

# WhatTheyThink!

“All Things Big and Soft”

Technology Outlook

Wide Format, Signage, and Apparel

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May 25, 2023



# Get the most out of this webinar...

- SEND US YOUR QUESTIONS DURING THE WEBINAR
  - There will be a Q&A at the end
  - Q&A box is at the bottom of your screen
    - Please use Q&A box rather than Chat box
- Downloadable archive—slides and audio—will be uploaded later today

# efi<sup>®</sup> Inkjet Display Graphics

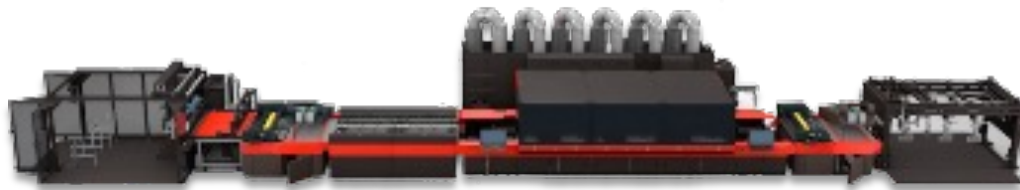


## *New Product Innovation*



Pro 30h  
hybrid

VUTEk FabriVU +  
soft signage



Nozomi DG 18000+ LED single pass



VUTEk Q Series R2R

VUTEk XT  
Super High Speed hybrid



# Today's Presenters



**Richard Romano**  
**Wide Format & Signage**



**Cary Sherburne**  
**Textiles & Apparel**

# Wide- Format & Signage



# Wide Format & Signage: What Kind of Day Has it Been?

- 2020: Wide format was a saving grace during the pandemic
  - The infamous “pivot” to safety signage, et al.
  - Shutdown of key verticals (events, travel)
- 2021: We’re ba-a-a-ck!
  - Rebuilding business during recovery
  - Occasional variant-related bumps
- 2022: Expanding capabilities and addressing new/old challenges
  - Flatbed printer acquisition growing; expands range of projects
  - True automation is finally coming to wide format; staff shortages are hastening it
- 2023: Diversification/new applications/markets
  - Textiles? Labels? 3D printing?

# Wide Format & Signage: What Kind of Day Has it Been?

- Smithers: global value for these applications in 2023 will reach \$40.99 billion
  - down ~\$5 billion from pre-pandemic value
- Volume of printed signage has fallen from 10.81 billion meters square in 2019, to 8.92 billion meters square in 2020
- Demand for printed signage did recover in 2021–2022
- Output for all printed signage is projected to reach 10.08 billion meters square in 2023
- Upward trajectory is now levelling off thanks to inflation, energy costs, and geopolitical issues
- Demand for printed signage will only grow marginally—value increasing at 0.2% CAGR to \$25.15 billion in 2028
- Volumes have a 0.7% CAGR to 2028; global output will reach 10.43 billion meters square in 2028

Smithers, [\*The Future of Printed Signage in a Digital World to 2028\*](#)

# The Graying of Wide Format

- Wide format is a mature market
- Commercial print migration to wide format is over
  - ~30% of the industry are “never wides”

