



**Corrugated Packaging:  
From Shipping Container  
to Marketing Vehicle**

**How Digital Inkjet Printing is  
Creating New Possibilities**



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### INTRODUCTION

A combination of forces, from lifestyle shifts to new print technology to consumer demand, is giving corrugated packaging a decorative makeover and expanding its role of protecting products to include marketing them. Corrugated packaging's transformation from plain brown shipping boxes to product containers with high-quality graphics and print embellishment is expanding opportunities for package printers/converters.

Advances in substrates, inks, decorative techniques, and inkjet printing heads for direct printing on corrugated board or preprinting liner are enabling brand owners to use the packaging application to enhance customer experiences and build brand awareness.

Corrugated packaging offers organizations a recurring opportunity for building brand awareness and reputation because it travels through many hands in the supply chain, from shipment to final destination. The ability to enhance corrugated packaging's appearance more efficiently, together with its widespread use, makes it the perfect tool for branding, promotion, and sales.

According to The Paper & Packaging Board, corrugated boxes are more widely used today than at any other time in their 164-year history, largely due to growth in e-commerce. In fact, the group believes corrugated materials have entered a golden age of creativity and use.

This special report, sponsored by Memjet, combines NAPCO Research survey data, *Packaging Impressions'* industry reporting, and secondary research to showcase how inkjet printing, brand owner demands, and market trends are elevating the quality, role, and opportunities of corrugated packaging.

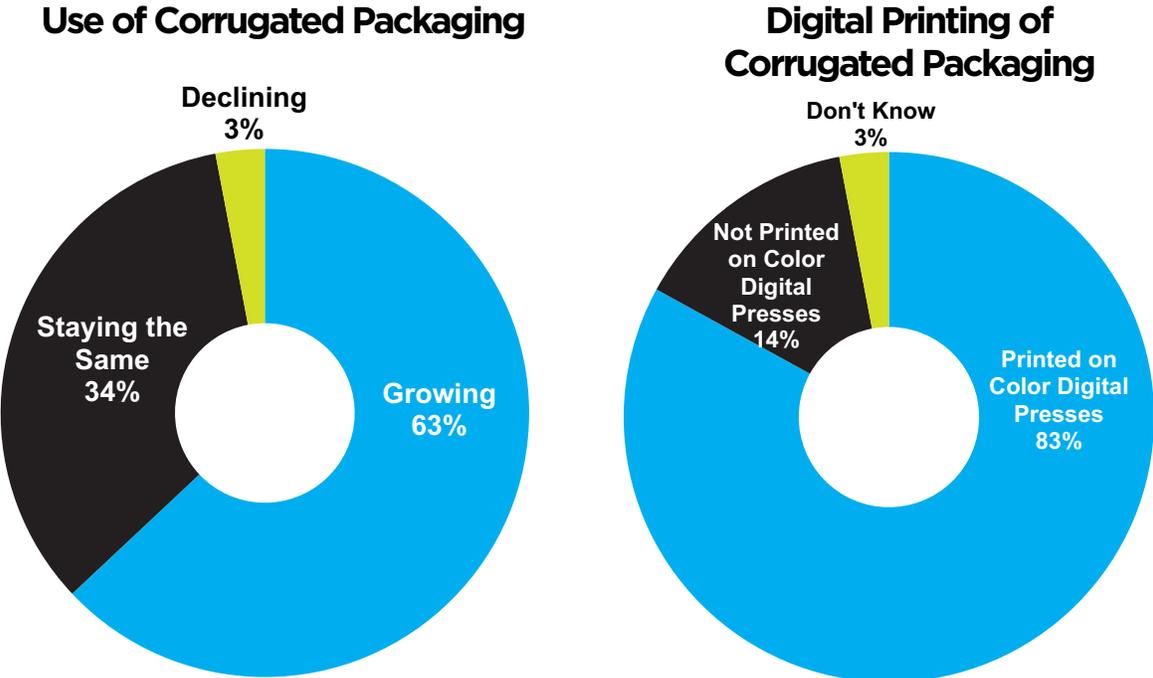
# THE DIGITAL CORRUGATED PACKAGING OPPORTUNITY

Corrugated board is the most frequently used shipping material, and advances in printing technology are expanding its marketing role in product packaging.

