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Trends in Labeling 2012

The Findings of an End User Market Research Study that
Explores the Trends, Advances and Issues in Labeling



TRENDS IN LABELING

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Trends in Labeling

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Executive Summary and Perspective



Executive Summary and Perspective

One of the most dynamic and fast changing elements of product packaging, labels not only reflect the product manufacturer's brand, they differentiate product packaging and provide consumers with an abundance of information about the product itself.

In addition, labels contain anti-counterfeiting features as well as tracking and tracing technology to help manufacturers keep track of incoming ingredients, internal processing and packaging and outgoing shipments to retailers.

That's a lot of functionality in a small space. It is little wonder then that product manufacturers have a difficult time sorting out the multitude of choices that lead to changes in labeling processes, materials and ultimately machinery.

The good news for equipment OEMs is that with change come new opportunities to help product manufacturers develop new labeling strategies and solutions. In other words, OEMs have a chance to become solution providers and help product manufacturers meet the challenges that changes in labeling pose to their business, lower their operating costs and reduce label waste.

70% of companies interviewed are involved in varying degrees of label, marking or coding changes.

A good place to start providing the kind of solutions product manufacturers want is increasing the versatility of labeling machinery. Product manufacturers want labeling machines that are;

- Capable of handling the array of new labeling materials
- Can accommodate multiple label technologies
- More intuitive to use
- Predicts maintenance
- Easier to clean

Additionally, optical inspection readers must be able to more accurately verify labels, barcodes, artwork and SKUs at increasing speeds to keep production lines flowing. A machine that can perform several functions reduces the production floor footprint and contributes to greater productivity.

70% of companies interviewed are involved in varying degrees of label, marking or coding changes. The key question manufacturers are asking of OEMs is, "*Help them implement new labeling technologies without impacting current procedures*".

Over the next 3-5 years key labeling issues confronting product manufacturers include:

- Reducing label unit costs
- Use of thinner label stock
- Reduction of label material waste
- Greater use of sustainable materials
- Implementing anti-counterfeiting and tamper evident measures
- Improved tracking across the supply chain

As the trends listed to the left become more prominent, product manufacturers expect to integrate new labeling equipment or retrofit solutions to existing production lines. Of the consumer product manufacturers interviewed, 59% say they will likely need new labeling equipment or equipment modifications to meet their changing labeling, marking and coding needs in the coming years.

Delivering the equipment and retrofit kits product manufacturers need to keep pace

with changes in labeling will require equipment OEMs to have a thorough understanding of:

- New label materials and their respective performance properties
- Direct influences on labels - product safety and regulations
- Growing consumer interaction with labels

Label Market Share

As product marketers find new ways to use labels to enhance a product's shelf-appeal the volume of labels being produced is increasing year-over-year as shown in the table below.

Shipments in the United States are projected to rise 4.8% annually to \$20 billion through 2015.

Worldwide, label shipments are expected to grow 5.2% annually to \$110 billion in 2015.

Type of label	2000 (\$000,000)	2005 (\$000,000)	2010 (\$000,000)	Calculated 2012 (\$000,000)	2015 (\$000,000)
Pressure sensitive	\$6,865	\$9,160	\$11,000	\$12,056	\$14,160
Glue applied	\$2,200	\$2,445	\$2,735	\$2,997	\$3,200
Stretch sleeve and heat shrink	\$560	\$830	\$1,180	\$1,292	\$1,520
Thermal transfer	\$170	\$230	\$265	\$289	\$340
In-mold	\$130	\$185	\$260	\$284	\$330
Other	\$315	\$370	\$400	\$438	\$450
Total label shipments	10,240	13,220	15,840	17,356	20,000

Sourced: *Labels to 2015 - Demand and Sales Forecasts, Market Share, Market Size, Market Leaders*
Fredonia Study #: 2784

Pressure sensitive labels are the most popular type of label and the majority of manufacturers interviewed plan to continue using them to fit their labeling needs. Although, pressure sensitive labels will remain dominant, they are expected to face growing competition from stretch sleeve, heat shrink, in-mold and other labeling methods.

Comparing Figures 1 and 2 below, the percentage of market share for pressure sensitive labels varies by 9%. There is an 11% increase in the market share of stretch sleeve / heat shrink usage by the product manufacturers interviewed for this report. This variance is explained in the report.

