

# Digital Printing

## Is it Right for You?

By Patrick Sarver

Production framers today are looking for a fairly inexpensive way to get into printing their own artwork, which I believe today's inkjet printers offer," says Brad Denger, owner of Beale Ash, a distributor of Epson printers and supplies. "Some larger companies are buying multiple printers to print large runs in-house, doing giclée printing on canvas or other fine art media all day long. It's not replacing offset lithographs, which there's still a big market for. But you can charge much more for a limited edition giclée. There's also a wide choice of media to print on that provides the versatility, the high quality output, and the wide format that production framers are looking for."

Digital printing offers some solid benefits for a production framer, especially if you have a clientele that wants and is willing to pay for giclée prints in sufficient volume to support your own printing operation. Printing giclées is not for every production framer, of course. It's not as easy as you might assume—not like the simple plug-and-play you get with a personal computer printer. Digital printing also costs more than other kinds of print, but your setup time can be relatively quick and you can support such an operation with smaller runs. Inkjet printers also offer a relatively modest investment. And even though your cost per print is higher than with offset lithographs and printing a full-sized image on 44" wide printer can take the better part of an hour, giclée printing can help you be more competitive in such fields as the hospitality industry or corporate world.

"To get set up to print for things like most hospitality projects, you would need a good monitor, a calibration device, a soft proofing box to view prints, a 44" printer, and RIP (raster image processor)," says Randy Hufford, digital print master at the Institute of Visual Arts in Kula,

HI. "Essentially, you can get into fine art printing at that level for \$10,000 to \$12,000."

"In addition, if you want to do your own scanning, you might take a look at a Canon 5D with copy lights, which would run about \$5,000 more," Hufford adds. "I have seen 30"x40" prints made with scans from the 5D that were great. On the other hand, if you plan to reproduce paintings with super photo-realistic detail, you would



Randy Hufford of the Institute of Visual Arts shows a print as it comes off the Epson Stylus Pro 9800, a 44" wide inkjet printer.

need a higher-end scanning tool like a BetterLight scan back for a 4"x5" camera. That would run around \$35,000. It all depends on the level of detail you want."

Over the long haul, the real costs are in the consumables—ink and media, whether that is paper or canvas. For an Epson 9800, for example, a bank of ink cartridges

*Using today's wide-format inkjet printers, production framers can expand their business and services in new areas*



The Epson Stylus Pro 9800 is an eight-color micropiezo inkjet printer that prints with variable ink droplet size for accurate imaging.

will run about \$900, and you could use one of those in a week if you're really busy. Managing ink costs is important because it's really easy to waste ink.

You also need to install your printer in a temperature and humidity-controlled room—basically, a modern office. Otherwise, it can be tough to get your settings right and keep them consistent. The printing environment needs to be dust free, as well. Dust is a real enemy of digital printing, and that can be a problem at a production facility.

Make sure there is one person dedicated to the printing who knows it inside and out. That person needs a sense of art as well as being technologically savvy. This is a highly skilled position. It can take days just to get the printer settings right during the initial installation, because it depends on the printer, the humidity and temperature of the room, and the paper you're printing on among other things. You need a settings management book for writing down your settings so you can keep

track of what you used when you printed a particular image on a certain type of paper or canvas.

### *Paper or Canvas*

“In the fine art market, I would say probably 40 percent or less is being printed on canvas and the other 60 percent is on other media, primarily paper,” says Denger. “But the canvas market is growing.”

While clients may be willing to pay more for canvas giclées, they can be challenging to frame. The ink can rub off if you don't coat the printed canvas. And paper giclées need to be framed with glazing, since digital prints are highly susceptible to water damage. “Most of companies that print their own giclées are also coating them,” says Denger. “Premier Art makes Eco Print Shield, which seems to be popular and was engineered specifically for Epson media, although there are others that also work.”

### *Printers*

The latest group of giclée printers, which includes the HP Z2100 and Z3100; the Canon iPF6000, iPF8000, and iPF9000; and the Epson Stylus Pro 7800 and 9800, are the ones that are attracting the most attention. And while Epson has been the clear market leader for a number of years, it now has two credible competitors.

