



PUBLISHED MAY 2017

A **bnp** PUBLICATION
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LABELING, CODING & MARKING PART 3



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ME 15c 18.5c
GOVERNMENT WARNING: (1) ACCORDING TO THE
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ALCOHOLIC BEVERAGES DURING PREGNANCY
BECAUSE OF THE RISK OF BIRTH DEFECTS. (2)
CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS
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Welcome to part three of our labeling, coding and marking eBook series. These machines are used in all industries from food to pharmaceutical, beverage and personal care – and just about everything in between. Read the best practices, examples, ideas and case studies to inform and inspire you as you consider your own business needs.

In this special eBook you can read articles on the top trends within labeling, coding and marking technologies including digital printing, labeling for the pharmaceutical industry and the growth in the segment. We also cover consumer and retail trends including top label trends in spirits packaging, smart packaging opportunities with the nutrition facts panel update and how to best get your brand's message across to consumers. Scroll through and enjoy our latest eBook on this vast topic. **PS**



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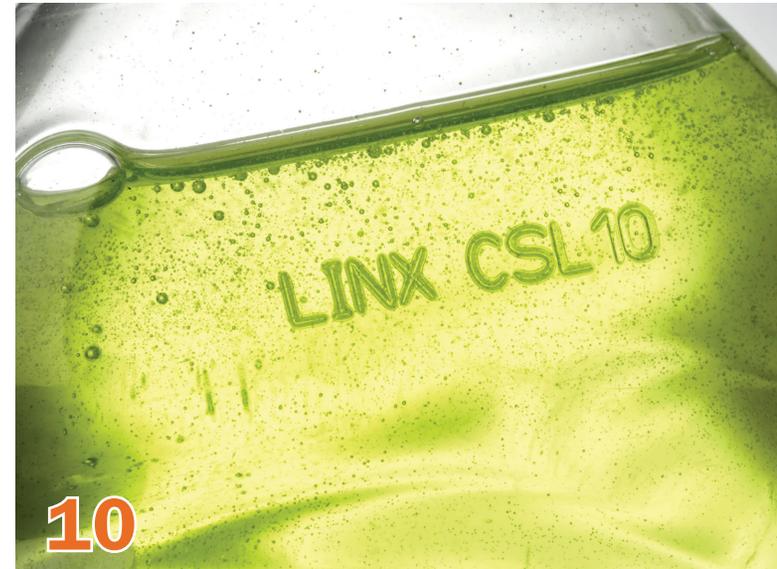
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PRINTING & CODING



THE GOOD, THE NEW AND THE INVISIBLE:

Printing and coding reaches a higher level.

by **KRISTEN KAZARIAN**, *managing editor*

Packages, bottles, medicine and many other products often require discrete codes and brand information that can be tracked through the supply chain. In addition, with new government labeling requirements including the new federal GMO labeling law, tracking may be tougher than it seems.

“Food and beverage manufacturers are seeking more high-speed, high-resolution printing and marking solutions. In addition, retailers are requiring food and beverage manufacturers to synchronize data between primary packaging and cases for product traceability,” says Bob Neagle, Videojet business unit manager, case coding & workflow solutions.

According to Neagle, the pharmaceutical/medical arena is also dealing with evolving regulations. In response, manufac-

turers are taking advantage of high-resolution printing, like lasers and thermal inkjet, to apply machine-readable GS1 bar codes to their products.

Here are a few new innovations in printing/coding technology that aim to answer customers’ needs for high speed, cost-effectiveness, reduced manpower and additional features.

MULTI-HEAD THERMAL TRANSFER PRINTER

At press time, Diagraph Marking & Coding (diagraph.com) is releasing the Allen MLi-TE, a unique-in-the-industry multi-head thermal transfer printer providing cost-effective, high-speed multi-lane, multi-line printing of graphics, alphanumerics and barcodes on thermoformed packages.

Featuring up to 12 print heads integrated on one common platform using a single controller, the Allen MLi-TE prints multiple lanes simultaneously and quickly. The system was designed to combine industry-leading speed with reduced maintenance and enhanced flexibility compared to alternative technologies at a similar price point. High-resolution printing of static and dynamic information – such as product identification information, date/lot/batch codes and company logos – can be quickly added to packages such as sachets and stick packs for a wide variety of applications including food, beverage, pharmaceutical and medical.

BRING ON THE DUST

A new industrial inkjet printer for production in dusty environments just came out, thanks to Paul LEIBINGER (leibinger-group.com). The special equipment of the JET2neoD keeps dust and particles out of the coder, guaranteeing reliable marking. An important element of dust protection for the JET-2neoD is the closed back panel that prevents dust particles or smallest parts from getting into the printer. Also, the active housing ventilation ensures that air is continuously flowing out of the printer so that dust cannot get into the electronics. Thanks to the head ventilation, the printhead always remains

dust-free, even when dust is present right on the marking position or when marking from below. The JET2neoD is ideal for use in somewhat dusty production environments and in environments with very small particles such as sawdust.

WHERE IS THE INK?

The ink experts at Videojet Technologies (videojet.com) have developed clear, UV fluorescing ink designed to print “invisible” codes that can only be seen under black light. The new ink is colorless in normal light and fluoresces blue under a black light. With its MEK solvent base, the ink offers good adhesion to a variety of substrates including coated cartons or glossy labels, vial caps and closures, and dark substrates where a bar code is needed.

The fluorescing ink was initially developed for the pharmaceutical market; however, it is also suited to other applications including retort processed food containers and cosmetic packaging. The ink is for use in the Videojet 8610 TIJ printer, which utilizes a purpose-built cartridge designed to use MEK fluids. The high-resolution printer is ideal for applications that require crisp, repeatable codes on foils, films, plastics and coated stocks.

Reliability is the most important attribute of coding equipment. But as significant strides have been made in the last decade



on this front, other customer needs are revealing themselves.

Videojet’s Neagle explains, “In particular, we are seeing greater levels of automation, intelligence and connectivity. Historically, coding equipment has been its own island with data manually input by plant floor personnel. This approach is subject to error and inefficiency considering that most of the necessary data resides in a remote database and is already being transmitted to other devices on the packaging line. So,

acquiring better methods to integrate within the plant IT infrastructures is the first step. The other piece of the puzzle is the level of data the printer is able to provide back to [the customer] – either about its own health or productivity, or that of the overall packaging line. Being able to seamlessly integrate the data – whether it be in the Cloud or locally within existing systems to provide increased visibility into factory floor operations – is certainly something that customers are starting to look for.”

SUTTER HOME WINERY FINDS A MATCH WITH DOMINO PRINTING

Sutter Home Winery Inc. – the second largest independent, family run winery in the U.S. – changed the way Americans enjoy wine. Headquartered in St. Helena, CA, Sutter Home produces high-quality varietals at an affordable price. The winery even created White Zinfandel, which has become one of the most popular wines in the U.S.

