

packager's playbook series
education for packaging professionals

Labeling Playbook

HOW TO SUCCESSFULLY IMPLEMENT LABELING PROJECTS

- Label design strategies
- Material specification best practices
- Machinery selection and implementation
- Evaluation toolkits

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This playbook is proudly sponsored by:

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Why the need for labels that deliver on shelf and across the value chain

BY JIM GEORGE,
Director of Education, IoPP
(formerly editor of *Shelf Impact!*)



AND DAVID NEWCORN,
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In today's retail market, product differentiation at shelf is more important than ever. Advertising influences only 8% of consumer purchases, but 35% of purchase decisions are attributable to eye-catching packaging. As much as 70% of purchase decisions are made in the store, and consumers decide within seconds whether they will purchase a product that caught their eye.

In this scenario, the label is perhaps the single most important marketing element on a package, and more consumer packaged goods companies are beginning to leverage the marketing muscle of the label to increase sales. The numbers reflect this belief: The \$15.4 billion U.S. label market will grow at 4.5% annually and through 2013.

A foldout label can function as the flag bearer for a long product history. A shrink-sleeve label can provide the 360° billboard that brand marketers need. A clear, pressure-sensitive label may work in tandem with other package components to create a brand experience. The label may provide the billboard for essential ingredient information on a food carton or a medicine bottle. Or it may provide tamper evidence or use materials that reflect a product manufacturer's eco-friendly packaging initiatives.

continued

Why the need for labels that deliver on shelf and across the value chain

But here's the bottom line: The right label can increase product sales—such as the 9% increase in dollar share and 20% rise in purchase intent that labeling contributed to new packaging for Procter & Gamble's Herbal Essences brand.

The best label designs result from assembling the right team, understanding your consumer, selecting the appropriate materials, validating the design, and also pay close attention to myriad details in package development and on the production line—elements that will be discussed on the following pages.

Best practices and pitfalls to avoid

To assemble this playbook, we interviewed many packaging experts across the value chain, including brand owners, consultants, design experts, and suppliers. We asked them to specify the best practices and pitfalls to avoid when embarking on a labeling project, whether it's a redesign or a full-blown new package. We also went back into our archives over the past several years and pulled some examples of compelling labels that work.

While there is no substitute for formal packaging education, the school of hard knocks is no less a demanding taskmaster. We've drawn from some of the brightest minds in packaging insights that will maximize your chances for success.

continued

Why the need for labels that deliver on shelf and across the value chain

We've divided this playbook into three sections: Design, Development and Equipment. The articles are concise and written for quick consumption. Invariably, your focus will only be on one of these sections, but we strongly encourage you to read the articles in the other sections. That in itself is a best practice—taking the time to understand the language, issues and constraints that challenge your colleagues. To deliver the best label possible, as economically as possible, requires a familiarity with all the factors that go into creating and producing a label and then adhering it to a package.

We're also delighted to include, in the back of this playbook, pages of special hand-selected photos of real-world packages whose labels epitomize the best practices in this playbook.

But the story doesn't end there. Quite the opposite. This entire playbook—and others in this series that Packaging World is proud to debut—is meant to be a living entity. We invite you to join the conversation. If you have something to add, click "Add comment" at the bottom of this or any page, and fill out the form that follows. Your comments will fuel future iterations of this playbook, strengthening the canon of packaging knowledge. ■

For great labels, know your consumer

BY JIM GEORGE,
Director of Education, IoPP



Collectible cups: For the screening of the blockbuster movie “The Twilight Saga: New Moon,” Hoyts Theaters served up collectible cups using distinctive metallic in-mold labeling, with striking photos of the popular movie characters.

The path to great label design starts with understanding factors that influence purchase intent, as well as how shoppers view and use products, and scan store shelves.

American shopping tendencies and habits are changing, with direct ramifications for package design decisions. Paco Underhill, in his book *Why We Buy*, notes four cultural factors that influence the way consumers shop today—and that affect how consumer packaged goods companies draw consumers’ attention.

- America is aging. Visual acuity is becoming a more important factor that package designers need to address. Exercises are conducted in which consumers wear smeared glass lenses or attempt to open childproof medicine bottles using gloves—all to simulate the difficulties that older consumers have opening, operating and reading packages. Yet package designs today—often designed by young people—routinely befuddle older consumers at a time when more product information than ever is included on packaging.
- Gender differences are eroding. Evolving gender roles are influencing purchase decisions. By the late 1990s, men were making a discernable portion of purchases of feminine hygiene products. More recently, women have begun to shop in auto aftermarket aisles. Lines have blurred for the products themselves as well. Fragrances used to be the domain of women, but

continued

For great labels, know your consumer

today any number of body washes, colognes and other fragrances are marketed specifically to men. The packaging needs to satisfy visual cues that are specific for each gender.

- Shopping patterns are evolving. The family unit is shopping together more, and dad appears to be less likely to say “no” when kids pick up an impulse item. And shoppers may enter the store to get one item but typically leave also carrying an impulse purchase or two.
- Immigrant affluence is increasing. In America, immigrants are moving from the ranks of the poor to the middle class. With it, the need for multilingual packaging is greater. The label, in particular with advancing technology that makes shorter runs possible, is an ideal packaging tactic for capturing this growing and evolving segment of consumers.

Once you understand the forces that influence consumer shopping patterns, it becomes important to understand how they shop and why they make the purchasing decisions they do. Two effective ways to gain this knowledge for shaping package design are eye tracking and ethnography.

Answer two questions

You’ve created multiple layouts for your label, and you need to determine the best design option. Foremost, you want to answer two questions:

- Which label design provides the most shelf visibility?
- What elements on your label did shoppers see, and for how long?

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For great labels, know your consumer

Eye tracking is one approach that can provide these answers.

“The potential loss of sales to a business by diluting their equity and getting lost on shelf is enormous, and it’s not a risk one wants to take in this day and age,” says Pamela Waldron, global director, Oral Care, in Johnson & Johnson’s Global Strategic Insights Group. “We use eye tracking frequently to assess new label design for major brands. We would not implement a graphic label design change without understanding its impact on visibility and imagery.”

Eye tracking can be done in at least two ways:

- If the goal is to measure shelf visibility of a label, individual consumers can view a series of store scenes in which store shelves are presented on a screen. Consumers view categories as if they were shopping, and using a joystick, they click to navigate between categories. Their eye fixations are recorded and used to produce a heat map showing the areas on a package or shelf that drew the most fixations.

continued

For great labels, know your consumer



Insight for Pantene: In Western Europe, eye tracking revealed flaws in package color selection for Procter & Gamble's Pantene Aqua Light conditioner.

This type of eye-tracking research confirmed P&G's belief that creating blue blocking would improve visibility for its Pantene Aqua Light conditioner in Western Europe. The light-blue pack the company had been using was too visually recessive on shelf.

- If the objective is to understand shoppers' in-store habits, a mobile approach can be used in which the shopper wears a special pair of glasses to record viewing data while shopping.

"You cannot close the sale unless somebody has seen the package first on the shelf," says Christian Simms associate director of consumer market knowledge at Procter & Gamble. "With eye tracking, you can determine if you are stopping consumers with your product."

Some CPG companies conduct their own eye-tracking research, but this requires a substantial capital investment for special glasses and other equipment used in conducting the studies. More often, brand owners who get involved with eye tracking approach research companies that work with a cross-functional team at the CPG company. The team includes members of marketing, branding, and R&D.

How to conduct an eye-tracking study

Here are four tips for conducting an eye-tracking study:

1. Define the questions to be answered. For example, do shoppers see the product on shelf? How much attention did the product get, compared with competing products?

