

# WhatTheyTh!nk

## Premium Commentary & Analysis

### Innovations in Wide-Format Inkjet Media

Continuing advances in inkjet-printable materials for higher-speed printing systems have been instrumental in the growth and expansion of wide-format graphics companies. After wide-format graphics producers merged with commercial printers, a slew of new materials are making printing more efficient, sustainable, and suitable for businesses with a mix of offset presses and narrow-format production digital presses and wide-format inkjet printers. Guest contributor Eileen Fritsch provides a round up.

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***By Eileen Fritsch***

Advancements in sign and display graphics media are easy to overlook amidst the hoopla about bigger, better, and wider digital printers with AI-driven software. But advances in inkjet-printable media can either open exciting opportunities to dazzle new customers and prospects or disrupt the market for your existing product lines.

Improvements in printable materials empower owners of wide-format printers to create new businesses, introduce new products, penetrate adjacent markets, and attract eco-conscious buyers.

The newest crop of digitally printable materials can help reduce costs by streamlining production and simplifying graphic installations. Cross-platform materials can make it easier to match the colors in promotional graphics whether they are printed on screen, offset, or flexo presses and fast narrow-format digital presses and wide-format inkjet printers.

This article highlights just a few environmentally friendly graphic media that print-service providers can use to grow their businesses.

At the 2025 PRINTING United Expo, advances seemed to focus on six key areas:

- Regulation-compliant vinyl
- Eco-friendly PVC-free alternatives to vinyl
- Matched media for narrow- and wide-format digital printers and offset presses.
- Improved adhesives for easier installations or use on rough surfaces.
- Recyclable rigid boards for short-term displays and events
- Engineered textiles for soft signage and art reproductions.

## Regulation-Compliant Vinyl

When the first wide-format color inkjet printers were introduced in the mid-1990s, screen printing companies already used solvent and UV-curable inks to print everything from bumper stickers and fleet markings to fine art canvas, ceramics, textiles, glassware, durable safety labels, and promotional products. As technologists envisioned the digital transformation of printing, they wanted to develop inks and materials to replicate what screen-printing companies could do.

Coated wide-format adhesive vinyls made it possible for users of aqueous inkjet printers to output graphics, labels, stickers that could then be mounted and laminated to foamboards, aluminum sign blanks, and other rigid materials.

Users of the first superwide inkjet printers and higher-speed electrographic printers approached ad agencies to suggest new forms of outdoor advertising such as wrapped buses, trucks, and cars.

Vinyl is still widely used for vehicles and other long-duration applications. But how vinyl is manufactured today is far different than in the 1990s. First-generation advertising vinyls were made with petroleum-based plasticizers (phthalates) for stretch and flexibility. Chlorine improved the durability and flame retardance of the vinyl. Unfortunately, plasticizers from discarded vinyl seeped into the soil and groundwater near landfills. Chlorine polluted the air during manufacturing or incineration.

Today, bio-based polymers made with renewable and biodegradable plant-based materials give material scientists options for making flexible, stretchable materials. And modern incinerators are engineered to keep harmful dioxins from being released into the atmosphere. Plus, PVC manufacturers can recover chlorine by-products from oil and gas refining and lock it in a non-reactive state for the useful life of the material.

According to Jay Kroll, director of Product Education at General Formulations, "Current film formulations are no longer produced with heavy metals, phthalates, and other 'bad actors.' Our PVC is all REACH and RoHS compliant, and nearly every product or ingredient we carry meets California's Prop 65 standards."



*Two laminating films in General Formulations' Economy Solutions collection of adhesive vinyls can now be printed. Use the laminating film to add a decorated protective layer of graphics to a vinyl print. Or skip the extra step of laminating short-term promotional graphics for flat surfaces by printing directly on either GF162 clear vinyl printable laminating film (above) or the GF160 white vinyl laminating film.*



*Because architects and designers still need durable vinyl wallcoverings for high-traffic areas of commercial environments, DreamScope offers a collection of blank white textured vinyl wallcoverings that can be used to digitally print long-lasting custom graphics for branded interiors or permanent exhibits*

## Eco-Friendly PVC-Free Alternatives

A variety of wide-format PVC-free adhesive materials are now available primarily for flat surfaces and applications that don't require long-term durability and extreme conformability.