**Epson:** The Epson Stylus Pro 9800 is an eight-color inkjet printer that uses micropiezo technology and UltraChrome K3 pigment-based inks. It uses eight colors, with multiple black inks, and Colorimetric Calibration Technology to provide consistent color. It prints variable size droplets as small as 3.5 picoliters. A professional edition series has added technology for professional print design and contract quality color reproduction. It includes a high-end RIP. The Stylus Pro 7800 is a 24” wide version of the same printer, and a 60” wide machine is to be released soon.

“The number of ink jet nozzles has increased and the



The Canon ImagePROGRAF iPF8000 is a new 12-color inkjet printer that uses Lucia pigmented inks.

head itself is bigger than for previous printers,” says Denger. “The 9800 is more precise than older printers like the 7600 and 9600. Ink jet printers are never as fast as what people would like, but the speed has definitely increased with the latest models.”

**Hewlett-Packard:** HP's Designjet Z2100 and Z3100 are thermal inkjet printers that offer 8- and 12-ink systems that use HP Vivera pigmented inks. Both come in 24" and 44" widths. An embedded spectrophotometer from GretagMacbeth allows users to create their own color profiles quickly and allows the printer to calibrate itself for automated color management. While they can print directly from Photoshop without a RIP, for commercial production a RIP is advisable. Its strongest point seems to be its ability to print good black-and-white photos while running in the color mode, creating rich blacks and neutral grays.

**Canon:** The Canon ImagePROGRAF iPF8000 and iPF9000 are 12-color inkjet printers with dual print heads that provide 12 channels of ink. These ink combinations are for sophisticated users who want to get into printing at a higher level. The iPF9000 is 60" wide and the 8000 is 44" that use LUCIA pigment inks and have a 4-picoliter droplet size.

“All the newest generations of machines make great prints, and all of them have longevity,” says Hufford. “Their accuracy and repeatability are also much better. Most people probably wouldn't be able to tell the difference between the printers.

“If I had to find a difference, I feel that Epson's piezo technology gives it an edge compared to thermal printing used by Canon and HP,” he adds. “While the difference doesn't matter that much if you're doing production printing, a fine art printer who needs to do additional runs months or even a year later, the repeatability is better with piezo. The pressurized tank in the newer Epsoms also means that you have the same amount of pressure whether the ink reservoir is full or low, greatly improving the repeatability. The greater number of nozzles on thermal printers largely compensates for this, but it is an issue when you're dealing with precision color. Epson also holds a patent on the K3 ink technology in which the pigmented ink particles are encapsulated with a resin. While this is not an issue with giclées, this resin does match the gloss coating on photographic paper, making for better photo prints.”

Again, these are fairly refined points, and overall, Canon and HP are right on the tail of Epson, meaning you can get just as good a print with a Canon or an HP as with an Epson.

“Perhaps more importantly, you need to find out what kind of support you'll get with a machine,” Hufford says. “Epson does have more experience simply because their printers been used for making giclées longer.”

## Color Management & RIP

A printer alone isn't enough to produce wide format inkjet prints. You also need to master the entire workflow, including scanning and color management, including color profiles and RIP software. (RIP is what translates a digital image in a computer into the format required by a printer.) A full-service supplier can help you develop this workflow. Lower-cost or “box” suppliers often don't supply tech support, don't know the different canvas and paper products, and don't know how to make fine art prints.

“The biggest issue we get asked about is color management,” says Denger. “While the printer does an outstanding job reproducing the artwork on paper, there are a



Photo by Randy Hufford

*Printing giclées on canvas of photos and artwork that are gallery-wrapped for frameless display is one popular trend.*

variety of elements you have to deal with in the workflow, from the capture device to the monitor to the lights used for viewing prints to the printing media to the printer itself. All have an effect on how the color matches from the beginning to the final output. Even when the image on a monitor looks just the way you would expect, it may look a little warmer or cooler when it's printed. Getting everything calibrated so your output matches what you see on the monitor is something a lot of companies need to learn about and implement into their workflow. Some OEMs also do their homework about inks and media before contacting us and know exactly what they're looking for. But we also get a lot of production framers who need guidance in making their media selection as well as setting up their workflow.”

