



Packaging

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Contents

- 3 Following the Electronic Trail Through Smart Labeling
- 5 Six Ways to Ensure the Safety of Packaged Foods **METTLER TOLEDO**
- 7 Nimble Counts More Than Ever for Beverage Product Labels
- 9 CTM Labeling Systems: Where Engineering and Support Matter Most 
- 11 Ordering In: The Benefits of Printing Labels In-House
- 14 Conduct a New Year Label Printing Audit to Ensure the Best Outcomes
- 17 Protecting Brands from Tampering and Counterfeiting
- 19 Enabling Digital Transformation for the Labeling Industry
- 20 The Digital Age of Labeling

Following the Electronic Trail Through Smart Labeling

By: **Joan Mantini**

Located Amongst several other companies leading efforts in detecting and preventing counterfeiting, theft and product diversion while increasing consumer engagement with manufacturers is LocatorX. Headquartered in Atlanta, Ga., this company offers a secure platform and tracking devices for manufacturers, supply-chain managers, warehousing and retailers. The technology enables brands and consumers to access an item's current location and audit trail from its origin using a smartphone.

The company is also developing the world's first molecular-sized location tracking device. This device is based on the patented Solid-State Miniature Atomic Clock (SMAC) technology created by the nanomaterials lab at the University of Oxford, to which LocatorX has exclusive rights.

Scott Fletcher, president and CEO, and Pat Pickren vice president of product for LocatorX took some time out to answer questions on how smart labeling is evolving and gaining popularity.

How has labeling evolved to accommodate for the rise of eCommerce?

LocatorX: There was already scanning technology in place prior to eCommerce but because of the need for handling returns and fulfilling shipments, more data is being printed on the label. Labels are now being used to help navigate products through the supply chain and tackle reverse logistics when products make their way back to a retailer.

Additionally, consumer expectations are shifting around engagement – customers are coming to expect more information about their product on the product itself. This leads us to interactive QR codes which can provide a more robust consumer engagement



experience. LocatorX's Certified QR codes enable customers and retailers/manufacturers to interact through product information, promotions and rebates, loyalty programs, and the list goes on. Packaging has evolved and continues to evolve to use more technology in the label so it's smarter and can become more interactive. We are now able to provide product security measures within the label itself. Labeling technology is expanding at a fast rate, and there is tremendous growth around the corner.

With so many new packaging options emerging that require their own labeling standards, how can brands continue to use next-gen tracking tech to optimize their supply chain?

LocatorX: Brands will be able to use next-gen tracking tech by utilizing developments that follow standards or protocols that are universally accepted. Advances such as QR codes have an ease of use globally, while Bluetooth tags and NFC tags are able to work with existing infrastructure. Fortunately, many new

technologies are being developed around existing QR codes, NFC tags and Bluetooth tags, which enable companies to optimize their supply chain without worry of a huge cost of implementation.

What new technologies are being used in smart labels and how are companies utilizing these?

LocatorX: New security features are being added to labels such as holograms or invisible ink which are difficult to forge. In addition to print technology, microchips such as Near Field Communication (NFC) and Bluetooth Low Energy (BLE) are being included in labels or tags which use low power, provide greater security, and a user-friendly experience. The inclusion

of NFC and BLE add greater intelligence to the labels with the ability to transmit data to a beacon or smart phone to track, monitor, and interact with the asset.

How is smart labeling benefiting consumers directly beyond their track and trace capabilities?

LocatorX: Smart labeling benefits customers through enhanced consumer engagement. Consumers are coming to expect more from their product packaging, and advances in product labeling will enable that. LocatorX's Certified QR Codes provide manufacturers/retailers with an opportunity to engage directly with consumers more easily than ever before. With a simple scan of a product, consumers can access

product information, loyalty programs, rebates and much more.

How are smart labels being used to reduce counterfeiting and eliminate theft?

LocatorX: At LocatorX, our labelling technology provides a reduction in counterfeiting and theft through the use of product authentication and secure track and trace technology. Our certified event log provides the secure architecture to enable companies to monitor their product every step of the way, without worry of their information getting into the wrong hands.

What role are smart labels playing in sustainability?

LocatorX: Smart labels play an important role in sustainability through reduction of waste, spoilage, ability to route faster and more efficiently, and smarter inventory management. Smart labels can provide a reduction in spoilage by closely monitoring environmental sensors and ensuring that products stay within a safe temperature or climate during storage and transit. By enabling more accurate inventory and route updates, smart labels contribute to a more sustainable supply chain.

With the advancements in technology, what do you predict we will see in smart labeling capabilities in the future?