Figure 1
Label Market Share 2012
Extrapolated from Labels to 2015
Freedonia Study

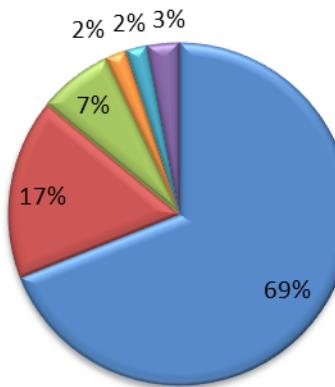
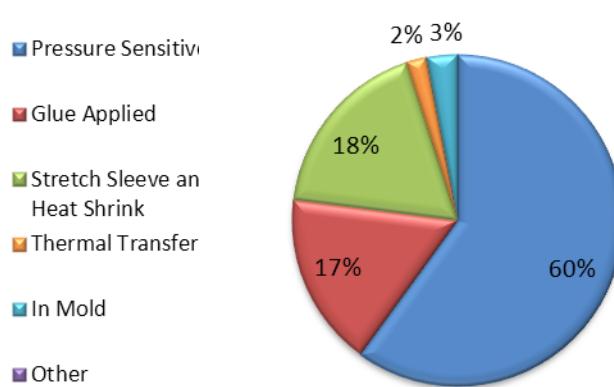


Figure 2
Label Market Share 2012
Product Manufacturers Interviewed Trends in Labeling 2012



- In the pie chart on the left, the Freedonia study predicts a 7% market share for shrink sleeve and heat shrink labels in 2012.
- Product manufacturers interviewed for this report are using a larger percentage of shrink technology placing market share for this label type at 18% in 2012 as shown in the pie chart on the left.

Making sense of labeling materials

The sustainability movement is one reason why product manufacturers periodically test new label materials. Eco-conscious consumers prefer buying products with packaging and labels made from bio-degradable, recycled or non-petroleum-based materials to reduce the amount of waste that ends up in land-fills.

Some of the new labeling materials being tested include:

- Soy-based film
- Tree-free and paper-free stocks made from stone
- Post-consumer recycled materials

As manufacturers move towards the use of eco-friendly materials in labels, 13% say they are actively moving away from the use of petroleum-based materials.

Weight and waste reduction

Experimentation with cutting edge materials is just one aspect of how product manufacturers are looking to make labels more sustainable.

43% of manufacturers interviewed are:

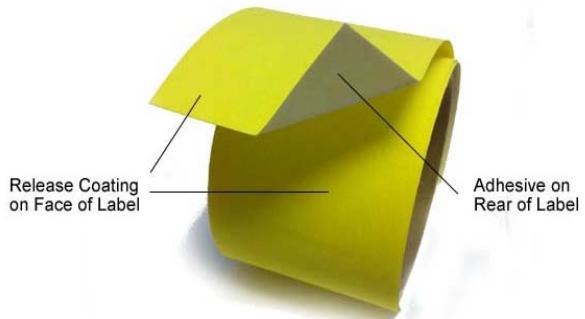
- Reducing material thickness
- Minimizing label waste

However, thinner label film is more susceptible to stress during high speed product runs, and therefore breakage. As manufacturers test thinner film stocks the challenge for equipment OEMs is making sure their machinery is capable of handling the material without causing breakage.

Another way for manufacturers to reduce their solid waste stream is to use linerless labels. On average linerless labels reduce material waste that usually ends up in landfills by as much as 60%. Linerless labels are pressure sensitive labels that do not have an adhesive backing. Instead, a special coating is applied to the face of the label that prevents adhesion.

Adoption of linerless labels has been slow.

According to several companies interviewed for this report advances in linerless labeling equipment lags behind manufacturer's needs. Companies interviewed also said manufacturers must consider the entire work flow of the line to make linerless labels work successfully.



The growing popularity of heat shrink sleeves

35% of the manufacturers interviewed currently use heat shrink and stretch sleeve labels. Nearly half of that group has plans to increase their use or expect the overall use of shrink/stretch sleeves in the industry to grow.