“An important question is how accurate you want your prints to be,” says Hufford. “Thermal printers tend to drift more in color reproduction over time. There can also be differences between the final color and what you

see on your monitor no matter what your printer is. Using RIP and color management software can help minimize these variations. But first, you have to know how much color variation you can tolerate. This is something we teach in our classes on color management. It's important because it determines how much you spend on equipment, software, and time. The tighter your tolerance, the better monitor you have to buy, the better the RIP software, and the better the calibration software. If you're doing fine art reproduction, you need a third party RIP because you need more color accuracy and you want to be able to build your own profiles to provide more accuracy. We find that a lot of customers become more lenient because they don't want to spend as much money."



Setting up a digital printing operation should be done in a separate office-type environment, such as this room with an Epson 9800 at Design Studio/Kai Publishing in Honolulu.

"RIP and color management software companies work at getting more color gamut, more sharpness, better fidelity, more depth, and more richness out of these printers," adds Hufford. "A good RIP can definitely give you a better print. And for 44" machines or larger, a good RIP can also save you ink and media with such features as nesting, test printing, and putting testing multiple images on a page without having to open documents in Photoshop. The savings in ink, media, and time can pay for the software. On the other hand, you can get great prints with all of the drivers that come with all of the printers. Right now, using those drivers, the Epson with eight colors has more color gamut than the Canon has with 12 colors because of the variable ink droplet size using piezo technology. But there are RIP drivers being developed by third-party companies for the Canon that will help their printers take advantage of all the color gamut offered by their 12-color machines."

"One RIP that would work well if you're printing

larger jobs like something for hospitality is ImagePrint from Colorbyte Software," continues Hufford. "It's very easy to use. If you use the profiles that come with it, then you probably wouldn't need any color management software if you're using piezo technology, especially for larger jobs where you can live with a little color variation."

He also points out that Epson has developed what it calls a "Complete Engineered Solution," which helps overcome problems caused by using incompatible products. HP and Canon have similar programs in the works. All of them will minimize problems caused when you use third-party inks and media and machines that aren't right for each other.

## *Digital Printing & Framers*

There are any number of ways that a production framer can add digital printing. These range from generating major hospitality framing contracts to a side business that also adds a steady additional flow of framing. Here are some examples of how some production framers are successfully integrating digital printing with production framing.

### *Focus on Hospitality*

"We work with architects and designers from the islands as well as all over the mainland states," says Peggy Krantz, director of Design Studio, a division of Pictures Plus in Honolulu. "Designers use our Kai Publishing branch, which does our printing, as an art library and as a resource. Our focus is on hospitality and large corporate projects, and we provide full service for the designers of those projects. We handle the whole package, everything from one or two high-end specialty pieces all the way up to a volume run. Our typical project is about 2,000 to 3,000 pieces."

The printing is done on three different sizes of Epson printers, the 9800, 7800, and 4800. "We use the 44" printer the most because we don't do a lot of small pieces and when we do, we gang print them on the larger paper for efficiency," says Krantz. "Currently, about 85 percent of our giclées are on paper; the rest are on canvas.

"Once the images are printed, the artwork is sent to the main Pictures Plus facility for framing in our 40,000 square foot plant," she adds. "They do all the framing and shipping. I am also involved in working with our factory in picking out frames or designing custom moulding for particular projects. We might need 10,000 feet of a certain frame or 40,000 feet of three different mouldings with different finishes. All that has to be coordinated with the designer and with the plant."

Design Studio works with more than 100 artists, mostly in the islands, although some are on the mainland. "I'm very involved with the arts community and that puts me in contact with many artists," says Krantz. "Sometimes artists also recommend other artists. Or an artist may

come to us through a designer. In other cases, I have to research to find artists to do certain types of work. Mostly we work with these artists on a per-print arrangement, although in cases where we commission works, we own the rights.”

