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DTG at 30

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(Image courtesy of Matthew Rhome)

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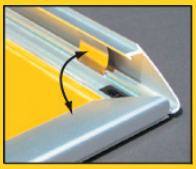
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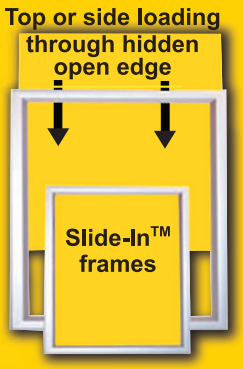
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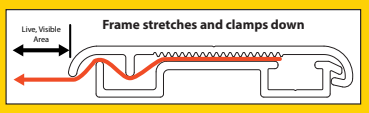
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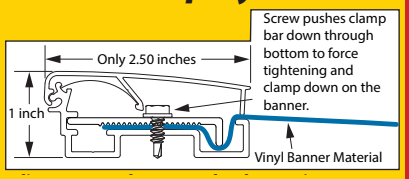






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The Godfather

There isn't a lot of research available on how many direct-to-garment (DTG) printers have been manufactured since Matthew Rhome was granted U.S. Patent 6,095,628 for his invention. One report estimates that up to 10,000 were produced per year between the mid-2000s and today. If we think about that as a span of 21 years, then we can project that more than 210,000 DTG printers have made their way into shops of all sizes.

That's all because Rhome had an idea for a more efficient way to scale his screen-printing business. He took that idea and followed it through to a prototype, then a patent, then helped it grow into an entire industry. You can read about Rhome's amazing journey that earned him the title of "Godfather of DTG" on page 12 of this month's issue.

While Rhome takes us back through the history of his invention, Cole Lundstrom gives us a look ahead in his article, "How to put AI to work in your print business." On page 48, Lundstrom shares actionable tactics he is using with AI that help his company operate more efficiently.

On the signage and printing side, you don't want to miss Andy Everding's look at canvas, fine art, and photo papers on page 38, where he shares the best-fit paper and canvas for specific projects ranging from wedding photos to wall decor.

As always, there's much more inside this issue. From on-demand heat printing to Photoshop face swaps, we've got something for every type of graphics pro.

Thank you

On a parting note, I want to thank GRAPHICS PRO readers, contributors, advertisers, and supporters that I've had the pleasure to meet over the past three years. This is my last issue at the magazine as I transition back to covering an industry I worked in for nearly a decade prior to my tenure here at GP. I'm especially appreciative of Marie Fennema, Stacy Marshall, Elizabeth Manning, Tim Kedzuch, Sonya Crocker, Iveth Gomez, and Charlie Fox — a team dialed in to providing the best experience for GP's readers, advertisers, and contributors. It's comforting knowing that the magazine is in great hands.



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SCAN ME

INDUSTRY UPDATES

FEATURED



PRINTING United Alliance announces 2026 honorees

PRINTING United Alliance recognized industry leaders through the Ben Franklin Honor Society Class of 2026, The Academy Class of 2026, Joe Clarke Innovator Award & Swormstedt Best-in-Class Award.

The **BFHS Class of 2026** included:

- Lane Hickey-Wiggins, Douglass Screen Printers, Inc. dba DPRINT
- Michael Magerl, Trabon
- Matthew Rhome, Sticker Mule
- John Seymour, Clemson University
- Chris Ulmer, Crystal Coast Graphics

The **Academy Class of 2026** included:

- John MaGee, Avient Specialty Inks
- Kevin Kauth, SAATI Americas Corporation
- Michelle Moxley, The Ink Kitchen

In addition, the Alliance and The Academy honored Riley Hopkins as the recipient of the 2026 Joe Clarke Innovator Award.



JDS Industries announces $3 million tariff giveback

JDS Industries will give more than $3 million back to eligible customers whose purchases were impacted by tariffs. The decision represents a significant return of value to JDS customers across the awards and recognition, personalization, promotional products, decorated apparel, and sign supply industries. Rather than retain the tariff-related value, JDS made the decision to return it to the customers whose purchases were impacted. Eligible customers will receive their individual share through JDS account credits that can be applied toward future purchases.

IN MEMORIAM



Herb Glantz

Glantz announced the passing of **Herbert Theodore "Herb" Glantz**, a longtime owner and leader of the family-owned sign supply company. Glantz died Aug. 26 in New York City at the age of 96. In a press announcement, the company said, "Over the course of his decades-long career with Glantz, Herb played an instrumental role in expanding the company and guiding it through significant growth. His leadership built on the foundation his grandfather and father, Edwin, established and positioned Glantz for the national presence it has today. As Glantz marks 120 years in business, Herb's legacy remains an important part of the company's story and the foundation upon which its future continues to be built."

UPCOMING EVENTS

Automate & Elevate 2026
Nov. 12, 2026
brandedmerchnetwork.com

PPAI Expo
Jan. 12-14, 2027
Las Vegas, NV
ppai.org/expo

UPDATES

Pukka joined brands from across the team sports industry for **Team Insight's** Team Headwear Vendor Roundtable, where manufacturers discussed the trends, challenges, and opportunities shaping the future of team headwear.

Signarama announced it has marked significant achievements in Europe and North America: Signarama France was inducted into the Signarama Hall of Fame; Signarama awarded master franchise licenses in Germany and Portugal; and Signarama Canada will host its own national convention.

FASTSIGNS hosted its 16th annual Outside Sales Summit in Dallas, Texas. The three-day event brought together 668 FASTSIGNS attendees for sales education, networking, recognition, and professional development.

SpeedPro announced the opening of its SpeedPro Cape Fear location under the ownership of local **Matt Sullivan**.

Nazdar celebrated the opening of its Nazdar SourceOne Solutions Center in Shawnee, Kansas, with a ribbon-cutting ceremony at the company's campus.

Fully Promoted of Southern New Hampshire welcomed hundreds of loyal clients and local business leaders at its third annual client appreciation event at Bedford Event Center in Bedford, New Hampshire.

UPDATES

Avery Dennison Graphics Solutions launched a training and certification program for architectural window film installation. The inaugural workshop experience took place Oct. 21-23, hosted by Wensco at its corporate headquarters in Belmont, Michigan.

Howard Custom Transfers debuted HCT Assist, a decoration and fulfillment service created to help apparel businesses pursue opportunities that extend beyond their available production capacity.

S&S entered the next phase of its new brand rollout. The new identity includes an updated logo and the tagline, "Take Your Vision Further."

REPORTS & STUDIES

Girls Who Print released its **2026 Industry Insights Report**, examining the experiences, priorities, and perspectives of women working across the global print and graphic communications industry.

S&S released its second annual **Sustainability Report**, and its first climate risk assessment aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework. The company also obtained independent limited assurance over its greenhouse gas emissions inventory.

To celebrate its 40th anniversary, **Signarama** released the findings of a national survey conducted by **The Harris Poll**, which shares new insights into how business signage shapes consumer perceptions and purchasing decisions.

A study commissioned by **PPAI** and conducted by **Oxford Economics** found that branded merchandise supports $170 billion in U.S. economics. The study measured the industry from end to end, including manufacturing and decoration, distribution, retail, e-commerce, fulfillment, marketing, and brand activation.

NEW HIRES, PROMOTIONS & RECOGNITIONS



Pat Noonan
SanMar

SanMar Corporation created a new chief operating officer role and appointed **Pat Noonan** to the position. Noonan is a 19-year veteran of SanMar and has served as chief product officer since 2017. His focus on customer satisfaction, innovation, and quality has shaped successful brand launches with Mercer+Mettle, and retail brands including Richardson, Carhartt, Brooks Brothers, and MiiR. He also played a central role in SanMar's recent acquisition of BELLA+CANVAS. In his new role, Noonan will continue to lead the product organization and will now also oversee information technology, distribution, and enterprise resource planning.





Marco Nespolo & Rolf Stangl
Fedrigoni

Fedrigoni announced that **Marco Nespolo** is stepping down from his role as CEO and chairman of the board of directors of the group to pursue other opportunities. The board of directors has appointed **Rolf Stangl** as executive chairman. Stangl brings more than two decades of leadership experience in the global packaging industry, as well as extensive executive and board experience across both private equity-backed and publicly listed companies.



Trevor Gnesin & Clive Goldberg
Logomark

Following the announcement in March of this year that Private Equity firm **Forge52** had acquired majority ownership of **Logomark**, founder and CEO **Trevor Gnesin** announced that the company's long-time president, **Clive Goldberg**, has been named CEO. Gnesin will continue to serve as a board member and consultant to the business.



Andrew Plowman
General Formulations

General Formulations added **Andrew Plowman** to its growing sales team as regional sales manager covering the mid-Atlantic Region, including Pennsylvania, West Virginia, Maryland, Delaware, and Washington, D.C. Plowman joins GF with more than a decade of experience spanning engineering, manufacturing, product management, sales, and marketing within the chemical and pharmaceutical industries.

Have news to share? Email gpeditorial@cahabamedia.com.

INDUSTRY UPDATES

NEW HIRES, PROMOTIONS & RECOGNITIONS



Mark Grinspoon

L.A.T. Apparel

L.A.T. Apparel announced the addition of **Mark Grinspoon** to its sales organization as territory sales manager, Mid-Atlantic. Grinspoon joins L.A.T. Apparel with extensive experience in sales, territory management, and relationship development within the apparel industry. In his new role, Grinspoon will be responsible for managing and expanding customer relationships across the Mid-Atlantic territory, supporting customers with tailored solutions while driving continued growth for L.A.T. Apparel.



Chris Kelm & Dave Warns

Watchfire

Watchfire announced **Chris Kelm** has joined the company as vice president of on-premises sales. Kelm succeeds **Dave Warns**, who is stepping back after 14 years with Watchfire. Warns helped build the company's on-premises sales organization and has been a tireless advocate for its dealers and customers.

MERGERS & ACQUISITIONS

JDS Industries, headquartered in Sioux Falls, South Dakota, has acquired **Small Balls**, a supplier of products for ADA-compliant Braille signage.

iPROMOTEu announced that **The Distributor Exchange** (DX), a division of iPROMOTEu, has completed the acquisition of **Flywheel Brands**, a merchandising, print, and e-commerce platform.

SRG has taken over sales and distribution of the **Kelvin Tools** line of custom-branded promotional products throughout North America.

Durst Group announced that **MPS Printing B.V.**, a Netherlands-based specialist in flexographic printing systems, will become part of the Durst Group on Jan. 1, 2027, through the acquisition of its holding company, and will operate under the name MPS – A Durst Group Company.

Hamed Dadgour is the new owner of **Minuteman Press** in Mountlake Terrace, Washington. Dadgour purchased 47-year business Printing Plus from retiring owner Michael Torres, who owned the business for 35 years.

AWARDS & RECOGNITION

FUJIFILM Business Innovation announced the winners of the Innovation **Print Awards 2026 Global**. A total of 42 award-winning entries were recognized for their creativity and technical excellence from among 442 submissions printed on FUJIFILM-branded production presses worldwide.

Abel Corral and Christine Corral, owners of a **Minuteman Press** franchise in Denver, Colorado, officially joined the Minuteman Press International President's Club for achieving over $1 million in gross sales for the year ending 2025.

GIVING BACK

Imperial renewed its partnership with **Watson Links**, a nonprofit golf mentoring organization founded by eight-time major champion Tom Watson. Imperial provides hats to Watson Links participants, giving junior golfers & mentors headwear to wear during their on-course experiences.

Pukka partnered with **Surfers for Autism** to provide hats for every participant and volunteer at the nonprofit's 16th Annual Cocoa Beach Surf Festival, bringing custom headwear to an event centered on inclusion, community, and shared experiences. The festival welcomed well over 200 participants and hundreds of volunteers for a day of surfing and activities designed for children and adults with autism and other developmental disabilities.

Image360 Calgary South is supporting the **CIBC Run for the Cure** for the second consecutive year, providing custom signage and graphics to help promote and bring the annual **Canadian Cancer Society** fundraiser to life in Calgary. Building on its involvement with the event last year, Image360 Calgary South expanded its support this year to include signage promoting registration in the weeks leading up to the run, as well as signage displayed throughout the event.

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5 questions *with...* Rachel Newman



Rachel Newman joined L.A.T. Apparel in March 2024 as chief commercial officer and has served as president since October 2025. In this role, she has led the redesign of the Live & Tell and Rabbit Skins brands, relaunching them as lifestyle brands with fresh, consumer-led imagery and a bold new retail presence at Hobby Lobby and Michael's. Much of L.A.T.'s recent growth has been fueled by a modern design aesthetic that keeps Live & Tell ahead of the curve, and Newman's design-forward focus has continued to sharpen the brand's point of view, giving it a distinct, on-trend identity.

Know someone who should be featured on this page?

Email gpeditorial@cahabamedia.com.

1 You oversaw printwear at a large company before coming L.A.T. How will that shape your priorities as president?

There are a lot of benefits to being big (resources, etc.) — but there are also many challenges. The biggest challenge is the ability to be agile. By maintaining strong partnerships that spread across the globe, L.A.T. can be agile in our production and not be firmly committed in a single area. We also have the agility to pack our programs in unique ways. We can do the high-touch, customized packing that breaks the giants. We can be nimble and reconfigure packing stations that can allow for us to provide shorter turnaround time.

2 How does L.A.T. make sure decorators can count on getting what they need, when they need it?

Amazon has influenced delivery patterns in our personal lives and this has impacted the business world as well. Customers order much closer into their needs, so we understand that if we don't have a product they will have to move on because they don't have time to wait. L.A.T. has a great supply chain with significantly long-standing partnerships that allow for flexibility when we need it.

3 Rabbit Skins has a strong niche in infant blanks. What should decorators know about doing that category?

I love our Rabbit Skins line! There's so much to it, from the technology to our in-depth Consumer Product Safety compliancy, to the fashion aspects we've introduced over the years. The biggest point of differentiation for Rabbit Skins is trust. Our customers know the challenges in infant and toddler categories — especially related to safety — and they love Rabbit Skins because they don't have to worry about safety concerns. We do all that work for them.