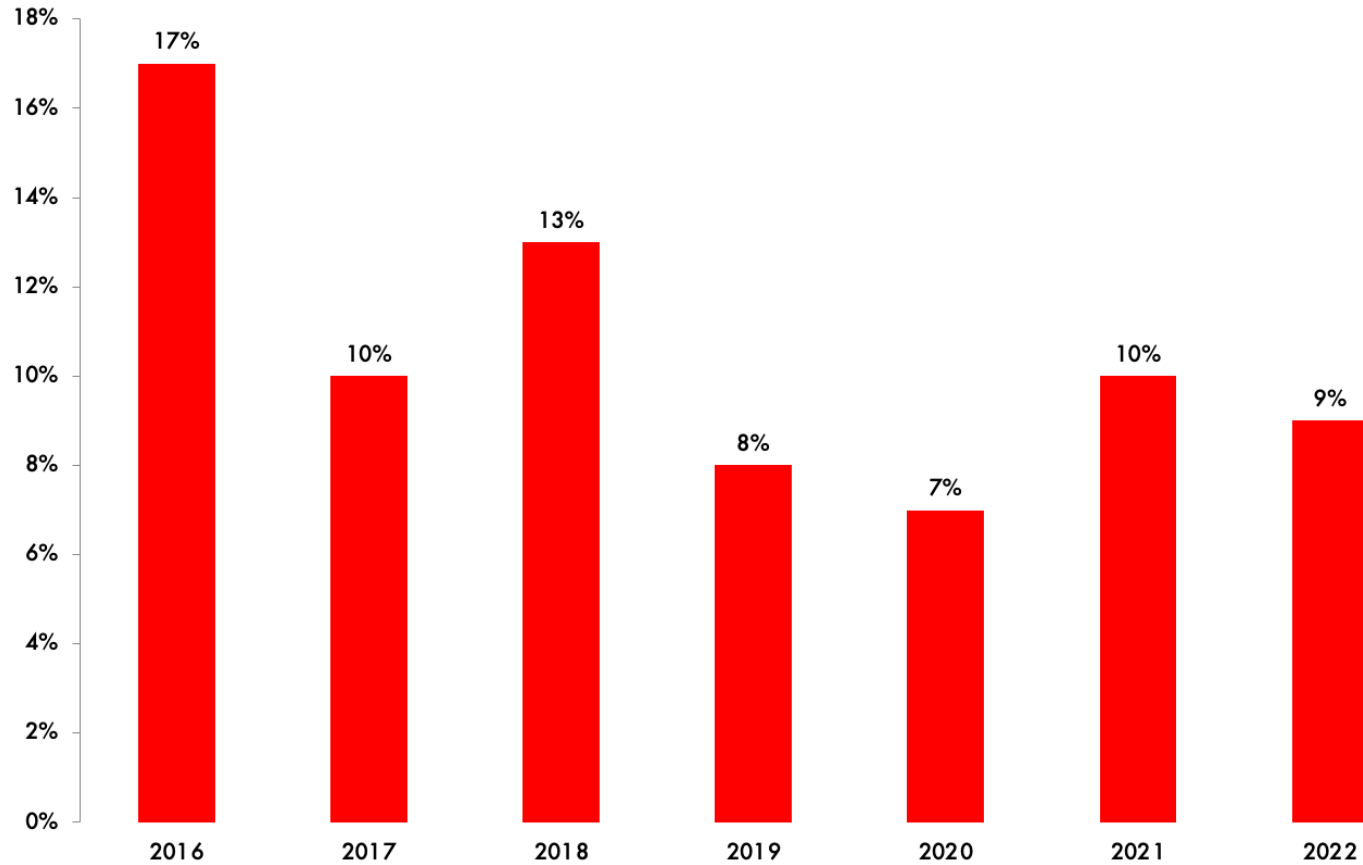


# The “Never Wides”

	Added more than 2 years ago	Added in past 18-24 months	Plan to add in next 18-24 months	No plans to add	Don't produce in-house but outsource/ plan to outsource	Don't know
high-speed production inkjet (like HP Page Wide)	13%	6%	17%	46%	8%	11%
wide-format printing (like signs, displays, banners)	38%	11%	5%	34%	9%	3%
textile/fabric printing for soft signage	8%	3%	2%	63%	16%	6%
textile/fabric printing for garment printing/decorating	3%	1%	2%	70%	16%	8%
direct-to-garment printing	1%	2%	6%	71%	14%	6%
specialty or industrial printing (like coffee mugs, golf balls, smartphone cases)	3%	3%	3%	66%	19%	6%
corrugated packaging printing	3%	6%	4%	66%	13%	8%
folding carton printing/converting	6%	4%	8%	58%	15%	9%
flexible packaging printing/converting	1%	4%	6%	66%	13%	10%
3D printing	2%	0%	2%	75%	10%	11%
printed electronics	0%	0%	1%	81%	9%	9%

