



MAKING AN IMPACT

*The new digital
era in corrugated
packaging*

EXECUTIVE SUMMARY

A woman with long dark hair and glasses is smiling broadly while holding a large cardboard box. She is wearing a blue and white plaid shirt. The background is a light, neutral color. The image is partially obscured by a large purple graphic element on the left side of the page.

The corrugated packaging industry is having a revolutionary moment. Dramatic changes in consumer trends, including the declining effectiveness of traditional advertising – and even of traditional online marketing – are driving brands to seek new ways of reaching their customers. Corrugated converters now have the opportunity to work with brands in a whole new way, to help them reach consumers through the one medium that simply cannot be ignored – product packaging.

With brands' spotlight now shining brightly on packaging, digital printing is a must. Only with digital printing can corrugated converters offer the production flexibility, advanced applications such as versioning and customization, and high quality that brands are increasingly demanding. As brands leverage new packaging opportunities to interact with customers, they also seek to enhance the “unboxing experience.” The growing trend of people sharing the process of opening packages on social media drives consumer engagement and gains attention for brands.

This paper examines the key trends driving change in today's packaging market, the challenges brands face, and the resulting demands on their corrugated packaging suppliers. It reviews the role of digital printing in meeting those demands, and presents the HP PageWide C500 Press as a powerful solution for post-print corrugated converters who wish to exploit new opportunities for growth.

THE SHAPE OF PACKAGING

*Where we are,
where we're
going*



THE SHAPE OF PACKAGING

*Where we are,
where we're going*

“Our challenge as a major global brand is to take mass volume product and make it appear niche and craft in the eye of the consumer. We need to be relevant.”

—Andrew Davis, Innovation R&D, Diageo

Brands today are constantly challenged to adapt to fast-changing, consumer trends. It's not just about adapting their products; they also must adjust the very core of how they build their brand. As a result, across every consumer segment, brands are evolving from awareness-building to engagement-driving; from TV-centric advertising to 360° campaigns combining multiple types of touch points; from slow and regular production to fast and agile.

As brands seek to continually innovate and refresh their offering, the demands on packaging have exploded. Packaging has become more than just a container for a product – it's now a vehicle for ideas; a powerful way for brands to communicate, to deliver content via a medium that, unlike online ads, banners, pop-ups and TV ads, can't be screened out or ignored.

PACKAGING IS NOW A VEHICLE
FOR IDEAS; A POWERFUL BRAND
COMMUNICATION MEDIUM THAT
CAN'T BE SCREENED OUT OR IGNORED



400 BILLION DAILY CONTENT INTERACTIONS



Online and digital advertising is losing ground amid an onslaught of mobile content, with about 200 daily interactions per person. Increased ad blocking and general distrust of traditional media in today's climate of "fake news" are forcing brands to be ever-more creative in how they reach consumers and what they say.

THE SHAPE OF PACKAGING

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In multiple packaging segments, such as labels, folding cartons, and flexible packaging, brands are already accustomed to using digital printing technologies to **create exclusive packaging that inspires with design and content. Now they are setting their sights on doing the same with corrugated packaging.**

For corrugated packaging producers, now is the time to keep pace with these new trends. What's needed is a strong understanding of how consumer trends are impacting packaging, how brands' requirements are changing, and what this means for converters.



Millennials – the generation defined as those born between 1981 and 1996 – make up 25% of the population in the United States, and 27% of the global population. This influential group has a strong voice, and equally strong preferences. Right on their heels are the Gen Zs, born between the mid-1990s and the mid-2000s, who for now are exhibiting similar characteristics. Technology gurus, both millennials and Gen Zs were born into technological literacy and a digital world. They have an unprecedented sense of individuality, not just seeking to express their own style and attributes but also demanding to be treated as unique individuals. Across the globe, millennials are increasingly setting the tone for how companies must brand and market themselves, forcing them to rethink their marketing concepts and the media they use.

