Digital Packaging Strategies

Newsletter

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in this issue ...

comment

We want to hear your views

Have your say on how digital technology might revolutionise the packaging print market. Whilst we don't have space for a readers' letters page, the Viewpoint column (page 2) is available as an open forum to anyone with an opinion to express, a value added application solution to share or simply a grievance to get off your chest. In the meantime, we hope that the information contained in this second issue of Digital Packaging Strategies is of both interest and practical use in helping you to take advantage of what digital technology has to offer your business. To take out a company subscription, contact Lisa Page (see page 8 for telephone number and e-mail details).

New strategy for Dotrix

Agfa Graphics has significantly revised its digital inkjet strategy within the packaging print market through the introduction of a next generation Dotrix press, incorporating flexo technology to facilitate improved pre-coating and finishing functionality.

There are currently only seven Dotrix machines in operation worldwide, plus a further three hybrid inkjet/flexo presses developed in conjunction with Mark Andy. Once existing stocks of the compact Dotrix are exhausted, future production will switch over to the new modular version only.

According to digital printing product manager Guy Fransen, research and development work on the Dotrix modular system pre-dates the original developer's acquisition by Agfa just over a year ago. Likewise, the inclusion of flexo enabling technology front and back of the SPICE inkjet print station was sparked by the joint development work undertaken with Mark Andy – although, Mr Fransen confirms, that the relationship has not extended through into the engineering of the new modular format, on which support has instead been drawn from a leading UK manufacturer of flexo equipment.

'In our opinion, with inkjet technology you can never invent an ink which will work for every particular substrate,' said Mr Fransen. 'We do have a lot of substrates where you don't have to apply a coating, but by introducing this pre-print flexo station it opens up the way to using a lot more. Also, for the moment it is difficult to make a dense enough white ink for single pass systems. White is essential in many packaging applications; by including this flexo station we can offer a better solution.'

Running at 900 m^2 per hour in its current configuration – incorporating four colour bars each with 12 printheads supplied by Xaar licencee Toshiba – the Dotrix modular system is likely to sell at around €1million. Beta testing is underway in the UK and Europe, and Mr Fransen is looking at full commercialisation during Q4 later this year with serious interest already expressed by labelling, POP and flexible packaging printers.

Printing at widths in excess of 60 cm takes it beyond conventional narrow web applications, and indeed the current capability of HP Indigo as a competing digital technology provider. Depending on how initial sales progress, even wider widths are very much a future option says Mr Fransen.

viewpoint

Time to change

Returning to the UK carton industry after many years away has been like taking a step back in time. At the recent BPIF Cartons conference there was no mention of digital developments. KBA, Man Roland, Heidelberg and Bobst explained how their new machines would reduce cost and increase speed, all the better to protect against the move of manufacturing to low cost Eastern Europe and Asian sources.

But most delegates seemed depressed and harried, discussing the totally unreasonable demands of rapid turnaround and very low cost in a declining market. Something has to change. There will undoubtedly be continued fallout and consolidation, but there are opportunities too. Some companies are moving to low cost production sites but few seem to be changing the way they operate.

Digital print is now ubiquitous in the commercial print sector, where most companies use the technology as part of their production armoury. Packaging suppliers should take note. Digital technology providers are developing particular systems and solutions for specific packaging applications, many under non-disclosure. The industry needs to offer faster turnaround and provide lower runs, in some cases versioned and personalised offering significantly higher value.

Digital print and systems allow suppliers to refine their products and services, getting closer to the customers and providing a wider range of activities. The future packaging supplier will be a solutions provider as well as a manufacturer. Digital print should be a key component of their services.

