect children however and this is a good thing. This system can help but not solve the problem of reconciling free speech and the need for subjective censorship. At least it provides a means of some control. Sometimes a cure can be worse than the disease though. Maybe encouraging parents to be more involved with their children might be more effective?

## Spindocs

*(Where the spinner gets spun!)*

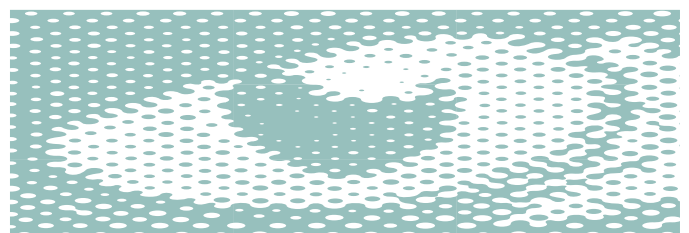
*Impressive Drupa-year kick-off by finishing equipment supplier Duplo, whose first press release of 2004 reads:*

**"Hat trick for Duplo 2CV**

For the third year running, Robin Greenhalgh, group managing director of Duplo International once again jumped into his overalls and successfully finished the annual 24-hour 2CV race in Belgium. The race was held at the stunning Spa-Francorchamps race circuit, home to the Belgium Formula 1 Grand Prix. Despite a blown engine which cost Robin two hours on the hard shoulder, he and his team finished the race a respectable 27th – out of 71 participants.

Greenhalgh comments: "I am sure lots of men dream about replacing their office apparel with racing overalls and completing one of the most exciting race courses! Although I thought the race was lost when the engine blew up, great team effort put us back in the running. It was incredibly tense but also great fun and I can't wait for next year's race. I am hoping to move up the field next year."

*We're not convinced publicising getting in at 27th was a great idea, Robin. We dream of replacing our office apparel with leather boots and whips, but we don't send out press releases about it!*



## Letter From... Noida

Dear Friends,

It is from beautiful Noida near the city of magnificence of Delhi that I am writing. See, you are the very people who I am needing very much to talk to. My difficulties are coming thick and fast and it is for many weeks that I am worrying. It is in my working job that I am most anxious. Most anxious indeed. You could feel the hair.

Adobe India is employing heaps and heaps of state-of-the-art-engineers and it is in the writing of the software that we are making busy. See software is a very special ingredient for the graphic designers and for the users of the electronic documents, but here in India the people are not understanding that it is not the correct way to behave to use the copied software. See here in India there are many, many companies who are not caring that they are doing stealing of software, if it is a copy that they are making, or if it is a falsified version that they are using.

If you are to any big institution going you will see those special fruits that are coming from our labours. Friends please tell your readers that are here in India residing that it cannot be possible that we can keep our wonderful employment positions if Adobe cannot survive the exciting times that are here prevailing. See it is India that is losing if so many and so wonderful IT companies like Adobe is, cannot be here in business. Ha so now you are I think seeing why it is I am so worrying.

Me and my good fellow colleagues are anxious for the setting of our business and our families. Heaps and heaps of us ask that you bear with us for a smoother tomorrow and tell people that to do the right thing is to say No to the stolen and copied softwares.

See here in India we are touched by the great history, trappings and the many miscellaneous wonders but it is to the new ideas that we are most often opening. It is for the most part that this is a very good, and very quality thing. But it is not a very good and very quality thing for the people to open to the new ideas of others

and the copying of the softwares. This we are understanding and are hoping that this can be assisted to by you.

Ranjit Kumarlakshmibaiventantarasariji

## Driftwood

*(Useful stuff washin' in on our shores)*

Working (or not) with XML in Office 2003

Microsoft's involvement with XML goes way back, although it didn't have a very good start. In 1998, just when XML 1.0 was about to come out, the U.S. Patent Office granted Microsoft a patent for "the use of style sheets in an electronic publishing system". The people in the W3C working committee for XML, didn't take very kindly to the news of this patent. Microsoft representatives had worked in the group for several years, and never mentioned that there was any such patent on the way. They probably didn't know of it themselves. Obviously the whole XML architecture falls well within such a general description, and for a while the publishing world wondered whether Microsoft really would pursue the patent's enforcement. Shortly thereafter Microsoft declared that it had filed the patent only in order to protect the industry from "standards terrorism".