Shrink sleeves offer product differentiation advantages:

- Conforms to irregularly shaped containers
- Offers a 360-degree surface to print required label content
- Allows for innovative and colorful graphics for product differentiation
- Provides a tamper evident seal around the lid of the container

Increased adoption of shrink sleeve labels are likely to grow at the expense of pressure sensitive labels as well as other label types and are also being used frequently for new product introductions.

Functional labeling

Shrink sleeves are not the only label type that offers a larger printing surface. Extended labels (a.k.a. peel-back or fold out labels) provide a larger printing surface to include more information on a label. It's not uncommon to see extended labels used on small containers, such as plastic bottles containing over the counter drugs because they can increase the size of the label without increasing the size of the package.



The expectation among manufacturers interviewed is that extended labels and peel-back labels will become more common and appear on all types of packaging in the future. Despite strong interest for extended and peel-back labels one major drawback is they cannot be applied at high speed, which slows production lines.

- 37% of manufacturers interviewed, primarily in the pharmaceutical and personal care industries, are using peel-back or extended labels
- 24% of companies, mainly in the food industry, are not interested in extended labeling
- 11% said they will continue to evaluate their use
- 28% simply did not know their plans and had not evaluated use of these labels

Just as manufacturers are using labels to deliver more information to consumers, they are using them as miniature billboards to grab consumer's attention. Foil labels combine shininess and elegance to differentiate a product at-a-glance and textured labels entice consumer senses.

Manufacturers are getting just as creative in their use of label inks. Thermochromatic ink, a type of dye that changes color when temperatures increase or decrease, is being considered as a quality indicator by food and beverage companies.

The creative uses for thermochromatic ink make it likely that more manufacturers will begin to experiment with it, which makes it a trend that bears watching by equipment OEMs.

Preprinted labels and digital printers

75% of the manufacturers interviewed most often use preprinted labels for several reasons:

- Special printers, software or adhesives are not needed
- Supports vibrant color schemes and graphics which aides in marketing and brand recognition
- Desired line speeds are maintained

Print and apply labels are also cost effective solutions for expiration date labeling. Other frequent uses include secondary packaging and bulk industrial or food service packaging, as well as shipping labels.

One drawback to preprinted labels is that the information and graphics printed on the label remains static. When that information changes, an entirely new batch of labels must be printed and the previous batch ends up as waste.

With many product manufacturers performing smaller product runs, digital printing allows manufacturers to produce more graphically complex images on their labels while requiring less pre-press setup. The improved quality of digital printers can be traced to software that supports up to 15 color printing, including 4 color process, varnishing and over-lamination.

Ironically, the vast improvement in printer technology and the quality of digital printers has on occasion raised the question whether manufacturers will eliminate labels and print content directly on the package.

When asked, "Is it likely label content will be printed directly on the container or package",

- 69% of the companies interviewed said no
- 10% of personal care companies said they already are
- 14% of personal care and pharmaceutical manufacturers said they are looking at doing so in the near future

What manufacturers want in labeling machinery

As product manufacturers adopt new label technologies the challenge for equipment OEMs is making sure machinery is versatile enough to:

- Handle new materials
- Run multiple label types
- Provide easy roll changes
- Detect flaws in labels on the production line in real-time

While many of the machine features and functionality desired by product manufacturers are directly driven by the need to differentiate products, there are peripheral influences at work. The Food Safety Modernization Act (FSMA) is expected to indirectly influence machines with guidelines for proving machine safety, reliability and hygiene.

FSMA is expected to indirectly influence machine design as follows:

- Automated data collection to measure machine performance
- Better machine hygiene will be at the core of the FSMA law
- Removal of allergen and microbial containments left behind on packaging and labeling

In 2011, allergens were the most common cause of food recalls, according to Dr. Acheson M.D. a partner and managing director of food and import safety at Leavitt Partners. Designing machines with

fewer harbor points to allow for more thorough cleaning will improve machine hygiene and minimize contaminants finding their way onto labels and packaging.

Smarter labels

Technology is influencing consumer's interaction with labels. Product manufacturers are finding the inclusion of 2D barcodes, which are also known as quick response (QR) codes, as a way to interact with consumers more intimately. Scanning a 2D barcode on a label with a smartphone can connect consumers to a web page containing more product information, special promotions or downloadable coupons.



