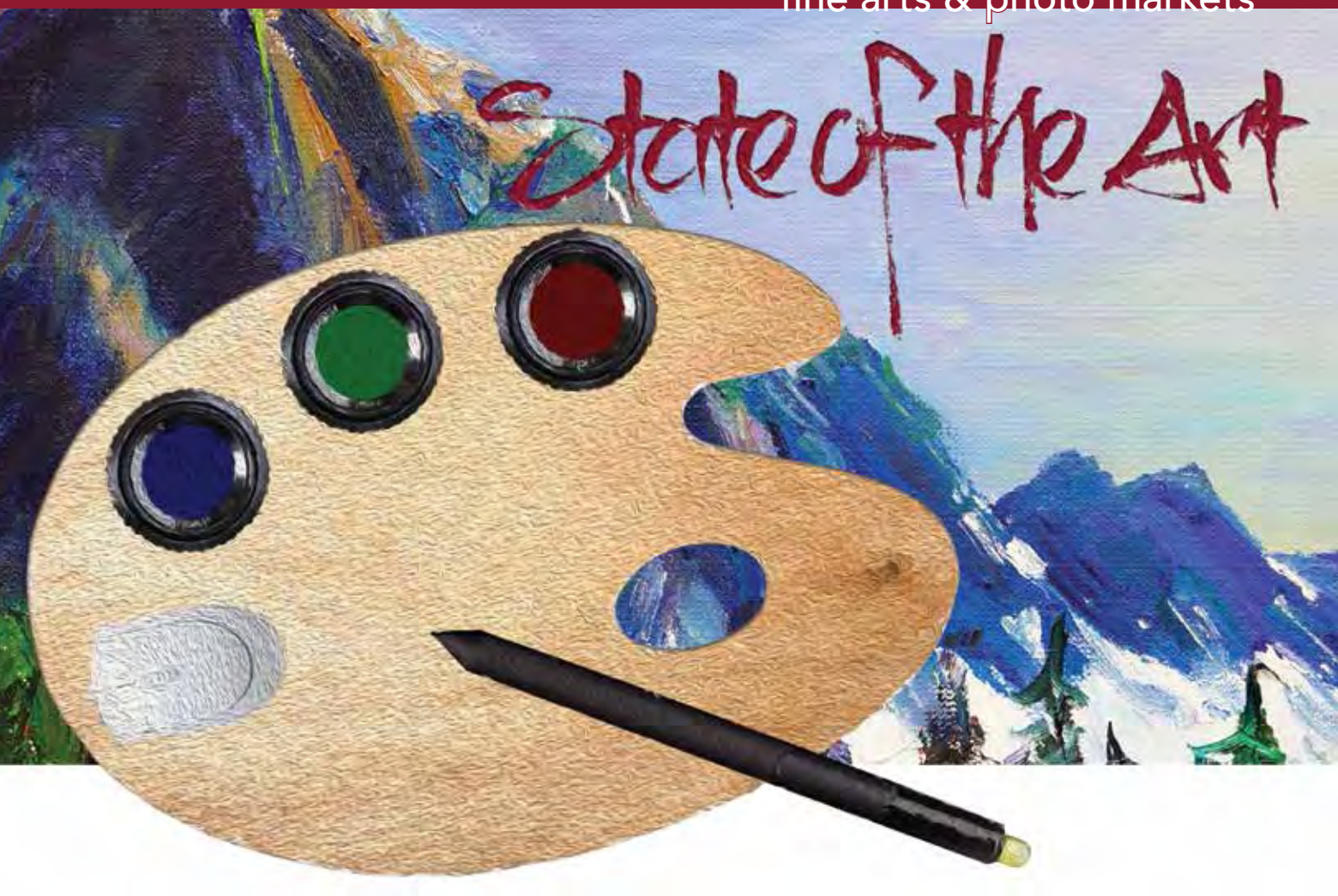
State of the Art



Any specialty graphics provider can readily identify at least one or two customers who regularly challenge the capabilities of machine and man. But if there is one class of graphics producer that often takes great delight in pushing the limits of what output equipment can do, it is artists. In the late 1980s and 90s, digital artists were among the first to seize on emerging wide-format technologies, and over the ensuing 20 years, both artists and equipment have evolved with respect to each other. The capabilities of today's printers can now, more readily than ever, capture and reproduce a given user's artistic vision. However, as the market has also evolved, identifying "digital art" has become almost as difficult as answering the age-old question, "What is art?"