•Dr Sean Smyth, Technical Director at Duncan Print & Packaging
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diary dates

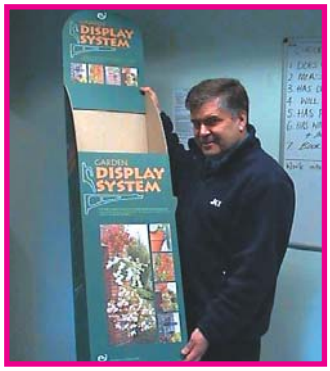
09 - 11 May	Sign UK / Digital Expo show review in DPS/3	NEC, Birmingham www.signuk.com
16 - 18 May	Fespa Digital	RAI,Amsterdam first-time event www.fespa.com
24 - 25 October	DigiPack from design to sales outlets, the global digital packaging supply congress	Paris www.digipack-congress.com

Saying it with flowers

The world's only FastJet flatbed single pass digital inkjet printer currently in production is scoring alpha+ with Cambridge based Jardin Corrugated, one of the UK's leading suppliers of transit packaging within the flowers home delivery market

Commissioned in February, the machine is being put through its paces over a six month trial alpha site period prior to planned commercialisation by the end of the year. Managing director Kevin Hennessy is convinced that it has already demonstrated the role to be played by digital inkjet in charting the corrugated sector's onward development path.

'20 years from now this will be the only form of printing. The speed with which digital printing is advancing is very, very rapid, and because of the simplicity of the process you don't need to employ printers to run this machine. You have got no origination charges; you have got no set up costs. As the technology develops and improves, it is my honest view that flexo will go the same way as letterpress went; it will become old hat.



'The machine is capable of running at 100 metres per minute; it is not really designed for short run. As part of the testing process we are running fairly high volumes with runs up to 20 000 units which would normally be flexo printed.

'One of the key drivers in this sector is a demand by retailers to extend usage of transit packaging. There are more and more boxes being used on display and so the print quality demands are increasing. This technology is giving us an opportunity to get into a much higher added value market.'

• DPS will be featuring an extended case study on Jardin Corrugated in a future issue nearer to completion of the FastJet alpha test period

Trends in RFID

A recently published report from independent industry consultants IDTechEx: Future of Chipless RFID: Technologies & Players 2006-2016 gives the clearest indication yet that printed tags rather than silicon chip technology is the most commercially realistic medium for wide scale adoption of RFID within the packaging sector.

According to Dr Peter Harrop of IDTechEx, there are now over 40 different companies working on Thin Film Transistor Circuits (TFTCs), capable of being printed at high speed on low cost plastic film. With the same electronic circuit as the silicon RFID chip, TFTCs employ the same frequencies and standards.

IDTechEx is forecasting that the volume of chipless RFID labels sold will have risen from five million during 2006 to 267 billion in ten years time. Because of its economical usage of consumables, digital inkjet is predicted to be the most significant print technology to benefit alongside gravure according to Dr Harrop.

Strategic alliance - Artwork Systems and Xeikon

Artwork Systems and Punch Graphix (owners of Xeikon) have signed a commercial agreement to promote each other's products within the digital packaging market. Both companies have co-operated on an informal basis in the past, and will now be working more formally together to develop new sales opportunities.

Xeikon now has 2700 presses in operation worldwide, of which 45% are in Europe and 40% in the US. The company increased its installed base by 10% during 2005.

HP Indigo ws4050

It won't be the ultimate solution, but as of now the HP Indigo ws4050 is way out ahead as the principal digital outputting system closest to addressing the needs of the flexible packaging sector.

With a point of entry price tag of around €529 000, the ws4050 has a running speed of around 1000 linear yards per hour in four colour mode. Since it was first demonstrated at the back end of 2004, well over 100 presses have been installed worldwide, approximately 50% of them in Europe.

First adopter was Geostick (NL) in January 2005; by a nice piece of coincidence, the first Dutch company to produce self-adhesive labels 40 years previously. Within a matter of months of commissioning the press, the company was already thinking of installing a second one; a not uncommon occurrence for countless Indigo users.

HP Indigo ws4050 installed at Eshuis BV

Also Netherlands based, Eshuis has just bought its third ws4050 within 18 months. The company now directs over 20% of its annual production via the digital unit (further complemented by an Indigo ws4000, and a Xeikon 500), amounting to around a €3.6 million revenue stream in digitally printed labels, shrink sleeves and flexible packaging applications, says managing director Peter Overbeek.