These influential groups value and are willing to pay more for sustainable products and more environmentally-friendly packaging, and to support social causes. They expect brands to project purpose beyond profit. This trend is driving brands to change their marketing messages to include their environmental goals and impact and highlight their corporate social responsibility.

Today, social media and engagement are at the heart of leading brands' marketing concepts, and not just when targeting tech-savvy millennials. For consumers of all ages, how they experience a product or brand is an important part of decision making. Brands are well-aware that online and offline social networks and communities encourage and motivate people to share their experiences and spread the word, building trust through peer recommendations.

CONSUMER TRENDS DRIVING MARKETING TRANSFORMATION

Millennials and Gen Z rule

BRANDING IS INCREASINGLY ABOUT SOCIAL CAUSES AND THE ENVIRONMENT; ABOUT TREATING CONSUMERS AS INDIVIDUALS



WHAT BRANDS NEED

Three key drivers that impact packaging

In this new consumer environment, brands are compelled to leverage product packaging to better engage with their customers. At the same time, they need to save costs, and reduce time to market.

1. Engagement

To grab and keep customers' attention and drive them to actively engage, brands are increasingly using customization, versioning, personalization, limited editions, targeted campaigns, and combined online and print campaigns. Along with that, to answer millennials' constant pursuit of what's new, fresh, and exciting, brands need to be able to quickly and cost-effectively market-test new products and campaigns.

It's not just about engagement in-store. The exponential growth of ecommerce and online shopping is forcing brands to consider the role of packaging as a powerful vehicle for delivering their message straight to customers' doorsteps.

