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Spindrift

...Savouring The Graphic Arts Industry Since April 2003

News Focus • Opinion
Reviews • Techno-Babble
Attitude

Volume 3, Number 9
9th February, 2006

encourage • ***v.*** give support, confidence, or hope to. –> help or stimulate the development of.

– From the Concise Oxford English Dictionary

Dear Reader,

Naresh Khanna, publisher of Indian Printer & Publisher, recently initiated a special meeting of trade press editors and writers at AD Communications' Pre-Ipex Media Week, which took place in London recently. The idea was to encourage members of the printing and publishing trade press to share their concerns and readers' interests in our various markets. People at the meeting were extremely enthusiastic and keen to keep the conversation going. We are therefore setting up the International Graphic Arts Editors Forum, IGAEF, on the Digital Dots website as a means of sharing ideas and staying in touch. Editors from all over the world have already responded positively to the idea, and we are planning another meeting during Ipex to explore other ways of developing Naresh's initiative.

We hope that the IGAEF will encourage energetic and positive dialogues between trade press journalists, ultimately to the benefit of graphic arts industry readers worldwide.

The other, rather bigger, news this month is what is going on at Ipex. Several of the leading industry suppliers have announced their plans, and so far it looks like Screen, with a herd of new CTP engines and a high speed inkjet press, will have the most to say. Others to keep an eye on include Canon, with two new 70 ppm digital production colour presses, Creo Print On Demand Systems, allowed to keep their identity and scope within Kodak. Our full length article is on page 9.

Enjoy the read,
Laurel, Cecilia, Paul and Todd

In This Issue

In the Ipex pipeline

The Great British Tradeshow comes at a time when there are signs that the printing industry is beginning to really get to grips with its digital reality. However, writes Laurel Brunner: "Many people are still blissfully untroubled by issues such as JDF or PDF output management, because they haven't even started to adapt their business to the digital world. Mostly they don't have a clue where to start, so for these digital innocents Ipex is an absolute must." Read the first of our Ipex preview articles…

see page 9

DI – reviewing the situation

Writes Paul Lindström: "For many years we have had a slightly sceptical attitude to DI presses, tending instead to pay more attention to developments in digital presses capable of variable data. The whole idea of a building a CTP system into a printing press seemed to us slightly absurd." Find out why he doesn't necessarily think that any more…

see page 19

Middle Eastern opportunities

Laurel Brunner went to the Gulf Print show in Dubai in December. Read her impressions on the emerging and vibrant Middle Eastern printing market...

see page 31

Regular Columns

News Focus

Ipex is getting ever closer so see page 9 for the gory details. Here are some other items to peruse:

Two specialist graphic arts PR and marketing companies, **amplifier.pr** and **Splash! PR and Marketing** are working together to provide affordable PR packages for companies exhibiting at Ipex for the first time. Participating companies will be branded Ipex Igniters. The initiative will help small companies and developers new to Ipex to get some attention from the press, as well as visitors.

Quickcut participates for the first time at Ipex to launch Global Media Exchange, a strategy to bring together workflow, data management and distribution for all forms of media. Quickcut is also launching sector specific versions of its range of digital workflow solutions with much enhanced functionality. Quickcut tools for automation, quality control and throughput efficiency can now be used in a variety of commercial print applications.

Dalim is showing the latest version of its Twist intelligent automated workflow software, which after all these years remains one of the most flexible automated workflow systems on the market. Amongst the new features are XML based production workflows and JDF based preflighting.

There is also a new SWOP certified version of Dalim's JDF compliant Dialogue softproofing system and greater integration of Mistral with third party front end publishing systems, with advanced versioning and advertising management. All this and more.

Xaar will host systems from Zund, Riso and New Systems, Xennia, iTi and Impika. These are all relatively new names to the graphics production industry, so worth a closer look.

Xeikon will show its new IPDS controller signifying its move into the transactional market. The new full colour digital print solution is specifically for the transactional and direct mail print production markets. The X-800 IPDS front end can support typical data centre and mainstream graphic arts workflows, so digital printers can support transactional printing applications.

Working in conjunction with Xeikon's 5000 digital colour press, the system supports a range of new post press functions relevant for transactional output such as slitting, merging, and dynamic perforating in two directions, for producing tear off strips on mailings and statements.

GMG, developers of high-end colour management and proofing solutions, is showing GMG Colorserver, a new tool for automatic colour conversions, plus expanded flexibility and functionality in its latest proofing and colour management products.

Other news

Ipagsa, one of the world's last remaining independent digital plate developers, has announced a cooperation with US developers Southern Lithoplate. Mr. Ferrari, Ipagsa's chairman, commented that, "Alone we can accomplish much. However, together we develop the greatest technology and value faster! In light of the world's [plate manufacturer] consolidation of capacity and competition, our collaboration ensures our competitive positions by completing our technology foundation and ensures our future generation of products." Could this mean a new processless technology? The time for processless is indeed now.

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 €80 and can be obtained by going to **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.

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Contributors:

Markzware, developers of preflighting, data extraction, & conversion software, has announced the availability of FlightCheck Professional v5.8 for Macintosh and Windows platforms. It has expanded PDF checking based upon the Ghent PDF Workgroup's (GWG) PDF/X PLUS specification.

There is also a free new version of Q2ID, its Quark Xpress to Adobe Indesign conversion technology. Enhancements include better accuracy for picture scale calculations, improved application of run-arounds, support for attributes of combined or merged table cells and improved paragraph offsetting calculations.

The **ADSML Consortium** has released new versions of its guidelines for advertising bookings and materials delivery to newspapers and magazines. ADSML Framework 2.0 Release 6 is open for public review and comment through the consortium's web site and includes legacy copies of all previously released schemas and documentation, including specifications already approved.

Adobe has announced the public beta of its Flex 2.0 product line and Flash Player 8.5. These tools are for developers building next generation web technologies, for more effective and productive sites. The Flex beta programme includes Flash Player 8.5, Framework 2.0, the programming model and component library, Builder 2.0 for applications development, Enterprise Services 2.0, for data services and delivering integrated rich internet applications, and Charting Components 2.0, for advanced data visualisation.

Dalim Software has joined the **Ghent PDF Workgroup** (GWG). Dalim's technologies are already GWG compliant, but membership means the company will be able to bring its considerable expertise in workflow management to further standards developments.

Global Graphics will be demonstrating a new version of the Harlequin Genesis 7.1 RIP. See Expandocs for details.

Vio is introducing a new streamlined version of Vio Certified Soft Proofing (VCSP). It automates basic processing steps, rather than expecting operators to have to initiate each new phase for online collaborative proofing.

The **World Association of Newspapers** is leading an initiative for newspaper, magazine and book publishers to explore ways to challenge the exploitation of content by search engines. Yes! There is woeful abuse of content on the web and this initiative is intended to identify ways of more fairly compensating to copyright owners.

Xerox has kitted out a new digital print centre at Standford Hill Prison in the UK. The centre is designed to train prisoners on state-of-the-art Xerox digital equipment (!!) providing them with skills to help them get back into a less errant profession than the one they were pursuing prior to entry into Standford Hill. Forgers within the community really will be pleased with this boost!

Esko-Graphics has announced that it is changing its name, but not. Although the legal name remains Esko-Graphics, the company is dropping the last bit as part of an updated brand identity. Esko's President and CEO Carsten Knudsen, has said that "preliminary results for 2005 indicate a revenue growth of 15% over 2004, with an expected EBITDA margin of 7%. We are well past the period of merging and restructuring, and are executing on our strategy focused at serving all packaging supply chain partners with value-adding solutions and services." He also said that the new branding "further illustrates our vision of expanding our pre-production solutions beyond 'just' graphics".

We are working with Knowledge View to test their Rapid Browser product for editorial workflow management. Rapid Browser is a news management and editorial sharing technology specifically designed for publishers working in distributed environments. Rapid Browser is a web based infrastructure that combines information access, with action based content processing. The idea is to help writers and editors to share stories they are working on, collaborate more easily and to develop their story archives.

Our preliminary testing efforts have been, as expected, a bit hit and miss. We will work on the next issue of Spindrift using Adobe's InCopy text editor combined with Rapid Browser. We will have a more complete report in our next issue.

Spindocs

(Where the spinner gets spun!)

Most PR companies in our industry do an absolutely first-rate job, and we hold them in high regard. But there is always the exception that proves the rule, and this is little gem is something we couldn't resist:

"We excel at ideas – the hot stuff – but we also understand how to create and implement campaigns that manage and give personality to an organisation's business strategy. That's the cool delivery bit. We even put client teams together using HBDI principles, so that problem solvers and detail-mad campaign planners complement fiery creatives. Which might explain why our client and staff retention levels are so good – 12.5% staff churn and less than 10% loss in 2003."

[What's an HBDI principle?– Ed. I don't know …]

They continue:

"We don't confuse activity with results by presenting 'doing' as 'achieving'. Teams at icas PR analyse clients' business and communications objectives, agree what success looks like, continually challenge and evaluate their work and always use measurable criteria. We keep our promises – and guarantee a return on investment in PR."

Elsewhere on the website is a page for accessing information about the company's clients, including Ipex:

"Welcome to the client pages of the icas website.

Please type your password in the box on the left to access your private pages

Please note that these pages are currently under construction"

A bit like life, really.

Expandocs

(In this section, we aim to cast some extra light on a particular recent news story.)

Harlequin in seventh heaven

Global Graphics has just announced version 7.1 of its Harlequin Genesis series Postscript and PDF interpreter. Well, in fact it's more than just an interpreter: if all of this RIP's modules are implemented, this is a fully fledged RIP System, and also a workflow server. The big "wow" with the 7.1 release is its capacity to process native PDF version 1.6 files, as well as earlier versions. Global Graphics RIP technologies interpret PDF natively without ever having to revert back to Postscript in the process. RIP systems based on the Adobe CPSI and Postscript Extreme interpreters, have to convert the datastream back into Postscript just before the screening and final imaging phases.

Several of the features in 7.1 had already been introduced in version 7 of the Genesis RIP, but they have been extended and enhanced. For example the in-RIP imposition capability has been extended from 2-up to 4-up, in order to serve small to medium size printers who are reluctant to invest in a fully fledged impositioning system with more bells and whistles than they will ever need. This addition provides basic automation that should considerably help small businesses to increase production throughput. Another notable improvement with version 7.1 is speed. Using conservative figures Global Graphics promises an average speed improvement of about 30% when, for example, processing colour managed jobs. Another welcome new feature is the support for the latest Tiger version of the Mac OS, 10.4.

This RIP is one of a very few RIPs that can output native PDF direct to imaging engines, without recourse to Postscript. Not only does this create a single platform for inputs and outputs, but it also means that graphically complex material has a better chance of accurate output, particularly for files which contain transparencies and other niceties supported in PDF 1.6, but not in Postscript.