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For great labels, know your consumer

2. Define experiment parameters. Examples include exposure time (timed or shopper controlled), stimulus (mock-ups or renderings), and parameters such as randomization, sample size, and scripts/prompts.

3 Conduct a pilot test. The goal is to ensure that the prompts and environment elicit the interaction desired.

4. Run the full test in realistic environments, if possible. This provides for maximum validity of the test results.

Ethnographic research is a technique that is fast gaining favor for providing reliable insights about how consumers view and use products. In simplest terms, ethnography is the study of human behavior in its natural environment. A CPG company's packaging team members can observe consumers as they prepare to visit a store, when they shop, and when they use the product in the home.

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For great labels, know your consumer

A well-rounded ethnographic team should include a representative from R&D, a brand manager, a marketer, and a designer, advises Melinda Wooten, owner and partner at KW Strategems and former manager of consumer insights at E&J Gallo Winery, which conducts ethnographic research as part of the package-creation process. Wooten offers the following steps for conducting effective ethnographic research:

- 1. Control expectations.** Identify two or three objectives.
- 2. Make decisions early.** Will you select a moderator internally or hire one from outside your company?
- 3. Open the interviews.** Decide how you will dress and act so that the interviewee feels comfortable. Join in whatever activity your interview subjects are doing in order to establish a bond.
- 4. Have icebreakers prepared.** Get into your interviewee's mind-set. Ask what their top three concerns are right now. Ask open-ended questions.
- 5. Watch how products are used.** Who is present, do they help them get into the package or use the product, and how do they feel about it? How does the interviewee handle your package?

continued

For great labels,
know your consumer

6. Accompany your consumer to the store. Ask them to drive you through their normal shopping route, and talk to them about it. Inside the store, what goes in the shopping cart first, and why?

7. Debrief the interview. Review the writer's notes for those "aha" moments.

8. Recap the project. This should be done before the end of the week of the interviews, while information and observations are fresh.

9. Create a record. Include visual stimulations and create a video record or even a photo album of your encounter with each consumer who was interviewed.

10. Translate insights into stellar design. Easier said than done, but your design will benefit by actual ethnographic research. ■

Assemble a cross-functional team

BY JIM GEORGE,
Director of Education, IoPP

The axiom is two (or more) heads are better than one. Yet far too often, package design still is a somewhat isolated affair in which departments work in “silos,” seemingly with little understanding as to how the decisions they make can affect a package as it moves through the value chain.

Did you know that different films used in shrink-sleeve labels have different shrink properties, and not all are suited to the requirements needed to decorate high-contoured containers? Or that a neck label might be justified to hide the inconsistent fill line in your beverage bottle?

These are just two examples that demonstrate the critical need for a cross-functional project team to drive any package design project in which labels are involved. Different project requirements may dictate variations in the team members, but generally, any package design project involving labels should include the following internal members:

Essential team members

Brand and/or category manager, marketing manager, sales manager, package design manager, innovation manager, packaging engineer, and operations manager. Input also is essential from a packaging performance technician and materials purchasing. Another key player: a research analyst who can assist in determining package requirements in the creative process (will you need a functional prototype or do online testing prior to market launch?)

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Assemble a cross-functional team

Also include vendors, from material suppliers to contract packagers. And don't forget about consumers.

Vendors and consumers are becoming an integral part of the mix in the "open innovation" approach that a growing number of CPG companies are adopting in creating labels and other components of their packages. Product manufacturers that were once very secretive and protective about creative ideas—even among their own departments—are becoming all-inclusive. They're looking to their supply chains and to consumers, casting a wider net in search of innovative ideas.

Procter & Gamble, Kraft, General Mills, and Estée Lauder are among companies embracing "open innovation." They understand that some great packaging ideas may lurk outside of their companies.

continued

Assemble a cross-functional team



Coupon label: By rethinking the possibilities for a label on small packaging, GlaxoSmithKline was able to include an instant redeemable coupon on its Aquafresh Gel-Flex and Aquafresh Deep-Action toothbrushes.

Open-innovation that works

Packaging & Technology Integrated Solutions makes four recommendations for a successful open-innovation strategy:

- Establish trust in relationships with partners to forge win-win scenarios.
- Look for a strong value proposition in which each partner gains something.
- Select the right internal leader for the program—a strategic thinker with strong knowledge of trends.
- Don't get hung up on cost early on. Consumer value may overcome that issue later.

From a cross-representative team, you can learn the label-related answers to questions such as the following: Which type of label will work best on my package surface? What tweaks should I consider to give consumers a label that communicates, marketing the visual impact it needs, and operations a label that works well in production, while also saving my company money?

A cross-functional team also provides the opportunity for streamlined planning that begins with production and works backward.

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Assemble a cross-functional team

Vendors can offer ideas for labels being oriented consistently on pillow pouches or labels being affixed properly on high-contour bottles. Sometimes, talking early on with a vendor produces better results than the design department originally envisioned. Case in point: By consulting its label supplier, GlaxoSmithKline was able to include a label providing an instant redeemable coupon on Aquafresh toothbrushes—a novel marketing approach in the oral-care segment.

Beyond creative and innovation considerations, it is essential for marketing and operations to work seamlessly to achieve the best possible label. Operations should be up to speed on marketing's needs from packaging and, conversely, marketing should understand that even minimal design changes could significantly impact the package's performance on a production line. It is important to note that quick changeover is both a tactic and a companywide strategy, and senior management must direct it. Changeover costs are rarely measured, but they typically amount to thousands of dollars per hour. ■

Five steps to optimizing label design

BY JIM GEORGE,
Director of Education, IoPP

The label is probably the universal marketing tool in packaging. Marketers with clear objectives can hone the label to achieve their goals more effectively.

An effective label not only adds aesthetic finishing touches to a package, it can help cement product sales—when the right approach is taken. Successful labels require a working knowledge of materials, film resins, application techniques, shrink issues, and printing.

Dollar for dollar, labels might be the most cost-effective design element on a package. Here are five considerations to get you started.

Determine your objectives

Labels are provided individually, on a roll, or on a sheet, and they can serve a variety of purposes. A foldout, or booklet label, can tell the “story” of a family-owned brand or, on OTC medicine bottles, can be the staging area for a variety of product or regulatory information that keeps the primary label on a bottle clutter-free. A pressure-sensitive label can conform to the package shape and provide a sleek “no-label” look. Cost-effective pressure-sensitive reseal labels are growing in popularity with companies working on lower profit margins as an option for reclosing pasta and potato chip bags and offering additional on-pack promotional opportunities. Smart labels have RFID chips embedded under the label stock. New materials and inks are coming on the market that enable the label to join the rest of the package as an environmentally friendly endeavor.

continued

Five steps to optimizing label design



Limited batches: Digitally printed labels enable Made in Washington Stores to frequently introduce and retire batches of its Roasted in Seattle Coffee. Some graphic elements on the labels change, but the rest of the packs remain the same.

Assess the product's planned duration on shelf and the label's role in the marketing effort

Short-run batches of products, from coffee to personal care products, are popular with consumers. Products are introduced and retired frequently to keep consumers coming back to find new and unexpected "treasures" each time they visit the store. An effective labeling strategy can minimize costs in support of this strategy. In coffee, for example, new batches can require only a change in graphic elements on the label. The rest of the package remains the same. Seattle-based Made in Washington Stores took this very approach in introducing and retiring new flavor varieties of its Roasted in Seattle coffee brand. The three-ply silver foil laminate bags didn't change from batch to batch. New roasts were signaled by changing graphics on the pressure-sensitive labels applied to the bags, flexo-printed in black plus two custom colors. The clever labels helped Roasted in Seattle sales surge during a recent holiday period.