4 Heavyweight, premium blanks are having a moment. From a decoration standpoint, what changes for a shop moving upmarket?

I think people often box this category in to more of a street/skater/surf perspective. However, we thought about it broader in looking at an upscale corporate view. Because of the weight in these fabrics, you can often do more with them. They hold embroidery very nice, can take on heavier patches/transfers, and embossing looks beautiful on these fabrics. Because of the more detailed embellishment, it can lead to higher margin opportunities for printers.

I would say people do need to think more broadly about this category — from skate to collegiate/resort to corporate. There really is a lot of opportunity.

5 Between cotton prices, tariffs, and freight, blank costs have been a moving target. What's your advice for a small shop?

In times of higher volatility, I think it's important to make sure to quote closer to the job, as well as having shorter price guarantee windows. This isn't always the case because sometimes you have customers that you hold prices for, and that's where transparency comes into play. Make sure you keep them up to speed on market discussions — for example, oil futures impact not only freight expenses, but it's also a basis of polyester. Not having these conversations can be very detrimental to your overall business if your costs are increasing. Be transparent with customers and try to find ways to make the process between you and that customer more efficient to cut out costs. That customer is likely having conversations with other suppliers — so transparency is important. It takes the discussion from a transaction to a partnership that they want to work with in the future because they know you'll be there for the long haul.

DTG at 30

An inventor's look back & forward

By Matthew Rhome

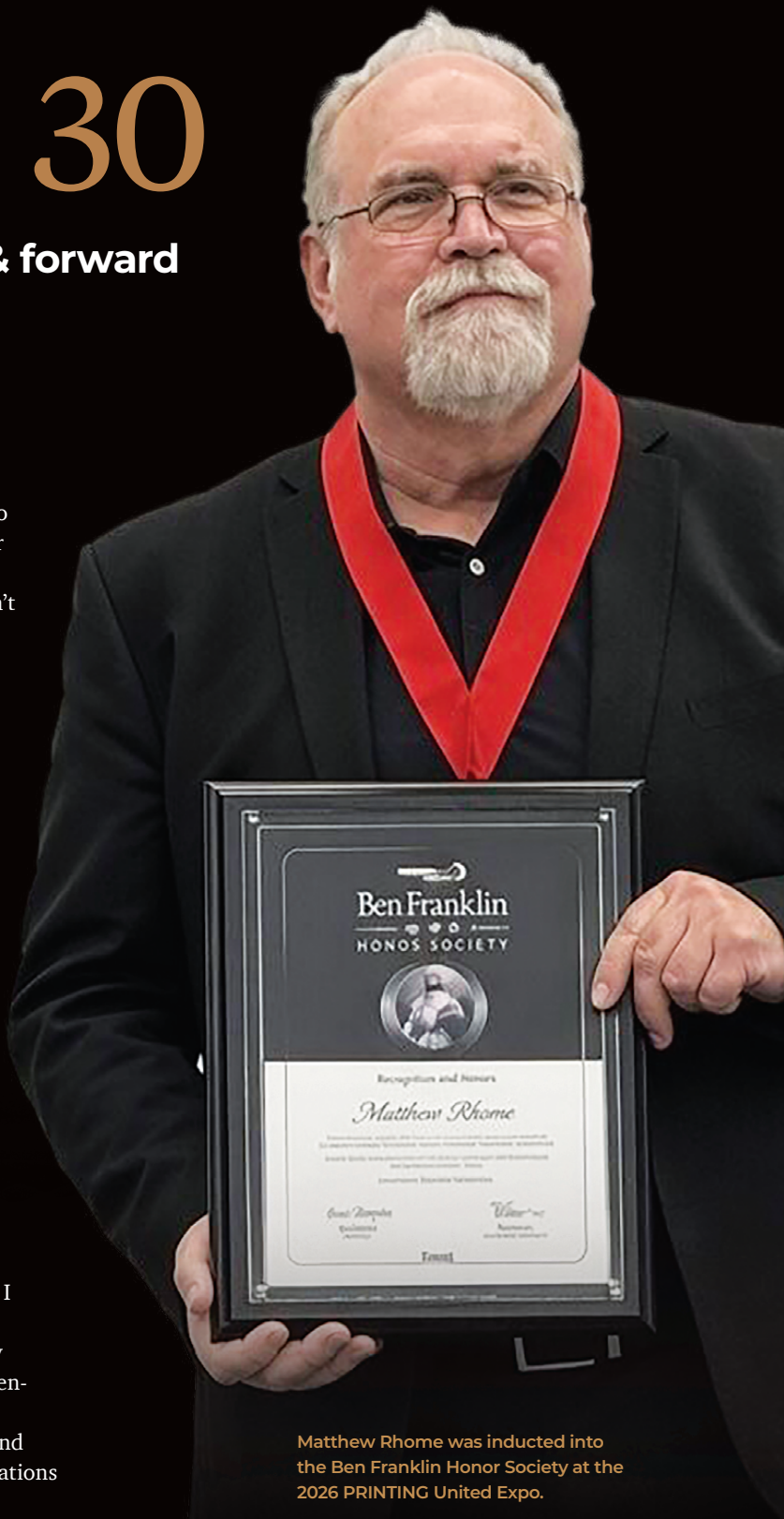
When people ask what it feels like to have invented the direct-to-garment (DTG) printer and help spark a multibillion-dollar industry, my answer tends to surprise them. At the time, it didn't feel like an invention at all. It felt like an answer to my frustration. Specifically, the frustration of turning away small custom orders. Looking back, that frustration turned out to be the origin point of DTG printing as we know it today.

The foundation: Early years in screen printing

My introduction to screen printing came at age 14, when I printed shirts for my Boy Scout troop. There was something immediately satisfying about it — ink on a screen, a pull of the squeegee, a design appearing on fabric. I was hooked from day one.

I taught myself how to print, but I didn't go it alone. I shared my interest with my school shop teacher, who remembered he had an Advance Process Supply catalog the school had received. Mr. Green, the company's owner, was incredibly generous with his time when a young student called asking for screen printing technical details. I still keep that catalog in my library, and I even bought my first printer from Advance when I started my own shop years later.

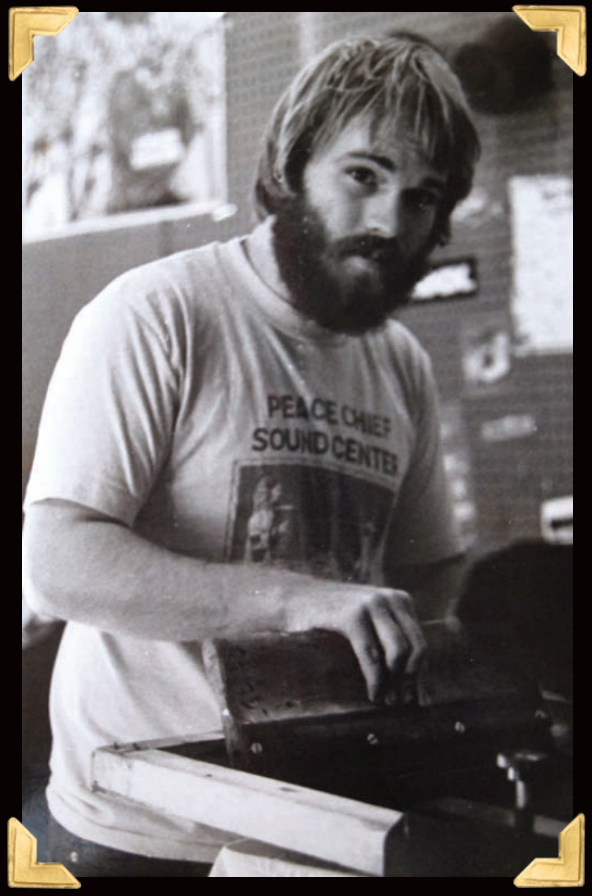
By 18, in the early 1980s, I had turned that early passion into a real business, opening my own screen-printing shop. Running that operation gave me a close-up view of where the process worked well, and where it fell short. By the late 1980s, those observations had led me toward a new challenge: designing



Matthew Rhome was inducted into the Ben Franklin Honor Society at the 2026 PRINTING United Expo.



The T-shirt that started Rhome's journey into the world of screen printing. It was his first paid order.



Rhome at his screen-printing shop at the age of 18.

automated screen-printing equipment to address the inefficiencies I encountered daily on the shop floor. That work shifted my thinking from operator to systems designer, and it set me up well for what came next. In the early 1990s, I founded a software company focused on developing purpose-built tools for screen printers, bringing together my production background, my equipment experience, and the growing possibilities of digital technology.

It was that combination of craft, engineering, and software that brought me face-to-face with the limitation that would define the next decades of my career.

Screen printing works beautifully at scale. An order for 500 identical garments? No problem. An order for 12, or for one? That's a different story. The setup costs — burning screens, mixing inks, and registering colors — stay fixed regardless of order size. The result is a constant dilemma: turn away short run customers or absorb the loss to keep them happy and hopefully recoup it on larger orders. Short-run and on-demand work was the industry's most persistent sore spot, and I was far from the only one who felt it.

Rethinking the process

By the early 1990s, I had reached a clear conclusion: the answer wasn't a better version of screen printing; it was a different process altogether. I started looking seriously at digital inkjet technology, asking a straightforward question: Could a garment be printed with the same directness and speed that a desktop printer brings to a sheet of paper?

My first instinct was to develop a hybrid system that combined inkjet imaging with elements of traditional screen printing. Since white inkjet ink for textiles hadn't been developed yet, my initial idea was to screen print a white base and then apply CMYK colors on top via inkjet. I put a lot of real time into that concept and even lined up a couple of buyers for the prototype. But the further I went, the more it became clear that a hybrid approach would be too expensive and too complex for the mass market. My goal was to create something accessible for small- to mid-sized shop owners working with limited budgets and a few or no employees. At an estimated cost of over $1.5 million, a machine that only large, commercial operations could afford wasn't going to solve the problem I cared most about.

So, I changed direction. The new goal was a compact, standalone, single-operator machine, something any shop — big or small — could adopt

without specialized staff or a major capital investment.

The 'Revolution': Bringing DTG to market

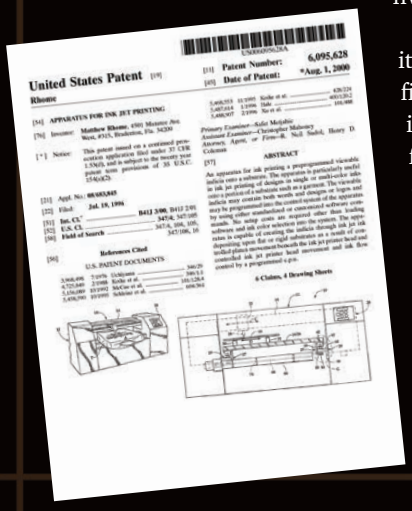
In 1996, I partnered with my friends Andrew Romines and Caren Jessup to form Direct Imaging Systems (DIS) out of Bradenton, Florida, but the spark that made it real came earlier, out on the water.

While jet-skiing in the Gulf of Mexico, I had a moment of sudden clarity. Take the hybrid technology I'd been developing, scrap the screen printing part, and scale it down into a compact, one-person machine that smaller shops could actually use and afford. I loaded up the jet ski on the trailer, drove home, and started to work. I pulled apart a flatbed scanner and a Canon inkjet printer sitting in my office, and stayed up through the night building.

By morning, I had a working prototype. It looked essentially like the DTG printers you'd recognize today; the design matched my soon-to-be-filed patent drawings almost exactly. I shared it with my partners, and their reaction was immediate: this is the machine we need to sell.

That prototype eventually became "The Revolution," the first commercially available direct-to-garment printer in the world, and one I believe fully earned its name.

The patent application was filed on July 19, 1996. After a multiyear review, U.S. Patent 6,095,628 was granted on Aug. 1, 2000. That patent gave formal recognition to something I'd understood from the beginning: a single-operator DTG machine wasn't just a practical improvement. It was a genuinely new solution to a challenge the industry had been living with for decades.

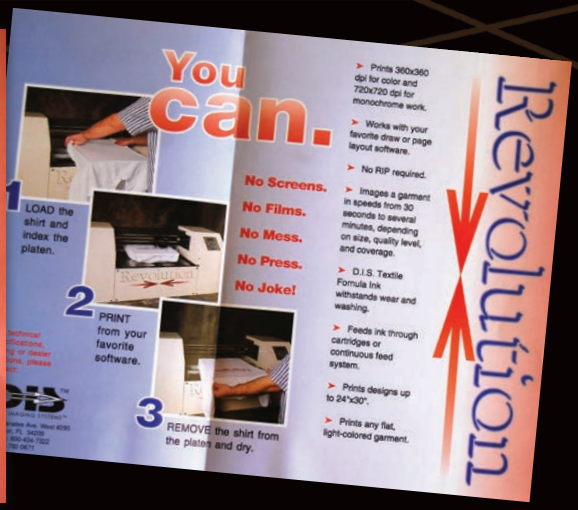

United States Patent [19]
Rhome
[11] Patent Number: 6,095,628
[45] Date of Patent: *Aug. 1, 2000
[54] APPARATUS FOR INK JET PRINTING
[57] ABSTRACT
6 Claims, 4 Drawing Sheets

Rhome's U.S. patent for the DTG printer, which was filed in 1996 and granted in 2000.

Of course, the machine itself was only the first step. We needed ink. An industry friend referred us to a company in California that manufactured specialized inks and dyes, and we contracted with them to produce inks compatible with the low-cost Canon print head. They connected us with a chemist named Dr. Jerry Woolf, who was known for inventing the erasable whiteboard marker. Dr. Woolf developed a CMYK textile ink that worked well with the Canon heads, and DIS began selling the Revolution in 1997.



A flyer promoting the "Revolution" printer in 1997.



Interior view of the "Revolution" flyer from 1997.

We took the Revolution to most of the major trade shows for the next three years, and it always drew a crowd. Outside of a small group of early adopters, the printer met real resistance from parts of the industry that were skeptical about digital printing. Even so, we made some sales, enough to push me forward into designing the next model, called the "Evolution," which I planned somehow to equip with white ink capability.