It's about greater device independence, more accurate proofing, and tighter integration between design and output processes because everything works with a common rendering engine. Genesis 7.1 also explicitly validates PDF/X files for conformance to the PDF/X-1a and PDF/X-3 standards.

Global Graphics' JDF Enabler 2.0 technology working in conjunction with Genesis 7.1 makes it one of the first RIP systems on the market to be compliant with CIP4's "Layout Creator to Imposition" ICS (Interoperability Conformance Specification) for much more robust interchanges between an imposition programme and the RIP. Global Graphics is also one of the earliest, if not the earliest, company to have finished support for a JDF ICS.

Automated impositioning is one of the hottest topics in JDF development at the moment. Genesis 7.1 has easy to use and automated in RIP imposition support for 2- and 4-up impositions. There are also tiling, scaling and step and repeat options to support saddle stitched work, as well as perfect binding. If the basic in RIP imposition doesn't fulfil a printer's needs, with the JDF ICS the Harlequin Genesis 7.1 RIP supports connection from dedicated imposition programs. The next step up from simple in-RIP imposition is JDF-based in-RIP imposition.

As usual with the release of new versions of the Harlequin RIP, it now depends on Global Graphics' OEM partners to implement all this new stuff in their RIP systems. As of January this year, developers have had the components delivered from Global Graphics to do so. Native PDF 1.6 support is more than attractive, since it provides the foundation for greater output accuracy and automation. It also gives developers a broader base upon which to add value specific to their target market's needs. With Global Graphics close involvement in the development of the new Microsoft page description language XPS (XML Paper Standard), there is every possibility that Harlequin users could be among the first to be able to process both Postscript 3, PDF 1.6 and XPS 1.0. Too few high end graphic arts system developers use Global Graphics' RIP technology, so in the light of advances being made with this technology, maybe they should reconsider.

Driftwood

(Useful stuff washin' in on our shores)

Machine Identification Code Technology the (not so) secret code

It has been a fairly well kept secret, but it was revealed on a public web site: the secret encoding of a device's serial number on output from many digital colour printers. This encoding is sometimes, but not always, referred to as MICT (Machine Identification Code Technology).

The idea of including the printer's serial number on all printed output is of course intended to help the police track and identify counterfeiters. The nonprofit organization EFF (Electronic Frontier Foundation) with its motto "to defend freedom in the digital world" has decided to reveal how this encoding is done, in the interests of individuals who might not agree with secret encoding of their documents, and fear that it could very well be abused by the authorities. We might be inclined to sneer at this as a symptom of paranoia, but it carries grave implications where freedom of expression is restricted.

According to the EFF's list, most of the well-known manufacturers of colour printers, both laser printers and inkjet based devices, have introduced some kind of encoding technology. The list on the EFF web site includes manufacturers such as Canon, Epson, HP, IBM, Konica-Minolta, Lexmark, Ricoh and Xerox. The EFF is actively encouraging members and visitors to their web site to send in samples for analysis. It has published a quite extensive explanation of how the encoding is done and of course how it can be revealed.

Basically the encoding seems to be done using a very small pattern made up by single exposure dots, so small that they are invisible to the naked eye. The pattern is also quite non-distinct, so if you expected to see a small serial number printed in the corner of the document, you would be disappointed. However if you know what to look for, you will find a few yellow dots spread out in what at first looks like a random pattern. Using the yellow ink

is clever, since the human eye has difficulties registering this low contrast colour.

When viewed under monochromatic blue light, the pattern is more distinct, and the next step is to know how to decode the pattern. The EFF even provides an answer for this, suggesting how to decode it. For copyright reasons we can't show a picture of what this pattern looks like, but if you read the explanation on the EFF web site and look at the photos provided, you will get the idea. It is quite possible to extract one sample printer's serial number from the pattern, along with a date and time stamp added to the information.

According to the Swedish police, they use this encoding regularly when tracking false bank notes. They understandably don't share the EFF's concern that this secret encoding is any threat to individual citizens, since any request to track the serial number can only be made if there is a criminal investigation properly registered with the police, which is fair enough in Sweden.

But the EFF suggests there are indeed reasons for concern, citing reports on suggested unwarranted spying on what should be considered peaceful groups such as Greenpeace and the ACLU (American Civil Liberties Union).

This is a very delicate matter, and links into other similar possibilities/problems with digital technology have yet to be fully addressed or even raised. Most of us have realised that we can be tracked all the time, if we carry our mobile phone with us. Not only who we call, but also where we were at a certain point in time, is registered and this information can be handed over to the police on request. Do we agree to it? Probably, since we use our phones and accept the terms of use in the contract. Did we know that our colour printers apparently insert secret codes, containing serial number and date of printout? And do we accept it?

Say What?

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

Quite how the UK's Office of the Deputy Prime Minister is expecting Amazon to do this we aren't sure …

"ODPM appoints Amazon for licencing scheme

1 February 2006

The Office of the Deputy Prime Minister (ODPM) has appointed Amazon to promote new licensing laws affecting landlords and tenants.

Landlords leasing properties for multiple occupancy will have a mandatory duty to apply for a licence from April 2006. Local authorities will enforce the licensing scheme, which aims to improve the private rented sector.

Amazon was appointed through COI to target landlords and tenants. The objectives are to raise awareness of the changes in licensing, encourage landlords to take action and advise tenants on how the scheme benefits them.

The £44,000 PR campaign will run until the end of March 2006.

Ends

© Crown Copyright."

Bizarre indeed.

Acrobites

(Something to get your teeth into)

IPBS

International Private Banking Systems is an important standard for the transactional print market. It is a fully integrated, Internet savvy, accounting and management information system. It supports multiple entities and currencies and provides front, middle, and back office support services for the finance industry. This includes everything relevant for international private banking, trust companies, mutual fund administration or other wealth management applications.

IPBS supports general banking operations, company accounting and business administration, securities trading, share registers and remote internet access for clients.

AFP

Advanced Function Presentation is an IBM technology developed in the early 1980s to help move IBM printing customers to a distributed output environment. AFP is a printer independent format that allows a host computer to drive printers of all shapes and sizes over asynchronous communication lines, instead of having direct connections. It also helps print engines to recover from halts in output such as paper jams or processing errors.

AFP was originally designed for processing complex, variable data jobs at the print engine's rated speed. It was first used on the IBM Infoprint 3820 cut sheet printer and the IBM 3800 line of system printers, with a single application driving both engines, despite their extreme differences. Today's version of AFP can handle data flows for more than 1,000 A4 page images per minute.

There are lots of tools around for converting data formats and fonts to AFP and even though this is an IBM standard, it can be used in other environments. AFP incorporates other industry formats such as EPS, PDF, TIFF, GIF, JPEG, XML, XSL, Postscript, PCL and PPML. It covers the entire range of colour and monochrome print output requirements including text, images and process colours, putting it high on the list of must have output standards for transactional and variable data output.

Boomerangs

(Your feedback fed back)

Una carta de España

Dear Ms Brunner:

Thank you for the great comments regarding our company in the Ifra Report. We are delighted to receive the Spindrift Magazine and we find it very interesting and useful as it helps us increase our knowledge about the Publishing Industry.

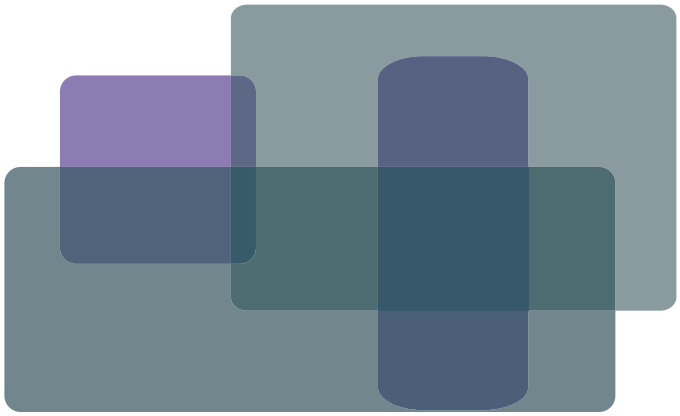
We are still expanding our business along with South America and Europe. El País from Uruguay and Cadena Capriles in Venezuela are our latest clients in America. Both of them are going to use Protec's editorial and advertising systems. We are also present in Chile, Colombia, Ecuador, Mexico, and in El Salvador.

We would like to send you the latest press releases of our company for you to get to know us a bit better. We hope this will be in your interest.

Please, contact me if you need any additional information about Protec. We would like to be in excellent collaboration with you.

Kind regards, and a happy new year!

Iván Turmo
Communication Department
PROTEC, S.A.



The initiative to set up a graphic arts journalist/editor forum on **www.digitaldots.org** *was met with a lot of enthusiasm after the first meeting at the pre-Ipex press gathering. This came in from (one of) our friend(s) in Italy:*

Hi Laurel,

Thank you for leading such an interesting round-table! I understand some worldwide markets are too different (in terms of dimension, typicalities and business models) for a real comparison, but I think this Forum can be a starting point for a real globalization of our industry's information... in the most positive meaning of this dreadful word. As I told you during my speech at the Editors Forum, some European markets (such as Eastern European industries) are having an effect on the Italian graphic communication, as well as the shake-up of big Italian printing companies (that are now opening new plants in Eastern Europe) may really change the balance and the competition rules of our national industry. And is simple to forecast that this will be happen more and more in the future, according to the exponential growth of India, China, Brasil and many other emerging economies.

I'm sure that we can (and must!) foresee certain changes and offer our readers the right interpretation, helping our entrepreneurs get prepared. Then, the natural selection will run its course. Just to give you an example, my last leading article was titled "Made in Italy... at the terminus?". A provocation, obviously, but not accidental!

Let me know how I can help you and I'll be glad and proud to be with you. By the way, thank you, Vicky and ADC guys, for helping us every day in our job and support our knowledge sharing.

My best regards,
Lorenzo

Lorenzo Villa
Italia Publishers Magazine

Around the corner

Ipex is the biggest show of this year for the graphic arts, printing and publishing industries. It comes at a time when there are hints of renewed confidence in the future of the medium, and signs that the industry is adjusting to the business imperatives of the new digital reality. But many people are still blissfully untroubled by issues such as JDF or PDF output management, because they haven't even started to adapt their business to the digital world. Mostly they don't have a clue where to start, so for these digital innocents Ipex is an absolute must. In this the first of several preview articles we take an initial look at what people can expect. We'll have more to say next month.

Unified Workflows

Workflow developments driving direct output to plate or press is the topic of greatest concern for printers and publishers. Automation has many attractions, not least removing variables, but digital supply chains require different management techniques and approaches to managing both raw content and output files. The details are inevitably subjective and few workflow systems can be all things to all people. JDF is one means of cross-linking subsystems, but JDF is not the starting point. Most developers are implementing JDF, and it is their system's functionality that matters much more than how the JDF code is written.