Understand what visually appeals to consumers

Product differentiation is more important than ever at today's retail shelf. A 2010 American Marketing Association/Market Force Information poll found that only 8% of consumer purchases are attributable to advertising, while 35% of their purchase decisions are attributable to packaging. A 2010 packaging study by AC Nielsen found that high-contour bottles with shrink-sleeve labels create strong emotional connections with consumers, thereby inducing product trial and sales. Other brands have reported success with clear, pressure-sensitive shrink labels on a clear bottle or container that enables consumers to see the product. Foldout or booklet labels are gaining momentum with some marketers as a way to get more information in front of consumers as package sizes get smaller. Know your consumers and what appeals to them.

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Five steps to optimizing label design



Personality plus: The right design on a digitally printed, pressure-sensitive label conveys the personality of Carmella's Italian Bistro on jars of its Carmella's House Marinara Sauce, sold in stores.

Establish package performance criteria

An important question to answer early in developing a quality label, or any other aspect of a package, is this: What does the package need to do, from a materials standpoint, to perform well in the market? That will provide clues for a meaningful discussion about the label.

The answer to this question, from a labeling perspective, could take in everything from package visibility (how well the label can be viewed under different store lighting conditions) to pairing the right inks and label surfaces for optimum legibility to selecting the appropriate material, taking variables such as package surface and contour into consideration.

Pressure-sensitive labels are a popular label choice because of their merchandising flexibility. About 46% of consumer packaged goods companies in North America use pressure-sensitive labels, but many of them could be applied more efficiently to lower operating costs and increase productivity, while also giving brand marketers the visual impact they need to induce produce sales. One option is an automatic pressure-sensitive labeling system to increase speed, streamline product changeovers, and customize labeling solutions.

Brand marketers also are fast embracing full-body shrink-sleeve labels. They provide a 360° billboard around the package, offer vibrant color, and add tamper-resistance to the package. But getting best results requires an understanding of your film's impact on graphics, and the shrink properties of the film you select. One common mistake, converters say, is a lack of understanding of the shrink ranges of the various films. On high-contour bottles, the wrong film could lead to tearing and distortion of graphics in a way that wasn't intended—and fine-detail work on your graphics can be compromised.

continued

Five steps to optimizing label design



Gravure printing: To enhance purchase appeal, Darigold chose six-color, gravure-printed labels of PETG film for shrink sleeves that decorate its coffee creamer bottles.

Shrink sleeves are “active” labels that will look different on a container than they did when they arrived at your packaging facility. During application, the label is heat- or steam-shrunk as much as 80% to hug the package surface, where it abruptly changes shape to conform to the package contour. As the film shrinks over the contour, text and graphics change in vertical and horizontal appearance. Ask your converter about the shrink capabilities and limitations of your film, and also for advice on modifying the graphics—or “distorting” them to match the design on your computer screen.

Consider the printing process

Offset lithography is the most common high-volume printing technology, but others common to packaging include flexography and rotogravure. Digital package and label printing is far less used but forecast to triple in growth by 2014, according to Pira International. Brand marketers’ demand for customization and shorter press runs—in part driven by labeling—will require a closer look at digital printing to limit dormant inventory and answer retailers’ and consumers’ desires for continually changing merchandise offerings in stores.

Digitally printed labels use less material, energy, and inks. In determining which printing process to use, consider quality, the label surface, color needs, turnaround requirements, proofing accuracy, and customization needs. Discuss your needs with your printer before submitting your project for advice on preparing files properly for the printing option you choose. ■

Two ways to justify package design

BY JIM GEORGE,
Director of Education, IoPP

Money can't be spent on a whim for package design. Ultimately, the investment needs to be justified to senior management, which operates under the notion that "If you can't measure it, you can't manage it."

Jeff George, vice president of research and development at Sara Lee Corp., says a step in the right direction is letting packaging lead the entire product-development process. Think of it as "packaging-based product innovation."

George says, "Rather than developing the product first and having packaging come in as an afterthought, let packaging be the driver of the overall innovation proposition."

An important early output of a creative team's efforts will be initial packages for market testing. You're looking for the right label on the right package, which is highly visible in the store and compels shoppers to place your product in their cart. But along the way, you also can make package tweaks that deliver to consumers the value they expect from your brand, while also optimizing materials and equipment to minimize costs.

Here are two approaches for justifying your package design.

- Eye tracking, mentioned earlier, can help justify the creative team's work. In one example, Tyson Foods was planning to make a significant investment in a completely redesigned label, which serves as the main "touch point" with consumers for its Wright Brand bacon.

continued

Two ways to justify package design



Flexibility delivered: DeLos brings a new dimension to vodka with an eye-catching shrink label on a glass bottle for small batches of handcrafted vodka.

Tyson repositioned the brand with the tagline “more of what you love about bacon” to focus on the thick, delectable bacon strips. To reflect the heightened brand positioning, the label underwent a significant upgrade, featuring a gold-outlined shield and crest area to connote premium quality.

Tyson had consumers shop a mock-up “bacon aisle” and included eye tracking and quantitative research to validate the appearance and investment in the new label. The results were that with the new label, consumers foremost noticed the brand name 91% of the time, and the design was noted by 26% of consumers within 4 seconds of looking at a shelf set—a significant improvement from the previous design. This demonstrated improvement in product findability gave Tyson the validation it needed to go “all in” on the new label.

- Validating a package design requires financial metrics to gain a buy-in from senior management. An increasingly popular approach at CPG companies is to “walk in the other person’s shoes.” People from each facet of the create team spend time interacting with other departments and learn their “language.” Designers, for example, visit the finance department to learn how to present their creative ideas in ways that incorporate costs into the picture. This approach can pay huge dividends in validating the expenses of a packaging project.

Taking this approach, some product manufacturers are finding success by letting a package design pull itself into the marketplace through quantifiable cost savings and consumer benefits rather than the more common method of the marketing department pushing a design into the market that fails to like anticipated benefits to the overall business strategy. Unilever’s restage of its Suave Naturals shampoo and body wash lines offers an illustrative example.

continued

Two ways to justify package design

Unilever increased dollar sales volume for the Suave Professionals line by 51% and unit volume growth by 12%, even after a retail price increase. Dollar sales volume for the Suave Naturals line rose 3% and unit volume grew 2% after the new packaging's first 12 weeks on the shelf.

Using a cross-functional team, Unilever achieved these results by communicating each line's price-value relationship more effectively to consumers while also reducing production costs. Visual cues were introduced on the label and elsewhere on the Suave packages, while avoiding frivolous decoration. Unilever switched to a wider cap and lighter-weight materials to deliver impact while also reducing costs. Designing the packaging with simple, contoured sides allowed for a wider label and the ability to mold the brand logo into the bottle.

The success of the project, says Stuart Leslie, president of design consultancy 4sight, which worked on the redesign, springs largely from multiple departments inside Unilever, and external partners, understanding not only Unilever's business and consumer needs, but also its manufacturing capabilities prior to launching the creative stage. ■

Outsource or in-house?

Six evaluation steps

BY JIM GEORGE,
Director of Education, IoPP

Your labeling project includes not just designing the labels and securing the right materials, but affixing them to packages. They must be oriented correctly on each package and also hold up well in harsh shipping environments.

Your company may or may not have in-house capabilities to handle each of these functions internally. If not, a viable option is turning to a contract packager to do the work for you. But to get the best results from contract packaging, you have to take the right approach, which varies for each project and each packaged goods company.

Heed these six steps when considering the services of a contract packager.

- Thoroughly evaluate the make versus buy decision.
- Confirm that your package runs efficiently on the contract packager's line.
- Watch for redundant efforts in the contract packager's facilities.

continued

Outsource or in-house? Six evaluation steps

- Communicate clearly with all the right people on your team.
- Demand a detailed quality audit agreement with the contract packager.
- Understand how you're using the contract packager—is it a short-term tactical relationship or a long-term strategic partnership?

