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**SERVICE AREA:**

Business Development Strategies

# ANALYSIS

## INKJET APPLICATIONS MATTER!

Opportunities & Trends in Production Inkjet

AUGUST 2018





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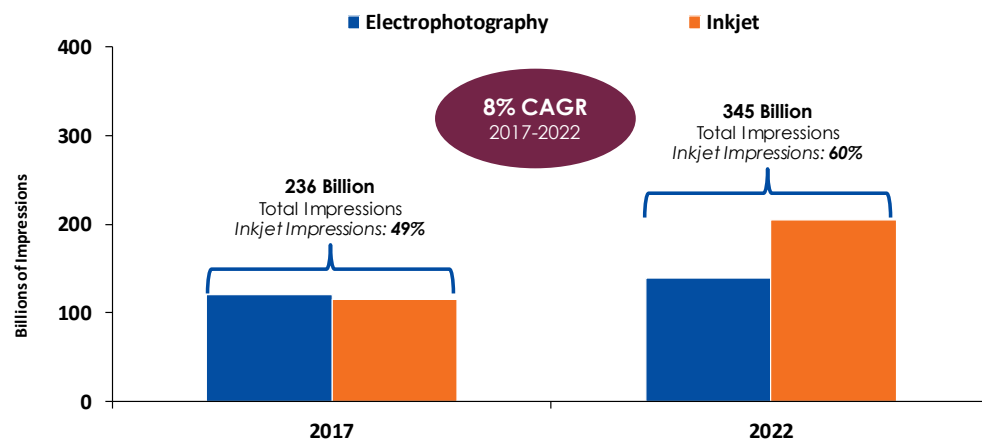
## Introduction

Inkjet offers all the advantages of digital printing—personalization, electronic collation, just-in-time manufacturing, workflow automation, fast speeds, and high productivity—as well as the ability to affordably produce higher-volume short run and personalized applications. It is creating improved opportunities for direct mail, marketing collateral, books, and other publications. Color consistency, reliability, productivity, and quality have improved, and these enhancements are directly linked to new processes, inks, heads, coatings, and substrate options.

## Inkjet Volume is Growing

Each year, Keypoint Intelligence – InfoTrends monitors the growth in digital print volume. Digital production color volumes totaled about 236 billion impressions in 2017 (Figure 1). InfoTrends expects volumes to approach 345 billion by 2022, with inkjet representing 60% of the total digital color volume.

Figure 1: Digital Print Volume Continues to Grow



Source: U.S. Print On Demand Market Forecast: 2017-2022; InfoTrends 2018

The dramatic growth that inkjet is enjoying is the result of a combination of factors, including:

- ◆ Continued innovations in technology
- ◆ The cost-effective migration of offset volume to digital color, based on significant improvements in speed, substrates, quality, and cost
- ◆ A drive for more customized communications
- ◆ New applications

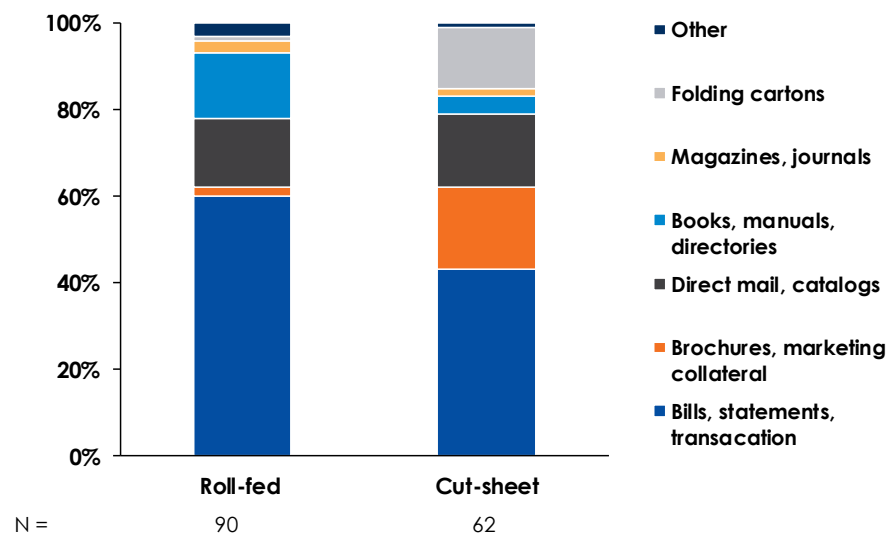
## Application Opportunities

In early 2018, InfoTrends completed its “High-Speed Inkjet Printing in Commercial Print Markets” research to capture perspectives from existing high-speed inkjet customers in key



market segments in North America, as well as understand the expectations of the next wave of customers (those that plan to invest in the next 24 months). According to the high-speed inkjet users profiled, the prevalent applications today for production inkjet are bills, statements, and regulated transaction communication for both roll-fed and cut-sheet inkjet systems. As shown in Figure 2, service providers are also using inkjet technology to produce marketing collateral and brochures, direct mail, magalogs and catalogs, as well as books, magazines, newspapers, folding cartons, and corrugated applications.

