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ANALYSIS

LABELS

WHAT YOU NEED TO KNOW WHEN GOING DIGITAL

MAY 2020





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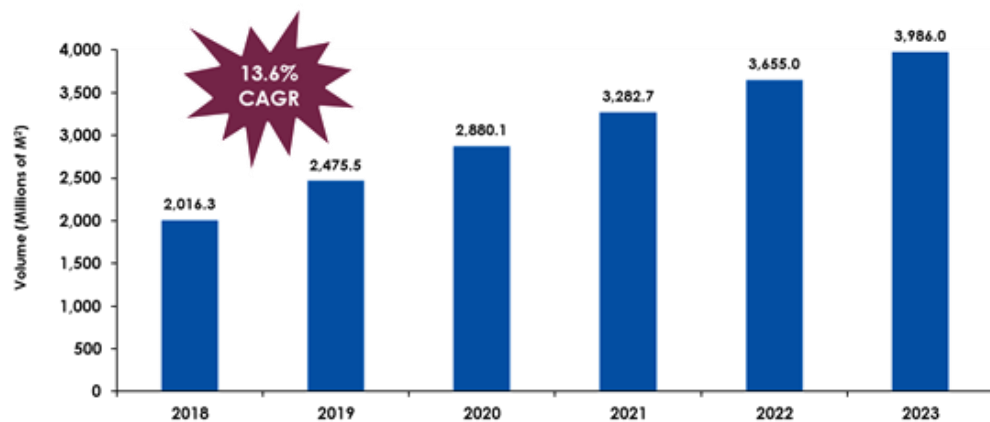


Introduction

Although analog printing of packaging will be with us for a long time, there is evidence that digital print is uniquely suited to address consumer and brand driven changes in the market. Short-run job volumes continue to grow, and some work that had once been produced on offset, flexo, and other analog devices has already moved to digital! The combination of more options, variable imaging, and short turnaround has enabled the digital side of the packaging market to expand its role and increase profitability for many converters. Keypoint Intelligence – InfoTrends' forecast data indicates that digital label printing will continue to rise.

Roughly 5% of labels with color graphics are produced digitally at this time, but there are growth opportunities in analog-to-digital conversions based on the increase in short-runs and customization. Keypoint Intelligence (KPI) estimates that while global digital color production volumes of labels totaled about 2 billion square meters in 2018, these volumes will nearly double to 4 billion by 2023. This represents a compound annual growth rate (CAGR) of 13.6%.

Figure 1: Production Digital Color Print Volume of Labels



Source: Color Digital Print Packaging Forecast, Keypoint Intelligence – InfoTrends 2019

In addition to marking the start of another new decade, early 2020 also saw the rise of a global pandemic. COVID-19 has brought a great deal of uncertainty to our world, and questions continue to swirl about its effects to humanity, the economy, and many industries. Although many market segments (including the general commercial printing market) have been hit hard due to the pandemic, the labels industry has enjoyed business growth. For print service providers (PSPs) and label printers seeking ways to grow their businesses into the 21st century, digital label production is on a strong growth path.



Today's Production Digital Label Printing Market

KPI defines a production-level label digital printing system as a digital printer with the following characteristics:

- ◆ Capable of producing at least process color (CMYK) output
- ◆ Designed to print labels
- ◆ Rugged enough to operate three-shifts per day, seven days a week
- ◆ An average monthly print volume of at least 1 million labels

There are two distinct uses of packaging defined as primary or secondary. Primary packaging is the first level of packaging that the product is housed in (e.g., a bottle of wine with its label or a folding carton box for facial tissues). Secondary packaging is one step away from the product (e.g., the cardboard box containing a 6-pack of beer or a corrugated carton holding multiple cans of produce). Color digital label printers mainly print primary labels for products such as foods, beverages, health & beauty products, and drugs.

