

# 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**

## **Lorenzo Villa – Are technology providers doing enough to reduce packaging's environmental footprint?**



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## Lorenzo Villa – Are technology providers doing enough to reduce packaging's environmental footprint?

While sustainability is an increasingly issue for brand owners and an opportunity for print-service providers, technology suppliers strive to create more eco-friendly solutions.

Packaging is a trendy topic in the print industry because it affects the relationship between brands and consumers, and plays a crucial role in transporting, protecting, storing, and consuming the goods we buy every day. As well as embellishing the product, packaging today must adhere to precise safety, traceability, and sustainability standards. In addition, the exponential growth of e-commerce over the past decade has put packaging in the spotlight, not only for positive aspects. While printed boxes and bags are vehicle for memorable unboxing experiences, they represent a critical factor in disposing the massive amount of excess packaging.

There's an open debate about the perceived value of folding carton and corrugated boxes, labels, and flexible packaging, putting printing at the forefront. If only printers were good product marketers, this would be great news. But unfortunately, that's only sometimes the case.

### **Sustainability: a supply chain's cross and delight**

Beyond its undeniable appeal and contribution to the safety and desirability of products, packaging significantly contributes to the amount of waste to be disposed of, whether it's paper, plastic, metal, or glass. This awareness is widespread among consumers, and especially among converters and suppliers in the supply chain, who're called upon to provide brands with solutions in line with safety and sustainability regulations. It's arduous, given that only some rules are recognized and shared globally, while each country or aggregation of countries, first and foremost the European Union, issue their own directives.

Back to drupa 2024, which technology areas are most affected? How are manufacturers mobilizing? And how will drupa highlight

technology leaders' possible contribution to sustainability?

### **Printing is in the eye of the storm**

Although depositing a layer of colorant on a substrate is not rocket technology, printing remains one of the exceptional watchdogs in packaging.

Analyzing modern offset presses, it doesn't take an expert to conclude that they have been essentially the same for decades. However, it's interesting to note how the (few) manufacturers have made every effort to make them more automated, interconnected, and efficient. The proof is offered by online printers and web-to-pack businesses, which run dozens of makereadies and hundreds of jobs every day on each press, with only a handful of waste sheets.

While analog plays its cards, digital printing is and will remain the key player at drupa 2024. In the field of folding carton, in particular, the world awaits the new moves of the multifaceted Landa, who at drupa 2012 launched the challenge of digitizing high volumes of B1-size folding carton using waterbased nanographic inkjet printing, reducing the minimum run to one sheet. A move that sees the Israeli player playing almost solo, except for Germany's Koenig & Bauer and Italy's Durst, which, in a joint venture, created the VariJET 106 using waterbased inks.

Also, in the field of printing presses, who's drying and curing systems can often be energy-intensive, there's an increasing focus by on energy consumption. With this in mind, Xeikon recently introduced an energy labeling program, quite similar to that for household appliances, which takes into account the energy, ink and waste material components.

### **The rising popularity of waterbased inkjet inks**

The use of waterbased ink chemistries on paper substrates is an open technology match, but it's out of the game for flexible films and plastic pouches, where digital technology is inapplicable or marginal. Pending a viable solution, digital manufacturers are promoting the replacement of plastic films with paper, printable using more sustainable chemistries, more easily disposable of and recyclable. The players in this field include HP Indigo with the well-known ElectroInk technology, Xeikon with its scratch-resistant and heat-sealable Titon dry toner, and Screen with its Truepress PAC waterbased inkjet platforms.

Although less urgent because of the lower incidence of food-contact packaging, waterbased printing is also increasingly common in corrugated packaging, where HP, with its PageWide Industrial pre- and post-print technology, leads the race. But new players are poised for bold moves in this field. Among them are Fujifilm and Canon, and China's Hanglory Group, an outsider to watch closely, occupying part of the booth vacated by Xerox at drupa 2024.

For almost all manufacturers, a thorny and unresolved issue is media deinkability, which will become increasingly crucial in a dynamic of true sustainability.