'We installed our first digital press three years ago, and have kept adding new equipment to continue to grow in this business. We were intending to extend, but actually hadn't planned any investment until we attended the Ipex show three weeks ago. The new press will be installed mid July and we expect to have it fully operational within a week of that.

'On the basis of current targets, it will increase our existing digital business by at least one third, because we can already fill this press. We are running two shifts, five days per week, and often go up to three shifts as required.'

What is attracting narrow web packaging printers to the ws4050 is a business proposition based on value added short run driven volume, says HP Indigo industrial sales support manager Syd Roberts. 'If you get the right solution, you get the right press and you target the right market then digital becomes a real viable alternative.

'The reason why the press is so successful is that we can do a proven return on investment; we can show you the profit that you can make on certain parts of your existing production: transferring your work from conventional to digital, and increasing the margins on those jobs. Sometimes as great a margin as 40% and more on shorter run jobs: that is what some of our customers are telling us.'

Extending its potential beyond the food and beverages sector, the ws4050 is the first and to date only digital press to have satisfied stringent validation criteria imposed by the FDA on behalf of the pharmaceuticals industry. In consequence, four of the leading flexible packaging printers serving that sector have now installed the system.

With labelling becoming increasingly a commodity item, the press has been purpose designed to facilitate access to the rapidly developing shrink sleeve and flexible packaging sectors, estimated to be growing at 7% and 4.5% respectively. A wider width machine would undoubtedly further accelerate that process, says Mr Overbeek. In the meantime, early adopters are enjoying a clear market advantage over their conventional print competitors.

Technology quick byte

With a running speed of 52.5 feet per minute in four colour mode (CMYK) and able to accommodate a further three special colours including white, the ws4050 will handle self-adhesive label stock and film substrates over a thickness range of 350 g/m^2 to 12 micron.

Web width is between 7.9" to 13"; input roll maximum diameter is 51.2".

The press is supported by a number of HP Indigo partners including Esko Graphics' workflow systems, and Artwork Systems' ArtPro pre-press software.

Designated finishing solution partners are DCM (slitters/rewinders and laminators) for shrink sleeve applications; and vertical form, fill and seal machinery manufacturers GKS for flexible packaging.

Xeikon packs more Punch

The inclusion of the Metadata tool within the newly introduced version 1.60 of its X-800 digital front end software solution has been introduced to enable existing Xeikon users to add late changes to a job on press without having to re-RIP it.

Hitherto, even a minor modification has required the operator to put the job through the complete workflow cycle all over again. This has typically meant having to re-open the original document in the application where it was created, and generating new output.

Xeikon user Didier Gilson, president of Toner de Presse (Belgium), commented: 'We have already used the Metadata functionality to develop several unique applications. For one job we printed 70 000 boxes using the Xeikon 5000 with a pre-release of the X-800 1.60 software. Each box had different barcodes; it simply wouldn't have been possible to achieve this job without the Metadata tool.'

Instant barcode from Enfocus

A new plug in for Adobe Illustrator from Enfocus will enable graphic designers to more easily generate, check and read barcodes within their familiar software design environments.

Instant Barcode operates on both Mac OS X and Windows platforms, and supports all of the most common barcode systems currently in use including EAN-8, ISSN and ISBN. When a code is created it can either be directly integrated within the Illustrator design or else can simply be exported to an EPS or PDF file for placement in other design applications.

The advanced barcode preflighting capabilities allow the design to be checked for the amount and types of barcodes used. The software also verifies the barcode height, the number of colours used, and whether it is set to overprint or not. As with Enfocus' PDF preflighting technology, certain errors can be fixed during verification.

The measurement of existing barcodes is simply carried out by the end user 'swiping' the mouse cursor over a code, which will then be instantly read to tell at a glance if the correct code has been used.