During that development phase, I needed a new printhead, specifically one using piezoelectric technology to handle larger particle-sized inks. That search led me into conversations with some of the leading printhead manufacturers in the world.

Taking DTG to scale: Brother, Epson & beyond

One of those calls went to Brother International. I was surprised to learn they already knew about the Revolution printer. They felt DTG technology would complement their product line, particularly their embroidery business, and invited me to collaborate on building a ground-up DTG printer. The vice president of Brother was a true visionary and saw where this could lead. I had a discussion with my partners at DIS regarding the opportunity, and with their blessing, I accepted Brother's offer.

In October 1998, I moved to Brother's headquarters in Bridgewater, New Jersey, and began writing the DTG business plan with a collaborator. After the plan was approved in 1999 by Brother's

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Rhome with the Brother Mat-1 DTG prototype in Nagoya, Japan, at Brother R&D.



Rhome and Harry Kira at the GT-541 Exhibit at the Brother Museum in Nagoya, Japan, in 2025.

top management, I relocated to Bartlett, Tennessee, to work in Brother's U.S.-based R&D division. Having substantial resources to draw on opened new doors. I brought Dr. Woolf back to develop ink for the Brother printhead, and I was paired with a talented engineer and project manager, Harry Kira, to begin development.

The project started strong. Dr. Woolf made early progress on ink development, even creating a white ink. This was a significant milestone, but unfortunately, he fell ill in early 2001 and had to leave the project.

With that and other changes, we fully shifted the R&D to Brother's facility in Japan later that year. Working between the U.S. and Japan, Harry and I collaborated with our colleagues overseas to develop a prototype printer. I was deeply honored when the R&D team named it the MAT-1 — which eventually became the Brother GT-541. This machine helped bring DTG to a much wider audience, showing that a technology born in a small shop setting could be successfully scaled into a global product.

Before launch, Brother created several prototype units and placed them with real print shops for an extended period, gathering feedback and ensuring the machines could hold up in actual daily use. This delayed the product launch by many months until 2005, but it was the right call as it verified all our assumptions that this printer would be a hit.



A flyer for the GT-541, which made its trade show debut in 2005.

2005 turned out to be a pivotal year for DTG. Several machines were on the market that year alongside the GT-541, including offerings from Kornit, Fast T-Jet, and Mimaki. Of all those that were available at that time, only Brother and Kornit remain in the DTG market today.

The GT-541 was a genuine success. Even without white ink capability, it sold well for many years. A few years after this launch, I left Brother to pursue other interests, but returned in 2009, just in time to work with Harry again on the GT-3 project. That was Brother's first single-platen CMYK and white DTG printer, and it came close to the original vision I'd had for many years. After the GT-3 launched, I stayed on mainly in marketing and sales-related roles until leaving in late 2013.

From there, in 2014, I moved into a business development role at Epson America, where I helped shape the company's approach to DTG as both a technology and a growing market. Along the way, people in the industry started calling me the "Godfather of DTG." I won't pretend that doesn't mean something to me; decades of sustained work in a field earn a kind of recognition that's hard to replicate any other way.

Present work: Sticker Mule

In late 2024, I joined Sticker Mule as director of quality and efficiency. I'd always wanted to work for a DTG printing company, and at this point in my career I'm happy to say that I'm able to pick and choose. Sticker Mule turned out to be a great fit. They have their own internal R&D department, and I get to work alongside genuinely innovative engineers every day. The owner of Sticker Mule is a true visionary and believes that innovation is

the key to success. For anyone familiar with my background, it's less of a new direction and more of a natural continuation.

The core mission has stayed the same throughout my career: making high-quality, customized printing more accessible and more efficient, regardless of order size. The principles I developed while solving the short-run problem in 1996 are still directly relevant to the work I do today, and they're exactly what we're applying as we build out our Sticker Mule DTG operation with in-house automation and engineering.

I'm especially proud that Sticker Mule is also launching a fully American-made T-shirt line. It's a project that combines everything I care about: quality, efficiency, and a commitment to building things the right way.


DIRECT IMAGING SYSTEMS

Designed to image garments and other flat textile goods directly from an IBM-compatible or Macintosh computer, the Revolution I inkjet printer eliminates the need for vellum, film separations, screen making, printing presses, and screen-cleaning chemicals. Because it can print four-color process and spot-color jobs without intensive file preparation, the system is said to be ideal for custom jobs, proofing, and prototypes.

The unit offers 360-by-360 dpi resolution for color work, and 720-by-720 dpi

Early press release on the "Revolution" DTG printer.

What comes next: The future of DTG

I was honored to receive the Joe Clarke Innovator Award at PRINTING United Expo in 2024, and in 2026 I was inducted into the Ben Franklin Honor Society. I value these recognitions not just personally, but as a reflection of how far the DTG industry has come since that first machine rolled out of a small shop in Florida.

After three decades watching this technology evolve into a globally recognized printing category, I'm more optimistic about DTG's future than I've been in years. The trends I see shaping the next chapter are ones I've been thinking about for a long time.

Automation is the biggest. The shops pulling ahead today aren't just buying better machines; they're engineering their entire workflow, from pretreatment to curing, so that human touchpoints are reduced and efficiency is increased.

Ink chemistry is advancing in parallel, with formulations that are more vibrant, more durable, and friendlier to a wider range of fabric blends, including the performance and synthetic fabrics that have largely stayed out of DTG's reach.

Sustainability is no longer just a selling point. Being a "green" process is becoming a baseline expectation, and DTG's low-waste, on-demand model is genuinely well positioned to meet it.

And the on-demand economy itself keeps growing, pushing brands and retailers toward smaller, faster, more personalized runs — exactly the kind of work DTG was invented to handle. The fundamental problem I set out to solve many years ago hasn't changed. What has changed is how much better we're getting at solving it.

Reflections on 30 years

Thirty years on, DTG printing is a well-established part of the decorated apparel world, used by shops of every size across the globe. I'm incredibly proud, not only of creating this machine, but of watching my invention change people's lives around the world.

Think about what DTG really represents — beyond the patent, beyond the machine, beyond the printing process. It's more than just a machine. It's a way to pay off a mortgage, put food on the table, give your kids a quality education, and build something for your family. That's what makes it truly special. And it's a wonderful thing that, even 30 years later, this technology continues to make a real difference in people's lives.

A thank-you to the community

None of this happened in isolation, and I'd be doing the story a disservice if I didn't acknowledge that. Thirty years of DTG history belongs just as much to the sellers, manufacturers, and repair techs who kept machines running, and to the print shop owners — big and small — the suppliers, and the machine operators who turned a new technology into a livelihood. It belongs to the designers who made the output worth printing, the trade show organizers who gave this community a place to gather, the magazine writers who documented it all, and the shirt suppliers and online retailers who got the product into people's hands.

To everyone who has built a career, a business, or family around this technology, thank you. I invented a machine. You turned it into an industry. **GP**



Matthew Rhome, a DTG industry pioneer, launched the first commercially available DTG Printer, "Revolution," obtaining the first U.S. Patent for DTG printer technology. With over 45 years in garment decoration, his contributions greatly influenced DTG's success at Brother International and Epson America. Matthew has excelled in printer technology, business ownership, invention, and equipment design.

Small audiences, big opportunity

How NIL & heat printing on demand are opening new paths into sports merchandise

By Dalaney Bradley

For years, the economics of decorated apparel favored volume. Large audiences justified large orders, and large orders maximized production efficiency. That model still has a place, but it no longer defines every profitable opportunity in sports merchandise.

As social media fuels more specialized communities, demand is increasingly spread across smaller, highly engaged audiences. Each audience may be smaller than the traditional mass market, but its connection to the subject is often much stronger. That enthusiasm can translate into higher purchasing behavior if decorators can offer the right product while interest is high, without taking on too much inventory risk.

Name, Image, and Likeness, commonly known as NIL, is one of the clearest examples of this shift. It has given college athletes more ways to participate in the commercial use of their identities, while creating new merchandise opportunities for retailers, licensees, and decorators. Just as important, NIL has highlighted a broader lesson: audience size matters less when production is flexible, fulfillment is efficient, and the product feels personal.

NIL changes the merchandise equation

Traditional collegiate merchandise is typically centered on universities, conferences, and major team marks. NIL adds the athlete as another potential point of connection. Fans may want to support a quarterback, gymnast, volleyball player, or wrestler who has a meaningful following, but isn't large enough to support a conventional inventory buy.

That creates a forecasting problem. Ordering hundreds of finished garments before demand is known can leave a retailer with unsold sizes and styles. Ordering too cautiously can create the opposite problem: the product sells out just as attention peaks. Interest may also change quickly after a breakout performance, rivalry game, tournament run, transfer announcement, or social media moment.

Print on demand helps address that uncertainty by moving production closer to the sale. Instead of decorating a full inventory in advance, a business can stock a smaller selection of blank garments and apply approved graphics as orders arrive. Products can be tested in limited quantities, expanded when demand grows, and retired without a warehouse full of obsolete merchandise.



Images courtesy of STAHLS'

Why heat printing fits this model

Heat printing is especially well suited to this model because it can support short runs, rapid changeovers, and a wide range of garment types. A decorator can produce a single T-shirt, a small batch for a team store, or a larger run tied to a major event using the same basic process.

The flexibility goes beyond order

quantity. Depending on the application, heat-applied transfers can reproduce full-color artwork, names and numbers, sponsor marks, commemorative graphics, dimensional effects, and specialty finishes. The same operation may decorate tees, hoodies, jerseys, headwear, and accessories without building a separate production line for every item.

That does not mean every design or garment should be treated the same. Successful programs standardize the variables that affect quality: artwork preparation, transfer selection, application time, temperature, pressure, garment construction, and print placement. Testing is essential, particularly with performance fabrics, coated materials, and garments that may be sensitive to heat. The advantage comes from combining flexible equipment with repeatable production standards.

The real challenge is the workflow

A heat press can decorate one garment at a time, but profitable print on demand requires more than production equipment. The order must move cleanly from an online store to artwork approval, production, quality control, packing, and shipment. If employees are manually reentering information at every step, the labor can erase the margin on a small order.

Decorators entering NIL and sports on demand should examine the entire order path. Can a new product be published quickly? Are the athlete, school, and league rights clearly documented? Does the order carry the correct art file and garment information into production? Can staff identify where each order stands? Are shipping labels and customer notifications generated without unnecessary handling?

Licensing discipline is particularly important. Permission to use an athlete's NIL does not automatically grant permission to use a school's trademarks, uniforms, or other













protected assets. Each program may involve different agreements, royalty requirements, artwork approvals, and sales channels. The best production workflow cannot compensate for unclear rights, so compliance needs to be built into the process from the beginning.

A live test in Austin

Few environments put a merchandise program to the test like a major college football weekend. During a recent home football game, the University of Texas Co-op in Austin, Texas, incorporated heat printing as part of a retail activation that leveraged licensed merchandise, blank apparel, decoration technology, and order fulfillment systems into a streamlined production workflow. Rather than relying solely on preproduced inventory, the program demonstrated how merchandise can be created and fulfilled in response to real-time demand.

The activation coincided with the co-op's traditional game-week happy hour, ESPN College GameDay activity, and the Texas matchup against Ohio State. Products and promotions were tied to the moment, while on-site heat printing helped the retailer respond as fan traffic and interest increased. The co-op reported record sales on both Friday and Saturday.

The broader takeaway is not that every decorator needs a major campus activation. It is that sports demand often develops in real time. When approved artwork, products, equipment, and workflows are prepared in advance, a business can react to that demand while the event still matters. The same principle applies to a high school championship, a youth tournament, a local athlete's milestone, or a club's season opener.

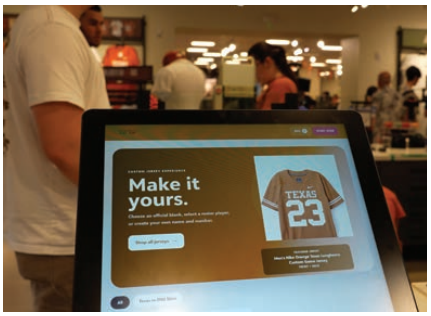
Start focused & build a repeatable model

Decorators don't need thousands of products to enter this market. A focused assortment is usually easier to operate and easier for customers to shop. Start with a few proven garments, approved designs, and clear price points. Define who owns the rights, how orders will be routed, when products will be produced, and how quickly they can be delivered.

It's also useful to separate everyday demand from event-driven demand. An always-available store may carry core athlete or team designs, while a faster activation plan can support rivalry games, championships, or other short-lived moments. Templates for product pages, artwork, pricing, and production instructions can reduce the time required to launch each new offer.

Finally, measure more than total sales. Track which designs convert, which garment and size combinations move, how long each order takes to produce, where errors occur, and what it costs to fulfill a single item. Those numbers will show whether the program is genuinely scalable or simply generating activity.

NIL may be the most visible example, but the opportunity extends well beyond college athletics. Youth clubs, recreational leagues, emerging sports, individual competitors,



and local organizations all have audiences that want merchandise reflecting a specific connection. Heat printing gives decorators a practical way to serve those groups in quantities that traditional manufacturing may not support.

The future of sports merchandise will still include large orders and national programs. It will also include thousands of smaller moments, each with its own audience and timeline. For decorators, the opportunity is not merely to print fewer pieces. It's to build a faster, more connected system that can turn genuine fan interest into relevant merchandise when interest is strongest. **GP**



Dalaney Bradley is a Detroit-based brand strategist at STAHLS' focused on fashion, heat printing, and branding in the custom apparel industry. She writes about industry trends and business growth for decorators and apparel entrepreneurs on the STAHLS' blog and other industry publications.



Live & Tell™

BY L.A.T.

A Hoodie Bold Enough to Carry His Confidence.

It started as a last-minute grab on the way out the door – just a simple fleece with a design that felt a bit more "him" than anything else in the closet. But somewhere between 8 a.m. lectures, late-night study sessions, interviews, and coffee runs, that hoodie became the piece he reaches for when he needs to feel like his best self.

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A Badge of Pride

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Scan to watch Live & Tell in action.

