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Commentary & Analysis

Is Waterless the Future of Printing (by Inkjet)?

By [Andrew Tribute](#)

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I get to visit many printers and suppliers in the course of my work. At the recent GraphExpo event in Chicago I went with a number of other industry analysts to see the first installation of the Xerox CiPress 500 waterless inkjet press. This was at dmh Marketing Partners at Mt. Pleasant, Iowa, some four and half hours by coach from Chicago into the mid-West farming country. While I have been tracking the development of this new Xerox press that has previously been previewed at IPEX in 2010 and at Hunkeler Innovationdays earlier this year, I really wasn't sure what to expect.

What I found was one of the most impressive production operations spearheaded, by the dmh VP of Technology, Randy Seberg. He discussed his company's partnership with Xerox that would allow dmh to substantially increase their business in the near future. Before going further with that let me outline the dmh company. The company is probably the largest and most successful mailing house in the USA. The company was founded in 1993 and today mails around 8.5 million mail pieces per day. Seberg states that dmh is a mailing company that prints, but not a printer that mails. They make their money by being the most efficient mailing manufacturing organization in N. America. As far as printing in the various dmh facilities they run most technologies and claim to be the largest Océ shop in N. America with a large number of continuous feed monochrome presses that are used to personalize offset printed content.

Around a year ago Seberg started discussions with Xerox concerning partnering in the development of the Xerox waterless inkjet press. The partnering is the important factor as Seberg wanted to be able to define and evaluate his specific requirements for a high-speed continuous feed digital color press. Xerox was looking for an experienced user to help them finalize the structure of the press and to fully test it in production as a true beta tester. The first press was installed early this year and has been running production since then. The early prototype press was replaced later in the year with a twin-engine production model for full color duplex printing.

One of the principal reasons for Seberg's choice of the Xerox CiPress 500 press was that it would run normal offset papers and did not require special higher priced inkjet-optimized paper. He did not want to increase the number of papers held by the company.

As I stated before I have watched the development of this press over a number of years. I was lucky to see the early stages of its development in Xerox R&D many years ago. The use of standard offset uncoated papers has always been a key element for the press but it was only after the visit to dmh that the full advantages of this, and the fact that the press was a waterless press, really struck home. Earlier I had felt that the image quality may not be adequate and would not be competitive against the competition's presses that used aqueous (water based) inks. Seeing how dmh worked and what they produced could be viewed as like going to a religious event and getting converted (not that this has never happened to me). What I can now say is the Xerox CiPress 500, and other Xerox presses using the same technology, will be major drivers in changing the industry to adopt inkjet. Xerox may have been late on getting on the inkjet express train and many analysts and members of the press have thought they were too late to succeed. Well no! Xerox had its own unique high-speed inkjet express and it may well be that other suppliers may be in catch up mode to compete against.

I have in front of me something no other supplier has produced, and this is the CiPress 500 Paper Swatch Book. This shows the same images printed on the CiPress 500 using a wide range of standard offset papers. These include 45gsm AbiBow Newsprint; 44gsm Catalina Opaque; 60 gsm Appleton Utopia GW Book and Utopia Filmcoat; 74 gsm Domtar Husky Offset Opaque Vellum and Opaque Smooth; 90gsm UPM Prepersonal Faber Imprimerie; 148 gsm International Paper Accent Opaque Smooth; and 128 gsm Georgia Pacific White Topliner. There were many other standard papers with the same printed images in the book. All of them were very acceptable.

The benefits of waterless printing are seen in the fact the press does not have to use a drier to remove the water from the ink to allow it to dry. All aqueous presses have to remove the water to dry the print and this is perhaps the biggest problem for such presses. It can cause difficulties with paper curling and image registration. It also can limit the amount of ink coverage when running at full speed. Aqueous inks can also penetrate well into the paper and this will be seen as show through on lightweight papers. If inkjet optimised papers are used that are necessary to get good quality printing then at present these papers cost around 25 - 30% more than standard offset papers.

At this time Xerox does not offer printing onto coated papers on the CiPress 500, having done no testing on them at this stage. One has to say however that few of Xerox's competitors' presses are printing on coated papers at this time. In fact I feel the future for inkjet printing may be to use matt papers and to post-coat them inline or offline to give the same appearance as offset gloss or matt-coated papers.

Following recent meetings I have had with Xerox and the visit to dmh, and in particular talking with Randy Seberg, I have become a convert to waterless inkjet as a real challenger in the growing inkjet market. I expect to see many developments on the technology by drupa next year to open up the market further. I would also expect that the CiPress 500 will be the first of a family of Xerox waterless inkjet presses that will widen the scope of this technology for more areas of the market.

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Discussion

By **Pat Berger** on [Sep 19, 2011](#)

What about paper recyleability. Are products printed with this inkjet destined for egg cartons and chipboard when recycled according to <http://www.ingede.de/ingindx/press/pr1001-ipex.pdf> probably not but time will tell in real production deinking production. As of yet all waterbased direct to paper ink jetted papers are doomed to down cycling, landfill or construction paper.

By **Andrew Tribute** on [Sep 19, 2011](#)

The Xerox CiPress 500 brochure states, "Our output is INGEDE (International Association of Deinking Industry) Certified "Good De-Inkable." This is the highest possible rating based upon ERPC (European Recovered Paper Council) Deinkability Scores.

Xerox state that their system is the only high-speed inkjet device in the market that has received this certification and that it means that output from the Cipress can be recycled from white paper back into white office paper.

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