

drupa Essentials of Print



The print & packaging industry is a living world and once every four years, it is important for all its stakeholders to meet and share for a better future. At drupa, we promise you inspiration, innovation, knowledge sharing and networking. Each visitor will have his own places to go and must-see hotspots. On the way to this event, we release the “drupa essentials”, a series of articles from designers, brands owners, printers, converters, journalists and influencers. These articles will offer visitors an understanding of the print & packaging world that is transforming rapidly under the umbrella of digitalization, automation and sustainability. So, enjoy the reading and give free rein to your instinct and curiosity under the adage “to each his own drupa”.

We are happy to provide you with this expert article and we would be pleased if you publish it.

Be inspired! _____

Your drupa Team

François Martin: Packaging - "Place your bets" - a wave of changes on the horizon



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François Martin is a freelance consultant in graphic industry. He is specialized in the digitalization of production processes. He believes that the changes to come are bigger than the one who already took place and his focus is on educating Manufacturers and Printers & Converters to embrace the digital transformation. He worked for Hewlett-Packard, Michelin, HP and BOBST driving new businesses.

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François Martin: Packaging - "Place your bets" - a wave of changes on the horizon

For decades, the packaging industry has operated behind the scenes, driven by the things we encounter every day, some of which rely on machinery and processes established over 50 years ago, the industry has recently stepped into the spotlight. While the saying "out of sight, out of mind" has applied well to this industry, it is now facing significant changes that could have occurred independently but have now converged.

The convergence of conjunctural and structural elements is reshaping the packaging industry. While these elements may not fundamentally challenge an industry known for its resilience, they are compelling all players to embrace change.

Let's start with the conjunctural elements that are evident and notably impacting profit margins.

Increase in energy and raw material prices. The significant price hikes, even when passed on to customers, are not sustainable in the long run. It is imperative for converters to implement energy-efficient production lines. Equally important is quality control and waste reduction. For machine manufacturers, after implementing notable price increases in 2021 and 2022, they now revamp their offering behind one simple motto: automation. We will look into this further later on.

Scarcity of labor and qualification of employees. The packaging industry remains relatively unknown to the general public. If we were to survey individuals with no professional or family ties to the industry, they would likely perceive it as a traditional and noisy sector. Furthermore, packaging is often seen as polluting and environmentally unfriendly. However, the advent of digital machinery and AI presents opportunities for packaging manufacturers to offer new careers and reshape their image to attract fresh talent.

Now let's delve into the structural topics:

Proliferation of short print runs. The growth of short print runs is expected to accelerate in the coming years. Brands manage increasingly diverse product portfolios, and sales forecasting has become more complex. The concept of "on-demand production" is becoming the norm. Additionally, promotional and event-based packaging, which often has a short lifespan, contributes to this trend. Furthermore, frequent regulatory changes require brands to update packaging information, necessitating new printing plates each time.

Evolving role of packaging. Packaging is no longer just about protection; it plays a crucial role in enticing customers, informing consumers, and optimizing the supply chain. As a result, new designs, customization, QR codes, and serialization are becoming increasingly common. These new responsibilities lead to more sophisticated and ever-changing print runs, contributing to the reduction of run lengths across all types of packaging.

Design and miniaturization. Design is gaining increasing importance for consumers and brands alike. Appealing design attracts consumers, while miniaturization reduces material consumption, environmental impact, and costs. These trends require more frequent design iterations and higher-performing machines capable of producing more complex formats.

New regulations. Brands and retailers are required to be transparent about the composition and origin of their packaging. Communication about materials used, recycled content, and recyclability can render certain packaging types and the machines producing them obsolete. Many large brand owners made significant pledges towards recyclable packaging by 2025. The clock is ticking.

Environmental responsibility. With growing concerns about the environmental impact of packaging, there is a shift from plastic to paper/cardboard and the development of new mono-component substrates for easier recycling. However, the challenge lies in the existence of recycling infrastructure. Packaging manufacturers need to implement industrial production processes capable of handling these new materials across coating, vacuum metallizing, printing, and lamination to the manufacture of final packages with proper sealing and opening features.

So, what's next?

