



Innovations in Industrial Inkjet 2023

Presented by:

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What's in the industrial
printing bucket today?

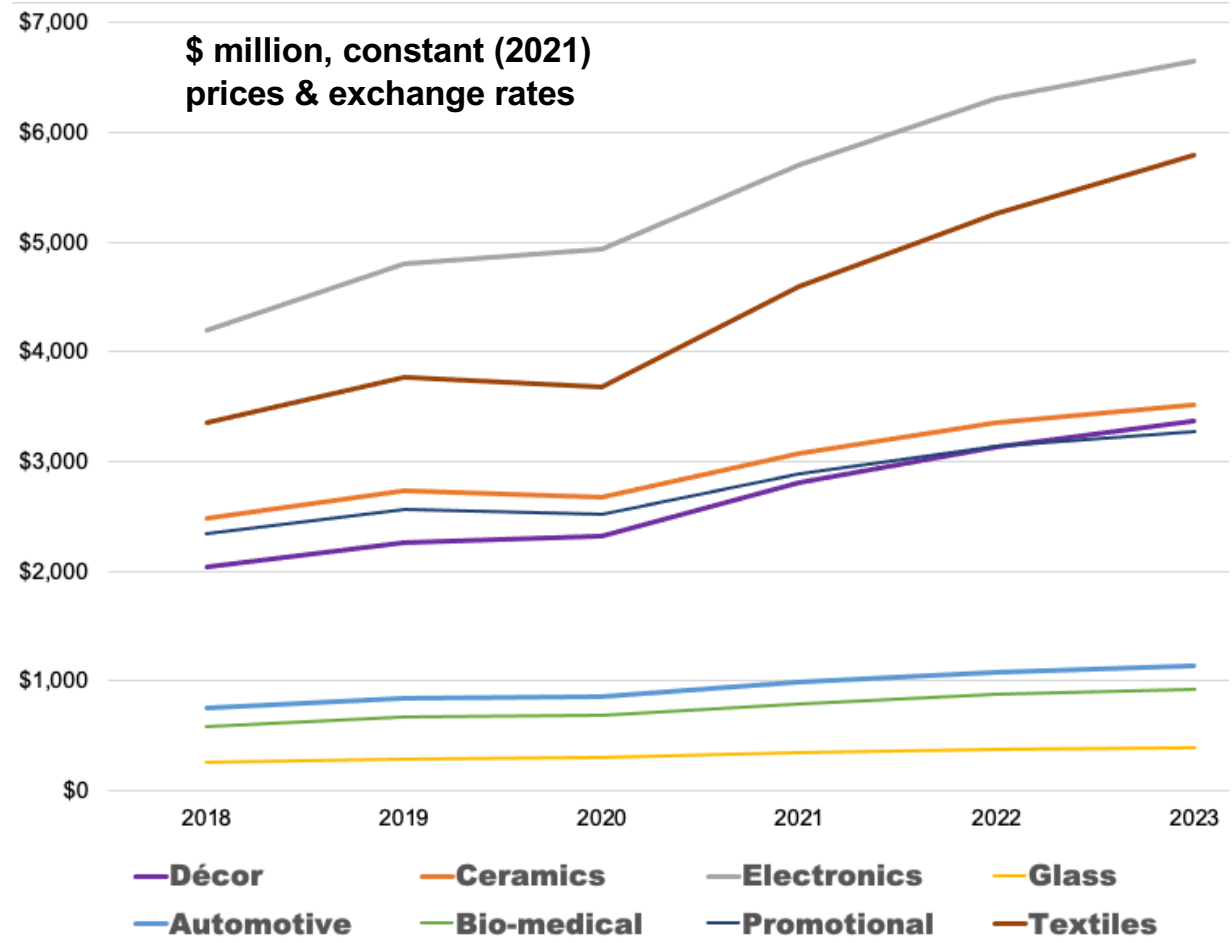


WW industrial inkjet growth by segment

Data provided by Smithers

Largest \$ volume	2023	CAGR (%) 2018-23
Electronics	6,655.5	9.7
Textiles	5,789.8	11.5
Ceramics	3,520.2	7.2
Décor	3,375.0	10.6
Promotional	3,273.5	6.9
Automotive	1,138.0	8.6
Bio-medical	930.9	9.6
Glass	400.3	8.5

3 fastest growing segments



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Industrial markets and materials

Organizing the discussion for today

Segments

- Automotive
- Building materials
- Décor
- Direct-to-Object

Light discussion of:

- Textiles / DTF / DTG
- Packaging
- Electronics
- Bioprinting
- 3D Printing

Materials

- Ceramics
- Metal
- Wood
- Glass
- Plastic
- Other

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Tackling different markets for industrial inkjet

Substrate & Application challenges

- Porous
- Non-porous
- Uneven surface
- Flat or warp
- Wear and tear
- Coverage
- Regulations
- Color
- Static

Printhead and throw distance

- Head options
- Addressability
- Even or variable distance to surface
- Speed
- Technology

Ink & Surface Treatments

- Chemistry
- Fastness
- Regulatory
- Properties
- # of colors
- White
- Laydown order
- Treat/prime
- Open time
- Environment