Market data from the Fibre Box Association highlights the popularity and use of corrugated packaging. The group reports 39 billion corrugated packages are delivered every year and estimates the size of the U.S. market for corrugated packaging and displays is \$35.2 billion.

A NAPCO Research survey indicates brand owners are highly interested in using corrugated packaging. The research study Digital Package Printing: The Time Is Now! found that brand owners' use of corrugated packaging is growing. In addition, brand owners reported using corrugated packaging printed on digital color presses (Figure 1).

**Figure 1: Demand for Corrugated Packaging Growing**



Q. Please indicate if your use of color printed corrugated packaging is growing, declining, or staying the same

Q. Of the applications you produce, which are printed on color digital presses? Response for corrugated packaging

n=76 brand owners that purchase corrugated packaging  
Source: Adding Value to Digital Printing, NAPCO Research 2019



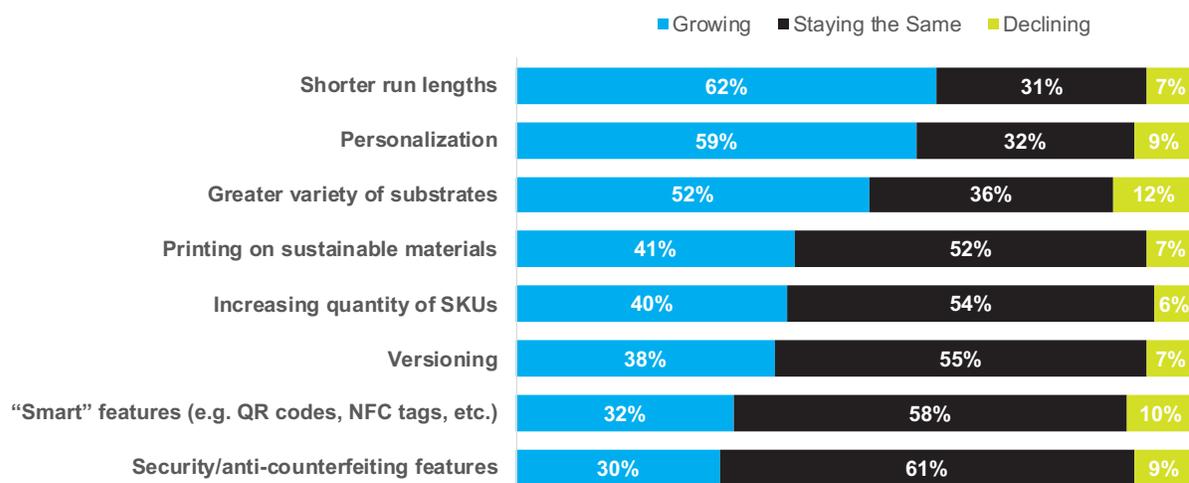
Digital printing is solidifying corrugated packaging's attractiveness as a marketing tool because it combines high-end print quality with short-run cost efficiency. Corrugated packaging is also becoming more available to brand owners as digital printing enables more providers to offer it. Previously, the corrugated packaging segment was more difficult to enter as specialized printing and finishing equipment was required.

In addition, digital printing provides brand owners with new possibilities for direct printing on containerboard or preprinting linerboard to attach to manufactured corrugated board. New opportunities include cost-effectively producing short runs, improving graphics, adding more colors, including special effects, reducing turnaround times, enabling more versions, and having the ability to test packaging concepts.

While digital printing of corrugated is starting to take hold, most corrugated packaging is printed on either flexographic or offset presses. Flexography is often used to print one or two colors directly on the corrugated material. Offset printing is used typically to print graphics on coated liners that are glued to the corrugated box.

A recent NAPCO Research/Memjet survey of corrugated package printers/converters reveals why digital printing is an attractive alternative. Respondents reported growing demand for shorter runs, increasing numbers of stock-keeping units (SKUs), greater versioning, and security features (Figure 2) – all areas well suited for digital printing.