This new plug in will be available from June 1, 2006, on the Enfocus website and through its distributor and reseller channel priced at €249. Instant Barcode replaces the company's previous Barcode Toolbar or Barcode Checkup solutions. Existing users can upgrade to Instant Barcode from €59 as an electronic download only.

Esko extends its Scope

A number of key innovations and user driven features have been added to Esko's Scope integrated pre-production software solution through the recent introduction of version 3.0 unveiled for the first time at Ipex.

The most prominent features include an even closer interaction between CAD and graphic aspects, and the systematic adoption of PDF as the native file format throughout the entire Esko workflow. Scope 3 also brings improved web collaboration facilities and new on-line review and approval capabilities. New tools for easy installation and on-line monitoring facilitate customer support and guarantee a stable working environment for the thousands of Esko software operators.

According to packaging software marketing manager Jan De Roeck, new plug ins in the company's DeskPack product, making it a truly 3D interactive process tool, will make the creative process for designers far easier and accelerate progress through the supply chain.

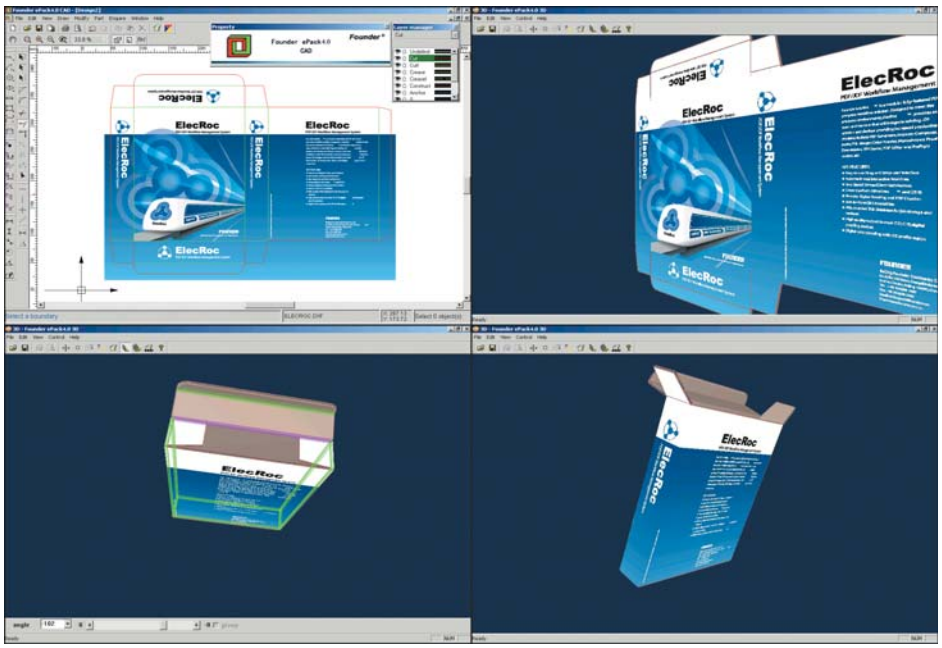
'Our aim has been to help the supply chain to stay within their favourite application and never convert files any more. Now they can stay inside Illustrator and complete the packaging design, trapping all the way to adding barcodes and to fixing sizes,' said Mr De Roeck. 'It is always error prone to have to make the next step in the workflow, always a big risk of destroying the file or lose editability. So we went all the way by saying let us accept the situation; now the user can stay within his comfort zone right through to finishing the job.'

For over 90% of the company's customers that have maintenance contracts, upgrades are free of charge. The rapid rate of development is such that if you are more than three versions behind, then you are effectively assessed as being a new customer.

Online pack design template

Asia's leading developer of graphic arts solutions could soon be making a significant impact upon creation to production within the carton packaging sector. Beijing Founder Electronics is currently beta testing its ePack design software package containing a library of 300 different carton design templates that can be edited online.