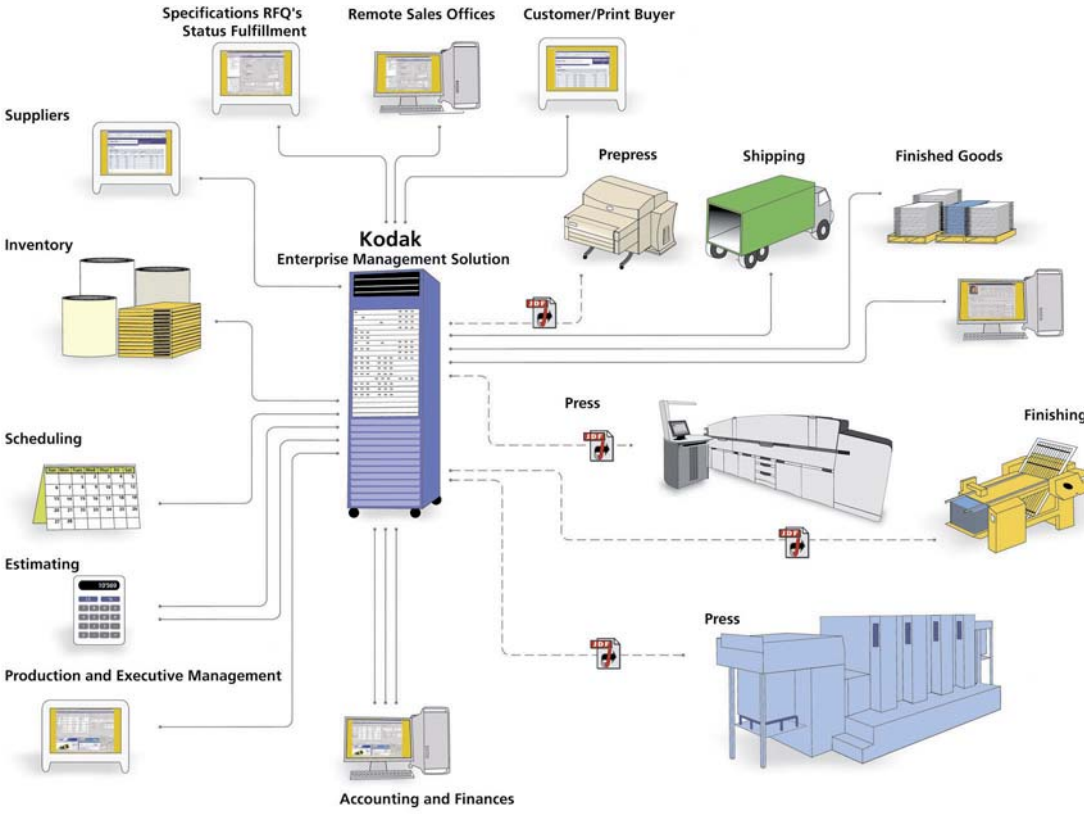
Artwork Systems has grown to be a leading developer and supplier of workflow management systems, not exclusively for packaging applications. It is one of a slender class of companies with healthy revenues and profit levels at €46.22 and €11.4 million respectively.

Artwork Systems' latest workflow development is Odystar 2.5, a native PDF workflow system based on PDF 1.6, JDF and Enfocus' Certified PDF. Like Nexus, the company's original workflow technology, Odystar runs under OSX, however it is much more current and amongst other things, makes legacy RIPs capable of processing PDF 1.6 accurately.

Odystar 2.5 is fully configurable, from basic PDF transfer up to a fully configured RIP and workflow system. New in version 2.5 are document version management, ICC based colour management for all modules and specific colour conversion modules, a CIP3 option for sending PPF rather than JDF data to press control systems, as well as more automated imposition. Odystar Packaging PDF is a recent version of the technology for native PDF processing, using Enfocus libraries. It now includes a PDF plugin for Illustrator. The InPDF plugin allows files to pass through an Artwork workflow in native formats, facilitating Illustrator file exchange

within the Odystar Packaging workflow. Odystar will take up where Nexus, now in version 10, leaves off but in the meantime Artwork continues to develop for both systems.

Artwork is also working on colour consolidated PDF processing and providing a new device gateway for multiple output device support and closer integration with Artwork's Webway product. Webway 4 for Internet based production collaboration, remote approvals and associated functions, is due at Ipex. New features include viewing one bit screened data, access to Certified PDF data, colour managed proof prints, and difference viewing for proofs. A web based PDF 1.6 editing tool will also be introduced at Ipex. Neo looks very impressive on paper with features such as separation handling, advanced text editing, object transformations and image editing and re-linking.



Kodak Enterprise Management System.

Canon intends to hit the road running in Birmingham. According to Per Klavsen, Canon's Director of European Professional Solutions Marketing, the company now has 167 people dedicated to the commercial print market and plans for 474 people by 2008, "the biggest single evidence of our commitment" and "Ipex is going to be the biggest investment for Canon ever in a print show". At Ipex most attention will be on Canon's new digital presses and its Business Builder Programme, which will be launched at the show, however workflow is just as important for Canon.

Canon's Mark Lawn, European Solutions Manager, Professional Print, spoke for the entire industry when he said: "the days of box shifting are over". Business today is about partnering and mutual support, so Canon is developing its partnerships, particularly with Efi and GretagMacBeth. It has a new pan European agreement with Efi to sell and support the Digital Store Front solution with Objectif Lune for its Planet Press Suite variable data production technology.

It seems **Creo Print On Demand Systems** is in no danger of suffering an identity crisis. Ronen Cohen, the company's general manager, said

that Jim Langley and Antonio Perez, Kodak's top deities have "very serious plans with regard to our team". They have declared Creo PODS an independent entity within Kodak, with a charter that, because of the nature of its business and its customer base and the need for sensitivity when dealing with the likes of Xerox and HP Indigo, will remain sacrosanct.

This is indeed a very special company. Creo PODS is based on the legacy and intellectual property of Scitex and its intimate Xerox cooperation. The group now has some 11,000 servers in the market, the majority of them sold in the last three years. It's apparently enough of a market presence to allow the Kodak gods to let those responsible for it to stick with the Creo PODS name, both for OEM business and for working with different groups within Kodak.

Workflow management is what Creo PODS is all about, particularly managing variable data content flows and graphics production RIP processing. The company focused on high end applications until 2004, when it started serving more general markets with the introduction of RIPs for copiers.

At Ipex the emphasis is on the HP Production Stream Server, which handles data transfers from Prinergy to the press. It has spot colour support and management of seven colour output. Features on the new server improve in press data management, and reflect the two companies' intimate software and workflow partnership.

Creo PODS will demonstrate workflow systems driving iGen3, Nexpress and HP Indigo engines, to show how Creo PODS technology can optimise the productivity of these engines, and take full advantage of these engines' capabilities to drive maximum volume.

Creo PODS activities in the last two years suggest that it is also designing for general and office markets, with front ends built for ease of use, but powerful and affordable. It looks like they may be heading for Efi's territory. Creo PODS's first "headless" server will be shown at Ipex and Ronen Cohen described it as "a platform for the future". There will also be a web based composition and personalisation tool for printers, and a new authoring tool based on Darwin for managing variable data in Xpress or Indesign.

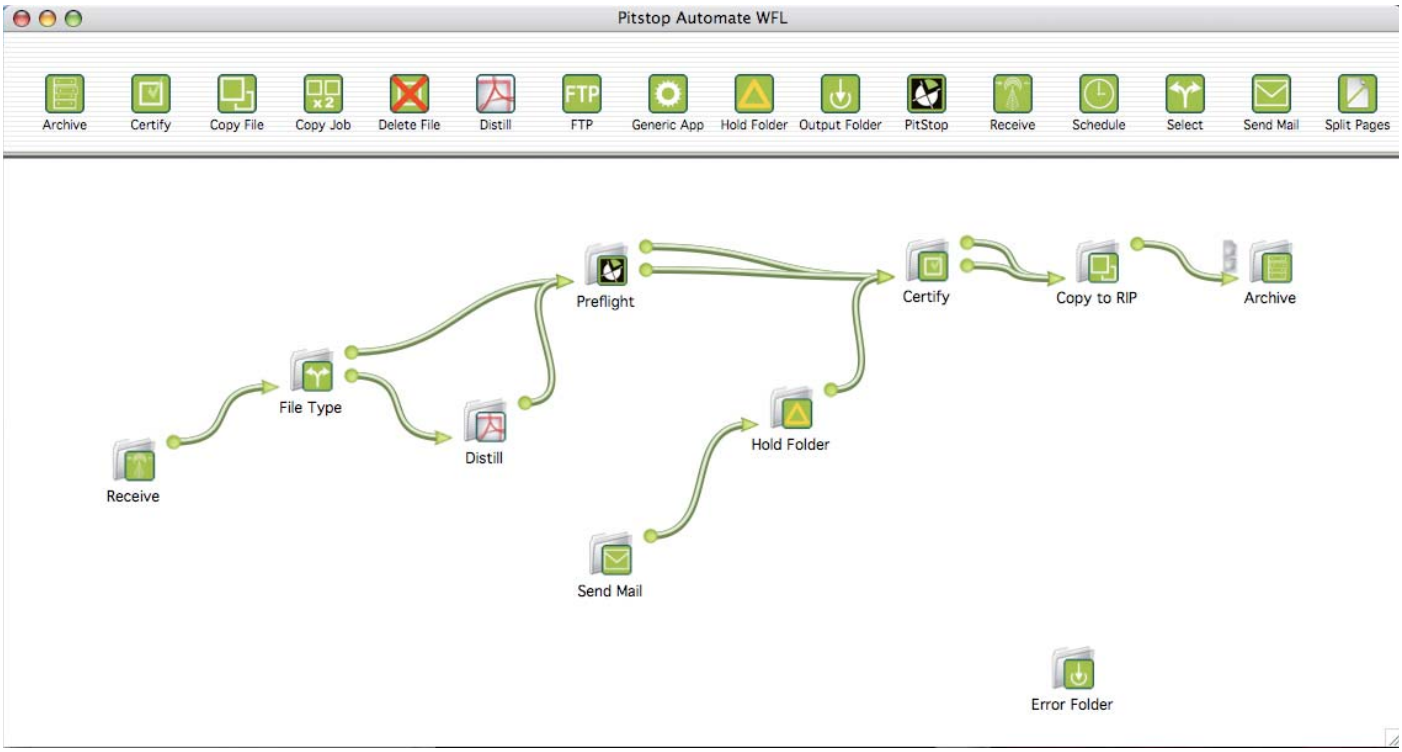
The company has an impressive partnership programme which it will extend. It now has over 30 certified partners capable of working with Creo front ends, including newspaper developers such as Sansui. Of the big names in digital printing only Canon's has been missing from the Creo PODS conversation so far. Ronen Cohen's comment on this was: "Canon is a company we are discussing with – from my perspective it's just a matter of time".