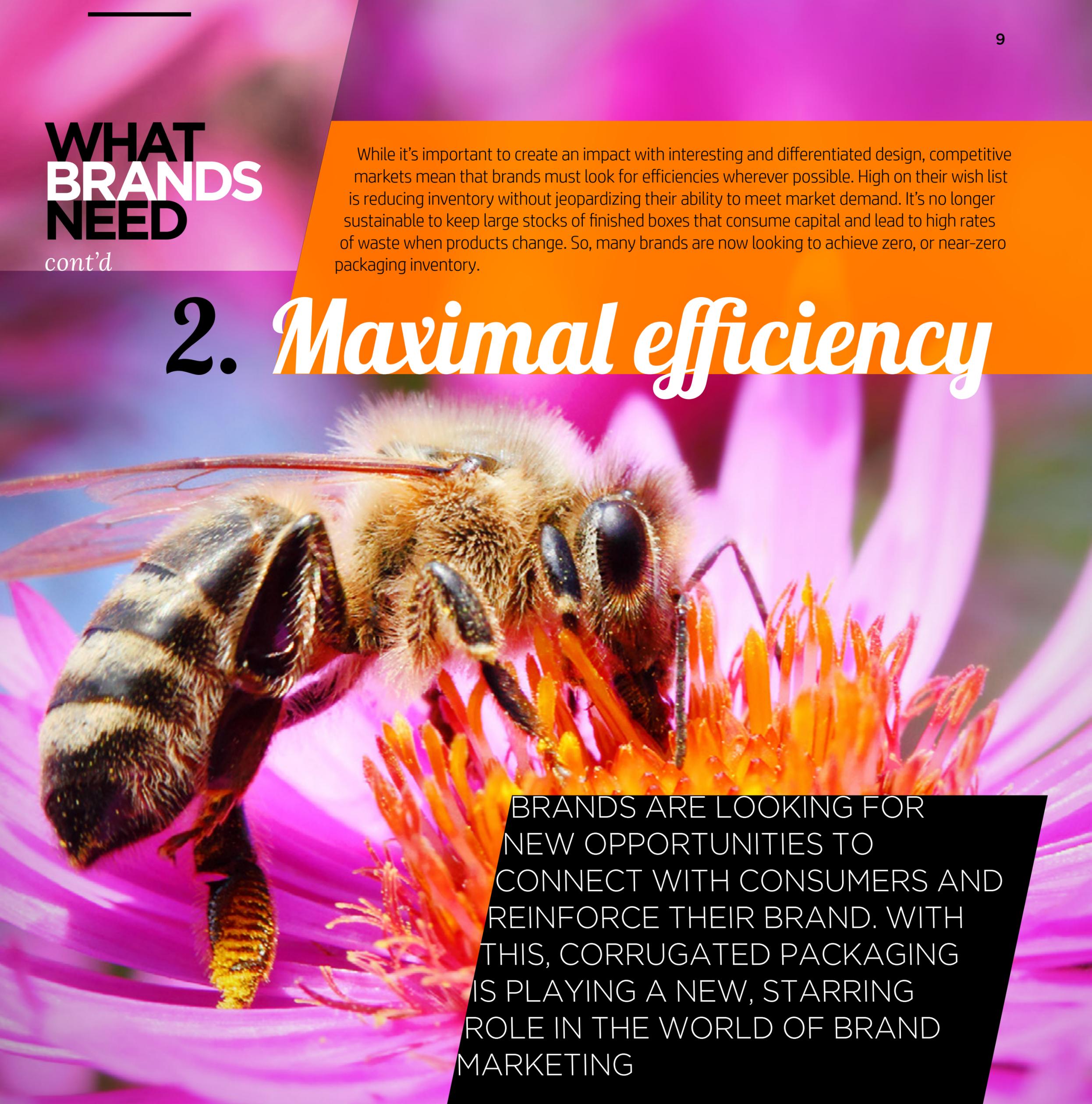


WHAT BRANDS NEED

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While it's important to create an impact with interesting and differentiated design, competitive markets mean that brands must look for efficiencies wherever possible. High on their wish list is reducing inventory without jeopardizing their ability to meet market demand. It's no longer sustainable to keep large stocks of finished boxes that consume capital and lead to high rates of waste when products change. So, many brands are now looking to achieve zero, or near-zero packaging inventory.

2. *Maximal efficiency*



BRANDS ARE LOOKING FOR NEW OPPORTUNITIES TO CONNECT WITH CONSUMERS AND REINFORCE THEIR BRAND. WITH THIS, CORRUGATED PACKAGING IS PLAYING A NEW, STARRING ROLE IN THE WORLD OF BRAND MARKETING

WHAT BRANDS NEED

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Engagement and cost savings tie directly into the third driver: reducing time to market. Getting frequent releases of new products, or new versions, onto shelves quickly is vital to keeping customers engaged and to staying ahead of competition.

The convergence of these drivers requires a new level of flexibility on the part of brands – and therefore also on the part of their packaging suppliers.

AND MORE Brands also need help protecting their products and reputations against fraud and counterfeiting. Here too, packaging has a role to play.

3. *Speed to market*

DEMANDS ON CONVERTERS

Adapting to a new normal

For corrugated converters, production values now include shorter faster runs, product customization and versioning as standard.

The growing demand for packaging changes, creative packaging solutions, short runs, and accelerated time-to-market makes production more complex, in turn making production efficiencies more critical.

Brands want ever-faster turnaround on their packaging, often in small quantities, to enable them to keep delivering new and relevant experiences and react to evolving opportunities. For corrugators' part, that means shrinking the whole process for package design and production from months down to weeks. It also means adapting production and workflow management to shorter runs, with many more jobs per day.

To meet brands' demand for customized and personalized packaging, it's not enough to be able to sub-divide packaging runs into 2, 4, or 20 smaller runs or to add stickers. Today you need to be able to print hundreds or even hundreds of thousands of different packages with different texts, images, designs, all in the same run. For that, variable data printing is fundamental.