Drying / Curing

- Radiation
- AQ/Sol Drier
- Environment
- Exhaust
- Heat
- Post Coats

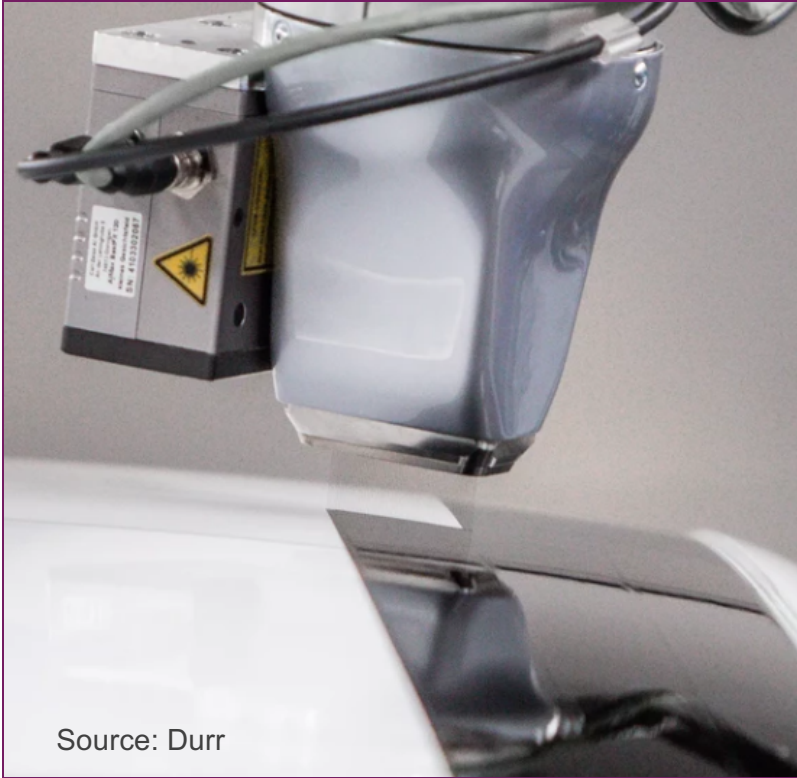
Mechanics & Automation

- Feeding
- Transport
- Stacking
- Reject
- Automation level
- Robot/Cobot
- Footprint
- Power
- Ancillary
- Inline/Offline
- Integration with manufacturing

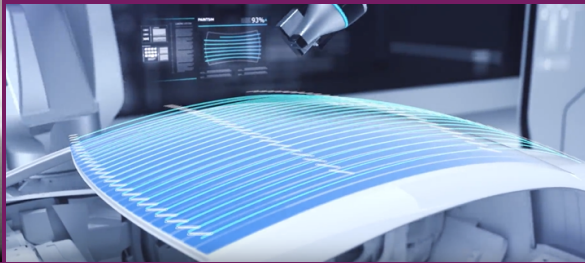
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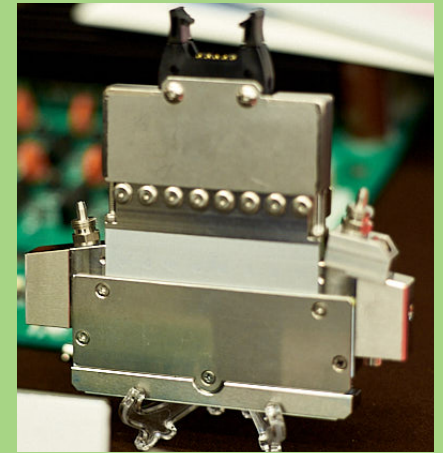
Automotive Valves and Piezo heads for painting



Source: Durr



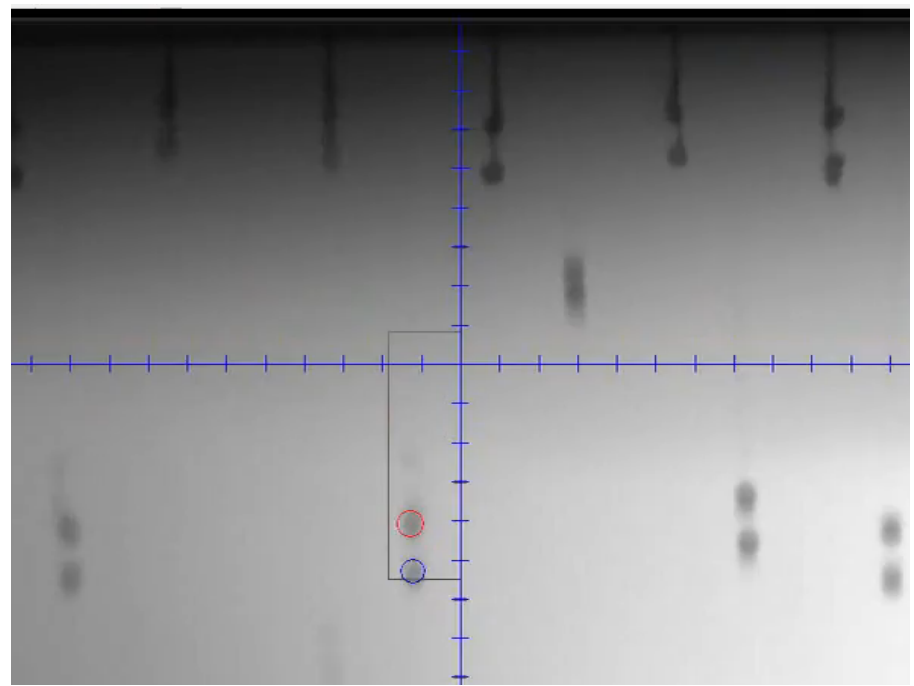
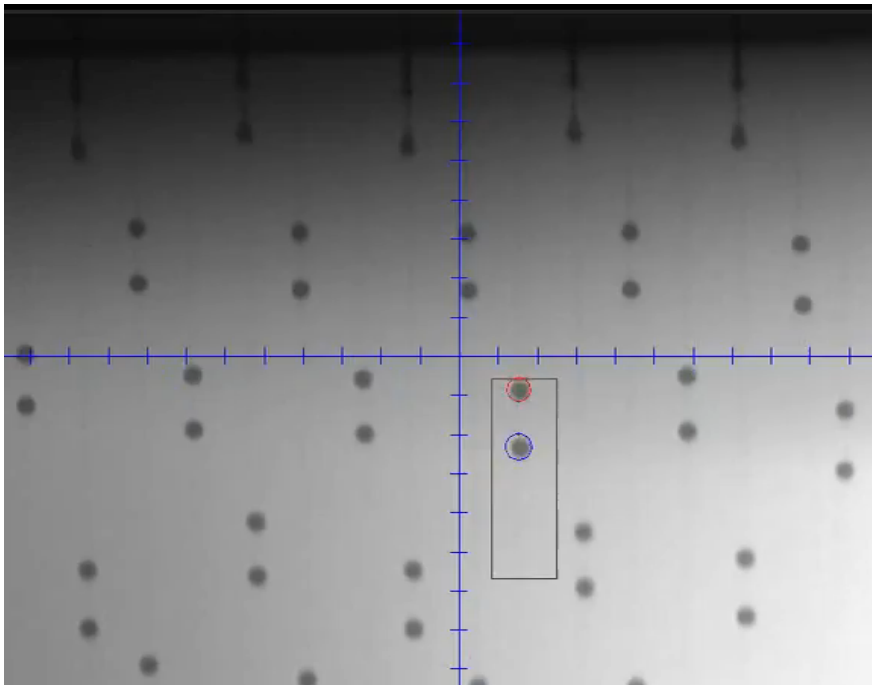
Source: Axalta