**Figure 2: Press Volume by Application (Roll-fed & Cut sheet Inkjet)**



Source: *High Speed Inkjet Printing in Commercial Print Markets*; InfoTrends 2018

Breaking down these applications by opportunity, the following tables lists the reasons for moving each application to inkjet, as well as benefits and onboarding recommendations for adding these applications to into an inkjet portfolio.


**Table 1: Transactional Printing Benefits & Opportunity**

Application: Transactional Printing (Bills & Statements)		
Opportunity	Benefits of Inkjet	Inkjet Suitability
<ul style="list-style-type: none"> <li>• Low ink coverage (&lt;10%)</li> <li>• Moderate print quality expectation</li> <li>• Increasingly willing to use process color vs. Pantone colors for corporate logos</li> <li>• Primarily use uncoated paper, standard weights</li> <li>• Extensive use of variable data</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate preprinted forms</li> <li>• Save on costs and time</li> <li>• No job-specific inventory</li> <li>• Higher productivity (queuing jobs)</li> <li>• Consolidate volume on fewer printers</li> <li>• Higher device utilization</li> <li>• Fewer operators needed</li> <li>• Add variable color options</li> <li>• Highlight key data</li> <li>• Add color graphics</li> <li>• Add/emphasize messages</li> <li>• Add promotional offers</li> <li>• Onserts vs. inserts</li> <li>• Images tuned to customer</li> </ul>	

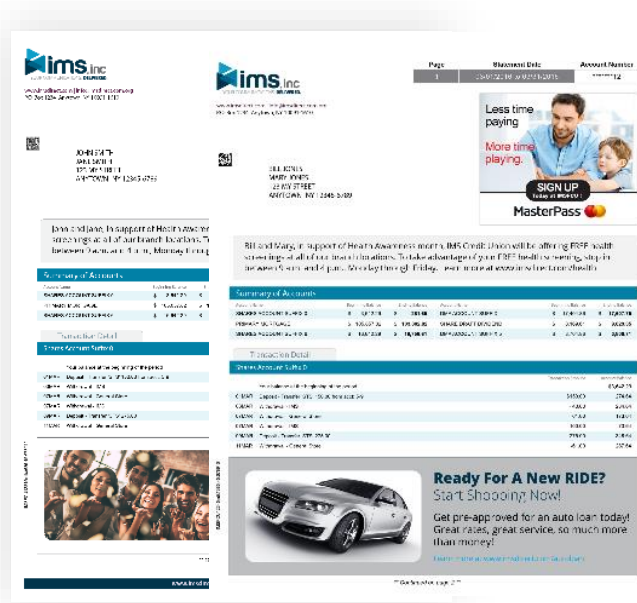
The original high-speed production inkjet application was bills and statements for telecommunications, insurance, credit cards, and other regulated communication. The power of starting with white paper, reducing the cost and time associated with offset preprinting of base stock - paired with the ability to produce full color print on a white paper base – opens opportunities for creating more targeted communication.

Today's quality enables creating not only brand-compliant transaction print, but also TransPromo communication, pairing targeted marketing to the transaction communication, and onsert communication to replace inserts. With help from a good design team, images can be selected that are appropriate for the customer profile. Another option used by companies in this market is the ability to add personalized educational content, including customized charts and guidance based on customer spending.

An often-overlooked feature of high-speed inkjet production is the option to change type, size, or weight to meet customer preferences or requirements - without first needing to send those documents to a specialized accessibility service.



Figure 3: Example Inkjet-Printed Transactional Statements



Source: IMS Inc.



