

The Rise of Printing on Demand in Flexible Packaging

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ABOUT EPAC



ePac Flexible Packaging is the first North American *all digital*, full service, printer/converter providing economical short and medium run length jobs, to brands of all sizes, with rapid time to market and true high definition quality graphics.



Locations:

Madison . Boulder . Chicago . Miami . Austin (in process) . Los Angeles (in process)

KEY MILESTONES IN DIGITAL PRINTING

1977 – Xerox launches the first digital printing device, the Xerox 9700

- First major product developed by the Xerox Palo Alto Research Center (PARC)
- Sheet fed, B&W, 120 ppm, 300 DPI
- Data center applications (transactional)
- Contributed \$1B/yr. in revenue



Xerox 9700

1990 – Xerox launches DocuTech

- Combined high-res scanning, electronic editing, and printing
- Sheet-fed, B&W, 135 ppm, 600 DPI
- Advanced s/w controls and UI, in 1993 network connectivity added
- In-plant and commercial printers (publishing applications)
- Coincided with the Desktop Publishing revolution

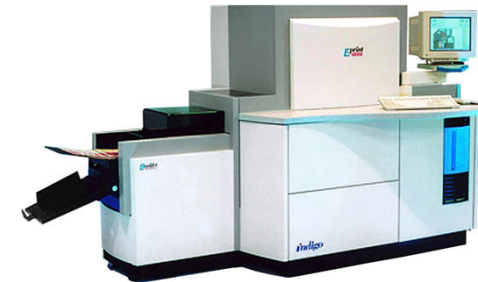


Xerox DocuTech

KEY MILESTONES IN DIGITAL PRINTING

1993 - Indigo launches the E—Print 1000

- Benny Landa founder
- Based on Electro-ink technology
- "High" quality 4 color imaging
- In 2001 HP acquired Indigo for \$729M



Indigo E-Print 1000

2014 – HP launches the Indigo 20000

- First wide format (30") digital press designed for flexible packaging
- 7 color press - CMYKOVG
- Image size 29" x 42"
- Speed up to 135 fpm
- Image quality 2,438 x 2,438 dpi (Hi-Definition)



Indigo 20000

GLOBAL PRINT MARKET GROWTH (BASED ON VALUE)