LocatorX: Smart labeling capabilities are experiencing rapid growth through advancements in technology. At LocatorX, we are bringing to market a terrestrial-based location system that does not require a satellite line of sight. This will enable companies to more accurately and affordably track and monitor items through product label technology. Additionally, the environmental sensors that will be available through LocatorX's product suite will be able to provide more accurate information on a product-level. Advances in nanotechnology are enabling LocatorX to provide these solution sets at a more affordable and easier to implement scale than ever before.



Six Ways to Ensure the Safety of Packaged Foods

Food safety regulations exist to ensure that only safe packaged foods are available for purchase. They also regulate the accurate weight and truthful labeling of packaged foods. The following are practical ways that food manufacturers and processors can adopt to conform to those regulations and to deliver the consumer benefits the regulations support.

1. Confirm all product safety markings

Requirement: No sub-standard food must be allowed to enter the marketplace, such as packaged products that suggest diminished quality and freshness by displaying expired “use by” and “best before” dates.

Solution: Machine vision inspection systems can perform a range of in-line quality assurance checks, including the presence and readability of specific dates and 2-D and 3-D codes.

2. Verify Label Accuracy

Requirement: All packaged products must clearly communicate product information in accordance with the labelling laws of each country where they will be sold. In general, these laws require that each label display the net quantity of product, plus ingredient and allergen information. Some countries have additional mandatory requirements.

Solution: Innovative machine vision inspection technology inspects the content of all labels, according to pre-programmed criteria, at production line speeds, and rejects those that do not conform before they can reach the marketplace. They also confirm label positioning, readability

and ensure that a fold or wrinkle does not cover vital information.

3. Detect and remove all contaminants

Requirement: All packaged food must be free from foreign contaminants. Most regulations give manufacturers the flexibility to adopt the most suitable inspection systems.

Solution: Integrate product inspection technology, either metal detection or X-ray systems depending upon the potential types of foreign bodies, into manufacturing lines to identify and reject contaminated products in real time.

4. Confirm Advertised Weight

Requirement: Net content laws and regulations differ around the globe: they range from requiring that “the average weight of the product cannot be less than the labelled weight” to that it be “within pre-defined tolerances.”

Solution: In-line checkweighing technology conducts 100% inspection of the highest accuracy and at top production speeds, ensuring that the weight of each packaged product matches the weight shown on its label. Product weights falling outside set parameters are rejected.

5. Confirm that the Product is “As Advertised”

Requirement: All products must be as advertised and not mislead the consumer. For example, manufacturers must ensure that a multipack contains the correct number of units, and that no

items are broken, and that a meal kit contains all the necessary items for use.

Solution: X-ray inspection technology simultaneously accounts for the items in a multipack or kit, and confirms their integrity.

6. Ensure consistent equipment performance

Requirement: Consistent and accurate data is the key to compliance, and manufacturers’ food safety plans must include verification activities. To achieve this, manufacturers must regularly verify the performance of their food safety equipment to ensure they are functioning correctly.

Solution: Investing in a service contract with the equipment manufacturer ensures that preventive maintenance and performance verification support will provide reassurance that product inspection equipment continues to operate as it should and that it meets regulatory approval.

Integrating these six solutions into a robust food safety management plan will enable packaged food manufacturers to comply with food safety regulations, and also to protect their brand image from the damage that can come from a recall. In addition, being able to demonstrate to authorities that the public is fully protected from non-conforming packaged food also often enables brand owners to enter lucrative new markets with a solid reputation for producing reliably safe foods.

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Nimble Counts More Than Ever for Beverage Product Labels

By: Gary Paulin and Mark Lusky

Beverage manufacturers projecting future consumer demand in light of a changed world must make sure their present supply chain is as close to bullet-proof as possible. Ability to be nimble in a “new normal” environment will be more critical than ever before. Custom Labels are obviously a key part of making product available on-demand.

As recent events have demonstrated, the rules of the road have changed, at least for the time being. Using overseas companies for label printing may prove balky

and uncertain. Even complex domestic supply chains involving outsourced printing and fulfillment present potentially daunting challenges. Shipping challenges factor heavily into the overall equation as well.

In short, a reliable supply chain with the fewest moving parts possible is the number one key to get high-quality labels quickly and at the most cost-effective price.

Beverage manufacturers wanting to double-down on quality, price and on-time assurances are well advised to review the following checklist for label printing, fulfillment and delivery. If present providers aren't able to meet these criteria, look for a custom label printer that can.

1. Check supply chain strength. The more a custom label printer controls operations under its own roof, the better. Printers that outsource printing, fulfillment or any other element of the process (except shipping itself), are more likely to be experiencing communication breakdowns, delays and quality challenges. In the present environment, it's become far more difficult in time-sensitive and quality-control situations to use overseas providers because of the logistics involved. And, if there's a problem with label quality, product manufacturers can find themselves up a creek without a paddle.