Efi is a name that is synonymous with workflow, having been in the business for over ten years and with over 12 million users worldwide.

Kodak should know a lot about workflow given the massive integration process the company is undergoing. Its Enterprise Management Solution (EMS) technology is based on technology from US based Epicor and combines MIS (Management Information System) with ERP (Enterprise Resource Planning), and adds a dose of HOS (High Octane Steroids).

Moving from print controllers to workflow management, Efi's Ipex emphasis is on Fiery software and servers, and the Digital Store Front production workflow technology. The new EIS web based data analysis tool is a business information system that supports Efi's three MIS technologies. All of these are moving towards a common interface, as are Efi's numerous RIP user interfaces.

Enfocus now boasts 4,000 Pitstop server users, 7,000 Certified PDF.net members, 8,000 Instant PDF users and 70,000 Pitstop Professional users. Growth is coming increasingly from corporate markets primarily because of Instant PDF.



Sample workflow screen from Enfocus' next generation workflow automation technology, Pitstop Automate.

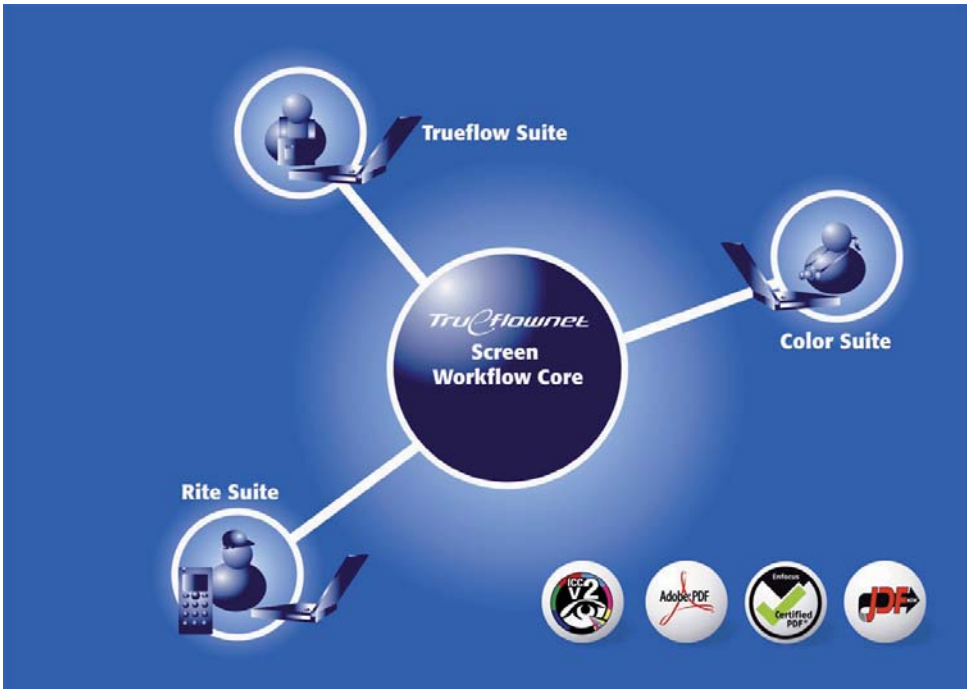
Pitstop Automate is a new server based PDF processing tool based on combined Artwork and Enfocus technologies for automation. It is built entirely on JDF, with advanced file routing, and there is a Software Developers Kit (SDK) available for developers to take further. This technology is designed to increase productivity for smaller companies through automation. It is integrated with Acrobat Distiller to provide Enfocus PDF editing and preflighting utilities and should eventually replace Pitstop Server. It offers both Pitstop Server functionality, plus automation based on triggers and actions, and sophistications such as tools for splitting multiple page PDFs into component pages. It also includes Certified PDF for handling embedded PDF profiles, plus full audit and error reporting trails. Certified PDF files even get priority processing through the workflow!

Pitstop Professional 7 will be introduced with faster and easier PDF handling, improved help and reporting, and full automation of repetitive tasks through action lists. These lists are to be easier to manage, with file

setting tools for controlling the viewing environment. This technology is in beta test and will be shown at Ipex.

Kodak should know a lot about workflow given the massive integration process the company is undergoing. Its Enterprise Management Solution (EMS) technology is based on technology from US based Epicor and combines MIS (Management Information System) with ERP (Enterprise Resource Planning), and adds a dose of HOS (High Octane Steroids). The result is an end to end business solution with modules to suit all manner of business tasks, from facilities management to print estimating. It includes business information tools for business driven workflow management, with customisable views of the workflow. JDF connectivity is incorporated with bidirectional interfaces to Prinergy, Preps and Upfront. EMS is in beta testing and due for summer release.

Screen is reclassifying its Trueflownet workflow systems into a series of three suites configured according to what people need to do at a given stage in production. The different suites share a common user interface and include modules relevant for a given point in the workflow. Rite Suite is for the creative phase, with modules for online communications between printers and their clients. This customer management suite is based on standard tools and IP (Internet Protocol) and Enfocus preflight technologies. It includes modules such as Riteapprove, a new module for online job approval.



The Trueflow Suite for production management is an extended version of Trueflow 3, Screen's PDF/JDF workflow management technology, which works with Outline PDF for guaranteed output accuracy. The Colour Suite is for quality control and this suite will include the new Spektacolor tool for spot and RGB to process colour conversions. This module is designed specifically for packaging applications.

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Screen is also announcing Spekta 2, an updated version of its hybrid screening technology, claimed to produce better quality and 20% ink cost savings. There is also a new proofing module, Labproof SE, for one bit TIFFs and spots as well as conventional requirements. It is based on CGS colour proofing and management technology.

The Trueflow Suite is also the foundation for a new packaging workflow management system based on a combination of Trueflownet and Artpro

technologies, with output to the Screen VLF platesetters. Trueflownet incorporates Enfocus Certified PDF technology to check incoming PDFs, handling colour conversions, imposition, trapping and RIPping with JDF/JMF basis for data interchanges and communications. It is the basis for Screen's thrust into new markets, specifically newspapers, packaging and digital printing.

Digital Output: to Plate to Press to VDP

Workflow might be the name of the software game, but without some destination for all that beautiful data, there isn't a lot of point to it. Automation, productivity and a unified workflow drive CTP and digital printing in a single output agnostic environment. As workflow technologies develop to support total file independence, hardware is evolving to image those files however necessary. For the end user we have to wonder if the value added is in the front end, the engine, or in their mutual optimisation?

There are many new players in the output business, but **Canon** is the one everybody is watching. Canon is developing its digital print presence on at least two fronts, with digital presses for commercial print causing the most excitement, even though details are scarce. There are two digital production engines coming: Imagepress Y and Imagepress X. The proper names will be announced at Ipex and both engines are due for commercial shipments this summer. There will also be three monochrome light production engines, but details of these are still under wraps.

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The Imagepress toner based technology is a totally new design and most definitely "not a CLC in another box". It is a huge investment for Canon, which has built a new factory dedicated to the Imagepress' manufacture. A digital front end co-developed with Efi drives both models. These are 70 ppm A4 simplex or duplex engines, with new toner fusing, imaging and front end technologies, plus some Canon developed finishing.

The Y is a high speed SRA3 machine with finishing options including saddle stitching, high quality colour output and support for a range of substrates. It will work for proofing, on demand printing and short run colour print. The X is a high volume version designed to complement offset, and that can support multiple finishing options as does the Y model, but with 10,000 sheet air assisted feeding capacity. According to Per Klavsen these engines offer "lower investment and running costs than the market is used to now".

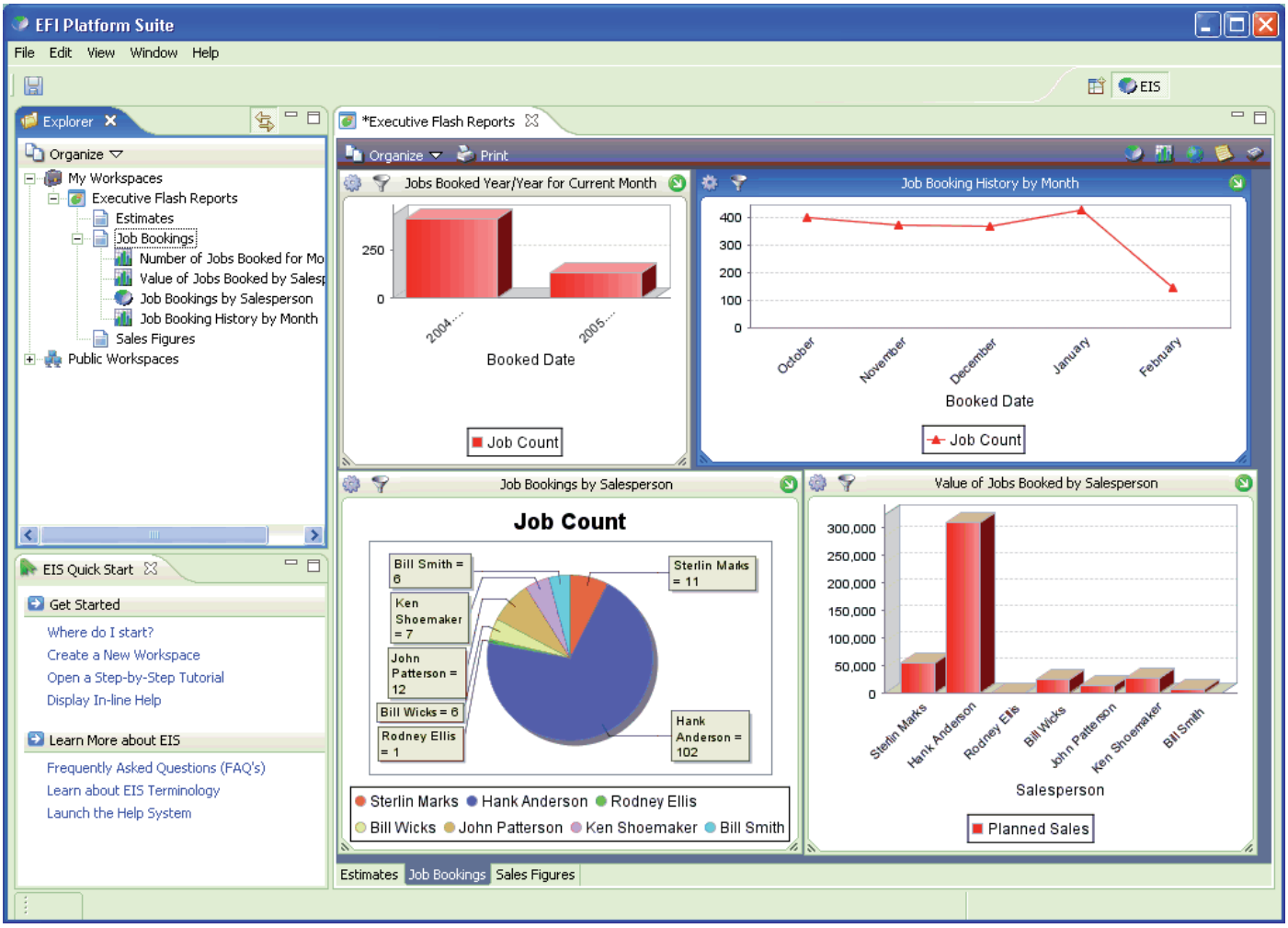
Since 2002 Canon has seen year on year growth of 40% in its large format print market. It aims to be the sector leader with a 20% market share by year end, working with partners including Global Graphics, Efi, plus a bundle of core RIP and colour management specialists. At Ipex Canon is showing large format print engines based on a new inkjet head system, details of which are embargoed until the 21st February.