A survey conducted in 2011 by marketing consultants WSL/Strategic Retail revealed that 33% of respondents downloaded apps to read QR codes or 2D barcodes. With smartphone adoption nearing 50% in the United States, the data suggests product manufacturers are eventually going to need printers that produce higher quality 2D barcodes on labels.

Another smart technology continuing to find its way in the manufacturing industry is radio frequency identification (RFID) tags. Beyond their usage at the pallet level,

- 15% of manufacturers interviewed use RFID tags for package track and trace
- High costs for readers and tags hinder adoption
- Within 5 years the cost of RFID technology is predicted to decrease

As the cost of implementation for RFID technology comes down a group of product manufacturers predict the adoption of RFID tags will grow.

The business case for RFID may also get a boost from U.S. legislators who are contemplating passing a bill mandating a barcode system or tracking methodology to monitor the authenticity of all prescription drugs moving through the U.S. supply chain.

Stymieing counterfeiters and serialization

Without a doubt, product counterfeiting is a constant concern for pharmaceutical, health and beauty manufacturers because it poses an extreme danger to consumers.

To ensure product authenticity product manufacturers will need to implement anti-counterfeiting techniques and/or tamper evident sealing using unique markings or codes on labels that either can't be reproduced or that permanently stays on the label.

Serialization technology allows manufacturers to identify products at the item level as opposed to the batch level. Despite the imminent regulations, many of the pharmaceutical/biopharmaceutical

companies interviewed are still grappling with how to print or mark serialization codes on to the container or label.

Of the pharma companies interviewed;

- 33% are implementing a solution; coding onto preprinted labels or laser printing each carton or recoding all barcodes to meet G10/GT10 standards.
- 42% are considering serialization solutions as a near term goal
- 25% refused comment as information is proprietary

Track and trace data gathered through serialization allows manufacturers to follow the chain of product custody in real-time as it moves through the supply chain. Locating the product is more efficient and faster in the event of a recall.

Overall, pharmaceutical companies agree that most of the anti-counterfeiting steps they are taking are driven by the Food and Drug Administration, which under the FSMA (Food Safety Modernization Act), now has direct recall powers.

Regulations

Beyond the well-known governing bodies in the industry, there are numerous independent government agencies, quasi-official agencies and departments within the federal government that create rules, acts, regulations and opinions. They also enforce various mandates affecting product labeling, as well as the various activities of House and Senate Committees and Subcommittees. They are listed by acronym to the right and by full name in Appendix C.

Governing Bodies Listed by acronym*

CSPC, EPA, FCC, FTC, MMC,
NRC, OSHRC, USTDA, FAO,
OECD, NSF, NTSB, OSC, CSB,
USITC, USDA, HHS, DHS,
FHWA, FMCSA, NHTSA,
PHMSA.

The Principal Packaging Engineer for a pharmaceutical manufacturer of nutrition and nutraceutical products says it would be helpful if OEMs advised on upcoming equipment needs and upgrades based on regulatory changes. OEMs would need to devote full time staff just to keep up with the doings of each regulatory body.

Still, the comment does provide some insight into how daunting of a task it is for product manufacturers to keep up not only with regulatory issues, but the potential impact of those issues on their manufacturing operations and equipment needs.

The bottom line

As changes in labeling materials, sustainability strategies and peripheral influences impact labeling, product manufacturers are looking to OEMs to provide more than just equipment.

59% of the consumer product manufacturers interviewed will need equipment modifications or new equipment in the next few years to accommodate increases in production, changes in labeling, marking or coding methods or to satisfy the demands for greater product safety.

Product manufacturers want maximum performance from their machinery:

- Smarter but easier to use
- Seamlessly integrated into the production line
- Capable of handling thinner label stocks without compromising the integrity of the material
- Run a wider array of label types on a single machine
- Allow for faster roll changes
- Easier to clean
- More automated in collecting and storing performance data

To meet those demands, OEMs must position themselves as solutions providers, because simply recommending equipment, installing it and providing training won't be enough to deepen the end user relationship.

OEMs that work with end users to prepare for coming changes in labeling equipment, offer retrofit solutions to extend the life of legacy equipment and that anticipate end user's needs will be able to create a point of differentiation that puts distance between themselves and their competitors.