“We always make sure we over deliver on quality to our customers – to do that we use the best equipment available,” says Scott Childers, production manager at Sutter Home. “In order to stay in front of the customer, we’re always experimenting with new packaging. We were one of the first to put

wine in PET bottles and now package with Tetra Paks, bag-in-boxes and cans. People love it!”

Sutter Home’s next step was to find solutions for its coding and printing needs – specifically for solutions that offer flexibility and ease of use. Because of its success, reliability and expertise with companies in the beverage industry, Domino Printing (domino-printing.com) was Sutter Home’s first choice as a coding and printing partner. And the choice has paid off.

Domino’s innovative outer-carton printing solution has saved Sutter Home time and money. Domino’s case coding D320i Laser features larger character printing that differentiates it from the competition and is difficult to replicate. In addition, Domino developed a mobile laser system – unique to the market – specifically to accommodate the flexibility requirements of Sutter Home’s production site.

“Our other lines that primarily use ink jet applications are

fixed coders, so they don’t move. But the laser Domino created was specifically made to move from line to line and even facility to facility,” explains Childers. “We have a lot of trust in Domino. It’s [performance is] repeatable, we have zero downtime and it’s essentially invisible in our operations, which is the best thing we could say about laser coding equipment.”

Sutter Home has hosted other wineries at its facility to share information and observe the Domino equipment — and the visitors have always left very impressed. “We’re lucky — we get to purchase equipment from the top manufacturers in the packaging industry. We also like to purchase equipment from people that we like doing business with, and Domino is a group we like doing business with,” Childers says. “Domino supports our operations – which at times is 24/7 – and hasn’t failed us yet. If we had to do this all over again, I would have just done it sooner!” **PS**

PACKAGING MACHINERY

PMMI CORNER: CONTINUED GROWTH FORECASTED FOR THE U.S. PACKAGING MACHINERY MARKET

by **MARIA FERRANTE**, senior director, marketing and communications, PMMI, The Association for Packaging and Processing Technologies

The U.S. packaging machinery industry continues to experience strong growth. The value of domestic shipments of packaging machinery is projected to grow at a compound annual growth rate (CAGR) of 2.4% reaching \$8.5 billion in 2020, according to PACK EXPO owner and producer PMMI, The Association for Packaging and Processing Technologies. More than half of this growth is expected to come from the food and beverage sector.

“The 2016 State of the Industry U.S. Packaging Machinery Report” also notes the value of domestic shipments of U.S.-produced machinery rose 0.3% to \$7.51 billion in 2015. Exports of packaging machinery in 2015 increased by 3.2%, compared to 2014 and are now \$1.1 billion. Backlog orders of packaging machinery grew by 14.1% compared to backlog orders at the end of 2014.

PMMI produces the State of the Industry study based on U.S. Census Bureau reports and shipments data provided by association members who manufacture packaging machinery. The report, which analyzes 28 packaging machinery categories, describes trends and the outlook for packaging machinery shipments through 2020.

According to the report, the labeling, decorating and coding, and case handling machinery groups are forecast to increase the fastest of all machinery types through 2020, at CAGRs of 3.9% and 2.5% respectively. The pharmaceutical sector is forecast to grow the fastest of all sectors through 2020, at a CAGR of 2.8%. This is followed by the beverage sector, which is forecast to grow at a CAGR of 2.4%.

The largest industry sector in terms of shipment revenues is estimated to have been food (37% of shipment revenues)

in 2015, followed by beverages (21.7%). The impact of legislation such as the Food Safety Modernization Act (FSMA), the trend toward single-serve packaging and the need for frequent changeovers due to the increasing number of SKUs are powering the increase in shipments in these sectors.

With the changing size of drinks being offered to consumers, the beverage industry has had to respond with more versatile equipment. While the demand for carbonated soft drinks has generally been declining, consumption of bottled water has been on the rise; largely driven by the consumer trend toward a healthier diet. Other segments that are forecast for strong growth include energy/sports drinks, craft beers and iced teas.

On the food side, as consumers lead increasingly busy lifestyles this is fueling growth in processed convenience foods and ready meals, which are perceived as convenient, but not particularly healthy options. As with retail in general, there is a movement toward online shopping and consumers having groceries delivered directly to their doors. There is also an emphasis on healthier lifestyle driving demand for new alternatives such as wheat-free, gluten-free, low-fat, and low-sugar products as well as fruits and vegetables.

In regard to packaging machinery categories, the rapid growth anticipated in the labeling, decorating and coding, and case handling segment is largely a result of new legislation demanding increased labeling and coding, continuing developments in printing technologies and the proliferation of SKUs.

With the strong growth of the industry and the many challenges faced to meet market demands, a top destination for discovering new and innovative packaging technology is PACK EXPO Las Vegas (Las Vegas Convention Center; Sept. 25-27). **PS**

PMMI, The Association for Packaging and Processing Technologies, actively brings buyers and sellers together through initiatives such as packexpo.com, educational programs and world-class events, connecting participants in the processing and packaging supply chain with their customers around the world. PMMI produces the PACK EXPO portfolio of trade shows, which includes PACK EXPO Las Vegas 2015 (Sept. 28-30; Las Vegas Convention Center) and Pharma EXPO, co-located with PACK EXPO Las Vegas 2015. PMMI owns PMMI Media Group, a market-leading B2B media company that produces information for processing and packaging professionals, bringing together solution providers and end-users and facilitating connectivity throughout the supply chain. Its world class media brands are proven leaders in covering this diverse and dynamic marketplace, and its digital products incorporate leading edge media technologies to deliver informed, actionable business intelligence to the industry.

Learn more at PMMI.org and Packexpo.com and pmmimediagroup.com.

LABELING, CODING & MARKING



DOING MORE WITH LESS

Advancements in marking/coding/labeling save time and money.

by **LIZ CUNEO**, editor in chief

According to a report from MarketsAndMarkets (marketsandmarkets.com), the global packaging printing market is projected to grow from \$120.02 billion in 2016 to \$192.75 billion by 2026, at a CAGR 4.9%. The market is driven by factors such as strong growth in the demand from the food and pharmaceuticals sectors, as well as the popularity of convenient packaging. The food & beverages segment is estimated to be the fastest-growing during the forecast period due to increasing demand for product differentiation, in addition to labeling needs for authentication purposes.

Advancements within the printing, coding and labeling industry are in direct response to this market growth, as well as customer demand for faster, more efficient and easier to use

technologies. To make laser coding simpler and more accessible, Linx Printing Technologies (linxglobal.com) launched two laser coders with easier and faster installation and set-up than previous models. These coders also boast faster printing speeds and greater versatility, making the coders ideal for a wider variety of products.

The Linx CSL10 (10 watt) and CSL30 (30 watt) laser coders feature a new, more powerful processing board that is able to relay the message from the control unit to the marking head more quickly, delivering higher speeds. The coder can handle complex messages and graphics without any loss of quality, specifically ideal for the requirements of high speed packing and bottling lines. Both models apply crisp codes onto many

different packaging materials including coated paper and card, plastic, glass, rubber, coated metal and anodized aluminum.

