

# Trends in Environmental Packaging

By John Yuva

John Yuva is a writer for *Inside Supply Management*<sup>™</sup>. Additional information provided by Ben Miyares, vice president, industry relations for the Packaging Machinery Manufacturers Institute, Arlington, Virginia.

Published February 2003, *Inside Supply Management*<sup>™</sup>, page 18.

## Points of Interest

At a glance, here are the main points covered in this article. By reading it, you will learn:

- What environmental and regulatory issues affect packaging
- What issues organizations need to consider with overseas packaging
- What future trends in the packaging arena may affect the manufacturing sector

**Packaging can serve many purposes for organizations; however, those purposes should serve not only the organization and its end users but the environment as well.**

It's nearly impossible to think of packaging without thinking of its effects on the environment. While some environmentalists would like to see packaging eliminated altogether, supply management organizations are taking a more aggressive approach to packaging materials and construction. With stringent overseas packaging regulations, U.S. supply management organizations are beginning to adopt their own environmental packaging initiatives.

What supply managers don't know about packaging can hurt them, both professionally and personally. Professionally, the organization could find itself paying thousands of dollars in packaging fees and penalties with overseas and Canadian customers. On a personal level, supply managers are also consumers, meaning the effects on the public also affect them. In part two of this packaging series, the following three areas will be explored:

- What environmental and regulatory issues affect packaging?
- What issues do organizations need to consider with overseas packaging?
- What are the future trends in the packaging arena that may affect the manufacturing sector?

## Environmental and Regulatory Issues

While there continue to be domestic environmental pressures, they're not as intense today as they were 10 years ago. One reason for this is when municipalities set standards in place called "rates and dates" (i.e., rate or percent of recycled content by certain dates), it was expected that a certain percentage of recycled content would be included in packaging by a particular date and that the content be primarily post-consumer recycled content. The municipalities and regulatory authorities that imposed or wrote these regulations discovered that it was extremely costly on their part to administer them. What the authorities realized was that the municipalities needed investigators and analysts to determine at the landfills or some point in commerce that the

regulations were being followed. The regulatory authorities found that they didn't have the budget to support this kind of policing. As municipal, state, and federal tax bases began to shift, other issues took priority over the environmental issues.

Product manufacturers are the ultimate source responsible for making packaging changes. The combination of regulatory and economic demands forced many manufacturers in a variety of industries to reevaluate and implement environment-friendly packaging for their products. One industry sector that has many environmentalists concerned is the electronics industry. What happens not only to the packaging but to the products themselves after consumer usage? For example, consumers are disposing of older computer models at a significant rate. What types of hazards does this pose for the environment? Fortunately, electronics manufacturers are conscious of these issues and are modifying their packaging materials and products accordingly.

For many years, computers were packaged in expanded polystyrene or polystyrene foam. This material is declining as a packaging choice because it doesn't decompose. As an alternative, air envelopes or air bubble packs ranging from small bubble wraps to air bubbles the size of softballs are now being used. One major computer manufacturer has gone so far as to package its printer cartridges in molded fiber or pulp inserts. When consumers purchase the cartridge, they remove the old cartridge, place it into the box with the inserts that the new cartridge came in, apply a piece of tape over the top, and UPS will pick it up for recycling. It's these types of initiatives by manufacturers that will improve the environmental impact of recycled content.

### **Packaging Issues for Manufacturers with Overseas Customers**

When considering overseas packaging, supply managers must first realize that packaging laws are different from country to country. Packaging materials that are commonly shipped coast-to-coast may not comply with the regulations or laws in Europe, Asia, or Latin America. Even countries that are part of the European Union have few regional packaging regulations or laws. While the European Union has some standards in place, they're constantly changing.

Victor Bell, president of Environmental Packaging International in Jamestown, Rhode Island, says that depending on how supply management organizations design the packaging, there are different fees on it and those fees strongly dictate the cost of goods. As of today, there are 28 different countries that assess packaging fees. That number is going to increase over the next few years to 30-35 countries. "In terms of packaging fees, plastic is the most expensive," he says. "Another critical issue involves composite materials. If you make a folding carton and put too much laminate on it, the package won't be treated as paper, but as a composite material, which can elevate the fees as much as 500 percent." Bell adds that supply management organizations must also be aware of international design and reduction requirements. In Europe, there is what's called the "essential requirements," which requires packaging to meet a set of standards before it can be placed on the market. In Asia, there are empty space requirements and design requirements that must be met before products can be sold there. As Canada enters the packaging fee arena next year, U.S. organizations will need to have environmental data on everything they package. "A lot of manufacturers are going to push these requirements back on their suppliers," says Bell. "It's making the package manufacturer and supplier do the certification on everything such as heavy metals and recyclability, and they're putting all that paper trail on their suppliers."

From an individual country perspective, Germany may have the most stringent packaging requirements. Its Green Dot program requires manufacturers to pay for the recycling of their packaging. There are different levels of payments depending on the type of packaging material. For example, a typical drinkbox purchased widely in the United States has a high recycling fee in Germany. Due to its blend of paper, plastic, and aluminum, a drinkbox is much more difficult to recycle than a liquid packaged in glass.

With such a diverse range of packaging fees around the world, what should supply management organizations do before sending their packaged products overseas?

- Determine the packaging regulations and legislation of the market the organization wants to penetrate. Resources such as [pmmi.org](http://pmmi.org), [packexpo.com](http://packexpo.com), or [packaginglaw.com](http://packaginglaw.com) can provide assistance in finding those answers.
- Encourage manufacturers to ask their packaging machinery manufacturers what the relevant packaging requirements are in the projected market. Because Packaging Machinery Manufacturers Institute (PMMI) manufacturers operate globally, they would have firsthand knowledge of the regulatory issues affecting packaging equipment.
- Contact the environmental affairs or trade zone authorities in the area of interest.