Also allowing for 3D modelling, prototype designs generated via the ePack solution can



3D modelling, prototype designs generated using ePack

be outputted direct to a proofer or a die cutting machine, and thereafter straight to press. Security pattern design software can be included as a further option, enabling designers to incorporate anti-counterfeit patterns in the printing process not as a secondary function.

Commercialisation is likely to be early 2007. The cost base has yet to be finalised, but is expected to be considerably below that of existing systems currently on the market.

Through a separate side of its business, Founder is to install HP Indigo digital presses throughout its network of EasiPrint franchises across China. Founder is also to distribute HP's 1050, 3050 and ws5000 presses to the commercial print market in China.

Founder established an administrative centre in Brussels earlier in the year to facilitate sales and service within the European print and packaging market. The Beijing based company has an annual turnover in excess of $2.5 billion.

Fujifilm Sericol wide eyed about digital

Same technology but now under relatively new ownership, it surely won't be too long before Fuji adds to its existing contingent of wide format inkjet press solutions within the POP sector. With both Sericol and Avecia in the fold, further developments in digital inks are likewise on the cards for later this year.

In the meantime, the Columbia turbo driven UV flatbed, running at 160m^2 an hour, printing onto substrates up to 3.2 metres x 1.6 metres in size and 40 mm thick, has been joined by the new six colour Spyder 320+: a six colour version of the compact footprint Spyder 320 adding light magenta and light cyan inks for smoother tones and gradation.

For the wider market, Sericol has also developed Color+, a solvent based, Piezo, drop on demand ink formulated for wide and superwide roll fed inkjet printers.

The new six colour Spyder 320+

Agfa supports PDF solution

Agfa has announced that its :ApogeeX pre-press production software and :Delano project management system will support the new Adobe PDF Print Engine technology.

Adobe PDF Print Engine is a next generation printing platform based on the same PDF technology as Acrobat and Creative Suite software. It allows PDF files to be rendered natively throughout the workflow, eliminating the need to flatten transparent artwork, and enables a complete, end to end PDF workflow that uses common technology to generate, preview, and print PDF files.

The Adobe PDF Engine combines the strengths of Adobe PDF for content definition and the JDF standard for job ticketing and process control in powering RIP and workflow systems. Available in printing systems from Adobe partners, it enhances output consistency throughout the workflow, improving overall print productivity and profitability.

After integration with other :ApogeeX components and third party software packages, the new PDF print engine will undergo an extensive beta test programme pending final release. Existing :ApogeeX users will be offered a software upgrade programme.

An extensive number of suppliers are also likely to incorporate the new PDF print engine into their workflows including EFI, Esko, Fuji and Xerox.

FastJet ready for take off

Inca Digital marketing director Heather Kendle.

With its UK alpha site already operational (news story: 'Saying it with flowers' page 2) and beta trials lined up in France and Germany within the next few months, the high speed FastJet flatbed digital printer jointly developed by Inca and Sun Chemical is well on track for full commercialisation by the end of the year.

Inca Digital marketing director Heather Kendle talks exclusively to DPS about inkjet's mounting challenge within the packaging print sector.

DPS: How will the FastJet perform?

HK: If you are doing a run of up to about 4000 m² it should be more cost effective to do it on a FastJet than on a flexo press. That is within an hour's running time so it fits in very nicely with the pressures that are coming through in the market. The cost of the press is likely to be around €1.5 million – which is expensive, but then it is a big beast

DPS: What applications is it likely to be best used for?

HK: We have identified corrugated because there is a flexo part of that business where a fairly crude print quality is acceptable to the market. It doesn't have to be top end; we are not trying to match the litho laminate business. We potentially see a good market in cartonboard, but we need to look at what the commercial pressures are in that sector: whether there is the same production in run lengths and whether there is a requirement for more personalisation

DPS: Why has it taken so long for inkjet to seriously enter the packaging market?

HK: Has it taken so long? The head companies tend to be very optimistic on what they can achieve and by when; but it is a relatively lengthy process. We have bought out new products about every 18 months; that is quite a fast product change programme in any market. The next generation heads that are coming through from all of the manufacturers mean that there will be some exciting new developments coming along in inkjet for sure, because they have made a step change.