TRENDWATCH

↗ PERSONALIZATION

↗ EDITIONS

↗ VARIETY

↘ LIFECYCLE

↘ BATCH SIZES

↘ TURNAROUND

HIGH QUALITY

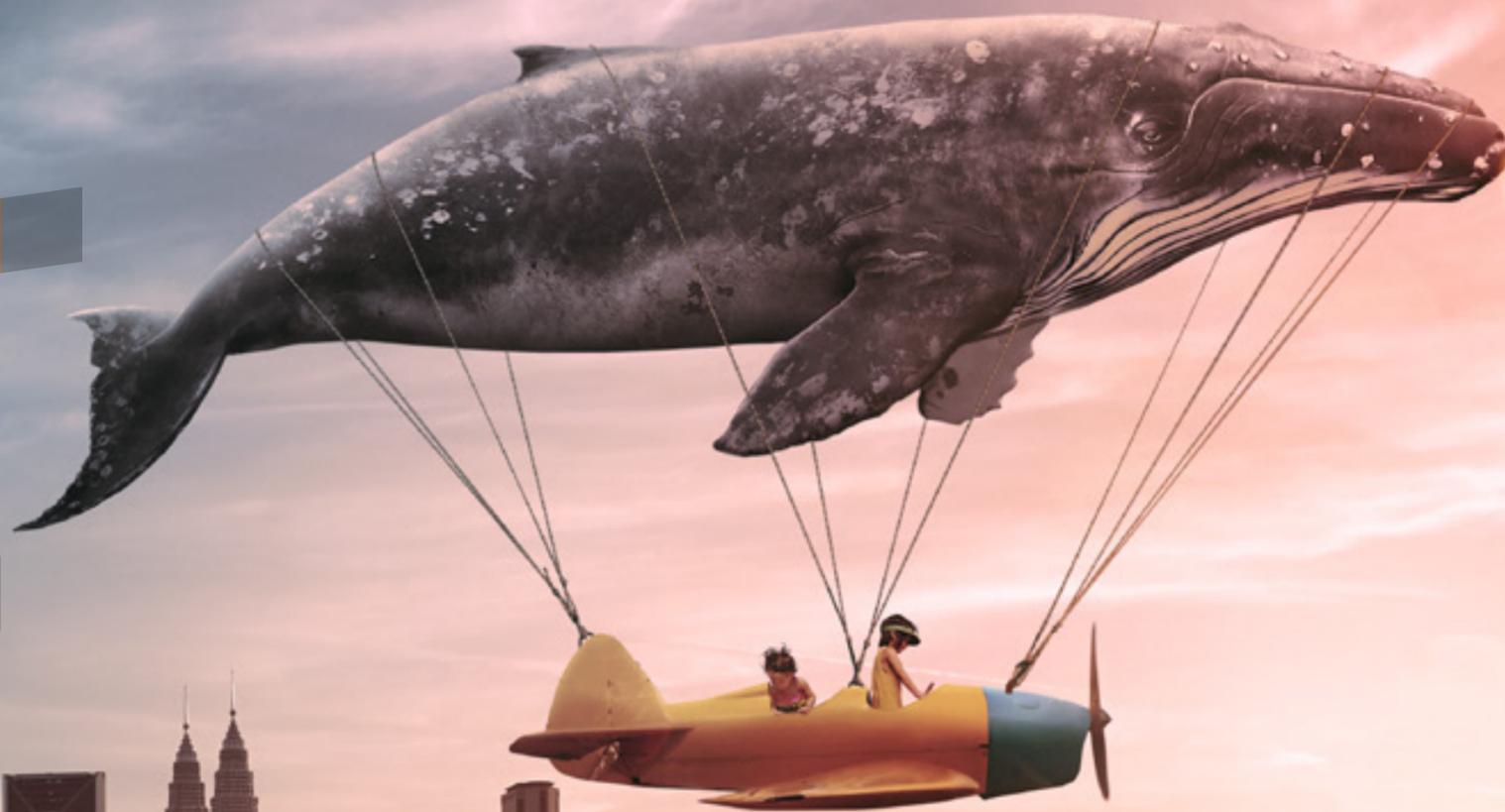
CONSUMER ENGAGEMENT

VDP

SECURITY PRINTING

SMALL RUNS

INNOVATIVE PACKAGING



A NEW BUSINESS REALITY FOR CONVERTERS

*Providing
value and volume*

To stay relevant in this changing packaging environment, converters must be able to offer new services and capabilities alongside their traditional offering. ▶

A NEW BUSINESS REALITY FOR CONVERTERS

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► Brands have high expectations that their packaging suppliers will produce high-quality, innovative packaging, provide variable data printing, and add security printing and network connectivity for brand protection and consumer engagement.