# Survey Says!

## ADDING WIDE FORMAT PRINTING CAPABILITIES AS A SALES OPPORTUNITY

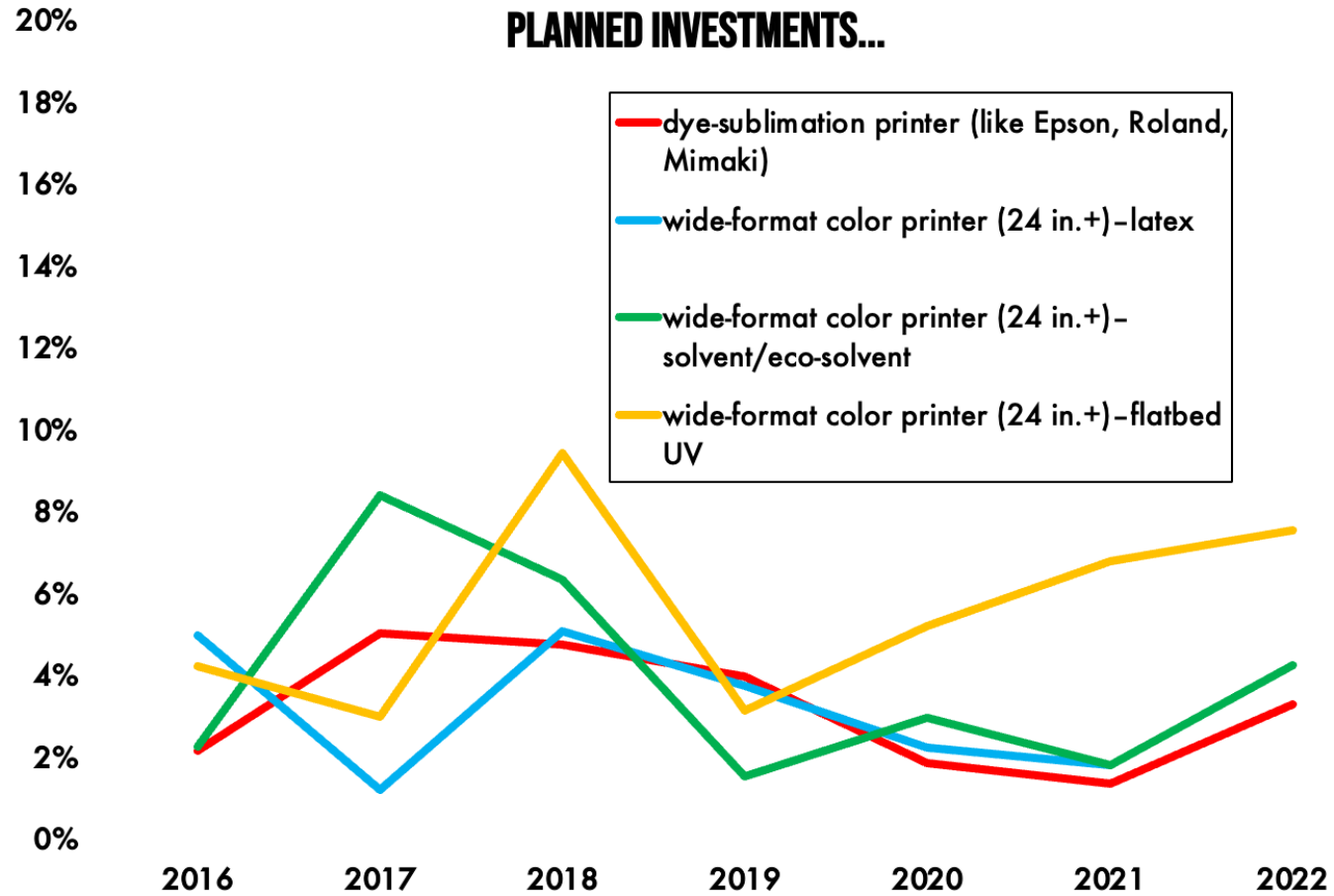


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*WhatTheyThink Business Outlook Surveys, 2016-2022*

