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PRODUCT OF THE WEEK

Unigraphica Challenger

Web-fed finishing kit is uncommon, but it's worth considering for the right application, says *Barney Cox*

Unigraphica is not a firm many printers are likely to have heard of, but this Lichtenstein-based outfit could become far better known due to its revolutionary new finishing system, the Challenger.

The firm has come up with a new approach that promises to improve productivity, cut waste, reduce manning levels and enable the integration of variable data anywhere within a stitched or bound product.

"Over my 25-year career, I've always listened to printers' concerns for the future," says Unigraphica founder and managing director Joseph Schweiger. "One of the results is the Challenger. While there's been lots of development in print, especially digital printing, there has been little revolution in post-press."

At its heart is the simple idea of moving away from folded signatures, to feeding from reels. It's surprising, given the long history of reel-fed print technology, that it's not more common to re-reel and finish from webs, with only a handful of firms operating in that manner.

"Web finishing eliminates a lot of feeding problems; in my view it represents a paradigm shift, it's like comparing cars with horses," says Schweiger.

For any firm looking to re-invest in print and finishing, the Challenger could dramatically reduce cap-ex by eliminating the need for a folder on the web, which Schweiger says are typically a third of the total cost of a press installation. Rather than running into a folder, you run to reel.

Rivals with signature-based systems point out that there are other factors that need to be taken into consideration when working from reels. One is that while you may produce minimal makeready waste on press (or on the Challenger), there's no convenient way of removing any waste produced during the run, whereas in a signature-based system it's easier to identify and reject bad copies.

Then there's the issue of integrating with today's wide web machines, which for the highest pagination machines, top out at over 2m-wide.

Schweiger's answer for those wide-web machines is to run a slitter to convert the reels into several narrower reels that are compatible with the machine's 1,060mm wide infeed unwinders. Although he adds that if required the firm could develop a system that takes wider reels. It already has a narrower 520mm-wide version for taking digital work.

The smallest configuration is four unwinders/infeeds, with a current maximum of seven, although Schweiger adds there is no limitation on increasing that figure if required. Even with four feeders it can produce 48pp products from two-around webs (16pp) or 96pp products from four-around (32pp) machines. With seven infeeds the maximum paginations are 112 and 224 respectively.

By adjusting the width of the reels on each feed, it's possible to offer publishers more flexible paginations, including the ability to increase in 2pp section rather than 4pp, helping them to better meet commercial requirements without production constraints.

Then there's the issue of stocks that can be handled. Heavier and lighter materials can be handled, from 35gsm to 200gsm, by eliminating folding, which Schweiger says compares to 50-90gsm for a typical on-press folder. With the ability to mix stocks from different reels it's easier for publishers to differentiate products and sections while also offering ways to cut costs through lighter weight products or add value through using heavier stocks – or even to cut the cost of those heavier products by switching to more cost effective web production.