**Table 2: Direct Mail Printing Benefits & Opportunity**

Application: Direct Mail (Letters, Postcards, Brochures)		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>• Low to high ink coverage (&lt;10% to 100%)</li> <li>• Moderate to very high print quality (depends on brand, marketing strategy)</li> <li>• Often uses multiple printing processes (Offset + Toner, IJ)</li> <li>• Often very long runs, fast turnaround</li> <li>• Extensive use of variable data</li> </ul>	<ul style="list-style-type: none"> <li>• Integrate or eliminate printing processes</li> <li>• 100% inkjet printing – especially for letters, postcards</li> <li>• Hybrid - offset press with inkjet heads</li> <li>• Multi-technology options pairing offset and inkjet pages.</li> <li>• Enhance inkjet addressing – images, messages on envelopes</li> <li>• Eliminate inkjet addressing</li> <li>• Eliminate selective inserting – use inkjet to print variable pages vs. inserting</li> <li>• Consolidate volume on fewer printers</li> <li>• Higher device utilization</li> <li>• Fewer operators</li> <li>• Increase variable color</li> <li>• More color images, graphics, messages, maps</li> <li>• Reduce production time, complexity</li> <li>• No need to schedule pre-printing</li> <li>• Distribute production to multiple plants across country (East, West)</li> <li>• Enable some PSPs to move to 100% digital production</li> <li>• Eliminating offset saves on space, operators</li> <li>• Enable some PSPs to insource jobs (e.g. roll fed offset work)</li> <li>• High interest in glossy paper, light weight paper, and ability to print higher coverage (images, maps) on both sides of sheet</li> <li>• Interest in additional color stations for spot varnish, flood coat, special colors/inks</li> </ul>	



Content and communication managers have an array of options when they are deciding how to deliver their messages. Direct mail marketing, postcards, and brochures form the backbone of most campaigns, often paired with online, mobile, or mass media delivery. For print communication, inkjet provides a cost-effective solution that is available across a growing number of substrate options. Today's inkjet can produce vibrant color that faithfully produces brand colors, as well as supporting photographic images. In addition, because it is digital, campaigns can be highly targeted, even if they are not personalized. Two options becoming more common in inkjet production shops are the ability to print on gloss stock and lightweight substrates, as well as adding spot and flood coating. Paired with higher coverage and the introduction of fifth and sixth color options coming into the market, communications managers and their design team have new tools to empower their communication so that it is always read.

Figure 4: Example Direct Mail



Source: Darwill





**Table 3: Magalog and Catalog Printing Benefits & Opportunity**

Application: Magalog and Catalog Printing		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>Moderate to high ink coverage (20% to 60%)</li> <li>Moderate to very high print quality</li> <li>Depends on brand, marketing strategy</li> <li>Uncoated, matte, glossy coated papers</li> <li>Minimum of 32 pages</li> <li>Often designed in 32-page multiples to take advantage of full-size roll-fed presses</li> <li>Often needs light weight papers (postage) similar to magazines</li> <li>Often uses multiple printing processes</li> <li>Offset (cover, text) + IJ (addressing)</li> <li>Concerns about finishing, folding, mail stream</li> <li>Often very long runs (50,000+)</li> <li>Low use of variable data</li> <li>Addressing</li> </ul>	<ul style="list-style-type: none"> <li>Integrate or eliminate printing processes</li> <li>100% inkjet printing</li> <li>Hybrid offset press with inkjet heads for magalogs and catalogs (covers, sections)</li> <li>Multi-technology options pairing offset and inkjet pages.</li> <li>Addressing added during primary printing</li> <li>Consolidate volume on fewer printers</li> <li>Higher device utilization</li> <li>Fewer operators</li> <li>Increase variable color</li> <li>More color images, graphics, messages, maps</li> <li>Reduce production time, complexity</li> <li>No need to schedule pre-printing</li> <li>Distribute production to multiple plants across country (East, West)</li> <li>Enable some PSPs to move to 100% digital production</li> <li>Eliminating offset saves on space, operators</li> <li>Enable some PSPs to insource jobs (e.g. roll fed offset work)</li> <li>High interest in glossy paper, light weight paper and ability to print higher coverage (images, maps) on both sides of sheet</li> <li>Interest in additional color stations for spot varnish, flood coat, special colors/inks</li> </ul>	

Catalogs are gaining momentum again, and magalogs (promotional catalog or sales brochures designed to imitate magazines) continue to attract attention. Where catalogs typically provide information on a range of products, magalogs take the concept in a slightly different direction by interweaving informational and educational content among the products offered for sale. Both can be powerful ways to keep recipients engaged, and inkjet is a reliable, quality method for printing these products. For catalogs and magalogs,



the trend is to use short run, targeted production to deliver a quality product. Today's inkjet supports high resolution images in vivid color across a range of substrates, appropriate to everything from hardware catalogs to luxury goods.