Some PVC-free materials help architects and interior designers attain the LEED (Leadership in Energy and Environmental Design) certification for designing, building and operation environmentally responsible building.





*DreamScape's Novalon PVC-free wallcovering is the newest of DreamScape's four lines of PVC-free wallcoverings. Novalon contains 15% post-consumer recycled materials and offers high durability and ease of installation like PVC wallcoverings.*

For graphics, PVC-free flexible materials such as polyethylene (PET), polypropylene (PP), and polyolefin are lighter than PVC and require less energy to produce and ship. Some may be easier to recycle.

At PRINTING United Expo, Digidelta showed their BIOND collections of wide-format self-adhesive films for printing, décor, and surface protection. BIOND films are manufactured with 85% bio-based polymers and solvent-free water-based or UV-cured adhesives. The materials enable print-service providers to reduce the carbon footprint of producing retail graphics, wraps, and outdoor advertising.



*Digidelta's BIOND range of 85% bio-based self-adhesive films for digital printing are crafted from vegetable-based products and can help large-format graphics producers evolve and diversify their offerings. The wrapped train car helps demonstrate that BIOND products perform like traditional PVC films. (Photo: Digidelta)*

Ultraflex, a long-time manufacturer of superwide vinyl banner and billboard materials, introduced Evolve PE Eclipse Pro, a coated polyethylene (PE) inkjet-printable substrate for making building wraps, billboards, banners, and indoor display graphics.





*Ultraflex, a long-time manufacturer of superwide vinyl banner and billboard materials, introduced Evolve PE Eclipse Pro, a coated polyethylene (PE) inkjet-printable substrate for making building wraps, billboards, banners, and indoor display graphics. This vertical billboard is made with the Evolve PE Eclipse Pro. (Photo: Ultraflex)*

Sycltex is a fully recyclable lightweight material for indoor point-of-purchase displays or short-term outdoor banners, event graphics, building and barricade signage. The scrim material that strengthens the banner is made of CLAF (a cross laminated

polyolefin open mesh non-woven fabric). The scrim is laminated between two smooth printable polyethylene (PET) films.

## Cross-Platform Substrates

When commercial printing companies added wide-format printers to their operations, many turned to their existing suppliers to furnish wide-format printable materials along with papers used for their offset and narrow-format digital presses.

General Formulations, which had provided wide-format materials to screen printers, noticed that users of cut-sheet offset presses were asking their paper merchants for sheets of adhesive vinyl. So General Formulations now offers sheets of white, clear, adhesive-backed vinyl that can be used on offset or production digital presses to make durable labels, temporary signage, counter mats, glass-cooler graphics, and slip-resistant floor graphics.

