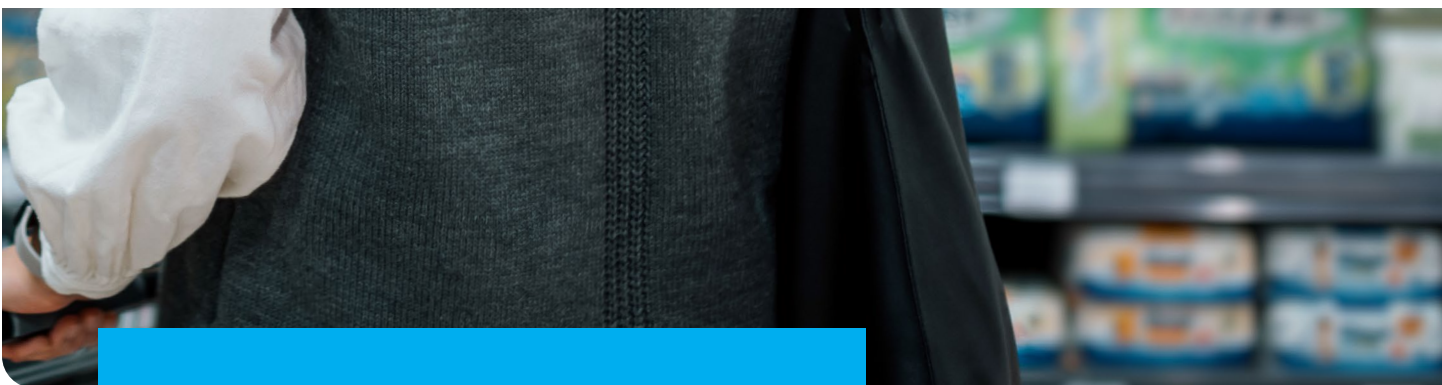




# Pursuing Packaging Printing **with** **Digital Printing**

 **NAPCO**RESEARCH



**Printing**  
Impressions

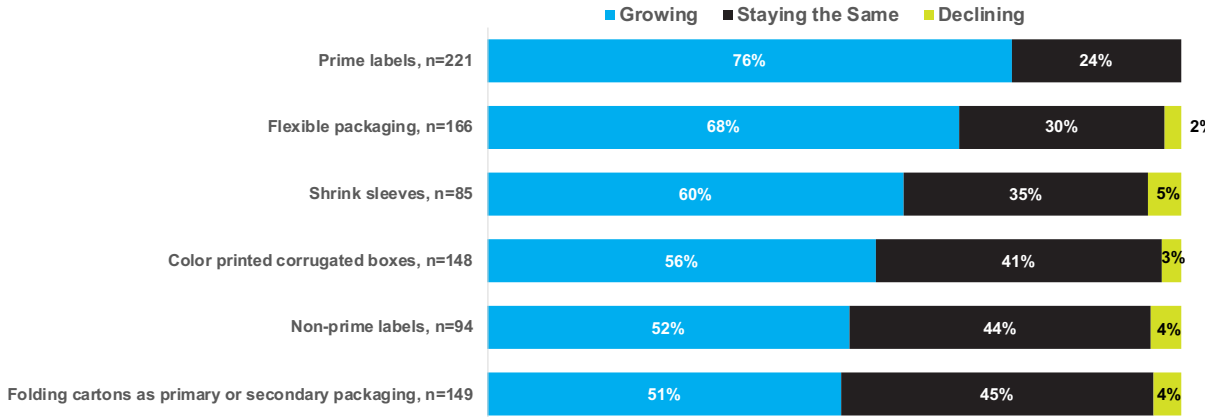
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# Digital Printing Lowers Barriers for Commercial Printers to Pursue the Package Printing Market

Commercial printers are well aware of the benefits of offering package printing and are taking action to add it to their service offerings. Many factors are removing entry barriers and accelerating commercial printers' migration into packaging. Ongoing progress in technology innovation, digital printing, early adopter successes, process simplification, customer demands, and fierce competition are all forces enticing and enabling commercial printers to offer labels and other types of packaging.

