Thinking on the Outside of the Box

by Nikki Johnson
Marketing Coordinator
FoxJet, An ITW Company

"Sustainability"—a new name for an old concept. Namely, the way in which a product, materials, packaging and palletization methods impact space utilization, storage, transportation and distribution costs through the lifecycle supply chain.

Call it what you want, it's always been a factor in manufacturing, as misused space and materials always create unnecessary costs.

The packaging industry itself, of course, developed from a profit-focused need to achieve better packaged products using the best available materials and practices. During the 1970s, however, another motivating factor was added to the mix: the environment. With the then-nascent green movement gathering momentum and Earth Day's creation, many company leaders began thinking about packaging's global impact.

This awareness continues to be promoted in the form of the now-familiar 3 R's: reduce, reuse or recycle.

Sustainability is not merely the business topic du jour. Experts say it will grow tremendously, impacting how companies package their products and affecting how they're viewed by consumers.

Achieving sustainability nirvana might seem like a tall task, but some fairly simple solutions can go a long way toward that realization. One of the most impactful for the packaging world involves—if you'll pardon the pun—thinking on the outside of the box.

By replacing large volumes of preprinted boxes and outdated date-and-time coding equipment with low-cost, high-resolution direct-to-case coding equipment, packaging companies slash expenses and help the environment.

Benefits include:

- Reducing pre-printed box-inventory requirements;
- eliminating or reducing box-changeover costs; and
- decreasing product-changeover time by quickly and easily changing the label format.

Defining the dilemma

The problem is clear: To meet consumers' varying demands, nearly all manufacturers produce multiple items in which the only difference is flavor or style. The corrugated-box size used is the same, the brand is the same, but carton contents might change only slightly from batch to batch.

In addition, retailers require a variable identification mark to be applied to each individual shipper case to identify batch, lot and other variable information. To accomplish this, the manufacturer must marry the pre-printed box with a typically low-resolution coder.

Companies such as these accumulate an enormous box inventory rivaling their raw inventory of actual product. This practice not only gobbles up footprint, it costs money and is hardly green-friendly, particularly if not all the pre-printed boxes remain current and have to be discarded in favor of boxes bearing new information. Consider also the manpower and downtime associated with this practice.

That was exactly the case for a large candy manufacturer. In this scenario, a pre-printed box provided the fixed product information—such as logos and product description—and a low-resolution case coder printed the variable date and batch code information as the box was packed.

Before each batch, personnel had to transport the previous batch's pre-printed leftover boxes to the box inventory warehouse and transport the next batch's pre-printed boxes to the factory floor. While the line was down waiting for this process to complete, the line worker would change the code on the variable coder—in this case, a manual process.

One size almost fits all

For manufacturers such as the above company, the solution is generic cases, possibly as few a one or two box sizes, paired with an ultra-high-resolution printhead able to code logos, product identification, and variable lot/date information—all in a single pass.

Ultimately, the customer is left with a manageable box inventory, lower labor costs, and high-quality reproductions of the pre-printed box format. In addition, frequent movement of boxes in and out of the warehouse to meet various batch needs will be eliminated and a minimal set of generic shippers will be utilized for all products.

Not only that, but costs linked to maintaining pre-printed inventory are reduced or eliminated. Batch changeover simply becomes starting a task and entering the batch info the system automatically requests.

The particular company noted above embarked on a generic case-coding project and installed 10 high-resolution inkjet coding systems, each of which took roughly six to eight hours to set up and train employees to operate and maintain. The production line supervisor—charged with all message design—spent just a few hours with the supplier's technician learning how to create, edit and manage the message database.

Each line's installation and labor-training costs totaled $28,000. Payback occurred slightly more than 10 weeks later with $140,000 in annual savings per line. These figures are based on the old system's 125,000-per-week box volume at $0.005 variable coder ink cost plus $0.035 cost per box. Current per-box costs are $0.02.

And again, the sustainability factor remains intrinsic to this model. Not only are companies who employ it helping preserve the Earth for future generations, they're engaging in a practice that carries strong public-relations appeal that can only enhance an operation's reputation.