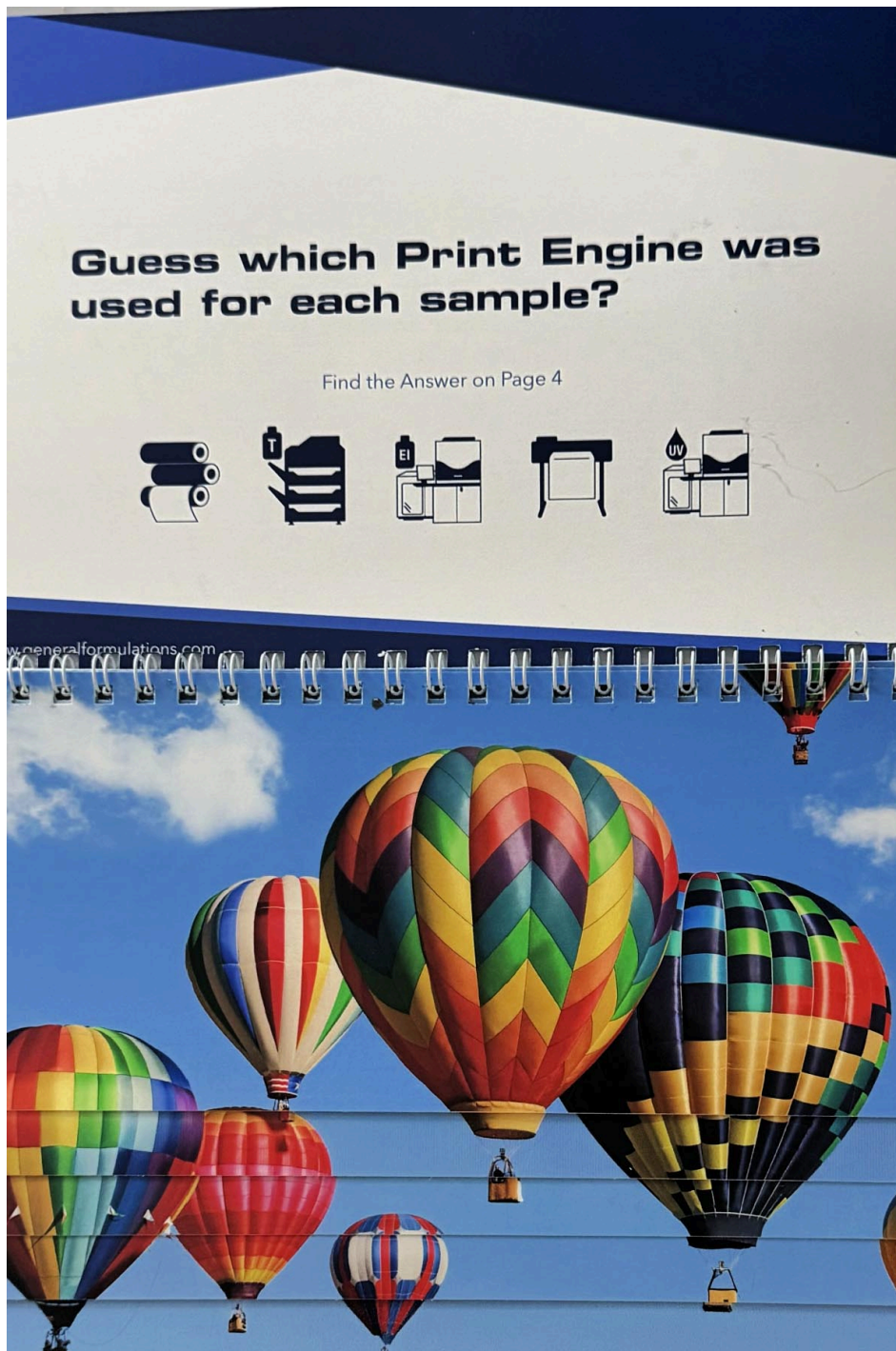
“We selected our top 14 items in our wide-format line, applied a proprietary top coating, and introduced our Narrow Format Digital sheets,” explains Greg Kestler, product manager of Narrow Format Digital Solutions at General Formulations. “With GF, you will get the same white point as well as the same adhesive across the different print engines—wide format digital, narrow-format digital, or offset.”



*With General Formulations' NFD (Narrow-Format Digital) materials, users of cut-sheet production digital presses can make*



*small runs of temporary promotional signs on self-adhesive vinyls. Shown here is GF NFD 208, a highly plasticized cling vinyl that is available in 19 x 13 in. and 29 x 20.5 in. sheets with poly-coated lay-flat liners.*



*The General Formulations sample book shows how colors printed on the narrow-format digital presses compare to similar GF materials for offset and wide-format presses. Each of the five overlapping pages were printed on a different system, including: a Heidelberg 102CD offset press, a Konica Minolta KM1 UV-inkjet printer, an HP Indigo 7900 press; a Konica Minolta c7100 digital*