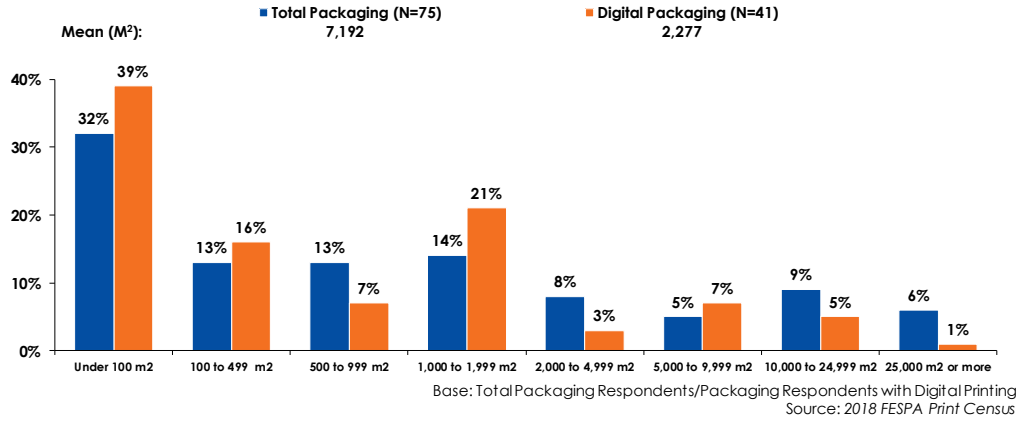
With over 20 years of history, color digital printing of labels is the largest and longest running of the digital print categories within packaging. Electrophotographic (toner-based) roll-fed printers first entered the market in 1996 and still produce most of today's digitally printed labels. At the same time, however, inkjet printers using ultraviolet (UV) or aqueous inks have been in the market for about 10 years and play a growing role in the label converting industry.

Today's production digital label print market is changing in two notable ways. The first is in run length. Wherein the past, mass production was prioritized, changing expectations and consumer desires have greater shifted the focus from long run lengths to shorter ones. This positions digital label printing at an advantage, as it is much more suited to shorter run lengths. Data gathered from FESPA in 2018 showed that the largest segments now regularly print in under 100 m² run lengths. For label printers slow to adapt, the increasing percentage of shorter run lengths means either money lost due to inefficient machine operating or profits lost from jobs the printer has to bypass since they do not have the proper equipment.



Figure 2: Frequency of Print Run Lengths

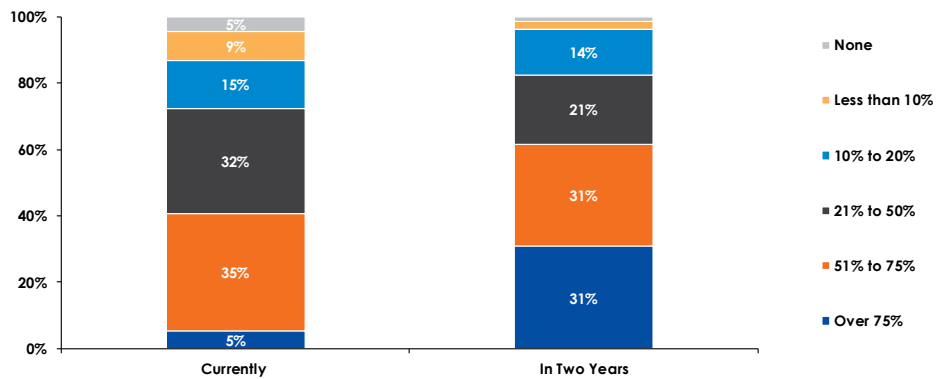
For all the packaging jobs that you print in your company, what percentage are the following run lengths?
For the packaging jobs produced on a digital press or printer, what percentage are the following run lengths?



The other trend is the growth in variable data printing (VDP). VDP has also arisen from the shift toward personalization, as it allows the switching of elements like graphics, images, and text from one printed piece to the next. Data gathered by KPI revealed that printers across the world are increasing their capabilities regarding VDP. The EU is ahead of the US in this regard, with many European printers expecting to produce more VDP within the next two years. While COVID-19 may impact this trend, it is still too early to say whether the pandemic will have any real dampening effect on VDP's growth.

Figure 3: Percentage of Print Volume that is VDP

Q: What percentage of your total print volume produced on your site is VDP?



N = 130 packaging converters

Source: Keypoint Intelligence 2018 EU Software Investment Report

A Brand's Perspective on Digital Labels

The following analysis has been provided specifically to help brand creators and PSPs understand the value of digital label creation. In addition, we have outlined several core changes to everyday workflows to help these brand operators understand the changes



that digital label production will bring to their business so that they may more effectively optimize current work structures and plan for the future.

Brands today need to stand out to succeed. The marketplace is crowded in virtually every industry and now more than ever brands need to make an impact quickly with relevant packaging designed to appeal to a targeted consumer base. This means making improvements internally, such as adopting a less complex supply chain that allows them to respond more quickly to certain promotions or events that can be used to drive profit.

Brands are also under increasing pressure to look more responsible to their customers, and this can be improved by efforts in sustainability and security. Digital label printing accomplishes all this and more with less dependency on a large-scale supply chain, the ability to print more specialized products faster and more affordably, as well as improved environmental performance and enhanced security features.

The Growing Demand from Craft Industries

Nearly every aspect of the print industry has seen an increased demand for shorter runs and the label segment is no exception. While printers in the direct-to-garment industry see an uptick in demands for on-demand shirt design creation, many label printers should expect to see more demand from growing craft industries, most notably wine and beer developers.