Microsoft has been very quiet about this patent choosing instead to embrace the WC3-standard more or less wholeheartedly, including the use of CSS (Cascading Style Sheets) and XSL (eXtensible Stylesheet Language). In Word 11, part of Office 2003, you can now work straightforwardly in XML, using both DTDs (Document Type Definition), and XSL to define the structure and look of an XML document. This is in contrast to for example InDesign and Quark XPress which only accept DTDs, a somewhat more old-fashioned way of working, as XSL and XSLT (Extensible Stylesheet Transformation) are generally considered more flexible and convenient to work with than DTDs.

Which brings us to the topic of this Driftwood. It's only in the Pro version of Office that you can work with XML, and even then the user is left very much alone. No Tutorial, no sample XML or XSL files in the documentation. Yes, there is the online documentation, and this is helpful, but it assumes familiarity with XML. To bring XML to a broader audience Microsoft would be wise to quickly bring about some decent Tutorials on how to use XML. And until this happens, lay users beware; this is one XML technology best left to developers and XMLophiles.

## Say What?

*(Iffy Writing Award Presented in the Ether for Obfuscation, Confusion, Misinformation or All Out Pretentiousness)*

*This press release is about a reverse take-over, but seems to have been written more to confuse than inform. It carried with it the statement "Not for release, publication or distribution in or into the United States of America, Canada, Australia or Japan." A rather odd request in this the age of digital communications and the Internet. Nonetheless, Americans, Canadians, Australians and Japanese, please avert your eyes. The rest of you can read on:*

"The boards of TripleArc and Access Plus announce a recommended offer to be made by Canaccord Capital (Europe) Limited on behalf of TripleArc for the whole of the ordinary share capital of Access Plus.

Based on yesterday's Closing Price of a TripleArc Share of 20.75p, the Offer values each Access Plus Share at approximately 223.0p and values the issued share capital of Access Plus at approximately £40.2 million. This represents a premium of 68.30 per cent. [sic] to the Closing Price of an Access Plus Share on 24 April 2003 (the last dealing day prior to the announcement by Access Plus that it had received an approach which may result in an offer being made for its entire issued share capital) and a premium of 22.19 per cent. [sic] to the Closing Price of an Access Plus Share on 22 October 2003 (the last dealing day prior to the release of this announcement).

TripleArc also announces a proposed placing of 70,000,000 new TripleArc shares at 16p per share to raise £11.2 million (approximately £7.9 million net of all expenses under and in connection with the Placing and the Offer)."

*That ought to cover quite a lot of costs associated with the construction and perorations for releases to conditional upon and acceptance thereof for press releases conditionally and unconditionally to targeted recipients and untargeted non-recipients. Or words to that effect.*

## Boomerangs

*(Your feedback fed back)*

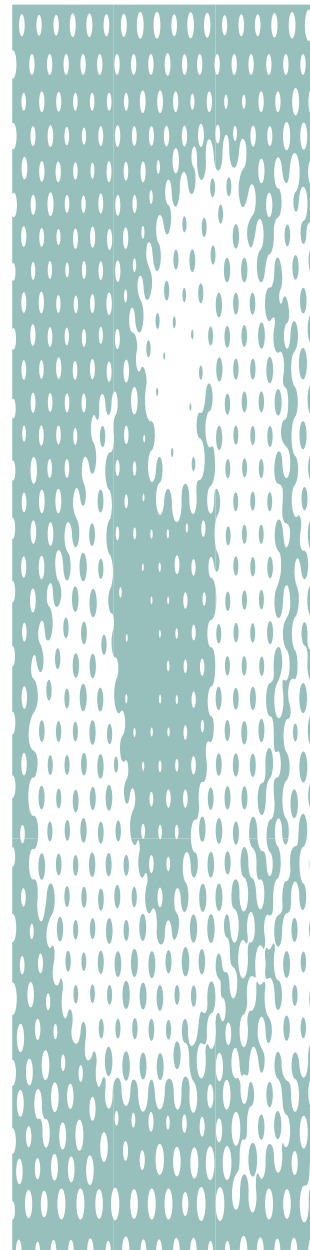
Helene, we couldn't resist...