*press, and an EFI Vutek 3250 wide-format UV-inkjet printer.*

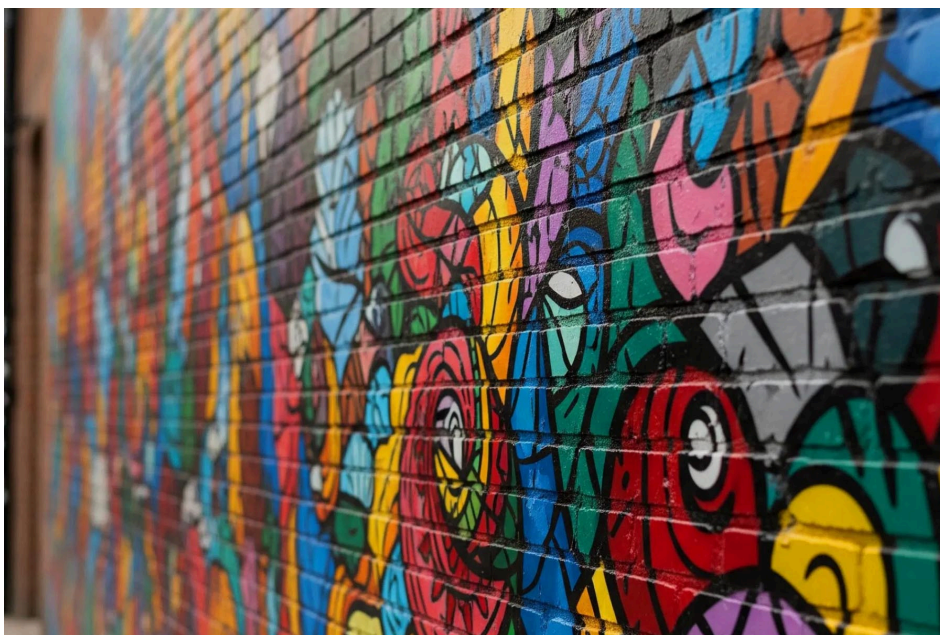
*(Photo: Eileen Fritsch)*

Another cross-platform material is Synaps from Agfa. This smooth, opaque synthetic paper can be used to make weather-resistant prints without lamination. It is available for printing on offset or flexo presses plus nearly every digital print technology. Long runs can be pre-printed with branding on an offset press. Then, a digital press can add personalized content as smaller batches of prints are ordered.

## Improved Adhesives

The newest adhesives help graphics producers apply graphics to a wider range of surfaces and simplify the installation of vehicles, windows, and walls.

For example, the high-tack adhesives on materials from companies such as Drytac, Mactac, 3M, Avery, and General Formulations make it possible to add colorful graphics to brick walls, concrete sidewalks, and asphalt parking lots.



*Drytac Polar Hi-Grab (above) and other materials with advanced adhesives for rough surfaces can add colorful art to bland brick walls. (Photo: Drytac)*

Nekoosa NextBond durable adhesives provide a cost-effective, eco-friendly alternative to traditional solvent adhesives for longer-



term print applications. Inline UV-curing during adhesive production removes hazardous solvent waste and harmful VOCs.

Nekoosa used the adhesive to make NextBond Premium Vinyl Print Media for outdoor-durable signs and NextBond HighBond Opaque Films for cover-up signage or labels on stainless steel appliances, wood paneling, tile, and products made with low-surface-energy plastics.

Jessup Manufacturing's Tenacious Tac adhesive PVC, PET, and PP inkjet media can be used for permanent branding or warning labels on products or equipment made with metals, plastics, or powder-coated surfaces.



*TenaciousTac high-tack films from Jessup Manufacturing enable safety, instructional, or brand labels to be permanently applied to industrial equipment or products made with low-surface-energy plastics such as beverage coolers and porta-potties.*

Inkjet printable materials with air-egress technology, slideable adhesive, and dot-patterned adhesive make graphics installation easier for both well-trained and first-time installers.

Adhesives with air-egress technology keep unsightly air bubbles from getting trapped beneath the surface of the graphic during installation.

Slideable adhesives give the graphic installer extra time to slide large graphic panels for buses and vans into position before the



adhesive starts to stick.

Dot-patterned adhesives enable smaller, temporary graphics to be installed without hiring a professional installer.



