

DIGITAL INNOVATION

FUTURE OPPORTUNITIES FOR CORRUGATED AND CARTONBOARD PRINT

Improvements in digital (inkjet and toner) printing on paperboards will provide a series of new revenue streams over the coming decade. These are among the multiple market opportunities identified in 'The Future of Digital Printing to 2032', the latest market data study from Smithers.

Growth Segment

Multiple factors are pushing for the wider adoption of digital print, with trends already evident pre-pandemic now accelerated as print buyers adjust to changed post-COVID realities. With sales of conventional publication and graphic print under pressure, packaging and digital print for packaging is one of the most promising routes to increased sales.

As this happens technology enhancements to inkjet print engines, inks sets, presses and in-line finishing are mutually supportive in displacing not just lower-run analogue print, but also some toner systems.

By 2032, Smithers' comprehensive market modelling shows digital will be worth \$230.5 bn or 25% of all value in print. The highest growth rates will be in labels and packaging print, with a market worth \$23.7 bn in 2022 more than tripling over this forecast period.



Corrugated

Corrugated board is central to this and will account for 82% of all incremental growth for inkjet in packaging over the next decade. Much of this is organic growth, twinned with demand for more bespoke box designs for use in e-commerce delivery – including print on a wider range of substrates, such as microflutes.

As more brands look to provide direct sales for e-commerce, customisable packaging can enhance the customer experience and more digital pack systems are being installed for gifting.

To minimise pack size, OEMs are developing more box-on-demand systems with integrated inkjet capability for adding mono and full-colour print to



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boxes that are constructed as the order is dispatched from a warehouse. One of the barriers to the use of inkjet has been the cost of its inks, typically bought directly from the OEM.

Across the next decade, market pressures will pull these downwards, including the arrival third-party suppliers selling non-proprietary inkjet inks. This will also be supplemented by more UV-curing and water-based ink sets, as well as bio-based ink formulations that offer a greener printing solution.

Folding Cartons

Electrophotography is not an option for corrugated, due to the rougher nature of the print substrate. As new inkjet machines get faster, toner printing will increasingly be focussed on smaller premium segments. Major sectors in this shifting market will include folding cartons, the second fastest growing application for the process over 2022-2032, and labels, the third.

For eye-catching effects, toner technology has and will continue to evolve to offer a better array of embellishments during finishing. Already in 2022 these include clear toners for imparting spot gloss and matt effects; white toners

for printing on transparent and coloured substrates; fluorescent pigments; security ink effects; and magnetic toner for covert security with Magnetic ink character recognition (MCIR) codes. HP Indigo reports strong traction for its line of metallic toners, with many customers employing them in 3-colour enhanced productivity mode, which reduces the number of clicks and delivers faster throughput for many jobs.

Track and Trace

Traceability mandates – including item-level tracking of individual packaging – are proliferating in pharma and medical device segments. Unique 1D or 2D (QR) barcodes are increasingly common, for cartonboard medical packs.

Beyond product authentication the same technology can be leveraged to better manage inventories and logistics, another post-COVID priority.

This has historically relied on mono thermal inkjet. A more efficient process has been developed by Schumacher Packaging for corrugated board, employing its Koenig & Bauer-Durst Delta SPC 130 inkjet machinery to print a continuous barcode on all four sides of a box. Printed six-up

on a sheet before die-cutting and gluing, this configuration means all sides of the finished package carries a scannable barcode, regardless of how it is turned on a conveyor.



The current and future market outlook for inkjet and toner print in corrugated, folding cartons, and all other markets is mapped authoritatively in the new Smithers report *The Future of Digital Printing to 2032*.

<https://www.smithers.com/en-gb/services/market-reports/printing/the-future-of-digital-printing-to-2032/>

Its forensic examination of press and finishing technology complements a comprehensive data set presented in over 150 data tables and figures; segmenting demand by print technology, 14 end-use applications, and over 30 leading national and regional markets. ■