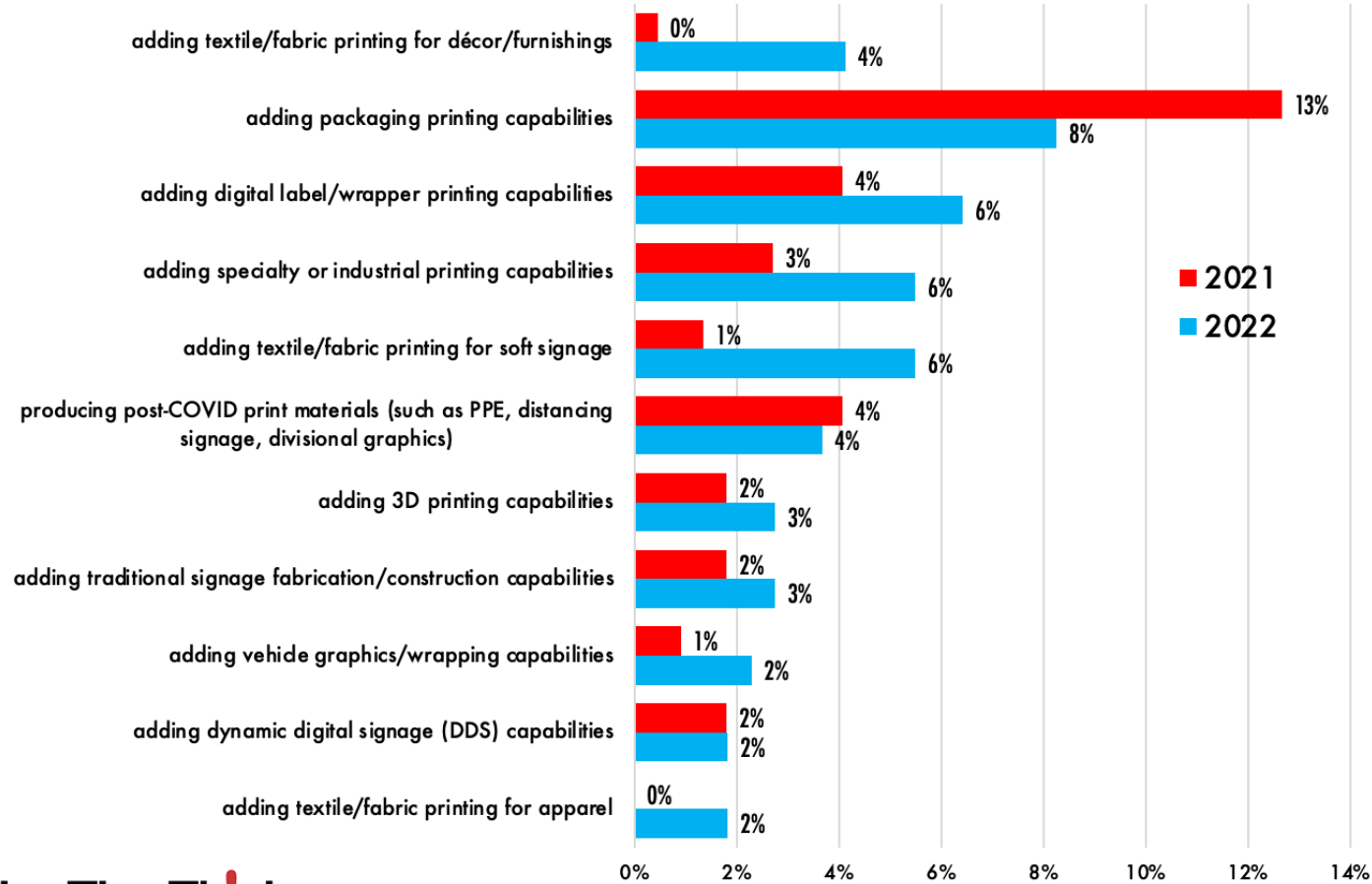
**WhatTheyTh!**nk

# Survey Says!



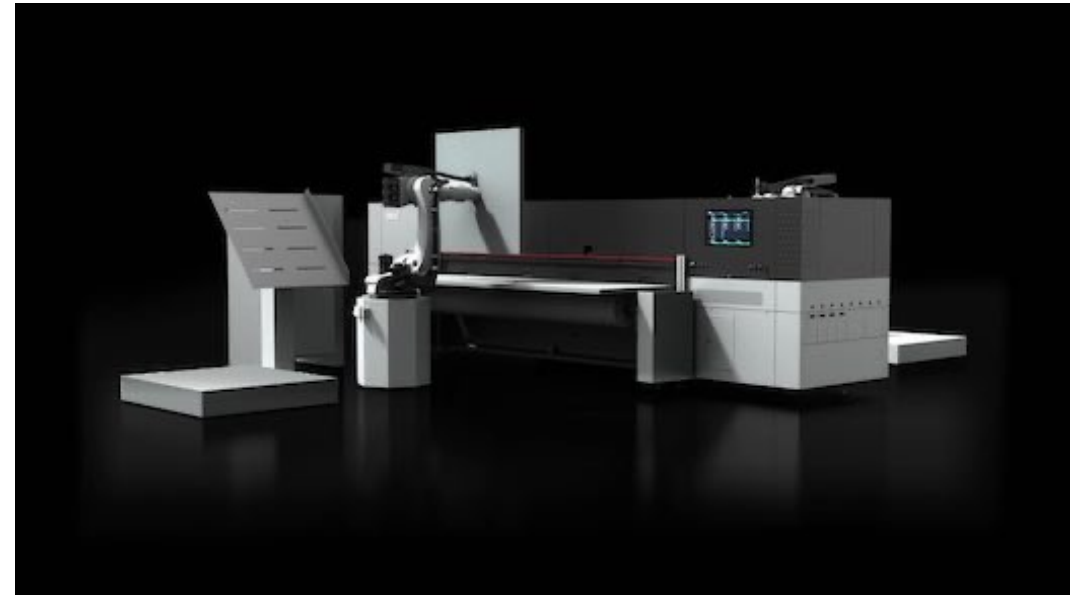
# Survey Says!

## NEW BUSINESS OPPORTUNITIES...



# Wide Format & Signage: What Does Automation Mean for Display Graphics?

- “RIP and print” software
  - And getting it to talk to all the other software
  - API connectivity to interconnect tools
- Nesting optimization and job preparation
- “Quick Sets” (Onyx), “Recipes” (Canon PRISMA), etc., automatically apply premade settings to jobs
- Compatibility with other applications, like textiles, etc.
- Hardware: robots, cobots, robotic arms



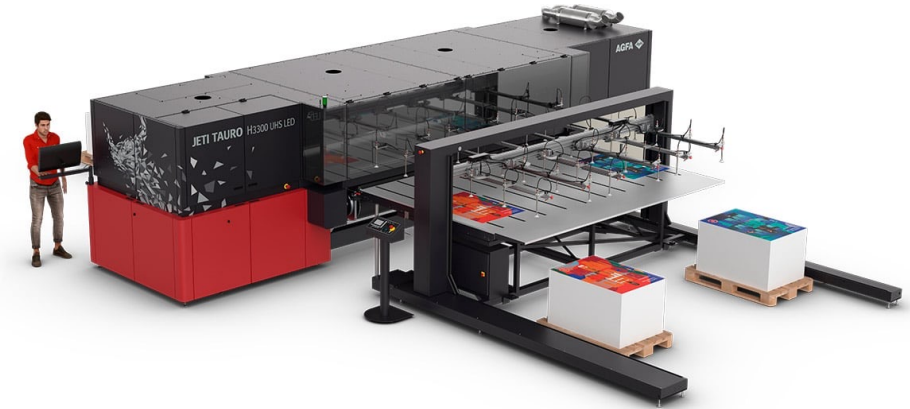
*Durst P5 Robotics*

# New Product Introductions

- New wide-format products largely evolutionary
  - Speed, quality, automation improvements
  - Fleshing out product portfolios
  - Expanding range of applications