Source: Nesson Cleary

Automotive Paint Challenges

Materials & viscosity/rheology



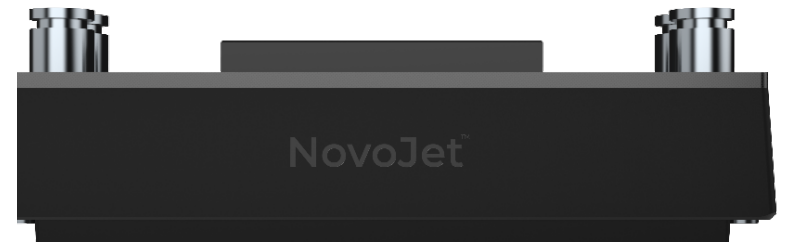
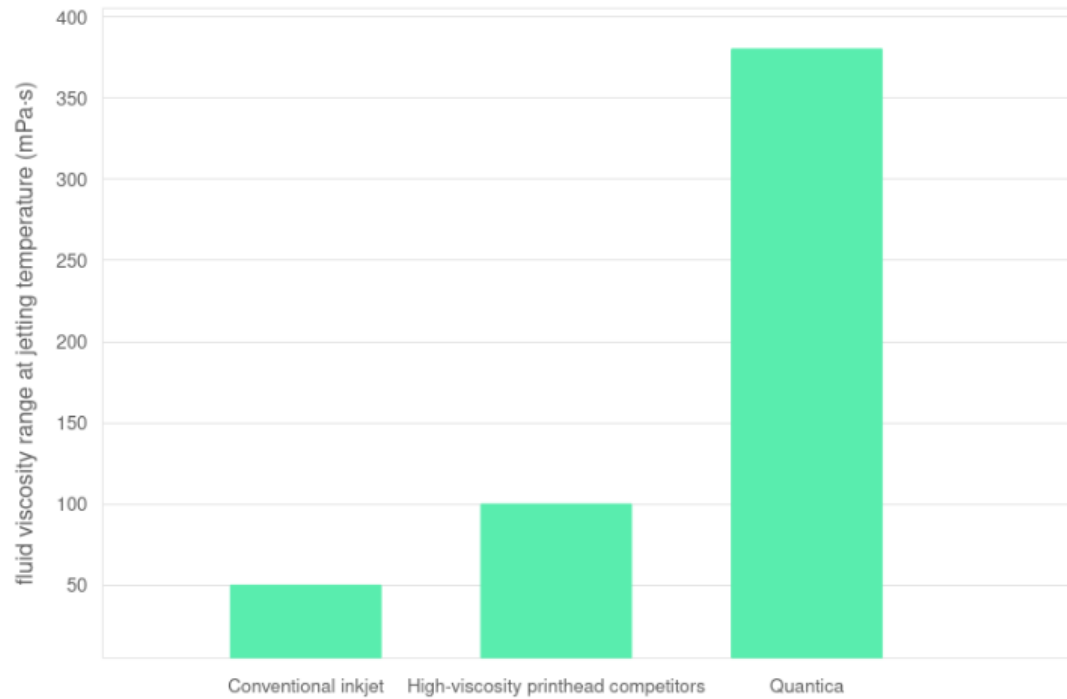
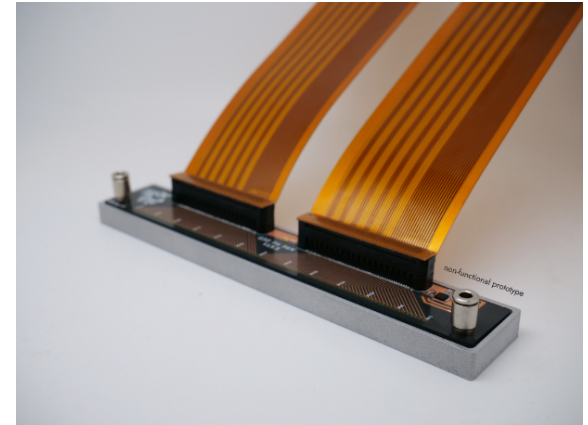
Source: DoDxAct