Dear Laurel,

I'd meant to look up the definition of Spindrift after I first saw your publication -- and then just this weekend read (don't tell anyone!) Rosalind Miles' *Isolde* trilogy and found it there with enough context to "get it".

Very cool publication title.

Best,  
Helene Smith



## Computer-to-Plate Imaging Pros & Cons

Computer to plate production isn't exactly the sort of topic one would expect to stir passion and fervour in the soul, but just try asking a supplier of platesetters about thermal or visible light imaging and then step well back. There's a good chance of fireworks, and a good chance they will be quite spectacular. Of all the issues relating to computer to plate production, the question of imaging technologies is just about the most volatile. It's a highly contentious issue for many people and their passionate belief in either technology seems to run deeper than mere commercial interest. Strange as it is to say, there are few people who do not have a strong opinion either way, and there are rarely half measures for fans of thermal or visible light imaging technologies.

### Making the choice

For first time buyers of computer-to-plate systems the choice of plate and imaging technology are impossible to separate, which is why making the correct choice is so important. It takes a long and thorough evaluation of the plate requirements to appreciate the importance and relevance of arguments for and against visible light and thermal technologies.

### Thermal imaging

Thermal plates have an aluminium base coated with a material sensitive to laser energy. The imaging process relies on radiated light, focusing it with lenses, bouncing it with mirrors or modulating it with defraction gratings to generate heat. Here too the exposure points depend on the amount and duration of light hitting the plate surface. Thermal imaging can be used for digital halftone proofing, so proofs and plates can be output on the same imaging engine saving equipment costs and ensuring output accuracy. Thermal imaging can also be used for imaging waterless, flexographic and processless plates.

Thermal imaging uses intense heat to either remove or weaken the coating material from a plate's surface. The imaging technology is based on an infrared laser generating light energy at wavelengths of 800 nm and above. Thermal plates are coated with polymers sensitive to intense heat within a very specific range. Thermal imaging works in a couple of ways. The surface can be removed by ablation which causes it to effectively burst away from the base. Alternatively the laser energy weakens the chemical bonds in the plate's surface so that it will fall away either in subsequent processing or on press. Once exposed and processed, the plate's surface becomes extremely hard and durable.

This technology is capable of extremely tight and precise control over dot shape and size. The precision of dot exposure means it is possible to image 1 to 99% dots at 300 + line screens with extremely straight sides and flat surfaces, for optimum ink transferal. These dots can be as small as 10 microns, which although too small to be universally usable on press, provides the printer with the best possible plate for rendering a wide tonal range. ▶

### *Drupa Prep Series*

Here starts our series of features to help you get up to speed on topical issues before packing off to Drupa in Düsseldorf. We'll publish two in each issue of Spindrift through April. The pieces are certain to be of interest even if you are not going to that great German Mai Fest. These articles, and others, will be published in our series of buyer's guides, coming out in time for the show. We're starting off with computer-to-plate.

### *About the Buyer's Guide Series*

These articles are part of the Buyer's Guide series due for publication in May. Over the next few months we will publish a series of articles to help readers understand business potentials and technology implications of CTP, JDF, Preflighting, Colour Management & Proofing, and Digital Printing. The Buyer's Guide series is an industry cooperation, with support from a variety of trade publishers and manufacturers.

**Publishing Partners:** AGI, CIP4, DRUPA, Il Poligrafico, Indian Printer & Publisher, Printing World, Seybold Publications and Spindrift.

**The Buyer's Guide to CTP Sponsors:** Agfa, Creo, Esko-Graphics, KPG, Screen.



Because of how it works thermal imaging technology yields some important benefits, many of which have to do with the plate itself. Thermal plates are very tough and will last a long time on press. The plates can be baked to last for as many as two million impressions from a single thermal plate. The other obvious benefits are in the final print quality. Sharp dots accurately placed provide the printer with a quality control benefit that can be passed on to customers, as can the benefits of stochastic screening. The tiny dot size is ideal for printing stochastic screens.

