

drupa Essentials of Print



We deliver herewith a series a series of articles, from designers, brand owners, printers, converters, journalists and influencers. We look forward to working together with experts, who enrich our drupa Essentials with fresh impulses, sound expertise and remarkable experience. All these articles will allow visitors to understand a world that has changed dramatically since the creation of drupa in 1951 and will continue to evolve. Different observations and perceptions of an industry seeking innovation in a fast-changing world. Give free rein to your instinct 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! _____

Good reading.

Sabine Geldermann & Team

Digital printing: from strength to strength in packaging



VITA _____

IsidTiziano Polito, Emballages Magazine.

"Individual consumers are becoming more particular... They must be offered products that match their needs. [...] This packaging production revolution will require packaging converters to review their entire supply-chain system."

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**drupa
content
contributor**



Digital printing: from strength to strength in packaging

The evolution of customer demand as well as improvements in quality and speed are accelerating printing production for packaging. The first entirely digital printing and converting lines for packaging production will be born in a few years.

Over the the last twenty years, digital printing of labels has emerged and expanded. Today every second press is equipped with electrophotographic motors or inkjet heads. This isn't surprising because the advantages of today's digital technologies are strong, for example, printing short runs at a viable cost is now a reality (compared with traditional processes such as flexo or offset), a success-factor that fully matches and supports the trend for the ever-shorter consumer product lifecycles. Now really is the time for packaging to enter into the digital arena. Of course, the number of digital presses sold in this new segment is still much lower than the number of presses sold for labels production, but everything suggests that it is only a matter of time.

Growing customer demand is influencing companies and leading them towards differentiation, individualisation and personalisation in their products. An example of this was seen early on by Coca-Cola, introducing Coke Light and Coke Zero. Their lines have now expanded significantly and now Coca-Cola can be purchased as sugar-free, caffeine-free or flavoured with raspberry, vanilla and sugar-free lemon. All these products are then sub-set into dozens of sizes and formats (33cl, 1l, 1.25l, 1.5l, in PET bottles, in glass, in cans). This is just one example of how a brand is utilising product proliferation to their advantage.

Individual consumers are becoming more particular... They must be offered products that match their needs. "Share a Coke" has demonstrated the success of customisation and mass-versioning, after successfully tapping into the millennials mindset and reaching followers of the „me, myself and I“ movement. "Share a Coke" is undoubtedly the most successful example however it isn't hard to find a multitude of other brands already offering their products in a wide array of sub-articles sold in different countries in multiple formats or presentations. This packaging revolution has already begun and impacts not only large companies but also smaller producers of products such as jams, energy drinks or skincare creams. Add to that the rise of e-commerce and with it the beginnings of production-on-demand. Kronos, one of the leading bottling companies, presented "Bottling on Demand" at Drinktec in Munich (Germany) in September 2017, an on-demand production and packaging concept, enabling each individual consumer to order a personalised, flavoured beverage – orange, for example, in a 50cl glass

bottle format, which is then shipped in a package of 1, 4 or 6 according to the consumer's wishes.

You can imagine yoghurt companies offering consumer lead online ordering, allowing them to create their own multipack, featuring only the flavours they like. Thousands of other products could one day be produced and sold in this way too, a method already used frequently in the automotive industry to reduce inventory costs. Thanks to digital packaging, products can be manufactured on-demand. Taking advantage of digital methods, brands and their print-suppliers will be able to test new products to the market, using flexible print-runs to limit excessive risks and costs.