“With our new laser models, we are delivering a significant improvement in performance while also widening the appeal of the technology to companies who might previously have considered it too complex,” explains Matt Eastham, laser business manager, Linx Printing Technologies.

For high-definition printing, one company is launching a new approach that delivers consistent quality at a low cost that matches the flexographic turnaround time companies are accustomed to. The GravureTECH, from Excelsior Technologies (exceltechuk.com), combines the high-definition print benefits of excellent accuracy, precise color matching and photographic representation, with time and cost savings.

“Over many years, the gravure printing process has fallen out of favor with many brand owners as it was associated only with long print runs, long lead times and high costs. But at Excelsior, GravureTECH embraces the challenge of supplying brands with the best quality consistent print at low cost and matches the flexo turnaround time on new designs. This is due to the faster change-over times on modern presses but also our integrated supply chain and pre-press,” says Julie Eller, Excelsior Technologies sales director.



“Our advanced pre-press origination department enhances the creative process, working with designers to precisely match their requirements while amortizing costs to offer cylinder engraving at flexographic prices. Add to that the fact that we engrave cylinders locally and can offer superior print and patterned lacquers, plus superior coatings for sealing, such as cold-seal – as gravure can put down heavier weights – then GravureTECH becomes the obvious choice for high quality flexible packaging,” continues Eller.

To assist in achieving better printer performance, Videojet Technologies (videojet.com) announces that its Videojet Remote Service is now available across the Videojet family of marking, coding and variable data printing technologies. This intelligent solution measures, tracks and provides recommendations for printer optimization. With this service, customers are able to improve printer performance by empowering quicker production line recovery with remote access capabilities, automated notifications and dashboard analytics.

“With Remote Service now spanning all major product lines, manufacturers can work smarter and take a more flexible approach to printer management, from the front of their lines with continuous inkjet printing, lasers, thermal inkjet and thermal transfer overprinting, to the back of their lines with case coding,” says Aysar Ziyadeh, business unit director, global service for Videojet.

According to Videojet, the company is using the data collected from its Remote Service technology to identify improvements. More than 1,000 Videojet printers are connected in the field, allowing the company to consolidate analytics and act on continuous improvement opportunities for both customers operationally and with the printers themselves. The service also includes predictive capabilities to avoid down-

time events altogether.

Debuted at PACK EXPO East in February, and available on short delivery time, HERMA US Inc.’s (herma.us, a subsidiary of HERMA GmbH), 152E Wraparound Labeler is ideal for the pharmaceutical and cosmetic industries.

The labeler features the same heavy-duty label applicator platform as Herma’s premium “M” (Master) series, allowing for simple installation of printers and vision systems. The module can handle substrate diameters from ½” to 4” at speeds of up to 150 products per minute.

The 152E Wraparound Labeler is cost-effective and easy to install. The machine is built around the H400 Label Applicator, Herma’s signature servo-driven labeling unit capable of achieving speeds of over 500 feet/minute. The H400 can be integrated into any production line or be built into a labeling machine specifically developed to suit individual requirements. It can be fitted with either an Allen-Bradley or Siemens PLC controller.

Customization, easy installation, fast speeds and reduced downtime are all key buzzwords surrounding the printing, labeling and coding markets. Today’s machines are working overtime to deliver to customers the most coveted of benefits: time and cost savings. **PS**



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BRINGING INNOVATION AND QUALITY!

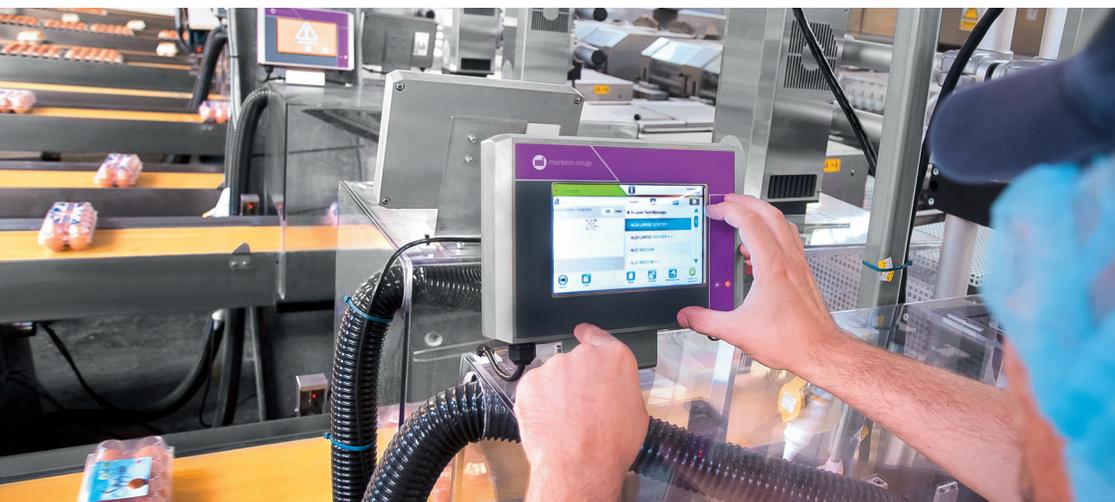
We offer nothing short of the best in product, case, and pallet coding. Our products are virtually ubiquitous across a variety of industries: food, beverage, pharmaceutical, cosmetic, electronic, and much more. Our coding equipment is specifically designed and developed to meet our customers' production needs. For high demand product coding, our top-of-the line 9000 series maximizes flexibility and automation to produce high quality printing on almost any substrate, and hassle-free head cleaning along with easy switch-out of consumables during operation increases uptime.

For lower volume product coding, our Thermal Ink-jets perform at high speeds and output high resolution, while boasting a maintenance-friendly design. We also pride ourselves on offering an array of superb case and pallet coders, like the CimJet, CimPak, and 2200 series, all delivering versatility, and high quality text with 100% readable bar codes.

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LABELING

NUTRITION FACTS PANEL UPDATE PRESENTS A GOLDEN OPPORTUNITY FOR SMART PACKAGING

GS1 US Mobile Scan offers consumers accurate information at their fingertips.

by **RICH RICHARDSON**, vice president of standards management for GS1 US

Changes in consumer attitudes toward their health, the environment and food safety are spurring big changes in the food industry. On May 20, 2016, the FDA announced that the industry will be required to implement a new Nutrition Facts Panel for packaged foods to reflect new scientific information, including the links between diet and chronic diseases such as obesity and heart disease. The new label will make it easier for consumers to make more informed food choices. The deadline for compliance is July 26, 2018 – just more than a year away – by which time almost all packaged foods will be required to sport the updated Nutrition Facts Panel on their packaging.¹

Companies that start now have time to consider more com-

prehensive packaging upgrades and leverage the required remodel to implement greater innovation that speaks to consumers’ growing desire for product transparency and engagement.

NUTRITION FACTS PANEL CHANGES

The new label requirement specifies greater visibility for calorie values, more specificity in certain nutrient values, and some new facts previously not included, like “added sugar.” Visually, the main difference between the old label and the new one is that calories and serving sizes will be presented in a much larger font. The panel will otherwise look much the same, while carrying updated scientific information about nutritional makeup.

