



On the Horizon?

In today's world of coldset printing, there are several market and technology trends that are driving R&D programs at the ink manufacturers. Three prominent themes that have been identified as:

1. Provide a means to compete with other printing processes (i.e. heatset, flexo, gravure) on the newsprint substrate.
2. Provide a system that uses coldset presses, but allows upgrades in the substrate to low grade uncoated and coated stocks
3. Simplify the printing process

Within these themes, there are several approaches that have drawn attention and focus on providing new opportunities for coldset printers. Let's examine the specific avenues where current interest has emerged.

UV on Newsprint

This particular topic would be best categorized as a specific approach to improve ink setting and rub resistance. It could deliver in a relatively straightforward way on themes 1 and 2 above. There are clearly other alternatives to consider such as heatset, infrared, etc. There have been several cost models to show how installation of UV lamps may offer a low capital approach to achieve performance, however, the ongoing consumable cost from UV inks as they are known today, may preclude it from general use and fitting all the desired outcomes. The major questions for the ink maker and printers to address will be:

- a. Do we need to sacrifice printing speed to maintain cure enhancement?
- b. Are print qualities on various stocks on par with alternatives (e.g. heatset)?
- c. Is all the UV material immobilized on newsprint?
- d. Can this be done cost effectively?
- e. Are there any recycling or health/safety issues?

Waterless Newspaper Inks

KBA has been heavily committed to the attempt to simplify the printing process and deliver versatility in color options with their Cortina press which is currently in beta site testing in Germany. This press uses the waterless process for web offset newspaper printing. The major benefits to the printer come from productivity gains (faster start ups, better stability, compact design) and versatility for providing 4 over 4 color. From the ink standpoint, the removal of constraints of the wet lithographic format allows for inks that are more environmentally friendly including water washability.

Value Added or Enhanced Coldset

Another strategy that has emerged in Europe requires the combination of ink and paper to be matched in order to deliver enhanced print performance. The premium inks and papers allow for a wide variety of performance applications to be provided via coldset printing that would not be normally available. The inks depend on more elaborate resin chemistry than typically used in coldset applications. The papers allow for controlled absorption that produces unique ink setting characteristics.

Lithographic Newspaper Inks that Print without Fountain Solution

Recently, there has been the introduction of sheetfed inks that print using water without the addition of typical fountain solution etches. The theory is that the ink composition has been altered to function as effectively when printed with water as when run with fountain solutions. The obvious question will be, "What is the possibility of doing this with web offset printing?". The major questions to address will be:

1. Can we maintain the high speed equilibrium without compromising quality?
2. How will plate wear be impacted w/o some lubrication additives available from fountain solution?

Alternative Screening Techniques

The recent CTP revolution has catalyzed a re-examination of various screening techniques for coldset applications. The technique, stochastic or frequency modulated (FM), surged in interest in the early-to mid 1990s (particularly in Europe). The benefits sought were enhanced print quality and improved registration control. Aside from complications from the use of films, what was found was that the benefits of the concept were manifested at times, but lack of consistency (not always delivering improved image quality) and process complications (piling, sand duning, runnability issues) during printing suggested that there was more sensitivity inherent in this approach. New approaches are being tried today that consider the entire mechanical and chemical aspects of printing to capitalize on the opportunities that FM screening can bring to image quality on newsprint.

Keyless and Emulsion Printing

There appears to be no further interest in expansion of keyless as the sought after simplicity of the various systems could not overcome deficiencies in the loss of latitude in controlling ink/water sufficiently to mask defects. From the ink manufacturer's perspective, these systems require such a higher degree of specialization and maintenance than originally forecast that the robust design of a process is extremely difficult. The potential of emulsion ink approaches, originally part of the single fluid process, has never manifested itself. Once again the intrinsic simplicity of the concept does not accommodate the dynamics of the high speed printing process. It remains to be seen whether this concept will re-examined in machine design by press manufacturers to make emulsion printing possible.