That means converters must **focus on providing value as well as volume, by adopting new digital technologies and processes.** It's not that the need for mass-production packaging is disappearing. In fact, **adopting digital technologies can enable better utilization of the existing conventional corrugated production platform.** With no need to fit all runs of every length onto the same presses, converters can leverage their offset and flexo presses for the truly high-volume runs they were made for.

It's a whole new ballgame for corrugated packaging production, requiring a new level of optimization and production efficiencies. To be able to move quickly from design to production and produce numerous small runs cost-effectively, corrugated converters need an optimized end-to-end workflow. Beyond that, they will need to update their production management capabilities to support more complex orders.

The demands may sound daunting, but with the right partner and the right solutions, adapting to this new normal can be smooth and assured.



**HP DIGITAL
CORRUGATED
SOLUTIONS**



**LEADING
INDUSTRY
TRANSFORMATION**



HP DIGITAL CORRUGATED SOLUTIONS LEADING INDUSTRY TRANSFORMATION

“THERE ARE TWO TYPES OF COMPANIES OUT THERE: THOSE THAT ARE ALREADY IN DIGITAL, AND THOSE THAT WILL NEED TO BE IN DIGITAL.”

- VANGUARD PACKAGING,
CORRUGATED CONVERTER

Corrugated converters have everything to gain by getting on-board with the fast-track of digital packaging. Now is the time to open the door to new opportunities, and ride the digital wave to stronger differentiation and business growth.

Having played a leading role in bringing digital printing to other packaging segments, HP's transformational role in digital print now embraces corrugated packaging, with a fast-growing offering of dedicated presses, workflow solutions and more. **With HP digital printing, converters can keep pace with brands' new requirements and grow their business with high-value, high-demand offerings.**

DELIVER WHAT BRANDS WANT WHEN THEY WANT IT

HP digital corrugated printing solutions are turning fast turnaround with superb print quality into the new standard of excellence for corrugated packaging.

Agile production workflows that cover the full process, from design and prepress to printing and cutting, for everything from ultra-short runs to industrial volumes, provide flexibility to change content quickly and frequently. Boxes can be printed and cut within just a few days, enabling brands to react at the speed of their market. ▶



DELIVER WHAT BRANDS WANT WHEN THEY WANT IT *cont'd*

► The combination of HP digital presses and optimized end-to-end digital workflows enables fast, consistent and economical production, with less waste. There's no press make-ready, and therefore none of the associated ink and media waste. Soft-proofing with PDFs instead of printed hard copies speeds up approvals cycles and reduces media consumption. Converters can print only what customers actually need, reducing the waste that goes with excess inventory. And, content can be changed at any time, with little warning or effort – exactly what brands need from their packaging suppliers.

BOXES CAN BE PRINTED
AND CUT WITHIN A FEW
DAYS, EMPOWERING
BRANDS TO REACT AT
MARKET SPEED

ACCESS ADVANCED SOLUTIONS FOR ADVANCED PACKAGING

HP digital print solutions enable corrugated converters to easily meet brands' demands for versioned and personalized corrugated packaging that supports short-term promotions. Digital printing is vital when brands want to incorporate event or time-specific messages to help them stay fresh and relevant, to run innovative engagement campaigns combining online and social media strategies with packaging, or to leverage holidays and seasons for new themed offerings. ▶



ACCESS ADVANCED SOLUTIONS FOR ADVANCED PACKAGING *cont'd*

▶ HP offers numerous cutting-edge solutions and services that make corrugated packages come alive, turning printed content into a digital experience — an interactive adventure that enables continuous and dynamic consumer engagement.

