



Digital Represents Wave of the Future for Label Printing

Technology supports and complements converters Flexo operations

Digital is coming on strong in the label printing industry, offering converters the opportunity to provide cost-effective labels with photographic-quality graphics, lively colors and snappy text.

Only 33 percent of new press sales in the North American market were digital in 2011, according to an LPC, Inc./TLMI North American Digital Label Study. But by 2014, the number of digital press installations rose to 52 percent and LPC, Inc. projects three of every four presses sold into the North American marketplace will be digital by 2020.

Whereas digital printing was once perceived as a competitive process to flexography (flexo), today the technology is viewed as more complementary, providing the opportunity for shorter runs and excellent printing every time.

Types of digital presses

The North American market for digitally printed labels is estimated at \$1.037 billion, according to LPC, Inc., with digital label volume representing 8.5 percent of the total North American label market revenue. Among digital presses installed in the North America labeling industry, about 85 percent are currently electrophotography and 15 percent are Inkjet.

Electrophotography presses allow converters to print images using a liquid toner on an imaging substrate such as paper, film, metal and fabric at a very high speed. The technology delivers quality print, high throughput, superior quality color and cost economy.

Electrophotography has been available for the past 20 years and retains the largest installed base. But, engine improvements and capability advancements relative to inkjet presses continue to favorably position this technology across various end-use categories.

Inkjet has the highest projected growth among digital label printing technologies for the next five years. And, while nearly 40 percent of converters presently do not have a digital press, according to the TLMI North American Digital Label Study, more than 80 percent of companies surveyed indicate they will purchase a digital press within the next three years.

Inkjet presses present a number of performance and cost advantages compared to flexo and in some cases electrophotography, including on-demand printing, short turnaround times and automated color management. The equipment is less expensive to purchase than other digital printers and does not include click charges. Unlike flexo, inkjet presses require no printing plates, which eliminates costs associated with plate ordering, mounting, cleaning and storage. Cleanup and maintenance are also significantly reduced.

Computer-driven Inkjet presses continue to gain momentum because they increase converters' operational flexibility while providing a cost advantage as converters pay only for the actual digital ink they use. Inkjet presses recreate a digital image by propelling droplets of ink onto paper, film or other substrates, with the print head never making contact with the media.

Digital inkjet presses generally use one of two types of inks: UV or water-based ink. Solvent inks provide desired durable printing results but are seldom used for label applications because of their high environmental impact.

UV Inkjet presses employ inks that are 100 percent solids and contain pigments, pre-polymers and UV-sensitive materials. Once the ink is printed onto a substrate, the pre-polymer hardens and forms a dry, colored layer under the influence of UV light. The hardened UV ink offers excellent resistance to water and fading and is comparable in chemistry to UV Flexo.

Water-based Inkjet platforms use inks with colorants that are dispersed or dissolved in water. During printing, the substrate absorbs the water, with the dyes or pigments remaining on the substrate. Both UV curing and water-based Inkjet label platforms offer important opportunities relative to speed, capital investment and format flexibility – all without compromising printed label quality. Inkjet offers a variety of more affordable price points lower than flexo presses.



The right media for the printing technology

One of the keys to success in the label printing industry is to match the right media to the printing technology for increased competitiveness, greater sales potential, better profitability and greater peace of mind. Converters sometimes purchase presses with the assumption that standard products are printable, which is not always the case.

Avery Dennison has invested in developing digital media solutions since the introduction of electrophotography technology, which remains largely dominated by the HP Indigo brand. The HP Indigo liquid toner process, for example, requires a special top coating to create a chemical bond between the ink and substrate surface. Xeikon dry toners adhere to most label stocks without any additional surface modification or coating. Specially optimized papers and films are available for UV Inkjet printers and water-based inkjet technology.

Avery Dennison offers an expanded comprehensive Inkjet portfolio for UV and water-based Inkjet presses, with solutions designed to balance ink adhesion with line and image quality. All solutions are validated among top digital OEMs. The Avery Dennison Inkjet portfolio simplifies the complexity associated with digital technology, OEMs, ink systems and printheads. Every solution was developed to reduce scrap, lower claims and minimize inventories while boosting end-users' speed to market.

Summary

Labels will continue to play an essential role as companies and businesses brand their products to remain competitive and increase sales. While the majority of the label printing market is still flexo, digital is rapidly gaining market share as brand owners and packaging buyers look to digital label printing technology for smaller quantities, expedited delivery and increased speed to market.

The digital industry is complex and continues to evolve with new press technology, substrates and inks. Teaming with an experienced label partner offering a wide selection of flexo and digital solutions will help converters identify new market opportunities and will assist in meeting and exceeding customer expectations.

All comparisons are believed to be reliable and accurate. However, the furnishing of such information and comparisons is for reference purposes only and does not constitute a warranty of any kind. Actual product performance should always be tested for fitness-for-use.

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