*The dot-pattern adhesive on Drytac's tear-resistant Spot-On PVC-free graphics film enables retail or restaurant employees to install and remove promotional graphics without special training. (Photo: Drytac)*



*Use Drytac's SpotOn Duo Mounting Adhesive to transform non-adhesive backed prints on cardstock or synthetic paper into peel-and-stick removable wall or window displays. The two-sided mounting adhesive uses a permanent adhesive to bond to the*

*printed material substrate and a removable adhesive that sticks the graphic to the wall or window. (Photo: Drytac)*

## Recyclable Rigid Materials

Manufacturers of rigid materials offer a range of innovations such as acrylic panels pre-coated to avoid the need to apply an adhesion promoting primer first.

At PRINTING United Expo, visitors saw how engineered fiberboards can replace plastics and metals for some signs and temporary displays.

Midland Fusion Board is a curbside recyclable, biodegradable paperboard sheet (sold in sheets of 28 x 40 in. and 50 x 100 in.). It can replace some of the plastic materials retailers use for wayfinding signs, window displays, interior signage, promotional campaigns, or posters.

Re-board is a lightweight printable, cuttable paper board with a fluted core sturdy enough to build 2D and 3D constructions for experiential marketing, events, or trade shows. Because it contains water-based adhesives and contains no harmful components, Re-board display material can be recycled like paper.



*Zurn Visual transforms eco-friendly paperboard into sustainable designs for retail displays, trade shows, and events. To illustrate*



*what's possible, Zurn used eco-friendly Re-Board to build this irresistible castle-like exhibit. (Photo: Eileen Fritsch)*

Xanita Board is a digitally printable and cuttable display board made with fibers recovered from recycled used cardboard boxes. The Xanita core can be decorated with print-ready kraft paper, MDF, or birch plywood. Short-term retail displays and brand activations made with Xanita board are quick to assemble, lightweight, and flat packable.





*XCEL Products used Xanita board to construct their PRINTING United Expo booth and display stands. Xanita-board booths can be disassembled for recycling after an event. (Photo: Eileen Fritsch)*

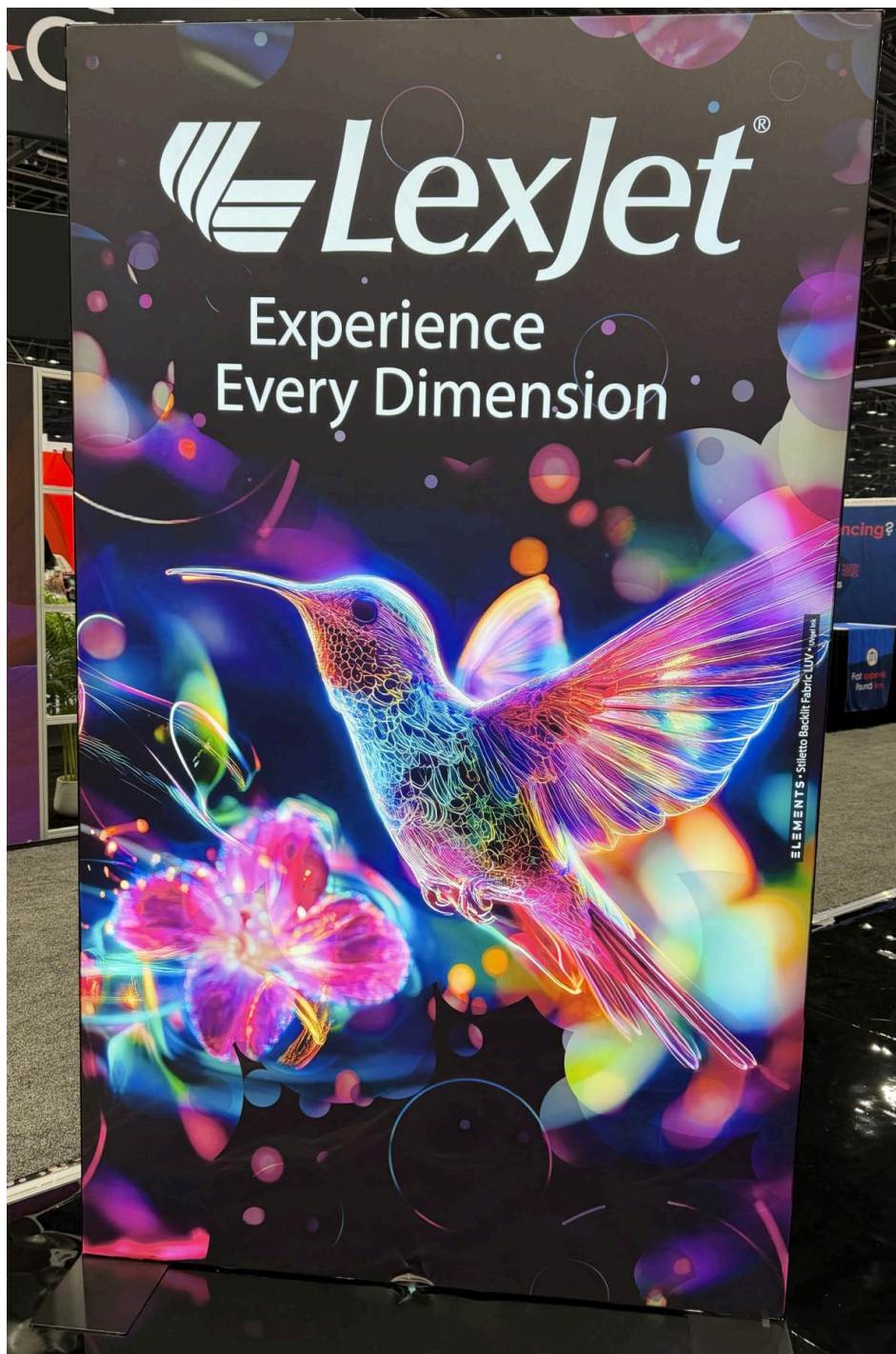
Mako Outdoor Board is another alternative to single-use plastics for short-term outdoor promotions in areas where moisture might cause warping. Mako Outdoor Board can be used for bollards in parking lots or gas pump toppers. Mako Outdoor Board is cross laminated to reduce warping and is completely recyclable.