**Figure 5: Example of Inkjet-Printed Magalog**



Source: TiS Lifestyle



Table 4: Book Printing Benefits &amp; Opportunity

Application: Book Printing		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>• Low ink coverage (&lt;10%)</li> <li>• Trade, technical</li> <li>• Moderate to high coverage (10% to 50%)</li> <li>• Illustrated, photo</li> <li>• Moderate to high print quality</li> <li>• Uncoated, matte, lightly coated papers</li> <li>• Extensive use of recycled paper</li> <li>• Illustrated/photo books may be on glossy</li> <li>• Often uses light weight, high opacity paper</li> <li>• 50 lb./75 gsm, 90+ opacity, smooth</li> <li>• Typically uses a single printing process (Offset, Toner, IJ)</li> <li>• Short to long runs (500 to 50,000+)</li> <li>• High use of print to order, short run (in trade books)</li> </ul>	<ul style="list-style-type: none"> <li>• Shift to print on demand production</li> <li>• 100% inkjet printing for book blocks</li> <li>• Eliminate offset and toner printers for book blocks</li> <li>• Consolidate volume on fewer printers</li> <li>• Higher device utilization</li> <li>• Fewer operators</li> <li>• Increase use of color</li> <li>• More color images, graphics, messages, maps</li> <li>• Reduce production time, complexity</li> <li>• Faster order to shipment cycle</li> <li>• Print near delivery, shipping centers</li> <li>• Enable more PSPs to move to 100% digital production</li> <li>• Longer runs</li> <li>• Retire underutilized presses</li> <li>• High interest in lightweight paper and ability to print higher coverage (images) on both sides of sheet</li> <li>• Interest in high speed/throughput (wide web, large sheet)</li> <li>• Enable profitable production of short runs</li> <li>• Custom publishing</li> </ul>	

Book printing is a mature inkjet application. From educational books and primers to trade and specialty books, inkjet provides a high-quality, low-cost solution for the shorter production runs commonly required to meet the new supply chain realities across education, professional, and retail markets. Originally considered for only monochrome book blocks, high-speed inkjet is now appropriate for both monochrome and full color publications in a variety of sizes and run lengths. One emerging use of inkjet is to reactivate back catalogs to create new revenue streams, instead of allowing slower sellers to languish in archives.



Figure 5: Example of Inkjet-Printed Book



Source: Stone Arch



Table 5: Magazine Printing Benefits & Opportunity

Application: Magazines		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>• High ink coverage (30% to 80%)</li> <li>• Consumer</li> <li>• Trade</li> <li>• Custom publishing</li> <li>• Niche, special interest</li> <li>• High to very high print quality</li> <li>• Depends on publication</li> <li>• Matte and glossy papers</li> <li>• Typically need light text paper (38# to 60#)</li> <li>• Often use heavier weight covers (8 to 12 point)</li> <li>• Typically use a single printing process</li> <li>• Offset, gravure – roll-fed</li> <li>• Few concerns about finishing, mail stream</li> <li>• Smudges, adhesives, coatings</li> <li>• Run lengths can range from thousands to millions</li> <li>• Tight production windows</li> <li>• Little use of variable data (addressing)</li> </ul>	<ul style="list-style-type: none"> <li>• Short run, special interest, custom publishing</li> <li>• 100% inkjet printing for content block</li> <li>• Eliminate offset for content blocks</li> <li>• Potentially shorter runs</li> <li>• More versions</li> <li>• Customized inserts, sections</li> <li>• Hybrid offset / inkjet to add customization to long run publications</li> <li>• Post press process (bindery line)</li> <li>• Enable profitable production of short runs</li> <li>• Localized versions (language, regions)</li> <li>• Custom publishing</li> <li>• Complement conventional printing</li> <li>• High interest in lightweight paper, glossy stock, and ability to print higher coverage (images) on both sides of sheet</li> <li>• Interest in high speed/throughput (wide web)</li> </ul>	

Inkjet is the appropriate technology for short run magazines targeted to hobbyists and professional audiences, but it is also a valuable solution for traditional popular magazines looking to add special sections that target regional or local content or offer reprints of out-of-print editions. The wide range of matte and gloss stock in appropriate weights, along with the high-resolution print options, form an excellent platform for magazine printing that is cost-effective and durable.