Delphax isn't a company we have previously paid much attention to, however this 400 person operation is a market leader in security and book printing. The CR2000 monochrome 600 x 600 dpi ink jet engine prints 1968 A4 pages per minute using Electron Beam Imaging (EBI). The company is researching ways of using this technology cost effectively for colour output and will have a prototype to show at Ipex.

Domino has developed a full colour inkjet web press for variable data printing applications, which will also be shown as a prototype at Ipex. This high resolution drop on demand machine, based on high speed Spektra heads, is designed to keep up with presses from the likes of Man Roland and Müller Martini when mounted inline. It is designed for commercial print and includes a secure print solution using bar code recognition "through opaque window-less envelopes, with automatic personalised printing of address details". We aren't entirely sure that they were on about, but we plan to take a closer look and let you know.

Efi's output focus at Ipex will of course be on Vutek, its recent acquisition. This departure from its core front end business provides Efi with a broader product portfolio and customer base, particularly since Vutek has grown since its founding in 1988 to be the largest supplier of these superwide (1.5 to five metres) engines, with market share of 30% in Europe.

With EIS, Efi is introducing web based data analysis to improve output management.



Efi's interest reflects the market's response to printed output of this kind and the company expects the market to grow by some 11% a year. But whether Vutek will be the market's choice is another matter: HP, amongst others, is also hell-bent on capturing it.

HP has recently restructured its business in order to specialise on professional output markets, as distinct from office and consumer markets. It has established a Graphic and Imaging business to include the superwide devices from what was Scitex Vision, large format engines and HP Indigo digital press technologies. The new division is going after a market estimated by HP to be worth $10 billion by 2008.

At Ipex an HP Indigo 5000 press will be shown with accelerated monochrome printing, gang stackers, and expanded processing capacity. The web fed HP Indigo press w3250 is being introduced for printing at up to 136 full colour A4 pages per minute.

HP Indigo has seen its installed base of one million+ duty cycle machines increase by 600%. There are now 3.4 billion pages printed annually on HP Indigo machines, a 40% year on year growth over 2004. HP Indigo claims to have 42% of the installed base of "high end colour" machines, with Xerox at 26%, Nexpress at 23% and Xeikon at 9%.

Kodak will show direct output to direct imaging and digital presses, and of course to platesetters, plus all manner of other stuff. There will be a new machine, Nexpress 2500 digital press, which prints 2500 A3 pages per hour (about 80 A4s per minute). It has a redesigned transport mechanism suitable for a wider range of substrates, a fifth imaging unit for glossing and an inline booklet maker.

Kodak's new Magnus 800

Kodak has a new 8-up CTP engine, the Magnus 800, which looks like a successor to both the Trendsetter 800 and Lotem 800. Based on existing Magnus technology it is available for four speeds, up to 40 pph capacity. This isn't a fair way to represent the machine's speed however, since it can concurrently process plates, each of which takes 90 seconds to pass through the system with concurrent interleaf removal, imaging, punching and transport to the processor.

The Magnus 800 has Kodak's latest Squarespot 3 imaging technology and can be configured for handling plates semi-automatically, automatically, and automated with up to five cassettes for a total capacity of 500 plates online. Punching is included and Kodak is finally considering adding punching to its VLF engines.

Konica Minolta is also entering the professional digital printing market with a high end production engine. The Bizhub 6500 runs at 105 ppm for full colour output and Konica Minolta has high hopes that it will be as successful as its monochrome sibling, which has a reputation for reliability. They are working with Ikon, suppliers of RIPs based on Creo PODS technology.

With a steady 36% CTP market share since 2004, including badged and re-badged engines, **Screen** rightly considers itself the dominant supplier of direct to plate engines for commercial print applications. Screen's ambition is to become quite simply the world's dominant graphic arts manufacturer. The company will try to achieve this goal through maintaining its position as an engine supplier, developing its workflow position and carving out a place in the digital printing market. To this end, and from its base of 73,000 users of Trueflownet, Screen is configuring its workflow technologies to support newspaper and packaging applications. The company is also diversifying into ink and consumables supply, electronic printing and furthering OEM partner arrangements to build automation technologies for graphics production.

In the meantime, CTP remains Screen's core product and the company is introducing a new range of devices for B1 and B2 output at Ipex. These engines will all have remote management software for diagnostics and maintenance planning. They can support smaller plate sizes down to less than B3 as standard, so one machine could support multiple presses. They are all qualified for processless plates from Agfa, Fuji, Kodak and Presstek and will be field upgradeable for enhanced productivity.

Screen's Platerite Ultima 24000 (above) and Truepress Jet520 (below)

The 6600 is an intermediate sized machine for B2+ presses. It can image plates from 304 x 370 mm to 685 x 980 mm maximum, which is slightly more than B2, imaging up to 6-up impositions for new presses from Ryobi, Goss and others. There are two models, one for 18 plates per hour (pph) and another twin headed machine outputting 30 pph at 2400 dpi so it's over 50% faster than the Platerite 4300 or 8600 engines. The 6600s image 1200, 2400, 2438 and 2500 dpi and include inline punching and automation. They will be commercially available in July.

The Platerite News 2000 is a new thermal engine for newspapers. It has a 64 channel laser diode head and outputs from 290 x 460 mm to 685 x 980 mm plates at a rate of 84 broadsheet plates per hour at resolutions of 1000, 1016, 1200 or 1270 dpi. This engine connects to any newspaper output management workflow and Screen has also developed Trueflow Rite News to drive it, but details are still sketchy.

For VLF output there are two new engines based on Screen's 512 channel GLV technology, Platerite Ultima 24000 and Ultima 36000. They are fully automated and designed with inline punching and to support new large format presses from KBA, Man Roland and Heidelberg. Both can image two B1 plates simultaneously to produce a full set of punched plates for a 12 unit press in 15 minutes. The 24000 images 29 plates per hour, or 50 when imaging two B1 plates at a time at an unspecified resolution.

Altogether there are six new Screen machines, all of which are field upgradeable for speed and automation. We would expect to see some of this new thermal technology appearing elsewhere in the market, from Screen OEMs, such as Fuji for example.

And that's not all that Screen is debuting at Ipex. The company is entering the high speed inkjet market with the new Truepress Jet520, based on piezo drop on demand technology printing a 64 mm web width at 720 x 320 dpi, with variable dot size. This single pass continuous feed engine prints 64 metres per minute to print 420 A4 pages per hour (pph) and is based on Epson heads with Screen engineering and manufacturing.

The Truepress Jet520 (which we prefer to call the Truejet 520 because it's easier) uses water based pigment inks and has a scanning quality control system which monitors the application of ink to the standard or coated paper. The device's front end is based on Screen's workflow know-how plus an Adobe Postscript RIP with AFB and IPBS drivers for the transactional market (see Acrobites). The support for AFP suggests that this technology might also be of interest to IBM, one of the world leaders for transactional print. Truejet 520 or Truepress Jet520 is available simplex or duplex for a range of applications such as direct marketing, transactional print, manuals, statements and newspapers.

Xerox hasn't said much about new products for Ipex, preferring to focus instead on business development initiatives for its customers. We understand that 800 iGen3s have been sold, so Xerox is dedicating its stand to demonstrating how these engines, plus its range of Docucolors are being used to develop print business applications.

This is all about putting the developer of print applications in control and such didactic efforts will be extremely helpful for visitors who want to get ideas of what digital printing could do for their business, wherever they sit in the digital supply chain. Shifting to a fully automated digital production environment starts with learning, and to further support exhibitors' efforts, the Ipex organisers have added a comprehensive seminar series. Sessions are tailored for different applications and geographies, and designed to further understanding of how to implement digital production technologies. Full details are on the Ipex website (www.ipex.com) We are contributing, sort of, to these sessions chairing a debate about the polarisation of the printing industry with luminaries from such companies as RR Donnelley and St. Ives. Hopefully you'll join us.

– Laurel Brunner

DI Presses put to the test

For many years we have had a slightly sceptical attitude to DI presses, tending instead to pay more attention to developments in digital presses capable of variable data. The whole idea of a building a CTP system into a printing press seemed to us slightly absurd. Why tie up a press waiting for it to image plates? Surely separate plate making and printing is more efficient? However, presses with built-in platesetting, the so called Direct Imaging presses, have been steadily gaining ground and there are now 2,500 or so of these devices in day-to-day production. Clearly there is a market for them, and we were wrong, so we decided to take a closer look. We ran a test of some of the more well-known models on the market and what we learned was as interesting as it was humbling.

The race for a true digital full colour press started soon after Postscript turned mainstream. The attractions of a press technology that provided superfast make ready for short run colour printing were obvious. Heidelberg was the first press developer to recognise the combined potentials of standards based, direct digital output to press. In 1989 the company opened a European Seybold conference with a presentation to describe the design goals for the GTO DI which was launched two years later. This was several years before the digital presses from Indigo and Xeikon saw the light of day and many, many years before anyone really could see the possible effects of digital technology on the traditional printing industry. The Xeikon and Indigo presses, with their capacity for variable data output, have an indisputable advantage over the DI presses, but in commercial print, the market for variable data output is far from huge. Many printers seem to be opting for DI presses, despite this limitation.

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Today we estimate there are roughly equal numbers of DI and variable data digital presses in the marketplace. The number repeated from different sources suggests about 2,500 DI presses, and representatives from both camps are about equally optimistic when it comes to the speed of market growth. HP Indigo, for example, expects that the number of digital presses installed will double in two year's time (excluding DI-presses) to many thousands. According to Presstek, which has invested vast sums into DI imaging heads and plates, this technology is the way of the future, and we should expect an increase in the number of DI presses sold in the coming years. It's hardly a surprising view, but there are clear differences between the two classes of device.

Is there a battle raging between the variable data digital presses and the DI presses? Having spoken to several DI press users and having read even more case studies about DI applications, the picture is a little more complex than that. This isn't a battle about one technology versus another,

because according to many users these technologies are symbiotic rather than mutually exclusive. It is not uncommon that users have both, using the variable data digital presses for variable data jobs and extremely short runs, with the DI presses taking over where they leave off, printing small to medium and even large runs. Contrary to what we believed, DI presses can handle quite substantial print runs very well. However, even though some of the DI plates are rated for 150,000 impressions, most users are printing DI runs of around 20,000 copies.