Stochastic screening makes an important contribution to quality and improves inking efficiencies. It can produce higher densities, smoother flat tints, and more stable halftones, because the dots are so precise, and affect mechanical dot gain. It doesn't form moiré patterns so it's possible to print reliably with more than CMYK inks. In fact stochastic screening increases dot gain, compared to AM screens because ink accumulates at the dot's edges, hanging out beyond it. A collection of small dots has greater edge length than one large dot.

Thermal imaging produces plates of extremely high quality and output resolution, and are claimed to have greater repeatability and consistency than visible light equivalents, although this is questionable. Accurate repeatability depends on precise plate loading and punching. Thermal imaging's precision can however mean that problems with the variable dot gain of different dot shapes and halftone line rulings are minimised so that overall plate behaviour on press is stable, predictable and reliable.

There are some arguments against thermal imaging. In some markets the plates can cost more than their visible light equivalent, and they are certainly more expensive than conventional UV. The energy required to expose thermal plates is greater than is required to expose visible light plates. This is an added cost to be taken into account and there are costs associated with the imaging technology itself. The cost of a high powered infra red laser is reflected in the price of the platesetter.

### Thermal in the market

The technology has been around for many years and the market has embraced it. Well over 50% of CTP installations are thermal devices, primarily in the eight-up and Very Large Format sectors. These markets also account for most of the world's thermal plate consumption, but for a number of years the VLF and eight-up markets have been relatively flat. Most new platesetter sales are currently in the B2 market which is showing the greatest investment activity. In this sector where printing applications vary so hugely the relevance of arguments for thermal or violet are much harder to qualify. Competitive issues may account for some of the passion so hopefully at Drupa thermal manufacturers will show signs of making an effort to move into small format markets. This could be tricky as these printers are very cost sensitive.

### Visible light imaging

The use of visible light to image a plate surface has much in common with film imaging technology. Like their thermal counterparts they consist of an aluminium base. However a visible light plate is coated with a light sensitive material, either silver halide or photopolymer based. When exposed to light the surface responds to create a negative or a positive image. The exposure points depend on the type of light hitting

**The use of relatively inexpensive violet diodes is attractive because it helps to bring down the cost of the optical system, and this affects the overall price of the platesetter.**



Agfa has benchmarked thermal (above) and visible light (below) imaging. These tests show that both can perform equally well, when imaging a 5% dot imaged at 200 lpi. At less than a 5% dot the differences will likely be apparent. (photos courtesy of Tony King, Agfa)





the surface and this in turn depends on the type of laser light source and optical system controlling it. Visible light imaging techniques can also expose conventional UV plates which has been attractive to many purchasers of CTP. UV plates are cheaper than their digital equivalents, and their use in a direct to plate production line makes possible support for hybrid workflows. Digital data can be written direct to a UV plate while any film based page content can be stripped in. This allows the printer some leeway in the workflow so that both digital and analogue content is supported, and there is no need to invest in copydot scanning technology unless content needs digitising for other reasons such as re-screening, archiving or reuse.

Visible light imaging uses laser light sources operating at specific frequencies to change a plate's surface coating. The use of light energy to expose digital plates has been around for years and is a relatively mature technology, widely used and stable. The recent development of visible light imaging systems based on low power violet diodes has stirred controversy and argument throughout the industry.

The use of relatively inexpensive violet diodes is attractive because it helps to bring down the cost of the optical system, and this affects the overall price of the platesetter. Violet diodes are long lasting so their use affects cost of ownership and return on investment. Because they use short wavelength light – as low as 407 nm – they work with smaller mirrors that can spin very fast for rapid exposure.

Violet diode imaging systems can expose plates fairly quickly and are simple to build because there are fewer moving parts. Also diode lasers don't need a modulator because they can be switched on and off very quickly. Thermal lasers, like YAG or argon lasers, are on all the time and need modulators (optical switches) to form the dots. This again affects cost. Violet sensitive plates can be used in a yellow light environment rather than a darkroom, making them more convenient to use.