Figure 6: Example of Inkjet-Printed Magazine



Source: Ugly

Table 6: General Commercial Printing Benefits & Opportunity

Application: General Commercial Printing (Brochures/Pamphlets, Newsletters, Signage, Stationery)		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>Moderate to very high ink coverage (15% to 100%)</li> <li>Moderate to very high print quality</li> <li>Depends on brand, positioning</li> <li>Wide range of papers—coatings, basis weights, finishes</li> <li>Frequent use of spot colors, foils, special inks, coatings, varnishes</li> <li>Numerous sizes, finishing (die cuts, folds, trims, embossing/debossing)</li> <li>Wide range of run lengths—hundreds to hundreds of thousands</li> <li>Concerns about quality consistency, finishing</li> <li>Low to moderate use of variable data (usually for direct mail)</li> </ul>	<ul style="list-style-type: none"> <li>Move short run work off conventional presses for better utilization</li> <li>Displace toner presses</li> <li>Larger sheets</li> <li>Short run printing</li> <li>Eliminate offset, gravure</li> <li>Print on demand</li> <li>More versions</li> <li>Add more variable data</li> <li>Personalization/Customization</li> <li>Hybrid offset (long run RF or CS work)</li> <li>Enable profitable production of short to mid-size runs</li> <li>High interest in wide range of papers, glossy stock</li> <li>Interest in high speed/throughput (larger sheet sizes – A3+, B2, B1)</li> <li>Sheet fed printing of signage, brochures</li> </ul>	

General commercial printing with inkjet is a mature application that has expanded as the range of substrates and increased resolution have combined to support static and variable



jobs. Originally considered for newsletters and brochures, where inkjet provides a cost-effective solution, inkjet routinely supports the production of posters, end-of-aisle and point-of-sale signage, brochures, flyers, newsletters, and most other commercial work.

**Figure 7: Example of Inkjet-Printing Commercial Work Samples**



Source: Canon Solutions America



Table 7: Packaging Printing Benefits &amp; Opportunity

Application: Packaging (Folding Cartons, Corrugated – for consumer, commercial, food, beverage, pharma, cosmetics)		
Opportunity	Benefits of Inkjet	Inkjet Suitability Ranking
<ul style="list-style-type: none"> <li>• Low to high ink coverage (10% to 100%)</li> <li>• High to very high print quality</li> <li>• Depends on brand</li> <li>• Uncoated, matte, glossy papers</li> <li>• Typically need heavyweight paper, board</li> <li>• 400 gsm+, 18 point+</li> <li>• May use multiple printing processes</li> <li>• Offset, gravure, flexo – sheet, roll fed</li> <li>• Often use spot, specialty colors, inks, coating</li> <li>• Brands, enhancement, protection, security</li> <li>• Concerns about cutting, folding, gluing, inks</li> <li>• Durability, smudges, adhesives, toxicity</li> <li>• Run lengths can range from hundreds to millions</li> <li>• Little use of variable data – bar codes, dates</li> </ul>	<ul style="list-style-type: none"> <li>• Move short run work off conventional presses for better utilization</li> <li>• Displace toner presses</li> <li>• More colors at rated speed</li> <li>• Short run packaging</li> <li>• Eliminate offset, gravure, flexo</li> <li>• Print on demand</li> <li>• More versions</li> <li>• Add variable data</li> <li>• Track &amp; trace</li> <li>• Security, authentication</li> <li>• Print methods</li> <li>• 100% inkjet printing</li> <li>• Hybrid offset</li> <li>• Enable profitable production of short runs</li> <li>• Small lot products</li> <li>• Custom packaging</li> <li>• Products difficult to forecast demand</li> <li>• Localized versions (language, regions)</li> <li>• Complement conventional printing</li> <li>• High interest in heavy weight and thick papers and board</li> <li>• Interest in high speed/throughput</li> </ul>	

Inkjet printed digital packaging comes in many sizes, shapes, and production methods. Folding carton solutions allow for the production of customized packaging in a variety of sizes, and in many cases permit printing on both the inside and the outside. This allows for targeted messages and other types of personalization and customization. Corrugated packaging production offers solutions that include preprinting the liner prior to corrugation and printing on corrugated boards of all types. Most solutions support color, some with up to six colors. The goal is to offer more targeted, localized, customized, and even personalized packaging at a cost-effective price.





Figure 8: Example of Ink-Jet Printed Packaging



Source: Zumbiel Packaging



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# opinion

## InfoTrends' Opinion

The core value of production inkjet technology is that it enables print applications that cannot be produced with other technologies, like producing more affordable high-value personalization, shorter runs, and versioning. High-speed inkjet systems are producing high volumes for transaction and direct mail not because they are cheaper than offset, but because they can do something that offset cannot do. High-speed inkjet is delivering value to marketers, enterprises, and service providers. It offers affordable digital color and associated improvements in operational costs, response rates, and time-to-market. Organizations that have not yet explored the inkjet opportunity are encouraged to do so in the near future to avoid losing out on all its benefits.



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[Comments or Questions?](#)

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