Michael Richmond, president of PTIS, says critical considerations involve analyzing time-to-shelf requirements. How soon does the product need to be in the market?

“If the company has to be first to shelf with a significant product or packaging innovation, then speed-to-market may be highly important,” Richmond explains. ■

Latest labeling material trends

BY DAVID NEWCORN,
VP/Digital & Custom Media



David Newcorn, Packaging World's VP/Digital & Custom Media, conceived of the Packager's Playbook series. Formerly an editor for Packaging World, he extensively interviewed brand owners, consultants, and suppliers for these articles.

Here are some trends we're seeing with labels and labeling:

- 1. Injection in-mold labels.** In-mold labeling of blow-molded containers is well established. Relatively new to the U.S. is in-mold labeling of injection-molded cups, tubs, and square containers, which now can carry 100% graphics coverage compared with more limited spot labeling. This can result in high quality graphics coverage on all four sides of a square container as well as on the bottom. For all in-mold applications, compatibility of the label stock with container recycling streams continues as a focus.
- 2. Relentless drive toward thinner label constructions.** Whether it's called sustainability or just plain cost savings, consumer packaged goods companies are pushing converters to reduce the thickness of the liner and/or the label without impacting performance. Also in the sustainability department, some companies are dropping the outer carton and switching to expanded-content labels.
- 3. More shrink film options.** In recent years, the onset of PETG LV shrink films provides another option besides OPS with regard to the important characteristic of very little shrink in the machine direction. (The benefit: no scalloping or puckering around the bottom and top of the container.) A new option is white pigmented shrink label films, which provide barrier to light, and which can yield more film per square inch.

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Latest labeling material trends

4. Labeling curved containers. Marketers want to add shape and contour to their containers and still be able to label them. Shrink sleeve labeling excels at this, one of its key growth drivers. But technologies such as Avery Dennison's Fasson Curvy™ film labels now make this possible for pressure-sensitive labels too.

5. The rise of "active" inks. You may have heard of scented inks, but converters are experimenting now with inks that consumers can taste, such as for a beverage product. Time-sensitive inks have gotten better, where a color changes after a certain time. (Arm & Hammer uses this to signal consumers when it's time to replace the baking soda in their fridge.) Thermochromic inks are also becoming more popular and less costly.

6. Better metallic inks. If it's been a few years since you've looked at metallic inks, look again. Converters are reporting that their ink suppliers are now providing metallic inks that will work with more printing processes and substrates than ever, including clear film labels. Metallic

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printing inks for shrink applications can now tolerate as much as 25% shrinkage while still maintaining the desired look.

7. Shift from pre-decorated containers to “clear” labels. Converters as well as labeling equipment manufacturers report a shift away from pre-decorated containers—particularly for health and beauty products—and toward the use of clear labels. That has triggered an explosion in clear film pressure-sensitive labels that provide the so-called no-label look. Pressure-sensitive labeling equipment has had to respond with improved control of the immediate atmosphere around the label to mitigate static and dust, two enemies of clear-film label application. Better control of packages is also required to assure accurate and consistent application, which can be verified with vision systems. Converters report that clear labels are also very much in demand for cut-and-stack and roll-fed label applications, such as for bottled water or carbonated soft drinks. The savings for switching from pre-decorated can be especially significant for companies with multiple or proliferating skus.

8. Linerless labeling. Since linerless labels debuted, the consensus is they’re not ready for prime time and won’t be for some time, especially when it comes to primary container labeling. However, over the next few years, the cost will continue to drop and performance will improve to the point where linerless labels are expected to be a viable option for print-and-apply shipper labeling.

9. Price increases. As oil prices continue to rise, expect to see increases in the cost of film labels, as well as pressure-sensitive labels that use petroleum-based adhesives. Consolidation in the raw materials industries that labels are made from—suppliers of substrates, adhesives and inks—will result in capacity being taken out of the market, also pushing prices higher.

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Latest labeling material trends

10. QR codes. Consumer packaged goods companies are just beginning to experiment with this way of connecting their end consumers to videos or Web pages on the Internet, just by scanning a 2D code on the package with Apple or Android smart phones.

11. RFID. RFID continues to steadily decrease in cost. Initially common for pallet-level tagging, it has begun a move to unit-level application in the apparel industry, even on lower-priced apparel such as underwear. Even though the product manufacturer bears the cost burden, it results in higher re-orders because retailers now can get more accurate inventory counts just by waving a scanner. The ability to create tags inline on a printing press will further reduce costs and lead to more unit-level applications for certain products. RFID's cost, however, will preclude it from mass adoption for prime container labeling for the foreseeable future. ■

Label specification: Best practices in package development

BY DAVID NEWCORN

There are a number of best practices you can follow to produce labels that meet your product's marketing and production requirements today and in the future. Here are a few:

- 1. Don't treat the label as an afterthought.** The container and the label must work together, and different label technologies can significantly impact container design; considering different labeling technologies is useful at the earliest stages, but locking in the preferred technology as quickly as possible will get your package to market faster and with fewer difficulties.
- 2. Think about label functionality beyond decoration.** Ask what else you can expect of the label. Do you need to hide the product? (Not all products are pretty.) What compliance or regulatory information is required and how may that change in the near term future? Can you cross promote other products in your portfolio or include information that can increase the amount of product your consumer uses, such as recipes or instructions for use? Do you need some sort of functionality to enhance package opening? For example, it's possible to add a grip surface to the label rather than molding it into the container.
- 3. Ensure roll direction compatibility with the equipment.** Preprinted labels can be printed and wound onto the roll in several directions and orientations. Particularly if your labeling project involves new equipment, check with the machinery engineer first

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Label specification: Best practices in package development

to confirm the direction in which the new equipment removes and applies the label. The only thing worse than applying upside-down labels is throwing away an entire shipment of unusable labels because they're printed in the wrong direction.

4. Coordinate suppliers. Early on in the process, meet with your container manufacturer, label converter and labeling equipment manufacturer to coordinate a label specification that plays to everyone's strengths, versus independently imposing a rigid spec. Such up-front coordination can optimize your label construction right out of the gate, and eliminate re-work later on.

5. Accelerate package design changes. Most CPG companies are dissatisfied with their ability to make quick packaging changes. The traditional approach of innovating new package concepts for individual brands and packages may be the culprit. Instead, many brand owners are starting to actively invite suppliers to pitch new ideas during an "innovation day". The goal: bring in all the new ideas at once and apply them across the entire brand portfolio wherever it makes sense.

6. Manage the design intent. Know at which point to stop involving the package design firm. On the one hand, if communication is severed with the package design firm too early in the production process, the production and engineering teams may alter the package in ways that consider only their needs, resulting in a departure from the design intent. On the other hand, involving the package design firm too far into the process can potentially slow down the project and add cost. Before having the design firm sign off, make sure all bases are covered in a written packaging brief that will be followed by all. Cost-saving tip: have the

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Label specification: Best practices in package development

design firm create the design just for one size, and have the converter scale the design to each of the different package sizes, rather than paying the design firm to do it.

7. Manage production cost of designs. Everyone knows that elaborate label designs cost more to print. Be very clear with designers about the parameters within which they must operate to meet your cost targets. Or find different ways to execute a design without compromising the design intent—for example, by using a tactile varnish instead of embossing. To assuage reluctant brand managers, additional consumer testing (including eye tracking) can provide valid and objective feedback.

8. Budget extra lead time for art and design. As anyone who's ever worked on labeling projects knows, art and design can be one area that blows through cost and time projections. Whatever time you've budgeted, add more. If that's not realistic, at least attempt to clamp-down on the sometimes-endless spiral of last-minute (and costly)

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changes. Having all the details formalized to everyone's satisfaction in a design brief, and following them, should eliminate these last-minute surprises.

