Making the Big Purchase

BY DAVID KING

How one shop realized the potential of investing in a high-dollar photo writer.

Above: This is a sample print produced on Castle Graphics' new photo imager. It contains many elements that are difficult to produce with inkjet printers — continuous tone, solid colors, gradated blends and doutones.

How do you know if you have made or are going to make the right decision to purchase a digital printing device? You might think that a price tag of $320,000 for a single printer is crazy when you can get the same basic output for $25,000. You might be correct, but in most cases there is not enough information available to make the best decision on the best purchase for the application.

Not only is the information difficult to achieve, but you do not have a crystal ball that would allow you to see the future orders for your new printing system. In our shop, we started with one inkjet printer, then moved to a second — and then a third and so on.

We did everything we could to pit our inkjet printers against our competitors that were running big $320,000 printing systems — and in our minds we were winning the battle, but what we did not realize is that we were losing the war!

CONSUMABLE COSTS/PRODUCTION TIME

The problem that comes into play is the cost of the consumables vs. the cost of the monthly payments. If you plan to be very successful, and your idea of success is money, then you need to sell a lot of square footage of graphics, and you need a system that can handle the high volume.

Before I go too much further we need to define *a lot* and *success*. I consider a lot of graphics to be more than 250 square feet per day and success to be more than $150,000 per year as a salary.

If the average inkjet print sells for $12 per square foot, then 250 square feet would bring in $3,000 per day gross ($60,000 per month). But now how much does this 250 square feet cost you to produce? And how long does it take to produce it?

If you use the industry's best photo gloss paper, indoor photobase inks, low-melt laminates, mounting adhesives, and quality boards, your cost-per-square-foot for a finished inkjet print would be $3 to $6.

When you consider that most customers order smaller prints than the actual width of your media, your average waste is around 30 percent — so your *actual* cost for the finished prints is, on average, $5 per square foot.

So your raw material costs for this $3,000 day is $1,250, and your profit is now $1,750. Now your profit for the month has shrunk to $35,000.

The average time to produce an inkjet print (including lamination and mounting) is about 20 to 50 square feet per hour, depending on the printer and laminator you have. Most shops that use inkjet printers average about 20 square feet per hour of finished goods. With this average, your 250-square-feet-of-graphics day is over 12 hours long.

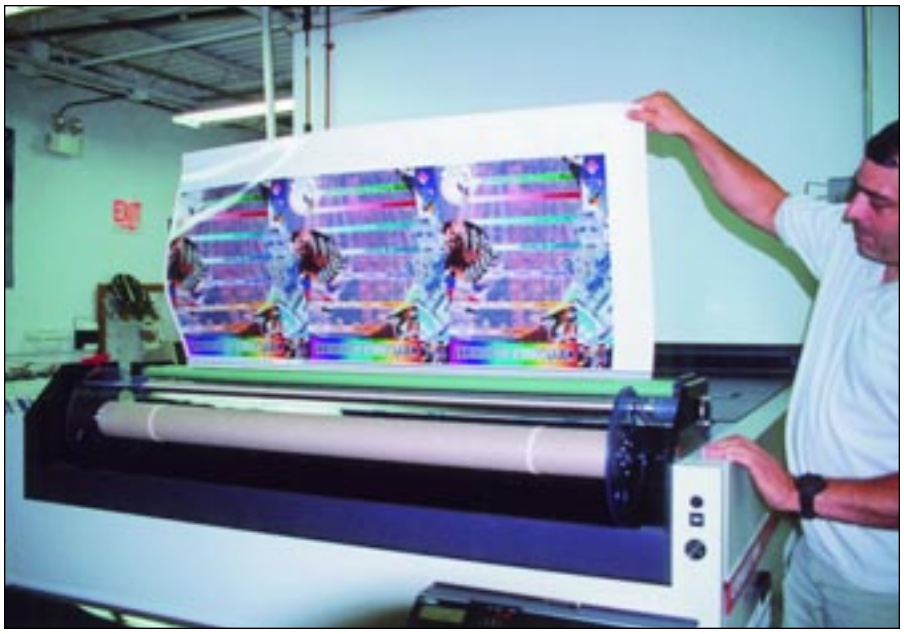
If you have more than one printer or have purchased one of the faster printers on the market, your day can be cut in half. But keep in mind this print time does not include front-end-file-prep time or RIP time.