The second reason to believe that digital printing will soon develop across packaging is down to the technology. Over the last decade, enormous improvements to print quality have been achieved. Whether in electrophotography or inkjet, the results in terms of resolution are impressive: increasing from 600 to 1200 dpi. This is such a good quality that only a keen eye can distinguish an offset rendering from a digital rendering. Then there is the print-speed that has also really gained pace. HP Indigo paved the way in 2012 with digital presses such as the HP Indigo 20000 and 30000, respectively, dedicated to film and cardboard sheets. They can reach speeds of 34m/min in 4 colours (up to 45m/min in 3 colours emulation mode) with the 20000 and 3450 sheets/hr in 4 colours mode (up to 4600 sheets/hr in emulation mode) with the 30000. Lately, inkjet has reacted and caught up. Examples include the Fujifilm Jet Press 750S, launched in September 2018, capable of printing 3600 sheets/hr in 4 colours, claiming to be the fastest 4-colour digital press on the market in B2 format. In terms of coil-printing, Kodak prides itself on being the only one to reach a speed of 300 m/min, for a resolution of 600 dpi in wide, namely on 650 mm coils using Stream technology that it is developing with integrators like Uteco. The American company, which puts forward „very competitive“ operational costs compared to electrophotography, has announced for the next drupa a resolution of 1200 dpi with Ultrastream technology. Above all, thanks to its print-speed it can directly compete against traditional processes. „We've calculated that up to 20,000 square meters it is more beneficial to use inkjet, until flexo becomes more profitable,“ said Dan Denofsky, director of OEM partnerships for the digital division.

To put this into context, until recently, the crossover for the digital/conventional curves did not exceed 10,000 m². In sheet-to-sheet technologies, which many players place today at 5,000 sheets, it could rise up to 10,000 sheets. The current industry equilibrium begins to be challenged

as digital printing, for a long time confined to small print-runs, evolves towards longer runs and ever-bigger print jobs. This paradigm shift is also because the market is no longer the territory of specialists. Big traditional printer's introduction to digital such as Koenig & Bauer, Heidelberg or Bobst diversifies the print-offer, increases competition and lowers prices. Above all, the arrival of these general manufacturers brings print know-how and the necessary control over medium and longer runs. Printing itself is not everything: to go fast on a machine, you also must know how to hold and pull the sheet or the reel and the big press-manufacturers also know just how that's done.

The third reason we believe that digital will continue to develop is the process of embellishment and converting. When we talk about labels or packaging, the addition of gilding and embossing is often a customer requirement, an example of which would be the perfume and luxury goods market. This can also be seen in the mass market as demonstrated by certain beer labels or in the packaging of high-end confectionery products. Soon, holograms and invisible markings will be added as aesthetically as a means to fight against counterfeiting and to avoid parallel businesses. Some markets like pharmacy and tobacco are very demanding in relation to this. It may soon be necessary to print RFID antennas with metallic inks to enhance the packaging and brand experience, to make it more communicative than what's currently offered with QR codes. It cannot be overlooked that packaging on offer today has already been enriched by a very interesting array of technologies from companies like Scodix and MGI, which are able to digitally enhance clients' packaging with visual and tactile effects (embossing, metallization, 3D varnish) achieved with speeds from 4000 to 5000 sheets/hr. In cutting and creasing, Highcon does the same with a process that reaches 5000 sheets/hr.

Although this is not yet a reality, we can easily foresee in the short term the emergence of complete lines where the material – film, paper, complex or corrugated cardboard sheet or coil – is successively printed, embellished then cut and all this implemented in the context of a 100% digital process. Crucially this will be economically viable on runs of 20.000 m² or 20.000 sheets. Beyond that volume, it will continue to be more viable using flexo or offset technologies.

This packaging production revolution, however, will require packaging converters to review their entire supply-chain system. With print-runs ever-more diversifying - whether small, medium or large - this will require the review of numerous flows, materials, consumables and finished products that are completely different than the current ones. Investments in IT and also in people (with new skillsets) will be required. This is change-management from "A to Z", from within both the converters and their clients.

In 2016, the drupa motto was "touch the future". But in 2020 visitors should "embrace the future". A visit to drupa in 2020 will be more interesting than ever, as the industry transformation is, like many things, happening faster than expected. The fair is giving impulses on how to successfully integrate important trends like digital management through keynotes, discussions, guided tours or visionary exhibitions –important impulses that each and every company should sooner or later incorporate. So yes, the first 100% completely digital printing and converting lines for packaging production will be born in a few years.