9. Budget extra lead time for new labeling processes. If all of your experience is in glue-applied paper labels and you're moving to an in-mold label, you're starting at ground zero from a knowledge base. Budget the extra time to learn the ins and outs of any new labeling technology. Don't assume your existing label supplier is the best fit for a new technology; build in time to look at others (see the next tip). Also, your label supplier may need extra time if you're sourcing special inks or label materials.

10. Know your converter's core competency. Just because you've used your converter for years for pressure-sensitive labels doesn't mean they're the best choice for in-mold labels, or vice-versa. Also, when bringing a new labeling project to the converter, consider specifying the requirements—such as the expected line speeds, geometry of the container, aesthetic expectations, installed equipment—instead of the actual label technology (pressure-sensitive, roll-fed, etc.). The converter should recommend the best label technology to meet your requirements, rather than a particular technology which it is best at.

11. Don't miss the forest for the trees. Don't just look at the label in isolation. Always consider how it's ultimately going to be displayed in context of the shelf set. That beautiful label design might be obscured by your special retail-ready display once it's assembled and on the shelf! One RTD iced tea company keeps its flavor names at the top of the container for maximum visibility in visi-coolers commonly found in c-stores.

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Label specification: Best practices in package development

12. Vet all label converters. Tour their facilities and conduct a full facility audit. If everything is neat and organized, it's a good sign. If there's junk all over the place, it's not. Ask to see documentation on their quality systems, and sustainable business manufacturing practices and processes. Make sure they handle design modifications confidentially with their other customers—if you can see the new labels from other companies when you tour, realize that others will see yours. Determine how well they understand container manufacturing and the extent of their technical knowledge to match particular label substrates to particular container materials and finishing treatments.

13. Find the dollars behind the pennies. While you are negotiating your best price for labels, realize that the cost of managing your label program, or in the worst case, shutting down your packaging line due to quality or service issues, far exceed the cost of the labels themselves. Take that into account and ask your suppliers what inventory management and quality systems are in place to reduce avoid or eliminate these hidden costs. Online systems that provide round-the-clock inventory management information can help. ■

Building labeling supplier relationships that foster innovation

BY DAVID NEWCORN

Why are some brand owners more innovative than others when it comes to labeling?

One reason is that some consumer packaged goods companies' relentless focus on cost optimization pits them against the very suppliers on whom they're relying for innovation. Suppliers are understandably reluctant to introduce new ideas to customers who are unwilling to pay for it, insist on exclusivity, regularly bid out the business, or pass on original ideas to their existing suppliers. Unfortunately, packaging engineers who believe in the value of true supplier partnerships are increasingly being overruled by procurement personnel tasked with driving out cost from the supply chain.

Ironically, there may be more opportunities for labeling cost reduction with a strategic partnership versus continually bidding out the business or pressuring suppliers for cost reductions. One company that partnered with its label converter had that supplier analyze labeling usage across the brand owner's entire product portfolio to optimize label size for combination runs on press. The result: a 20% cost savings.

Inherent separation of duties at larger CPG companies can create obstacles to innovation. Procurement departments want cost reduction, sometimes at the expense of value; packaging departments want speed-to-market; and brand managers focus on sales growth. Often there is no linkage between the three. The result: stagnated thinking and stifled

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Building labeling supplier relationships that foster innovation

innovation. Talk to suppliers in a cross-functional way to mitigate this tendency.

Building a relationship is about reducing the costs for both sides, and guaranteeing a certain size business. The innovation will happen as the supplier will be more inclined to share ideas without affecting overall cost to the CPG. ■

How labeling projects fail

BY DAVID NEWCORN

Many things can go wrong in the process of bringing a package and label design to market. Cautionary tales abound:

- 1. Design “black holes”.** Because artwork and design are so subjective, one can overdo requisite consumer testing. It’s easy to get caught in endless cycles of design modifications. Artwork is also subject to painful, last-minute changes by the marketing department—even after plates have been made and labels are on-press—which is a sure recipe for missing launch dates.
- 2. Faulty assumptions based on past projects.** Don’t assume that a pressure-sensitive labeling construction that’s worked in the past, even for an identical product, will work for a new product. In one case, a pressure-sensitive label construction was picked up from one deodorant package and re-used on another. Once in production, frantic phone calls were received from the plant that the labels were peeling off. It turns out that the colorants and anti-stats in the new package were incompatible with the old pressure-sensitive label construction. Doing your homework up front rather than simply repeating something from another project can prevent such disasters.
- 3. Too many projects underway at once.** The “mental make-ready” time of having to constantly switch mental gears between different projects can add delays, introduce mistakes, and reduce overall quality of work.

continued

How labeling projects fail

4. Poor supplier coordination. At many CPG companies, labeling tends to be an afterthought, resulting in little or no coordination among the label supplier, design firm, container supplier and the labeling equipment manufacturer. Snags may occur due to unclear, inadvertent or incorrect assumptions surrounding container size, shape, material, and machinability. Avoid these bottlenecks by bringing together all the suppliers, setting clear expectations, and including them on your team. Ensure that everyone reviews and commits to a common timeline. This worthwhile step not only reduces the potential for things to go wrong, the shared clarity and responsibility can minimize finger-pointing when problems occur.

5. Letting the perfect be the enemy of the good. This applies to not only the artwork itself but also the implementation of the design in terms of printing. The “We’ll know it when we see it” school of thought can take you right past deadlines. Getting the last 20% can take you as long as the first 80%.

6. Poor container tolerances. Inconsistent label placement accuracy, which at first glance may seem like a machinery problem, may in fact be due to variances in container shape. Always verify the tolerances on the container. And be aware of the impact of the chosen container shape on the successful application of the label. Tapered containers, for example, are notoriously difficult to label with longer wraparound labels. ■

Five labeling equipment trends

BY DAVID NEWCORN,
VP/Digital & Custom Media



David Newcorn, Packaging World's VP/Digital & Custom Media, conceived of the Packager's Playbook series. Formerly an editor for Packaging World, he extensively interviewed brand owners, consultants, and suppliers for these articles.

1. Simpler OEE connectivity and migration toward servos. With the ever-improving price/performance curve of controls technology, it means that labeling equipment can much more easily tie into systems that collect OEE data, rather than exist as an island outside of the OEE system. Also, it means more servo-controlled container handling, resulting in more precise label application.

2. Design for zero downtime. Equipment manufacturers continue to reduce the number of adjustments required during changeover, ensuring repeatability and smooth start-ups. Dual-roll auto-splice capability allows for changeover to a new roll of labels without stopping production. Also look for machines that are designed for serviceability, enabling the easy removal and replacement of wear parts or sub-assemblies for offline repair. On-board diagnostics for wear parts or maintenance is a plus.

3. Expanded-content labeling flexibility. Trends such as sustainability, regulatory labeling requirements, and multi-language marketing are driving an increase in expanded-content labeling, also known as extended-text or foldout labeling, and sometimes eliminating outer cartons. Look for machines that can specifically run booklets as well as single-thickness labels.

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Five labeling equipment trends

4. Serialized coding on labels. The movement to serialized GS1 codes or 2D bar codes is made possible in part by the shrinking size of coding equipment, enabling integration of coding equipment right into a labeling machine.