For example, HP SmartStream Mosaic is an innovative software tool for package design that automatically generates unlimited unique graphic patterns for printing on corrugated packaging. Millions of variants in design and color can be created from a small number of basic patterns, enabling millions of one-of-a-kind packages.



ACCESS ADVANCED SOLUTIONS FOR ADVANCED PACKAGING

cont'd



linkReader

► Another example is HP Link Technology, which is a prime enabler of the connected package (packaging with built-in interactivity), answering the growing demand for network connectivity, advanced digital security solutions, and supply chain efficiency. Imperceptible digital watermarks with unique codes applied during printing provide track and trace capabilities and help safeguard products against fraud and counterfeiting. Brands can integrate scanning capabilities over an entire package to deliver targeted information, generate messaging opportunities, and provide content such as nutrition information, digital coupons, and promotional campaigns.

In the constant battle to dominate shelf space, the high quality of HP digital printing makes packages stand out and get noticed. Brands enjoy increased sales and revenues, and the option of virtually unlimited design options for packages, to remain relevant and new.

With HP digital printing solutions, corrugated converters can step into the new digital era for corrugated packaging and enter a new and profitable era for their business.

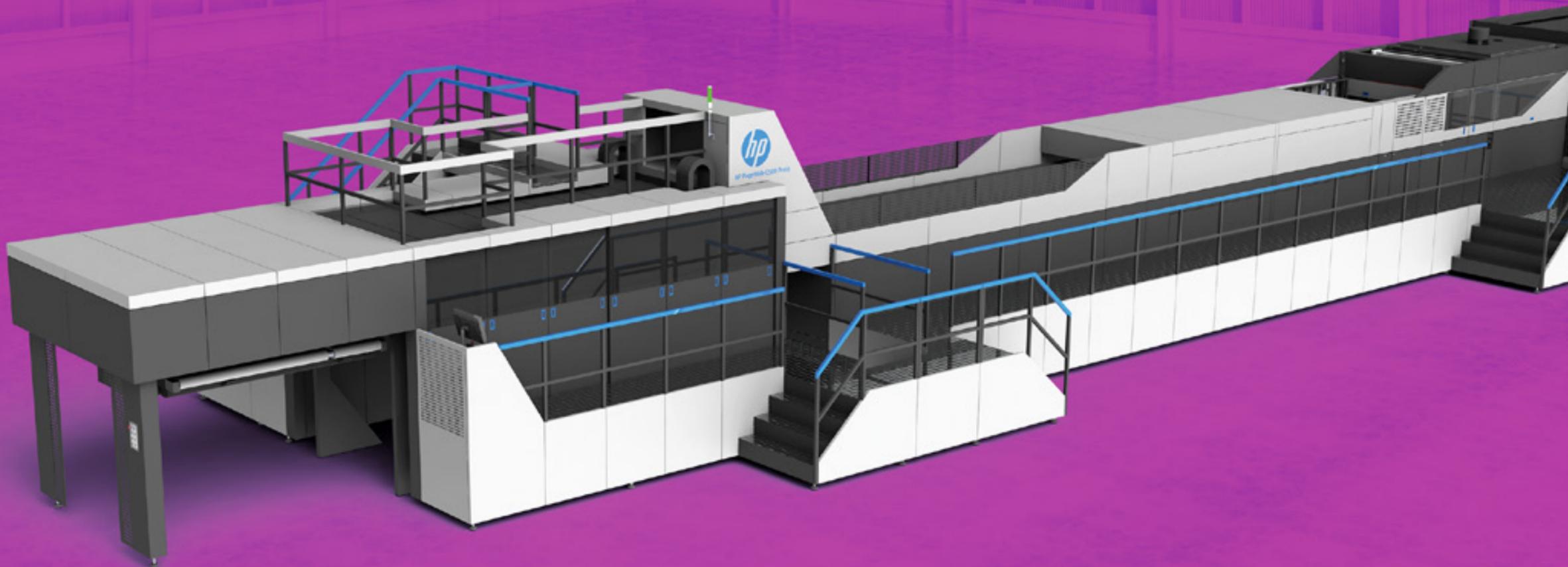
**SPEED
INTO
DIGITAL
WITH THE
HP PAGEWIDE
C500 PRESS**

