

## Digital transformation: Inkjet the last piece of the puzzle



- Market Update & Why
  - Print/Mail and packaging is rapidly changing to inkjet
- Technology
  - Single wide inkjet printheads for solutions under \$100k
- Applications
  - Current & future
  - Operational parameters & economics



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## Printing & Mail Trends

Print Outlook – Market Observations

Digital Transformation

Offset to Inkjet

Mailing and Parcel Grows Print



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## 2022 Print Market Observations

- 2022 Customer Print Volumes
  - Average Increases In Volumes
    - Sales Growth 10-22%
  - Print Shops Operation
    - 90% Capacity
- 2022 Market Forecast
  - Expect Growth of ~ 6-12%
  - Biggest Challenges
    - Supplies Consumable Pricing
    - Finding Labor
    - National Economic Conditions
- Planned Investment
  - Finishing Binding Equipment Digital
  - Inkjet
  - Workflow



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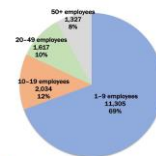
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## 2023 Inkjet Market Developments

- Focused Marketing Targets & Mail Operations in N.A.
  - 16,000 + Print Operations
  - 18,000+ Mail Operations
- Many Print/Mail Customer are Small Businesses <20 employees
  - Make Equipment Easy
  - Labor Challenges
- Apply Inkjet to Other Applications
  - Packaging
  - Inline Mail Opportunities
  - Mail and Direct Mail Addressing



Number of US Commercial Printing (Except Screen and Books) Establishments (NAICS 323111), 2020



WhatTheyThink

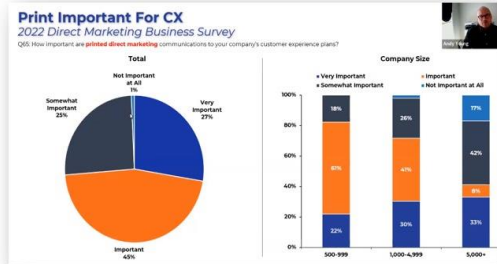


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# Printing with Inkjet Is Growing and Important

- **Business perspective:**
- 50% of Communication is moving from print to electronic (esp mobile)
  - esp for large (>5000+ employees) companies
  - esp for transactional communications
- **Direct mail: Print = key component of customer experience.** Spending on print for DM is up +5% y/y
- **Electronic communication better for communicating with established customers** (as in transactional space, bills, bank statements);
- **Physical print = critical for engaging/attracting new customers** (esp for smaller businesses);



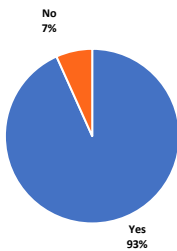
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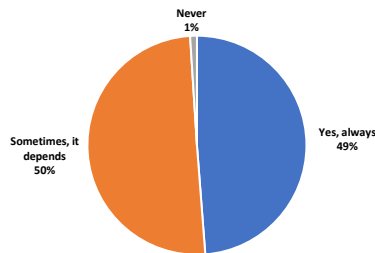
# Parcels As Emerging Direct Printing Channel

2022 Direct Marketing Business Survey

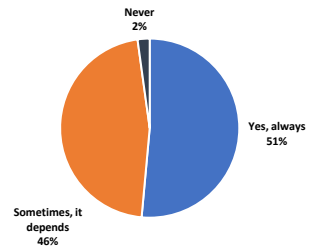
Q25: Does your company ship products directly to customers via FedEx, UPS, DHL or other shipping delivery companies?



Q26: When shipping items to directly customers do you include any additional printed direct marketing communications inside the parcel (box, package, envelope) with the item being shipped?



Q27: Are the additional printed direct marketing communications that are included in the parcel for shipping personalized for the customer with their name, unique graphics, and special offers?



An emerging channel for personalized direct marketing enclosed with item in shipping parcel/package

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# Technology Assessment

Single wide inkjet printheads options

Equipment less than \$100k

Operational Considerations Economics

Next Generation of Inkjet



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## Single Wide Print Head Options

**HP OEM Fixed Imager 1000**  
Fast, versatile, durable pigment ink



The HP OEM Fixed Imager 1000 (FI-1000) offers OEMs proven HP PageWide technology in a set of sub-assemblies and reference designs for building a fast, A3 (357 mm x 11.7 in), full color inkjet solution.

**Fast**  
The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing. The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing.

**Easy to customize**  
The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing. The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing.

**Scalable print run**  
The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing. The HP OEM Fixed Imager 1000 is a fast, versatile, durable pigment inkjet solution. It is designed for high-speed, high-volume printing.

**Introducing DuraFlex**  
A durable, flexible, and reliable inkjet solution for OEMs. It is designed for high-speed, high-volume printing.

