Raising the Barcode: An Intro to Enterprise Labeling



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The barcode label contains far more than shipping information or data about a product's contents, it has the prescription for your company's successful supply chain.

Change seems to be the only constant in supply chain management. Evolution has become the rule of supply chains overall, and of every node or link in them as well. No one argues that sourcing, manufacturing, transportation or warehousing, each a vital element of the supply chain, hasn't undergone tremendous change. Enabling optimization of each of those components is barcode labeling. And no one should discount the change that it has undergone—and the great importance that labeling has for supply chain management.

The significance of barcode labeling has increased dramatically as supply chains extending around the world have become intertwined, and as enterprises have needed to scale up their operations. If anything, labeling today is a strategic imperative, especially due to the growing requirements of customers and regulatory bodies.

With the evolution of today's global supply chain, a straight out-of-the-box solution isn't enough anymore. Instead there is an increasing demand for more comprehensive Enterprise Labeling Solutions that integrate labeling processes with business processes to standardize mission-critical labeling. This approach, allows businesses to quickly react to evolving customer, regional and regulatory requirements and empowers business users to quickly and efficiently design and maintain barcode labels. It also ensures consistency across a global supply chain enabling companies to meet performance and scalability requirements with the power and flexibility to support complex, global and high-volume labeling requirements.

Josh Roffman, vice president of product management for Loftware, an Enterprise Labeling Solution provider, explains that labeling, which was largely manually driven in the past, was not usually integrated with enterprise applications. "Not only did accuracy suffer, but the disconnected nature of manual processes had built-in inefficiencies. For one thing, as companies grew, they found that their labeling demands did as well. Unfortunately, these systems couldn't offer the flexibility and scalability to meet their requirements," he said.

As companies have jettisoned proprietary labeling systems, developed in-house for the most part, they have discovered that Enterprise Labeling Solutions enable greater control and easier maintenance. In fact, this new approach continues to revolutionize barcode labeling.

At one time, a large organization, global in its footprint, might have maintained label printing operations at a hundred sites or more with almost as many barcode labeling software packages. Such lack of standardization led to costly inefficiencies.



A centralized approach to labeling leads to flexibility and control over how capabilities from label design to print integration, are deployed across an enterprise's global landscape. Centralizing labeling in this manner provides the opportunity to leverage common data sources, components and configurations across all sites, enabling companies to integrate seamlessly with business transactions, leverage a single source of truth and provide status to users in their environment. This also helps to avoid mislabeling issues, which can cost businesses time and money.

Technology, however, has changed the face of label printing. It's helped integrate labeling with enterprise applications, which is where essential data—sources of truth—for production, shipping or other vital areas is stored. Now systems can connect to that information easily and in real time, helping companies avoid mislabeling. By integrating an Enterprise Labeling Solution with existing enterprise applications and business processes, companies can enhance overall supply chain efficiency.

The reliability that results from standardization is a must, not merely nice to have. When supply chains are severely disrupted or even if less serious outages take place, standardization enables an easier recovery. Best practices allow a business to shift labeling production from one location to another in order to avoid a disruption and continue business as usual. Standardized and centralized Enterprise Labeling Solutions provide access to key corporate label data sources and visibility to enable business continuity while protecting against lost business.

Therefore, any time changes are required, each operation would be supported, avoiding potential inaccuracies, not to mention loss of time.

That means one is no longer looking at labeling on a plant-by-plant basis but across an entire organization, which brings greater consistency. Enterprise Labeling helps to link supply chains across different business partners and suppliers, making it far more efficient to work together. The importance of that can't be overstated given the plethora of rules and regulations that companies have to comply with today. Take just two: GS1 in the food and beverage industry or GHS standards in chemicals. Each is a highly regulated industry, and the label accompanying their production, shipment and storage is enormous in quantity and critically important in content. Labeling has to be right. "You simply can't do business if your labels don't adhere to the regulations," Roffman says.

That's echoed by Chandra Deeds Gioiello, vice president of Industrial Health and Safety Consultants Inc., whose clients run the gamut of industries, including many dealing with hazardous materials. Regulations governing manufacturing, distribution and sale of consumer products and other items are growing more uniform around the world, she says, yet variations in those laws do exist. Labels, which contain huge amounts of information concerning brands, contents, product pedigrees, expiry dates, among other things, have to be accurate and consistent and in the appropriate languages, regardless of which country they are shipped to or through. Among other things, that means that labeling has to be in the appropriate language.

A centralized, integrated approach to labeling ensures the needed consistency.

"Systems like that certainly make it much easier for our clients who, for example, need to have correct warnings—is it corrosive, is it carcinogenic, whatever—on their products."

As compliance requirements have grown stiffer, some barcode labeling providers have not kept up, and that's problematic. Not only can improper labeling cause shipment delay and hefty fines but—or worse, destruction of products—it can overstate the hazards of one's products. That was of particular concern when compliance was less structured and access to up-to-date classifications wasn't at hand.