### *Adding Framing to Printing*

“We work primarily with digital printing for artists, from professionals who are exhibiting in museums and galleries to amateurs, who just want the best print money can buy,” says Rich Seiling, president of West Coast Imaging. “We are in the process of adding framing so we can be a one-stop shop, providing finished pieces that can go in galleries or homes. About 90 percent of what we do is custom, although in the course of a year a photographer may order multiples of the same image. But we still print and frame one at a time and look to be framing 250 to 750 pieces a month.”

“We do a lot of printing with Epson inkjet printers on every paper you can imagine—fine art, watercolor papers, canvasses, photo surface papers,” Seiling adds. “They are all 44” printers. We have two Epson 9800s, an Epson 9600, a 10000, and an old 9500 we use for black-and-white piezography. The new HP and Canon printers look pretty equivalent in terms of print quality. Consistency is a big issue with us. Every time you change a variable, it changes the result. And digital printing is a fairly

time-consuming process.”

Seiling points out that a printer can only print what you give it. “That’s why making the best digital file you can is the most important thing,” he says. “The camera or the scanner you’re using is incredibly important. I also think that printing photographs is easier than making accurate reproductions of art. It’s one thing to satisfy the average person; it’s another to satisfy an artist. But the bottom line is that this is an exciting, challenging, and often frustrating technology to work with. You’ve really got to enjoy it to stick with it.”

### *A Side Profit Center*

“Digital printing is a side profit center, but one that adds to our framing business,” says Jason Dittelman, owner of Crestar Manufacturing in East Greenwich, RI. “Having this feature in-house creates a synergy. People come in for printing and sometimes get framing. Others come in for framing and they get printing. So one feeds the other. Our main business is wholesale picture framing, but the printing is very substantial and growing. We’re getting good money for printing, so it’s a whole new profit center. Not only are we framers, but now we’re also printers. And if you play your cards right, you get a client for life, because they’re so deeply entrenched that it’s hard for them to go elsewhere because printing and framing makes a stronger relationship. And the client doesn’t have to order from

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two separate sources or pay two shipping prices.”

“When an artist comes in and wants to frame an original, we tell them how we can copy it so they can sell prints, which gives that artist a tremendous profit potential,” adds Dittelman. “For example, we work with a world-class marine photographer who lives in our area. He gives us an image he shoots, about a 17 megapixel file, and we put it into the computer and clean it up. He okays the color, and then he’ll do an edition of, say, 350 prints. So we’ll make one for him either on paper or on canvas. When he sells it, he calls and orders another. We can produce these pictures for him one at a time so that he doesn’t have to invest a lot of money. But now that we

have his images in our computers, we can print and stretch them on canvas or print them on paper and frame them with a mat and glass.”

“We printing maybe 70/30 paper and canvas,” says Dittelman. “What’s happening now is a trend towards canvas, stretching it and putting a frame on it or making a gallery wrap. This gives us the ability to offer the product three or four different ways. We stock stretcher bars in 1”, 1 1/2”, and 2” thick and wrap the image around it. We shipped 20 giclées today that were gallery wrapped. When we first started, we would make our own stretcher bars out of scrap. Now we buy 20 cases of stretcher bars at a time per size. It’s a fantastic business.”

“For someone new getting into this, the learning curve is the biggest challenge,” says Dittelman. “Anyone can buy the equipment. The hardest part is learning how to do the color correction properly. It is getting easier because of the technical advancements in scanners and the other things that enable you to make a good print. And getting the color correct is important because we’re advertising that we can reproduce art and make a copy look almost exactly like an original. Digital printing requires a significant investment in equipment, and the hardest part is getting the expertise to run it. But I wouldn’t be without it.”

### Getting Started

“What I would advise is to do your research before getting into printing and deciding on a machine,” says Denger. “You should definitely talk to more than one person and about more than one type of equipment. It’s important to understand the differences between the equipment. And it’s not always based on the cost. You need to take into account the cost of consumables and the cost of setting up the workflow.”

Although you may never be able to match the quality of digital prints or the selection of artists offered by a digital art publishing company, you can still provide the kind of artwork that will satisfy the needs of your clients while generating new sources of income. And that’s the real benefit of doing your own digital printing. ■

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