Puttering with volleyball tournament tees

Sailing away with a new design

By Lon Winters



topstep07 – stock.adobe.com

Images courtesy of Lon Winters.

If you've followed my articles in this magazine over the decades, you know that some projects have a way of showing up on the calendar time and time again. We see the name on the email and before we open any files, we know it's that time of year again. Putterhead is one of those jobs. The Putterhead Doubles Volleyball Tournament has been part of the Colorado volleyball landscape since 1994, when it started as a small, locally run tournament. In 2003, the Breckenridge Parks and Rec brought Volleyball of the Rockies (VOTR) — a common client of our shop that I have written about before — in to manage the event. Since then, the tournament has grown from 50 teams into one of Colorado's largest volleyball events with 20 divisions and 1,000 teams participating throughout the weekend, spread throughout Summit County in Silverthorne, Frisco, and Breckenridge. At elevations nearly 10,000 feet, the mountain air makes a fit volleyballer reconsider life choices. A few days of sunshine, parties, and altitude-induced competitiveness and it's one heck of a volleyball weekend.

As you may expect, every player receives the official Putterhead event T-shirt. The shirts have become collectible over the years, and we have been fortunate enough to do the Putterhead shirts for three decades now. The shirts have become a visual history of the event. There are volleyball nuts who have every year's shirt. We have been all over with Putterhead art. Some designs simple, while others wandered down a rabbit hole, so to speak. We once created a series of cartoon animals. Apparently, management decided we exhausted the critters supply. This year, the client provided the kind of detailed direction that every designer desires. "Do something cool."

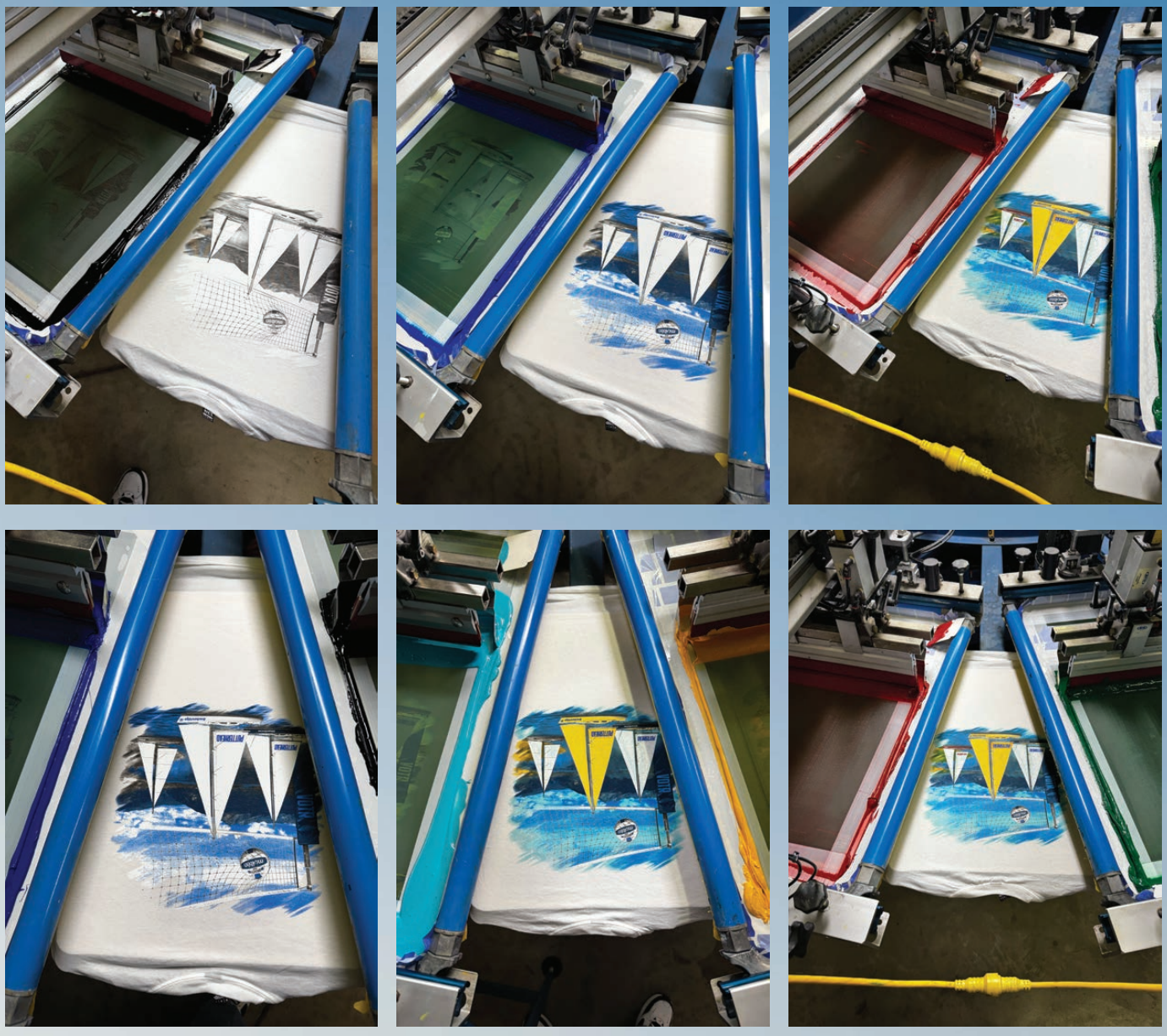
Okay then. The art needed Colorado, Putterhead, and volleyball thrown into a blender. Something connected to the location and Putterhead with a unique visual. VOTR wanted us to use a photograph of Dillon Reservoir with the surrounding Breckenridge



mountain landscape as the foundation. There were some modifications to make. The bottom needed cropped up to the marina, the homes along the right would disappear, and the composition needed room for three sailboats. Each boat would represent tournament locations. Silverthorne, Breckenridge, and Frisco. Putterhead would be incorporated on the sails, and we needed a volleyball net and ball.

We opened the photo in Adobe Photoshop. We cropped away the lower foreground, bringing the image up as requested, removed the structures, and added some water where the boats would live. This was a combination of selection, masking, and cleanup work as well as the Clone





Stamp and Healing tools. Once the image was reconfigured, we simplified the photographic information. The Filter menu gave us a useful starting point to reduce the photograph information for a more illustrative look. The sailboats, volleyball net, and ball needed to coexist with the photographic background. Some of the shapes were constructed from simple vector geometry, while others required more careful drawing and editing with the Pen Tool and Direct Selection Tool. The sailboats were going to carry a lot of the identification. Rather than simply dropping the cities somewhere underneath the illustration, we incorporated them into the boats. Putterhead was placed on the sails. Illustrator and Photoshop worked together. Photoshop for the raster foundation, while Illustrator provided the vector components. The boats had to look believable on the water but fit the illustrative nature of the image. The volleyball net and ball were treated the same way.

Once the proof was approved, we noticed potential production issues. The small lettering on the boats looked fine on the monitor but wasn't going to print clean separated in halftones. Before removing the lettering from the Photoshop file, we exported a TIFF of the rasterized composition and placed it into an Adobe Illustrator document for positional reference. The small type was recreated in vector and positioned directly over the TIFF to match the original locations. Once the vector type was locked into position in Illustrator, back in Photoshop, we removed the type. With the type removed, the raster file was used for our simulated separation. We would be working on white, light, and dusty blue garments. We didn't need to build a heavy white printer or underbase. Once the sim seps

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were finalized, they were brought back into Illustrator for output, and the type was positioned over the same TIFF. The vector type was then grouped with the appropriate color for output and imaging on computer to screen at 55 lpi at 22.5 degrees.

The press setup followed a straightforward sequence. Starting with an ironing station, followed by white on a N-166 tpi screen. After a flash, a smoothing station prepared the surface for the colors. Process black followed by royal blue and gold. Next was turquoise and another flash and smooth before continuing with forest green and red. All the colors were printed wet-on-wet on N-272s. The final station was a blending white with 50% halftone clear. All meshes were at 45 N/cm^2.

The final image had enough photographic information to give the reservoir and mountains realism, while the sailboats provided the foreground and real estate for the town names. Putterhead on the sails tied the boats directly to the event, and the volleyball net and ball made sure nobody confused this with a yacht club shirt. The total production was 1,500 shirts. After 30 years of Putterhead, we have learned that the challenge isn't necessarily coming up with anything new, it's finding a fresh way to tell the same story. Mountains, water, volleyball, three mountain towns, and a tournament that has become a Colorado tradition are all part of the Putterhead story. This time, we just added sailboats. Not bad for what started with, "You know, do something cool." **GP**



Lon Winters is founder and president of Colorado-based Graphic Elephants, an apparel decorating studio and international consulting firm. He was inducted into the Academy of Screen and Digital Printing Technologies in 2013 and is widely recognized for his contribution to the graphic printing industry. Learn more at graphicelephants.com.

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Live & Tell™
BY L.A.T

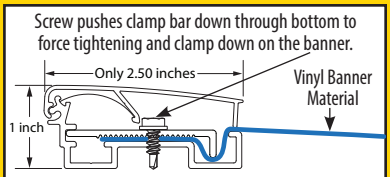


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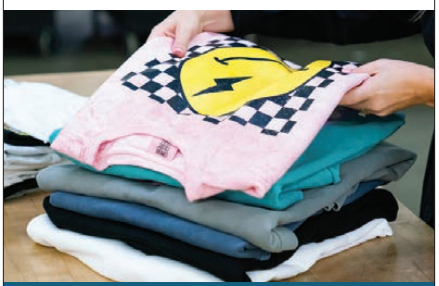
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GP1124

The commercial value of color management across materials

Understanding color management when UV printing

By Lon Riley



Image courtesy of DPI Laboratory



A design can look right on a white acrylic panel, then appear very different when printed on dark plastic, clear glass, brushed aluminum, or unfinished wood. The file may not have changed, and the color values may be identical, but the finished product can still look noticeably different.

UV printing has moved well beyond traditional promotional product applications. Businesses now use it for branded merchandise, packaging, signage, awards, retail displays, drinkware, and specialty products across a wide range of materials. For shops accustomed to a single decoration method and a limited range of media, UV opens significant new product opportunities. That flexibility creates new opportunities, but it also makes color management more complex.

For branded products, color is often tied directly to how a customer recognizes the product. Corporate logos, school colors, licensed sports graphics, retail packaging, and sponsor merchandise often come with specific expectations around color consistency. A shade of blue that appears slightly too dark, too gray, or too transparent may not matter on every job, but it can matter greatly when the product is tied to an established brand.

The material itself is where color management begins. White materials provide a foundation that allows color to appear closer to what the designer sees on screen. Clear, dark, metallic, and textured materials require more consideration. Clear acrylic or glass may require a white-ink layer behind the image to keep colors from appearing washed out. Dark products may require white ink to prevent CMYK colors from losing their strength. Brushed metal can change how color appears as the product is viewed, while wood grain, porous surfaces, and matte coatings can all influence the visual result.

Even white materials can vary greatly based on their specific white-point, and materials that appear similar can behave differently in production. Two products may both be described as clear acrylic, black plastic, or coated metal, but differences in finish, surface treatment, gloss, or material composition may affect the print. A profile or production setting that works well on one item may need adjustment when the material, supplier, or finish changes. That is why printing on the actual product is important when color is critical.

White ink is one of the most useful tools for managing color across materials, but it is not simply an automatic setting. The amount of white ink, the order in which it is printed, and the way it is cured can change the look of the finished graphic. A full white underbase can provide strong color on a dark or transparent product. Selective white can create depth, highlights, or a specific design effect. In some cases, allowing the material to remain visible is part of the visual goal.

White ink should be planned as part of the product and production process, not added as an afterthought. It influences vibrancy, contrast, detail, and the appearance of the finished item. Shops that develop clear white-ink strategies for different materials have more control over color and fewer surprises once a job reaches production.

There is also a difference between an artwork proof and a product proof. A computer screen produces light, while a printed product reflects it. A graphic viewed on a bright screen may appear more saturated than the same graphic printed on a matte product. A printed piece displayed under warm retail lighting may look different than it does under daylight or office lighting. Metallic and clear products can also shift as they are moved or as the background behind them changes.

For general custom work, a digital proof may be enough to confirm the layout, content, and placement of the artwork. For a color-sensitive product, a physical proof is often the better investment. Color can also be subjective unless the customer and printer are working from the same approved reference. Comparing an RGB image on a screen directly to a CMYK printed product does not provide a valid measure of whether the color is correct; they are different color environments. For color-critical work, the better approach is to establish an approved physical sample and measure the production output against that reference.

Physical proofing does not need to become an obstacle to efficient production. It can be built into the quoting and approval process for new materials, first-time customer programs, or color-critical applications. The cost of a proof, material testing, and any additional setup should be considered as part of the job, rather than absorbed after a question arises in production. A physical sample gives the customer a clear view of the finished result before the full order moves forward.



Before promising a color match

Before committing to a color-sensitive job, it is useful to ask a few practical questions:

- What is the exact material and finish being printed?
- Does the design require a white underbase, selective white, or the material to remain visible?
- Is the customer approving layout only, or color on the finished product?
- Will the product be viewed under a specific lighting condition?
- Is this a repeat order that requires documented settings and an approved reference sample?

These questions do not need to complicate every order. They help identify the jobs where a standard workflow is appropriate and the jobs where testing is the better investment.

Color profiles, RIP settings, and file preparation are important, but they are only part of the process. Shops also need to consider the material, ink set, white-ink settings, curing approach, and product handling. When a successful job is completed, those settings and production steps should be documented so the result can be repeated.

This does not mean every shop needs a complicated color-management program. It does mean that repeatable products deserve repeatable standards. A business that regularly prints branded drinkware, acrylic awards, packaging sleeves, or retail products should know which materials have been tested, which settings produced the approved result, and whether a white-ink layer or special finishing approach was used. That information becomes especially important when jobs move between operators, production shifts, and future reorders.