Many of the big challenges for producers of fine-art prints have actually been conquered. The advent, in the late 1990s, of pigment-based archival inks gave inkjet prints a longevity they had never had before, meaning prints could be sold like any other artwork without fear of fading. "I think Wilhelm [Imaging] has tested certain media up to 275 years, which is even longer than traditional film processing," said Eric DuPaul, business development manager, Large-Format Printing, for Hewlett Packard. Still, changes in the market for fine-art printing have, for many users, made that a moot point. "Archivability is not a requirement in the emerging part of the market for fine art," commented David Hawkes, group product manager, Signs, Textiles & Roland Academy, for Roland DGA. "For some types of digital photography and giclées there may be some call for that, but we no longer see that as a requirement."

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everyone's satisfaction, and what artists, print providers and manufacturers alike will all agree on is that printing artwork is so much easier than it used to be — which is both good and bad.

Challenges and wish lists remain, and while equipment manufacturers eagerly work with artists, photographers and designers, and listen to them when designing new models, the fact remains that art and artists are but a small niche in the much larger wide-format market. So serving the needs of these creative users while at the same time doing what is economically feasible can be a balancing act for many equipment vendors.

Ah, But What Is Art?

Before we can talk about technology, we need to define what we mean by "digital art," as the term has come to mean any of a wide variety of products. While using the term "products" to refer to art may be sacrilege to aesthetics and purists, it really is, to a large extent, what art has become, thanks especially to the simplification of the printing process.

When digital art was emerging, the archetypal end product was the *giclée*. (The term was coined in 1991 by Jack Duganne — then of Nash Editions, now principal of Duganne Atelier — who appropriated the French verb *gicler*, which means "to squirt or spray," via the noun *gicleur*, French for "nozzle.") At first used to specifically refer to output on the then-new IRIS inkjet printers, the word now refers to inkjet output, generally artistic, from any printer. Despite this legacy, equipment vendors have been seeing the biggest growth area — at least in terms of fine art — outside the traditional giclée.

When we use the term "fine art," we think of tortured artists toiling away in garrets (even if it is Photoshop or Illustrator on a computer screen rather than oil on canvas), gallery openings in Soho, sniping art critics, and other aspects of the "traditional" notion of the artist. That's not necessarily an inaccurate portrait; many digital artists still have shows and openings at galleries and museums. But "fine art" today is also very much a commodity; walk through brick-and-mortar stores like Target or A.C. Moore, or go to sites like art.com or canvasondemand.com, and you'll find that "fine art" is big business. "It's just a monstrous market," said Jeff Smith, product manager for Epson.

In some cases, "digital art" has almost become synonymous with "wall décor" — one of the fastest-growing applications in wide-format.

"When people think of fine art, they think, 'Oh, this is a canvas, it's framed,'" said Hawkes. "But removable, repositionable imaging has made fine art wide-open. It doesn't have to be a giclée or something like that." The end customer ultimately has far more control over the final image than at any time since the days when wealthy patrons could tell artists exactly what to paint.

From Oil-On-Canvas to Ink-On-... Virtually Anything

Artists have always been interested in printing on unusual substrates: Exotic papers, canvas, textiles, glass, metal or even plaster. In the past, this would have to be done either using transfer sheets or via techniques that would likely void the machine's warranty. However, today's flatbed UV printers have opened up entirely new areas for self-expression thanks to their ability to print on virtually any surface. "If you want to put art on driftwood, go right ahead," said Hawkes. "Artistic people are looking for different ways to express themselves. With UV... Go for it. Image wood, image glass, image rocks. What do you want to do?"

Not that this is without its challenges. One of the perennial sticking points for wide-format output providers has been color management, which only becomes more acute when printing on unconventional surfaces. "You don't exactly have a color profile for a rock," said Hawkes. Artists can usually get around that issue with a little bit of creativity; "good enough" color will usually suffice, as not too many people are printing, say, logo colors on a rock or a piece of driftwood. But that may change.