SPEED INTO DIGITAL WITH THE HP PAGEWIDE C500 PRESS

The HP PageWide C500 Press is a powerful solution for corrugated converters that wish to establish and quickly build a differentiated digital print offering. This single-pass digital post-print solution drives the possibilities for digital to new heights by delivering true offset quality for corrugated packaging.

Adding this press to a robust conventional production floor opens the way to operational efficiencies through better utilization of analog printing presses. And, new opportunities can be captured with the ability to produce applications that are impossible or impractical with conventional platforms.

OPEN NEW OPPORTUNITIES
WITH THE ABILITY TO
PRODUCE APPLICATIONS
THAT ARE IMPOSSIBLE
OR IMPRACTICAL WITH
CONVENTIONAL PLATFORMS



DIGITAL FLEXIBILITY FOR MEANINGFUL VOLUMES

With improved economics

The HP PageWide C500 Press prints at high quality directly to standard coated corrugated boards as well as to uncoated boards.

You can cost-effectively print jobs of varied sizes, from one-offs to runs of thousands – freeing your conventional presses for the very long runs. In addition to profitably converting a significant portion of your current jobs from analog to digital, you can leverage your digital capabilities to acquire new customers and new jobs – not just for digital, but also to fill the freed-up capacity on your litho and flexo presses.

Win new business and build loyalty by offering new services that your non-digital competitors cannot get close to. Deliver what brands need, when they need it, whether it's customized and personalized packaging, fast-turnaround on new and repeat orders, short-run campaigns, or last-minutes changes.

POST-PRINT SIMPLICITY WITH OFFSET PRINT QUALITY

The HP PageWide C500 Press merges all the benefits of a post-print process with offset-replacement print quality and digital print flexibility.

The press introduces several exciting innovations for precision media handling. Industry-grade boards, even warped boards, are held down tight and flat to the print bed by HP's Corrugated Grip. The unique Virtual Belt technology ensures precise media motion control. It guides boards through the printing process at production speed, with precise dot placement accuracy across the full run. With efficient drying and in-line overprint varnish, the HP PageWide C500 Press delivers stacks of boards that are ready to convert for durable packaging.

You will see vibrant graphics even on the finest details, such as text and small barcodes, thanks in large part to the high-precision print heads. A total of about 1 million nozzles with x6 redundancy enable consistent print quality, even in the event of nozzles failing during a print run.

The true water-based inks produce a wide color gamut that meets offset color standards. This makes it possible to offer your customers fast-turnaround top-ups of packaging that is normally produced on analog presses, enabling them to confidently reduce inventories without fear of supply gaps.



WIDE APPLI- CATIONS RANGE

*Meet stringent
food-packaging standards*

Open your business to a wide range of packaging applications, with HP's food-safe true water-based inks.

With the ability to digitally print directly on nearly all coated and/or uncoated board stock with superb quality, you can produce a wide variety of boxes, from basic to premium. The high-quality printing on uncoated media types not commonly used with offset and flexo presses opens the way to efficient production of a wide range of existing and new jobs. ▶



WIDE APPLICATIONS RANGE *cont'd*

► HP CV150 Water-Based Inks are compliant with stringent requirements for food packaging, including secondary and primary packaging (also called food contact packaging)¹. They are 100% free of UV-reactive chemistries and require no additional barrier between the packaging and the food².