We recently worked with a cooler manufacturer that also offers branded products. One of its largest corporate clients needed red coolers to align with a particular design, along with white tumblers as part of the same order. Color consistency of the logo across both items was critical. Because the red cooler and white tumbler created very different foundations for the printed color, the same production settings did not produce a visually consistent result. A short testing process established the appropriate ink application for the white tumbler so that the logo visually aligned with the approved cooler standard.

The value of managing color correctly is not limited to avoiding reprints. It also helps a business sell with more confidence. When a shop understands how materials affect color, it can guide customers toward the product that best supports their design, brand, and budget. In some cases, that may mean recommending a white product instead of a dark one. In others, it may mean testing a different coating, using a white underbase, or setting realistic expectations about how a color will appear on metal, glass, or wood.

That is where color management becomes part of the service a print business provides. The customer is not simply purchasing ink on a surface. They are purchasing a finished product that needs to look intentional, professional, and consistent with their brand.

The strongest shops set realistic expectations, test when needed, and know when a different material is the better choice. The best color outcomes are determined before the printer starts, with the material, the product's intended use, and a clear understanding of what the finished piece needs to communicate. **GP**



Lon Riley is an engineer and printing industry veteran and the founder and CEO of DPI Laboratory, a digital print innovation company headquartered in St. Petersburg, Florida. DPI Laboratory develops UV printing systems, inks, specialty coatings, and workflow consulting solutions.



New ornament designs that bring modern style to personalized gifting.

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Gift Tag Ornament

2.45” x 4”
Gloss White
2-Sided Aluminum



Rounded Tag Ornament

2.45” x 4”
Gloss White
2-Sided Aluminum



Angled Tag Ornament

2.45” x 4”
Gloss White
2-Sided Aluminum



Scalloped Oval Ornament

3” x 4”
Gloss White
2-Sided Aluminum



Wavy Rectangle Ornament

2.83” x 4”
Gloss White
2-Sided Aluminum

Boost your business with a CO_2 laser engraving machine

How CO_2 laser engraving can add value to products & provide unique gifting solutions

By Amy Harris

Today, companies are looking for new ways to grow their products and profits. They want to do this without spending a lot of money. The best way to get more customers in your shop is to improve the value of your service.

Ways to increase value with laser engraving

Laser engraving has revolutionized personalization and product enhancement, offering a precise and permanent way to add value to a wide range of items. Whether you're a business looking to boost your brand or an individual seeking unique gifts, laser engraving provides a versatile solution. Here are some key ways to increase value with laser technology.

1. Personalization & customization

- Unique gifts: Transform ordinary items like jewelry, mugs, or wooden keepsakes into cherished gifts by adding names, dates, or special messages.
- Corporate branding: Engrave logos, slogans, or employee names on promotional products, awards, or office supplies to enhance brand recognition and create a professional image.
- Custom designs: Offer customers the ability to create their own designs or artwork for engraving, providing a truly bespoke product.

2. Enhancing product aesthetics & functionality

- Improved aesthetics: Laser engraving can transform plain products into visually appealing items with decorative patterns, textures, or personalized touches.
- Increased perceived value: Adding a unique and permanent engraving can significantly increase the perceived value of a product, allowing for higher pricing and improved profit margins.
- Functional enhancements: Laser engraving can be used to add functional elements such as serial numbers, barcodes, or measurement scales to products, improving traceability and usability.

3. Industrial & business applications

- Product identification: Engrave serial numbers or barcodes for inventory control and product tracking.
- Signage and displays: Create professional and eye-catching signage, nameplates, and displays for businesses or events.
- Industrial marking: Laser engraving can be used for the precise marking of parts and components in various industries.

The versatility & accessibility of CO_2 laser machines

Affordable desktop laser engraving machines have been around since 1988. Traditionally, laser machines have been used in the awards and engraving market, but over time an increasing number of industries have been discovering the value that a laser system can add to their shops. From furniture makers to plastic fabricators to tool manufacturers, the versatility of a laser system allows companies in numerous fields a low-cost alternative to the large, expensive mechanical engravers of the past.

The appeal of desktop laser engravers lies not only in their versatility but also in their accessibility. Traditionally, achieving similar results required large, expensive mechanical engravers, often representing a substantial investment for smaller businesses. These older machines often required specialized training and dedicated space. In contrast, today's desktop laser systems offer a low-cost alternative, allowing companies in numerous fields, from small workshops to large manufacturing facilities, to bring engraving capabilities in-house. This eliminates the need for outsourcing, reducing lead times and providing greater control over the production process. The compact footprint of these machines also makes them ideal for smaller workspaces, further broadening their appeal and accessibility across various industries. This shift has democratized access to precision engraving, empowering businesses of all sizes to enhance their products and services with engraving and cutting machines.

A wide range of materials

One of the reasons that laser machines have become so popular is their ability to work with a very wide variety of materials. CO_2 laser machines are used to engrave and cut acrylic, wood, plastic, glass, rubber, leather, fabric, matte board, stainless steel, and melamine, but that is just the start.

Expand your product line

A laser system can add the ability to create signage from marble, stone, wood, plastic, acrylic, glass, ceramics, and fabrics. You can also increase your product line with architectural signage, picture frames, awards, plaques,

trophy plates, corporate promotions, decorative tiles, point-of-purchase displays, advertising specialties, and much more. When you combine the list of materials you can work with, and add in all the possible projects that you can complete with those materials, the possibilities are endless!



Stunning graphic images

Another factor contributing to the popularity of CO_2 lasers is their ability to produce stunning graphic images. From clipart to scanned images, a laser can use virtually any artwork to create custom graphic designs that look great on the materials listed above. The learning curve for laser engraving in the sign market is amazingly short. The laser works like a printer — what you set up on your computer screen is what you are going to engrave on your product. The longest portion of the learning curve is learning graphic software, such as CorelDRAW or many of the other Windows-based graphics packages. Once you know that, you can quickly master the laser system. Many Epilog customers that are already operating graphics software start producing revenue within hours of receiving their laser.

High profit margins

Personalization of products is definitely a profitable addition to your business. Laser-engraved products are perceived as high-value products and can be priced accordingly. Since the perceived value is high, but the cost of production is relatively low, the profit margins on lasered products are typically high. Because of this, people just getting started in the laser business have questions about pricing, but there are a couple of easy ways to establish pricing. One of the most popular is to determine how long the job will take and then decide how much they want to charge for machine time. An example of this is as follows: Your customer wants 50 pieces of 8' X 10' wooden door signs, and each sign is going to take you 30 minutes to engrave. This means that you have 25 hours of engraving to do. Many people know what their machine time is worth. In other words, they know that they want to charge $60 per hour of engraving plus materials. For this job, you have 25 hours of engraving multiplied by $60 per hour, and that means that you want to quote $1,500 plus materials for this job. In the corporate market, this is very reasonable.

Determining your pricing

The tough part of this equation is how you know you want $60 per hour for machine time. You can consider these factors in determining what to charge per hour.

- How much are you paying your employee to do the engraving?
- How much rent does it cost to keep the machine in your building?
- How much does your overhead, like utilities, cost?
- How much profit do you need to make?

You can come close to a realistic number by considering these factors. The number will vary a lot from region to region. Some engraving companies located in high-value markets of the country will charge between $200 and $250 per hour, but on average, engravers charge between $50 and $100 per hour.

Return on investment

The return on investment depends on how much you are running the laser. Epilog has one customer who paid for their system with the first job they ran! That is rare, of course, but the possibility is definitely there, especially with the internet making it possible to expand nationally, even offering just a few specialized products. The most important factor that will affect how quickly you can earn back the money you spend on the laser is the speed of engraving. A laser that can run at 120" per second (with excellent engraving quality) will allow you to run twice as many jobs as one running at only 60" per second. But remember to compare the quality and speed!

Grow your business with a CO_2 laser

The sign industry is one of the quickest-growing markets for acquiring laser technology. In a downturn in the economy, it is important that you continue to increase the value of the products you are able to offer to your clients. Expanding your capabilities with a laser has never been more affordable, nor have you been able to reach so many potential customers. Take the next step in growing your business — explore the endless possibilities a CO_2 laser system can bring to your product line and profitability. **GP**



Amy Harris is a marketing communications specialist at Epilog Laser with more than 18 years of experience. She writes about laser engraving applications, industry trends, and the creative ways businesses and makers use laser technology to bring their ideas to life..

Beyond visibility:

How signage builds trust & attracts business

By Kelly Mattingly

What is your signage

telling consumers about your business? Look closely, and you'll probably see a lot more than simple facts like the name. A sign doesn't just tell people *where* you are; it also tells them *who* you are and whether they can trust you to do business with you. It goes deeper than just telling the consumer you sell what they need at the price they want; are you the business they should choose above all your competitors?

The significant role signage plays in affecting consumer behavior was starkly revealed in Signarama's 2026 Consumer Signage Survey, conducted by The Harris Poll. Of more than 2,000 U.S. adults surveyed, 84% said signage affects their decision to purchase from a business; 39% said they've entered a business just because of its sign. And a staggering 90% said signage impacts whether they view a business as professional and high-quality.

At the same time, 75% said chaotic, hard-to-read signs make a business less credible, and 79% said too many signs create confusion for the consumer.

The high numbers were eye-opening, but only backed up what we've known for a long time: signage is a 24/7 marketing tool that builds brand recognition, creates a strong first impression, communicates professionalism, and helps customers navigate your space. Its influence begins before someone even decides to step through your door.



Images courtesy of Signarama

What's your sign really saying?

Consumers naturally make quick judgments based on what they see, and signage is no exception. Faded vinyl, peeling graphics, burned-out LEDs, crooked letters, outdated branding, or a damaged sign can unintentionally communicate that the business doesn't pay attention to details. On the other hand, when signage is clean, professional, and well-designed, it's a strong indicator that the business is established, takes pride in its appearance, and pays attention to details.

Placement is just as important. You can have a beautiful sign, but if it's too small, obstructed, poorly lit, or positioned where drivers don't have enough time to read it, it isn't doing its job.

Building trust was an essential outcome for one of our customers, a local church. Their goal went beyond simply adding signs. From the moment anyone arrived, church leaders wanted the space to better communicate who they are, what they believe, and the programs they offer.

For a church, signage is especially important because, in addition to members who know the building well, there are first-time visitors who may be walking in without knowing where to go or what to expect. The signage has to make the space feel welcoming and intentional to all, while also strengthening the church's identity.

To help carry that experience throughout the property, we created program logos on the exterior to create





visibility and help identify different areas. Their mission statement was displayed prominently inside, and interior wall vinyl and graphics reinforced their message and branding throughout the facility.

What I loved about this project was that the signage wasn't just decoration. Each piece had a purpose. The exterior signage created recognition, while the interior graphics helped tell their story and reinforce their mission.

It is a great example of how signage can support a much bigger goal. When it is done thoughtfully, it can help an organization communicate who they are, create a better experience for the people walking through their doors, and make their brand and mission feel consistent throughout the entire space.

Signs of effective communication

Our church client understood that visibility is important, but a sign also needs to give people a reason to take the next step. You only have a few seconds to get someone's attention, especially when they are driving by, so the message needs to be clear, easy to read, and memorable.

Placement and size are also incredibly important. We sometimes have customers who want to make a sign smaller to save money, but if no one can read it from the road, it isn't accomplishing its purpose and is a waste of money.

Consistency with the rest of the brand experience is extremely important because every interaction a customer has with your business should feel like it comes from the same brand. Your signage, website, vehicles, social media, printed materials, and even the experience inside your business should all work together.

The same is true when businesses have multiple locations or vehicles. Consistent colors, logos, fonts, and messaging help people recognize your company wherever they see it. That recognition builds familiarity over time, and familiarity helps build trust.



From order taker to consultant

As teams adopt this more holistic approach, the role of a sign professional has become much more consultative. Our job isn't simply to take an order and produce whatever sign a customer initially asks for. We need to understand what the customers are trying to accomplish and then help them find the best solution.

When a customer comes in and says, "I need a sign," that should be the beginning of a conversation – a collaboration. We should be asking lots of questions: Who's the target? Where will people see the sign? How quickly do they need to understand the message? What does the rest of your branding look like? What experience do you want someone to have when they arrive at your business?

Go beyond asking about price; the better question is "What do you need this signage to accomplish?" Is the customer trying to attract







more customers, increase brand awareness, make their location easier to find, promote a specific product or service, or create a more professional experience for their customers?

Sometimes, the best solution is different from what the customer originally had in mind. That is where our experience becomes valuable. We can recommend the right size, materials, placement, lighting, and type of signage based on their goals, budget, and location.

For larger projects, look at the entire customer experience — from the exterior building signage and parking lot to wayfinding, windows, walls, ADA signs, and interior branding. Everything should work together.

The sign team should view themselves as experts and trusted resources for customers. When we understand the bigger picture, we can help a business make a smarter investment and create signage that actually supports what they are trying to accomplish.

3 rules of effective signage

I encourage business owners to think about signage the same way they think about any other marketing investment. The difference is that a well-made sign can work for your business 24 hours a day, seven days a week, for years.

Here are three basic rules to guide your customers:

- **Make a strong first impression:** A customers' first decision is whether they should even enter your business, so your sign should look professional, current, and well-maintained. Keep text and graphics simple and clean; don't try to put everything on one sign.
- **Make it easy for people to find you and do business with you:** Customers shouldn't have to search for your entrance, wonder where to park, or struggle to figure out where to go once they're inside. Exterior signs, directional signs, window graphics, and interior wayfinding should all work together to create a better customer experience.
- **Don't treat signage as something you purchase once and forget about:** Your business changes, your brand changes, and your customers' needs change. Look at your signage regularly and ask whether it is still helping you accomplish your business goals. And don't wait until signage is in really bad condition before doing something about it.

I encourage customers to look at their signage through customers' eyes: Drive past your own building and walk through the front door. Is the business easy to find? Can you read the sign quickly? Does everything look clean and professional? Does the signage represent the quality of the product or service provided?

Protecting your investment

Your signage shouldn't feel separate from your marketing — it is part of your marketing. The goal is for someone to see your sign, vehicle, website, or social media and immediately know it's your company. When everything works together, you create a much stronger and more memorable brand.

