

# Emerging Opportunities for Commercial Digital Printing Processes in the Fine Arts

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I have taught on the faculty of Rochester Institute of Technology for more than three decades, from a time when the only way to make reproductions of pictures was with wet chemistry, photo-sensitive materials, and mechanical devices powered by falling water or burning coal, to the swirling digital vortex of social media and instantaneous global connectivity of the present. I was born at exactly the right moment in history to fully experience this revolution from the start as a fully conscious adult with both feet in the game.

The digital revolution has delivered the power to express visual ideas that once belonged only to a tiny elite of wealthy institutions into the hands of everyone in the world with a smart phone and something, anything, to say. I have abetted and celebrated the democratization of the means of production at forums like this one for most of my professional life.

In the past few years I have had the experience of stepping back into a world where more traditional means of production and distribution still reign supreme. This is the world of the fine arts. Three years ago I had the opportunity to escape the responsibilities of academic administration after fifteen years of service as a dean, and return for a soft landing back in the classroom. I had known for some time that I wanted to get back to full-time teaching, and that I also wanted to spend the last decade of my teaching career on the content-creation side of the business. After more than thirty years building and promoting processes that enabled other people to express their visual ideas more easily, and with less expense, it was now my turn.

So I joined the faculty of the School of Photographic Arts & Sciences and acquired the license to use the still-evolving systems of web-enabled digital color printing and finishing as a creative toolset, like the box of Crayola crayons and pad of clean white paper that I have always kept close at hand to remind myself of my first true love.

For several years before this liberation I had experimented in my spare time with the new digital toolset offered by companies like MyPublisher, Lulu, Blurb, Lightning Source, and others, to create a series of “instant books” that were all conceived and published in one day. This series was intended at first as a demonstration of the capabilities of the new production systems. But it soon took on a life of its own as the titles proliferated. A few of the titles began to receive recognition as artistic works on their own merits. When Rachel Stuhlman, the curator of photo books at the George Eastman House, began to collect some of the titles, I realized that I had found a new path that would lead back to my original purpose in life.

After handing over the reigns of the College of Imaging Arts & Sciences to the new dean on August 1, 2011, I was granted a sabbatical for the following academic year to prepare for re-entry into the classroom. During this year I was fortunate to be invited by Brian Segnit to spend time at the Xerox Gil

Hatch Center experimenting with some of their new digital color printing machines. Brian asked me to “push the envelope” and see what the machines might be capable of doing that hadn’t yet been demonstrated. Xerox had recently begun to ship the new iGen4 press capable of printing a 26-inch long sheet, and they were interested in ways to showcase this unique capability.

The new press was also able to use a new “ultra matte” black toner that produced a gorgeous rich black solid. So I decided to design a book that would exploit both the 26-inch length and rich black. Fortunately, I had accumulated an archive of panoramic photographs over the previous decade that constituted the ideal content for the book. The result was *Rochester Panorama*, which measured 26 inches wide by 8.75 inches high. The book made its commercial debut at Drupa, where it helped Xerox promote the new press.

We decided to create a limited edition of the big book as well as publish a trade edition of a slightly smaller version (22 inches wide). The edition of the full-size book was limited to 25 signed and numbered copies sold privately to collectors and museums. This was my first experience creating something where scarcity was a key ingredient to the value of the end product. I had always previously lived in a world where increasing abundance was the goal, and “better, faster, cheaper” was the way to get there.

## Abundance and scarcity

In my college there are programs that focus on the creation of works of art that are one-of-a-kind, as well as programs that focus on the creation of works of art intended to be possessed and consumed by the masses. The School for American Crafts, for example, is a place where the artists make objects out of wood, metal, glass, and ceramics that are all originals. The goal of these artists is to achieve a level of recognition, and perhaps even fame, that will allow them to sell their singular original works for enough money to make a decent living. It’s a long and hard path to a potentially wonderful life for those who have the courage and talent to try. I am saving my money for the day when I can afford to buy one of Wendell Castle’s magnificent rocking chairs for my house. But to buy the chair I will have to sell the house.