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A New Head Partnership

Quantica NovoJet head to be made by Xaar



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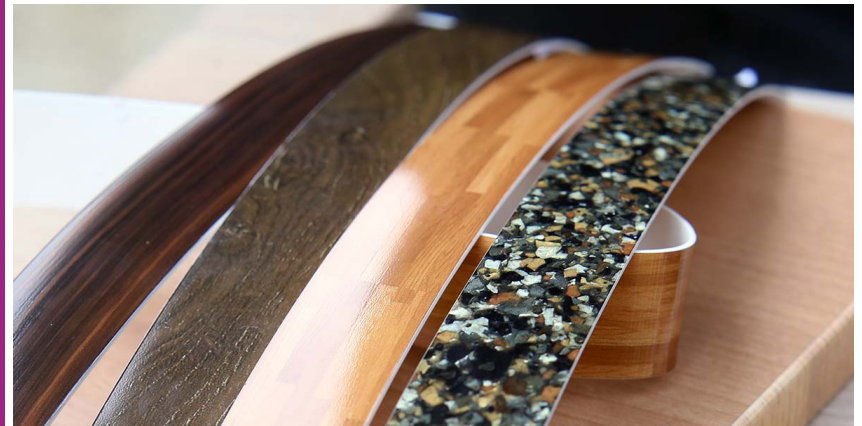
Source: Quantica

More Automotive - glass, molded parts, interior finish



Source Tecglass Vitrojet

Laminates for inside décor
Gravure → Inkjet



Agfa Altimira PID inkset

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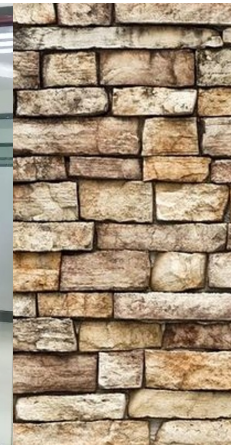
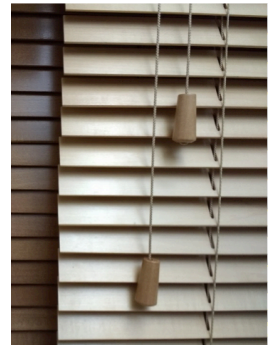
Building materials and decor

Indoor applications

- Blinds
- Ceiling tiles
- Flooring (ceramic, wood, vinyl)
- Furniture
- Wallpapers

Outdoor applications

- Architectural glass
- Concrete
- Outdoor ceramic tile
- Garage doors
- Metal decor



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Architectural glass



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Dip-tech is a pioneer in inkjet
for architectural glass



Tecglass press & Jetver inks

Concrete

Tiger print onto concrete

Lots of options

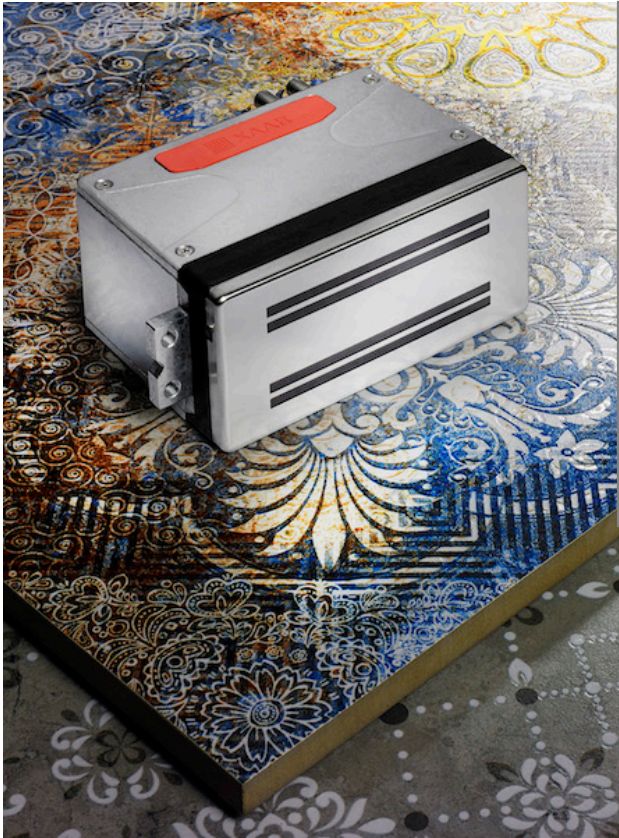
Inorganic/organic



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Ceramic tiles Always pushing technological boundaries



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Source: Xaar
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Source: System



Source: Xaar



Source: Dimatix

Wood flooring and laminates

Decorating laminates
composite, vinyl, paper, and
even real wood (with staining)

Luxury Vinyl Tile



EFI Cubic



Source: Koenig & Bauer

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Metal Decor

From flat sheets to coils



Source: Tinmasters



Source: Globus (YouTube) [Link to video](#)