DPS: Do you think people have become so invested in toner and liquid ink technologies that it is going to make it harder for inkjet to break into the market?

HK: Whether it is wet or dry, the toner solution only really works for some materials. It suits a range of applications – labels for example – but there are lots of others that people would like to be digital but aren't because that technology doesn't work for them. HP bought Scitex last year; I think you will see some interesting developments going on within that organisation. They are very interested in where inkjet's going, not off down just the one track to push everyone into toner technology.

DPS: Where does digital inkjet stand in relation to conventional print?

HK: Well, not necessarily just as a short run solution as FastJet proves. But we do see this as a complementary technology; it will be many, many years before it replaces analogue if it ever does. It is not yet as reliable as a conventional printing press by virtue of the fact that the technology is still at a very early stage. I think some of the bigger conventional press manufacturers are looking at it quietly; of course, for them it is disruptive technology. They are thinking about how they take it on board without it killing off current business. It is a case of 'I have this brand that has a sector of the market; I don't want to destroy that but at what point do I feel inkjet is a stable enough technology that I would want to put my brand name against it'.

Technology quick byte

The single pass FastJet digital flatbed printer is achieving running speeds of more than 4000 m² per hour. It can handle substrates of up to 10 mm thickness board with a print width of 520 mm at 300 dpi. Four colour process, UV curable pigmented inks. Due for commercialisation end 2006 as a Sun Chemical badged up system.

A Passage to India

Is packaging pre-press likely to go the same way as page make up for magazines and colour corrections for catalogues; in other words, to India? Express KCS CEO Robert Berkeley says it could be just a matter of time.

Established in the 70s, Express KCS's parent company Express Colour Scan is India's largest independent pre-press company, locally serving brands such as Nike, Coca Cola. GSK and Philip Morris. From the outset, management policy was to train staff overseas at institutions such as the London College of Communications and the Rochester Institute (NYC). Its regularly extended technology and systems base is directly comparable with western standards, and about 35% of annual turnover is generated outside of India, of which the fastest growing proportion is in packaging pre-press.

Pre the digital age, the notion of sourcing print ready artwork from India would have sounded preposterous. But the collusion of level playing field technology, the Internet and lower labour costs is making Delhi the preferred option for a growing number of UK and European based repro bureaux looking to outsource pre-press.

Why would an external specialist supplier in turn out source? Partly to better manage the peaks and troughs of an increasingly market responsive supply chain, and also in direct consequence to the changing role of the repro house within the client relationship, says Mr Berkeley. 'They gain a number of things, one of the most important being capacity. Their retail clients don't tend to send them nice even amounts of work; it is much more famine and feast viz knock out these 550 SKUs in the next three weeks. So, we help them to provide an excellent customer service without having to chase around after freelancers and train them up with all the headaches that entails.

'For a lot of our pre-press clients the relationship with the brand is now a lot more consultative. Artwork delivery is just one aspect of what is becoming an all embracing facilities management activity.'

So, rather than a threat, outsourcing from India is more of an expedient. Quality standards are high, delivery turnaround is fast, and with savings of as much as 70% of the norm, costs are low enough to still allow for a margin. And, Indian companies like Express KCS are far enough removed from the client to have insufficient leverage to be able to fully service the business and take it over.

Could brands and more possibly, converters, also look eastwards?

'I have spoken to some converters who are receiving artwork, probably from an agency, and are then having to send it out or else do it internally,' said Mr Berkeley. 'However, they don't tend to be particularly cutting edge when it comes to realising these sorts of efficiencies and cost savings, which in any case are relatively small for them.

'If they have got an in-house department of three or four people that they control, they are probably going to feel more comfortable with that than outsourcing. Also, the risk will appear to them to be very high if they should get something wrong.'