While COVID-19 may slow the growth of these smaller breweries, distilleries, and wineries, it is not expected to flatten the market. In fact, some of these companies have pivoted during the pandemic to developing disinfectant – which also requires its own custom printed label.

The pandemic will likely mark a shakeup for many brands, causing certain big market names to suffer at the expense of new products and services emerging to fill customer needs. The growth in these smaller businesses will mean new opportunities for label printers looking to service the smaller craft industry segment. Those equipped with digital label printers will be in better position to meet this need and serve these clients.

Minimizing Waste and Optimizing for Sustainability

It is well known that printing labels creates waste. Unused elements such as inks, containers, edge trim, setup materials, plates, and more are frequently produced with each print job. Sadly, as of 2018, much of this waste ends up in landfills – particularly in the United States. Only around 15% was recycled.¹

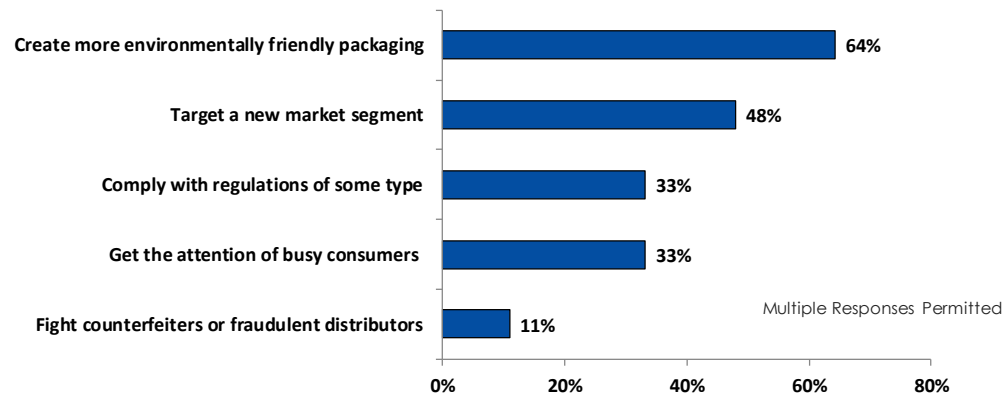
Switching to digital label printing processes will help improve this number, allowing companies to practice green workflows – giving them a name in sustainability while

¹ Statistic taken from an [online Labels & Labeling Article](#)



reducing waste output and increasing profit margins. Given that many studies are already linking the COVID-19 pandemic to air quality and pollution, having a greener image may be more important than ever as the world eventually moves to rebuild from the impact of the coronavirus.

Figure 4: The “Green” Challenges Driving New Printing Processes



N = 265 European brand owners

Source: InfoTrends Survey

Another important factor regarding waste is the greater frequency of UV and aqueous inkjet, which are less toxic than traditional label inks. These are showing up in leading digital label printer hardware, meaning that the technology itself is naturally moving away from dangerous leftover chemicals.

Exploring Secure Label Printing

Part of transforming a workflow for the 21st century involves giving more thought and investment to the realm of security. It is estimated by organizations like the International Chamber of Commerce that hundreds of billions of dollars are lost each year due to counterfeiting. Label printers, especially those involved with the printing of consumer-facing products, must be prepared to safeguard these items from counterfeiters and other data criminals. To this end, print security specialists have prepared numerous techniques to reduce the likelihood of counterfeiting while also offering printers and their clients greater transparency into tracking their items once they have left the print production floor.

This transparency largely comes from track and trace, a method that is used to detect and pinpoint printed products anywhere in the supply chain. This empowers the process of verification down to individual items and creates what is essentially a complete view of the entire process. Items that are tracked and traced are authenticated each step of the way and this can be visible the client and potentially the consumer, giving each greater peace of mind and more confidence in the authenticity of the product.

Other security measures include:



- ◆ Watermarks that will only show up in certain conditions, such as specific lighting.
- ◆ Serial Numbers that are printed directly onto the label, marking it as unique.
- ◆ Inserting miniscule RF-active devices into the printed product. Such devices can be monitored by RFID scanners.

