

6 Ways Digital Printing Can Transform Your Supply Chain



As the pharmaceutical industry evolves away from being dominated by blockbuster drugs, product volumes are changing dramatically. Companies are increasing SKU's and decreasing the volumes of private-label drugs, generic drugs, market-specific products, treatments for smaller-patient populations, and personalized medicine. At the same time, variable printing is on the rise as pharma companies work to meet different serialization requirements and medical device manufacturers phase in Unique Device Identification.

Such changes are transforming your needs for labels, cartons, and other printed materials. You no longer need blockbuster-sized volumes of identically printed labels; you need inventories right-sized to match demand, and you need to support the growing requirements for variable printing.

Digital printing can support these changes. The technology first emerged for pharmaceutical and medical applications over 10 years ago as a way to manage short runs quickly and economically, and it has evolved considerably from its early days. You may now be using some digitally printed labeling and packaging materials, but are you using the technology to its fullest potential? Digital printing is no longer just a niche solution—it can transform your supply chain for printed materials in 6 key ways.

1

Reduce time to market for printed materials through quick turnaround

The key advantage of digital printing comes from the elimination of conventional printing plates. Instead, a rotary image plate is “digitally” inscribed with an individual color separation to attract ink containing electronically charged pigments. That separation is then transferred to a blanket. The plate is cleaned, and the digital inscription process is repeated for each of the different color separations that are needed for a given label. As the separations are transferred one by one to the blanket, the complete image is built and all colors are transferred at once from the blanket to the label substrate. This process from digital inscription to printing takes place in a matter of minutes, with precise registration. Any needed color adjustment can take place quickly, too.

Artwork preparation for digital printing is quicker, too. One estimate puts such prep work for flexo-graphic printing at about 3 to 4 hours, whereas images for digital printing can go straight to the press with little to no prep work.

With such expedited printing, just-in-time print orders can now be standard, streamlining the printed materials supply chain to provide speed to market and an immediate competitive advantage.

2

Provide flexibility to make changes quickly and to be innovative

Because printing plates are inscribed digitally, changes to artwork can be realized quickly, on-demand. Digital printing is proving particularly useful for companies that are managing frequent label updates and revisions. Companies can react much more quickly to regulatory or market changes, and the ability to adapt to those changes could itself translate into market share gain.

Digital printing further enables speed to market by shortening the time from design conception and innovation to realization. Users can experiment by printing a number of different designs on labels and cartons, demonstrating how such designs would look on the shelf. Digitally printing design samples can also show how they can be cut, folded, and glued—aspects that would be difficult to demonstrate conventionally.

Such capability during the design phase speeds up the approval process.

Digital printing therefore gives designers the flexibility to be innovative—quickly. They can produce design samples for market studies and test what’s appropriate for certain markets before printing entire runs. This process is much faster than it would be using conventional printing, shortening the supply chain and time to market.

3

Reduce inventory and therefore obsolescence and waste

Digital printing is truly on-demand printing. Once freed from the costly investment of conventional plates, digital printing users no longer need to maximize the expense of one print run like they used to. Companies no longer have to maintain sizable inventories of printed materials; some could even move toward just-in-time inventory.

As a result, you only order what you want, when you want it, how you want it. Digital printing enables users

to right-size their orders to match smaller product volumes and market demand. Such lean inventory levels reduce the likelihood of obsolete or out-of-date materials that would need to be discarded.

There’s also far less material required for make-ready when compared with that typically required for conventional printing. For instance, 10 sheets are typically needed in digital carton printing for color adjustment, compared with about 150 sheets per color multiplied by 4 for four-color conventional carton printing.



	Digital Workflow 4 color	Offset Workflow 4 color
Make ready time	10 minutes	60 minutes
Make ready material	10 sheets for color adjustment	150 sheets per color (600 sheets) for color adjustment
Printing plates	No Plates Needed	4 plates
Time between each new job	15 minutes	75 minutes
Number of jobs per shift (5,000 cartons, 12 out on a sheet)	15-20 different jobs	6 different jobs
Variable printing	Yes, including unique codes (2D, 128, etc.)	No
Carton number reconciliation	100% count accuracy	No

4

Reduce cost

As sizable inventories shrink, so does the cash tied up in them. Reducing inventory cash flow is a big advantage of digital printing. Right-sized print runs reduce printed material costs when compared with the sizable runs typically seen with conventional printing. Companies that switch from traditional printing to

digital can expect 10-15% end-of-year savings by reducing obsolescence and revision charges.