## Soft Signage Fabrics

Innovations in wide-format print materials disrupted the businesses of wide-format graphics companies that failed to anticipate the potential impact of printed textiles.

The development of 126-in- wide rolls of soft signage materials eroded the demand for smaller rolls of backlit films and other flexible materials used for trade shows, retail, and museum graphics.

Superwide soft signage fabric rolls combined with innovative tension display systems made it possible to print seamless 10-ft. high trade-show booth backdrops that are easier to ship and set up than multiple panels of laminated graphic films.



*LexJet, a 1990s-era pioneer in creating wide-format printable films for trade show graphics, featured their new Elements Stiletto Backlit Fabric LUV for latex and UV inkjet printing at 2025 PRINTING United Expo. The 100% polyester textile is engineered for backlit and front-lit displays in tension frame systems and lightboxes in high-traffic, high-impact settings. The crease-resistant surface displays high-definition images, even after the printed fabric has been folded and re-folded for shipping. (Photo: Eileen Fritsch)*

Companies such as TVF, Fisher Textiles, Berger Textiles, Ultraflex, and Aberdeen Fabrics have all worked to help print service providers expand into new applications such as wind-resistant mesh banners for events and construction sites, branded tents for outdoor events, non-fray cotton-like theatrical backdrops, and colorful attention-getting feather flags that wave in the wind.

Soft signage fabrics are particularly popular for backlit graphics. But achieving the total opacity needed to disguise the source of the backlight can be challenging.

Heat used to transfer sublimation inks from printed paper to the polyester graphics fabric can cause unpleasant smoke and smells from textiles backed with black coatings for opacity. New gray-back sublimation fabrics from companies such as Berger Textiles and TVF help address this issue.

For example, TVF's PureNight Pro fabric is a high-performance, eco-friendly blockout fabric made from 100% recyclable polyester. It delivers excellent light-blocking without heavy back coatings.

Leif Kristensen, TVF print media consultant, says it is hard for manufacturers and print businesses to stock multiple 126-in. rolls of fabrics for specific applications. So, some suppliers are developing a few versatile soft signage fabrics that PSPs can use for multiple applications.