Great signage doesn't just get noticed — it encourages action. Make sure the impression it is creating is the one you want customers to have. **GP**



Kelly Mattingly is the owner of Signarama San Antonio NW and Downtown, where she is highly focused on customer relationships, community impact, and empowering women in the signage industry. She is passionate about giving back to the communities she serves, supports local nonprofits, and serves on the Board of Directors for the Greater Boerne Chamber of Commerce, helping support and strengthen the local business community throughout Boerne and the Texas Hill Country.

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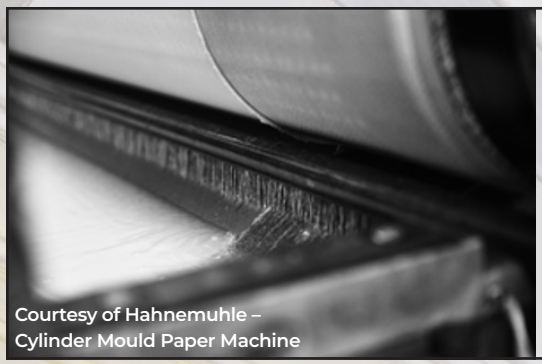
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Courtesy of Hahnemuhle – Cylinder Mould Paper Machine

Canvas, fine art & photo papers

Matching the media to the project

By Andy Everding

Spend any time around wide-format printing and you'll notice the printer gets most of the attention. Ink sets, pass modes, and print speeds dominate the conversation. But ask any photographer or artist who sells their work, and they'll tell you the paper is where a print really comes to life.

The same file can look completely different on a glossy photo paper, a textured cotton rag, and a stretched canvas. Each has its own feel, strengths, and ideal uses. Our team has been helping printers, photographers, and artists choose media since 1998, and the question we hear most isn't "Which printer?" It's "Which paper should I use for this?"

Here's a practical look at the three big categories, what each does best, and how to match the right media to the project in front of you.

Photo papers: Color, contrast & punch

Photo papers are built to deliver the deepest blacks and the most saturated color your printer can produce. Typically printed on an aqueous (water based) inkjet printers, they use Photo Black ink and are usually described by their surface finish.

- **Gloss** gives the highest Dmax (maximum black density) and the most vivid color. The tradeoff is glare, which makes it a tougher choice for framing behind glass or hanging under bright lights.
- **Luster, satin, and pearl** are semigloss finishes. They keep most of the color and contrast of gloss while cutting reflections and hiding fingerprints. Luster is the workhorse for portraits, weddings, and event photography for exactly that reason.
- **Baryta and fiber-based papers** recreate the look of traditional darkroom prints. A barium sulfate layer under the inkjet coating gives them rich blacks and a subtle sheen, making them a favorite for exhibition and black-and-white work.

Most photo papers use a resin-coated (RC) base, which keeps costs reasonable and the sheet flat. On glossy surfaces, watch for gloss differential, where lightly inked areas look duller than the rest of the print, and bronzing, a metallic sheen in dense shadows when viewed at an angle. A well-built profile with the right ink limits as well as using Epson's Gloss Optimizer or Canon's Chroma Optimizer can mitigate these common issues.

Fine art papers: Texture, feel & longevity

Fine art papers are what most people picture when they hear "giclée." They're typically matte, printed with aqueous inkjet printers using Matte Black ink, and made to look and feel like a traditional art paper. Brands like Hahnemühle, Canson Infinity, Moab, and Innova, along with Epson's and Canon's own lines, have built their reputations here.

A few terms help sort through the options:

- **Fiber content:** 100% cotton "rag" papers are the premium choice for archival work, with a soft hand-feel and excellent longevity. Alpha cellulose (purified wood pulp) papers cost less and still perform well. Blends sit in between.
- **Hot press vs. cold press:** Hot press papers are smooth, which suits fine detail, illustration, and photography. Cold press papers carry a visible texture that complements watercolor and painterly reproductions.
- **Weight and caliper:** Weight is measured in GSM (grams per square meter). Caliper measures the paper's thickness. Heavier sheets in the 300 GSM range feel substantial in hand, which matters for prints that are sold unframed.
- **OBAs:** Optical brightening agents (OBAs) make whites look brighter, but they can fade over time and shift the paper's tone to a more natural white. For museum or archival



Courtesy of Moab: Entrada Rag Bright

work, many printers choose OBA-free papers that begin with a natural white point.
- **Mould-made and deckled edges:** Mould-made papers are formed more slowly, closer to handmade, and often come with a torn, deckled edge for a gallery look.

Matte papers won't hit the same Dmax as gloss, and that's by design. The softer contrast and absence of glare are part of their appeal.

Canvas: The gallery-wrap favorite

Canvas turns a print into a finished piece of decor, no frame or glass required. It's also one of the most profitable products a print shop can offer, from family portraits to fine art reproductions.

- **Poly-cotton blends** combine some of cotton's natural texture with the durability and lower cost of polyester, landing in the middle on price and performance.
- **100% polyester** canvas is bright, durable, and cost-effective, a solid choice for decor and high-volume work.
- **100% cotton** canvas has the natural look and feel artists expect for reproductions of original paintings.

Canvas comes in matte, satin, or gloss finishes. The weave style and orientation give each canvas its unique texture pattern. Matte canvas suits artwork and a traditional look. Satin and gloss canvas add pop for photographic images.

Most aqueous canvas prints should be coated with a liquid laminate or spray varnish. Coating protects against UV, moisture, and scuffs, and it helps prevent cracking when the canvas is stretched around the bars. Plan for the wrap, too: either leave extra image on the edges or mirror the edges in your software.

Shops producing canvas at volume often look beyond aqueous printers. Solvent printers like Epson's SureColor Solvent series and HP's Latex printers provide durable canvas output that holds up to stretching without lamination. Eliminating the messy and costly lamination step allows volume canvas producers to reduce costs and speed up delivery times.

Matching the project to the paper

When a customer asks what to print on, we start with three questions:

1. **What am I printing?** A photograph (portrait, landscape, or black and white) or artwork (illustration, watercolor, or oil painting)?
2. **What surface look do I want?** Matte or glossy? Smooth or textured?
3. **Where will it be displayed?** A gallery, a museum, a business, or a home?

The answers usually point to a clear starting place:

Project	Best fit	Why
Portraits, weddings, events	Luster or satin photo paper	Strong color, low glare, handles fingerprints
Vivid landscapes, commercial photo	Gloss photo paper	Highest Dmax and saturation
Exhibition black and white	Baryta or fiber-based paper	Deep blacks, darkroom look
Detailed illustration, fine art photo	Smooth (hot press) cotton rag	Fine detail, archival, no glare
Watercolor and painting reproductions	Textured (cold press) fine art paper	Texture echoes the original
Museum and archival collections	OBA-free 100% cotton rag paper	Most stable whites over time
Wall decor, gifts, volume orders	100% Polyester canvas or Poly-cotton blend canvas	Durable and cost-effective
Oil and acrylic reproductions	100% cotton canvas, matte, varnished	Authentic look of the original



Courtesy of Epson: Fine Art Papers & Canvas

Test before you commit

A chart can narrow the field, but nothing replaces seeing your own images on the paper. Grab swatch books from the major brands, order sample packs of your top two or three candidates, and then print the same image on each and compare them side by side under the light where they'll hang. For the most accurate results, use the manufacturer's ICC profile or build a custom one for your printer

While you're testing, keep the full cost of a print in mind. Media cost per square foot is only one piece. Fiber content, weight, OBAs, and brand reputation all affect paper and canvas price. But beyond the paper, you have the costs for ink, bars or moulding, labor, coating, shipping, and more. All these add up quickly to make the cost of the paper only a fraction of the full product price. A pricier paper that raises the prestige and sale price of your prints may be worth your investment.

The printer will always get the spotlight in our industry. But understanding what sets these media apart helps you recommend the right paper, price your work with confidence, and avoid costly reprints. Choose well, and the paper will bring the print to life. GP



Andy Everding is a seasoned leader in digital imaging. Over 15 years at IT Supplies, he's helped print businesses of every kind — photo labs, sign shops, apparel decorators, and fulfillment operations — find the right printing solutions. He co-hosts The Extended Gamut Podcast and is a frequent contributor and host on the IT Supplies YouTube channel — passionate about elevating craft through cutting-edge technology.

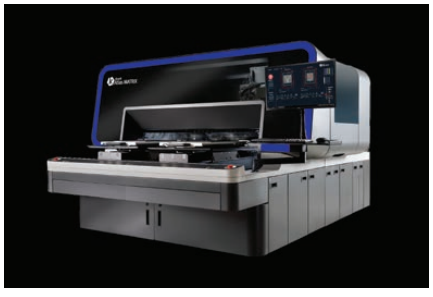
PRODUCT PICKS

Nearly 850 exhibitors took part in PRINTING United 2026, held Sept. 23-25 at the Las Vegas Convention Center. While space prohibits mentioning every product that caught our attention, what follows is a brief description of just some of the items the GRAPHICS PRO staff stopped to experience first-hand at the show.



Bella+Canvas 4741 unisex polo sweatshirt

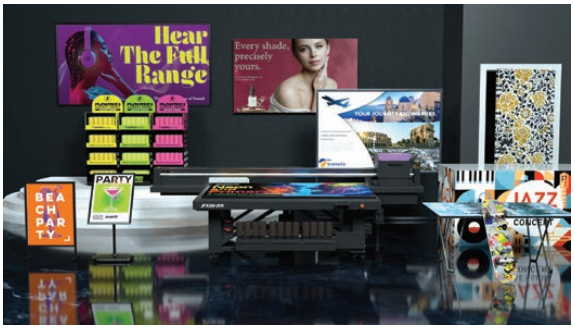
The Bella+Canvas 4741 is one of two new fleece styles the brand released alongside a half-zip pullover. It is made from 10-ounce, three-end fleece with a polo neckline and ribbed cuffs and waistband. The sweatshirt is side seamed with a tearaway label. A structured fit and horn buttons give the relaxed silhouette a refined heritage finish. Colors include black, asphalt, dust, and vintage heather grey, in sizes XS through 3XL. **bellacanvas.com**



Kornit Atlas MATRIX

Kornit's Atlas MATRIX is a digital apparel production system designed to handle cotton, polyester, and blended fabrics on one platform. The system supports direct printing using Karbon Shield technology and transfer on film using Karbon Transfer. The Matrix builds on Kornit's Atlas platform, and some installed Max Plus and Max Poly systems can be upgraded to the new specification. **kornit.com**

Mimaki JFX220-2515



Mimaki's JFX220-2515 is a UV-LED flatbed printer in the company's mid-range. Its 98" X 59" bed fits a full 4' X 8' board with room for smaller pre-cut pieces, and media clearance reaches 4". The printer's Anchor Technology consists of a vacuum system that applies suction only where media is present, which cuts down the masking and prep that usually precede a flatbed job. It is designed to hold warped substrates such as corrugated board and acrylic sheet. Four staggered piezo heads in a dual-CMYK arrangement deliver up to 226 square feet per hour in four-color mode. New fluorescent pink and yellow inks widen the color range, and texture tools support 2.5D, emboss and Braille effects. RasterLink8, Mimaki's updated RIP software, drives the workflow, and applications span signage, point-of-purchase displays, building materials and packaging. **mimaki.com**



STAHLS' Hotronix Carousel Heat Press

The Hotronix Carousel is a six-station rotary heat press from STAHLS', built for high-volume decorators, contract printers and fulfillment operations. The press has three independent heat zones, an automated loading system, and an optional automated transfer peeler. It runs on an 11 kW heating system with 240-volt, three-phase power. The press is designed so that one operator can produce 300 to 400 garments an hour, more than double the capacity of STAHLS' dual-station presses. The press also works with direct-to-film, screen-printed and hybrid transfers. The press itself measures about 88.6" square and weighs roughly 1,874 pounds. Installation is included. **stahls.com**



Canon Colorado XL

Canon's Colorado XL-series extends UVgel technology to the 3.2-meter graphics market with a platform 3.4 meters wide. It includes the Colorado XL7R roll-to-roll printer and the XL7H hybrid, which adds a flatbed table for rigid media. Both use the UVgel 860 gel set, formulated for rigid and flexible applications, plus new UVgel 850 printheads. The carriage uses DynamicMotion Control for accuracy on challenging media, and UVgel FullBeam Curing is new to the series. The TRIdrive vacuum belt uses three rollers and multiple vacuum zones to reduce wrinkling and skewing, and it detects and corrects media position. Canon rates speed at up to 211 square meters per hour in express mode. Options carried over from the Colorado M-series include UVgel white. **usa.canon.com**

PRODUCT PICKS



Epson SureColor F370 & Sublimation Primer for Cotton

Epson's SureColor F370 is a compact, $999, dye-sublimation printer for makers, small businesses, schools, and growing customization shops. It supports 13" X 19" media, and its transfer paper modes are tuned for crisp, vibrant results on fabrics and hard goods. Alongside the printer, Epson introduced a Sublimation Primer for cotton, a liquid solution that enables dye-sublimation on white and light-colored cotton garments. The primer extends the process to other natural fabrics. Sublimation has traditionally depended on polyester or polyester-coated surfaces, so the primer widens the goods a shop can offer without adopting a separate process such as DTG or DTF. **epson.com**



Next Level Apparel's fall lineup

Next Level Apparel's fall collection is built around three silhouettes: heavyweight, cropped, and long sleeve. New this season are the 9607 Heavyweight Hooded Zip and a garment-dye collection that includes the 1818GD, which has a softer, washed look. The 7610 Women's Heavyweight Boxy Tee (pictured) and 1580 Women's Ideal Crop Tee cover cropped fits, while the 8212 Women's Ideal Thermal Long Sleeve and 6221 CVC Long Sleeve Hoodie handle layering. The heavyweight tee, style 7200, uses 10-ounce combed ring-spun cotton with an oversize fit and dropped shoulders, in colors such as Bone, Tan, Midnight Navy, and Shiitake. Next Level's fall colors favor warm browns, blue-greens, olive, berry reds, and a soft off-white. **nextlevelapparel.com**



Brother DTRX

The Brother DTRX is a 32" roll-to-roll direct-to-film system that combines printing, powder application, and built-in curing in one integrated line. Brother calls it its flagship all-in-one DTF system for high-volume production. The printer uses four piezo printheads, two for CMYK and two for white, and accepts media up to 800 mm wide with a 780 mm print width. Production speed is rated at up to 15 square meters per hour. Maximum resolution is 600 X 1200 dpi, the water-based DTF ink comes in 700 ml pouches, and the powder shaker has a large reservoir and uses infrared curing. An industrial maintenance station with automatic ink circulation and a wet wiper cleaner is meant to reduce manual maintenance and downtime. **brother-usa.com**



Roland DG TrueVis AG-640

The Roland DG TrueVis AG-640 is a 64" latex printer/cutter that the company calls the first latex printer with integrated cutting. It uses newly developed TA-2 water-based latex inks and the latest piezo printheads for precise dot control. The ink set goes beyond standard process colors to include orange, red and a high-density white. Target applications include wallcoverings, vehicle graphics, and window displays. **rolanddga.com**



LAT Apparel 6928 Unisex Mock Neck Fleece

The LAT Apparel 6928 is a unisex mock neck fleece sweatshirt made from 7.4-ounce, three-end fleece in a 60/40 blend of combed ring-spun cotton and polyester. It has a structured rib mock neck collar with rib cuffs and a rib bottom band, plus jersey back neck tape, a locker patch, drop shoulders, side-seam construction, double-needle topstitching and an EasyTear label. The fabric is preshrunk. Available in sizes small to 3XL. Colors include basil, black, charcoal, mauvelous, natural, navy, and red. **latapparel.com**



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Every holiday order needs a place to go

Prepare your shop to keep its promises

By Aaron Montgomery

It's a Tuesday afternoon in a print shop in November. The presses are running, the shipping table is full, and your team has a plan for the rest of the week. Then a customer calls. They need 75 hoodies for their company party next Friday. It is a good order from a good customer. You hear yourself say, "We can probably make that work."