This kind of scarcity is real. Each original Wendell Castle Chair, or Albert Paley table is a hand-made object unlike any other. There is only one of each, just as there is only one Mona Lisa, or Pieta, or Guernica.

But what happens when it is possible to make identical multiples of an original artwork? And what if there is no practical upper limit to the number of copies? And what if the original is a digital file with no physical characteristics of its own? In this case, scarcity is something that has to be

manufactured, if scarcity is to be part of the value proposition. This is where the idea of a limited edition is born. With analog printing processes, such as stone lithography and woodcuts, the physical degradation of the master employed to make the reproductions imposed some limits on the number of copies that could be made, and the earlier in the production run, the better the quality of the copy.

So artists using early print reproduction processes learned to limit the number of prints and number them consecutively to firmly fix the scarcity of the final product. "There are only 100 of these prints in existence, and this is number 36 of 100." Because of degradation, the lower the number of the print, the higher the potential value. This practice of creating a numbered, limited edition of a particular print continues to be a viable way of establishing scarcity, and therefore value.

This formula changes once we enter the digital realm. There is no degradation of the digital master. In theory each reproduction can be identical to all the previous ones. In reality the mechanics of a digital printing press will degrade over time, but the components that determine image quality are replaceable, so there is not the same sequential relationship between the print number and print quality as there was with mechanical masters. For all practical purposes we can assume that digital processes deliver consistent results for an entire production run, no matter how long.

With digital print, therefore, scarcity is entirely unnecessary, and is not a natural consequence of the process. However, digital makes it easy to build scarcity into the product by using sequential numbering that can be incorporated automatically into each printed piece. This is a feature I expect to see in the marketplace shortly. Blurb or CreateSpace should consider offering a numbered edition service where an artist can limit the number and sell only that many copies.

## **Digital print in the gallery**

At the beginning of March 2013 I was preparing to teach an elective course in panoramic photography at RIT. The morning of the first day of class I received an email from Doug Smith, president of Merlin International, a digital commercial printer. Merlin serves the market with innovative print solutions that take full advantage of the computational power of current technology. The company started in the mid 1990s as a commercial research project at RIT sponsored by a photo processing company called Nashua that was trying to develop a digital photo-finishing replacement for wet chemistry. The technology was too young for that purpose, but the team working on the project decided to buy the assets of the project and start the first born-digital commercial printing company in Rochester.

Merlin had just acquired a new Xeikon 8500 digital color press, capable of printing panoramic images up to 20 inches in one dimension and as long as necessary in the other. Doug was looking for test images to show potential customers the capabilities of the new machine. I told Doug that I had a new collection of panoramic images made during the 2012 Rochester summer festivals season on my hard disk, that I had not yet printed or even seen at their proper size. In exchange for using the files to demonstrate the new press, Merlin printed the entire

set of images at full size. With this set, I was able to show the prints to a number of colleagues, who then helped me evaluate and select a final set of prints for a gallery exhibition and publication. With the support of Xeikon, Merlin graciously agreed to produce the images for a September 2013 exhibition in RIT's downtown Rochester gallery, Gallery R.

Because the Xeikon 8500 is a roll-fed press, we realized that it would be possible to print the entire show on one continuous piece of paper. This incorporated all of the images, captions, text, and white space necessary to wind the show through two rooms of the gallery, navigating corners and support beams along the way. Hanging the show required some special engineering. I constructed an unwinding device incorporating a Lazy Susan, a paper core glued to the center, and a rolling cart to allow free movement around the perimeter of the gallery.

When we first began to evaluate the capabilities of the Xeikon press for this application, several people expressed concerns that the surface characteristics of the prints were different from the familiar silver gelatin and inkjet surfaces that still dominate fine art photography. The color gamut of the Xeikon prints also appears to be more vibrant. Judged against the accepted appearance standards of the more conventional materials, the Xeikon prints look hotter, wilder and less disciplined. My fear was that the prints might look out of place in the cool white light of the gallery, like a loud buffoonish uncle wearing a plaid sport jacket and striped pants at a black tie affair. It remained to be seen.