5. Multiple-technology machines. Manufacturers have begun to offer labelers that are flexible enough to accommodate multiple application technologies on the same machine, such as cut-and-stack, pressure-sensitive, and roll-fed labeling. That builds in future flexibility. ■

Seven best practices for buying labeling machinery

BY DAVID HOENIG



Determining requirements for machinery isn't rocket science, but it does take careful planning. During the 35 years I worked at Revlon, I learned to ask some basic questions on any new project to determine the appropriate direction to take. Here are the key areas your questions should address:

- 1. Outsourcing versus in-house.** You don't have to install a production line for every new product, particularly if the longevity of that product is far from clear. Ask whether someone else—a contract packager—can do this project better, or cheaper, than you, saving you the capital investment. Other considerations are whether the launch window is extremely tight, or whether this project makes the best use of existing plant space that might be better used for another project.
- 2. Flexibility of equipment for other applications.** Don't assume you're developing requirements just for this particular package. Marketing may come knocking a year later with a request to go to a different package size. All of your assumptions in the beginning are no longer valid and suddenly, your equipment has limited capabilities. You'll be faulted because you didn't think about what's coming next.
- 3. Don't just replicate what you've done before.** Doing so may be easier, more comfortable, and less risky, but you won't be exposing yourself to new technologies and

Hoenig worked for Revlon for 35 years, most recently as VP Manufacturing and Engineering Synergy Worldwide.

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Seven best practices for buying labeling machinery

new vendors that may give your package and operation significant cost and time-to-shelf advantages.

4. Determining speed requirements. This really breaks down into multiple components: throughput (nominal, jog, surge) as well as the conveyor speed through the labeling area. Devise two speed requirements: the speed required to produce enough product for the initial launch, as well as the speed required for ongoing production. Make sure the speed the labeler will run at day in and day out will be 15% to 20% lower than the maximum speed of the equipment to avoid extra wear and tear. Also, build in excess capacity (15% is a rule of thumb) for future growth.

5. Put cost in proper perspective. When initially canvassing vendors, don't eliminate a machine right away based on cost before you've done a true apples-to-apples comparison. One manufacturer's price may include more options relative to the other manufacturers. Also, don't automatically choose the lowest-cost machine, because you may pay an additional price later on in reliability.

6. Follow-up training. It's common to train operators and mechanics when the equipment is installed. But it's critical to schedule follow-up training, either to reinforce certain things after the equipment has been running for a time or to address issues that have cropped up. Be sure to specify this follow-up training as part of your requirements.

7. Spare parts strategy. Make sure to identify common wear parts and stock them in-house. Examine wear components for continuous improvement programs. For labeling machines, that typically means including belts, sensors, and air cylinders. ■

continued

Seven best practices for buying labeling machinery

Four tips for working with suppliers on projects

1. Deal with the right person. Find the person on the supplier side who has the proper technical knowledge and authority, rather than going through the supplier's salesperson in the hopes that they can translate. Ideally the person you deal with will be the one responsible for the design of the equipment.

2. Documentation control. Create one action document that lists who's doing what, and the status of each item, rather than sending 75,000 e-mails. Have formal and scheduled design reviews where you review the document together and assess status. This can be accomplished over the phone; it doesn't necessarily need to be face-to-face. Make the supplier take ownership of maintaining and updating this document throughout the project.

3. Be transparent and consistent. Suppliers will only quote solutions based on what you've told them. If you're not consistent with information you provide to suppliers, you're not getting apples-to-apples comparisons. Try to avoid keeping small pieces of information from suppliers just because they seem inconsequential. Often, they can be quite the opposite.

4. Produce line layout drawings. Having a signed-off floor plan avoids a lot of problems and clearly communicates to the labeling supplier whether the labeler should be a right-hand or left-hand orientation, and how the machine precisely it fits into the line. ■

Vendor evaluation methodology for labeling equipment

BY PAUL ZEPF,
P.Eng., M.Eng., CPP



With nearly 40 years of packaging production experience, Zepf has written 14 books on packaging production technology and is a co-founder of Zarpac Inc., an engineering, software, and consulting firm.

When evaluating labeling machinery suppliers, it's important to follow a disciplined methodology to eliminate as much subjectivity as possible. What follows is a simple Vendor Evaluation Analysis methodology that is well-suited to labeling equipment. Broadly, the process breaks down into three phases:

1. Canvass the field. Even before you write your requirements document, you can start informally canvassing suppliers to get a rough idea of budget, timeline, and ability to meet your requirements. A simple checklist of requirements will suffice at this stage. You're just looking for a rough guide—don't hold them to it without furnishing a formal RFQ.

2. Write a requirements document. While this is nearly always done for critical machines on the line (such as fillers and cappers), companies tend to mistakenly skip this step when it comes to labeling equipment. It's impossible to perform even the simplest of Vendor Evaluation Analyses without thinking through your requirements and writing them down. This exercise forces you to really think thru what you need this equipment to accomplish for you and the unique (or not so unique) constraints of this project. This document can be used when canvassing the initial universe of suppliers, and can also serve as the basis for your request for quote (RFQ).

continued

Vendor evaluation methodology for labeling equipment

Simple Vendor Evaluation Analysis

Item	Description	Weight	Company A Raw	Company A Weighted Rate	Company B Raw	Company B Weighted Rate	Company C Raw	Company C Weighted Rate
1	Lead time and size fit	20	6	120	6	120	9	180
2	Ability to meet speed requirements	10	6	60	6	60	9	90
3	Ability to meet quality requirements	5	6	30	6	30	9	45
4	Operational simplicity (operator's)	5	6	30	6	30	9	45
5	Lead technological risk	10	6	60	6	60	9	90
6	Reliability of the machine	30	6	180	6	180	9	270
7	Least anticipated maintenance	5	6	30	6	30	9	45
8	Easy access for maintenance	2	3	6	3	6	9	18
9	Quick change process ability	5	6	30	6	30	9	45
10	Ease of installation	5	3	15	3	15	9	45
11	Design for safety	20	6	120	6	120	9	180
12	Fit, finish and style	5	6	30	6	30	9	45
13	Vendor servicing and parts	5	3	15	3	15	9	45
14	Parts and training aids	5	3	15	3	15	9	45
15	Experience with similar products	10	6	60	6	60	9	90
16	Experience with our company	5	6	30	6	30	9	45
17	Local machine options and specs	20	3	60	3	60	9	180
18	Maintenance/Quarantee	5	6	30	6	30	9	45
19	Compliance & response to safety	5	6	30	6	30	9	45
20	Other costs, duties, taxes, etc.	5	3	15	3	15	9	45
21	Delivery costs/freight, crating, etc.	5	3	15	3	15	9	45
22	Delivery time & assurance of validity	10	6	60	6	60	9	90
Total				5,175		5,175		900

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3. Issue the RFQ. You'll want to issue your RFQ to ideally three, but no more than six, packaging suppliers. With the responses you get back, rate them using the Intermediate Vendor Evaluation Analysis form (see download link, left).

4. Conduct the Vendor Evaluation Analysis. If you're spending US\$200,000 or less on your labeling machine, use the simple VEA spreadsheet link at left to evaluate the responses from suppliers. This form contains 22 sample criteria to evaluate both the vendor and the machine—which you should feel free to add, modify or remove to suit your specific needs. (For higher-cost machines, more sophisticated vendor evaluation analyses should be used, separately evaluating the vendor and the equipment.)

The spreadsheet uses a simple weighted scoring mechanism. To mitigate against the tendency of giving a middle-of-the-road "5" score to ambiguous criteria, restrict your scores to a 1, 3, 6 or a 9 (on a hypothetical scale of 1 to 10, where 10 is best), which forces differentiation. If you don't have prior experience with the vendor, it helps to speak to the vendor's other customers who have similar products, and use that as the basis for your scores.

The spreadsheet sums the individual rows and then provides a total weighted score for each vendor. While the spreadsheet can't pick the vendor for you, it can be a system for helping to make sense of and evaluate the mass of information you're receiving from vendors. ■

Staffing a machinery project for success

BY SHAWN FRENCH,
Technical Director, Dannon



French has worked in packaging for Hormel, Nabisco, Kraft, as well as for packaging suppliers.