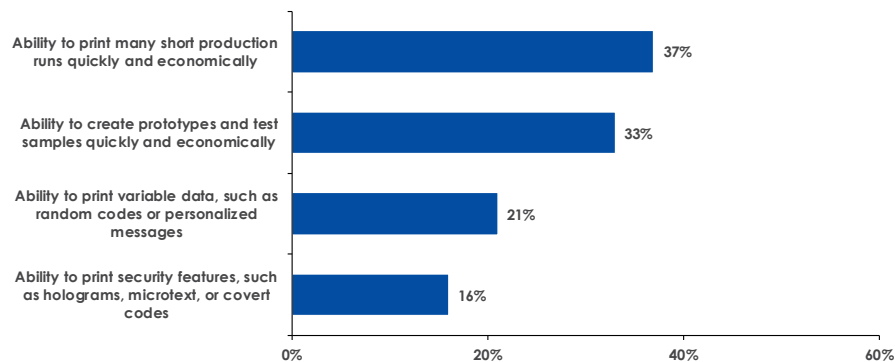
It should also be noted that during 2019, HP made a notable investment in secure printing via a partnership to Agfa to create a VDP solution designed to promote brand protection. This agreement essentially empowers HP Indigo to create a virtually limitless multitude of designs that are not only visually pleasing but also make it much harder for counterfeiters to determine the authenticating marks and product compelling forgeries.

A Converter's Perspective on Digital Labels

Brands are not the only companies that should prepare themselves to transition to the use of digital label printing hardware. Converters too should be undergoing preparations to ensure they can meet client demands and produce digitally printed labels quickly and cost effectively.

Figure 5: Importance of Print Capabilities when Choosing a Converter

Q: For decisions at your company about the printing of packaging or labels, how influential are the following (highly important only)



N = 265 US Brand Owners
Source: Keypoint Intelligence 2019 Market Reports Live: Digital Packaging Printing

Technology and Training for the Digital Era

Automation has been one of the biggest buzzwords in the print industry for some time and it is not going away. Web-to-pack solutions that capture online orders from print buyers and brands are also powerful tools for automation. Customers can place orders at their convenience—and with greater confidence thanks to newer 3D visualizations and proofing. At the same time, the orders can seamlessly flow into the converter's automated print production workflow. This helps improve turnaround times.

Technology is not the singular answer to print production; it is merely a tool that provides leverage. Skilled administrators and operators are still required. According to a 2018



Printing Industries of America survey, organizations expect 30% to 50% of their skilled workers to retire within the next ten years. Although automation is helping to close the gap, KPI anticipates that a skilled worker shortage will soon become an issue for the print industry.

PSPs must be proactive in workforce training programs. Investment now means less revenue lost in the future. Employees should be trained on the new digital hardware, with these instructions carefully captured for future generations of workers. Technology like augmented reality (AR) software solutions, such as Vuforia Chalk, can help companies with this task.

The logic is simple enough. The more orders placed online that can be automatically prepared for digital printing, the more resilient the operation becomes. The need for skilled laborers to administer the workflow, process difficult jobs, and handle exceptions is still critical. Investing in automation and training programs will enable converters to be more efficient while also better positioning them to meet the needs of clients in the future.

HP Indigo has developed a world-class Service Training Portal that is designed to guide operators through a certification program. With HP Indigo service, 80% of issues can be resolved independently. Implementing this training makes it possible to create a group of highly skilled, self-sufficient, confident operators who are more in control of their processes. HP Indigo promotes continuous learning to promote and refresh operators' skill sets while also maximizing press uptime.

Making the Investment

HP Indigo is well known as a top supplier of color digital printers in the three main packaging applications, i.e. labels, folding cartons, and flexible packaging. The company continuously invests in advancing digital printing for packaging through improvements to print quality, consistency, media range, and automation. The company has helped its top converters land major brands as digital print clients, and in the process has spurred awareness of color digital printing for packaging.

Printers that invest in the shift to digital print workflows can expect several positive changes, notably the fact that they will no longer need to create flexo plates (internally or through a third party) for their print procedures – a direct improvement over analog. Not only is this one less step, but it in itself contains a multitude of advantages. It means less waste creation, no plates to discard, and it reduces the amount of makeready print waste that will be produced with each job.

On top of that are all the advantages already outlined in this paper: the improvements regarding shorter run length and VDP, the lessened eco-footprint, as well as the ability to take full advantage of the latest security developments. While label printers may be



concerned about the initial investment, digital label printing technology provides a wealth of incentives that will pay off in the long-term, allowing printers to operate at higher levels of efficiency when it comes to handling the bulk of shorter run print jobs that are increasingly demanded from consumers.

Opinion

Although analog has been the dominant print technology in label production, digital printing brings numerous advantages to brands and converters. Customers increasingly want products that are customized, authentic, and sustainably created. Simply put, they are demanding products that naturally fit with the strengths of digital label printing.

Although COVID-19 has proven quite detrimental to many industry sectors, the labels market has actually benefitted. HP has long been a leader in this field with its HP Indigo family of products, so it is particularly well-positioned for future growth. As digital label printing technology continues to develop, KPI believes that HP will remain at the forefront of the digital label printing ecosystem that connects consumers to brands and brands to converters.

opinion



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