## Figure 2: Digital Printing Meets Corrugated Customers' Demands



Q. Please indicate if demand from your label and packaging customers for the following requirements is growing, staying the same, or declining.  
*n=69 companies that print corrugated packaging and displays*  
 Source: Lowering Entry Barriers in Digital Packaging Printing, NAPCO Research/Memjet 2020



The combination of higher print quality with short-run cost efficiency is elevating the use of digitally printed corrugated packing.

## CORRUGATED PACKAGING IS A POWERFUL BRAND AMBASSADOR

Advances in printing technology, substrates, and finishing methods are expanding color and special effects options to add new quality features to corrugated packaging's list of popular benefits — it's strong, lightweight, made with renewable materials, and recycled at a high rate.

Packaging is an important part of any company's marketing strategy, and in many respects is the fifth "P" of the marketing mix. Packaging is a significant vehicle for presenting marketing messages to consumers at the point of consideration, purchase, and delivery.

According to an Ipsos survey of 2,000 U.S. adults on behalf of the Paper and Packaging Board, 72% believe that the design of a package is a key influencer when selecting products to buy. In addition, 71% of respondents report they are more likely to buy brands from companies that package their products in paper or cardboard than in other materials.

A driving force in the use of corrugated packaging as a marketing tool is the growth in consumers purchasing products over the Internet.

As more products are shipped to buyers in corrugated boxes, marketers are looking for ways to leverage packaging to build awareness and influence perceptions of the recipient and any others viewing the box before it reaches the final destination.

### **Figure 3: Adding Color Graphics to Corrugated Packaging Captures Attention**



Source: <https://colordyneinkjet.com>

## E-COMMERCE GROWTH LEADING THE CORRUGATED EVOLUTION

Ongoing growth in e-commerce is a key factor generating demand for corrugated packaging and expanding its functional role — product protection — to include marketing. Market research firm Statista estimates that e-commerce sales will reach \$6.54 trillion in 2022.

The COVID-19 pandemic has accelerated online product purchases, which will likely continue as consumers have become accustomed to the convenience of online ordering and the supply chain has adapted to meeting increased volumes.

### Figure 4: E-commerce Growth Is Increasing Demand for Corrugated Packaging



*Photo: Getty Images / Ichumpitaz*

The enormous growth in e-commerce purchasing is moving the point of customer engagement from physical store locations to buyer locations. When a customer receives an online order, this may be his or her first physical interaction with a brand, and in that lies a huge opportunity for impact. This shift is leading brand owners to specify more colorful, aesthetically pleasing, customized packaging that creates an emotional “unboxing” experience.

According to a NAPCO Research survey, 33% of brand owners report that creating unboxing excitement for e-commerce sales is a key challenge.

Brand owners are creating more colorful, customized, and engaging packaging to create an emotional “unboxing” experience for e-commerce customers. Exciting packaging strengthens the customer relationship, builds brand advocates, and can result in new customer referrals. Customers often document and share their experience opening a package via social media videos or images.

## SUSTAINABILITY MATTERS, AND CORRUGATED MAKES THE GRADE

Another important marketing feature of corrugated packaging is its sustainability. Sustainability is an essential priority for brand owners, retailers, and consumers. Consumer demand for sustainable packaging influences designs, substrates, printing processes, and provider selections.

A recent survey of 2,000 U.S. consumers conducted by Two Sides North America finds that packaging is becoming a driving force in consumer purchasing decisions, and that consumers care about sustainability.

According to the survey:

- More than half of consumers (57%) prefer products ordered online to be delivered in paper/cardboard packaging, and two-thirds (66%) believe paper/cardboard packaging is better for the environment than other types of packaging.
- More than a third (38%) will spend more on a product if it is in eco-friendly packaging, while 36% will avoid retailers that are not taking steps to reduce their use of non-recyclable packaging.

Corrugated packaging offers sustainability advantages. A primary ecological advantage of corrugated boxes is that they are commonly recyclable and are made from a high percentage of recycled paper, including cartons or newspaper. While other forms of packaging may claim recyclability, corrugated packaging is one with a solid recycling infrastructure.

More corrugated packaging is recovered for recycling than any other packaging material. Most municipal recycling programs collect corrugated materials for recycling. The American Forest & Paper Association (AF&PA) estimates that 96% of U.S. citizens have access to community curbside or drop-off corrugated recycling programs.

