



Flexographic Printing vs. Digital Printing

Understanding the Variables that Affect the Selection of Label Printing Technology

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Labels play an important role in the branding of businesses and products. Here is a look at the key factors that affect which printing solution is the most appropriate for your business.

The Problem

As technology has improved, the number of printing technology options has increased, causing confusion about what is the best choice.

Why It Matters

Without understanding which printing solution is best for their needs, companies run the risk of wasting time and money on labels.

What to Do

Understand the key factors that determine which labeling solution will be most appropriate. Recognize that there are other variables that should be considered, outside of printing technology, when choosing the right company to provide your printing services.

The printing press is considered to be one of the most important inventions in history, with its ability to print reading materials and make them available for mass consumption. We have, however, evolved far beyond the woodblock printing performed by the Chinese in the 2nd century, as well as the first printing press that was invented in the 15th century.

Today, businesses have options when it comes to selecting the right technology for printing labels. With options, however, comes confusion.

The two printing processes generally used today for printing labels are flexographic and digital. Unfortunately, there are many factors to consider when determining which of these printing processes is most appropriate. While some printing jobs are best suited for a flexographic printer, there are variables that can cause digital to be the most appropriate option. There are often unforeseen variables that affect which technology is most appropriate, variables that are generally uncovered while discussing your specific needs with a label manufacturer.

Labels: An Investment in Success

While it may just appear to be a small piece of paper with adhesive on the back, this seemingly insignificant item can have a major impact on the sale of products. Significant time and energy should be spent determining and evaluating the target audience, selecting the right colors and designing a label that will enhance sales.

Role of Packaging in Influencing Consumer Purchasing

According to Bo Rundh¹, a product's packaging attracts the consumer's attention to that particular brand, enhances its image, and influences the consumer's perceptions about that product. It also can add unique value and works to distinguish the product from other, similar, products. As a whole, the packaging plays an important role in branding and should, therefore, be considered to be one of the most important factors.

7 Important Packaging Elements

According to Mitul Deliya and Bhavesh Parmar², there are seven important elements that should be evaluated when making decisions about packaging: color, image, material, font, wrapper design, printed information, and innovation.

Color

The color of the label or packaging can help set the mood for a product and attract the customer's attention.

Background Image

An eye-catching background image is designed to catch the customer's attention and compel him or her to take a closer look at the product.

Material

Customers are drawn to quality products, which are reflected in the materials used on the packaging. High quality materials and packaging attract consumers and will, most

¹ Rundh, B. (2005). The multi-faceted dimension of packaging. *British Food Journal*, 107 (9), 670-684.

² Deliya, M. & Parmar, B. (2012). Role of Packaging on Consumer Buying Behavior—Patan District. *Global Journal of Management and Business Research*, 12 (10).

times, be selected over lower quality, unless there is a significant variance in price.

Font

The most successful companies have established best practices in creating font styles that influence customer behavior. Those companies hire specialists who create unique, attractive font styles that enhance the appearance of the product and drive sales.

Wrapper Design

Like the other design features, there is a correlation between wrapper design and buying behavior.

Printed Information

The printed information serves a number of purposes, such as establishing brand identity, enhancing name recognition, and provides detailed product information that is important for anyone looking more closely at the product.

Innovation

Not only is there a link between it and buyer behavior, innovative packaging can actually add value to the product, such as regulating portion control, allow for easy-opening, easy-storage, or easy carrying.

Overall Goal

Manufacturers strive to produce packaging that will grab the consumer's attention on the retailer's shelf, maintains the key equities of the brand, and can be produced at a lower cost. However, it's important to make the right decisions during the design and printing process in order to ensure your product does represent your brand well and influence the consumer to purchase. Beyond design, one of the most important decisions you will make, one that will have a significant impact on the

cost of production, is selecting the printing process for your labels.

Selecting the Right Printing Process

After you have completed your design and selected the material you will use for your labels, you will need to work with a label manufacturer to select the label printing technology. There are many variables that affect which printing process is best for you, and this choice will have a significant impact on the amount of money you invest in your product's packaging.

What is Flexographic Printing?