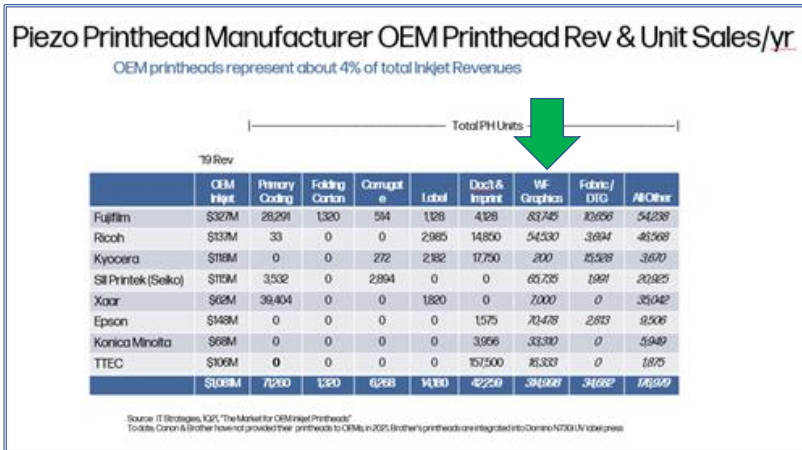
| Component/Feature | Specifications                          |
|-------------------|---|
| Print Head        | HP PageWide Pro 1000 (11.7 in x 357 mm) |
| Substrate         | HP PageWide Pro 1000 (11.7 in x 357 mm) |
| Print Speed       | Up to 100 ppm (A3)                      |
| Print Resolution  | Up to 1200 dpi                          |
| Print Color       | CMYK                                    |
| Print Size        | Up to 11.7 in x 357 mm                  |

**2023 Production Stop for DuraBolt**




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## Pagewide solutions from Piezo Based Solutions



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## Inkjet Equipment under \$100k in N.A.



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## Operational Needs = Real World Results

1. Improved Profits
2. Speed
3. Simplicity

**INKJET INSIGHT**  
Improving Operations and Profitability With Thermal Inkjet Technology

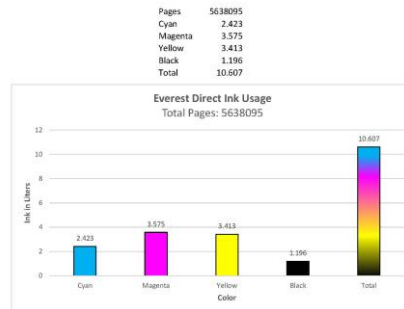
Improving Profitability in Mail & Direct Mail Production  
iJetColor Pro 1175P by Printware is an envelope press based on HP Fi-1000 TIJ technology. It can print short-run, full-colored variable data jobs using aqueous pigment based TIJ ink. It prints up to 11.7" wide with an adjustable printhead height of up to 2" to accommodate thicker substrates. The goal is to help mail shops improve profitability by utilizing the unique benefits of inkjet.

**Production full color envelopes.**  
Fi-1000 Thermal Inkjet Technology from HP enables TK-250K envelopes/day. Ideal for mail rooms, universities, churches and small to medium businesses.

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## The Economics of Inkjet

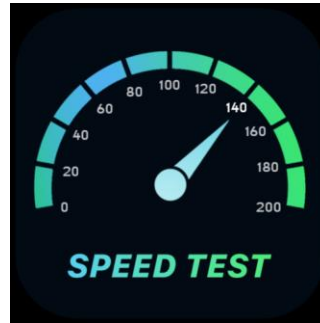
- It's always about the Total Cost Ownership
- Super Efficient Variable Costs = \$0.01
- Long Life Print Head 5M+
- Labor Rates like Digital Equipment



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## The Speed of Inkjet

- Jobs per hour/Minutes per order
- 3 Big Trends Collide:
  - Shorter Run Lengths
  - Full Color
  - Personalization
- 4,000 to 15,000+ /hr
- Affordable Systems < \$100k



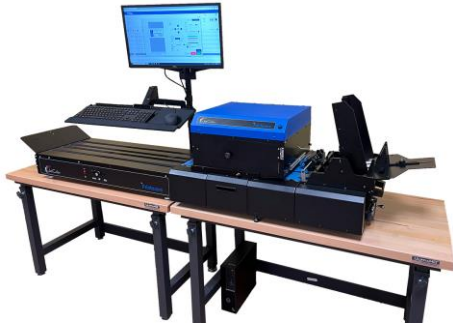
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## Inkjet– Next Generation Products Uncoated Materials



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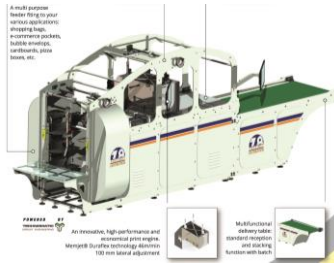
# Inkjet- Next Generation Products Uncoated Materials



iJetColor 1175



DURALINK®



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