Labels, folding cartons, corrugated containers, and flexible packaging are all print applications typically in high demand and cannot be easily replaced by digital media. [A recent NAPCO Research survey of brand owners](#) reveals packaging is a growth opportunity. More than half of brand owners participating in the survey report increasing use of labels, folding cartons, corrugated packaging, and flexible packaging (Figure 1). While this survey was conducted prior to the COVID-19 pandemic, NAPCO Research's [ongoing 2020 and 2021 print provider surveys](#) tracking business conditions indicate packaging has been a resilient application.

**Figure 1: Demand for Packaging Applications**



Q. Please indicate if your use of the following types of packaging is growing, declining, or staying the same.

n=Varies, Base 266 Brand Owners

Source: Digital Packaging Printing: The Time Is Now!, NAPCO Research 2019



Interestingly, the pandemic itself increased demand for packaging as consumers upped e-commerce purchases. The high volume of e-commerce ordering is likely to continue as consumers have become accustomed to its convenience, and the distribution channel has adapted to meet increasing volumes. The increase in e-commerce sales is creating demand for all types of packaging, from labels, to folding cartons, to corrugated packaging.

## ADD PACKAGING TO GROW AND DIVERSIFY

Commercial printers are expanding their core businesses into adjacent market segments, like packaging, as a way to grow and diversify. A review of the print applications offered by companies featured in the most recent [Printing Impressions 350](#) roster of the industry's leading firms in the U.S. and Canada ranked by annual sales, reflects commercial printers' moves into packaging. The 2020 edition of the venerable list includes 97 companies that reported offering both commercial and package printing — seven more than on the 2019 list.

One of the earliest packaging applications pursued by commercial printers — largely because it can be printed on sheetfed offset presses — is folding cartons. Paper-based substrates, like folding cartons, are more familiar to commercial printers than the complex films used in flexible packaging. The first commercial printers to move into packaging recognized folding cartons as being an application they were best suited to take on.

Nearly two-thirds of commercial printers (64%) that produce packaging and participated in a 2020 NAPCO Research survey identified sheetfed offset presses as the most common equipment type used to produce packaging. This reflects commercial printers' early entry into packaging with folding cartons, but also points to the rise of digital printing. After sheetfed presses, commercial printers reported that digital presses were the next most common type of equipment used for printing labels and packaging.

## DIGITAL PRINTING HELPS LOWER ENTRY BARRIERS

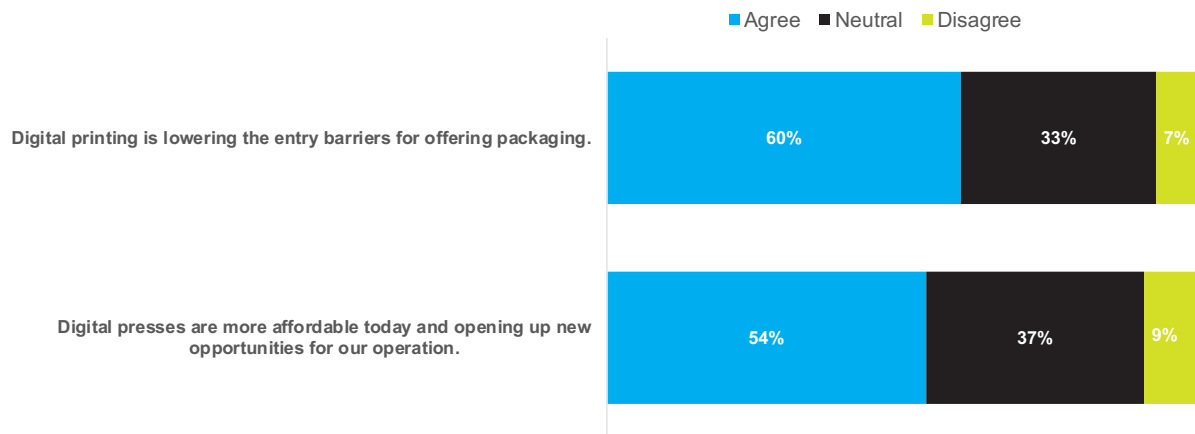
While many commercial printers may have entered packaging by printing folding cartons on sheetfed presses, the ongoing technology developments in digital presses are lowering entry barriers for offering packaging.

Hardware, software, inks and toners, and substrates for producing labels and packaging on digital presses are constantly evolving, resulting in more automated and less complicated processes. These innovations are lowering the investment risk because they reduce technology complexity, workflow steps, and process variables.