It is crucial to select the right labeling solution provider because requirements of regulatory agencies are constantly in flux.

"The benefits of integrating labeling solutions into your existing applications are, number one, the consistency that you now have across all of your distributed locations, either in an individual country, or across the globe," Gupta says. "And number two, the chance of error is significantly minimized or eliminated because you are now automating the correlating process as opposed to feeding the printers individually."

But the benefits don't stop there. By definition, supply chain players are interconnected and rely on information transfer among the parties. Placing certain data on barcode labels can help streamline the processes of players downstream. They can simply receive inbound goods and scan the existing labels without having to create new ones.

That kind of cooperation amounts to more than being helpful, however; often it's mandatory in order to do business with certain partners. A major contract may demand labels be produced a certain way with specific data elements and meeting format requirements. Meeting that customer's requirements, accurately and consistently, is imperative.

Consistency is also paramount. If, say, a company's divisions in different parts of the world are sending components to the same major client, differences in labels produced at each site can be detrimental to the relationship. An intra-company lack of standardization may mean a number of label templates exist at several locations, and still other labels templates are being used elsewhere. It's reported that some companies with sites internationally maintain a daunting number of templates—some even in the hundreds of thousands globally. Standardizing and centralizing labeling operations across the enterprise, regardless of the number of locations or printers installed, dramatically reduces that confusion. As business requirements evolve, templates themselves often must change. Whether the label design elements are fairly simple or quite extensive, centralized labeling makes implementing change so much easier, quicker and accurate.

Roffman likens the process to the way a Rubik's cube works. "Labeling usually has different and complex requirements, whether it is language, product or regulatory or brand requirements," he says. "Each and every one of those variations can add up to hundreds of thousands of different labels. You need to be able to support those variations but with a small number of labels, and for it all to be manageable."

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— Richa Gupta, senior analyst at VDC Research

"People need to know that labels are living documents," says Gioiello. "They're not one and done—you don't do them once and then never do them again."

What large, global companies need is a labeling solution that is part and parcel of one's enterprise systems—the ERP and warehouse management systems, for example. Lack of integration often leads to delays and inconsistent or incomplete data capture, according to Richa Gupta, senior analyst, autoID and data capture with VDC Research. Centralization of labeling processes tends to guarantee quality control. Forgoing that, she says, may lead to costly chargebacks by customers unhappy with label formats or quality.

Gupta also says that centralization ensures better regulatory compliance, which is vitally important when one is sourcing across the globe and label consistency is needed.

Quite aside from consistency, a company must be able to print labels quickly—and in great quantities—sometimes a million or more daily. It is key to have a solution that allows you to meet the requirements of those major customers, quickly, and then adapt the labels to the needs of other clients, just as fast.

Enterprise labeling is not point by point but across the enterprise. Where one used to have to send files back and forth, which becomes complicated when changes are required, Enterprise Labeling Solutions enable data consistency and control in multiple locations, no matter how extensive the supply chain.

While Hypertherm Inc., a manufacturer of high-tech cutting solutions, sells around

the world, it makes its plasma cutting tools and other products at its Hanover, N.H., plant. This location has label printers at each of its 75 or more workstations, or "cells", each one of which makes several products. Loftware barcode labels are affixed to consumable products, such as the nozzles that fit into plasma torches used to cut metal at places ranging from auto-repair shops to shipyards.

Like ink cartridges in inject printers, the nozzles need replacement from time to time, says Robert Kay, IS infrastructure and operation leader at Hypertherm. Because each has a different amperage, these "consumables" are not interchangeable; each one is intended for a specific line of torch. However, they can't be distinguished by the naked eye, so barcode labels are essential for packaging and distribution.

For Kay, accuracy is the most important consideration when selecting a barcode labeling provider. You don't want a customer to buy the wrong part, yet some cells at Hypertherm make at least 20 SKUs, so it's important that barcode labels match the right components. Operations like those at Hypertherm require a solution that won't permit a label to be printed until nozzles have been properly identified, he says.

Built-in logic in the Loftware solution also plays an important role when dealing with the so-called "hidden factory," Kay says, referring to employees doing things outside a company's prescribed process because they think their way is better. Example: employees at individual workstations may be tempted to pre-print labels rather than going through the nozzle-identification process to ensure product and labels are properly matched. "That logic is important because it controls what they do and reduces error."

Summing up, Roffman says labels are no longer tactical but strategic requisites. And the C-suite has taken notice of that. It's clear to executives that improper barcode labeling has cost some businesses millions of dollars due to inaccuracies, an inability to meet customer requirements or because they couldn't ramp up fast enough to suit a client. Events like that easily make the case for investing in Enterprise Labeling Solutions. With so much riding on it, the right barcode labeling solution is clearly a must-have in the enterprise's supply chain IT portfolio.