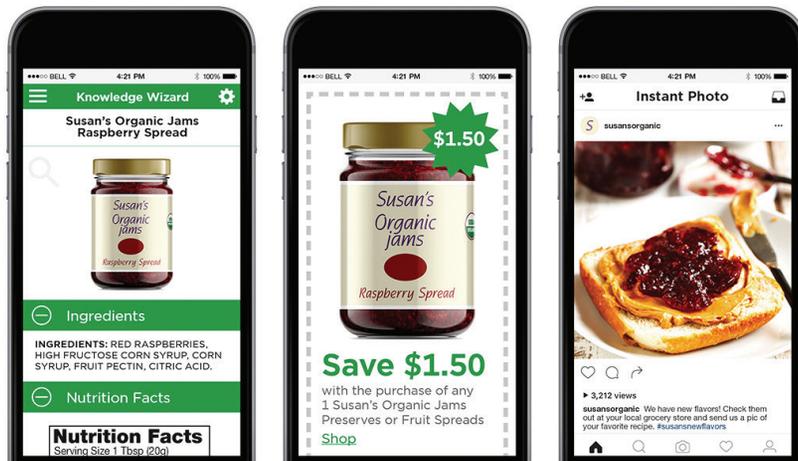


The impact on product packaging is significant when you consider scale. Every label for every packaged food product will need to be redesigned and manufactured to meet next summer's compliance deadline.

Implementing the volume of packaging changes required will take time for food manufacturers, so it makes sense to start planning now. This required change also presents an opportunity for companies to take a fresh look at their packaging and think about making additional upgrades in the same redesign.

JUST THE FACTS

Today's consumers want more detailed information about the products they buy and consume. They want to know if the food they're eating is locally sourced, cage-free, organic, non-GMO, nut-free, allergen-free, gluten-free and more. These product attributes are becoming more important in many consumers' purchasing decisions. The new Nutrition Facts Panel will help satisfy some of their information needs; at the same time, it's worthwhile to consider highlighting these and other desirable product attributes on the package for products offering them.



GETTING SMART

As of June 2016, almost three-quarters of all consumers reported using their mobile phones while shopping in a physical store² – and that number continues to grow. Trends like real-time product research and digital couponing show that shoppers want instant access to as much product information as they can get, prior to making a purchasing decision.

There’s no time like the present, when a package design is on the drawing board, to optimize its “wow” factor. This is a perfect opportunity for food manufacturers to look at the power of their product packaging in new and innovative ways. Imagine a reinvented package that takes consumer engagement to a whole new level – integrating the package, the product and the consumer’s growing preference for digital interactions to nurture a relationship with the brand. With “smart packaging,” a physical package can now be a convenient, interactive portal to share dynamic and useful content to consumers, both before and after the sale of the product. Smart packaging is a game-changing way to provide deeper levels of product information, in real-time, while dramatically improving consumers’ brand engagement.

GS1 US Mobile Scan is a new interactive packaging platform from GS1 US that uses imperceptible watermarks, called

DWCodes, to embed the same number contained in the U.P.C. barcode, the Global Trade Item Number® (or GTIN®), into a product’s packaging artwork. The DWCode is embedded into the product’s packaging artwork during conventional design workflows. The package is then printed just like it was before, with no need for special printers, inks, or printing processes.

A quick smartphone scan anywhere on the package will then connect consumers with brand-authorized product information – such as recipes, special offers, detailed product attributes, usage tips and more. GS1 US Mobile Scan can also enable ongoing engagement with products long after purchase – a few quick scans of a customer’s pantry might yield coupons, suggested ingredient combinations, video demonstrations, etc.

Consumers are already using their smartphones for product research. Instead of sorting through potentially inaccurate and dated information served up by search engines or unauthorized sources, shoppers using GS1 US Mobile Scan will know they are getting their facts straight from the manufacturers themselves. And consumers are more loyal to brands that go above and beyond to provide them with detailed product information, according to a recent study by Label Insight (labelinsight.com).

New, exciting solutions like GS1 US Mobile Scan will help brands communicate with today’s tech-savvy shoppers, and

some retailers, like the regional grocery chain Wegmans, are already using Mobile Scan to get a leg up in this new “phygital” landscape of physical and digital shopping.

THE TIME IS RIGHT

Food manufacturers are facing an unavoidable packaging refresh for their entire product lines over the next year at the same

time that “phygital” convergence is gaining momentum. Forward-thinking brands will consider building interactive packaging technology into the redesign to engage today’s consumers. By using this opportunity to innovate, brands can set themselves ahead of the pack and make the most of a moment in time. **PS**

More information is available at sites.gs1us.org/mobilescan.

1. <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm385663.htm#dates>
2. <http://www.richrelevance.com/blog/2016/06/creepy-cool-2016-second-annual-richrelevance-study-reveals-consumer-attitudes-towards-todays-shopping-experiences/>

LABELING



WITH LABELS, IT'S ALL ABOUT MESSAGING

Labels speak volumes about your brand.

by **LIZ CUNEO**, *editor in chief*

It's no surprise that labels today are designed to do more than just stick around and inform buyers of what's inside. They are designed to offer more opportunity for engagement, design elements, and also practical traits like light-blocking and water-resistant materials. Labels work hard to clearly speak your brand's message, so what are they saying?

FUNCTIONALITY FIRST

Clear-on-clear labels offer a sleek and clean look but can be problematic if required to withstand wet conditions. One such problem, known as the framing effect, occurs when moisture creeps under the label and causes an unsightly white haze along the label's edges. Designed to eliminate this problem,

HERMA (herma.com) has created the highly transparent label adhesive 62F. 62F is designed for beverage containers that need to withstand conditions in a cooler, where melted ice causes excessive moisture. When tested by immersing in water for 96 hours, the label adhesive did not show any signs of clouding. The adhesive is further characterized by high initial tack and very good resistance to oils and aqueous media.

The permanent UVA adhesive is designed specifically for challenging applications in the cosmetic, food and pharmaceutical industries. To ensure that the labels preserve their qualities for their entire life, the new grade offers excellent resistance to light, heat, water and aging. This film delivers good print quality with all the conventional printing techniques and pro-

duces visually appealing, glossy and highly transparent labels.

Another label works to block yet another element from destroying the package or its contents: light. Klöckner Pentaplast's (kpfilms.com) Pentalabel® shrink film line has been expanded to include a new light blocking film, Pentalabel® eklipse™. This advanced product introduces maximum light blocking properties into the film process and satisfies a market need for films that are cost-effective, process efficient and improve light barrier characteristics. Pentalabel eklipse films also offer high performing shrink percentages for the best design possible while eliminating the need for high-barrier primary containers. This technology is ideal for food, health and beauty, home and garden, and household packaging. In addition, these new films offer other benefits to packagers – extended shelf life, off-taste reduction and vitamin protection (dairy products), reduced total package costs and color protection.