The majority of commercial printer respondents (60%) participating in NAPCO Research's 2020 survey believe digital printing is lowering the entry barriers to offering packaging (Figure 2). The survey is part of a research project titled [Lowering Entry Barriers in Digital Packaging Printing](#). The research, sponsored by Memjet, explores the market trends, innovations, and forces that are reducing obstacles for organizations looking to either enter or expand their offerings in label and packaging printing.

Today there is a digital device for every budget and pressroom size, from digital machinery costing well into the seven figures, to tabletop devices for a few thousand dollars. A typical barrier to entering or expanding in the packaging market is investment cost. More than half of survey respondents believe digital package printing equipment is more affordable today and offers new opportunities for their operations (Figure 2). What's more, 92% report printing labels and packaging on digital presses.

**Figure 2: Digital Printing Lowering Packaging Barriers**



*n=120 Commercial printers that print labels and packaging*  
*Source: Lowering Entry Barriers in Digital Packaging Printing, NAPCO Research/Memjet 2020*



## THE INFLUENCE OF PRODUCTION INKJET

Inkjet is a key digital printing technology that is reducing entry barriers to offering packaging. Printhead developments, in particular, are enabling digital press manufacturers to offer less expensive systems that feature high resolutions and fast speeds.

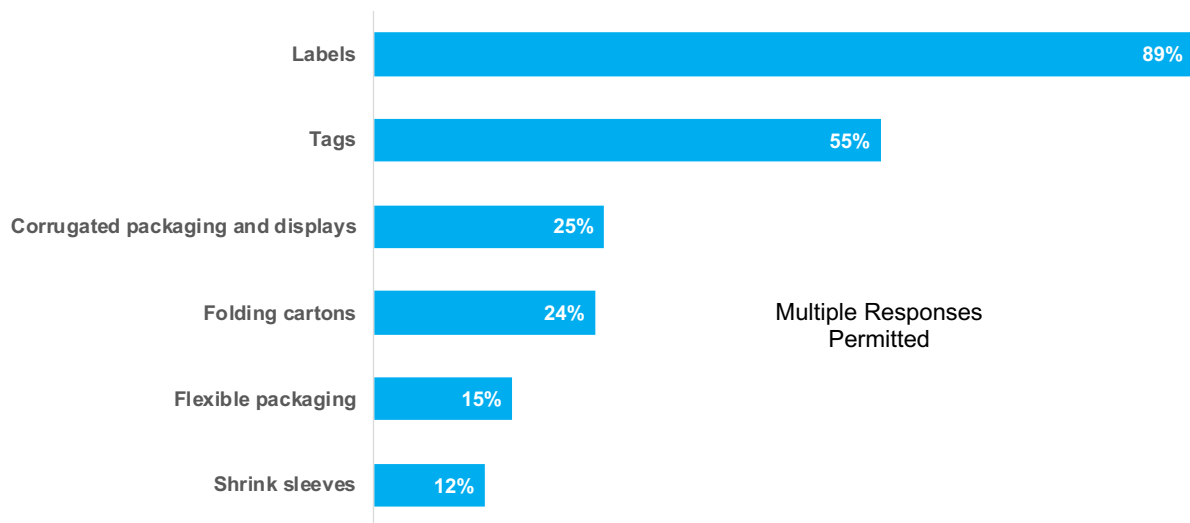
In addition, the ability of inkjet to print directly onto various substrates — including corrugated material, folding cartons, and flexible films — makes it an attractive option and less complex process compared to alternatives.

Inkjet printing of packaging is the next stage in a print provider's evolution to serving brand owners. Competitive cost structures, faster printing speeds, enhanced image quality, and the ability to print on a wider variety of substrates are breaking barriers that previously restricted inkjet technology from achieving wider use in label and packaging applications.

## LABEL PRODUCTION LEADS THE WAY

Labels were one of the first packaging applications to migrate from conventional presses to digital devices. It was the top packaging application produced by commercial printers participating in NAPCO Research's 2020 survey, by a wide margin compared to other applications (Figure 3).

**Figure 3: Types of Packaging Applications Printed**



Q. Does your company offer any of the following packaging applications?  
n=131 Commercial printers that print labels and packaging  
Source: Lowering Entry Barriers in Digital Packaging Printing, NAPCO Research/  
Memjet 2020



The label market is diverse, and multiple types and sizes of digital label printing devices exist to serve it. Digital printing systems include electrographic presses, as well as single- and multi-pass inkjet printing devices, that output digital files directly onto rolls of papers, films, foils, and other materials that can be converted into various types and sizes of labels. In addition, some wide-format printers and printer/cutters also are well suited for producing labels.