2017 - 2022

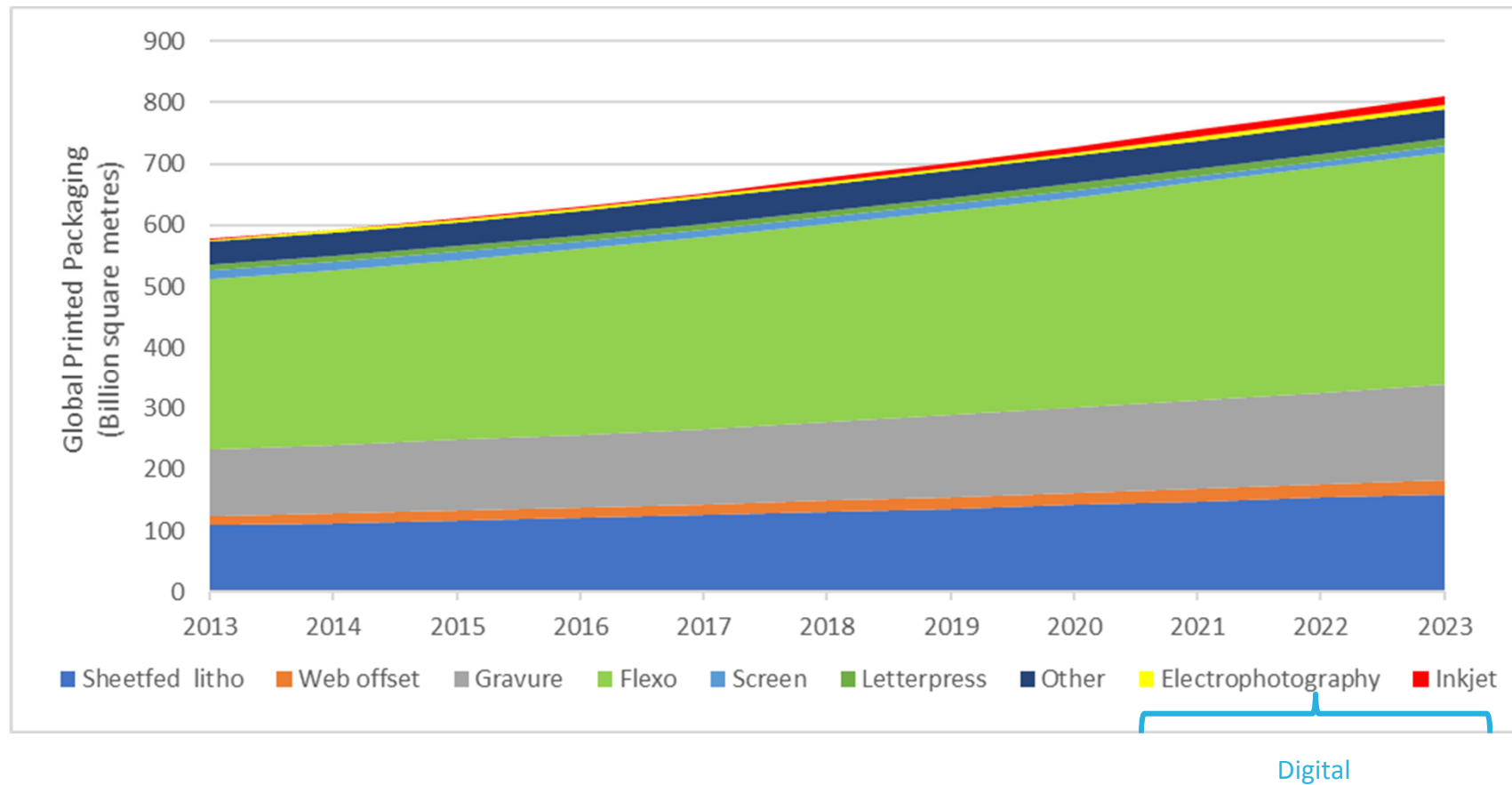
- Overall print market growth: 0.8% CAGR
- Digital print market growth: 3.9% CAGR
- **Digital print / packaging growth: 11.9% CAGR**

Drivers:

- Decline in US and Western Europe print volumes vs. increase in developing countries
- Digital growth driven by:
 - Electrophotography and ink jet technologies
 - Decline in offset printing
 - Workflow software and finishing options
 - Label and packaging applications

Sources: Smithers Pira / Statista

PACKAGE PRINTING METHODS



Source: Smithers Pira 2018

MARKET DRIVERS



Demographic Trends

- More people live alone
- Dual income households
- Increasing obesity
- Concern for environment
- Growth in E-Commerce
- Buy local

Lifestyle

- Smaller portion sizes
- Healthy snacking
- More Natural and Organic foods
- Work / life balance
- Eat on the run

Brand Impact

- More products, sizes, flavors, SKUs
- Growth of SMBs
- Growth in Natural and Organics
- Clear product labeling and graphics
- Decrease environmental impact
- Better marketing via packaging
- Distribution via E-commerce

CUSTOMER IMPACT



ePac

- Improves short and medium run economics
- Delivers faster turnaround times
- Addresses customization / versioning
- Produces great graphics
- Partners with SMBs
- Has less environmental impact
- Embraces digital technology