While few people today have any qualms about the image quality coming off inkjet devices, achieving that quality on unusual surfaces can be a challenge. "We've seen metallic prints; we've seen printing directly to glass plates," said DuPaul. "They print on substrates that people would have said 'I didn't know you could do that'. Image quality on multiple types of media is important." Trial and error becomes the primary way of finding a solution to many of these unconventional imaging problems.

While flatbed UV printers have opened up new frontiers, there are still some barriers to entry, particularly for artists who like to experiment. One of the biggest is that flatbed printers are, well, *big*. So the challenge is finding space for the actual output equipment.

Dorothy Krause is one of the pioneers of digital art, forming the Digital Atelier, a collective of digital and mixed-media artists, in the 1990s. A core trio — Krause, Bonny Lhotka and Karin Schminke — was a fixture of many graphic arts trade shows at the time, brought in by equipment manufacturers to give demonstrations of art techniques, showcase their work and, of course, highlight the capabilities of the hardware. Until recently relocating to Florida, Krause had been based in the Boston area and would make trips up to the Vutek (now EFI) facility in Meredith, New Hampshire to avail herself of the company's array of flatbeds.

"I could fill my car up with all kinds of funky stuff and drive it up there to play with," Krause said, "so I didn't have to deal with shipping. [Different flatbeds] have various strengths, but they all are quite wonderful."

At present, there is no room in her condo-based studio for a large flatbed. "I love the flatbed printers," she said, "but I won't be buying one of them any time soon, especially since it won't fit in the condo. I love the ability to print on copper and things with dimensionality. Thick surfaces.

"I'd love to have it in a 19-inch or a 24-inch affordable printer that more people could make use of," she added. "I'm debating whether I need to rent studio space. But I really love working in my pajamas."

"I've got some work I've done on [flatbeds]," commented Karin Schminke, digital art pioneer and one of Krause's Digital Atelier partners. "There's a nice physicality to how the ink builds up. I imagine if I could have one in my studio it would work with my workflow, but it's just too big."

For artists like Schminke, the process is almost as important — if not more so — than the final piece, and having to use a service bureau as the middleman can stifle creativity. "I got nice results, but it wasn't as fulfilling.

"The way I would want to work would be to paint something and then paint again, and that just wouldn't work with the service bureau," Schminke continued. "That's just my way of interacting with the digital media, to always use it like I would any other artist's tool in a mixed-media environment, where I look at what I'm working on and ask what goes next."

Schminke's primary workhorse is an Epson 9600, which she has been using for more than a decade. "I feel like I know its nuances so well," she said. "I'm always

pushing the edges of what it can take. I know someday it will die, and I'll have to replace it. I'll be really sad, because it works so well for me."

Artists do tend to be attached to their equipment, perhaps far more so than other types of users. Said Smith, "So many people say, 'I wish my old printer would die so I could buy a new one.'"

Machine sizes are also changing, as some vendors have found the market for any device under 17 inches wide (or even under 24 inches wide) to be shrinking. The growth area, says DuPaul, is not with the individual end-user but with photo printing shops that can print enough volume to easily justify the cost of the equipment — and make it cheaper to outsource a print, something that was prohibitively expensive as recently as 2007.

Bonny Lhotka, co-founder of the Digital Atelier, recently published the book "The Last Layer: New methods in digital printing for photography, fine art, and mixed media," in which she offers a variety of tutorials for working with UV printers, and achieving certain effects, such as with white ink. She wrote in a "bonus chapter" to the book, "Printing with solvent inks is becoming more popular, and is a reasonable alternative to UV printers. Most of the larger models can print with both white and silver ink at the same time, but smaller models can do only one or the other. As I'm writing this chapter, I've started working with one of those smaller models, the Roland BN-20, configured to use silver metallic ink."

Worth the Paper They're Printed On?

While UV machines can print on virtually any surface, for many artists — and buyers of art — there is still nothing like good old-fashioned paper. Jeff Smith of Epson identifies several classes of producers of digital fine art. At the high end are professional photographers, artists, museums and repro shops that require an image quality and a paper that can fetch up to $50,000 or more per print. Below that are what he refers to as "art by the pound" sellers like art.com. "They print thousands and thousands of images a day," said Smith, "They don't require such high-end output, but they still want high quality."