If you have a faster printer or a number of slower printers (most companies have slower inkjet printers) your day is now between four and six hours.

In our case, we had four inkjet printers running about 60 square feet per hour (on the average), so our day was four to five hours long on just inkjet printing and mounting.

CONSIDERING PHOTO WRITERS

When our sales people told me earlier this year that we had lost three orders in a row to our competition I had to take a more serious look at photo writers, such as the Durst Lambda and Gretag's LightJet (laser driven systems).



Prints off of the photo writer cost about 30 cents per square foot to produce. The machines can easily produce more than 200 square feet of output per hour at 4,000 optical dpi.

The decision to invest in a big-dollar photo imager started to make sense for Castle Graphics after some serious number-crunching.

After much research and a number of meetings and phone calls, it was clear that each print off of these systems produced a cost of about 30 cents per square foot, and the machines could easily produce more than 200 square feet of output per hour at 4,000 optical dpi. And, to add insult to injury, these prints were virtually *perfect* (no dots, extremely smooth blends, and pure solid colors).

In addition, I learned that output does not need to be over laminated to protect the print. These systems do not use ink to print. An operator loads in photosensitive film (just like a Polaroid camera) into the printer, and then the printer fires three lasers (red, green and blue) at the film to produce the image.

Making the BIG Purchase

Then the film is removed in a dark room and loaded into a processor where it is developed. At 60 inches a minute, the processor runs the finished print out the other side. Could it really be this easy? Yes — if you can get past the huge $6,700 monthly payment...

CRUNCHING THE NUMBERS

So, the *big* question is, can you make the payment? Let's go back to our above numbers and take a look. Our very easy model called for 250 square feet of output per day and our average cost was $5 per square foot, but this included the board and adhesive, so when you remove these other costs and just look at the paper, ink and over laminate, the cost for these components is about $1.45.

You could argue that the inkjet print has laminate and the photo printers do not, but you need to understand that the inkjet must have the laminate to protect it and the photo printer does not.

In addition, these photo printers can use gloss or matte paper to control the finish. Now you take the $1.45 and take the photoprint at $.30 and you are left with $1.15 per square foot more in cost for the inkjet systems.

If you produce only 250 square feet per day this costs you $287 per day more in materials, or $5,750 more per month.

Now you take the payment for your inkjet system based on the same rules for the large system, 10 percent down and a four-year lease, your cost per month is $525, take this from the $6,700 and you are left with $6,175 per month difference. Now remove the extra cost of the material and you are left with $425 more in cost for the photo system!

When I consider that I now have a system that is four times faster than my four inkjet prints put together, my blends are *perfect*, and I can now sell print-onlys without laminate — the $425 more per month is worth it.

What I missed in my above calculation is that it takes more than two inkjet printers to equal one photo printer so the actual Return On Investment (ROI) is higher than only two inkjets!

OTHER APPLICATIONS

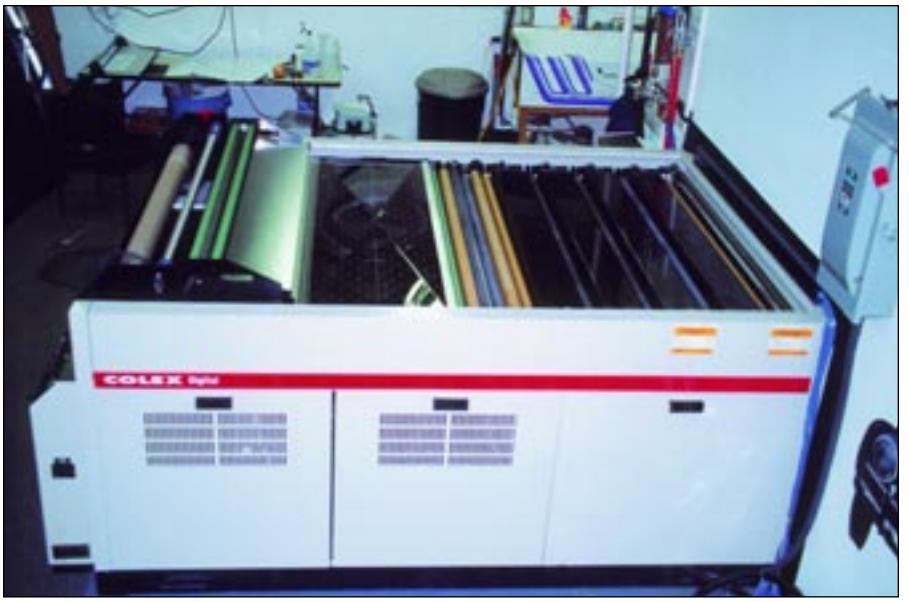
After we installed the photo printer at our shop, we learned about other products that we have always had a difficult time producing with our inkjet printers — backlit and flexible graphics.