# New Products

- **Agfa Jeti Tauro H3300 UHS with Varnish**
  - 3.3m wide
  - Up to 905 m<sup>2</sup>/hr.
  - Hybrid
- **Canon Colorado M-series**
  - “M” is for “modular”
    - Three versions: M3 Base, M3 Pro, and M5
    - users can scale up as their business and their needs grow
  - 64-in. wide
  - UVgel 460 CMYK inkset—and now offers a white option



# New Products

- **Durst**

- At FESPA this week, introduced the P5 350 HS D4 hybrid printing system
  - Features Durst P5 Robotics
  - Feeder/stacker unit comprises two Kuka robots to handle unmanned production of a complete shift
  - Robots can pick up media from different pallets up to 180 cm height, feed them, stack them separately
  - Printed media can also be turned 180° for reverse-side printing and fed into a second printing system
- P5 350 HSR
  - 3.5m LED roll-to-roll printer
  - Print speeds of up to 670 m<sup>2</sup> per hour
- Durst software for all aspects of the printing process
  - Analytics, Workflow, Smart Shop (Web-to-print), etc.





# New Products

- **EFI**
  - This week at FESPA, previewed the Nozomi 14000 SD single-pass printer for sign and display graphics
  - 1.4m width
  - Said to be 10 times faster than current multi-pass printers
  - CMYK + white, orange, and violet
- **Epson SureColor T-Series for AEC applications**
  - 36-inch SureColor T5770DM and 44-inch SureColor T7770DM
  - 4-color SureColor F6470 and 6-color 44-in. SureColor F6470H dye-sublimation printers are now shipping
  - SureLab D570 professional minilab photo printer
    - High-quality photo printing in compact lightweight design



# New Products

- **Fujifilm**

- At FESPA, launched the Acuity Prime Hybrid
  - 2m
  - Prints at production quality from 92 m<sup>2</sup>/hr.
- Uvijet HZ Thermoforming Ink for Acuity Prime series
- Fujifilm partnering with Barberán to develop a single-pass printer for the display graphics and signage market
  - Expected late 2023

- **HP Latex 2700 printer**

- 126-in (3.2m) width
- Color speeds up to 1302 ft<sup>2</sup>/hr. (121 m<sup>2</sup>/hr)
- Four configurations—dual roll and/or white ink options



# New Products

- **HP SitePrint**

- Designed for architecture and construction
- Robotic printer like a Roomba that prints directly on the floor where walls, doors, and other architectural features go
- 10 times the productivity of manual process
- Accuracy is currently within 3mm and they are continuing to improve on that
- Announced SitePrint as an “early access program” and will be announcing general availability later this year



# New Products

- **Konica Minolta AccurioWide 250 hybrid**
  - 2.5m width
  - Speeds up to 1,238 ft<sup>2</sup>/hr.
  - Can print 4 x 8-ft. boards in landscape
  - Can switch 4 x 8-ft. board production from long to short print tables—eliminates up to 12 ft. in printer depth (96 ft<sup>2</sup> of floor space)
- **Mimaki TxF150-75**
  - Mimaki's first foray into DTF
  - Max. printing width of 80cm for DTF transfer sheets
  - PHT50 heat transfer pigment ink includes CMYK+W
  - Said to produce up to 22 T-shirts/hr. or 210 “logo” shirts an hour



# New Products

- **MUTOH XpertJet 1682SR Pro**
  - 64-in.
  - 8-color option
- **Roland DGA**
  - VersaSTUDIO GS2-24 desktop vinyl cutter
  - Expanded TrueVIS™ line, with six new units:
    - AP-640 resin printer
    - LG-640/540/300 high-productivity UV printer/cutters
    - MG-640/300 UV printer/cutters
  - VersaSTUDIO BN-20D Direct-to-Film System
  - VersaOBJECT CO Series UV hybrid
    - Print on objects up to 7.87 in. height—even irregular 3D objects
    - Six configurations, 30-in. and 64-in. wide