One way to assess is current performance-based intel. Is it pretty much business as usual, consistent with processes and performance pre-COVID-19? Is there one area that has experienced problems, and if so, what can be done to remediate it? As far as shipping, there obviously are some elements that can be beyond anyone's control (short of developing your own delivery company). The key is to ensure that “on-time” is the rule, not exception.

2. Check into the current printer's workforce stability. Workforce disruption, including layoffs/turnover, low morale and lagging productivity can be very damaging. Is your current custom label printer workforce staying stable and productive?



If so, that's likely a positive sign of what's to come. If it isn't, it's time to ask hard questions to see if/how the printer intends to keep everything moving smoothly. If the situation seems unstable, consider looking for another provider.

3. **Determine present printer “what if” plans.** As events of the last few months have shown, there are unforeseen issues and problems that can constitute worst-case scenarios. Does your label printer have contingency plans in place for a variety of “what if” scenarios? If so, what are they? And, when problems arise, are the protocols in place going to give beverage product manufacturers confidence in their ability to solve them? A solid history of stellar customer service is one standard indicator of future performance. Effective customer service teams are accustomed to responsive problem-solving.
4. **Run test scenarios of potential coming situations.** Product manufacturers and their label printers should strategize ahead of time how to handle what may come down the road. For example, pent-up demand may greatly expand the number of labels needed going forward. Custom digital label printers, already accustomed to just-in-time ordering and fulfillment, should be able to provide clear and insightful solutions based on a variety of hypothetical scenarios.
5. **Determine if the printer will discuss terms.** Key to building loyalty and longevity is willingness and ability of the label printer to tailor payment and other terms to present needs. Is the printer demanding fulfillment of existing agreements or contracts versus having a discussion to find mutually-agreeable solutions? Does your current printer seem “too willing” to drop price substantially and offer extraordinary service in return for quick cash in the door? If so, that could be a sign of impending printer shutdown or reduction in quality. In essence, there is a sweetspot between stubborn insistence on business as usual and being overly accommodating. As in most areas of life, the best outcomes likely will be achieved somewhere in the middle.

These are extraordinary times. Beverage manufacturers should look for custom label printing solutions that go to extraordinary lengths to meet the challenges.

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Ordering In: The Benefits of Printing Labels In-House

By: **Kellie Garber**, Senior Product Manager for Primera Technology, Inc.

There was a time when “manufacturing” was synonymous with “mass production.” No longer. Customers are demanding unique experiences—not just in services, but also in the products they purchase.

Today’s consumers value boutique creations, rare finds, unusual flavors and scents, seasonal or limited-time specials and goods tailored to their interests, loyalties and moods. A whole manufacturing technique known as “mass customization” has evolved in recent years, just to address these kinds of short-run, specialty needs.

Why bother? Because there’s money to be made. Segmentation and customization, it turns out, can be highly profitable. In one Bain & Company study, 81 percent of all executives surveyed said that customer segmentation is a critical tool for growing profits. Another report by IBM Watson and Econsultancy found that customer segmentation was the top priority among marketing, ecommerce and digital professionals.

In 2011, Coca-Cola Australia marketed cans and bottles of Coke, each with one popular first name printed on the label. Over 150 different names were featured in all. That summer, in a nation of just over 23 million people, more than 250 million units were sold. As Coca-Cola proved, personalized products can be a winning strategy.

As a manufacturing strategy, however, “short-run” doesn’t always mean the products themselves are limited—just the reasons for buying. Holiday or seasonal specials, commemorative editions and team/community affiliations are just a few examples of how to entice buyers without changing the product itself.



The label is often times the first thing that attracts a customer to a product.

The key to these innovations, it turns out, is in the label. Create a custom label that captures and celebrates the moment, and incremental sales will follow. To support such opportunities, new types of color label printers, affordable enough to be used in-house, are opening the doors for additional sales—and generating lower costs, higher retail prices and greater profits in the process.

On-Demand Benefits

Manufacturers who mass produce their packaging can add a decorative label to identify a special flavor, blend and more.

Color label printers, capable of custom output, are helping manufacturers in dozens of categories from wine and beer to specialty foods, gift products, cosmetics, pet products and many others. In-house printers and label applicators offer performance that rivals and even exceeds high-run alternatives.