The inks deliver excellent durability, producing printed images that are both water-resistant and light fade-resistant. For applications that require extra durability, you can apply aqueous overprint varnish (OPV) that enhances scuff and scratch resistance, and enables you to offer a choice of surface finishes.

HP's digital printing process enables you to amaze brands with a wide range of value-added applications, including versioning, customization, and even personalization. With 100% variable data printing (VDP) of each package may either be completely unique or have custom information. You can offer your customers a wide choice of printed security features, for track and trace and product authentication. Invisible and visible printed features can also be used to add connectivity to your customers' boxes, enabling them to deliver targeted information to consumers at the point of purchase.

1. Refers to HP A30 Water-Based Inks (and HP P36 Water-Based Priming Agent and HP A50 Water-Based Bonding Agent), and HP CV150 Water-Based Inks (and HP CV150 Water-Based Bonding Agent). Representative use cases include E-Flute packaging printed on external side. US terminology "packaging materials in direct contact with food" analogous to "primary packaging." Contact HP for additional information. Information contained herein subject to change without notice.

2. Leading regulations and industry guidance include: US FDA 21CFR parts 170-199, EU Framework Regulation 1935/2004/EC, Swiss Ordinance 817.023.21 (2017), EuPIA Guidelines on Printing Inks (incl. GMP guidance & 2017 NIAS-Inks for Food Contact Materials), Nestlé guidance (2016), and EN 1230 Sensory Evaluation of Printed Paperboard. Evaluation is based on representative use cases; packaging converter responsible for determining compliance of the final packaging article. The information contained herein is subject to change without notice. Contact HP for additional information.





DIGITAL MADE EASY

*The right solution
from a trusted partner*

Choosing the HP PageWide C500 Press provides you with a complete solution from a trusted partner – everything you need to confidently join the digital revolution and grow your business.

HP's thermal inkjet printing technology is already proven, with hundreds of billions of printed pages, produced on presses installed at production plants around the world.

HP offers a comprehensive digital workflow that extends from idea to box. The workflow tools and solutions from HP and its partners are designed and tested to work together, to enable you to smoothly integrate the HP PageWide

C500 Press into your existing business and production management systems.

With a fully digital workflow, you can streamline business and production processes and gain flexibility, cost, customization, and efficiency benefits across your operation, reducing time-to-delivery of your customers' packaging orders. The integrated solution is enabled by prepress and color management tools for assured high image quality, MIS connectivity, and a fully automated stack-based workflow. It allows you to connect to your customers and offer web-to-print services.

DIGITAL MADE EASY *cont'd*

Easy interaction with design agencies and brands means, you can be confident that your packaging products will meet expectations for content, quality, cost, and delivery time. In addition to eliminating the time and costs involved in plate making, mounting, and recycling, a digital workflow gives you visibility and control that are unattainable with traditional workflows.

Additionally, desktop and mobile devices integrated into the digital workflow give you anytime, anywhere access to real-time operations on your production floor, enabling you to efficiently manage job flow and loads, monitor consumables usage, and respond promptly to press alerts.

HP is better placed than any other digital printing solutions provider to support your digital journey. HP offers comprehensive service programs with full after-sales service and round the clock support to enhance your digital capabilities. You will have access to HP sales training and active user communities, leveraging HP's extensive knowledge and relationships to help drive your success.

Looking to the future, HP's firm commitment to long-term partnership means you will benefit from advanced features and performance enhancements that will drive your continued differentiation and growth.



SUMMARY

There is no question today whether digital printing is required for corrugated packaging; it is now simply a question of how fast you will adopt it.

The changing packaging environment and brands' pressing needs to better engage with consumers, to get their packages in less time, in greater variety, and with more flexibility mean that corrugated packaging converters must offer new services and products. Only by expanding your capabilities by adopting digital printing can you meet those needs and continue to grow in a competitive market.

Talk with HP about how you can seize the opportunity now - and position yourself for new profitability and growth.

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THANK YOU!