MORE ENGAGEMENT AND MORE INFORMATION

To get more engagement and fun into your label, one company from Italy delivers a solution that allows you to add a sticker insert between the bottle and the label. StickerIN, designed and developed by Sanfaustino Label (sanfaustinolabel.it), works well for the development of campaigns, games, enter-



tainment and other promotional activities, especially for the beverage industry.

This innovation allows for the application of a removable, collectible, tradable sticker on the back side of a roll-fed label. It is an ideal solution for packagers who want to add more to their label, without using up valuable label surface space.

One company has created a different sort of label that is unique for many reasons. The K3® technology from Greiner Packaging (greiner-gpi.us) is a cardboard-plastic combination packaging for cups. The package features a cardboard label

wrap that surrounds the package, but can be easily removed. It offers packagers the opportunity for more design and marketing messages, delivering immediate impact right off the shelf.

Here's how it works: The cup consists of a cardboard-plastic combination. The inner cup is plastic but it is wrapped in a cardboard label that allows company's more space to communicate with their customers. The outer cardboard label has a patented tear-open system that looks like a zipper and peels down the side of the cup, making it easy to separate the plastic and cardboard components. The cardboard surface provides another messaging platform to promote recipes, campaigns or just about anything else.

Other product benefits include reduced plastic content which contributes to lower CO₂ emissions, and high strength and stability with the durable cardboard wrap. Additional functions such as windows in the cardboard wrap or special isolation effects can also be implemented according to individual specifications.

Recyclability is still a sought-after function of packaging, from the bottle itself to the label, CPGs and consumers appreciate this eco-friendly trait. Coca-Cola European Partners (CCEP) recently launched GLACÉAU Smartwater

Sparkling, working with Constantia Flexibles (cflex.com) to create a pressure-sensitive label that fits with the brand's values. It was a key priority for both CCEP and Constantia Flexibles that the labels be recyclable. Therefore, Constantia Flexibles gravure prints the labels on Avery Dennison's (averydennison.com) recyclable CleanFlake™ material. This is the same material that they use on the original GLACÉAU Smartwater so rather than becoming waste, the labels will be retained and used to make new products. According to CCEP, the use of this material means that the business will recycle around 70 tonnes of waste each year and the carbon footprint of CCEP's Morpeth factory will be reduced by approximately 80-100 tonnes of CO₂ per year.

Additionally, the label is designed so that the water's messaging can be seen through the bottle. Constantia Flexibles' label uses special inks that allow the design to be seen on the front of the bottle, as well as on the back of the label, viewed through the water.

More benefits mean more "wow" factor and the more likely it is that consumers will remember your brand. Let labels be the soundboard of your package, proclaiming functionality, form and fun to deliver on your brand's promise. **PS**

PRINTING

DIGITAL PRINT FOR PACKAGING

A look at the many benefits and growth in the segment.

submitted by **GRAPHIC PACKAGING EUROPE**, graphicpkgeurope.com

As a relatively new technology, digital print has only recently started to seep into the packaging market. But in a short space of time, this new capability has gained immense popularity as those in the packing industry realize its potential for providing seamless and personalized advertising. Market research company, Smithers Pira (smitherspira.com) has already put a value on this fast-emerging industry; an exclusive report from 2015 predicted the global industry to be worth \$10.5 billion – and this figure is expected to reach \$14.4bn come 2018. This makes digital print for packaging one of the most rapidly growing areas of print. This isn't surprising, seeing as the capabilities of digital technology are continuously expanding, making it an increasingly cost-effective option when compared to analogue printing.

How digital prints for packaging is affecting the market

So how is digital print affecting the packaging market? The main change we'll see is as a result of the flexibility digital print will bring; the ability to change designs quickly and easily and without major cost is allowing packaging manufacturers the opportunity to grow. Digital printing is enabling companies to vary their production quicker based on demand, managing their inventory in a more agile way.

Brands are also becoming more able to respond to consumer behavior with a higher degree of precision; research carried out by brands into why people buy their products suggests that many people do so based on a reaction to certain types of graphics and colors within packaging. Designing packaging that meets these complex needs has, until now, required a huge investment. Digital print is enabling more creativity and personalization within smaller budgets,

meaning that companies can tailor packaging towards different groups of customers and changing consumer behavioral patterns. This flexible approach will no doubt be more effective for brands and therefore put digital packing in increasing demand.

For these reasons, packaging (which includes types such as folding boxes, labels and flexible packaging) is the only sector within the global print industry that will grow significantly; an expected growth rate of 3.3% per year will take the value of packaging to €141bn by 2020.

SUSTAINABLE AND ECO-FRIENDLY PACKAGING AND LABELING

There are two trends that are becoming more significant in the packaging industry. The first is the new rise of consumerism in developing economies. A new wave of middle-class spenders is creating a demand for packaging that relates to individual markets but is also inspiring and aspirational. Second, demand among consumers for more environmentally-friendly packaging is increasing. As Smithers Pira found in its report, consumers are increasingly eco-aware and it is important to them to know that the packaging they buy is not harming the environment and has been

produced in an ethical and responsible way. According to Smithers Pira, the market for sustainable packaging is on track to reach \$244 billion by 2018; so it's no wonder that eco-packing is high on the agenda for brands in all industries and meeting that expectation from consumers is likely to be the biggest challenge facing companies by 2023. This is likely to be an even greater consideration that reducing production and packaging costs.

This is where digital printing will step in. A far more sustainable alternative to traditional printing methods, digital printing methods reduce waste typically produced during the printing process. Furthermore, it uses up to four times less ink and removes the need for plates, which, according to Brett Anderson, packing advisor at Nosco, adds up to 30% reduction in carbon footprint. Short runs are often the biggest culprits when it comes to waste; however, by using digital means, the implications – not to mention the cost – of short runs are minimized significantly.

ADVANTAGES OF DIGITAL PRINT AND LABELING

Brands are fast becoming aware of the advantages of digital printing and, the more they start to experience these benefits for themselves, the more we will see digital infiltrat-

ing the packaging industry. The first benefit is flexibility; companies can print on demand with minimal waste and are able to order only the amount that is needed, rather than costly bulk orders. Then there's cost; no plates and less press set up time means the costs for digital printing are lower for short run labels compared to using analogue methods – and of course, when you take away the need for plates and multiple complex apparatus, you have the added bonus of a quicker turnaround time on runs.

There is also the ability to produce short print runs in a cost-effective manner, which – as brands develop more awareness around – makes digital printing methods a sound investment for the future. Labels that are produced in high definition with high-quality graphics and colors are those that attract the most attention from consumers; digital enables a level of detail previously missed by analogue printing methods that make it a superior choice. And this high quality is what will lead to a positive reputation for brands over time. Poor packaging to consumers means poor product; many impressions are formed within the first few seconds of looking at a product's packaging, so digital will enable a look and feel that consumers will immediately respect and respond to.