### **Embellishment and converting are greener when digital, integrated, and hybrid**

Packaging production involves a lot of ancillary processing, especially in high-end products. For decades, converters have performed pretreatment, printing, die-cutting, folding, gluing, applying selective varnishes and metal foils, overprinting, and coding using analog processes, almost always offline, often using external suppliers to produce plates and screen-printing frames.

The introduction of digital technology into the finishing field dates back 15 years by Scodix and MGI. Today, it's well suited to the speed and size requirements of packaging, so much that many converters use it intensively to perform B1-size varnishing and foiling of medium runs, zeroing setup times and waste.

Digital die-cutting, introduced by Highcon at drupa 2012, is also an established option being developed by a few manufacturers. Among the most notable is Italy's SEI Laser, a candidate

to enter BOBST's orbit in 2020, which has combined laser cutting with an off-line writing device for creasing matrixes, offering a clean, accurate, and cost-effective system for die-cutting from one to thousands of sheets.

However, the packaging segment that has most adopted digital technology is label printing and converting. Here, playing the game are incumbent suppliers, pioneers of digital, and a large group of newcomers, offering integrated printing, finishing, and converting platforms capable of performing several inline processes, going from a neutral adhesive reel to a ready-to-apply label in a one shot. The label industry is also the most advanced laboratory in hybridizing analog and digital print engines, with an offering too vast to be covered in this article.

### **The crucial role of papers, substrates, and software ecosystems**

Although the focus at drupa 2024 will be on heavy iron, packaging professionals know that creating more sustainable packaging comes through all components of the value chain, even the less visible ones. Such is the case with papers and substrates, often in the dock for their energy-intensive production methods, their impact on the planet's water and forest resources, and the critical issues in recycling and disposal processes.

While the paper industry has been committed since the 1990s to sustainable forest management and reducing its environmental impact - who is unfamiliar with the FSC and PEFC schemes? - today, the debate is about the disposal of multi-material packaging. In other words, how to dispose a glass bottle with a plastic cap and paper label? Global biggies and niche manufacturers are all investing in creating easily removable single-material packaging and adhesives that simplify packaging separation and recycling. One example is Avery Dennison's AD CleanFlake technology, which completely detaches the printed label (including glue) from PET and HDPE packages. More and more label stock manufacturers are investing in liner recycling programs and the development of linerless technology, which, if deployed on a large scale, will eliminate millions of tons of siliconized papers and films for disposal each year.

The research and development of new sustainable packaging solutions accomplished by advanced converters is also an interesting phenomenon. Italy's LIC Packaging, for example, uses its corrugators not only to produce corrugated cardboard, but also an innovative single-material paper substrate for food contact, which is biodegradable and recyclable, grease and heat-resistant. LIC prints most of its products with HP PageWide waterbased inkjet technology.

Last, but not least, is software. Long considered an extension of the machinery, today software plays a crucial role in the user experience and process automation, material optimization, and the reduction of manual operations, errors, remakes, and waste. It is no coincidence that software is central to manufacturers' strategies. Emblematic are the efforts of manufacturers to build proprietary ecosystems, such as HP SmartStream, BOBST Connect, and Durst Workflow, and the aggregations of leading automation and color management brands built around Hybrid Software Group, Danaher, and Veralto, among others.

### **Dialogue and collaboration in drupa style at the heart of the solution**

Looking at manufacturers' moves, no one has found the magic formula for sustainability. Conversely, many realize that there are few ways to contribute other than by wasting less, producing the right amount, and creating more easily separable and recyclable packaging.

There is not a single manufacturer who's not working to contribute, and at drupa 2024 we will have proof of that. While the big guys have the advantage of large installed bases, proprietary ecosystems, and some influence, what needs to be improved is an open, joined-up approach. As happened in 2000 with the PrintCity initiative - bold for those times and to date only partially digested - if drupa 2024 can play a role, it will be to bring the most sustainability-conscious players closer together, making them more influential with large and small brand owners, who too often still decide on price.

While drupa is just one major event among few others, such as Interpack, and it has not been held for eight years – a significant gap in a rapidly evolving industry – drupa 2024 is positioning itself as the primary meeting place for value generators within the printed packaging value chain. We will soon find out whether it will be a turning point for sustainability.

### **Quotes**

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