The second generation DI presses

It's just over ten years since the first DI presses came to market and, to be honest, the print quality hasn't been all that great. The concept for the early DI presses was the same as it is now: fast make ready so that printers could compete for very short run work. Time has worked in favour of this business model, as print runs get shorter and print buyers expect increasingly fast job turnarounds and delivery.

Quite a number of press manufacturers have shown prototypes of DI presses over the years, but then quietly left the market. Today Heidelberg, which released its second generation technology, the Quickmaster DI, in 1995, dominates the DI market for sheetfed DI presses. Heidelberg competes with KBA, Kodak, Ryobi and Screen in this sector, and a few manufacturers have shown prototype web offset DI presses. Today only MAN Roland and Wifag can deliver functioning products, so for this testing project we have stuck to sheetfed DI presses. Anyone interested in digital web offset presses should have a look at the MAN Roland Dicoweb and the Wifag Evolution DI.

The first DI presses were designed for fast make ready and ease of use. However, manufacturers had to compromise for a while to balance performance with price, so that the presses could be easy to operate but not too expensive. In their efforts to build a compact, small footprint press, manufacturers sometimes compromised on quality. To achieve short plate exposure times, both resolution and screen rulings were kept down, which also compromised print quality. This was the case with first generation DI presses, but that has all changed. If anyone still connects mediocre print quality and DI presses, it is time to have a new look at print samples from today's engines. Second generation DI presses reflect innovations in all areas of print technology: new and improved plates, new and faster exposure units operating at higher resolutions, and better and more automated colour control on press. The printed result looks superb.

More and better plates to choose among

Several of the DI presses on the market image roll-fed polyester-based plates. This was one of the limiting factors for first generation DI presses, affecting both registration and run length. Presstek has developed a polyester based plate with a thin aluminium layer on the plate to overcome these limitations. The material can still be delivered on rolls, but it has the precision of a single sheet aluminium plate. Another route to take

is to use aluminium plates, which is the case for larger presses, such as the Heidelberg Speedmaster 74 DI and the KBA 74 Karat. An ideal plate should typically be able to hold 200 lpi but some plates can achieve 300 lpi and even support fine grained FM screens.

The range of processless aluminium plates suitable for DI presses is growing. Beside plates from manufacturers like Agfa, Kodak, Konica-Minolta, Mitsubishi and Presstek, Fujifilm has also presented new processless plates which could apparently work on a DI press. Heidelberg sells plates under the Saphira brand name, but these plates are based on third party technologies, such as Agfa's Azura. Several of these plates are designed for waterless printing, which eliminates the need to balance the ink and dampening water proportions. Waterless printing requires temperature regulation on press, since the inks for waterless printing don't take heat very well, and are more sensitive to temperature fluctuations.

The Heidelberg Quickmaster DI is by far the best selling machine of the DI-presses. About 1850 have been sold world wide according to Heidelberg.

But not all presses are waterless, both the Heidelberg Speedmaster 74 and the Screen Truepress use conventional water based printing technology. In the interests of easy operation, the balance of ink and dampening solution is automatically controlled; this technology was developed for DI presses and could well find its way to wider use on conventional presses.

Whatever plate you use, automated plate mounting on DI presses provides exact and even plate mounting on press. And, since exposure occurs inside the press onto mounted plates, plate imaging accuracy is hard to match on conventional presses.

Faster lasers at higher resolutions

When the first DI-presses were launched, the technology for computer-to-plate was very new and not well proven. Today we use second, and even third, generation lasers and exposure units. The plate exposure technology used in DI presses varies, but the goal is to image sufficient resolution to support high screen rulings. The most common technologies used are imaging systems for thermal, processless plates. The Pro Fire Excel imaging system from Presstek is used in DI presses from KBA and Ryobi, whereas Heidelberg uses the Presstek Pro Spot on the Quickmaster. The fastest version of this imaging system has six laser modules and can expose a plate in about four and a half minutes. Heidelberg used Presstek's imaging systems in the GTO-DI model, and continues to do so in the Quickmaster. In the later models of the Speedmaster 74, Heidelberg switched to imaging systems from what used to be Creo, now part of Kodak GCG. Screen uses its own imaging technology, the Multi Array Laser Diode (MALD), which exposes plates in the Truepress 344 in about five minutes.

Clearly with exposure times at around five minutes for B3 plates at resolutions of 2540 dpi, today's DI technology matches even very high print quality demands.

Better and easier colour management

Ultra modern and highly automated colour management is common to all DI presses. This includes complete JDF based presetting and the use of scanning spectrophotometers or densitometers for colour control. In some cases, measurements are made inline inside the press, with the press control system making automatic adjustments to ink densities. One of our questions in this test project was "can DI presses print as well as conventional presses?" The answer is clearly yes, however to really confirm this conclusion we asked the vendors to print a test form for evaluation. We used the Altona Test Suite test form, which was originally designed for evaluating proofing systems. We felt it could be used for digital presses as well, particularly since many DI presses have been installed for proofing applications as well as print.

Ultra modern and highly automated colour management is common to all DI presses. This includes complete JDF based presetting and the use of scanning spectrophotometers or densitometers for colour control.

One company who have done just that is the prepress company Vignold in Austria. Vignold decided to use a DI press as a proofer because operators often produce long runs of proofs, up to 50 copies, and often print on many kinds of substrates and paper qualities. Michael Adloff, director of the technical department, said that Vignold evaluated the KBA 74 Karat in the same way as the company had tested different proofing systems: "We found that the 74 Karat could match the FOGRA Media Wedge [part of the Altona Test Suite] with an average colour deviation of less than 4 Delta E. As a reference we asked more than 30 different printers to print the same test form on conventional presses. Only less than a third of them could match the colours to the same narrow tolerances as we could in the 74 Karat." Michael Adloff conducted his test three years ago, when the press was purchased. Since then more and more printers have gone through the certification process to learn to print according to the ISO standard, so we would hope that a similar test today would show that more printers can print within tolerances. The conclusion the people at Vignold drew, even three years ago, was that DI press print quality is at least as good and stable as that of conventional presses. We agree, based on the results of our own tests.

The DI presses on the market

Over the years quite a number of models of direct imaging presses have been demonstrated, but some of them have quietly disappeared. The models listed below are the ones dominating today's market. Most are available in most markets, however the situation with the KBA 46 Karat and Kodak Direct Press 5634 models is a little special, a mess in fact. Both presses are really a Ryobi 3404 "under the skin". What makes the situation even more complicated (at least for us journalists) is the fact that Kodak doesn't market the Direct Press 5634 in Europe. The Presstek subsidiary AB Dick markets the KBA 46 Karat, which is the same technology. In Scandinavia the same technology under the Ryobi name, the Ryobi 3404 DI, is distributed through MAN Roland. Or at least, that is our understanding of the situation.

However, we list the sheetfed DI presses available today, plus the web offset DI-presses, although they weren't part of the current round of tests.

Heidelberg

Heidelberg dominates the market for DI presses in terms of the total number of presses sold. Of the approximately 2,500 DI presses installed worldwide, just over 2000 are Heidelberg presses. Of these, the Quickmaster dominates with 1850 installed and approximately 160 Speedmaster 74 DIs installed.

Speedmaster 74 DI is a four-up press, or A2+ (53x74 centimeter) and works with aluminium based thermal processless plates. This press can have up to six printing units, all with built-in CTP. For optimum colour control and automation this press should be equipped with the Prinect CP2000 press control system, so that presettings can then be made based on JDF formated data. Heidelberg's Star System oversees and automatically adjusts a range of operations, such as dampening solution, powder sprayers, drying and so on. The RIP used for the Speedmaster is Heidelberg's own Meta Dimension.

The Speedmaster 74 DI from Heidelberg can be extended to up to six printing units, all with built in CTP. Pictured is a four-up printing press (53 x 74 centimeter sheets).

One printer very pleased with the Speedmaster 74 DI is Digitalhuset in Vejle, Denmark. Digitalhuset is a typical example of how a dedicated repro house can turn itself into a digital printing facility. A team of four press operators keep the press running 24 hours a day. Fleming Olsen, managing director of Digitalhuset, knows he can easily match the printing quality offered by colleagues and competitors with conventional presses. The Speedmaster 74's very fast make ready (it takes approximately ten minutes to load and expose the Heidelberg Saphira plates), has helped Digitalhuset to be very competitive on short run printing.

The Quickmaster DI 46 is a two-up press, or A3+ (34 x 46 centimetres) available in two basic configurations, with the Quickmaster DI Pro the faster model. The central impression cylinder has a quadruple width so it can serve all four blanket cylinders simultaneously. The automated temperature controlled inking system is well suited for the inks used in waterless offset. The plate used is a Presstek processless polyester based plate supplied on rolls, each of which holds 35 masters. The imaging units, four in all (one per plate cylinder), are manufactured by Presstek and both the plate and blanket cylinder have an automatic cleaning system. The RIP used for the Quickmaster is Heidelberg's own Meta Dimension.

Quickmaster 46 DI from Heidelberg has built in ctp, one imaging unit per plate cylinder. It's a two-up printing press (34 x 46 centimeter sheets).

The Quickmaster is the most widely sold DI press in the world. We spoke to Kopieringsbolaget in Sweden, which bought its Quickmaster in 1999, so it's not the latest and fastest model. According to managing director, Lasse Strandberg: "We normally plan print runs of about 500 copies to be printed in the DI press. Fewer copies than that we place in the colour printers we have, mainly the Canon CLC 5000 machines. For make ready in the Quickmaster we calculate 15 minutes, although the exposure as such only takes about 10 minutes. We plan to replace our Quickmaster DI with a newer machine, but haven't decided yet on what model or make this will be. But what's for certain is that it will be a digital press."

KBA (Koenig & Bauer)

KBA introduced the 74 Karat in 2000, as a joint venture with Scitex. The press was even then called the 74 Karat but, since its launch it has gone through numerous design upgrades. As the name suggests, the 74 Karat is a four-up press for formats up to A2+ (52 x 74 centimetres). The central impression cylinder is triple width and serves both of the two blanket cylinders, which in turn are double width. This means they can serve two plate cylinders each. This makes for both a very compact design and a small footprint, and makes it possible to use only two imaging heads, each serving two plate cylinders. The imaging units are manufactured by Presstek and the 74 Karat has an automated inking system called Gravuflow. This is a keyless inking system, designed to bring the press up to colour very quickly. Since the printing technology is waterless, there is no ink-water balance to maintain. Automated temperature control optimises printing conditions for the waterless inks. The plates used are Presstek's aluminium based processless plates loaded into two cassettes on the press. Each cassette holds 20 plates enabling ten make readies automatically. Ink is loaded into specially designed cassettes for easy and fast handling. The RIP is a Brisque.