In addition, material waste during set up can be minimized. When setting up a print job, only 10 feet of printed material is wasted, compared with 700-plus feet for traditional flexographic printing. Users are also able to eliminate printing defects, further reducing costly waste.

Shorter print runs also reduce energy costs and consumables.

Finally, digital printing is well known for its elimination of plate-making costs, which could be significant. For instance, some labels require six conventional plates, and at \$150 per plate, labeling updates could add up considerably. Such potential cost savings add up to a more economical supply chain.

5

Incorporate added features such as serialization and brand protection as well as other components into a single process

Digital printing gives you variable data at the press of a button, which means that you can easily build track-and-trace initiatives into your printed material supply chain.

For instance, at the digital file preparation stage, each label or carton can be given a unique serialized 2-D bar code as well as a lot code and expiration date.

With such variable data capability come several options, including brand protection and security features. For instance, unique features such as invisible digital fingerprints can be added for anti-counterfeiting and



anti-diversion. Very fine text as small as 1.5 point is possible, as is micro-printing that can be viewed only under a microscope.

If additional printing technologies are needed to achieve a specific decorative effect, a hybrid printing process can be employed to couple digital printing with conventional printing in a manner that achieves seamless fulfillment.

Other features can be added in-line with the digital press, such as embossing cartons with up to 8 lines of braille characters and attaching or inserting expanded content labels and inserts.

Most importantly, all these add-on features can be fulfilled in one process, in one order, by one vendor, streamlining your supply chain.

6

Reduce risks through enhanced quality

Digital printing quality is consistent, thanks to process repeatability and 100% inspection and verification. Color quality is achieved in a few ways. First, for the initial print run, inks are calibrated according to customer profiles. These profiles are saved and can be used for all subsequent printing. Then, during all print runs, color consistency according to that profile and among all batches and SKU's is monitored and maintained automatically by an on-press spectrodensitometer that detects any defects and alerts the system if needed. Colors are also consistent between cartons and labels, ensuring brand consistency globally.

Because all colors are laid down at the same time on the substrate, digital printing provides 100% artwork registration. As a result, complex designs with very fine white lines are achievable, print images no longer need traps, and art elements feature very sharp edges and deep ink densities, with no dot gain. Shadows and vignettes are also easier to maintain. With flexographic

frequently to avoid harsh lines from ink build-up, but you won't see that with digital printing.

The digital process also verifies 100% of all content, including variable data, with 100% reconciliation. An on-board vision system reads each carton or label, and if it identifies a defect on a particular sheet, that single carton or label—not the entire sheet—can be eliminated down the line. The system compiles a list of the unique identities of each carton or label and provides all pass/fail data to customers.

Codes are also verified during folding and gluing stages, where scanned codes are automatically checked against pass/fail records from the printing stage.

With such quality control, supply chain risks are reduced significantly. In addition, once a company is using digital printing, the cost of transferring business from one supplier to another is now easier. Such flexibility lessens the risk associated with relying on just one vendor, enabling companies to respond to spikes in demand or emergencies and build in supply chain redundancy.

It's Time to Transform Your Supply Chain

Given its digital nature, digital printing will allow you to transform your printed materials supply chain into a more flexible, on-demand, cost-effective one. You'll be able to print more often, in short runs, and be able to support variable data and frequent content changes, giving you a competitive advantage over others that rely on traditional printed material supply chains that are inherently longer and more complex. You can match market demands and even out peaks in your production schedule. Consequently, you'll be able to reduce costs and eliminate waste, while increasing quality control.

To learn how digital printing can transform your supply chain, reach out to a digital printing specialist for a free 30-minute consultation.

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Karl Hoelper
khoelper@cclind.com
 Ph: 609-490-3032
www.cclhealthcare.com

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Contact a digital printing specialist for a free 30-minute consultation to learn more about digital printing or print-on-demand.

For more information:

CONTACT NAME

Karl Hoelper

COMPANY NAME

CCL Healthcare

EMAIL ADDRESS

Khoelper@cclind.com

PHONE NUMBER

609-490-3032

ADDRESS

120 Stockton Street
Hightstown NJ 08520

WEB ADDRESS

www.CCLHealthcare.com