By now it's widely accepted that for maximum success on any packaging project, it's best to create a cross-functional team as early as possible.

However, there is often an age and gender gap between the package development side, which includes the creative team—often staffed by women and younger people—and the equipment side, which tends to consist of older men, often in their late 40s through 60s.

Often the younger team members are intimidated by the older engineers, especially if those engineers react negatively to ideas or discussion points brought up in meetings. Discussion between the material and machinery people can also grind to a halt because they don't speak the same "language."

This can create a dynamic that can hinder or even jeopardize the project if you don't take steps to address it. For example, there could be minor changes in dimensions or materials that help the machine perform much better. If the two sides are not working together, that could be something you find out three, six, or even 12 months after the machine is installed and you've been struggling.

continued

Staffing a machinery project for success

With engineers, a lot of their professional respect for other team members is based on shared work experience with those individuals. With someone a year or two out of school, that respect is not there yet. To move past this natural impediment, require conversations and participation on the part of the younger people and tell them not to be intimidated by the older engineers. The worst thing that can happen is for the packaging materials person to be at a meeting or Factory Acceptance Test and not say anything. You have to force them to communicate. Ask them what issues or opportunities they see and what improvements can be made. ▣

Who leads the team?

BY DAVID HOENIG

It may seem logical for someone from the machinery engineering organization to lead a labeling machinery project, but sometimes when this happens, gaps occur in areas outside of the immediate scope of the engineering department. Instead, consider assigning a true project manager, tasked with covering all the bases.

Another approach is to put the production supervisor in a project leadership role, if possible. That's because engineers tend to give short shrift to production-oriented aspects like runnability and reliability. The equipment that's ultimately selected should become the production department's baby, rather than the engineering department's baby. ▣

Roadmap for a successful labeling factory acceptance test

BY PAUL ZEPF,
P.Eng., M.Eng., CPP

When it comes to labeling equipment, an unfortunate trend is to skip the factory acceptance test (FAT). Don't! Some best practices to ensure a successful test:

1. Provide labeled “control” samples. Having finished, labeled control samples not only prevents conceptual problems from creeping into the FAT stage, it serves as a reference for how the label should actually look when applied to the bottle. It sounds like common sense, but it rarely occurs.

2. Furnish a factory acceptance test plan. This is the time to discover failures, determine reliability, verify efficiencies and explore how the machine should handle failures. This plan actually should be prepared up front and submitted to the supplier as part of the request for quote (RFQ). Although you'll pay for the test, most equipment suppliers will agree to a provision that if the machine fails, any subsequent test is free. Your test plan should specify how long the machine should be dry-cycled (24 hours recommended), how many containers should be run through the labeler and at what speed—in other words, the length of time (no more than five minutes at high speeds). It should also specify disposal plans for the finished, labeled containers. This is especially important if they are pre-filled with water or product to simulate actual container handling on the line.

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Roadmap for a successful labeling factory acceptance test

3. Make sure you train the right people. If training is provided as part of the factory acceptance test, make sure the people being trained are the production people who will run the line, not the engineers.

4. Follow a detailed “failure” script. Make an inventory of the type of failures that you’ve experienced or might experience, as well as expected outcomes. For labelers, this checklist could include:

- Hit the e-stop, then re-start it. Ensure the machine doesn’t jam itself on start-up, and that there are few or no wasted containers or labels.
- Trigger or block each sensor to see how the machine responds and re-starts.
- Induce a jam in the infeed by knocking over a container or inserting a foreign object.
- Break the label web to see how the machine responds.

FORWARD

ADD COMMENT

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Roadmap for a successful labeling factory acceptance test

- Block the label dispenser to prevent the label from being applied. Does the machine detect a bottle with no label?
- Block the date/lot code from being applied (if applicable). Does the machine detect the container with the missing code?
- Induce a failure in the auto splicer (if there is one) by cutting the label web halfway through. Does the machine gracefully shut down?
- Run the labeler at very low and very high speeds; are there critical differences in the way it pulls off the label and applies it to the bottle?
- Try operating cold glue, cut-and-stack labelers in high humidity to induce label curl. How does the machine respond?
- How does it handle wet bottles due to an upstream failure of some sort?

5. Test part replacement. Test how long it takes to replace the most common wear parts. Determine how to remove a defective part.

6. Assess safety. Complete a review of the equipment from a safety perspective.

Problems and their corrective actions that consume a whole day at your plant may only be a five-minute job at the supplier's. Don't skip the factory acceptance test! 🟩

Ten tips for a successful line start-up

BY DAVID NEWCORN

Here are some tips for a successful line installation and start-up:

1. Don't wait until the last minute to involve operators and production people. Often it's the engineers and the purchasing people who seem to know everything about the project, yet it's the production people who have to live with the equipment. Get the production manager, operators, and maintenance people involved near the very beginning of the project. They don't need to be at every meeting, but they should be at important ones. They should be very familiar with the equipment once it reaches your floor.

2. Consider pre-integrating the entire line before it gets to your factory. Some consumer product companies, particularly in the pharmaceutical industry, have found it to be worth the cost to work out the kinks and make any necessary adjustments on someone else's floor. This can be beneficial for high-speed lines where running it for more than five minutes during a factory acceptance test becomes impractical. Pre-integrating the line can be done at the plant of the vendor who has the furthest upstream machine, or on the critical machine of the line (the filler, for example), or simply at whomever has the most space. Some companies even rent a warehouse explicitly for this purpose.

3. Pay the supplier to install it. Engineers often think they can save the company money by installing the equipment themselves, but having the supplier install its own equipment or at the least oversee installation in what it considers to be the correct way can save you money down the road.

continued

Ten tips for a successful line start-up

4. Staff the start-up with your best production people. Don't choose a mediocre operator. Staff it with your sharpest operators who can teach other operators.

5. Don't let the supplier technician touch your labeler. Normally during an install everyone stays away from labeling equipment supplier technicians while they perform their work. This is a mistake. Rather than working with the equipment directly, have the supplier technician show your staff how to make the adjustments themselves. Your team will learn by doing. When that technician walks out the door for good, you don't want the operator or mechanic having never solved problems or made adjustments during actual production conditions.

6. Document what you learn from the supplier technician. Depending on the complexity of the equipment, it may be worth it to keep the supplier technician in your factory an extra few days. During that time, follow that technician and learn everything you can to fill in any knowledge gaps among operators. Shadow the technician with a camcorder, snap plenty of photos with a digital camera, and write down what you've learned.

7. Document last-minute changes to line layouts. Often during installation, adjustments are made to how equipment is positioned on the actual floor, deviating from the line layout drawings prepared at the beginning of the project. Take the time to go back and modify these drawings so that the line layout drawings reflect the actual packaging line as built. Down the road, you'll avoid lost time caused by a mismatch between what the drawing says and the reality on your floor.

continued

Ten tips for a successful line start-up

8. Finish your punch list. During the factory acceptance test or startup, it's common to compile a punch list of minor adjustments and then never follow it up once product is being successfully produced. Unfortunately, this can lead to problems down the road that impact product quality, such as a guiderail causing an inadvertent scuff on a container. Operators are less likely to bring these problems to anyone's attention "because it's always been done this way." The punch list should be reviewed and approved by engineering, production, and management, with ownership transferred from engineering to production in a formal sign-off procedure.

9. Spare parts. Things do fail during start-up. Don't forget to request a spare parts list and order the critical spares so they are delivered prior to the equipment arriving at your factory.