### **Figure 5: Strong Support for Corrugated in Municipal Recycling Streams**



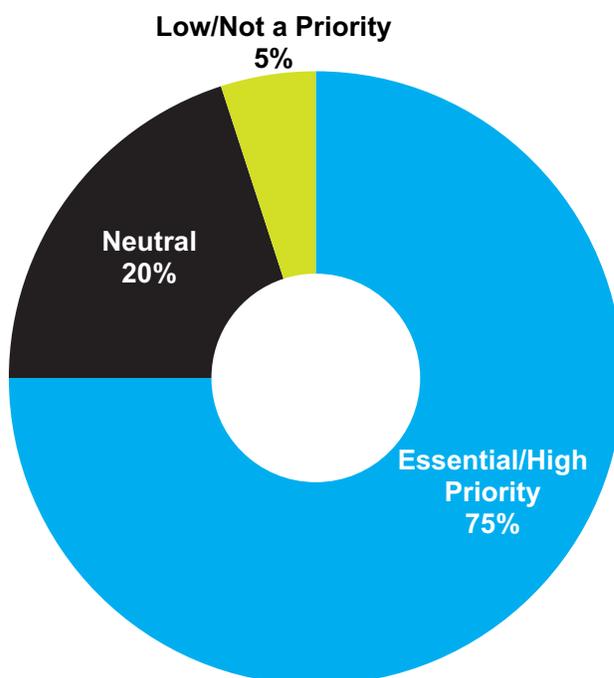
*Photo; Getty Images / subjug*

As brand owners become more focused on sustainability, corrugated packaging is commonly recycled. The pulp and paper industry is already adept at converting it into new generations of containerboard. Memjet water-based, pigmented inkjet inks will fully support the recycling of printed corrugated materials, and will not create toxic waste streams.

## INKJET PRINTING: A SUSTAINABLE ALTERNATIVE

Inkjet printing of corrugated packaging offers sustainability advantages to brand owners. According to a NAPCO Research survey, 75% of brand owners report sustainability is a high priority (Figure 6).

**Figure 6: Sustainability is a Top Priority for Brand Owners**



*Q. What is your level of priority for the following packaging-related objective:  
Meeting environmental standards/objectives?  
n=255 Brand owners  
Source: Adding Value to Digital Printing, NAPCO Research 2019*



An often overlooked sustainability advantage of inkjet printing is that it can economically produce the exact quantities required. Digital printing's ability to accommodate shorter runs enables converters and brands to reduce costs and waste associated with overproduction. A recent NAPCO Research survey found that combating waste created by rapid product obsolescence was a top challenge for 29% of brand owner respondents.

## INKJET PRINTING CREATING NEW CORRUGATED POSSIBILITIES

Stunning full-color graphics, customizable content, and reduced turnaround times are all making corrugated packaging a more attractive alternative to brand owners and marketers alike. A big factor enabling new creative techniques used in corrugated packaging is high-speed, single-pass, digital presses. Although the technology is still in its early stages of adoption, it is quickly demonstrating its value to corrugated printers and their customers.

Innovations in single-pass, high-speed, direct-to-board digital presses are offering brand owners new corrugated options and advantages, including:

- Flexible print runs
- Affordable setup costs
- Personalization and versioning
- New level of quality

These single-pass digital color inkjet solutions — like the ones powered by Memjet inkjet technology — print extremely fast, firing millions of drops of ink per second to produce exceptional quality at a low cost. The printheads can be flexibly assembled to create various widths and system speeds depending on the type of packaging needed. A plain corrugated package only has to pass once underneath the fixed printheads to lay down all of the colors and details required.

The use of digital printing is expanding in corrugated printing as a result of high-speed, single-pass inkjet printing systems. While multi-pass flatbed inkjet printers have been used for some time to print corrugated board, their slower speeds have limited use. For inkjet to make its mark in printing corrugated packaging, more productive devices with faster printing speeds were required to meet customer demands.