# New Products

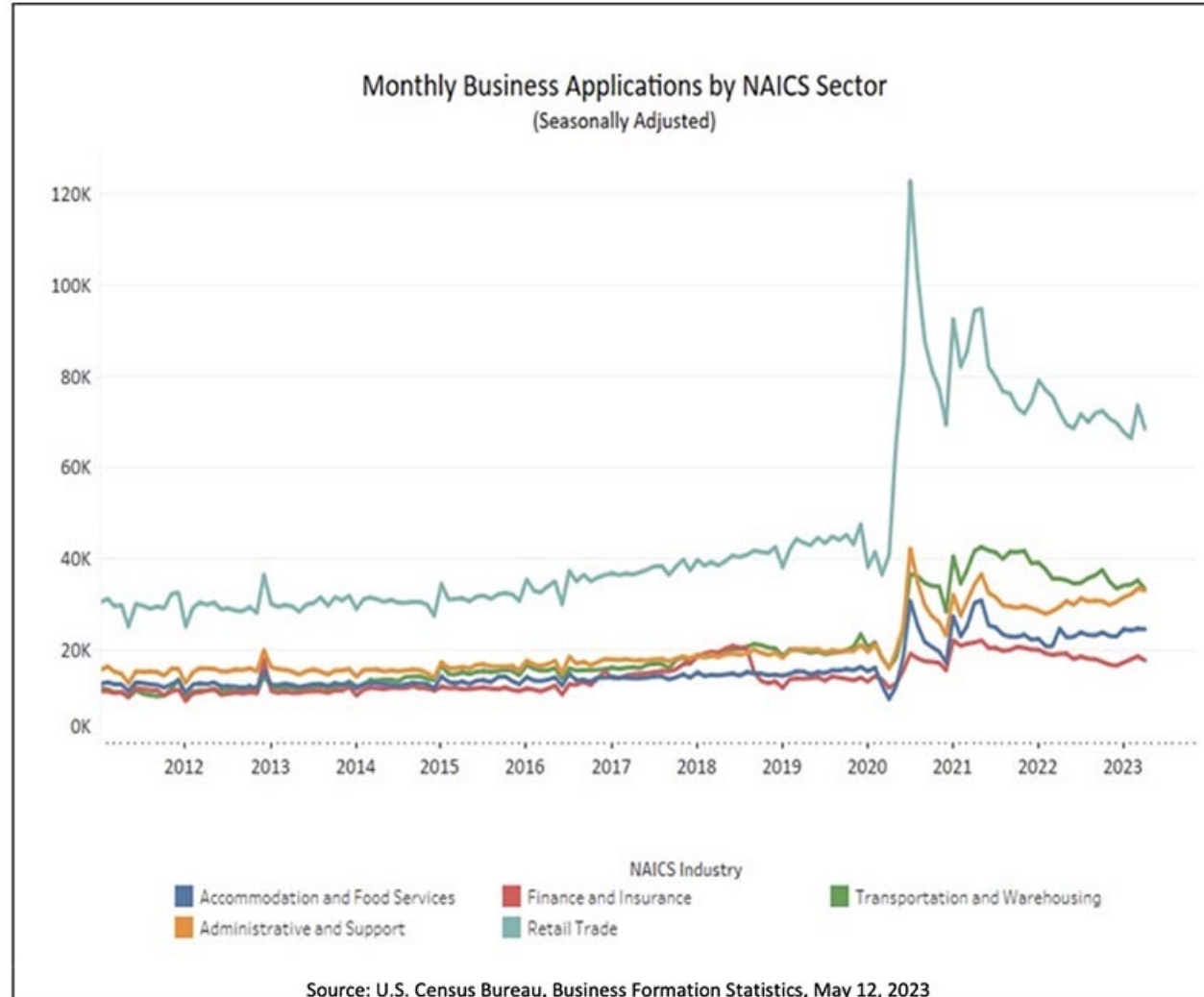
- **SAi**
  - EnRoute 23
    - CAD/CAM design software
    - Ton of new features for CNC routing, etc.
  - Adendo.com
    - Training program for sign shop employees
    - Online courses, virtual one-on-one troubleshooting, and even on-site visits
- **Vanguard VK3220T-HS Next-Generation UV Flatbed**
  - 3.2m width
  - Prints up to 360 m<sup>2</sup>/hr.
- **Zünd Q-Line with BHS180**
  - Board handling system comprises board feeder, cutter, and off-load unit for high levels of automation



# Wide Format & Signage: 2023 Outlook

- “Supply chain” problems easing
- Automation—software and hardware
  - Here come the robots!
- Two sides of employment issue: production staff shortages, but more entrepreneurial sign business owners
  - The latter especially true for franchises
- More entrepreneurial workers overall
  - For example, “bezonkers” (*The Economist*) new business formation
  - Many in traditional wide-format/signage verticals
  - Opportunities for new customers

# New Business Formation Still High





# Wide Format & Signage: 2023 Outlook

- Experiential graphics headed for a rebound as offices continue to reopen, good time for a rebrand/refresh
  - Downsized offices/new locations also provide opportunities
- Commercial construction has been slow but looks like it may be picking up
  - AIA Chief Economist, Kermit Baker PhD: “The ongoing weakness in design activity at architecture firms reflects clients’ concerns regarding the economic outlook. High construction costs, extended project schedules, elevated interest rates, and growing difficulty in obtaining financing are all weighing on the construction market.”
  - This impacts new signage projects as well as the AEC market
- Diversification beyond print and traditional display graphics
  - Textiles? Packaging? Labels? 3D printing?