The 46 Karat from KBA is just like the "bigger brother" 74 Karat using waterless printing technology. It's actually manufactured under license by Ryobi for KBA.

Since 2002, in parallel with the 74 Karat, KBA has also marketed a DI press for 2-up, or A3+ (34 x 46 centimetres) output, called the 46 Karat. KBA makes no secret of the fact that this is really a Ryobi 3404 DI, slightly dressed up design-wise to look somewhat like the 74 Karat. The configuration of the cylinders is similar to that of the 74 Karat and the central impression cylinder is triple width, serving both blanket cylinders. These in turn are double width, serving two plate cylinders each. The imaging units are manufactured by Presstek, and it takes about four and a half minutes to expose all four plates. The RIP system is based on the Harlequin Postscript interpreter from Global Graphics.

The 74 Karat from KBA uses waterless printing technology and is a four-up press (52 x 74 centimeter sheets). Some use it as a proofer for longer print runs.

Make ready on this press takes a little longer than the exposure time, because the plates are automatically dry-cleaned prior to printing: loosened silicone and other particles are removed from the plates. According to Jon Walbank at Absolute Digital Print in Kendal, UK, the press is up to colour after only 10–20 sheets. Absolute Digital is yet another example of a printer who combines a "true" digital press from HP Indigo with a DI press. Print runs over 500 copies are planned for the 46 Karat, and the really short run and variable data work is done on the HP Indigo machine.

Kodak Direct Press 5634

Like the 46 Karat this machine is really the Ryobi 3404 DI, but it has been given an outer look to suit Kodak. There are two configurations: the 5634 is fastest with six laser diodes per imaging head and the 5334 has only three laser diodes per imaging head, so it's slower. When Kodak acquired Creo and evaluated which products should remain in the portfolio, it was uncertain for a while whether the Direct Press would remain. Kodak has decided that it will, as it complements Kodak's other digital presses, the Nexpress and the Versamark. The RIP system currently used in the Direct Press 5634 and 5334 is Direct Works, reflecting the historical connection

The Kodak Direct Press 5634 is yet another DI-press based on the Ryobi 3404. For Kodak it is a complementary product to the other digital presses in the portfolio, the Nexpress and the Versamark.

with Global Graphics' Harlequin Scriptworks. Time will tell if Kodak will offer DI users the RIP systems available from what was Creo: Prinergy, Brisque, or for that matter, Spire.

Ryobi 3404 DI

Besides manufacturing conventional presses and DI presses licensed to KBA and Kodak, Ryobi manufactures and markets its DI press under the Ryobi name. The Ryobi 3404 DI's design is apparently inspired by the 74 Karat, but Ryobi cooperates very closely with Presstek to develop its DI technology, and in fact the press is manufactured under licence from Presstek. The Ryobi 3404 is a two-up press, or A3+ (34 x 46 centimetres). The Pro Fire Excel imaging units are manufactured by Presstek and are capable of generating a 300 lpi AM screen, or FM screen. The Ryobi 3404 can be configured in two ways, where the 3404X is the faster with six imaging units, each with four laser beams – in all 24 laser beams expose the plate. Configured as 3404E DI each exposure unit has only three lasers, so it takes twice as long to expose a plate: nine minutes instead of four and a half in the 3404X. The Ryobi 3404 uses Presstek polyester based processless plates and waterless print technology. The plates are fed from rolls, one per plate cylinder, and mounted automatically to the plate cylinder before exposure. After exposure the plates are washed off automatically. The inking system is temperature controlled to suite the waterless printing technology. The RIP is based on Harlequin Scriptworks, and accepts 1-bit TIFF data from a range of other RIP systems. The press control system supports JDF and so can use presettings to speed up make ready. Ryobi call this the Auto Print Function.

The Ryobi 3404 DI is designed in close cooperation between Presstek and Ryobi. The design is clearly inspired by 74 Karat, but this is a two-up press (34 x 46 centimeter sheets).

The idea is that the press operator should basically be able to start the print run with just one click of the mouse. The Ryobi 3404 can be extended with UV curing units as well as an infrared dryer. The infrared dryer helps reduce the need for powder sprays, and so offers a cleaner working environment.

Among the European users is Latvala-Reimat in Helsinki, Finland. Latvala-Reimat is a little secretive regarding customer types and applications, having extended its services from prepress to include digital printing. Before buying the Ryobi 3404-DI Latvala-Reimat already had a Xeikon digital press, and now splits production between these two presses.

Truepress 344 is the second generation DI-press from Screen. It uses waterbased offset printing technology but has built in density measurements and water-ink balancing.

Screen Truepress 344

Screen presented the Truepress 544, its first DI press, in 1998. The new Truepress 344, launched in 2004, is totally redesigned and twice as fast. The Truepress 344 prints 7000 A4 prints per hour and is a two-up press for A3+ format (34 x 47 centimetres) applications. Screen has designed the Truepress and manufactures the imaging head, with part of the manufacturing subcontracted to the press manufacturer Hamada. The Multi Array Laser Diode (MALD) exposure units image the plates in five minutes. The plates are polyester based processless thermal plates manufactured by Konica-Minolta and the printing technology is conventional water based offset. After exposure there is no silicon debris, so the plates

don't need to be washed off before printing starts. Since conventional water based offset printing demands a tightly controlled ink-water balance Screen equips the Truepress with an automated function for this, which, coupled with inline density measurements, offers very fast make ready and a reduced number of waste sheets. Screen normally suggests the Trueflow RIP system for the Truepress, but the imaging system also accepts 1-bit TIFF data from a number of other RIP systems.

Provided the RIP system can handle JDF data, the Truepress can use presettings delivered in JDF to speed up make ready even more. Make ready should take about five minutes, but actually takes five minutes and twenty seconds according to Ian Relf at Creative Digital Printing, UK. Ian evaluated several different DI presses before settling on the Truepress. Creative Digital had entered the digital printing arena with an HP Indigo digital press in 2001, but soon found that slightly longer print runs dominated their customers' needs. The company started to look at DI presses and soon decided on the Truepress 344. For the last six months the company has split jobs between the Truepress 344 and the HP Indigo.

Test results

To complement our overview of DI presses, we decided to ask manufacturers to submit print samples for evaluation both through spectral measurements, and visually. Of course you can't evaluate a press from just one single print sample, but it's still an indicator of what print quality one might expect. ECI (European Color Initiative), together with FOGRA and the German printers' federation Bvdm, has put together a test form called the Altona Test Suite. Originally this was intended to test proofers, but we thought it could be used for other digital printing systems as well. To complement the Altona Test Suite a set of reference prints is provided, printed on a conventional offset press, a Heidelberg Speedmaster. These reference prints gave us a control sample for the test.

The Gretag-Macbeth robotic measuring device Eye-One iO reads a typical test chart in less than two minutes. This device was used for the tests (see page 28).

For our visual evaluation we placed the printed samples side by side with the reference prints in a viewing booth. We evaluated grey balance, colour accuracy, tonal transitions, contrast and overall sharpness detail. These factors were graded 1-10, where five was acceptable, and ten is excellent. We also measured printed samples with a spectrophotometer and compared those values with the target values for the FOGRA Media Wedge, included on the test form. This has 46 patches and the average colour deviation is expressed as a value Delta E and a colour difference of Delta E 1 is generally regarded as impossible for the human eye to detect. We, like FOGRA, suggest that an average colour deviation of less than Delta E 4 is a reasonable colour match for a proof or print.

It is not typical to use a DI press as a proofer, but it's reasonable that the press should be able to match the results from an approved proof. The Altona Test Suite is based on printing according to the ISO 12647 standard, but the same principle could be applied to the SWOP-standard.

We ran into an unexpected but pleasant dilemma in that most of the test samples turned out to merit a mark higher than 10. When we compared the samples to the FOGRA reference prints, we found the DI press prints to generally look better than those printed with conventional offset. So we introduced the 10+ in the protocol (see table below). Unfortunately Heidelberg didn't participate with printed samples, but looking at the competitors' samples we would hope that the Heidelberg technologies are at least competitive. Our results show that the DI presses tested can, in general, print equally well or even better, than conventional offset presses in the same sector.

Based on interviews with users of Heidelberg DI presses and considering that more than 2000 of the approximately 2500 DI presses worldwide are Heidelberg technology, it's pretty safe to assume that samples from those presses would be in line with the results. However it would have been nice to have had Heidelberg participating in this test too. According to Stefan Wolf, product manager for DI presses at Heidelberg, they had to prioritise other projects during the period when this test was conducted. We will continue with this project, so hopefully Heidelberg will make it next time around.

The future of the DI-presses

For many years, we have pooh poohed the idea of putting a CTP system inside a printing press. Having spoken to many DI users and having studied the technology more carefully and thoroughly, we are converts. DI presses serve the market, not as alternatives to the "real" digital presses that produce personalised print and variable data, nor as replacements for the bigger conventional sheetfed and web fed offset presses. But when it comes to print runs, let's say from 350 to 2000 copies, it's hard to beat the DI presses for price and performance. They can print longer runs as well, generally up to 20,000 copies and some plates even manage print runs up to 150,000 copies. As we have seen in several of the reference customers, the combination of a "true" digital press and a DI press is often attractive.

Some of the technologies developed for the DI presses, like inline density measurements and simplified user interfaces, will probably find their way into conventional presses. If it were affordable, perhaps every press really should have built in CTP? It isn't justifiable for all applications, but in many it is, which may be why MAN Roland and Wifag are developing DI web offset presses for newspaper applications. For sheetfed markets, DI presses are in line with the trend for fewer copies but more print runs per day, so we expect more digital presses to be sold in the coming years, be they DI engines or variable data digital presses.

– **Paul Lindström**

By numbers

Visual evaluations were made using a Just Normlicht viewing booth. Spectral measurements were made using a Gretag-Macbeth Eye One spectrophotometer and Profile Maker software. The measurements were made patch for patch and not in scanning mode, to obtain more accurate results. Every patch was measured at least three times, and the average colour deviation of the whole Media Wedge was found to be around +/- Delta E 0.2.

In this test we didn't measure colour fluctuations throughout the print run, but from earlier tests we know it can vary as much as Delta E 1.5, sometimes more. This should be considered when reading the tables below.

We think it's just as well that printers get used to print buyers demanding good quality control, for both colour accuracy and stable output for the whole print run. The best way to measure and record this is by using a spectrophotometer and evaluating measurements as CIE La*b* values. From those values you can calculate average colour deviation, expressed as Delta E. There are several ways of calculating Delta E, but it is mostly done using the classic formula from 1976, and since FOGRA uses this, so do we. We are also looking into using the 2000 formula instead, as this is said to offer a better match between visual evaluation by the human eye and spectral readings. This may explain why our visual evaluation produced fairly high marks, despite the fact that the spectral measurements often indicated a higher colour deviation than Delta E 4.