Quality, for example, is maintained through inkjet processes that deliver up to 4800 dpi resolution. In-house color label printers also support a variety of glossy or matte stock, in multiple label shapes and using scratch- and smudge-resistant label materials. Pigment inks, when combined with polyester or other

substrates, provide a highly water-resistant result that is ideal for beer, juices, or other food/beverage products. And because the substrate allows inks to sublimate and become sealed below the surface, photos, graphics, text and barcodes are protected against a wide range of environmental factors.



Manufacturers who mass produce their packaging can add a decorative label to identify a special flavor, blend and more.

Cost savings is another advantage. Manufacturers are often saddled with buying thousands, or even tens of thousands, of labels from vendors or service bureaus when only a few hundred are needed. In-house color label printers, by contrast, allow manufacturers to produce only the labels needed, immediately and on demand.

Tabletop color label printers capable of printing hundreds of thousands of labels start at under \$1,300, and label applicators that apply 1,200+ labels per hour start at less than \$1,600. Given that in-house printers can meet exact production specifications, it's possible to lower unit costs since no minimum quantities or price breaks are imposed. Obsolete inventory is eliminated as well.

Ultimate Flexibility

Short-run label printers make it easy to personalize any product.

Custom labeling makes it easy to update designs, or create new designs, on the fly. Unique or short-term products get to market faster because labels can be printed immediately—when, where, and in the exact quantities needed—and often commanding a higher profit.

Short-to-medium run custom labels have proven their value time and again. One specialty soap company, in business for over 20 years, found a way to improve margins by purchasing a short-run color label printer. After opening its doors with goat milk soap, the manufacturer expanded into lotions, body sprays, lip balms and other niche products. Using a pigment inkjet label printer, the company is now able to generate extreme quality labels for its new products and scents as needed, at speeds of 6"/second. In addition to saving money, the company is able to print its new labels on UV stock, which ensures vivid color retention on products showcased at outdoor shows.

In another case, a coffee company uses an in-house color label printer to quickly identify its specialty and limited-offer coffee blends. Self-adhesive labels bantering the blend are applied over the top of each bag—many of which are delivered by bicycle.

From wine to water, candles to cleaning products, dairies, greenhouses, gourmet foods and hundreds of other categories, in-house labels can boost sales and improve margins. Your product may be your business; but your label is your brand, your reputation and your primary sales tool. Use it to your advantage with in-house labeling, and greater profits can be the happy result.



Short-run label printers make it easy to personalize any product.

About the Author: Kellie Garber is senior product manager for Primera Technology, Inc., one of the world's leading specialty printer manufacturers. Its products are sold through Primera Authorized Resellers and Distributors in more than 200 countries and territories.



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Conduct a New Year Label Printing Audit to Ensure the Best Outcomes

By: Gary Paulin and Mark Lusky



Label printing is ever-evolving. From better printing processes and faster turnaround to greater convenience and affordability, there are many ways to ensure optimizing your options.

Here is a six-point New Year checklist to help assess what's working well—and what needs rethinking and/or improvement.

1. Consistency

Can you count on your label printer to deliver consistent quality while meeting deadlines and price commitments? Lack of consistency is a big complaint in the industry—one that's likely to get worse in our harried and hurried work environment.

When checking other printers, look at both the quality and quantity of reviews from a variety of sources where possible. Don't just rely on reviews posted on the printer's site, unless they link to such verifiable platforms as Google Reviews. They will provide an historical snapshot, and can serve as a reliable predictor of performance going forward.

To get the best intel, look at enough reviews to see a wide variety of opinions (dozens or better yet, hundreds or more). Look for consistently positive reviews, and drill down to see some of the most-mentioned positive and negative comment. From this, you can usually determine where a company excels and areas needing improvement.

2. Convenience

Is it easy to order and re-order? For some, this means a digital dashboard handling everything from the initial

order through proofing. For others, it's a dedicated account manager or team that responds rapidly and reliably. There is no right or wrong, only preferences that need to be met.

Another critical part of convenience is fast turnaround. Are you getting the turnaround time you need and want? When unexpected deadlines arise, can you get "extra special" service? If you're happy with present circumstances, then stay put. If not, shop around. Two trends polarizing customer service are—

companies dedicated to growing bigger at the expense of quality service and support, and companies making an ongoing commitment to quality performance and customer service as they grow. Make sure you're working with the second category.

3. Capacity and Capabilities

Capacity looks both at how many can be printed as well as how few, and whether or not one printer can handle low to high volume needs. For many product manufacturers, printing 50 at a time affordably is just as important as many thousands or even millions.

Capabilities can run the gamut of sizes, shapes, substrates, inks and special finishes. Oil/water resistant premium labels, maximum durability, variable data/imaging and consecutive numbering/barcode are just some of the higher-level requirements needed by increasing numbers of companies. Also important are fulfillment capabilities—including packaging and shipping. Bottom line, if you need it and aren't getting it, chances are the capability exists somewhere. Check it out.