But what really matters for individual printing applications? It's impossible to say because the relevance of all these arguments is so subjective. Unfortunately there is no such thing as a printing plate imaging technology that is ideal for all purposes. The debate between thermal versus visible light imaging has simmered for a while, but it has not reached such levels of passion until quite recently. This may be because the plating market is most active for B2 and B3 printing where the technological requirements may be harder to generalise. Both visible light and thermal imaging have their strengths and drawbacks, and it's important to keep sight of what is most relevant for a given application. There are good reasons for investing in both forms of imaging but in the end it all depends on the business' needs.

– Laurel Brunner

**What really matters for individual printing applications? It's impossible to say because the relevance of all these arguments is so subjective. Unfortunately there is no such thing as a printing plate imaging technology that is ideal for all purposes.**



## CTP Consumables & Plate Processing for Commercial Print

Computer to plate production is no longer a possibility for the printing industry, it's a reality even for packaging where computer to flexographic plate is impacting the market. Going CTP yields substantial returns on investment, improves quality, pushes deadlines, saves costs and brings the benefits of a digital workflow. Many commercial printers, particularly in the B2 market, are upgrading workflows to eventually invest in CTP. For most printers, deciding the digital printing plate to use determines platesetter choice. Plate performance has been crucial to the success of the CTP business. With digital plate sales around 100 million square metres annually, this is a mature market with many suppliers, high volume manufacturing and competitive prices.

Selecting the ideal plate depends on what the plate has to do. Printing plates put dot patterns onto a final substrate, without distortion and with accurate, consistent placement. The printing plate must be easy to work with, economic to use and last as long as the print run, if not longer. Plate choice is thus fundamentally important to any commercial sheetfed or web colour printer.

Metal plates are based on grained aluminium coated with UV-sensitive photopolymer. Light hitting the photopolymer causes chemical changes so that weakened areas fall away during processing to create the imaging surface. One group of digital plates is exposed with visible light energy and one with thermal energy, with laser power at different wavelengths exposing the plate. Silver halide and light sensitive photopolymer based plates are imaged with visible light from 405 nm to 680 nm. Silver halide plates have a hydrophilic (water loving) anodised aluminium base coated with a light sensitive film emulsion. Visible light photopolymer plates are coated with a film speed photopolymer. A thermal plate has an aluminium base with a thermally sensitive, possibly multi-layered polymer coating that responds to heat. Apart from processless plates, digital plates require chemical processing to develop the laser exposed coating and prepare the plate for use on press.

### Silver halide

Since their introduction in the early 1990s silver halide plates have been widely used in printing, from newspapers to commercial print. Those imaged with red or green light are extremely sensitive to light and require red light handling. Violet visible light plates can be handled under yellow light and so are more convenient. Critics state that silver content makes a plate vulnerable to chemical interactions with processing chemicals, fountain solutions and even ink and substrate materials. This is really only an issue in harsh environments such as on highly corrosive UV presses, where baked thermal plates are more suitable. Eroded silver in the processing chemistry requires disposal however and this involves cost.

Silver halide visible light plates cannot be baked for long runs, but used on presses from small B3 to newspapers, they have a reputation for robustness. They are extremely stable, consistent and reliable, support high resolutions and can render a wide tonal range. Economies of scale

**Going CTP yields substantial returns on investment, improves quality, pushes deadlines, saves costs and brings the benefits of a digital workflow.**

keep silver halide plate prices very competitive. Stronger violet diodes capable of imaging photopolymers are now available and this is the area of greatest activity for new consumables.

### Photopolymer

Like silver halide plates, film speed photopolymer plates are sensitive to light and in a manual CTP system need a darkroom. Photopolymer plates are very consistent and durable, and can be baked for even longer runs. Their surface content is polymer based and is not vulnerable to undesirable chemical interactions. Photopolymer plates have the added benefits associated with visible light imaging and are particularly popular for newspaper printing. Photopolymer plates cannot support such high resolutions as silver halide and print a narrower tonal range.

Both silver halide and photopolymer plates are exposed using 405 to 670 nm light. However they are imaged they are still subject to their inherent strengths and frailties. Progress is being made to overcome the tonal range and resolution disadvantages of film-speed photopolymer plates, especially using low power violet light. Violet plates are sensitive to shorter wavelength light present in the blue area of the visible spectrum. The short wavelength means the mirrors in the optical system can be very small and so spun extremely fast, for high productivity and precision. More precise imaging produces sharper dots capable of rendering a wider tonal range.