Folding cartons, corrugated packaging, and flexible packaging, too, can be printed on digital presses, and offer growth opportunities to commercial printers. Here is brief summary of the benefits of producing these applications on digital presses:

**Folding cartons** can be printed by a wide range of processes, including offset, digital toner, and digital inkjet presses. Advantages offered by digital printing of folding cartons include affordable short-run production, fast turnarounds, versioning, and personalization.

Progress in sheetfed inkjet and finishing have opened up possibilities for commercial printers to take advantage of new inkjet technology offerings. Inkjet sheetfed presses with a B2 sheet size and greater rival offset press image quality with 1,200x1,200 resolution. They can also address a wide variety of folding carton requirements with their support of thick paper — up to 400 gsm or 0.6 mm — and sheet sizes up to 23x29.5”.



In addition, digital finishing systems and embellishment presses can apply foil and specialty coatings to folding cartons, offering commercial printers new sources of profitability. Enhancing folding cartons with decorative elements is gaining in popularity, as new digital printing technologies have enabled these features to become more cost-efficient to produce.

Printing **corrugated materials** on digital devices is creating new opportunities for adding more colors, graphics, and special effects, while accommodating customer demands for short runs, versioning, and personalization. Previously, the corrugated packaging segment was more difficult to enter as specialized printing and finishing equipment was required.

Today, both multi- and single-pass color inkjet printers are lowering the entry barriers to printing corrugated packaging. Inkjet wide-format devices are printing high-quality graphics directly onto corrugated materials and liners. More and more, digital wide-format devices are being developed or modified for high-speed printing on corrugated paper and board.

**Flexible packaging** is made from paper, plastic, film, foil, and metallized or coated papers, or any combination of these materials. The most common forms of flexible packaging are pouches, bags, and other pliable product containers. Compared to rigid forms of packaging, there are more restrictions on the printing processes that can produce flexible packaging applications. The majority of flexible packaging is produced via flexographic or gravure printing.

Digital printing's volume of flexible packaging is tiny (less than 1%) when compared to analog processes, but it is beginning to have an impact. Digital printing of flexible packaging started on electrophotographic devices, but the ongoing introduction of high-speed inkjet devices is likely to expand its use. According to the Flexible Packaging Association, food packaging represents half of U.S. industry sales. Given that half of flexible packaging is purchased for use in food applications, food safety is a critical requirement.

## TOP 5 BENEFITS OF PRINTING PACKAGING DIGITALLY

Digital printing offers label and packaging producers and their customers many attractive benefits. According to NAPCO Research's 2020 survey, commercial printers that print packaging on digital presses report the top five benefits these devices deliver to their operations include accommodating customers' short-run production needs (62%); printing multiple versions in a single print run (51%); faster turnaround (50%); the ability to cost-effectively print prototypes or short-run samples (49%); and personalization (45%).

As such, brand owners recognize the benefits of digital printing. According to NAPCO Research's study, *Digital Packaging Printing: The Time Is Now!*, 80% of brand owners prefer to work with printers/converters that offer digital printing. Digitally printed packaging is providing brand owners with many exciting opportunities to better serve customers, improve internal operating efficiency, and drive sales and profitability.

Digital printing's short-run capabilities offer brand owners important operational benefits, including accommodating stock-keeping unit (SKU) proliferation, reducing storage requirements, minimizing product obsolescence, and improving design testing. Prior to digital printing devices, brand owners' packaging testing options were limited as the costs to produce printing plates and other setup costs made it too expensive to print lower quantities.

NAPCO Research’s brand owner surveys frequently find that shelf competition, lifestyle shifts, changing regulations, and product safety are key packaging influencers that play directly to digital printing’s strengths. Digital printing’s ability to produce versioned packaging and labels more effectively than conventional printing enables brand owners to offer more compelling versions that stand out from competitors.