4. Clarity and Crispness

Labels should look crisp and clear. This speaks to the quality of the printing itself as well as design and content. While the label printer is responsible for maximizing clarity and crispness of what they've been given by a customer, they also should be able to weigh in on potential potholes after being given the artwork to print—offering insights and workarounds that will improve the final product.

5. Customer Engagement

Job one is to give you what you need, when you need it and meet any challenges along the way. Automated technology platforms can be great. But, access to a real, live human being who can support, problem-solve and follow up to ensure ongoing satisfaction also is vital. The best customer engagement generally follows from

giving companies options to interact in the way(s) they are most comfortable—from high tech to high touch, and everything in between.

6. Counterfeiting Protection

This is a rapidly growing blight on legitimate commerce. Notes a Forbes.com article: “While online marketplace sales volume is up 23 percent from last year, fraudsters are capitalizing on the opportunity. Brand protection company Red Points released a report today which found a 40 percent increase in counterfeits from 2018 to 2019. The report confirms what many branded manufacturers have experienced first-hand recently: knock-off products being sold under their brand name on sites that shoppers trust... This makes it hard for shoppers to know what is real and what is fake. It's also costing the original brand a pretty penny – both in diverted sales and lost confidence from consumers.”

Emerging technologies being adopted by label printers enable smartphone users to download an app, then click on a small digital ID imprinted on a label to verify product authenticity. Increasingly, these technologies are inspiring consumer confidence about the authenticity of what they buy—in turn reinforcing positive company reputation.

Obviously in all of this, favorable pricing is very important. However, it shouldn't just be about bottom line—it should be about value. If you're getting great prices

and value, that's worth its weight in gold. If not, keep looking until you find the pot o' gold.

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Protecting Brands from Tampering and Counterfeiting

Advanced packaging and labeling features help companies combat threats to brand security and diversion

By: **Stan Chess**, Applications Engineer, RRD Label Solutions

Today's global distribution chains are as complex as ever, enabling brands to reach consumers in all parts of the world. However, this complexity can enable counterfeiting, theft and diversion. These issues impact a slew of markets including apparel, footwear, food and beverage, pharmaceutical and medical devices, aerospace, components, petroleum and consumer electronics.



Counterfeiting, as defined by the World Trade Organization, is an unauthorized representation of a registered trademark carried on goods identical or similar to goods for which the trademark is registered, with a view to deceiving the purchaser into believing they are buying original goods.

Counterfeit goods can be a source of consumer confusion and, even worse, a health risk when the goods in question are medications, food and cosmetics. Theft can also be categorized as the false labeling of products or the utilization of undesired materials or components used to produce a product coupled with wrongful use of a trademark. Diversion is yet another concern relating to security in which a product is removed from its

intended supply chain and directed to an unintended market unbeknownst to the original producer. Diversion can raise serious allegations of regulatory violations, create product shortages in intended markets and hurt revenue streams.

Regardless of the security concern in question, the affected companies can face costly and lengthy litigation, negative publicity and possibly an irreparable loss of loyalty from consumers. These challenges are not necessarily insurmountable, but they are best avoided. Through proactive measures to advance labeling and packaging solutions, brands can better defend against the proliferation of counterfeit goods and other threats to product security and the resulting damage.

Identifying Vulnerabilities

The first step toward better brand security should be understanding the challenges of the marketplace and vulnerabilities of the current supply chain. When

thinking of counterfeit goods, clothing and electronics often come to mind, but even food, cosmetic and pharmaceutical brands can be (and are often) counterfeited. Companies that underestimate the risks of their industries and supply chains may not take the preventative measures necessary to avoid danger to both their brands and potentially consumers until it's too late.

As consumers shift more of their purchase making to eCommerce channels, this trend opens up an opportunity for the proliferation of counterfeit goods online — especially on third-party e-tail sites. Although companies and consumers can and do press for reform, transparency and verification on those channels, it's imperative for brands to also take action in guarding their integrity.

Overt Features Alert Consumers

Overt security methods provide visual cues to indicate whether a product has been compromised and can serve as points of differentiation for consumers to distinguish between an authentic product and a counterfeit. These features include retro-reflective materials that verify authenticity and labels made with destructible substrate. Another example includes tamper-proof labels, such as those that leave a residue upon opening, which can be especially important for packaged goods in the petroleum and aerospace markets.