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Source: IQdemy

Wallcoverings - from wide format to industrial inkjet

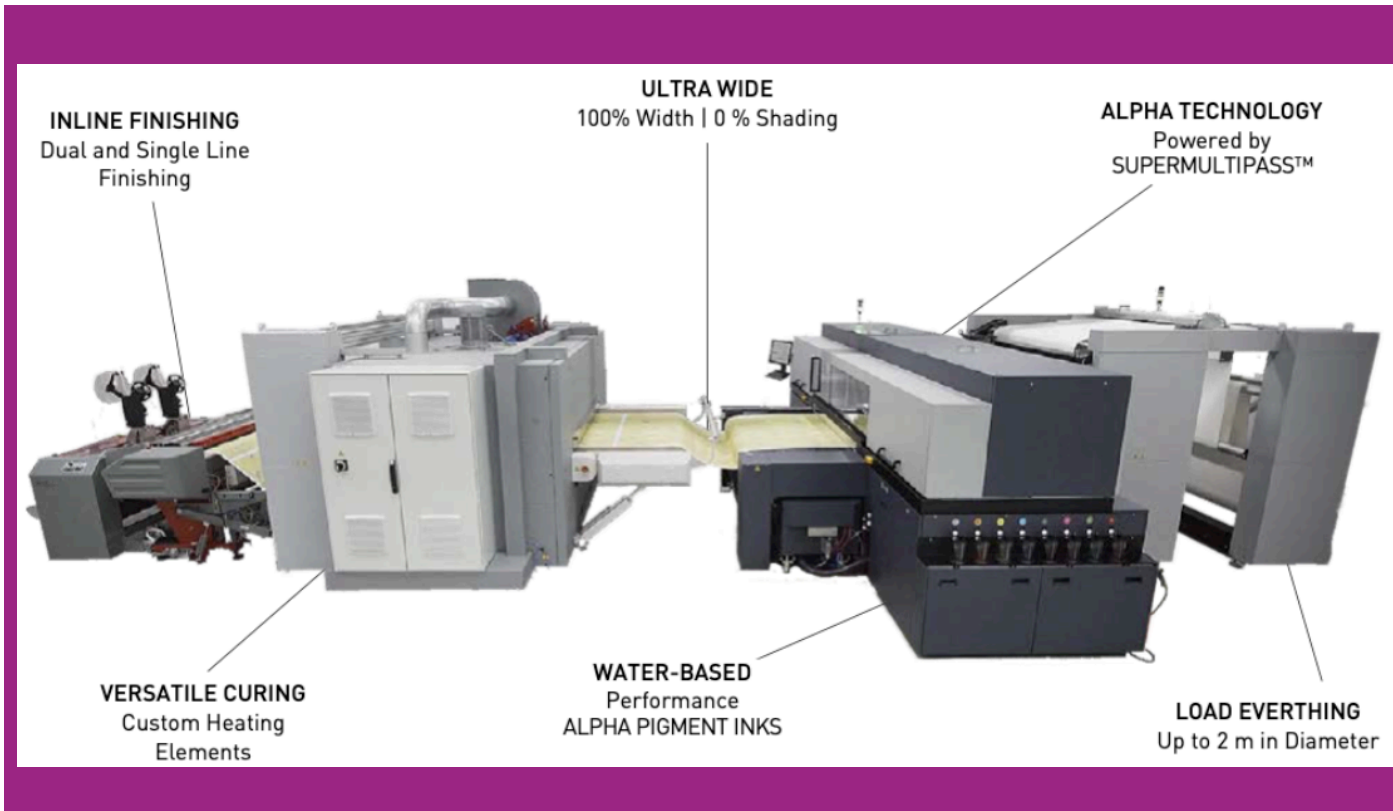
- Solids, patterns, murals
- Scuff resistance, cleaning
- Non-woven paper-based material or vinyl-based peel-and-stick substrates.
- Pre-pasted, paper-based materials, with a water-activated adhesive backing.
- **Low odor**, MSDS, ink safety

Norafin Group natural fiber-based products



So many substrates!
Not just “paper”

Wallcoverings



[Durst Alpha Wallpaper edition](#)

Source: Industrial Inkjet Ltd.

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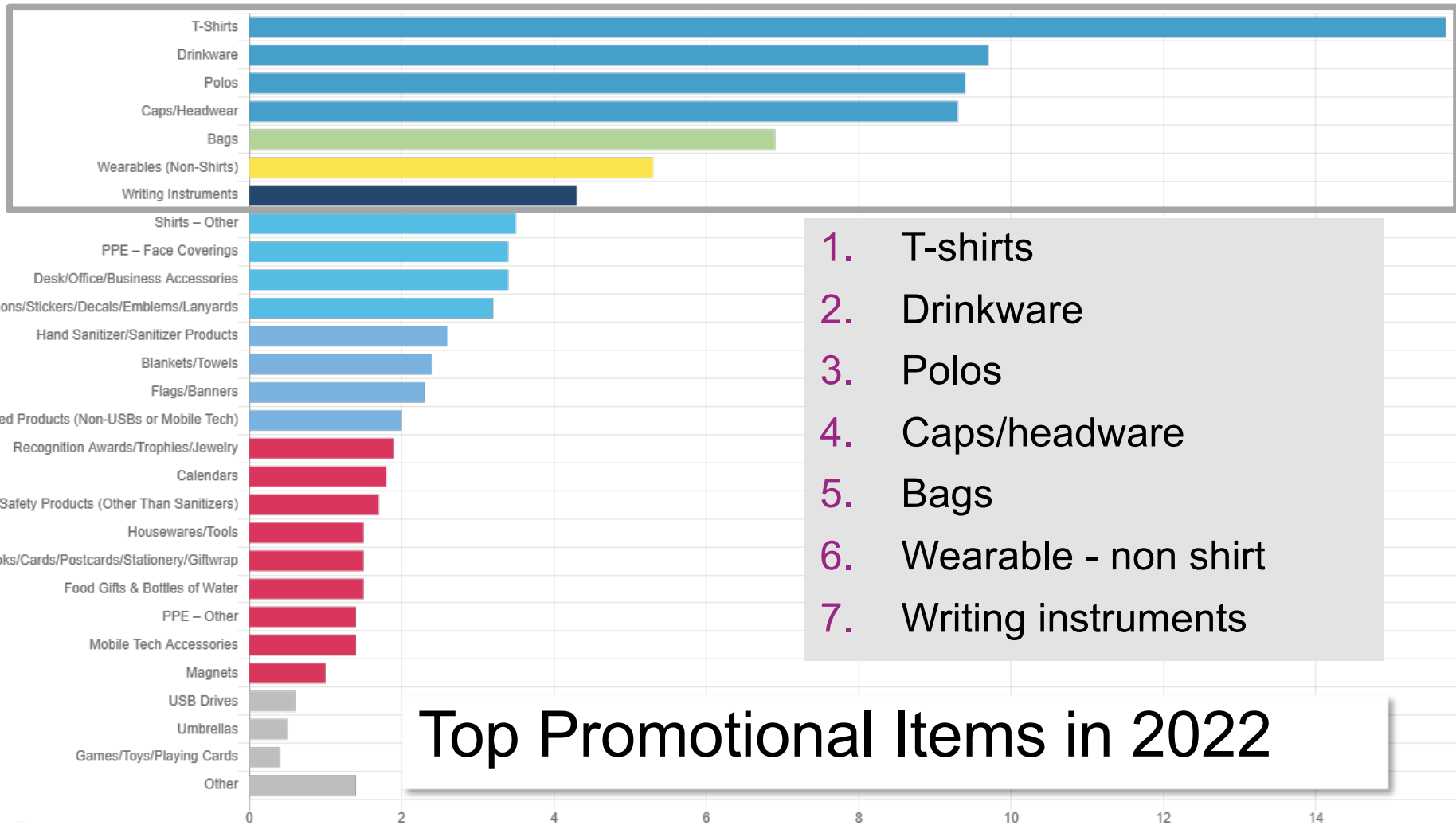
Direct-to-object
Direct-to-shape