MAJOR PLAYERS ARE JOINING THE DIGITAL REVOLUTION

As brands start to demand this technology, major players in the printing and packaging industry are starting to equip themselves with new capabilities. No one is championing this revolution more than market leader HP. In 2013, it launched the HP Indigo 20000 – which was without a doubt the most significant move to date in digital printing and marked the start of the movement into the mainstream. That same year, HP and KBA unveiled the world's first HP PageWide Web Press T1100S, a huge inkjet rotation with a width of almost three meters.

In fact, the company believes digital printing is already in the mainstream and has installed more than 1,000 digital presses. Competitor Xeikon is also investing heavily in digital, with more than 300 digital systems in place. Even the more traditional companies are getting involved, such as Heidelberg. Heidelberg has bought Gallus (the company) and re-branded/launched digital printing systems under that brand with the Primefire and Labelfire presses.

Another innovation comes from Landa; its W10 digital web press was designed to offer a cost-effective printing solution with an ultra-fast turnaround time. The system can be used to

print various mainstream packaging applications onto standard plastics using simple digital technology that requires no setup.

OPPORTUNITIES BROUGHT BY DIGITAL PRINT AND LABELING

Coca Cola’s recent packaging campaign, Share a Coke, highlighted the opportunities available to brands through digital labeling and is a terrific example of the impact of digital and personalized printing on a large consumer base. The company created huge interest among the general public by enabling people to personalize their own named labels, as well as find labels in shops with a friend’s name on. This catapulted the capabilities of digital printing forward and showed the full extent of what is possible using these new methods. Largely thanks to Coke’s campaign, labeling now makes up the bulk of digital printing demand – almost 90% – with a value of \$6 billion.

Further opportunities also lie in product introductions, launches and testers; it is easy to test a new product to the market using temporary or introductory packing using digital methods. Limited editions are also much easier to print, enabling brands to really tap into this consumer demand for meaningful, personalized and one-off products.

Many much-loved brands already push sales through intro-

ducing limited editions – think companies like Cadbury that frequently introduces temporary flavors to push sales on some of its favorite products e.g. Lion White, Snickers White, and ultimately, its ‘Spectacular 7’, a limited edition bar with its own packaging and branding and of which only 50 were ever made. Through flexible packaging, Cadbury has been able to respond to the demands of its customers, while also tapping into a consumer trend to buy highly desirable, unique and enviable products.

Another great example is Oreo, which created customized wrapping for its much-loved cookies in the US. Personalized messaging on limited edition Oreo packaging bumped the retail price up from \$1.99 to \$10. Again, in the food sector, Australian store Myer offered customized jars of Nutella for \$12.95 each last year, selling more than 400,000 across the state of Victoria.

It is clear that there are huge opportunities for brands to tap into this new revolution – and many companies are already showing how digital printing can be used to take product packaging to the next level. Products that are personalized, unique, empathetic and eco-friendly are what today’s consumer now demands and expects; not only can digital printing help brands to meet those expectations, but it can provide an immediate and cost-effective way for brands to change and morph as consumer needs continue to rapidly evolve. **PS**

LABELING



PHARMACEUTICAL PACKAGING: THE YEAR OF SERIALIZATION

by **KRISTEN KAZARIAN**, *managing editor*

U.S. government-mandated serialization is creating a scramble in the pharmaceutical packaging world. Track and trace solutions must meet Drug Supply Chain Security Act (DSCSA) compliance by November of this year. Before the initial deadline, however, there are actions one must take to interact with the serial number – such as with product returns and suspect product investigations.

According to the report “Pharmaceutical & Medical Devices: Trends and Opportunities in Packaging Operations” by PMMI, The Association for Packaging and Processing Technologies, the push of serialization has led to an increase in aggregation adoption. In fact, of companies interviewed that are required to serialize their product, more than half have adopted aggregation.

One of the innovative products out in this segment is an electronic pill dispensing unit that offers easy tracking and monitoring, as well as single-tablet dispensing. Amcor Rigid Plastics (amcor.com) collaborated with Netherlands-based Confrérie Clinique (confrerie-clinique.com) to develop The S.M.R.T. Bottle. The system delivers drug compliance, user friendliness, child and senior citizen safety, and connection to any smartphone for easy tracking and monitoring. It includes a clock-calendar function and unit dose tablet detector; registers the time, date and number of doses taken from the bottles; and stores the data. Using devices such as Near Field Communication (NFC) readers, the information contained in the memory can be read, displayed and transmitted to any smartphone.

The dispenser combines the benefits of a blister pack and a bottle in one package. The two-piece assembly can be designed for any pill bottle and existing filling lines with no changes required to the sealing process. The dispenser's electronic system counts pills going in or out of the bottle, tracks the temperature of the container and ensures product integrity.

Schreiner MediPharm (schreiner-medipharm.com) introduces a customized Pharma-Security solution to safeguard the supply chain: a newly developed label that demonstrates a combination of digital security features on a Booklet-Label with an integrated first-opening seal. The bottom layer of the Booklet-Label contains a tab that serves as a closure seal for tampering protection. When the seal is opened, a void effect emerges as an irreversible first-opening indication. The Booklet-Label applied to a medicine pack allows a pharmacist, for instance, to view product information about the medication without opening the pack and thus destroying the tamper protection.

The sample label is equipped with three digital security features:

1. BitSecure: A novel copy detection technology based on a high-resolution, cloud-like random pattern. In an attempt to copy BitSecure, the fake will suffer a loss in precision and optical details.

2. KeySecure: The tracing system is based on an encrypted 15-digit alphanumeric code, which makes it possible to identify and authenticate every single product item marked via a smartphone or the Internet.

3. Label-Integrated NFC Chip: The chip enables digital authentication using a smartphone, wherein the NFC chip blends in with the label design and allows for contactless product identification within a few centimeters.

The Bottle Mosaic Station (BMS) by Mettler Toledo (mt.com) carries out multiple steps in providing track & trace capability for round, unoriented bottles: marking, verifying and code linking. All integrated system components, such as the conveyor, printing system, high-resolution camera, product transfers and sorting equipment, are matched to ensure a seamless process. The Bottle Mosaic Station allows for quick changeover in a broad variety of product formats, as well as seamless upgrades.

Individual bottles are transferred directly from the production line filling system using an accurate transport unit. Regulation-specific data such as the serial number, batch and shelf life date, as well as the 2D datamatrix code are read precisely, and the helper code is printed on the bottle top or bottom. The BMS consists of the Mosaic Station, which incorporates six cameras for 360° inspection of labels and codes;

a seventh camera for reading top and bottom helper codes and/or UV codes; a side grip to hold the package during bottom code reading; a printer to apply helper codes inline when needed; and a conveyor that moves bottles from station to station, and can be fitted as an option with a rejecter to remove non-conforming bottles.

Omega Design Corporation (omegadesign.com) recently introduces the LabelSync™ 360° inspection and reject handling system for bottles. Suitable for all markets, the unit captures codes, inspects caps, matches components and helps protect against food and allergen contamination, tampered/incorrect product, improper labeling and recalls. An integrated reject station along with fail-safe programming ensures that only verified product will move downstream. Adding a top or bottom camera can enable inspection and data syncing with a secondary line code, making possible the sort of unit-level product visibility that is increasingly being adopted around the globe. This SCADA-compatible system is ideal for food & beverage, consumer goods and medical, and can seamlessly integrate with MES and data management software.