10. Performance criteria. Linking a vendor payment to the equipment's performance at start-up can be a strong incentive for the vendor. Consider an extended testing period, covering enough shifts (or even weeks) to really understand its abilities and limitations. ■

Determining when to rebuild or replace a labeling machine

BY PAUL ZEPF,
P.Eng., M.Eng., CPP

Here are some warning signs that may indicate it's time to either rebuild or recondition your labeling machine:

- 1. Speed and efficiency reductions.** Gathering data to document these reductions is the only way to justify a return on investment on something new.
- 2. Quality decreases.** The number of out-of-spec or rejected containers increases.
- 3. Changeover time increases.** The cost associated with this type of downtime can really add up.
- 4. Jams and failures due to damage and deterioration.** On a rotary glue labeler, glue build-up on each station tends to be a problem. Sometimes, operators then unwittingly damage the labeler by using screw drivers or other tools to scrape away the glue. This damage over time can contribute to increased jams and failures.
- 5. Maintenance increases.** Some companies use specialized maintenance software like [MP2](#) to not only help keep maintenance running smoothly and avoid surprises, but to track equipment maintenance trends to provide the big picture.

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continued

Determining when to rebuild or replace a labeling machine

6. Component obsolescence. Parts are no longer available from or supported by the machinery manufacturer or third-party suppliers, including old PLCs, proprietary controllers, or even outdated servo gear.

7. Requirements change but the line does not. Marketing may want a new package format or a new size. Replacing may be a better option than modifying the labeler to do what it wasn't designed to do. ▣

Financial justifications for labeling equipment

BY PAUL ZEPF,
P.Eng., M.Eng., CPP

Financial justifications for new equipment come in two varieties—hard and soft. Focus on the hard justifications, which will require you to provide data to demonstrate a return on investment. Then back it up with additional “soft” justifications for which you don’t have data but which support clear benefits.

For example, you may be able to provide three hard justifications that will generate more than \$590,000 in savings over a three-year period. Then you may be able to pick out seven other soft justifications for which you can’t produce data. You should be able to justify your labeling equipment on the hard justifications alone, but the soft justifications help bolster your case.

You should never try to justify a project solely on soft justifications—at most companies, there are too many accountants who will require hard justifications. Also, in some circumstances, it will be impractical to get data off the line to support a given justification—for example, it makes no sense to spend \$100,000 to get the data to support the investment in a \$100,000 labeling machine.

Be sure to include cost avoidance, not just cost savings, in your justifications.

continued

Financial justifications for labeling equipment

Seven hard justifications

Remember, you'll need to furnish actual data to support these before you use them. Several of these can backfire if your assumptions are incorrect, so use with caution!

1. Reduced inventory of pre-decorated containers or pre-printed labels or cases. There are space and handling costs associated with anything pre-printed.

2. Reduction/elimination of excessive maintenance costs. This one's tricky, because even if you track the cost of breakdowns, repairs, and maintenance to keep an older labeler going, the math often doesn't justify a replacement machine.

3. More sales due to more uptime. You can only realistically use this justification if you're selling 100% of what you make, you're maxed out in shifts, and if it's indisputable that any marginal additional amount you can produce also will be sold.

4. Reduced work periods, shifts, and overtime. This is also tricky due to the nuances in separating fixed costs that you incur anyway (overhead, lighting, rent, etc.) from variable costs (hourly workers staffing the line). Also, by eliminating downtime you may not actually reap as much savings as you thought because you aren't necessarily going to send people home and save that money.

continued

Financial justifications for labeling equipment

5. Full depreciation at the end of its useful life. At the end of the depreciation period, whether it's five years, seven years, whatever the number, the justification here is that you need a new machine to remain competitive. Some engineers have found more success with this justification versus relying on justifications related to downtime or maintenance costs.

6. Material savings. If you switch to a labeler that will enable the running of a different or thinner material, the material savings can justify the investment in new equipment.

7. Less rework. This has associated costs in labor, space, scrap, and material disposal. ▣

continued

Financial justifications
for labeling
equipment

Fitting financial justification into overall company strategy

BY DAVID HOENIG

Though hard justifications are preferred when making the business case to invest in labeling equipment, they're often not very easy to find. For example, the procurement department may find it's cheaper to buy containers pre-decorated in China than labeling them in-house.

Instead, focus on creating a holistic business case, addressing how the equipment fits into the business strategy, inventory turns, obsolescence, and first-to-market capabilities. If possible, address how in-house labeling could favorably impact scheduling and delivery, resulting in improved customer satisfaction.

Your presentation needs to drive home the idea that this project is the cost of being nimble and being able to respond to changes in the market. Conversely, you'll want to indicate the cost of not investing. ■

Four common pitfalls to avoid on label machinery projects

BY DAVID NEWCORN

1. Unanticipated additional container sizes/shapes. A machine designed to label an oval container will have tooling that's not suited to labeling a round one once it's on your plant floor. Take the time to think through all the possible containers you'll be running on your labeler and communicate that to your equipment vendor up front.

2. Not prioritizing production volumes before the machine is designed. If there's an oddball size or shape that's throwing a wrench into the machine design process, knowing that size were going to run, say, less than 1% of the time can put things in proper perspective. Conversely, tell the vendor which container sizes and shapes are expected to account for the bulk of the production volume. That enables them to optimize the equipment, to the extent possible, for those sizes and shapes.

3. Confusing product throughput speed with label dispense speed. As it turns out, the two are completely different. In one multipack labeling application, one consumer products company told its vendor the required throughput speed was eight bundles per minute. But they neglected to mention the conveyor speed was moving at 200 feet per minute. Ouch.

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continued

Four common pitfalls to avoid on label machinery projects

4. Overstating the speed requirements.

Labelers are very speed-sensitive. Requesting a labeler to be designed for 300 per min for a line that ends up running at 70 per min will likely cause problems. Avoid overspecifying your speed requirements to the labeling equipment manufacturer. This can also happen if you assume each machine in the line should run 15% faster than the next closer machine to the critical machine on the line, a common rule of thumb. If your labeler is the fifth machine down from the filler, using this logic will require it to run 2X faster than the filler, which may not be close to reality. ■



Gravure printing: To enhance purchase appeal, Darigold opts for six-color, gravure-printed labels made with PETG film.



Promotional labels: Campbell Soup leveraged its iconic soup labels by offering a limited number of seed packets in exchange for the code on the bottom of the soup can in its Help Grow Your Soup campaign.



Smart: label: The label gradually turns pink to indicate when it is time to replace Arm & Hammer's refrigerator air filter.



PLA yogurt packs: Stonyfield Farm's switch to PLA for yogurt multipacks includes in-mold labels applied during cup forming.



14% sales increase: In South Africa, Appletiser, a premium, nonalcoholic beverage, rides an engaging pressure-sensitive label on a new glass bottle to improved sales.



Strong brand cues: Wisk laundry detergent's new look cuts through visual clutter by leveraging the label to highlight the brand's new Stain Spectrum Technology; The label features several reds and reflective foil to integrate seamlessly into the package structure.



Shelf presence: A full-body shrink-sleeve label adds distinction to a spoonable container of zero-calorie natural sweetener from Cargill.



Label upgrade: Consumer research showed that a gold-outlined shield and crest area containing red, white, and gold elements on a blue background provides greater visual impact and better reflects the brand's premium positioning than the former label.



Vibrant color: Eight-color, flexo-printed, full-body shrink-sleeve labels ramp up the color intensity in probiotic beverages for GoodBelly Splash, from Next Foods.



Extended branding: A peel-back, three-panel design provides more label space for McCormick Canada's Club House brand One Step Seasoning Blends.



Textured ink: A proprietary label technology incorporates textured ink in a raised dot-pattern configuration to refresh the look for Lubriderm Skincare lotion.



Upscale look: An Applied Ceramic Labeling infuses Nestlé's Glowelle "beauty juice" packaging with a premium look in the cosmeceutical market at high-end department stores such as Neiman Marcus.

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