For well over six years, we have been fighting with every material in the industry to have our inkjet printers produce a great backlit print, but each time we had too many problems — such as banding, poor color consistency, saturation of color, lack of print durability and quality of resolution.

The best luck we had was with the Océ reverse print backlit film, but, unfortunately for us, the quality was still not what our *customers* were demanding.

During the year before we purchased the photo writer, our backlit sales dropped to practically nothing, and this hurt! The Lambda prints the most perfect backlit I have ever seen, and does it at less than half the cost of the inkjets, and, again, I do not have to laminate the finished print. I can also install grommets in these prints and send them to the airports for their large displays.

The other product we sold a lot of was flexible graphics for roll-up graphics. We



The photo processor can crank out 60 inches per minute of finished prints that require no lamination.

would print on photo glossy paper, laminate the top with a Luster or Matte low-melt vinyl laminate, and then mount the print to a 15-mil polycarbonate substrate. This would produce a nice heavy graphic that we would roll up and ship in tubes for our customers' trade shows.

The problem was that our customers would put these graphics back in the cases after the show, all rolled up, and three months later they would take them out to use them again (at the next show) and they would not lay flat.

So, these customers eventually stopped purchasing these types of graphics from us because they were expensive and they did not last.

The photo printer images to polyester film that is very durable and rigid, then we laminate the top with a vinyl laminate and mount a film called StopLight on the back to add more stability to the image.

When we are finished we have a graphic that will roll up and unroll time and time again and always lay flat! The backlits and the flexible polyester films have opened up markets that we had lost in the past, and new markets that we did not even want to look at because of the past problems.

LIMITATIONS TO CONSIDER

Does this mean that you will now take your inkjet printers and sell them to pay for a new photo writer system? Heck no!

Photo writers only print to photographic paper and film and will not print to vinyl, Tyvek, canvas, PVC, etc. In addition, the photographic paper and film is not designed for outdoor use. In our shop, we used the inkjets only for indoor prints, so the decision was easy. We had our printing systems for outdoor prints, and our dye-sub system for digital fabric.

Some digital printers shy away from photo writers because of the chemicals involved, but like solvent-based pigments, these substances, if handled responsibly, pose no threat. For those who shy away from mixing chemicals, automated mixing systems (shown in background) are available.

Up-front file prep time is reduced in many cases when using a photo writer because there is no need to go through RGB-CMYK conversions — laser driven systems use light, rather than ink to produce colors.

Making the BIG Purchase

Durst's Lambda and Gretag's LightJet were both in contention as Castle Graphics considered purchasing a photo writer.

What my crystal ball could not have predicted was how much more business we could have (and probably would have) won with our new photo writer system. It was like someone took off our choker collar and let us loose.

Our sales rocketed to over double our inkjet sales, and each day we were able to push our production higher and higher.

Our lamination and finish department came back after the first month and reported the loss of images was down by 40 percent due to the thickness and quality of the great Kodak films and papers we were using.

Once the word got out about our ability to produce hundreds of prints per day we were now quoting on 100 to 500 print runs and winning the business.

Our new cutter costs $45,000 and I thought I was off my rocker to purchase this, but the first job we brought in for the cutter (one week after the photo writer was installed) was 500 8" x 10" prints.

This job took us under three hours to print and cut and generated over $3,500 in profit. Most of the time was spent waiting for the machines to finish their work!

What a great feeling this was to see this new system making good money for the company instead of the old way where it would have taken over 16 hours to print and eight hours of labor to laminate and cut this same job.

David King is director of operations for Massachusetts based Castle Graphics. He has been in the digital industry for more than 19 years and works with a number of major manufactures to help develop new and better technologies. In addition to writing for Digital Graphics *magazine, David is a frequent speaker at* ***The B.I.G. Show — Best In Graphics*** *shows. Please check him out at www.castle-graphics.net.* **DG**