Cross segment uses



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1. T-shirts
2. Drinkware
3. Polos
4. Caps/headware
5. Bags
6. Wearable - non shirt
7. Writing instruments

Top Promotional Items in 2022

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Infographic: Top Promotional Product Categories 2022 (asicentral.com)

Direct to Object

From desktop to factory...



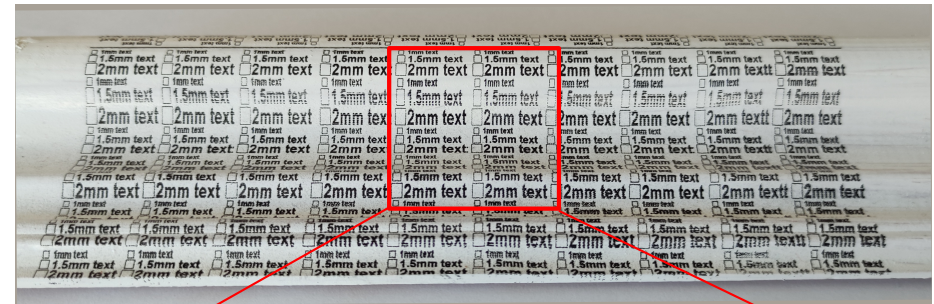
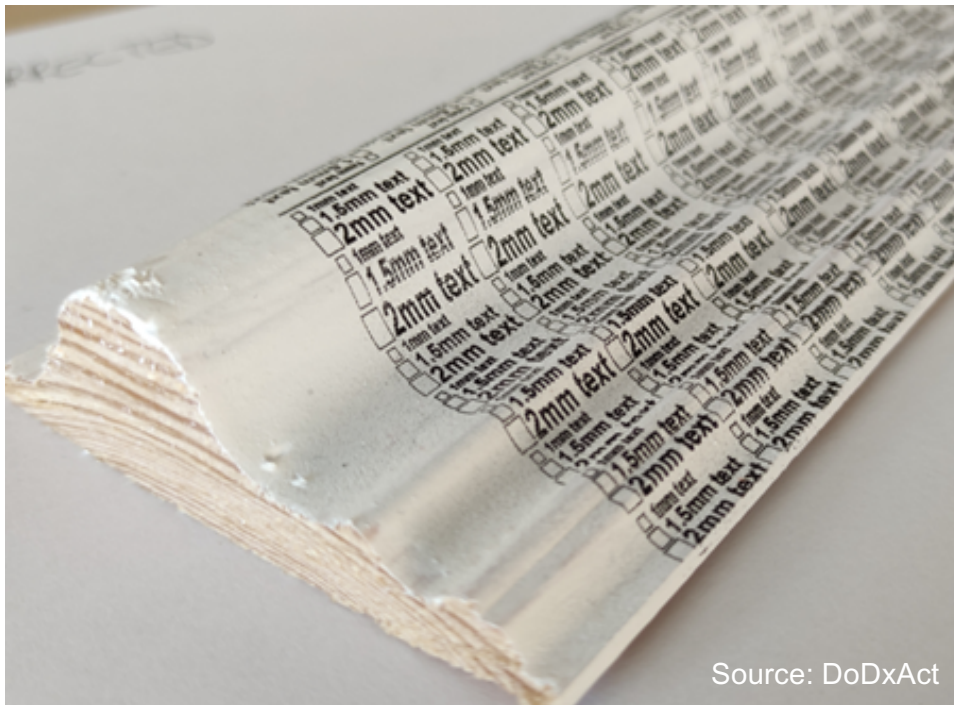
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Direct-to-Object Challenges