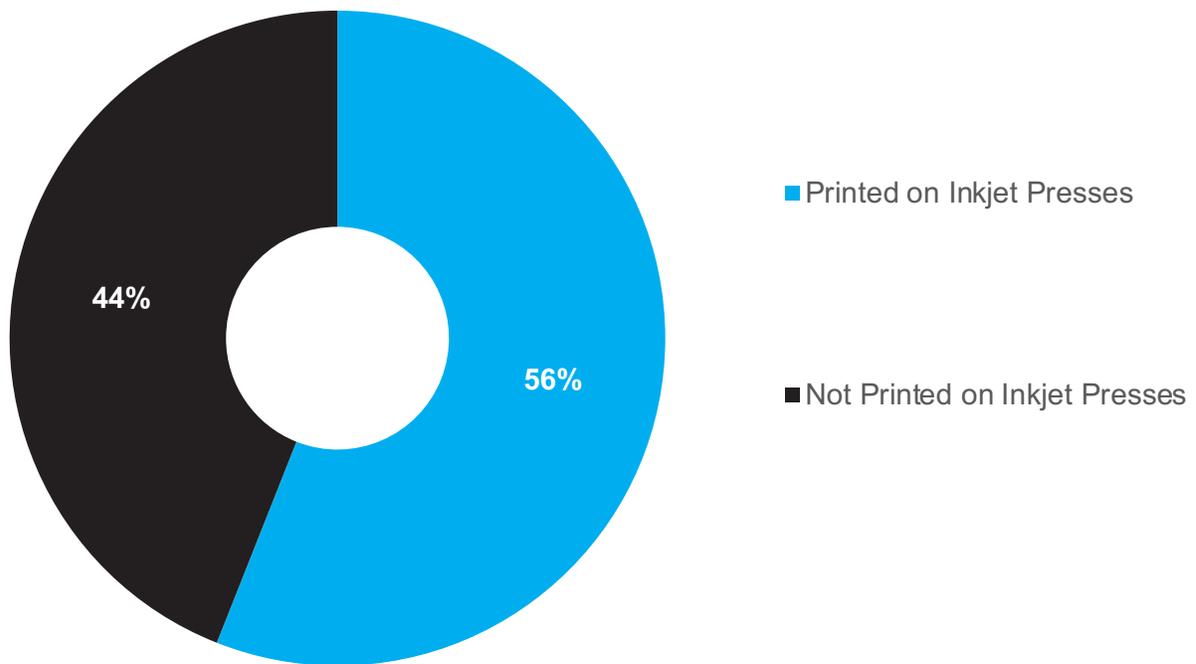
Single-pass inkjet printing uses multiple printheads that are positioned along the whole width of the substrate, instead of heads moving from left to right over the substrate. This enables faster printing since the substrate moves at a constant speed through the printer and the total image is created in one pass.

Another way that modular inkjet printing is influencing corrugated is when it is incorporated into the late stages of box-making. On these machines, boxes are created on demand based on the size of the contents, and the ability to add custom graphics that match the size of the box — and potentially even the recipient of the box — can be a significant advantage.

The major inkjet printhead manufacturers have worked to eliminate many of the obstacles for printing corrugated cardboard substrates. One example is color matching, as there are single-pass inkjet systems printing up to seven colors. The expanded color gamut enables corrugated printers to accurately hit customers' brand colors and produce more realistic images — capabilities that are critical for brand owners.

Inkjet printing is gaining ground in corrugated printing. A NAPCO Research/Memjet survey of package printers/converters found that 56% of respondents that print corrugated packaging were printing it on inkjet presses (Figure 7). While the majority of corrugated packaging volume is printed by flexography, this research finding indicates package printers/converters are adding inkjet printing to the production mix.