Visual Evaluation

Vendor	Press	Grey B.	Col. Acc.	Tone tr.	Sharpness	Contrast
KBA	74 Karat	9	9	10+*	10+	10+
KBA	46 Karat	10	8	10+	10+	8**
Ryobi	3404X	10	9	10+	10+	9
Screen	Truepress344	10	9	10+	10+	10

*We introduced the mark 10+ since several of the samples looked better than the reference print from ECI/FOGRA.

** The density was for some reason too low in the 46 Karat. Technically it's identical to the Ryobi 3404, so the results ought to be similar.

Spectral Evaluation

Vendor	Press	Average colour deviation (Delta E76)
KBA	74 Karat	4.5
KBA	46 Karat	7.5*
Ryobi	3404X-DI	3.4
Screen	Truepress344	4.5

* The density was for some reason too low in the 46 Karat. Technically it's identical to the Ryobi 3404, so the results ought to be similar.

Technical Facts

Vendor	Press	Paper Format (max.)	Printing Method	Lasers	Price (Euro)
Heidelberg	Speedmaster 74 DI	530x740 mm	conv. offset	Creo thermal x4-6*	725,000**
Heidelberg	Quickmaster 46 DI Pro	340x460 mm	waterless	Presstek ProSpot x4	350,000***
KBA	74 Karat	520x740 mm	waterless	Presstek ProFire x2	870,000
KBA	46 Karat****	340x460 mm	waterless	Presstek ProFire x2	345,000
Kodak	Directpress 5634 DI****	340x460 mm	waterless	Presstek ProFire x2	355 000
Ryobi	3404X-DI	340x460 mm	waterless	Presstek ProFire x2	340,000
Screen	Truepress 344	340x470 mm	conv. offset	Screen MALD x2	395,000

*Depending on number of printing units, one per plate cylinder

**"Street price" according to Heidelberg. "List price" is 850,000 Euro.

*** Street price" according to Heidelberg. "List price" is 375,000 Euro.

****Technically identical to the Ryobi 3404X-DI

Web offset DI presses

We tested sheetfed DI presses for two-up and four-up formats, but there are also two manufacturers of web offset DI presses. These presses serve very different application needs than the sheetfed DI presses, but we thought we should present them in brief here.

MAN Roland Dicoweb

The Dicoweb is special in several ways. First of all it's not loaded with any printing plates but instead images straight onto the plate cylinder, erasing the image after each finished print run. The plate cylinder is made of stainless steel and the image is transferred onto the surface using a thermo-transfer technique. This takes about eight minutes and after fixing and hardening of the substrate, the image holds for about 30,000 impressions. The printing speed is 20,000 impressions per hour at a 630 millimetre cut-off length. The thermal imaging units operate at 830 nanometer for a resolution of 3200 dpi. MAN Roland has sold and installed a number of Dicowebs, for example at Nussbaum Medien in Germany and Stämpfli in Switzerland.

Wifag Evolution

This Swiss press manufacturer has argued for quite some time that web offset presses for newsprint should be equipped with built-in CTP. Quite recently Wifag also started to deliver presses prepared for in-line imaging, although no press currently use built-in CTP in real production. The Evolution 471 is installed at Neue Zürcher Zeitung. NZZ

It's not only smaller presses that use the DI-technology. The MAN-Roland DICOweb uses direct to plate cylinder imaging for fast make ready on this web offset press.

is testing the direct imaging while running the press conventionally in actual production. Mounted plates are exposed in custom built, extra fast Xcalibur CTP devices from Agfa. A number of Evolution presses have been sold ready for direct imaging, for example to the Italian newspaper La Stampa, the North Jersey Media Group, US, WAZ in Germany (which bought 17 presses a few years ago) and to Trinity Mirror Printing, in the UK. Wifag has also developed its own imaging unit, and for now uses processless plates. The plan is to move to imaging directly onto the plate cylinder.

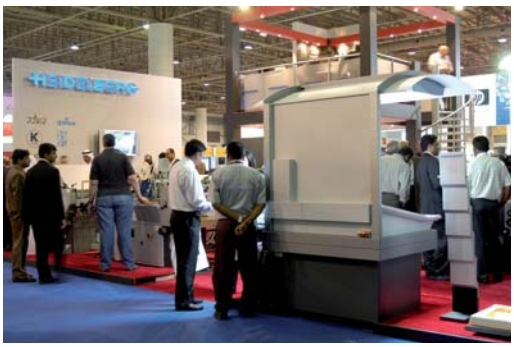
Among the newcomers in DI-imaging is the Swiss newspaper press manufacturer Wifag. The Evolution DI web offset press has direct imaging of the plates, on press. The first installations are at present run in test production.

Across the Divide at Gulf Print

Few industry events these days see strong increases in visitor numbers, but we recently participated in an exhibition that is seeing more than healthy growth: Gulf Print. This exhibition and seminar took place at the beginning of December in Dubai, and we were fortunate enough to be invited to participate.

Regional shows provide an important function, both as meeting points and as venues where new products are presented. Adding a seminar series to an exhibition can be a risky business, since it is difficult to gauge audiences and interests. However Gulf Print's organisers recognised the need to support exhibitors and visitors, and to add an educational dimension to proceedings. At Gulf Print we worked with US trade title, Electronic Printing's editor, Keith Hevenor, on a three day series covering computer to plate and digital printing.

Anxious is probably a good word to describe how we felt about a three day series taking place on the show floor. Not least of our worries was how to make sure that what we said today was relevant to the people listening, or not, yesterday and tomorrow! At Gulf Print not only did we have reasonable continuity of audience from day to day, but we also had a lot of questions both during the seminars and in between times. This reflects visitors' strong interest in the topics, as well as this fast growing market's broader interest in digital production. We had questions ranging from our views on consumables, through to how to implement JDF in a digital workflow. People came from a variety of Middle Eastern countries, from Bahrain to Iran.



Our little seminars were, according to the organisers, "an eye opener for many who have attended Gulf Print 2005". We were in fact extremely flattered by the energetic interaction and the level of interest which ranged from colour management, through to whether a printer in Saudi Arabia should or should not sign the consumables contract he was offered. And that's the sort of thing that makes these events truly worthwhile. We are pleased to say that the Gulf Print organisers are looking to encourage more seminars and workshops in the future, working in conjunction with ME Printer, the region's leading trade title. ME Printer is a young magazine but in three short years it has grown to be the dominant voice for the Middle Eastern printing industry. We are proud to say that ME Printer is our publishing partner for the area.

The success of ME Printer and of Gulf Print reflects the region's interest in graphics technology, particularly for print. Dubai, the United Arab Emirates' second city after Abu Dhabi, is of course a world unto itself. Still visitors came to Gulf Print from as far away as Pakistan and it seems all points in between. The organisers were extremely pleased with the

number and diversity of visitors, over 8,000 – many of whom had travelled to the show from an estimated 75 countries. Most visitors came from the Middle East, but 9% were European, 10.5 % Asian and 9.74% came from the Far East. A mere 0.76% came from the Americas, and that was probably Keith.

The organisers were understandably well pleased with the event and according to Sales & Marketing Director Lina Alousta of Fairs & Exhibitions: "Judging from the response of our exhibitors and their sales, the show has met exhibitor and visitor expectations successfully. Exhibitors were overwhelmed when their sales figures outnumbered their expectations by 60%. This covers both the major international players in the industry … as well as the smaller businesses."

This show is growing, with a 40% increase in the number of exhibitors over the previous show. The 2005 show covered a floor space of some 15 000 square metres in total, including Gulf Pack, and 118 companies exhibited in the Print part. The exhibitors we spoke to were extremely happy, having signed contracts valued at approximately €20 million at the show. Heidelberg took €5 million on site apparently and Xerox sold its first iGen3 in the region. Heidelberg is a big noise in this part of the world with, for example, 3,000 presses in Iran and a 50–60% market share. Xerox is hoping for at least equivalent success. Exhibitors were anticipating another €9 million in business to come in after the show closed. The show organisers were very happy with all of this, particularly since the major international companies exhibiting, plus many local distributors, signed up for space at their next event. Details of the next Gulf Print will be announced at Ipex.

Gulf Print's organisers are looking to host more design software companies, plus advertising and publishing houses within the region to compliment the printing technologies on show. This is smart because many media houses have extremely ambitious investment plans already in motion and enthusiasm for the future abounds. Media production is about supply chain management, which it makes sense to incorporate into the next event. The future is coming on fast.

So what does this tell us about the state of the printing and publishing industries in a region currently infamous more for tragic loss than abundant gain? It tells us that perhaps we shouldn't take CNN and BBC World at face value, and that even in a region as volatile as the Middle East, maybe there is more hope for the future than there is despair for the past. According to the World Bank, the Middle East and North Africa (MENA) region has undergone exceptional growth since 2003. In 2003 and 2004 economic growth averaged 5.6 percent a year, the best it's been in a decade and the best it's been per capita since the mid-1970s. These gains are literally oil fuelled with GDP advancing 6.8 percent in 2003 and 5.5 percent in 2004: output in Saudi Arabia rose 7.2 percent and 5 percent in these years, and growth in Kuwait jumped to 9.9 percent and 6.8 percent respectively.

Unfortunately in the MENA region little printing and publishing industry data is available. Different countries face different blocks to general market development, and for printing and publishing as well as the people who live there, the most serious and intractable is freedom of speech.

Laurel Brunner, Keith Hevenor and Gulf Print organiser Lina Alousta on the ME Printer stand.

Unfortunately in the MENA region little printing and publishing industry data is available. Different countries face different blocks to general market development, and for printing and publishing as well as the people who live there, the most serious and intractable is freedom of speech. However many other blocks can and are being eroded. Reforms to trade policies are underway, along with reforms in many countries to improve the trading environment for private enterprise. Oil has provided substantial revenue gains for many countries in this part of the world and encouraged dramatic spending increases in government investment and consumption. This has apparently filtered down through the economic strata and is leading to increased private consumption. And all this despite the conflict in Iraq. According to the World Bank "assuming that a generally favourable outturn to the current uncertain situation in Iraq transpires over the period, the outlook for MENA is one of further solid growth … anticipated to register 4.9 percent and 4.3 percent in 2005 and 2006, respectively." Of course, even if you can readily parse this sentence, economic statistics are just abstractions, but for a service industry like print, all this has to be at least the start of good news.

Print serves industry and society, providing the communications tools that underpin everyone else's activities. Print's growth is therefore inextricably dependent on the growth of industrial and consumer responses to everything that shapes the socio economic environment. Trade magazines and industry events make a huge difference and making a difference is what Gulf Print was all about.

– Laurel Brunner

Visitors in the scrum at the opening of Gulf Print in Dubai.

(Above) His Excellency Ahmed Humaid Al Tayer, one of the UEA's more important government ministers, opened Gulf Print. (Left) The ME Printer editorial and management teams, plus guests.

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