

# The Evolution of Digital Production Color Printing

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## Abstract

It will be safe to say that most material that's meant for communication is now created digitally. In my talk, I will start with a subset of this communication process, which is the printing of full-color material, and then converge on a subset of this, which is "production color digital printing".

One way to characterize the various needs of making color printed pages is by the size of the job, that is, how many pages need to be printed. Color jobs needing one to, say, 20 pages are commonly printed using desktop printers. Color jobs ranging from 20 to, say, 100 pages are printed using convenience walk-up printers. For color jobs with more than 100 pages, a more centralized, "production" printer is usually required. The attributes that differentiate these classes of printers are speed and the ability to reliably produce the volume of pages needed from multiple end-users.

Traditionally, the need of production color printing has been satisfied by technologies like offset and gravure, which are dependent on printing plates as masters. This had caused two important limitations. One: the jobs had to be medium to long run length, as the cost of the plates and the time to burn plates and set up the press had to be amortized over the job, and two: one could only print static information.

The introduction of the first high-speed digital color printers, actually within three days of each other, in 1993 by two relatively unknown companies at that time - Indigo and Xeikon - brought the promise of both short runs and variable printing for production color printing. The approaches couldn't be more different or more innovative!

The Indigo E-Print 1000 was based on liquid toner, intermediate transfer, four-cycle imaging and cut-sheet paper, whereas the Xeikon DCP-1 was based on dry toner, direct transfer, tandem imaging and web paper. Both were clean sheet designs, as opposed to being leveraged from an existing platform. Hundreds of these printers are still operating in customer sites, and variants of the design are still offered for sale.

In the rest of my talk, I will describe what I feel are the ideal attribute set for color digital production printing, and map into that how the attributes of printers have evolved during the past ten years. I will also attempt to project how these attributes are likely to evolve during the next ten years.

## Biography

**Arun Chowdry** has been with NexPress since its formation in 1997, and is currently Chief Technical Officer and Vice President. He was part of the team that architected the NexPress platform and selected the technology sets for the first product and for future products.

His career started at the Eastman Kodak Company, where he worked on novel imaging processes, development of high-quality color electrophotographic systems and new business opportunities for color electrophotography.. Dr. Chowdry is the author of 16 patents.

Dr. Chowdry received a bachelors' degree in electronics and electrical communication engineering from the Indian Institute of Technology, Kharagpur, and a doctorate in electrical engineering from The Johns Hopkins University.