## Figure 7: Printing of Corrugated Packaging on Inkjet Presses



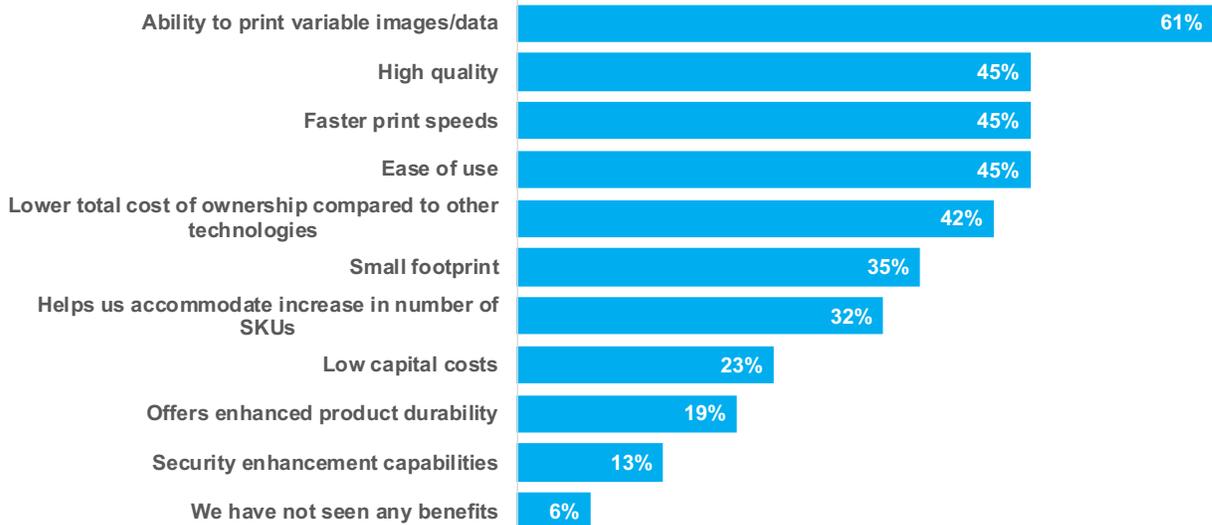
Q. Of the packaging applications you print, which are printed on inkjet devices?  
Response for corrugated packaging and displays  
n=41 companies that print corrugated packaging and displays  
Source: Lowering Entry Barriers in Digital Packaging Printing,  
NAPCO Research/Memjet 2020

**NAPCO**RESEARCH

FM Future's the Future of Inkjet 2020 offers another proof point on the heightened role of inkjet in corrugated packaging printing. Of the 129 companies participating in the group's survey — a mix of inkjet developers, manufacturers, and print providers from printers in the U.S. and Europe — 56% identified corrugated and folding cartons as segments poised to be significant adopters of inkjet printing.

Inkjet printing offers corrugated printers many attractive benefits. According to the NAPCO Research/Memjet survey, respondents that printed corrugated packaging on inkjet devices identified the ability to print variable images/data, high quality, ease of use, faster print speeds, and lower cost of ownership compared to other printing methods (Figure 8) as top benefits. These benefits reflect the value and role inkjet printing is playing in expanding corrugated packaging’s ability to enhance customer experiences and build brand strength.

## Figure 8: Benefits of Inkjet Printing of Corrugated Packaging



Q. What are the top benefits of printing packaging on inkjet printing devices?  
*n=31 respondents that print corrugated packaging and print packaging on inkjet printing devices*

Source: Lowering Entry Barriers in Digital Packaging Printing, NAPCO Research/Memjet 2020



## CONCLUSION

There is no doubt corrugated packaging’s stature as a marketing and branding tool will continue to grow as brand owners become more familiar with new capabilities. As packaging printers step up efforts to educate brand owners on the advantages that inkjet printing delivers to corrugated packaging, more creative innovation will follow.

Inkjet printing of corrugated packaging offers many attractive benefits for brand owners in enhancing customer experiences and marketing results. Say goodbye to the mundane brown box and hello to a visually compelling, engaging, functional, eco-friendly packaging alternative.

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# WHO WE ARE

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## **NAPCO**RESEARCH

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# WHO WE ARE

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Beautiful Precision, Simplicity, and Affordability.

Memjet is a global leader in the design and development of innovative thermal inkjet printhead technology, supporting modules, and aqueous inks. The modularity and technical components, combined with Memjet's commitment to customer success, empower OEM partners all over the world to develop fast, cost-effective printing solutions to grow and succeed in new markets. Together, we are building the future of print.

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2. [DuraLink® technology](#)
3. [DuraFlex® technology](#)

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