### Thermal plates

Thermal plates consist of an electrochemically grained and anodised aluminium base coated with polymers. Once exposed and processed they are extremely hard and so suitable for long runs when baked. Because they are only sensitive to spectral energy of more than 800 nm these plates can be handled in daylight. Most thermal plates image at a minimum threshold temperature and require some time at that temperature before exposure takes place. Processing is simple and the plates behave like conventional plates on press. Some require preheating prior to processing and baking afterwards in order to achieve really long runs.

On a thermal plate each spot is individually exposed to light until it reaches a specific temperature. At that point chemical bonds are rearranged to form an image spot. The spots on a thermal plate have straight sides and flat surfaces and can be very small. Thermal plates can support 1 to 99% dots for the widest possible tonal range, and provide impeccable plate image quality, supporting line screens of up to 300 lines per inch and stochastic screening. Thermal plates are popular in commercial CTP environments because they are tough, long lasting, and can be baked for longer runs or use in UV environments.

### Processless plates

Processless plates use thermal energy to expose a plate but require no processing and some can be put straight on press. Processless plates save considerable amounts of time, hassle and cost because they don't need processing equipment or chemistry. Processless plates are imaged either with ablation or phase change technology. Plates that rely on ablation are exposed with a high powered laser that causes the plate surface to burst away from the base. This technique can require some means of debris collection and disposal in devices where dust could settle on the platesetter's mirrors and lenses. This has to be

**Investing into CTP starts with understanding the relationship between plates and platesetters. The two are intrinsically linked, and it is impossible to say whether it is plate imaging technology that drives platesetter evolution or vice versa.**

▼ built into the platesetter which can add to the cost of the device. On a phase change plate the laser energy causes the coating to change its solubility. Fount solution washes away the soluble areas on press. Several manufacturers are working on alternative technologies for processless plates, in readiness for Drupa. Some rely on the laser to soften the non-image area so that is removed with the first few press copies. Others use a removable top layer sensitive to heat.

### **Plate costs**

Plate costs are difficult to identify independently of capital equipment costs and quantity discounts. Prices vary according to the plate volumes purchased, support and maintenance arrangements and even the region where they are sold. Although the price of a digital plate has been substantially higher than its analogue equivalent, prices are coming down. Rising platesetter sales and increased digital plate usage together constitute a growing market, leading to economies of manufacturing scale benefiting individual customers and the market as a whole.

### **Plate performance and characteristics**

Deciding which plate to buy depends on which press the plate is for. Once the format requirements are clear, performance criteria should be identified and quantified according to quality and reliability requirements. Quality measures include such things as screening, resolutions and line screens, and negative or positive working. Measure performance according to average run lengths for the presses, the range of substrates printed, plate production speed, and platesetter availability. Consider the working environment and space available for a new plate line, and temperature controlled storage of plates (20 to 25 degrees Celsius). Processing issues include equipment and chemistry, cost, chemical storage and disposal, and support especially where deadlines are tight. Support costs should be considered either as part of the plate contract, or on a call-out basis.

The major suppliers of digital and analogue plates for commercial printing applications are Agfa, Fujifilm and KPG. Plates are also available from a number of other companies mostly offering only one or two products. (See side bar)

### **Next steps**

Investing into CTP starts with understanding the relationship between plates and platesetters. The two are intrinsically linked, and it is impossible to say whether it is plate imaging technology that drives platesetter evolution or vice versa. For the commercial printer investing into CTP plate processing, performance, the machines that can image it, and of course the cost all shape choice. The market for digital plates is healthy and there are plates to suit every pocket and platesetter. This ought to encourage B2 and B3 printers to make the move into CTP. There is no reason to hold back.