Serialization and traceability consulting firm, Supply Chain Wizard (supplychainwizard.com), has just announced

a partnership with Medicines for Europe, a pharmaceutical advocacy group. The company has plans to develop a similar relationship in the States.

In December, Supply Chain Wizard co-hosted the Pharma CMO Summit in Berlin, which gathered more than 100 pharmaceutical executives from 27 countries. Networking events that provided opportunity to exchange serialization advice and experiences with peers from around the world aided in the event's success. The event also showcased ways in which serialization can go beyond mere regulation compliance to provide opportunities for enhanced business practices through data analytics produced by such systems.

The company is currently planning a serialization summit for CMO (pharmaceutical contract manufacturers and packagers) this spring in the U.S.

While working toward meeting the looming deadlines for the stricter regulations, the challenges you may face are not likely yours alone. Make sure to download the newest release of the GSI U.S. (gslus.org) guideline, "Applying GSI Standards for DSCSA and Traceability (R1.2)." Turn your informed plans into real-world solutions with help from organizations and companies that can offer assistance along the way. As well, reach out to peers in the market who may offer guidance. **PS**



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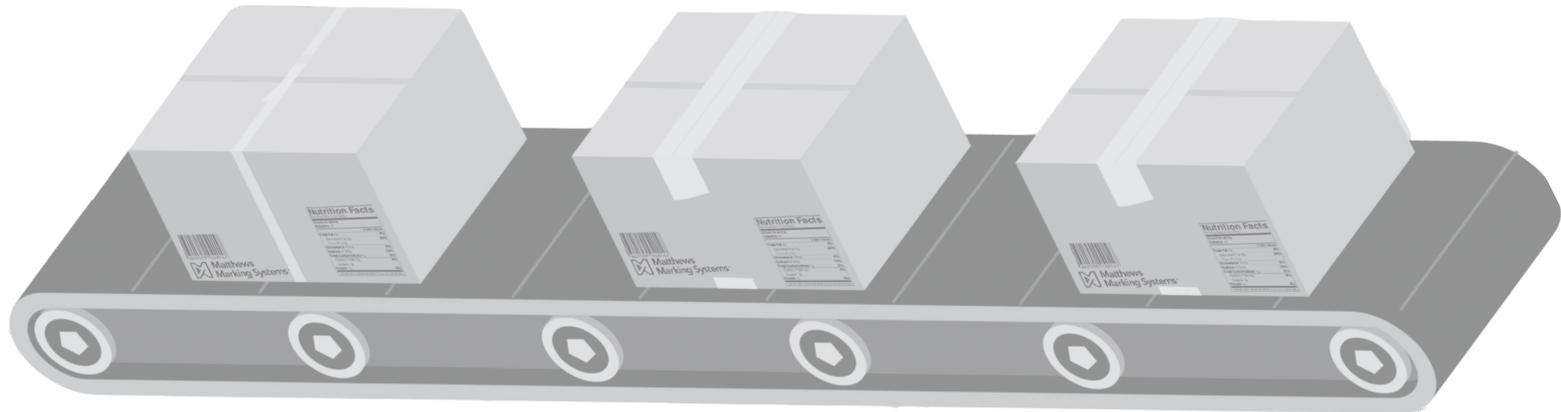
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LABELING

TOP SHELF DESIGN TRENDS FOR WINE AND SPIRITS LABELS IN 2017

Insights on the ways pressure-sensitive label materials can help brands deliver on consumer trends.

contributed by **AVERY DENNISON**

Consumer purchasing in the wine and spirits marketplace continues to grow, with 2016 being the 18th consecutive year consumption rose in each area year-over-year, according to statistics from the Beverage Information Group.

To cut through the clutter in this highly competitive space, where consumers are faced with seemingly endless choices and brands, a vintner or distiller’s bottle must capture attention at the point of purchase. According to Alex Kidd, creative design manager for Avery Dennison Label and Packaging Materials North America, pressure-sensitive (PS) labels can help capture consumers’ attention as they browse the shelves.

“Unlike glue-applied materials, PS provides brands the design flexibility and impressive on-bottle performance that can



help wine and spirits bottles appeal to consumers’ senses and move from the shelf,” says Kidd. “The dynamic benefits PS label materials allow brands to capitalize on design trends to make their packaging vibrant and keep consumers engaged.”

Below are a few PS labeling trends Kidd has identified that will impact the wine and spirits segment in 2017:

- **Textured Stocks:** Textured PS materials, like dappled, micro-textured, felt, linen and vellum, are becoming more prevalent in the wine and spirits space – and for good reason. These materials handle embossing and foil stamping beautifully, creating an unforgettable canvas for design targeted to a sophisticated, younger demographic.
- **Intricate Die Cuts:** Gone are the days of the conventional rectangular or circular label. PS materials allow for intricate die cuts and unique label shapes with complex punch outs that draw the eye and integrate with the bottle shape for added visual impact. The materi-

als’ ability to hold complex die cuts provides designers creative license to push the envelope in new ways.

- **Multiple Labels:** Designers are also re-imagining label sizes, and again PS material is the perfect canvas for such creativity. From adjacent oversized and undersized labels, to neck and cap labels, to back of bottle labels designed to be seen through glass, multiple labels offer a sophisticated look that provides enhanced shelf appeal.

North American designers and brands can experiment with these trends by obtaining the recently released 2017 Avery Dennison Pressure-Sensitive Wine & Label Materials Collection. The portfolio contains nearly 60 labels constructions grouped by: New Materials, Aqua Stick™ Portfolio, Unique Papers, Uncoated Papers, Coated Papers, Films and Welded Materials. For more information about the Avery Dennison 2017 PS labeling trends and Pressure-Sensitive Wine & Label Materials Collection, visit <http://label.averydennison.com/wineandspirits>. **PS**

LABELING

LABELING DISRUPTIONS MAJOR CAUSE OF PRODUCTION DOWNTIME

A recent survey reveals 47% of manufacturers experience production downtime due to labeling disruptions. Loftware (loftware.com), the global leader in enterprise labeling solutions, announces results from the survey on uncovering the challenges manufacturing professionals face when it comes to barcode labeling in a global supply chain. Approximately 175 professionals from global companies were polled, which show lack of effective barcode labeling solution in the manufacturing supply chain results in customer dissatisfaction and lost revenue. **PS**

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PRINTING

TECHNOLOGICAL ADVANCES IMPROVE FOOD LABEL PRINTING EQUIPMENT AND SOFTWARE

Advances improve printing speed, accuracy and flexibility to accommodate different label types.

by **NEAL LORENZI**, *contributing writer*

The latest printing equipment and software for the production of food labels is designed to enhance product appeal and better communicate information on food content. Technological advances have improved printing speed, accuracy and flexibility to accommodate different types of labels and provide quick changeover.