Wide-format printers that use extended gamut inksets can produce extremely sharp images. So, Fisher Textiles' Eco Canvas polyester/cotton blend canvas enables PSPs to expand into high-volume production of fine-art reproductions, photography, home furnishings, and upscale retail signage.

Photographers like the portability of seamless stretch fabrics for backdrops.





*The sublimation-printing company JVI (Just Vision It) uses Fisher Textiles' ET9848 EZ Stretch dye-sublimation fabric and a portable Easiframe Display System to make seamless backdrops for studio and school photographers or photo booths at special events. This multi-directional stretch fabric is made from 100% post-consumer recycled polyester. (Photo: Eileen Fritsch)*

## Get Advice from Media Suppliers

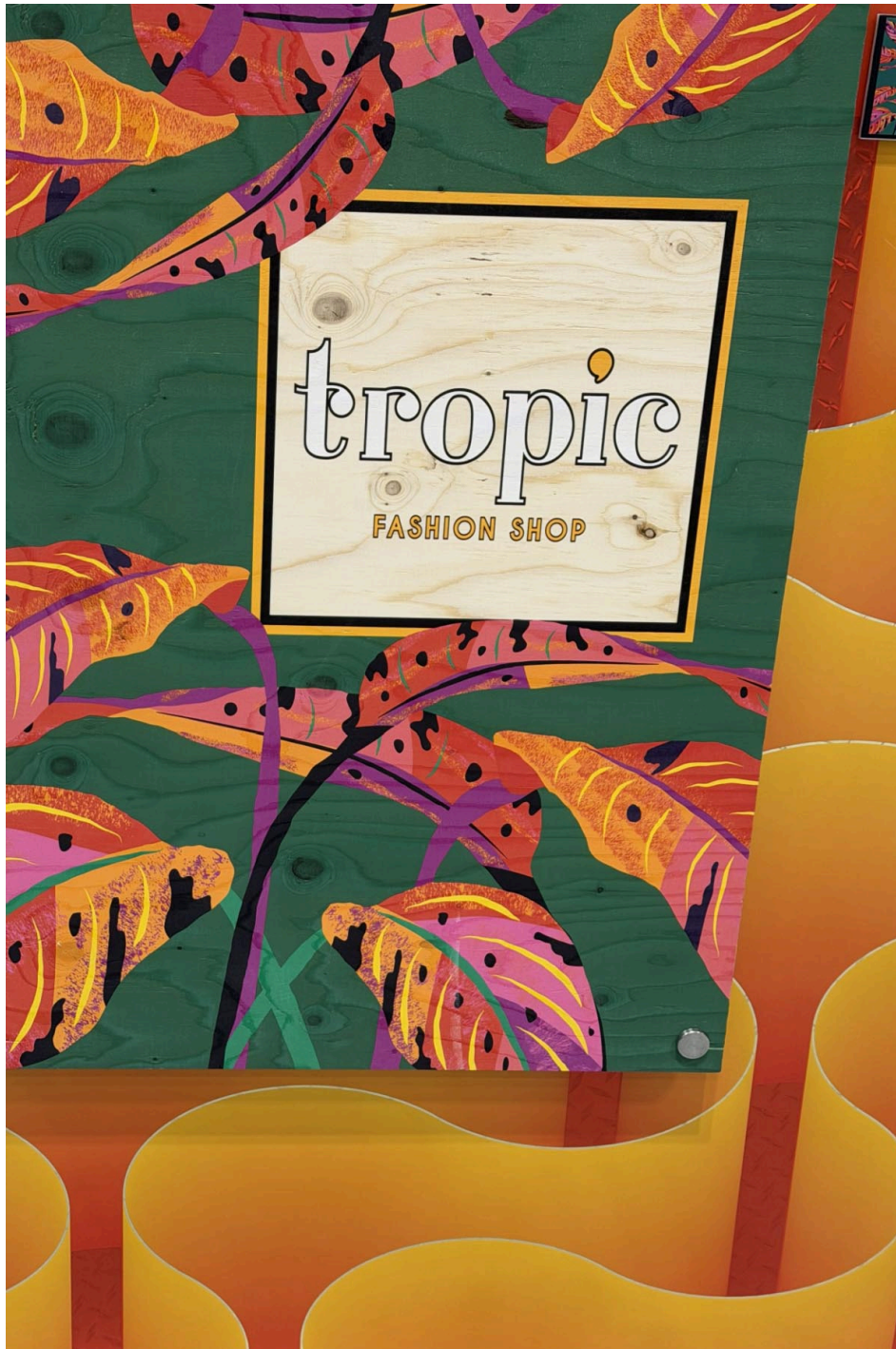
When most print-service providers use similar materials to offer similar products, it leads to commodity pricing for print services.