Combining the conjunctural and structural elements, it becomes apparent that the packaging industry will face numerous significant challenges. It must evolve to become more flexible, responsive, and adaptive. In this context, what are the opportunities and upcoming changes?

Automation and quality control. The increasing trend towards automation allows for the reduction of scarce and costly skilled labor. It also helps minimize errors and waste. Machines equipped with quality control systems – eg [AVT](#), [ACCUCHECK](#) can rectify shortcomings or halt production. With the

integration of AI, these systems will make significant progress, enabling machine operators to supervise multiple machines with very limited physical intervention.

Digitalization. While the digitalization of labeling has become prevalent, the folding carton, corrugated board and flexible packaging sectors are still relatively hesitant. However, the global threshold of 100 digital presses for corrugated board packaging was crossed by the end of 2022, indicating a shift towards digitalization adoption. The overall packaging digital transformation extends beyond printing and encompasses embellishment and cutting such as [Highcon](#), [SEI Laser](#), [MGI](#), [Jetfx](#). Although current solutions may not yet match the productivity levels of conventional technologies, they are necessary to optimize overall production and allow conventional equipment to focus what they are designed for meaning medium and long print runs.

Digital technologies are an incredible tool, not a threat, and it will intelligently complement conventional technologies that will persist for decades. We will also see the rise of hybrid solutions combining the best of both worlds. Many label converters and commercial printing companies can testify to the advantages of digital technology. The adage "we fear what we do not know" remains true in most industries.

Workflow management. It has become the nerve center of packaging manufacturers. From order placement to pre-press, production, quality control, and invoicing, optimizing the flow of production and processes and mastering workflow management are fundamental. data-driven processes, leading to greater operational efficiency and optimized resource allocation are now required for faster-time to market and more flexibility. And the advent of AI will further enhance the power of software tools and machines for an ultimate flexibility including preventive maintenance. The challenge lies in employees' ability to effectively manage the provided information, and management's willingness to validate recommendations from intelligent systems. At drupa, visiting [ESKO](#), [Hybrid Software](#) and others will be a must and probably where you will touch the future the most.

Web-to-Packaging and new business models. Digitalization and automation are gradually leading us towards factories managed by robots operating day and night with minimal human intervention. Major packaging equipment manufacturers are investing in or acquiring robotics companies – eg Durst and BOBST. Within less than five years, factories producing packaging in an "Industry 4.0" format will become a reality. Although these dark factories will only address a small portion of production, the course has been set. Last, new

technologies enable new players to build new business models offering services not available before.

New entrants and consolidation. The packaging industry provides an opportunity for players from the declining commercial printing industry to enter new markets. These printers are well-versed in the digital realm and skilled in managing sophisticated workflows with optimized margins. While they may not have all the necessary equipment for mass packaging production, their focus will be on short and personalized packaging print runs, typical in commercial printing. Furthermore, consolidation within the packaging industry will continue. Significant investments are required in all sectors, and expertise needs to be enriched with new skills, facilitating acquisitions and mergers.

In the table below, we can gain a clear idea of the dynamics of the packaging markets. Recently shared figures at dscoop demonstrate overall global growth, with digital technologies experiencing a more pronounced increase.

Industry segments	Global market	Digital
	CAGR 2022 -2026	CAGR 2022 -2026
Labels	4%	8%
Flexible Packaging	3%	5%
Folding Carton	3%	9%
Corrugated board	2%	17%
Commercial Printing	0%	6%

Worldwide data - dscoop - May 2023

In a growing global market, equipment manufacturers will support printers and converters with more connected, digitalized, and automated machinery. drupa 24 will provide opportunities to validate new directions and the relevance of innovations that address the industry's challenges. At drupa 2024, four words "connectivity, digitalization, automation, sustainability" will be everywhere. Not to mention AI and eventually, drupa will become drupai.

The key challenges for all stakeholders in the packaging industry will be managing growth, addressing more complex packaging formats, overcoming environmental constraints, implementing new regulations, attracting new talent to the industry, developing new business models

like web-to-pack, and welcoming new entrants from the commercial printing world.

"Ladies and gentlemen, place your bets. No more bets, please."

Quotes

"The digitalization is a major opportunity for the packaging industry"

"Data driven process and human resources are at the core of packaging production"