Much of the improvement has come in the area of on-demand color printing of labels. The biggest trends include a sharp increase in speed and image quality. While on-demand color printing technology has existed for years, the speed was limited so it was only suitable for short production runs. Today, simple solutions are available with high-image quality that can produce tens of thousands of labels per day.

Some of the latest printers are driven by RIP (raster image processing) software that yields color matching, an image quality previously only found on sophisticated printing presses. “The result is high image quality by non-press experts. In terms of media, these new printers not only produce high image quality, but also durability. Water, oils and alcohol no longer pose a problem with the latest media materials,” says Andy Scherz, senior product manager, Epson America Inc. (epson.com).

The demand for more variability in color printing is driving the need for better on-demand solutions. On one hand, customers are looking for more product diversity tailored to micro markets. On the other, product safety, content and nutritional labels are using color detail to help improve communication and clarity.

“It is all about reaching and connecting with customers,” Scherz adds. “With on-demand labeling solutions, it is now possible to target specific segments. Targeting can be as small as a single community or a single month. On-demand means the labels can accommodate marketing ideas with no need to meet minimum print-run quantities.”

CUTTING-EDGE INNOVATIONS

Primera Technology Inc. (primera.com) has introduced the LX500 Color Label Printer. The desktop label-and-tag printer features a tri-color ink cartridge that keeps cost-per-label low. An optional built-in, guillotine-style cutter allows users to quickly print and cut short-run labels, according to Amber Miller, product manager.

Printer drivers are included for Windows 7/8/10, along with Bartender Ultralite Software (for Windows) to format label designs, and add barcodes and QR codes. Most popular graphic design programs for Windows can be used to design and print labels. In addition, a Mac driver is under development, Miller notes.

Videojet Technologies (videojet.com) has released the Videojet 9550 Print & Apply Labeler. It features Intelligent Motion technology, which reportedly enables precise control

of the entire system while eliminating adjustments.

The system minimizes misapplied and snapped labels with Direct Apply self-adjusting label placement, which accommodates varying line speeds, throughput and package sizes. An intuitive touchscreen interface helps reduce operator error and ease job selection. Also, due to its simple web path, operators can perform label and ribbon changes in less than 60 seconds.

“Inline printing means there is no need to carry an inventory of pre-printed labels, which helps food processors better accommodate variability in SKUs. By improving end-of-line efficiencies, Intelligent Motion reduces the primary causes of downtime: label, web and ribbon jams, and mechanical failures and adjustments,” says Arthur Smith, global marketing manager, Videojet.

Another innovation is the Videojet 9550 Corner Wrap system, which is suitable for cases or shrink-wrapped products where the label must be applied across adjacent panels so that information can be seen from various angles. “In many instances, a manufacturer’s distribution and retail partners want the label information visible on the case in more than one orientation. The Corner Wrap process is more efficient than printing and applying two separate labels,” Smith adds.

EPI Labelers (epilabelers.com) has unveiled the Model 262, which is designed to print production and lot numbers,

bar codes and product information. “The design and high speed of the labeler allow it to accommodate print-and-apply challenges by using a high-torque, five-phase stepper motor to drive labels at high speeds. The drive preserves printer components, while allowing the labeler to reach into the tight spaces,” says Katie Williar, marketing coordinator.

Easy to set up and operate, the Model 262 labeling system easily integrates into different packaging systems, Williar adds. Also, it is made with corrosion-resistant materials and can withstand harsh conditions.

John Tierney, marketing director, Linx Printing Technologies (linxglobal.com), says that continuous inkjet (CIJ) printing offered by Linx provides a versatile coding solution on packaging lines. “The print head is small enough to fit into any packaging line and can facilitate coding in any orientation; a flexible conduit with a choice of lengths helps in this case, as the printer can be positioned away from the point of coding if space on the line is restricted.”

A wide range of inks is available based on color and speed of drying, adds Tierney. So it’s easy to find an ink to suit individual applications. Some CIJ printers also have a carton coding function that enables both primary and secondary cartons to be coded with the same printer.

“Lower-speed lines with regular packaging shapes could benefit from simpler coding technologies such as thermal inkjet (TIJ) coders,” Tierney says. “They use technology similar to desktop printers and are easy to install. High resolution, quality codes offer an alternative to entry-level coding such as roller coders. Also, this technology can replace labels with direct coding onto the packaging, thereby reducing inventory and SKUs.”

SOFTWARE ADVANCEMENTS

A variety of label-creation software options are available to give producers the ability to customize the labeling process. Examples include safety, warning and nutrition label templates, as well as graphic design templates.

Epson America recently added Wasatch SoftRIP software to its ColorWorks C7500G on-demand inkjet label printer. Featuring speeds up to 59 feet per minute, the combination produces full-color, glossy labels with spot color matching. The printer allows users to quickly adjust the size of a label and create the desired print layout by adding columns and rows. In addition, rotary cutting marks can be added directly from the main screen of the user interface.

Wasatch SoftRIP includes color-management options, including spot color replacement, and support for file formats

such as PDF and TIFF, as well as optional variable data printing (VDP) for sequential numbering, barcodes or images that can be inserted and managed.

By using 3D packaging design software – such as the Studio application from Esko (esko.com) – food processors can experiment with different ideas, according to Joe Eckerle, director, brand owner sales. “They can build designs around packaging in 2D or 3D, to see how a package will look – special effects and all. Users can quickly check finishing effects, as well.”

The Esko Studio Store Visualizer allows users to view packaging designs on the shelf and present a complete product launch in 3D. This includes retail-ready packaging and displays. “Brand owners can see how a product sits alongside the competition and even walk through the store taking in the visual impact. Store Visualizer integrates with planogram systems to create and populate virtual 3D stores in minutes,” Eckerle says.

LINER-FREE SOLUTIONS

Some of the biggest problems that producers face during high-speed packaging operations center on misapplied labels, label jams, wrinkled labels and constant mechanical adjustment. On a more-basic level, they face other challenges, as well, including: finding the right label material (paper or

polyester) for their product and conditions; finding the right label material finish (glossy or matte) for their label design; whether to hand-apply labels or use a label applicator; and what printer type to use for their application.

More food processors are looking at liner-free label solutions, which eliminate label backing and its inherent waste, according to Brett Wedel, sales manager, NuLabel Technologies Inc. (nulabeltechnologies.com). The company offers Catalyst, a liner-free printer applicator that reportedly improves flexibility and throughput while reducing downtime. The liner-free label media is in continuous form – no gap between labels – which allows for label rolls to be interchanged regardless of label feed (length).

“This allows for variable-label lengths in a single run, meaning a brand can use different lengths based on the case being labeled without changeover or downtime,” Wedel says. “The system allows for twice as many labels per roll, cutting roll changeovers in half, compared to lined pressure-sensitive (PS) material. When a roll is changed, the changeover is quicker than that of a PS roll with no waste (liner) to feed through the rewind reel.”

The net result is increased flexibility and reliability – attributes any snack producer or bakery can get behind. **PS**

*This article was originally published in **Snack Food & Wholesale Bakery** (snackandbakery.com)*

PACKAGING STRATEGIES

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