"The only way to avoid commodity pricing is to innovate," says Javier Larraz, HP LFP product management category director. "It's a mistake to focus entirely on the price and speed of delivering as many printed materials as soon as you can," Larraz contends. Staying on top of new materials and creative applications is a good way to add value to your prints.

According to Kroll, some print service providers decide to stick with what they know and automate the production processes using the same media going through the printer all the time. That can limit their ability to build relationships with designers whose eyes light up when they see something new and different.

Suggesting new types of materials can help sales reps become trusted advisors that can help print buyers promote their businesses, brands, events, or workspaces.

TVF, LexJet, and other manufacturers and distributors of wide-format materials routinely answer questions about how to choose the best materials for diversifying into new markets or completing specific projects.



*HP's booth at the PRINTING United Expo showed creative applications that users of HP latex printers can make. This retail sign printed with HP Latex inks preserves the visible grain on the wood panels from Gabbarro, a Spain-based distributor of wood materials. (Photo: Eileen Fritsch)*

“If you’re looking to move up the value curve, think beyond standard applications,” advises Ana de la Rosa Ph.D., HP large-format media strategic manager. She notes that HP Latex performs beautifully in vehicle graphics, thermoforming with PET boards, and synthetic leathers for custom upholstery.

Hybrid printers that support flexible and rigid materials enable print-service providers to build blended campaigns that use acrylic, aluminum composite panels (ACP), or wood to complement vinyl, film, or fabrics.

HPLFMedia.com lists a wide range of HP Large Format Latex Printing Materials that support odorless indoor prints. Materials such as wallcoverings, canvases, window films, backlit films, and textiles enable print-service providers to offer personalized premium looks for retail, hospitality, and interior spaces.

The HP Learning Hub features video training with use cases and application ideas.

## AI Can Help

As AI reduces the amount of time your employees must spend on routine tasks, consider assigning an employee or two to keep up with new options in printable materials. Perhaps the employees could test new materials on your printing devices and suggest new applications that would expand your revenues and please clients who want more sustainable print materials.

HP Print OS with Nio artificial intelligence capabilities will help print-service providers compare the costs and potential profits of bringing new types of substrates into their operations.

“By combining PrintOS production data (e.g., Print Beat) with AI reasoning, PSPs can evaluate ink usage, substrate yield, press time, and risk factors in one view,” said Juan Aguila, HP Industrial Head of AI Center of Excellence.

HP Nio already operates within PrintOS for most Indigo presses, turning live telemetry and knowledge assets into operator-ready guidance.



“Our objective is to expand PrintOS AI to enable automatic quotation and recommended configurations (including printing materials). Plus, we want to integrate HP Nio with other HP printers and PrintOS apps (e.g., Media Locator, Substrate Manager) so certified-printing materials data and saved substrate profiles can ground recommendations,” said Aguila.

While controlling materials cost is important, Larraz believes print-service providers want to be more than transactional businesspeople: “They want to make money doing something that they love and feel proud of.”

He notes that print business owners not only show their facilities and equipment, but also the jobs they have done and say, “Look at what we did.”

*Eileen Fritsch has covered the digital transformation of printing since 1995 when she was assistant editor for Screen Printing magazine in a publishing group that also served sign shops and visual merchandising for retailers. In 2006, Eileen became founding editor of Big Picture magazine to educate potential users of the wide-format color printers. Since 2014, she has written articles for a variety of publications and supported content-development projects for wide-format printer manufacturers and e-commerce sellers of inkjet equipment, software, and supplies.*

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