You hang up and realize nobody asked which hoodies, whether the artwork is ready, or where those 75 pieces will fit into your already busy schedule. The person running production does not know about the promise yet. The customer thinks Friday is settled. Your team thinks the schedule is settled. You are the only one who knows both things cannot be true without a change.

I have spent a lot of years around decorators and small business owners. Most of the holiday trouble I see starts with an understandable desire to help. We want to solve the problem. We want the sale. And we have pulled off enough last-minute miracles that we start believing there is always room for one more. Then the miracles begin showing up three at a time.

Last month, I wrote about preparing for the holiday rush before it arrives. Forecast the work, check what your shop can really produce, talk to suppliers, and set deadlines. That work matters. Now November is here, and the orders are coming in. The question becomes more immediate: How do you keep the promises you have already made when another opportunity walks through the door?

Plant a better question before you say yes

Every order takes a place on your schedule, even if you never write it there. Also, even if you don't have an office schedule, it takes up time in your day. It uses time for artwork, ordering blanks, printing or decorating, checking the finished product, packing, and delivery. A change to one job can reach into several others.

The 75-hoodie order might fit beautifully. Maybe this customer reorders the same garment every year, the art is approved, and you already know the decoration method. Or perhaps the customer wants a color that is out of stock, three logo options, individual names, and a guarantee that everything will be at the party by noon. Those are two very different jobs hiding behind the same quantity of hoodies on a quote.

I talked about this at PRINTING United when I asked shop owners to think about the hidden cost of each yes. A $1,000 job that requires new sourcing, extra design work, and several interruptions can leave less profit than a $500 repeat job that flows through a process you and your team are good at producing.

Before you promise a date, ask: Is this job ready? Does it fit what we do well? If we accept it, what has to move? You can still say yes to a challenging order. Make it an informed yes, with a price and delivery date that reflect the actual work.

Prepare the shop to keep its promises

Start by deciding when an order is ready to enter production. For the hoodie job, that might mean the customer has approved the art, confirmed sizes and quantities, selected an available garment, paid the required deposit, and agreed to the delivery method. Until then, the job is waiting for information. For example, maybe the customer said they want blue hoodies. A quick search on Sanmar's website for "blue hoodie" returned 308 products. Each one of them is very unique. So you ask the salesperson to be more specific, and they say, "just a dark blue hoodie." So you put a dark blue hoodie in front of them, and the salesperson says that is great. Now ask them to sign off on that, verifying it is what the customer wants. All of a sudden, they go make sure the right hoodie is selected. But look at all the time in that back-and-forth, and if



your production is waiting for that information.

Or how about the times when customers say, "Go ahead and put me on the schedule. I will send the sizes tomorrow." Tomorrow may become Thursday. Meanwhile, you may turn away a job you could have finished. Tell the customer what you need and when you need it to hold the requested date. If it arrives late, check the schedule again before renewing the promise. That is fair to the customer and to everyone already in line.

Give your team one place to see the day's commitments. A whiteboard, spreadsheet, or job management tool can all work. A job's stage tells you where it sits. During the holiday rush, add one useful detail to that view: the next decision each job needs. "Waiting for art approval by 2 p.m." tells the team more than "pending." "Blanks due Wednesday" gives someone a reason to follow up before Wednesday afternoon.

Then look at how much work is open at once. Picture a shop with 12 jobs started, blank shirts in three corners, proofs in two inboxes, and the one person who knows what belongs together out sick. Everybody looks busy, but very little is leaving the building. Finishing two ready jobs before opening four more can free space, clear questions, and give the team a win. Batch similar work when it makes sense, but do not let batching hold a promised job hostage.

Late changes need a clear path too. If that hoodie customer calls after approval to add six pieces and change two names, who decides whether it is possible? The person who answers the phone should not have to guess. Give one person the authority to check the blanks, artwork, production time, price, and delivery date. That person can offer the added pieces on a later date, quote a rush charge when there is genuine room, or say the current run is closed. A change is a new decision, not a tiny favor that magically happens between other jobs.

And one last thing that I believe is extremely important is communication. Build a short team check-in into each day. Ten minutes before production starts may be enough. Ask what must leave today, what is waiting on a customer or supplier, what changed since yesterday, and who will contact anyone affected. Keep the discussion about decisions. Your team does not need a 45-minute meeting about every order.

Making one honest promise today

So back to that call on Tuesday about the 75 hoodies. I would encourage you to have a new anchor statement or way to handle those requests. Instead of "We can probably make that work," you could say, "I would love to help with the party. Let me confirm the garment, artwork, sizes, and our production space. We will give you a firm answer by 3 p.m."

That short pause gives you room to do your job well. Check with the team. Find out whether the desired hoodies can arrive. See what is already committed for next week. If the order fits, offer a clear approval deadline and price. If you have room for 50 by Friday and the other 25 on Monday, say that. If the only way to meet the date is to delay a job you already promised, weigh that cost before you agree. A customer may choose an alternate garment, a smaller first batch, pickup instead of shipping, or a later delivery. Give them a real choice.

Make one change in your shop today: Pick the order most likely to cause a surprise and ask what decision is missing. Is the artwork approved? Are the blanks actually available? Does the person decorating it know the deadline? Is someone supposed to update the customer? Resolve that one loose end before it turns into tomorrow's emergency.

Then write a simple rule your team can use for the next new order. It might be, "We confirm product, art, quantity, and schedule before promising a delivery date." Put it where orders come in and use it yourself. If you make an exception, tell the team what changed and what work takes its place.

A clear yes and an honest no, or a better option that you can deliver with confidence is the best customer service. The holiday rush may fill the calendar. You still get to decide what goes on it, what each promise requires, and how your people will carry it through. **GP**



Aaron Montgomery is a business facilitator and author of "The FUNdamentals of Business Success" and "The Gratitude Shift: A Simple Path to Find More Peace and Joy." With nearly 30 years of experience guiding small businesses, Montgomery helps people fall back in love with what they do each day. For more visit consultaaron.com.



Swapping faces

Digital surgery creates the perfect expression from multiple images

By Stephen Romaniello

Lustre Art Group – stock.adobe.com

Sometimes the photo

just isn't right. Perhaps it's the wrong expression or the subject blinked at exactly the wrong moment, or the smile looks more like a grimace. Even worse, an important person showed up too late to be part of the group photo. These are common occurrences that could spell catastrophe for a photographer or digital artist with a critical deadline. The good news is that with a few precautions and a little digital magic, these potential disasters can be corrected. This article will take you through the process of face swapping and body inserting. No, this is not a creepy science fiction B movie; this is about using sophisticated editing techniques for seamless compositing of image content from multiple sources.

Shotgun

The process of compositing starts at the photo shoot. Professional photographers shoot dozens of photos of the same subject. Especially for portraits and group shots. Shooting multiple shots is sometimes referred to as the "shotgun technique" and practically guarantees success. If the "money shot" doesn't happen in the first dozen, it's more likely to happen in the second or third dozen **(Fig. 1)**. Even if there is no perfect shot, elements from multiple images can be combined to produce a perfect composite. Think of it like shooting a shotgun. The more pellets that fly out of the barrel, the more likely you are to hit your target.

When you take the photograph, work the scene. Engage with the subjects and try to make eye contact. Why? Because, if you engage with your subject, you can get them to relax. And if they are relaxed, the more likely you are to capture a great image. Sometimes a subtle difference between what is happening in the background, the eye contact of a person, or a hand gesture is what makes the photograph.

Swapping features

Sometimes it comes down to a simple replacement of a sad or open mouth or closed eyes with open ones as in the case of **(Fig. 2)**. This photo was taken during a portrait session, and fortunately, the photographer snapped dozens more, because it was later needed for publication in a newsletter with a tight deadline. Ultimately, three photos were combined to produce the perfect portrait.

The source images were chosen because the features were good and the poses were similar to the destination image. The eyes and mouth are selected on each photo using the



Figure 1. If the "money shot" doesn't happen in the first dozen, it's more likely to happen in the second or third.

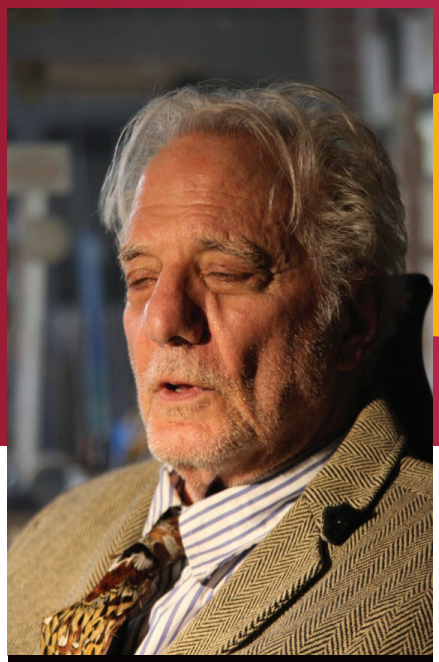


Figure 2. Sometimes it comes down to a simple replacement of a sad or open mouth or closed eyes with open ones.

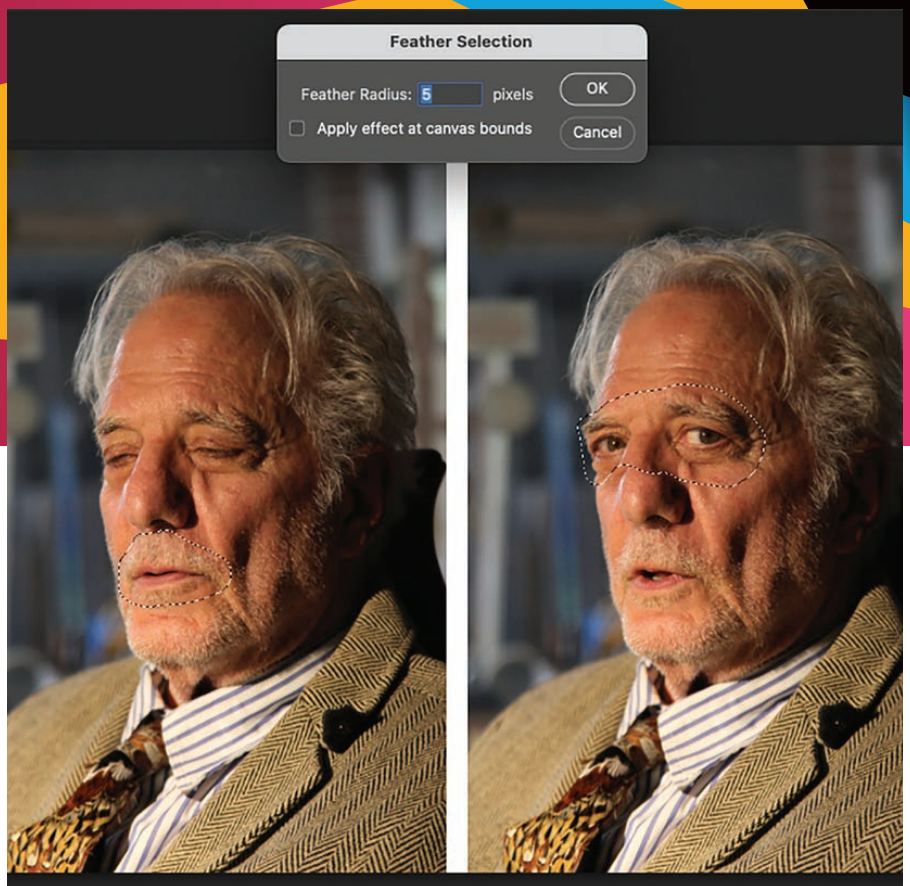


Figure 3. Use the lasso tool to encircle areas on the target image. Feather the selection so that it has a soft transition edge.

lasso tool, leaving some space around the areas including the eyebrows and the mustache — which can always be masked out if they are not needed. The selection marque is feathered (Select > Modify > Feather) in order to create a soft transition zone **(Fig. 3)**.

Eye-mouth coordination

Drag and drop the selected areas, on each source photo, one by one, to the destination document and roughly position them over the underlying eyes and mouth. They appear on separate layers which will be named. Reduce the opacity of the layers to 50% so that the underlying content can be seen to better position and scale them. They can be sized or slightly distorted, (Edit > Transform > Distort) so that can be perfectly aligned with the underlying content. After they are properly in place, increase the opacity to 100%.