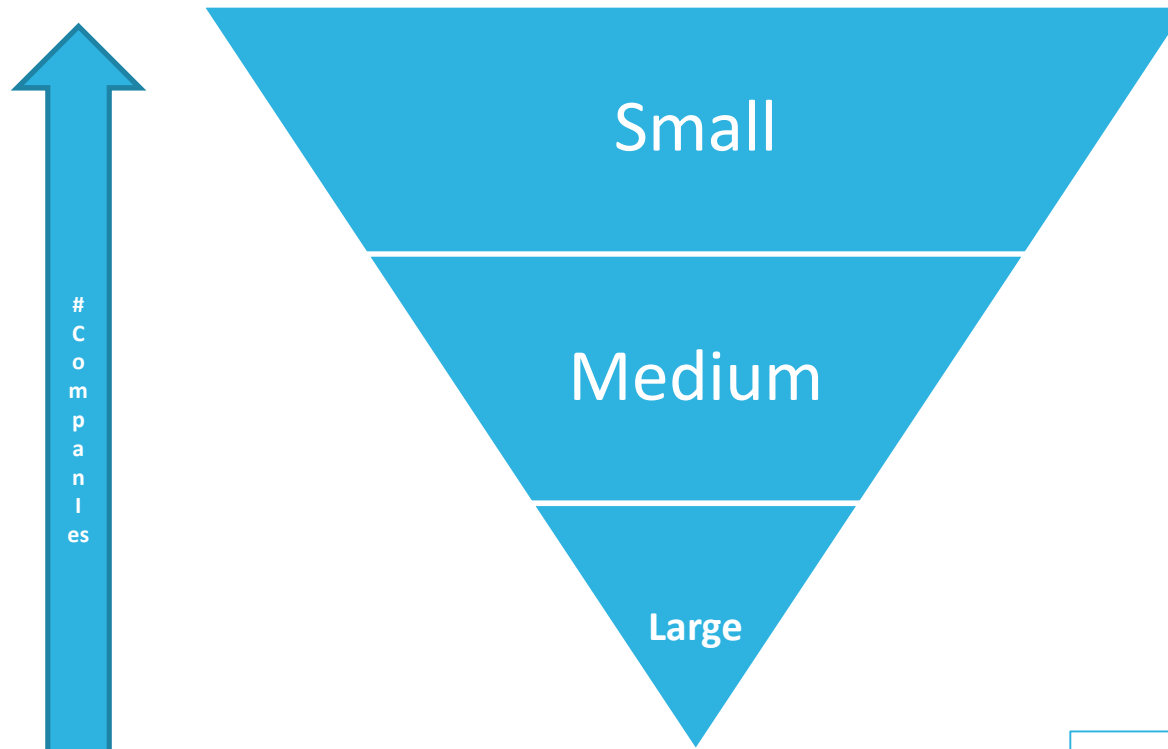


Enables Brands To

- Launch more new products – *faster*
- Run more promotions
- Order to demand
- Reduce inventory and obsolescence
- Make changes on the fly
- Buy American

EPAC VS. CONVENTIONAL

CRITERIA	EPAC	CONVENTIONAL
Lead Time to Ship	Orders ship in 10 business days.	6-12 weeks
Manufacturing Location	Multiple US Locations	Over \$4B of flexible packaging comes from overseas
Run Length	Specializes in short to medium length runs	Impose high minimum run lengths.
Inventory	Digital print on demand reduces inventory	High inventory levels required
Obsolescence	Minimal due to print on demand	High inventory obsolescence
Plate and Set Up Fees	No plate or set up fees. Ideal for multi-SKU orders	Plate and set-up waste costs are charged
Customization	Can customize to target market	Not possible with conventional printing
Target Marketing	Ideal for product launches promotions, regional and event marketing	Not possible with static print, impractical due to cost



SMB Pain Points:

- Time to bring new products to market
- Cost of change
- Cost of plates
- Cost of inventory and obsolescence
- High minimum orders
- Overseas packaging

Large CPG Opportunities

- Target marketing w/ variable data
- Product differentiation w/ variable imaging
- Promotions
- Test marketing

2017 SMB revenue growth +8.7%

2018 SMB projected revenue growth +9.1%

(Source: Dun and Bradstreet 12/17)

MULTIPLE SKU_s

The digital print ability to print short runs allows the brand to market test, and add SKU's with full agility and maximum quality.



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VARIABLE IMAGING & DATA

Concept: Mosaic



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Web based activities

Each version will be numbered.

This will allow a communication stream with consumers online.