Flexographic printing is a method of printing that uses flexible printing plates made of rubber or plastic. Each plate, with its slightly raised image, is rotated on a cylinder and coated with fast-drying ink. The material to be printed on, or substrate, is passed between the print plate and impression roller, which applies pressure to keep the substrate against the plate. This high-speed print process can be used for printing onto any number of substrates. Some common applications for flexographic printing include product labels and direct thermal labels, such as those that would be used in a Zebra or Dymo LabelWriter printer.

Benefits of Flexographic Printing

Enhanced Durability

You can use the flexographic printing method with virtually any substrate. This is especially important with those that are sensitive to heat, such as the direct thermal materials that are printed upon a second time using printers such as the Dymo LabelWriter series or the

Zebra desktop or handheld printers. Labels that need to have a longer shelf life or need to withstand the damaging effects of outdoor use are best created using flexographic printing technology.

Speed of Production

Another significant advantage that flexographic printing has over other printing processes is its production speed. Flexographic presses use fast-drying inks that allow the presses to add one color after the next in virtually no time at all. Furthermore, the laminating, die-cutting and other processes like cold foiling are integrated into the press line, making production continuous. Unlike other printing technologies that require the labels to be removed from the presses and taken to another station for additional steps, the flexographic presses enable cold foil, die-cut and lamination to all be completed in one step, making production continuous.

Color Precision

Flexographic Printers use the Pantone Color System, a standardized color reproduction system, to determine the exact color for your graphics. This system is used around the world and allows customers to determine the exact color they want. The color can then be reproduced precisely, no matter where you take your labels.

Low Cost for Large Run Print Jobs

The high-speed and high-volume production in flexographic printing causes it to be extremely affordable for large runs. Furthermore, no work is really needed between the preparation process, setting up the printer and plates, and taking the finished product off the presses, which saves on labor. The reduced operating costs mean cheaper

products of uncompromised quality for the customer.

Drawbacks of Flexographic Printing

While there are many benefits to using flexographic printing technologies, there are several drawbacks to this printing solution.

Cost of Plates

The cost of the printing plates is the greatest drawback of using flexographic printing. These plates hold the images that are going to be printed on to the label, and there must be a plate purchased for each color. For a large run, with a large number of labels, the one-time cost of the plates is easily offset by the speed and production costs. For a short run, however, the cost of the plates outweighs any possible production savings.

Cost of Image

The act of wrapping an image around a cylinder for the press causes the image to become stretched and distorted when it is printed. Recognizing this, it is necessary to distort the image before the plates are created. The cost of distorting the image is, like the plates, a one-time fee. However, for short runs, this additional cost is a deterrent against using flexographic printing.

Registration

Registration is the method of correlating overlapping colors on one single image. Because flexographic printing requires movement during the process of creating the single image, the movement as the labels move from one color plate to the next, it is impossible for the colors to overlap precisely. Instead, traps and bleeds must be used. Trapping is accomplished by intentionally overlapping colors, whereas bleed refers to printing that goes beyond the edge of the

label. Both of these printing methods work to ensure that minor problems in alignment are not noticed.

How Does Digital Printing Work?

Unlike the flexographic printing presses that require plates, digital printers deposit toner onto the substrate. The toner does not actually permeate the substrate, but instead forms a thin layer on the surface that is adhered using a heat process.

Benefits of Digital Printing

Fast Turn Around

Digital printing doesn't require plates to be created or images to be distorted and the setup time for the machine is minimal. For these reasons, digital printers can easily turn around custom print jobs quickly and easily, with no significant labor demands.

Higher Image Quality

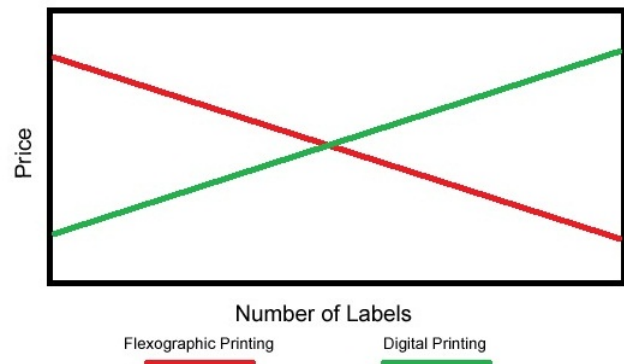
Because of the movement of the label on the flexographic printing presses, it is nearly impossible to achieve perfect alignment for every color plate, and bleeds and traps are added to accommodate for this. However, digital images are printed in one image, rather than using several different plates. For this reason, there is never any registration, or color overlap, with digital printing.