In addition to traditional photo and watercolor papers, canvas has always been a popular substrate, and now newer types of canvas — e.g., metallic — are appearing on the market. Even direct printing on metallic substrates like aluminum is seeing some spikes in demand. Textured papers are also becoming a high growth area, added Smith.

"I'm always looking for interesting papers," said Karin Schminke. "With my laser cutter, I can cut out metallic papers and collage them and print over them with my inkjet printer."

How Many Colors Do You Really Need?

Users of wide-format equipment are always clamoring for more colors, especially spot and Pantone colors. And yet, a good chunk of the devices on the market already can hit the majority of Pantone colors — it often only requires tweaking the calibration. And most equipment manufacturers admit that there is not enough demand to warrant the investment in additional colors and ink sets. With some exceptions.

"One of the things we wished for and got was white ink," said Krause. "Kevin Currier [then] at Vutek worked with me in terms of figuring out how to lay down white ink where I wanted to print onto dark surfaces and how to do gradations."

It helps that white ink was also heavily in demand by customers doing signage, POP/POS displays and other, higher-volume work. So most manufacturers today have a white ink option for at least some of their product lines. The next ink set challenge on the horizon looks to be metallics.

"Metallic inks are the other thing I am very happy to see coming and wished were more widespread," said Krause. "I also love the inks that have a dimension to them, building up surfaces."

As is the case with virtually any wide-format output provider, the big challenge — as indicated earlier — is not in the number of colors, but in managing the colors one already has. Top wish list items from fine-art printers include embedded spectrophotometers and simple means of generating color profiles on the fly — and managing those profiles.

Cuts Like a Knife

"The biggest change technologically was the use of the laser in my art," said Schminke.

She began using a Universal Laser Systems laser cutter five years ago as part of her mixed-media work. Schminke would use the laser to cut paper into different shapes and collage them with inkjet ink and other paints to build up surfaces on top of aluminum.

"I started experimenting with little sculptural forms out of cut paper," she said. "Then I went to cardboard. These are nice, but they need to be bigger. I can only cut up to 18 by 24 inches on my



laser, so I had to outsource laser cutting and water cutting panels of wood. I hope to do metal someday."

Krause has also had a great deal of fun playing around with lasers. "I had a laser cutter until we moved [from Massachusetts to Florida]. I think it's now gone to Jack Duganne, so it's still being used by people who are doing interesting things."

The Simple Life

Despite what sounds like increasing levels of complexity, the trend over the past 15 to 20 years — and one that will only continue — has been toward basic simplicity. "When it comes to artists, what they're looking for is an easy way to create their output," said Roland's Hawkes. "In the past, printing was complex enough that just to create output was a career in itself. But what they want to do is take their imagination and apply it to a work, not take 10 times as long printing it as they did to actually come up with the art. So simplicity and the tools that are available actually help them become more artistic."

"Everything is simpler now," said Krause. "Simpler and more complex. The technology has just made everyone a graphic designer and artist and photographer, and it's so easy to work with images, even on your iPhone. At the higher end, things are incrementally improving but not enough that I need to buy the latest and greatest. All of the improvements are not the giant leaps we had in the early years." Ultimately, she added, "I have no complaints."

Hydraphobia

The Art Institute of Chicago has on display Gustave Moreau's 1875/6 oil-on-canvas *Hercules and the Lernaean Hydra*, which seems an apt image for the state of art today, as the contemporary digital fine-art market is a multi-headed, Hydra-like beast, comprising bulk art sellers, digital décor producers, mixed-media artists, photographers and any combination thereof. It can take a Herculean effort to battle any one of those heads, let alone all of them moving independently of each other. But as technology continues to evolve, and new applications continue to emerge, visually creative individuals will have new avenues at their disposal for the expression of their creative visions.

Richard Romano has been writing about the graphic communications industry for almost 20 years, and covering wide-format printing since 1998. He is a senior analyst for the news and information portal WhatTheyThink.com, covering wide-format, production inkjet, and environmental sustainability. He is the author or co-author of more than half a dozen books. His most recent book is The Home Office That Works! Make Working at Home a Success — A Guide for Entrepreneurs and Telecommuters, www.homeofficeworks.com.