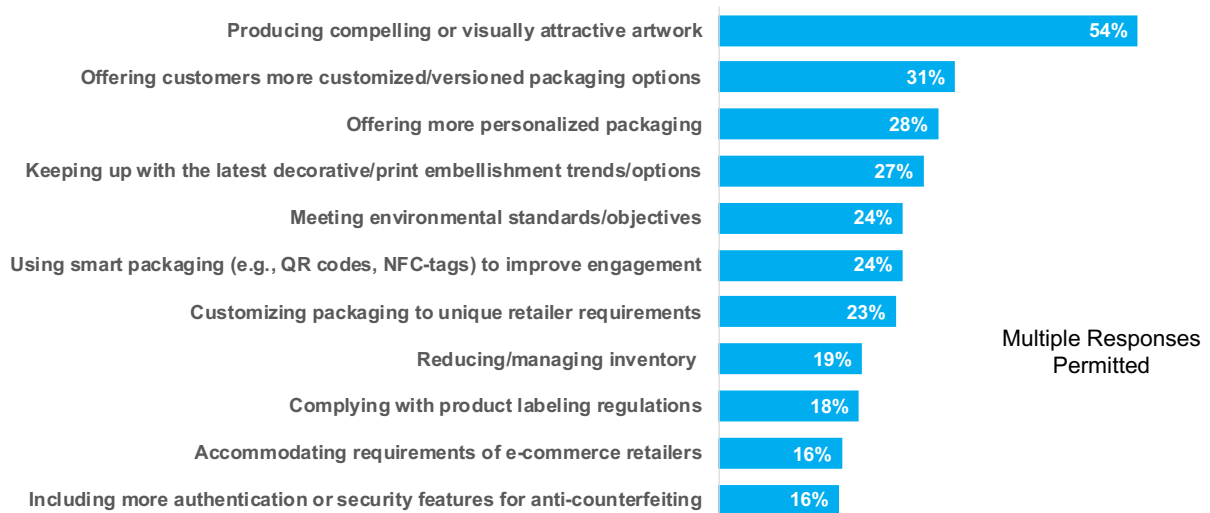
In addition, variable data printing of expiration dates, barcodes, and batch numbers also enables manufacturers and distributors to track products and offers buyers essential product information.

## EXPANDING PACKAGING’S FUNCTIONAL ROLE

Labels and packaging are powerful extensions of a brand, and often a customer’s first experience with a product. In turn, brand owners are seeking ways to expand the functional role of their labels and packaging from a container that transports products, or a label that identifies “what’s inside,” to a marketing vehicle.

A recent NAPCO Research brand owner survey found that producing compelling or visually attractive packaging was a top priority for a majority of respondents (Figure 4). This finding indicates that brand owners recognize the marketing and promotional potential offered by their labels and packaging and are looking for providers that offer innovative recommendations for capturing attention.

**Figure 4: Brand Owners’ Key Packaging Objectives**



Q. What are your top packaging-related objectives?  
 n=528 Marketers that influence label and packaging purchasing  
 Source: NAPCO Research 2019



Other important objectives centered on finding ways to enhance packaging’s ability to engage customers (i.e., more versions, personalization, embellishment, smart packaging), improve supply chain management through better inventory management, and meet regulatory requirements.

## THWARTING PRODUCT COUNTERFEITING

Brand theft is a chronic challenge for many organizations. Technology has made it possible to more easily duplicate product packaging. In addition, product knock-offs have expanded from luxury goods to almost all products. Another important area of brand protection is gray-market goods, where legal products are sold outside the normal distribution channel. This is also referred to as product diversion, as products are sold in “unauthorized” places.

Digital printing devices offer brand owners a strong solution to authenticate products. The ability to print variable images and text is a key weapon in brand protection. Digital presses allow brand owners to print a unique number, image, or code for tracking or authentication purposes on individual packages and labels. In addition, some digital printing devices can print special visible or invisible inks.

The packaging segment is ripe with opportunity for commercial printers. While a strong track record in commercial printing doesn't assure an identical result when expanding into packaging, it is an excellent base to start.

Technology advances, process simplification, substrate availability, and more digital printing options are all removing entry barriers and enabling more commercial printers to offer labels and other types of packaging.



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# WHO WE ARE

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## Printing Impressions

For 61 years, *Printing Impressions* has provided authoritative coverage and analysis on industry trends, emerging technologies, and graphic arts industry news, with a focus on the commercial printing segment. We connect with our audience via a monthly publication, a daily enewsletter, videos, webinars, the Inkjet Summit event and the “Show Daily” for PRINTING United, the largest printing event in North America.

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