One of the opportunities in using the Xeikon press was the possibility of printing the exhibition prints, prints for sale, books, and promotional materials on the same device. This would provide a uniform appearance across all of the imagery associated with the show. I designed a book to accompany the show using the same image files. We made three versions of the book, publishing the smallest version (8.5 inches square) with Lightning Source to make it available through Amazon. Two larger versions, one 12 inches square, and one 19 inches square were made from the same files enlarged and printed on the Xeikon press. The color appearance of the prints in these two larger versions of the book was identical to the prints on the gallery wall.

When the show opened, we discovered that the two characteristics of the Xeikon process that represented the most radical departures from conventional fine art practice, the printing of the entire show on a continuous roll, and the vibrant, almost electric, color gamut, elicited the strongest praise from attendees of all types. We began to realize that the Xeikon process gave the show a vitality that would have been impossible to achieve with more conventional means.

## **From commercial print to fine art**

Throughout history visual artists have picked up tools and materials first developed for commercial purposes and adopted them for their work. Most of the traditional processes used by visual artists today were at one time considered high technology. Long after processes like stone lithography and copper engraving ceased to be commercially viable, artists still use these processes to produce new work that expands the

boundaries of human visual expression. The more primitive the technology, the more likely it is to survive as a fine art medium once its commercial utility has vanished.

Digital print technologies are different in that they require a complex infrastructure of supporting technologies to remain viable, and these can only exist if the processes also remain commercially viable. The Xeikon and Xerox presses that are now being used to create new artistic works cannot work unless the vast network of consumables manufacture can be kept alive by a healthy volume of commercial business. Without the high-tech toners and photoconductive cylinders and belts, and the massively complex LED arrays and lasers and spinning polygons, the Xeikon and Xerox presses that I have used to make my whimsical art objects would be impossible.

If the commercial world embraces high-speed continuous inkjet printing and abandons electrophotography, the art world will not have the luxury of spending the next 200 years perfecting the nuances of dry toner or liquid ink as fine art processes. The infrastructure will not be there. We will have to either move quickly with the technology or retreat back to a technology base that does not require a massive industrial complex to be sustainable. Linoleum blocks and oil paints will always be available. But for those wishing to move forward with technology, decisions will have to be made, and new processes will have to be embraced quickly.

Key to the rapid embrace of new technologies by the art world will be the leadership of progressives within the community who have influence over their peers and colleagues. Our show of the Rochester festivals panoramas attracted some influential members of the local art community who were sufficiently impressed with the quality of the prints to initiate

projects of their own. Both the Visual Studies Workshop and RIT Gallery R have plans to use the same Xeikon technology for future productions.

In late February 2014, Gallery R will open a show of new posters incorporating historic photographs from four archive collections, three obtained from the Library of Congress, and one from the archives at RIT. The posters are designed to make use of a standardized format of 18 by 24 inches developed by Merlin after prototyping new production workflows using student work from my classes at RIT. We will also be using a panoramic format that Merlin is preparing to offer to the market.

The Visual Studies Workshop used the same Xeikon technology to produce an edition of large accordion-folded piece featuring a selection of work from Brenda Ann Kenneally's *Upstate Girl's* project. This is yet another example of a format that can only be obtained from the Xeikon device.

The experiences I have gained from the launch of the Instant Book project in 2006 through the mounting of the poster show at Gallery R in February have led to the following conclusion. The fine art community will be reluctant to accept a new process with a look and feel different from what they know, if it is merely attempting to mimic a form that is familiar and established. If you show a print from a Xeikon or Xerox or HP or Kodak device that could easily be produced by more conventional methods, it is easy to find fault with the new process in every aspect that deviates from the familiar. However, if you use the new process to create an object that establishes a compelling new format that could not exist otherwise, members of the community will be much more open to accepting the new process, and beginning to explore the possibilities for their own future work.