– Laurel Brunner ▶

## *The plates and their makers*

### Agfa

Agfa has numerous plates but its best seller is Lithostar Ultra. This visible light silver halide plate is available in several versions according to the user's preferred imaging technology. The Lithostar Ultra-V is used in devices imaging with violet light at 400 nm. Lithostar Ultra-O is sensitive to light from 488 to 532 nm. The Lithostar Ultra-R for red laser devices imaging at 650 to 680 nm. All three are rated for run lengths of around 350,000 impressions and support resolutions of 1 to 99% at 200lpi.

Thermostar is Agfa's thermal plate. This positive plate is used in commercial applications of all kinds, especially for eight-up and Very Large Format applications. Thermostar lasts for over 150,000 impressions without baking and over one million if baked. Resolution is 1 to 99% at 200 line screens. These plates require no preheating and there are options for use in external and internal drum devices, the Thermostar P970 (830 nm) and the Thermostar P971 (1064 nm).

The ThermoLite processless plate is designed for either off or on press imaging with a suitably designed digital press. This phase change technology is sensitive to IR 830nm light and uses the dampening water on press to loosen the nonprinting areas of the plate. ThermoLite plates last for up to 50,000 impressions.

Agfa also offer the negative working N91 photopolymer plate, mainly for newspaper applications. There is also a violet version of this very popular photopolymer plate, the N91V.

### Fujifilm

Fujifilm's line of Brillia digital metal plates is used in numerous printing applications and includes thermal and visible light options. There are two thermal plates imaging at 830 nm and three visible light plates in the Brillia line up. There are two versions of the Brillia LP-N3 negative photopolymer plate, responding to either blue argon-ion (488nm) or green FD-YAG (532nm) light. Designed for runs up to 200,000 this plate has a resolution of 2 to 98% at 200 lpi. The Brillia LP-NV is a violet sensitive negative working photopolymer plate for commercial applications, Fuji claims lasts for around 200,000 impressions without baking. If baked, the plate can last for up to one million impressions. The plate is rated for 2 -98% at up to 200 lpi.

The Brillia LH-PI for longer print runs is a positive thermal plate exposed with an IR Laser (830nm). The LH-NI is a negative version that can be baked for extremely long runs. Fuji's Brillia LH-NN negative plate is a version of this technology for newspaper applications.

### KPG

The KPG Electra Excel is a next generation version of the Electra 830 thermal plate. The Electra 830 thermal positive plate was the first commercial thermal digital plate that did not require preheating. It is positioned for eight- and four-up applications, along with some Heatset web applications and works with lasers in the 800 to 850 nm range. The plate lasts for around 150,000 impressions, but if baked will print over two million. This positive thermal plate can image resolutions from 1-99% at 250 lines per inch. The ThermaNews plate is a thermal technology optimised for newspapers and suitable for runs of 300,000 without baking.

KPG also has the DITP Gold thermal plate which does require preheating. This positive plate supports resolutions of 1-99% at 300 lines per inch and has a dual wavelength capability so in mixed workflows it can also be used as a standard negative plate. The plate is sensitive to 800 to 850nm light or 380 to 400 nm when used for analogue applications. The DITP Gold is rated for 200,000 impressions rising to over one million if baked. KPG is working on a processless technology and continues to evaluate various plate technology options.

### Presstek

Apart from OEM plates Presstek's processless plates are all thermal ablation plates imaged at 800 to 1200 nm. Anthem is suitable for runs of up to 100,000 and requires only a water rinse once imaged. PearlDry plastic plates are used for waterless printing up to 20,000 impressions. The Applause plate is rated for up to 100,000 impressions and doesn't even need a water rinse prior to going on press. ▼

### Lastra

Lastra's core business is plate production, primarily for newspaper applications although Lastra products are also used in commercial printing. The DiamondPlate LY-8 photopolymer plate is imaged with 532nm YAG light DiamondPlate LV-1 is a negative photopolymer plate for violet exposure around 410 nm. The DiamondPlate LT-2 is a positive working thermal photopolymer plate imaged with 830 nm IR light. It requires no prebaking. The Diamond 2G is a thermal plate suitable for 100,000 impressions or one million baked.