Color adjustment

It's often necessary to perform a color adjustment to better match the color and tonality of the original **(Fig.4)**. Use a Hue/Saturation, Levels, or Curves adjustment layer to match the new layer content to the destination image. The two adjustment layers are "clipped" to the Eye layer and Mouth layers independently so that

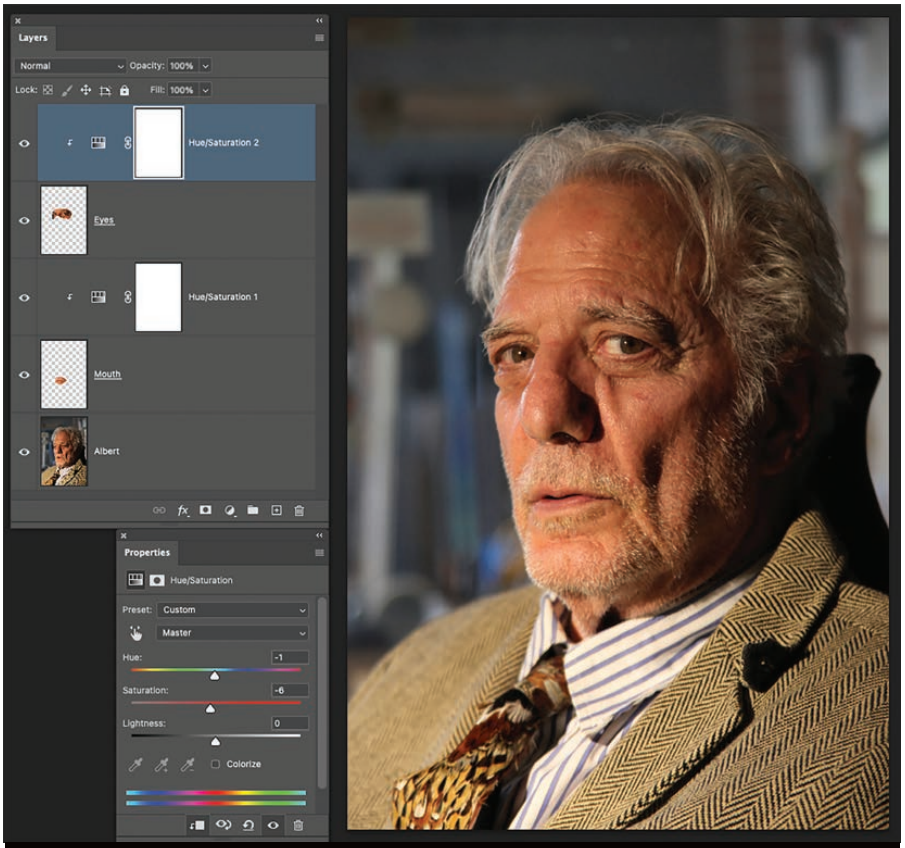


Figure 4. It's often necessary to perform a color adjustment to better match the color and tonality of the original.



Figure 5. The original group photo without the missing person.



Figure 6. The results of the second photo shoot, where the subject is standing in the location where he will be placed.



Figure 7. The new content layer with the missing person was dragged and dropped into the document and the new layer's opacity was reduced to 50% so that the figure can be sized and accurately placed.

they only affect the color of the layer immediately below them for more precise control. To Clip Layers, place the cursor between the layers in the Layers panel. Press Option (Mac) or Alt (Win) and click.

Missing persons

A group shot can present difficulties if an important individual, for one reason or other, cannot attend the initial photo shoot. They'll need to be inserted later, and that requires a separate photo shoot. If the initial group shot was taken outdoors, the rescheduled shot should be taken in the same location, at the same time of day, and under similar lighting conditions. If that is not practical, which it often isn't, care should be taken in using Photoshop's adjustment layers and filters to best match lighting conditions and tonal qualities of the original image.

Compositing an outdoor group has its own unique set of challenges. If you can decide where the missing person will be inserted beforehand, at the initial shoot, then you can plan to leave a space for them. More frequently, however, you don't have that luxury.

It's easier to place the missing



Figure 8. An accurate layer mask was traced to eliminate unwanted content. Finally, the new layer's opacity is increased to 100% to complete the composite.

individual in front of the group, but sometimes that can appear awkward. Closer to the back requires that you edit content by masking. Finding a simple background for your subject will make compositing easier.

The original photo without the missing person is shown in **(Fig. 5)**. You can see where the photographer left a space on the right to place him. The results of the second photo shoot **(Fig. 6)**, show where the subject is standing in the location where he will be placed. The work of compositing has been substantially simplified by shooting against a relatively simple background — the green door, the terrazzo tiles, and the white column. The new content layer with the missing person was dragged and dropped into the document and the new layer's opacity was reduced to 50% so that the figure can be sized and accurately placed **(Fig. 7)**. A carefully-made layer mask was traced to eliminate unwanted content. Finally, the new layer's opacity is increased to 100% to complete the composite **(Fig. 8)**.



Figure 9. Add a slight shadow with the burn tool to darken the areas that contact the ground.

Shadows

One of the most the most common mistakes when compositing an image is that the new content seems separate, does not look anchored to the ground, and appears as if it's been stuck to the original. An easy way to avoid this problem is to select enough of the background where the figure stands so that the natural shadow is included.

If you're unable to select the background and need to make a tighter selection of the figure, you can add a slight shadow with the burn tool to darken the areas that contact the ground **(Fig. 9)**. It's a quick fix, but it works to better anchor the new content to the image.

Compositing tips

- Take care when choosing content. Be sure that the light sources are similar in both images.
- Pay attention to the details when selecting content. Include everything that is relevant in your initial selection and then some. It's much easier to eliminate content by masking than it is to include elements that you neglected.
- Feather the edges of your selections for better transitions.
- Use a soft-edge brush on your layer masks and reduce the size and opacity of the brush to blend adjacent areas.
- Correct the color and tonality of the new content so that it perfectly matches the original image.

The techniques demonstrated here are standard practice for salvaging images. I'm sure you'll find them useful. Compositing can be a lifesaver and sooner or later every professional needs to accurately combine the content of two or more images. Of course, it's always better to get the "money shot" the first time, so shoot multiple images of the same subject. Even then, it may be necessary to composite elements from multiple sources. GP



Stephen Romaniello is an artist and educator who has taught graphics software for over thirty years. He is a certified instructor in several graphics and video applications and the author of numerous books and articles on creative image manipulation, illustration and media programs. Romaniello is the founder and CEO of GlobalEye Systems, a company that offers training and consulting in graphics software. He is also the founder of Fire Boy Productions, an art-book publishing company.



Andrey Popov – stock.adobe.com

How to put AI to work in your print business

Start with one problem worth solving

By Cole Lundstrom

Recently, I told someone on our team to "read the invoice because not everything needs to be AI." That might sound strange coming from someone who uses it constantly. But if the event time is already on the invoice, then open the invoice to find it. You do not need a robot to turn a simple question into a research project. There are, however, plenty of amazing time saving tasks the AI can accomplish for your shop.

At Merch Troop, we use AI to help with the work surrounding our live merchandise events. Quotes need to be built, customer conversations need follow-up, and the team needs the right information before showing up onsite. These are ordinary business problems. They are also good places to put AI to work.

Put the AI in the middle of everything, everywhere, all at once

Our AI assistant is named Rosie, and our team talks to her in Slack. Someone can ask about an upcoming event or request an estimate in the same place we already chat with each other. That matters. Another tool nobody remembers to open will not do much for your business.

Behind the conversation, Rosie is connecting to GoHighLevel, our customer management system. She checks the business inbox for quote requests, routes items internally, and posts a summary in Slack every two hours. She also pulls together information from meeting notes. This is a game changer for me personally. I simply record my Google meeting with everything I promise the client, and Rosie takes the transcription and makes payable estimates and notes for us. Our OpenClaw setup runs on a VPS, a rented computer in the cloud, so scheduled work does not depend on an open laptop.

You do not need to copy our setup. Start with Claude, Codex, or any assistant you already use. Give it a customer request and your business information, and see whether it is actually useful. I have found myself developing many separate tasks, or crons, as being far more successful than a master instruction for all tasks. So, for example, we have a unique cron for only creating a live printing estimate. The instructions are clear, under 500 words, and the AI has a structure to succeed with.

Give it a specific task not a loose idea

One of our useful workflows starts with a request in Slack and ends with an estimate draft in GoHighLevel. Rosie organizes the scope and prepares the estimate for review. The team can correct it before anything goes to the customer.

Think about the alternative: Somebody reads an email, pulls out the details, checks pricing, opens another program, and types everything again. If AI can help move that request into a usable draft, you have a better starting point for the sales conversation.

But you have to tell it how your business works. Give it your services, pricing rules, examples of good estimates, and the questions it should ask when something is missing. If you do not know your own pricing, AI is not going to magically make you profitable.

One of our estimate drafts priced nine hours when the request already included setup and teardown in seven. That is a real mistake, and a useful reminder. Read the work. Check quantities, labor, shipping, and what you actually promised. A confident answer can still be wrong.

The level of review should depend on what happens next. A summary or a draft is easy to check. Sending a price, making a promise to a customer, or publishing something deserves more care. Give those decisions a clear approval step. Connect only the information the workflow needs, and be clear about what the assistant is allowed to change.

Stop relying on someone remembering

Rosie also posts scheduled summaries and reminders in Slack. Those can bring an upcoming event or an unfinished follow-up back into the conversation. This is useful because the task is easy to describe: look for work


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that needs attention and put it in front of the person who can do something about it. Those reminders are only as current as the records behind them.

A simple first automation for a print shop could be a weekday review of open quotes. Tell the assistant where to look, which quotes count as needing attention, and what to produce. For example: find quotes with no customer reply for three business days, check for a newer conversation, and prepare a short follow-up draft for the salesperson.

Then decide where the result belongs. It could be a Slack message with a link to the quote, a task in your customer management system, or an email draft. Make one person responsible for reviewing it. Start with a handful of real jobs and check the results before putting it on a schedule.

Scheduling tells the system when to run. AI helps it interpret the request and prepare the response. You can combine those pieces gradually instead of trying to automate your entire business on Monday.

The connection needs testing too. We still check for email inquiries that have not made it into the CRM. An assistant looking only at the CRM will miss those. Agree on where the current information lives and check that the workflow can actually see it. Otherwise, you have automated an incomplete picture.

Get the owner out of every little question

Our team uses Rosie to pull together event details from the information available to her. A summary can show what is known and what still needs to be collected. That gives people a place to start without every question becoming a call to me.

A traditional shop could use the same idea for production handoffs. Have AI organize the approved garment details, decoration locations, artwork status, and deadline. Keep links to the original information so the team can check it. Missing details should come back as questions, not guesses.

If you are the only person who knows what is happening, you have made yourself into a very expensive filing cabinet. Getting that information into a useful form helps the business keep moving while you are doing something else.

Use the time to sell something

The business opportunity goes beyond clearing your inbox. At Merch Troop, customers are buying an experience for their guests. AI can help work through a brief, organize proposal ideas, and explain how a merchandise activation fits the event. You still choose the idea and make sure your team can deliver it.

For your shop, that might mean suggesting a better company apparel program or showing a fundraiser a few options that fit its budget. Give AI the real costs and constraints. A useful alternative gives you more to talk about than another discount.

We also use Rosie to prepare case-study drafts from completed event work and bring them to us for approval. The job is already done. Now its story can help the next customer understand what we offer. The same material could become a social post or a relevant example in a proposal. Review the facts and use photos you have permission to share.

Start with one problem worth solving

Pick something you repeat every week. Define what starts the work, what information it needs, what a good result looks like, and who checks it. Get that working before adding the next connection.

Measure the whole job, including the time spent correcting AI. Are quotes getting reviewed sooner? Are follow-ups happening? Are fewer details being lost? Those answers matter more than a big claim about hours saved.

Then, use the room you created. Call a past customer. Build a better proposal. Go after the kind of work you actually want. The goal is a healthier, more profitable business that depends a little less on you remembering everything.

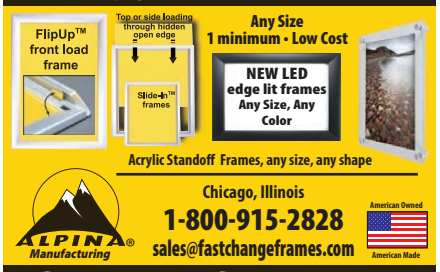
And when the answer is already on the invoice, you can still just read the invoice. **GP**



Cole Lundstrom is the founder of MerchTroop.com, specializing in live event apparel activations for brands and experiential marketing. With 16 years in the print industry, he's now launching PrintShopCRM.com, a workflow and automation platform built specifically for print shops to scale smarter and operate more profitably.

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Issue Date of Circulation Below: September 2026	Average No. of Copies Each Issue During Proceeding 12 Months	No. Copies of Single Issue Published Nearest to the Filing Date
Total Number of Copies (Net Press Run)	16,173	16,207
Paid/Requested Outside County Mail Subscriptions Stated on form 3541 (Include advertisers proof and exchange copies)	14,864	14,997
Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS®	0	0
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Non-Requested Copies Distributed Outside the Mail	114	67
Total Non-Requested Distribution	1,309	1,210
Total Distribution	16,173	16,207
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Total:	16,173	16,207
Percentage Paid and/or Requested Circulation	91.9%	92.5%
Electronic Copy Circulation		
Requested and Paid Electronic Copies	628	1,457
Total Requested and Paid Print Copies + Requested/Paid Electronic Copies	15,493	16,454
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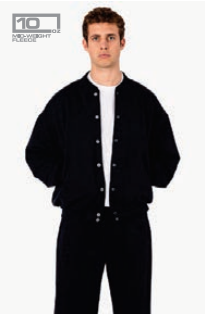
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S–XL



5455
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S–XL



TRF455
12 oz. Tri-Blend Fleece Track Jacket
XS–XL



TRF412
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