Example 2: Non-flat shapes

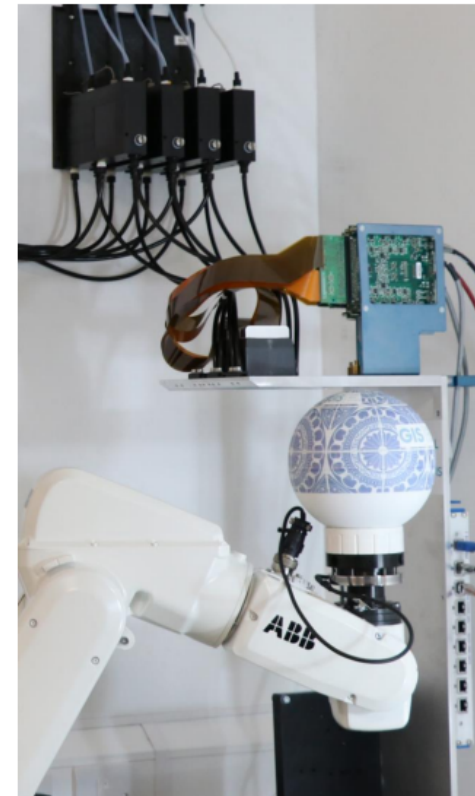
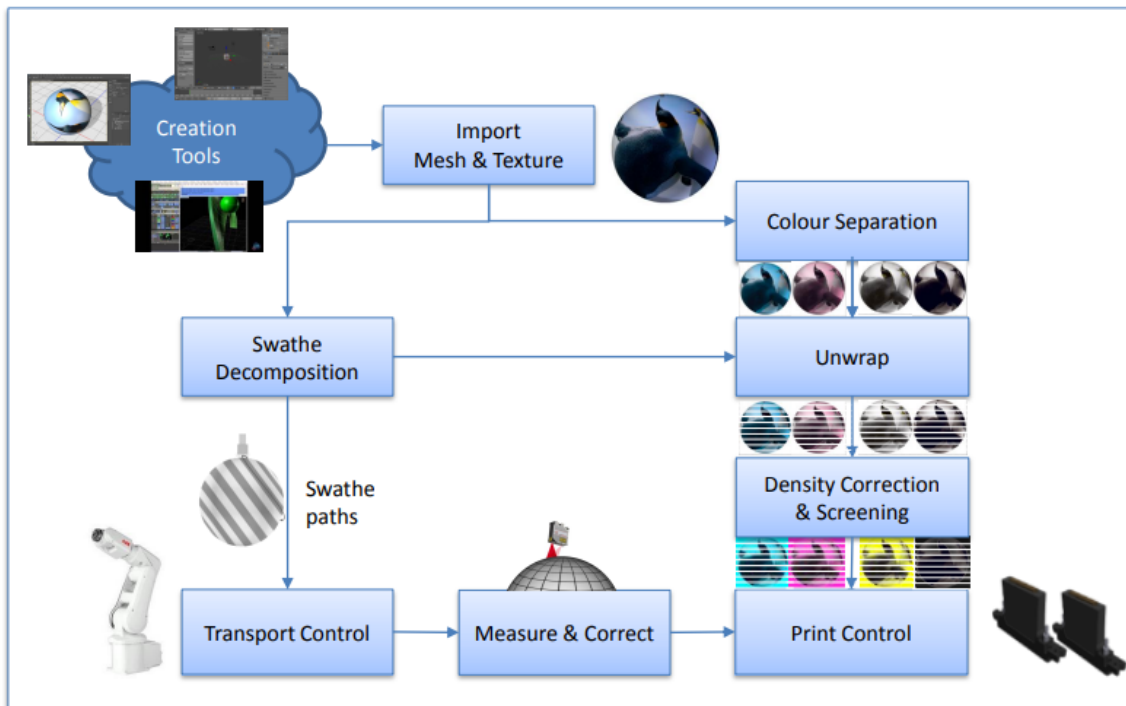


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Direct-to-Object Solutions

Software holds the key



Source: Global Inkjet Systems

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New Release: Inkcups XJET Switch



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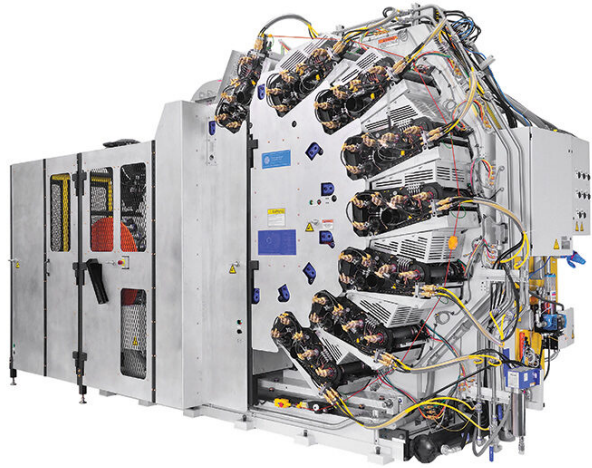
Direct to bag



Servo
rotation



Direct to Cylinder (Cans!)



Stolle Decorator:
2,200 cans/min -
offset

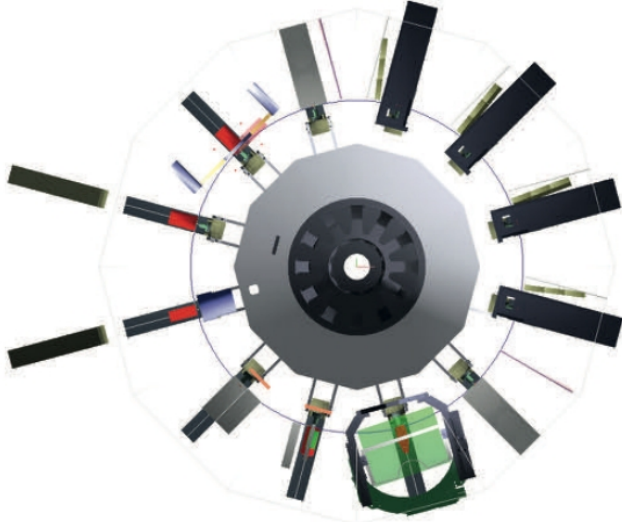


Hinterkopf D240:
240 cans/min

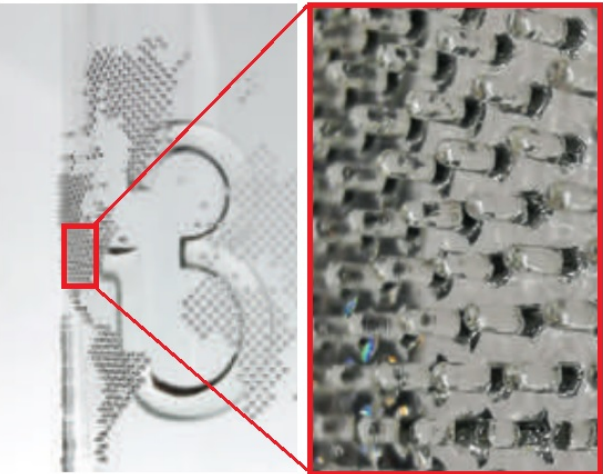
	Velox	Hinterkopf	SLAC International
Machine	IDS NC	D240	SC-DCP-200-6
Technology	UV inkjet	UV inkjet	UV-LED inkjet
Max colours	14	7 – 8	6
Max resolution (dpi)	900 – 1,600	900-1,200	600-1,200
Maxi Speed (12fl oz cans per min)	500	240	200
Print can neck/chime	Yes/Yes	Yes/No	Yes/No