Covert Solutions Enable Verification

Manufacturers can also incorporate print-based security features — typically known as covert methods — like hot and cold foil printing, as well as microtext or coding. Microtext characters can be inserted into overt images, text and other design elements that are not readily apparent to the naked eye. This method is difficult to replicate or copy without using advanced production equipment. Ink-based security features offer another level of protection. Advances in printing technologies allow packaging engineers to incorporate color-shifting, penetrating, thermochromic, visible or invisible, UV fluorescent and pen- or rub-activated inks for additional forms of verification.

Track-and-Trace for Reassurance and Rapid Response

Brands can also implement serialization and numeric coding at the point of production to mark and code each individual product, especially in industries that are highly regulated such as cannabis and

pharmaceuticals. Depending on the product, the implementation of multiple layers of security may be necessary.

Certain technologies — such as QR codes — can be designed to enable communication about the product, for example allowing consumers to receive information on its origin and verify authenticity. Along with QR codes, radio-frequency identification (RFID) — which uses electromagnetic fields to identify and track tags attached to an object — is gaining traction by providing traceability. While security may connote fearfulness, certain security methods are actually also enabling greater transparency between the manufacturer, brand, and consumer, allowing for verification and authentication of products in an increasingly overcrowded marketplace. Sophisticated track-and-trace measures such as these also enable companies to identify compromised product batches and remove them from the marketplace whenever a problem does occur to minimize the impact of the incident.

Staying Ahead of the Curve

Brand owners may implement one or multiple security measures to avoid counterfeiting, theft, and diversion. However, bad actors will often be nipping at their heels. Therefore, brands must assess their packaging and labeling operations regularly, stay attuned to consumer feedback, and update security features often. To stay abreast of these technologies, brand owners should look to trusted suppliers that are developing and implementing the anti-counterfeiting technologies of tomorrow.

About RRD: RRD is a leading global provider of multichannel business communications services and marketing solutions. With more than 50,000 clients and 39,500 employees across 34 countries, RRD offers the industry's most comprehensive offering of solutions designed to help companies optimize customer engagement and streamline business operations across the complete customer journey. For more information, visit the company's website at www.rrd.com.



Enabling Digital Transformation for the Labeling Industry

By: **Ken Moir**, *Vice President of Marketing at NiceLabel*

Getting quality products in the hands of end-users automatically, while minimizing human errors and meeting regulations is not sustainable without companies making a bigger commitment to their digital transformation efforts.

Companies have made significant strides with digitally transforming their back-end systems and the processes associated with the early stages of their product manufacturing. However, the latter stages of their manufacturing processes haven't reached a similar level of digital maturity. One of the most overlooked processes is label management.

The labeling industry is quite resistant to new technology adoption, despite the fact that in some instances (think pharmaceuticals and food labeling) it plays a crucial role in health and safety. Technology or digitalized processes could play a significant role in improving labeling operations because printing the right label isn't always simple. Behind the scenes there is a lot that goes into creating them. This includes managing the data that's used (and often required by legislation) and ensuring all stakeholders — from suppliers and IT, to logistics and end users — are on the same page in terms of up-to-date information.

With so many businesses moving key systems and applications to the cloud, the same should be done for labeling. There are many challenges in the labeling process, from design and management, to quality assurance and printing that can be overcome largely by applying the right technology and moving towards a more cloud-based approach. The question is: how?

In the fashion retail industry, for example, labeling can play a key role in competitiveness. The aim for retailers is to get merchandise into stores as quickly as possible. This means re-ticketing items (or re-tagging items) speedily and accurately in order to get them out of the distribution center and onto the racks. Unfortunately, legacy systems don't necessarily allow retailers to meet these goals — especially when you consider that their main competition (e-commerce organizations) is vastly more agile than they are. Typically, their existing technology comprises standalone label printers that are not always connected to a centralized database. This causes bottlenecks and delays when it comes to the printing of the required tags and labels. This means a slower time to market, which can have a significant impact on the bottom line, especially for international companies.

The same can be said for the labeling of allergens in the food retail sector. For these brands it's not about speed-to-market, but rather meeting regulations and ensuring that the health and well-being of customers are considered. Companies are required to highlight allergens on labels, a process that is challenging and complex, especially when using disparate legacy systems. In addition, there's a data management issue to consider as well. All information that goes onto the labels has to be current and accurate, with quality control and audit trails crucial to the process. There are also challenges in ensuring all stores are using the correct and most up-to-date labels because often there's no consolidated management of the data.

There are a myriad of problems for other industries. For example, ensuring all suppliers are using the same labeling, format and structure on items delivered to an organization so that they can be correctly distributed or stored, without wasting time trying to figure out what's in a box, crate or pallet. Companies must be able to provide localized labeling

in a cost-effective and efficient way, while ensuring the data is accurate.