### Mitsubishi

Mitsubishi Chemical offers a number of photopolymer plates suitable for runs of 100,000. The LV-1 is exposed with violet light, the LA-5 with blue and the LY-5 with green light. Mitsubishi sells three thermal plates the LT-1 for runs of 200,000 and LT-N for 100,000 impressions are imaged at 830nm. The LT-G is imaged at 1064nm and is also suitable for runs of 100,000.

Mitsubishi Paper Mills has three plates including the thermal PCP imaged at 830 nm plus two visible light silver halide plates. The Silver Digiplate Alpha is a violet sensitive plate designed for imaging at 400 to 430nm. The Alpha Red is imaged at 630 to 688 nm. These plates are rated for run lengths of up to 200,000. Mitsubishi also has a processless plate based on thermal principals under development.

### Creo

Although not a name generally associated with consumables Creo has recently entered this arena. The Creo Positive Thermal Plate is manufactured under contract through third party manufacturers and Creo has acquired a plate production plant. The PTP is a positive thermal plate rated for runs of 250,000 without baking.

### And the rest

There are several other players active in the plate business, with limited product options, such as Asahi which sells a processless 830 nm thermal plate suitable for runs of 50,000. Citidigiplate's Aqua-LHP is a photopolymer UV-violet plate sensitive to 360-450 nm light and Konica has a similar product the WP8. IBF is a Brazilian company that has two 830 nm thermal plates. The IBF-Million 1 is a negative plate rated for 100,000 impressions or over one million when baked, and the Million 2 is its positive equivalent that requires no pre-heat. Toray has a negative thermal plate for waterless printing. Imaged with IR 830 nm light the TAC-RG5 is suitable for up to 150,000 impressions and can image resolutions from 1 to 99%. Ipagsa is a small Spanish plate manufacturer that has recently entered the market with a well regarded thermal plate.

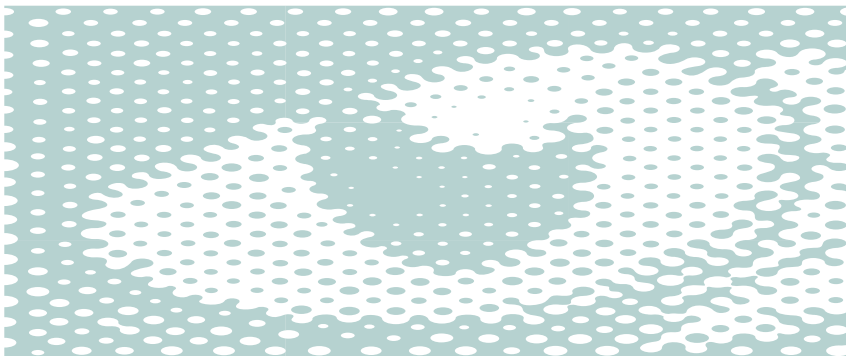


## A Special Message

Spindrift is a labour of love for a fantastic industry. We are sure you appreciate that. We are very grateful to our subscribers for your support. However, too often we get comments about Spindrift content from people who are not on our subscriber list. If you are reading a copy of Spindrift but have not taken out a subscription yourself, please do not assume you are a group subscriber. If there is any doubt contact us and we will help you get your own subscription. Our web site now also has support to handle multiple subscription orders.

We charge a measly €50 for an annual subscription. This is less than it costs you to fill up the car with fuel. It is less than you spend going to the movies with your family, and less than you spend on duty free stuff when you're bored at the airport. And you probably claim that back as an expense anyway. This much we know.

So given these basic truths and the fact that Spindrift relies on subscriptions income for its very existence, please subscribe. If you choose not to, please understand that we will find you. The next time you spill paint on the carpet, burn your toast, lose the car keys, have to go to the dentist, or generally have to suffer some annoyance or inconvenience, it will be Spindrift's digital pixies getting in your way. Thank you for your support.



### Copyright ©

All rights, including copyright, belong to the originating author. In accessing the Spindrift newsletter, you agree that you are only using the content for your own personal edification and non-commercial use. You may not copy, broadcast, share, store (in any medium), send, adapt or in any way modify the content of any Spindrift article or element without the prior written permission of either Digital Dots or the originating author.

If you do believe that you are in some way exempt from the rules of copyright, please remember that karma catches up. The pixies will find you.