# Wide Format & Signage: 2022 Outlook

- Economic conditions
  - Economy is doing pretty good: GDP still rising, record low unemployment
  - Only glitch: inflation still persistent, but down dramatically from last year
  - No sign of recession...yet?
  - Debt ceiling showdown—default will blow everything up
- Sustainability
  - Not just materials but overall business practices—esp. end-of-life issues
    - Sustainably discarding/recycling old signage/display graphics
    - Vycom Recycling Program
      - <https://www.vycomplastics.com/sustainability/>



# Textiles & Apparel

Scaling  
Sustainability



# Textile Trends: Some New, Some Ongoing

- Shipping costs from Asia almost back to pre-pandemic levels, from container cost of \$20,586 in January 2020 to \$2,720 10/22; will this affect reshoring?
- Reshoring occurring but not at scale; nearshoring to Latin America currently a focus. Labor costs and lack of sewing talent in North America still an issue.
- Sustainability focus flagging. Fossil Fashion: License to Greenwash?
  - Certification schemes abound but accountability often remains elusive
  - Europe proposes tougher rules to counter Fast Fashion
- And yet ...
  - There is some activity ... attempts to bring manufacturing closer to the point of need, developing and using sustainable materials, new approaches to recycling, more on-demand manufacturing, reducing waste, continued evolution of digital textile printing.
  - Will ITMA show progress?



# A Focus on Labor

- Consumers increasingly want to know “Who Made my Clothes?” Apparel labels with links to this information is interesting to many consumers.
- Several initiatives helping with training textile & apparel workers but we need more!
  - Fashion Revolution: working to raise awareness of and find solutions for treatment – or mistreatment – of factory workers
  - Detroit-based Industrial Sewing and Innovation Center (ISAIC) trains people on traditional skills as well as skills that are required for advanced competitive manufacturing and includes a full-scale manufacturing facility.
  - BMC.fashion focuses on seam types; typical worker trained to competency on one seam type in one day.
  - Shimmy.io: virtual training for both sewists and sewing machine technicians
- New digital facilities offer better work/life balance, comfortable working conditions



# Most Sustainable Brands

30

- Patagonia, Levi's and The North Face topped the list of the brands most committed to fashion circularity
  - Patagonia donation of company to Holdfast Collective, a nonprofit organization “dedicated to fighting the environmental crisis and defending nature” a key driver
  - Only 19 out of 200 brands scored 5 out of 10 (sad)



# Other Sustainability News



- Textile Recycling Heats Up
  - Australian enviro-tech startup Samsara Eco partners with lululemon to create new recycled nylon and polyester made from apparel waste
  - Researchers at North Carolina State University using enzymes to separate cotton and polyester from blended fabrics, resulting in clean polyester, to contribute to reducing textile waste
- Swedish university develops a new method to purify contaminated water to reduce toxic dye discharge

# Demand Grows for Manufacturing On Demand



- Angelina Jolie launches new kind of fashion business
- Custom Ink advertising heavily on Cable TV
- Name Bubbles offers personalized stick-on clothing labels produced on demand
- Sales of digital fabric printing equipment are reportedly strong
  - More manufacturers entering the fray



# Digital Dye Sublimation

- Grandview Research reports 52% of all digital fabric printing used dye sublimation inks
- Future Market Insights projects digital machinery market to grow from US\$320 million in 2018 to US\$890 million by 2030 (13.8% CAGR)
- Dye Sub growth driven by continued growth in polyester fabric market
- Multiple new dye-sub printers from Epson, Mimaki, HP, Agfa; more to come
- New inks entering the market, including inks from Kiian Digital, STS, Dupont, Sun Chemical, Swiss Performance Chemicals, Nutec Digital
- Transfer papers from Neenah Coldenhove, Texo Trade Services, Sappi, Ahlstrom add scale
- Inline sublimation from EFI Reggiani and Durst make production faster and easier



# Direct to Garment: Logical Transition from Soft Signage

- DTG printers available from Epson, Kornit, Ricoh, Brother, M&R, Aeoon and others
- Prices range from sub \$15,000 to six figures
- Blanks of all types readily available
- Sign & Display Graphics printers can augment offerings by adding decorated garments for trade shows, events and other purposes
  - T-shirts, hats, tote bags and more



# Direct to Film Gaining Ground

- Images printed on film using water-based pigment inks
- Wet print is powdered with hot melt adhesive and heat cured
- Image transferred using standard heat press
- Film can be stored for later transfer since adhesive not activated till heat is applied
- Can be used with most fabric types
- Most suitable for smaller images, such as logos, names, sleeve images, décor
- DTF solutions from Mimaki, Roland
- Hybrid DTG/DTF printers from Epson, Ricoh and others offer even more flexibility