Waste debate

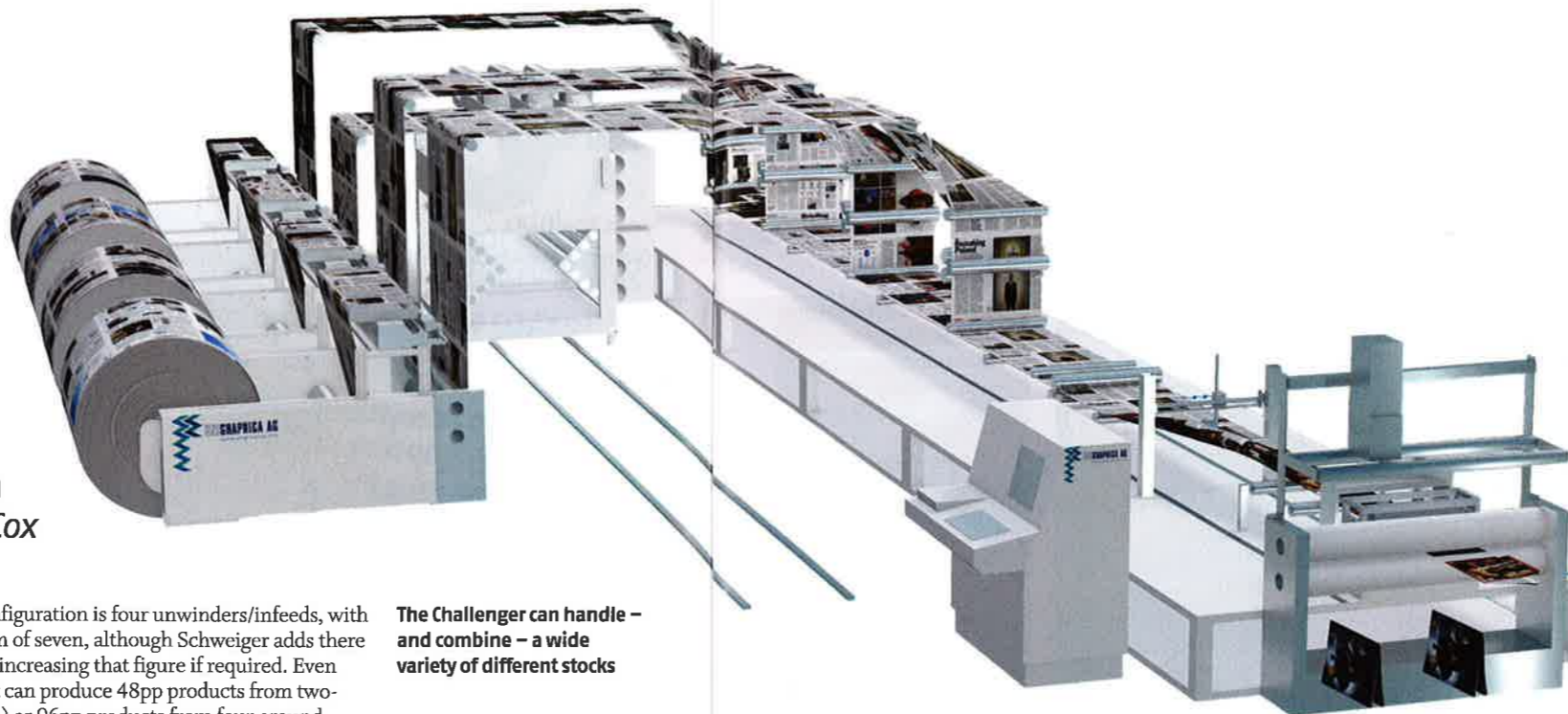
Thanks to the design of the folders, the saddle and the use of a web, there is a reduced need for the overfold needed by conventional stitchers and binders to open out each signature, which the firm claims reduces paper waste by 15% – a not inconsiderable sum. However, rivals question if the figure is that high when compared with the latest bindery kit. There's also virtually zero makeready waste, and little chance of misfeeds and damaged sections, which again reduces waste and improves productivity.

While Schweiger claims his machine has the potential to change the entire landscape of post-press production, UK agent WRH Marketing (which also supplies Ferag equipment) sees its application being a little more niche.

"It's different to a signature gatherer-stitcher," says WRH sales director Colin Marlow. "It's not competitive on big magazine jobs, but it is ideal for smaller runs and brochures."

Marlow adds that the ability to mix different substrates provides additional flexibility that may lead to the development of new kinds of printed products, and ones that,

The Challenger can handle – and combine – a wide variety of different stocks



SPECIFICATIONS

Number of reels	4-7 (additional reels available on request)
Reel width	210-1,040mm
Max reel diameter	1,270
Speed	0.5-3.5m/s (210m/m) 36,000 copies per hour
Pagination (A4)	48-224pp
Page size	150x105-430x340mm
Stock weight	30-200gsm
Price	four-infeed, 520mm web width: €1m (£846,000) four-infeed, 1,060mm web width: €1.5m (£1.27m)
Contact	WRH Marketing 01279 635657 www.unigraphica.com www.wrh-marketing-uk.com

through clever use of materials, play to print's strengths as a physical medium.

