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Commentary & Analysis

## Hybrid Printing – The Future of Direct Mail?

By [Andrew Tribute](#)

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With all the developments in digital printing, the one item that seldom gets much coverage in the press is using add-on inkjet printing heads on existing printing and finishing equipment. This is a technology that has been around for a long time in many areas of product marking and low quality monochrome imprinting, but is relatively new in the graphic arts markets. In this area the only real player for some time has been Kodak with its Versamark DS Series continuous inkjet imprinting print heads, but these have predominantly operated in the monochrome and spot color markets at relatively low resolutions.

In the past overprinting was mainly adding simple text items to provide limited personalization.

What we are now seeing is the availability of a new generation of high-speed inkjet print heads for adding onto both presses and finishing systems for imprinting of variable data alongside offset or flexo printed material. Again Kodak is seen as the leading player in this area with its [new Prosper S5, S10 and S20 continuous inkjet print heads](#). Kodak however is not alone in this market. We have recently seen [HP introduce its C400 Color Print Module](#) to compete in this space. In Europe Impika has introduced its range of [iEngine modules](#) for this market, and Atlantic Zeiser has its [Gamma](#) and [Delta](#) print modules. R.R. Donnelley has also developed its own Proteusjet Modular system for enhancing its offset presses.

The arrival of these new print heads and modules opens up new business opportunities for imprinting or overprinting of pre-printed reels of paper. In the past overprinting was mainly adding simple text items to provide limited personalization. Very little was carried out in printing images because of the low quality of earlier imprinting systems. The first of the Kodak S10 print heads are now seen doing both text and monochrome images. These print heads are only

supplied as single color modules printing a width of 4.16 inches at 600 dpi at speeds up to 1,000 ft/min. It is up to an integrator to add these to a press or finishing system. Some integrators have combined them together to print CMYK in one pass. There are however so far very few printers doing four-color printing with these heads.

I visited one of these, Lettershop in Leeds, England. Lettershop is one of the leading direct mail printers in the UK and they already have a large number of Kodak Versamark DS Series print heads on a variety of different systems in their massive finishing department. Lettershop have added eight Kodak Prosper S10 print heads onto Scheffer offline finishing line that takes pre-printed reels up to 38 inches wide from their two Goss Sunday presses. This allows them to print two areas each of 4.16 inches wide on the web in color for personalization of direct mail pieces. The print heads are mounted on rails allowing for them to be moved and also to allow for duplex printing. The print line also has the earlier Kodak Versamark DS Series heads to allow for black and spot color printing.

Lettershop has substantial experience in personalizing its web printed content although up to now it has only been monochrome text and spot color using the Kodak Versamark DS Series heads. The Kodak Prosper heads allow for color and images now to be printed. Lettershop do not use toner or inkjet based digital presses for printing believing them to be too expensive for volume direct mail printing. They also do not believe in adding imprinting print heads onto an offset press preferring to have them in the finishing department. The reasons for this are both flexibility and speed. Currently Lettershop has found that while the speed of the Kodak Prosper S10 heads is 1,000 ft/min it is best to run them slower to facilitate good drying of the ink. Lettershop's view of the use of digital printing for direct mail is that it is far more economical to print the majority of color by offset and then add the relatively small amount, up to 20%, of variable data by inkjet printing.

Currently Lettershop has only just started using the new color overprinting facility. The first job was a 320,000 item run for a low cost UK airline. Lettershop is in detailed discussion with many of its customers in defining how best to use this new facility to add greater value to their high-volume direct mail pieces through the addition of full-color personalization that was previously unaffordable.

Having seen this hybrid offset/inkjet printing in operation certain points stand out as being significant. First is it feasible to add such print heads onto a high-speed web offset press? Such presses run at in excess of 2,000 ft/min whereas high-quality inkjet print heads run at up to 1,000 ft/min, and that is assuming you can dry the ink at that speed. It is probably far better to consider putting the print heads into a finishing operation. Secondly in order to be competitive no offset printer is going to use special inkjet optimized substrates for printing, so one has to check how well the inkjet print heads print and the inks dry on the offset papers used. Lettershop gets around this by predominantly not using any gloss coated papers and they have developed post-coating systems to add a gloss to both sides of the printed sheet after inkjet printing has taken place. Thirdly jobs have to be specially designed to make use of the limited width for color printing that these print heads provide. At this stage no supplier is offering print heads with a width greater than around four inches. To stitch individual print heads into an array on a device that is not designed for the purpose of inkjet printing is a very complex task. We will probably

have to wait for the print head suppliers to build print modules with stitched heads before wider print widths will happen. A fourth point is who will do the integration of the print heads. There are special integrators, however some companies such as Lettershop do it themselves.

A final point is that these print heads are very expensive, and adding a narrow width of color overprinting will probably cost well in excess of \$1 million. This is not a role for the faint hearted, and you will be living of the bleeding edge of technology!

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Please offer your feedback to Andy. He can be reached at [andy@whattheythink.com](mailto:andy@whattheythink.com).

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