Low Cost for Short Run Print Jobs

Because there are no plates to create or images to distort, the cost of printing can be low in comparison to flexographic printing. That said, the cost per label is actually higher with digital printing than flexographic. For short runs, however, the higher cost per roll

or per sheet is still offset by the significant savings from not having to purchase plates.

Please refer to the chart below to get a visual understanding of the way price is affected by quantity when using flexographic versus digital printing.



It is the job of the label manufacturer to determine where the two lines meet and one form of printing becomes more affordable than another. Keep in mind that the point where the two lines intersect is not static. Because of the different number of colors and plates that are used, there is no set point where flexographic becomes more affordable than digital.

Flexibility

Because digital printing largely just involves the image, as opposed to costly plates, labels can be easily changed or updated at no expense. You can also easily print multiple versions of the same label quickly and easily. Digital printing allows for flexibility with your print jobs that flexographic printing can't accommodate without adding time and money.

Drawbacks of Digital Printing

Just as there are benefits to selecting a digital printing solution, such as image quality and speed of turnaround, there are also a number of drawbacks that should be considered.

High Cost of Large Run Print Jobs

While avoiding the investment in plates for flexographic printing may offset the higher cost per label for short runs, it doesn't work for large runs. For businesses that need to print a large number of labels quickly, flexographic printing is the more affordable solution.

Less Durable

While ideal for most product labels, digitally printed labels aren't designed to last the test of time or be used outdoors. A laminate can be added to increase the level of durability, but this requires an additional step during production.

Color Selection Less Exact

Unlike flexographic printing that can create exact matches to the Pantone Color System, digital printing uses a four color process build, using cyan, yellow, magenta, and black. While digital presses can often get extremely close to a color, they are still limited in their range of colors. A digital printer is incapable of duplicating an exact Pantone Color.

Additional Processes Mean Additional Steps

Digital presses are limited to just printing that image; no additional processes can be added to the line. In order to add lamination, cold foil, or another process, you must first print the image, remove the roll, re-run it to laminate it and die-cut it after it comes off the printer. These additional steps require

additional labor and therefore additional time and cost.

Limited Materials

Because digital presses use a heat process to adhere the ink to the substrate, they cannot print on materials that are heat sensitive. Direct thermal labels, for example, would turn black if you tried to print onto them using a digital printer.

Selecting the Right Label Manufacturer

Selecting the right label printing technology isn't something you should do yourself, however. It's important to select a label manufacturer to work with you in making the decision about which label printing technology is best from a cost and quality standpoint. Your company may also have other needs, independent of technology, that factor in to your decision as you find the right labeling manufacturer.

Experience

Look for a company with a proven track record of providing labeling solutions.

Reputation

Evaluate the company's reputation. Read reviews to establish how happy the customers are with the services that are provided. Any company can win you over with the right marketing jargon, but positive reviews from happy customers will go much further in letting you know what a company's reputation is.

Turnaround Time

Another important factor to consider is turnaround time. Do you require your custom labels quickly and on a regular basis?

One of the LabelValue.com customers requires a fast turnaround time on his food labels, so they are printed and kept stocked in advance so they are available at a moment's notice.

While every business has different needs, it is important to consider how quickly you will need your labels and how frequently you will need more. Are they going to be a one-time only short run? Or are they a large run that you will need again and again?

Ease of Ordering

Ease of ordering is also another important consideration. Are sales representatives or customer service representatives readily available for you to place your order? Can you order or re-order custom labels through the website? Depending on your specific preferences, these conveniences may be important to you.

Shipping

Don't forget to consider the cost of shipping your order. Do you have special shipping needs?

LabelValue.com has customers who need different versions of their labels shipped to different locations but billed to the main office. Each business has different needs that require a unique labeling solution.

No Two Problems are Alike

The exact labeling solution cannot, necessarily, be uncovered by simply marking "yes" or "no" on a list. Each company faces different labeling challenges and has different needs, some of which, such as special billing needs, may have nothing to do with the labeling technology. The only way you can

truly know what is right for your business is to speak to the sales representative at a labeling manufacturer. They have the knowledge and experience to ask the right questions and guide you toward a solution that is tailored to meet your needs and will provide you with high quality, affordable labels.