Most brands are probably unaware that their repro is being handled in this way. 'People just want to keep it secret at the moment,' said Mr Berkeley. 'Some want to protect their existing revenue and perhaps use it as an opportunity to increase margin; others just want to have extra capacity without the client knowing what they are doing to realise it, or because they may be concerned that the client's perception of India is of low quality, fast and loose and it is thrown together.

'Pre-press is quite often the 'redheaded stepchild' as they say in America. By and large, it is not considered hugely important simply because it is a low ticket item along the way from making the goods to flogging them on the shelves. The cost of pre-press in relation to print is so low that it barely figures on the radar. But it is a cost that can be saved that's for sure.'

Robert Berkeley, Express KCS CEO for two years, has gained industry wide experience in magazine and newspaper production over twenty years.

Only for Albert Heijn

Netherlands based HP Indigo user Eshuis is currently helping leading Dutch multiples chain Albert Heijn to build sales of its new own label 'Kies&Kook' range of fresh produce through selected stores.

The 'Kies&Kook' concept is based upon inviting consumers to 'mix 'n' match' from a range of pre-packed meat products and vegetables in order to determine individual meals. Over 40 different label designs in short run quantities were required to cover all ingredients included within the range, which was initially test marketed through eight separate outlets.

Sales have subsequently exceeded original expectations, with the 'Kies&Kook' concept now being rolled out through 18 stores. More Albert Heijn outlets are likely to stock the full range later in the year.

According to Eshuis managing director Peter Overbeek, 'With the bigger runs now beginning to exceed 2500 linear metres per design some of the business will be moving across to our flexo equipment. This is consistent

with our business philosophy of starting off new work on the digital presses, and as it grows in volume then transferring it to conventional production.

'We have the software in-house to enable us to adjust between processes so that for the customer the finished result is virtually identical. As volumes increase, the end cost to the customer also reduces, so they win at both ends of the project.'

New printheads

New proprietary technology Piezo inkjet heads that have been under development for the past two years are now almost ready for market launch, says HP Scitex global marketing and business development director Itai Halevy.

'The norm period for printhead development is around four years, so we are running well ahead of the competition,' claims Mr Halevy. 'Whilst these will be included within the Scitex proposition, they may be adopted by HP's speciality printing systems (SPS) division which commercialises HP technology to other applications that aren't conflicting. SPS activity has mostly been contained within the commercial print sector to date, but I am sure there are some packaging applications such as barcoding and thermal imaging that could be appropriate.'

This tends to confirm that its track record in printhead development was a major influencing factor behind HP's decision to acquire Scitex Vision earlier this year.

Aprion printheads are inclusive within the corrugated POP focused CorJet, which currently runs at 400 m^2 per hour. 'In order to print corrugated boxes we need to go at least ten times faster,' said Mr Halevy. 'You also need the cost of ink per square metre to come down; that is still a major limitation with UV curable inks. We believe that 300 dpi is too limiting in terms of that type of application, but we are looking to be able to handle boxes within the next two years.'

In the meantime, HP Scitex has no plans to extend its remit into flexible packaging applications within the foreseeable future viz three to five years. 'Although flexo is a great technology, it has its limitations - but the same is also true of digital,' concurred Mr Halevy. 'Because of the huge range of substrates used in the flexible packaging sector, and because the leading applications require a very high quality level based upon speciality inks and metallics; and because run lengths are typically very long, we don't currently see an opportunity.'

Xeikon cups it all

The latest application being explored by Xeikon through its joint venture with board manufacturer Stora Enso is personalised disposable cups, says digital print business development manager Filip Weymans.

'By printing on a Xeikon machine, the dry toner enables us to have indirect certification. The cups are printed flat, and the substrate – which is sealed by a special PE film – is then formed into the correct shape by a unique Stora finishing process.'

Also, in the cartonboard packaging sector, the Xeikon 5000 is also being used by a French converter (Labarr) in sheet form and then using a flat bed die cutter to print pastry boxes.

Cost of the combined Xeikon 5000 + Stora Enso system is between €800 000 and €1 million.

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