The most significant value of digitalizing the labeling process is that organizations of all sizes can now benefit and draw on the productivity gains. Previously it was enterprises, with skilled IT teams, that were able to deploy label management systems. With the advent of cloud and software-as-a-service offerings, there are fewer barriers to entry for smaller organizations.

An additional advantage is that the quality assurance process itself can be digitalized, effectively removing human error and risk from the equation. This is especially important in food and allergens labeling, as well as pharmaceutical labeling. It provides traceability — an audit trail detailing what changes were made, by whom, what was printed and when. This is essential for compliance across industries.

Having a label management system in the cloud means that all processes are unified; data is stored, changed and approved in a central location. This makes it easier to share that information and label designs to the areas of the business (be it factories, distribution centers, stores or even suppliers) and ensure they are correct and current.

While cloud certainly isn't the answer to every challenge in every industry, when it comes to labeling it's fair to say that it delivers significant benefits. Each industry might have unique problems when it comes to the labeling process, but transforming the process through digitalization is the first step in overcoming these obstacles and providing a solid technology foundation for organizations to future proof their operations.

The Digital Age of Labeling

By: **Lee Patty**, Vice President & General Manager at NiceLabel Americas

Labeling has come a long way from its humble beginnings, when labels were still hand painted or created using lithography. Since then, we have seen countless advancements like the self-adhesive label in the 1930s, laser printing in the 1960s, thermal printing in the 1970s, and of course, inkjet printers in the 1980s that revolutionized the industry. And though these advancements have made label printing more cost-effective, quick and easy, we are now at another step in the evolution of labeling where new challenges of the digital age must be addressed for companies to compete. In an increasingly connected world, where high-quality products must be delivered faster and to more markets, it has never been more critical for every company to make the labeling process more effective.



A Landscape Fraught With Challenges

Today, labels are considered a business-critical process widely used across extended supply chains. They're essential in a multitude of industries, from food

and beverage to pharmaceutical, retail and more. But until recently, the process was complex, expensive and simply not feasible for many, if not most, small to mid-sized businesses. Now, the process is more democratized.

Labeling is also data intensive, quality sensitive and thoroughly regulated. And while there are unique challenges for every industry, everyone faces the challenge of ensuring their labels are compliant and their revision history is transparent, both domestically and internationally. Meeting these requirements in today's age requires ensuring that labeling is aligned between suppliers, sites and locations with centralized visibility and control. And as one can imagine, assuring quality, accuracy and productivity in an environment with countless stakeholders and label variations can be overwhelming.

A Cloud-Based Solution

Though the challenges involved may seem daunting, they can be overcome with the right solution. Digitally transforming the labeling process, for example, can eliminate the chance for human error – significantly reducing IT costs, promoting end-to-end operational efficiency, increasing consistency and scalability, and centralizing and streamlining quality assurance.

Going one step further, cloud-based capabilities can democratize labeling by making it affordable and feasible for companies of all sizes, not just large enterprises. SaaS solutions also enable companies to store label templates in a central location. Therefore, changes and updates are logged automatically, making it easier to send label designs and information across an entire supply chain (including

factories, distribution centers, retail stores, or even to suppliers) with assurance that labels will be correct and current.

A cloud-based label management system is also more traceable and secure. This can enable multiple tiers of role-based security so only people with the right access can amend data or label templates. It can also provide an extensive audit trail, detailing when and where changes were made and labels were printed, as well as the people behind those activities. This ability to track assets can be a critical success factor for meeting compliance in regulated industries.

Use Cases for the Cloud

One example where a cloud-based system is particularly important is in allergen and food labeling. When it comes to food safety, the consequences of getting a label wrong are too high to chance. In this case, a cloud-based labeling solution could eliminate the need for human intervention, ensuring greater compliance, traceability and accuracy. Additionally, compliance can be easier to maintain as access rights can be limited to those authorized to design and approve labels, reducing mistakes and unintended errors. This brings risk down and lowers costs in an environment where one small mistake can endanger countless consumer lives or result in a costly recall.