The real strength of the Challenger comes into play for digital work, or in the combination of digital printing with pre-printed elements.

It's possible to add overprinters to any of the unwinders on either or both sides of the web and either across one page width or the entire web. The firm has already received an order for one machine, which will use Kodak Stream heads to offer full-colour personalisation across one page on one infeed. Given the machine's flexible speed, from 0.5-3m per second, it can accommodate a wide variety of digital print engines, although Schweiger says that the first implementation plumped for Kodak heads as they can keep up with the Challenger's 210m per minute maximum throughput. In the future as digital makes further inroads into high volume production it could be possible to replace the unwinders with digital presses to produce a totally inline system, although the benefits of one-pass integration needs to be carefully weighed up against the flexibility of a nearline solution. As you'd expect of a new system it is fully JDF compatible and all adjustments are automated via servo control.

Integration station

Rather than reinvent the wheel the Challenger is designed to be integrated with third-party products when necessary. For instance, although it includes a head and tail trim, using rotary knives for maximum productivity, it is designed to use a third-party, fore-edge trimmer. Also, although a saddle device, it uses spine gluing to fix the pages. If you want a stitched product then you'll need a third-party add-on.

For perfect bound products the Challenger can be used to assemble the blocks and then pass them onto a milling, gluing and cover mounting machine, or more accurately machines, as its 36,000 copies per hour (CPH) speed is fast enough to keep two lines fed.

Unigraphica is well placed to help customers with integration. It has 25 years' experience as a dealer and systems inte-

THE ALTERNATIVES

GOSS PACESETTER

As well as web presses Goss also offers finishing lines, with the Pacesetter saddlestitchers in 25,000 and 22,000 copy per hour speeds. It has a reel-to-saddlestitch option and the ability to mix reels and folded signatures. For simple products, one-pass production with stitching heads at the ends of the on-press folder is an extremely efficient option.

Price n/s
Contact Goss International
01772 257571 www.gossinternational.com

MULLER MARTINI 3697 GATHERING MACHINE

Muller argues that folded signatures remain the most flexible and affordable method of feeding binders and stitchers with pre-printed work, while a single web such as its SigmaLine is the optimal approach for digital print.

Price £500,000-£1.5m DOS
Contact Muller Martini
0844 875 4590 www.mullermartini.co.uk

grator, with Schweiger getting the idea for the system from his observations and conversations over the decades with hundreds of printers worldwide.

While the system can integrate with a wide-range of third-party post-press systems, including Muller Martini, Wohlenberg and Ferag, it's likely that for any additional new equipment you'll be pushed down the Ferag route as the Swiss firm's parent and marketing wing, WRH, handles sales of the Challenger in the UK and the firms are in discussion about a global deal.

So far there is one Challenger installed, at an undisclosed security printer in Europe, and Schweiger won't be drawn any further on the application. Others are on order, including the system with the Kodak overprinting unit.

While page-based products such as magazines and brochures are one market for the technology, Unigraphica has also identified another group of markets for the machine. In this instance rather than folding the web and spine gluing, stitching or binding to produce multiple-page products it can be used to bring several webs of materials together to form multiple layer products, which can either be sheeted or re-reeled. Schweiger says the applications here include security print, where multiple materials can be used to produce difficult to counterfeit products and to add passive or active security tags. Other applications include packaging. Where multiple layers can be used to produce functional materials that can for instance identify if storage requirements have been breached, all the while using films to separate different layers and to ensure the products being packed don't come into contact with any problematic substances. Lastly, and perhaps most exciting in terms of long term application of this multi-layer product assembly, is printed electronics, an example of which Schweiger says is printed batteries.

Wherever it turns up, it's clear that Schweiger's bright spark of an idea has a myriad of uses that will keep existing printing markets competitive, but also opens up the possibility of developing new applications for printers and the print process. ■