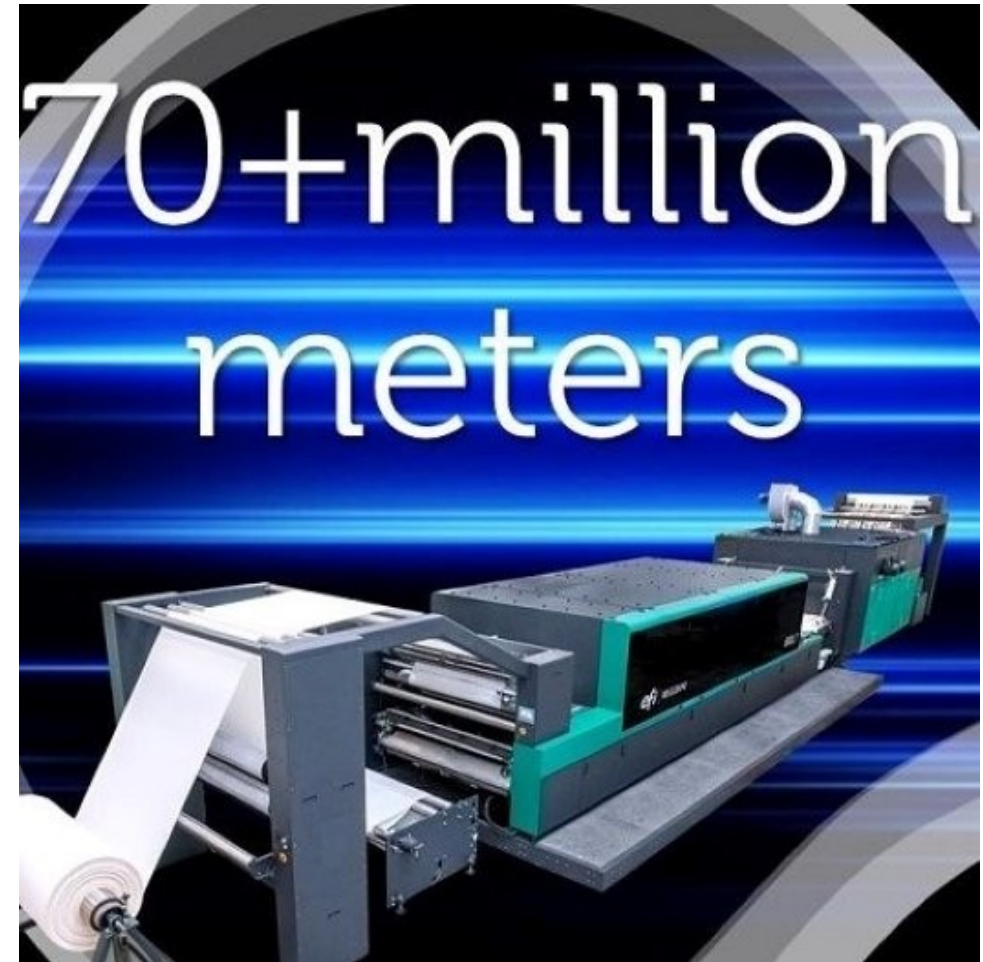
*Image compliments of Epson*

# DTG v. DTF

- According to Keypoint Intelligence:
  - When compared to direct-to-garment (DTG) printing, DTF offers the ability to avoid fabric pre-treatment, which is often required when printing with DTG.
  - While preparing the image for print is particularly important, applying the hot-melt adhesive is equally so with DTF; it uses a hot-melt powder made of polyurethane resin ground into adhesive powder.
  - DTF offers the ability to decorate a wide range of fabrics, does not require fabric pre-treatment, is durable with great elasticity and stretchability, and is often a cheaper and faster alternative.
- Important to keep limitations in mind ... hand feel can be an issue with larger graphics

# Direct to Fabric Printing

- Continuous improvement of pigment inks brings more functionality, sustainability to direct-to-fabric printing
- Single-Pass technology such as EFI Reggiani's BOLT offers high production, high quality alternatives to analog printing technologies
- Kornit increases focus on direct-to-fabric opportunities
- Wide range of printers from Durst, Mimaki, Mutoh, EFI Reggiani, HP, Roland. New from Kyocera: FOREARTH
- Hybrid direct-to-fabric/dye sub printers from EFI, HP, Mimaki, Roland and others increase flexibility
- Digital printing of some fabrics still requires pre- and post-processing which is less sustainable, requiring water and energy use, but less fabric waste than analog printing and capable of print on demand



# Embroidery Still Popular for Garment Decoration

- Coloreel dyeing of textile thread on demand takes embroidery to a new level
- New partnership with Tajima Software Solutions integrates Coloreel features into DG16, no longer requiring a separate program to colorize embroidery
- Faster design, easier modification of designs, reduced risk of error
- Combination of Coloreel and standard threads possible



*Image compliments of Coloreel*

# Q&A

Send us your  
questions!

questions  
are a burden to others  
answers  
a prison for oneself

# Technology Outlook Finishes!

- May 26—Finishing, presented by Kevin Abergel and Trish Witkowski

And coming up:

- June 6—The Status of Nanographic Printing in the Market
  - Heberto Pachon, General Manager, Landa Digital Printing
  - Paul Hudson – Hudson Printing
  - Cheryl Kahanec – Quantum Group
  - Brad Haralson – Southern Champion Tray

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Thanks for joining us!