Another scenario where correct labeling is essential is in the apparel or garment industry. In these businesses, it's vital to get merchandise to a destination as quickly as possible, especially when online competitors are shipping at increasingly fast speeds. Before digitalization, a retailer would have had to wait weeks for a bureau to provide tickets and tags. However, with a centralized database information can be found easily

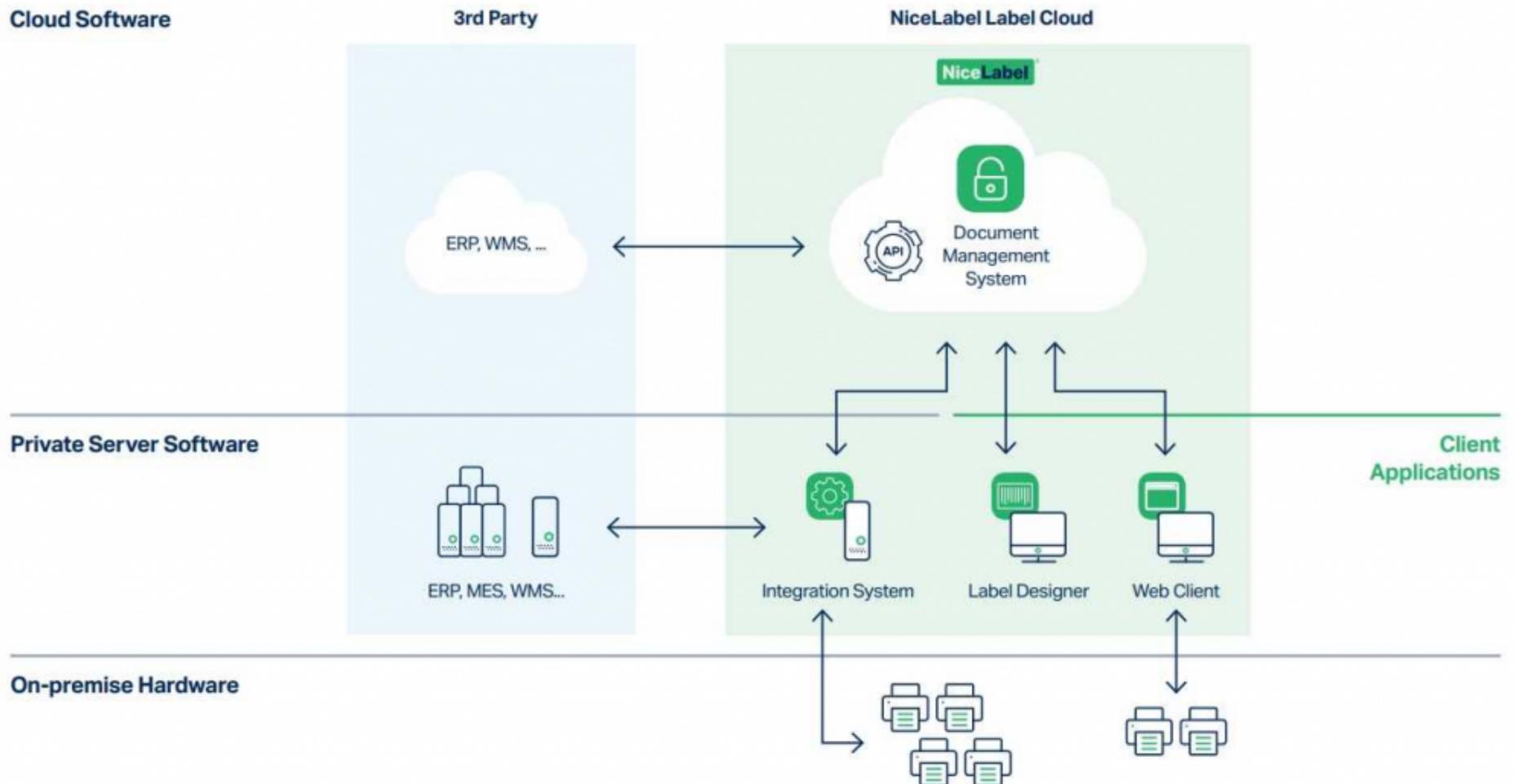
and efficiently, and labels can be printed quickly and accurately either at a distribution center or in-store when re-tagging or re-ticketing is needed.

A New, Digital Age

A cloud-based label management system provides businesses of all sizes with the ability to keep centralized control of their labeling while eliminating time delays and bottlenecks, minimizing errors, and improving traceability and accuracy.

With digitalization bringing improved systems at a cheaper, more accessible price, we are experiencing a watershed moment in labeling. And with improved logistics processes and technology, consumers now have higher standards for speed and quality of delivery. Label accuracy and compliance are critical for safety and success, so having a streamlined and agile process for labeling is essential to not only survive but thrive in the business landscape of today and tomorrow.

About the Author: Lee Patty is vice president and general manager at NiceLabel Americas. Prior to NiceLabel, he co-founded Niceware International, LLC, a NiceLabel distributor, where he was responsible for marketing, healthcare product development and professional services. NiceLabel acquired Niceware in 2013, adding him to the global executive team. Patty has over 20 years of AIDC industry experience.



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