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UNLEASH MARKETING POTENTIAL

Concept: Variable Data

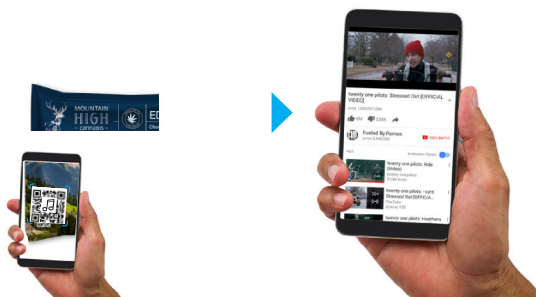


Using variable data can allow you to alternate images with no limits.



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Concept: Variable Data



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Concept: Variable Data

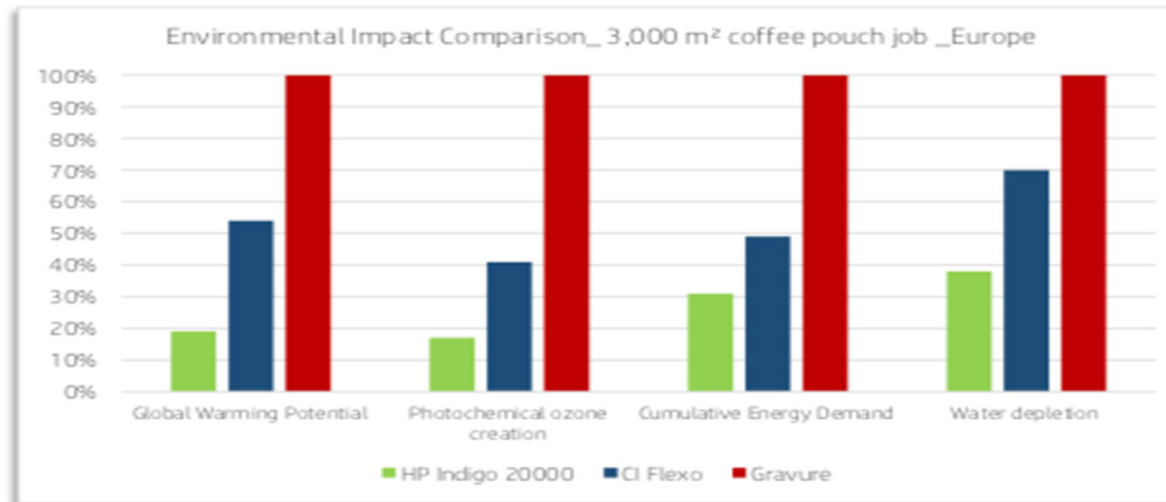


Using a variable QR code can lead to consumer engagement activities. Such as - each QR leads to a different shazam/youtube music clip.



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DIGITAL PRINTING AND SUSTAINABILITY



Source: HP Commissioned Study with EarthShift Global, LLC for 3,000 m² print job using CI Flexo, rotogravure and HP Indigo 20000 print technologies on a flexible coffee pouch substrate.

Drivers:

- Significantly lower press energy requirements than flexo or roto.
- Does not require the material and energy inputs to produce and process plates and cylinders for the print process.
- Minimal print setup and waste - uses less energy, ink, and substrate during print setup.

Digital advantage extends to ~ 85,000 (6" x 9" x 3") printed pouches

CASE STUDY-SKRATCH LABS

Skratch Labs – Package Portfolio Redesign

Located in Boulder, CO

- 5 years in business
- Sports nutrition products with natural ingredients
- 35 SKUs

Customer Focus Group Revealed:

- Packaging did not convey the concept of the “lab”, together with an emphasis on natural ingredients or product use differentiation
- Lack of functionality.

Result:

- Zippers that improve the moisture barrier
- Packaging that’s easy to tear open
- Contrasting soft-touch treatment with metallic patterns
- Bold colors and imagery to make the flavor identifiers more visible
- Enhanced graphics and material
- Single-serve packaging
- Consistent structure of design cues and naming hierarchy
- A brand refresh to focus on science and nature



[Skratch Labs Video](#)



Thank You!