<https://inkjetinsight.com/type/article/inkjet-direct-to-shape-printing-attracting-the-big-boys/>

How about cylindrical glass



Kammann Koenig & Bauer



High-build varnish



Color/Structure Effects



Foiling/Adhesive

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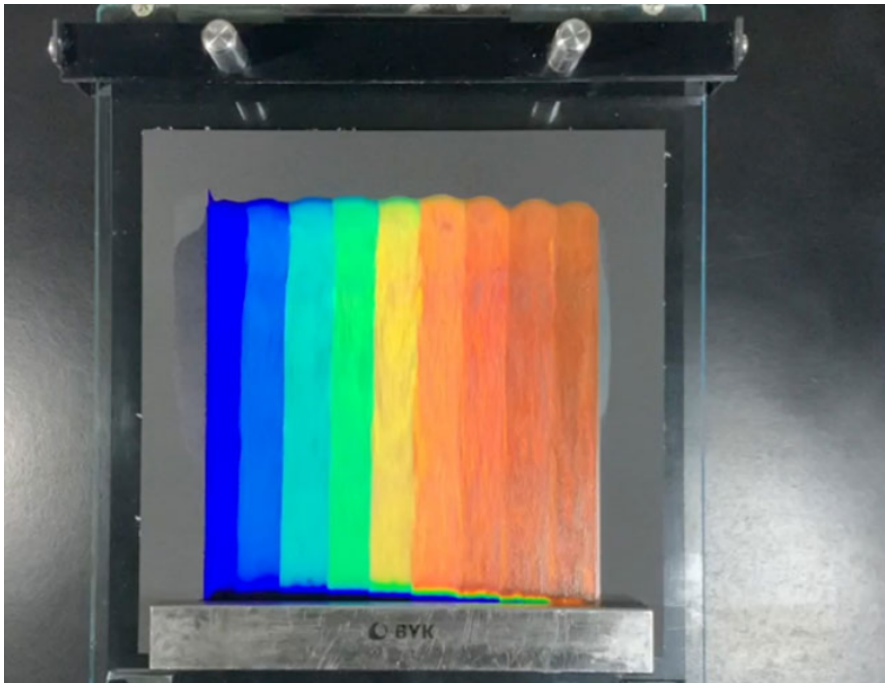


What's next?



Chemistry Innovations

Coming to a press near you!



Xaar Axalta paint

Cypris Materials/BASF Structural Color

Living Ink renewable carbon black seeing growth in inks.

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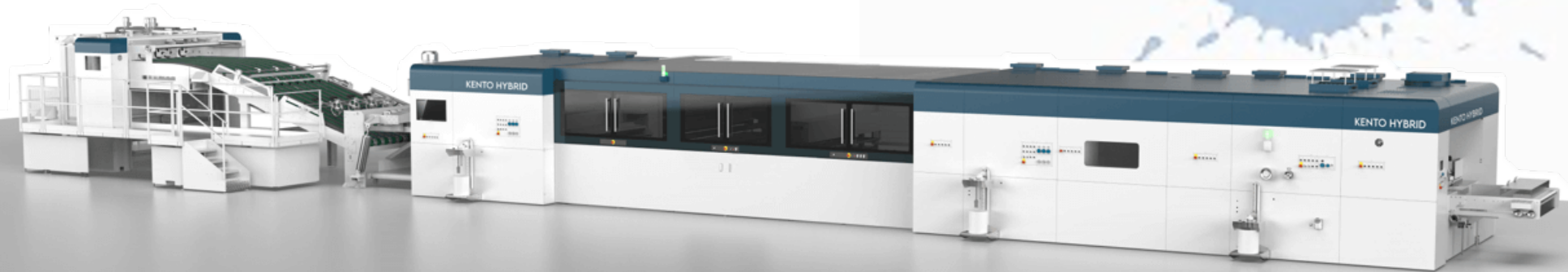
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Kento Hybrid Open Ink Model

- 176B Opportunity
- <1% Corrugated is digital today
- Ink cost is a barrier
- Automation
- Open ink systems
- Kento Hybrid

Pros and Cons of open ink models

- Competition / pricing
- Distributed liability / accountability



Upcoming Inkjet Insight Webinars

Innovations in Production Inkjet

Thursday October 12

Mary Schilling
Schilling Inkjet Consulting

Ralf Schlozer
digitalprintexpert.de

[Register](#)

Innovations in Inkjet for Textile Printing

November 14

Debbie McKeegan
TexIntel

Elizabeth Gooding
Insight Forums

Innovations in Inkjet for Packaging

Thursday October 12

Mary Schilling
Schilling Inkjet Consulting

Ralf Schlozer
digitalprintexpert.de

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Inkjet to Compliment “Box on Demand”

- Box on Demand
- Lower DIM
- Custom box for shipping
- Add Inkjet Engine



See our December Webinar on Inkjet for Packaging

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Inkjet Insight provides valuable tools and resources to help companies objectively **evaluate** the potential of inkjet for their business, **optimize** their operations and **grow** their businesses using production inkjet.

Our Message to Printers, OEMs and the Industry at Large:
Evaluate. Optimize. Grow.
Repeat.

Evaluate. Optimize. Grow.

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Terry Clayton: terry@summit-analytical.com

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