It's important to note that the United States does have regulations for goods shipped into the country. All goods shipped into the country in/on wooden pallets, cases, or boxes have to be treated because the United States has experienced an infestation of longhorn beetles that have wiped out a number of species of trees in and around the country's international ports of entry. The beetle burrows in the wood of the pallets. When the pallets arrive in the United States by boat or plane and are then stacked outdoors, the beetle finds its way into nearby trees and repopulates.

In response to this, the U.S. Department of Agriculture has established some standards and requirements on goods shipped into the United States for countries where the beetle is infesting. As a consequence, these countries see this as a restraint of trade. Fortunately, the United States is now a member of the World Trade Organization (WTO) where some of these issues are being debated and resolved. A world court was developed to try to establish some of these standards and reduce some of the retaliatory regulations.

### **In Summary**

Packaging does play a vital role in the supply chain from the selection of the raw materials to its final disposal. As domestic supply management organizations reach out globally, they will be subjected and expected to adhere to strict packaging regulations and fees that may be avoided if they consider the same packaging requirements in their own supply chain. Packaging can serve many purposes for organizations. However, those purposes should serve not only the organization and its end users but the environment as well.

**(Box from page 20)**

### **The Future of Packaging**

The packaging industry is very dynamic and has undergone a great deal of change because the universe in which it works is changing. Laws and regulations, new products, the globalization of technologies, and a general increase in competitiveness have accelerated in the last 10 years, but there are greater concerns with health and reliability issues such as greater commercial pressure for freshness in foods. In the drug sector, there's also been pressure to tell the consumer greater details about the drug, its effects, and side effects.

With those pressures in the packaging industry starting to take effect, it's important to examine how packaging is likely to change in the future. Because the packaging industry is essentially a business-to-business activity, packagers may not be aware

of the larger trends in society, particularly from a consumer point of view. Also, because the packaging industry is an enormous system involving everything from raw materials to waste disposal, each level may experience a relatively narrow view of the future. There's a need for a more comprehensive and integrated view to putting the industry on a more solid planning basis. The following are societal areas where the influence of packaging will play a larger role in the not-so-distant future.

**Environment.** Environmentalism has played a large role for several decades and continues to produce new things. For example, the current move toward bottled water is producing 1.5 million tons of plastic waste each year. In many areas of the country, the most conspicuous kind of trash on the street is plastic water bottles. This is going to create a large problem if the industry doesn't start tapping into the environmental issue this will cause.

Also, the different levels of mine waste heaps are not only becoming a chronic nuisance in society but affecting terrain, aquifers, and flowing water. While society finally tries to deal with the situation, the waste heaps will continue to grow larger. Something will have to be done to clean them up.

**Globalization.** A quite different trend is globalization. As American firms globalize, what they're going to find is that in much of the world there's a tremendous desire and demand for reusable packaging: not necessarily to reuse it for packaging, but to reuse it for domestic or household use. Supply management organizations moving into Europe will find severe stresses by law on the nature of packaging. There's also going to be the opportunity to look at local products and how they might be differently packaged.

Another factor that's important with globalization is symbology — the significance of color, names, numbers, etc. For example, in China, the number four is a bad number and the number eight is a good number. In different parts of the world, orange, yellow, and green are positive or extremely negative colors. As businesses globalize, they must accommodate their packaging to reflect the culture.

**E-commerce.** On a quite different level are the things going on in e-commerce. E-commerce is going to push for standard sizes. Why? Because e-commerce means more packages going to more places and standardized sizes make so much more sense. What's giving an edge to e-commerce is the development of radio frequency identification. Supply management organizations will soon be in a position where a product leaving the warehouse or the factory is never touched by a human hand until the consumer receives it. This is possible by integrating radio frequency identification within the entire transportation system.

**Energy.** The idea of rationing energy use or carbon dioxide production has increased from a possibility to a probability, which will have a direct effect on packaging. Years ago, the average American product was eightfold excessively packaged. Whatever the current number, there is excessive packaging, which

translates into a waste of energy and a source of carbon dioxide production as the material is burned.

More broadly, there's a movement in society that has a new slogan called sustainability. Packaging is going to have to satisfy a consumer market and, in turn, a business market that packaging is part of the sustainability cycle. Whatever that may turn out to mean, that may have different connotations for different products. In the next few years, supply management organizations will eventually see a tally on packaging of its energy content and the energy content of the material inside the package to make consumers more fully aware of what's being consumed.

**Family.** At the family level, great things are happening to affect packaging. Household makeup and sizes are changing. The largest response to these changes in food packaging is single servings. Because people are moving to more grazing, they want more sealable and resealable packaging, which has increased the movement to pre-prepared food. All of this has to do with unconventional daily schedules of eating. More eating away from home shapes the things that are being eaten at home. While the basic example of pre-prepared food is pizza, it's only a narrow end of a broad wedge. In the near future, consumers can expect slot-machine food dispensers with both hot and cold foods because it cuts labor costs, and the dispensers will accept not only dollars and coins but credit cards as well.

**Legal regulations.** Domestic and overseas regulations will push three major areas of importance:

- Recycling — That is, running the package through another use cycle.
- Reclamation — Recovering usable parts.
- Remanufacturing — Recycling is well known with packaging, but reclamation and remanufacturing will largely apply to the things that are packaged. As reclamation and remanufacturing occur, there's going to be a need for packaging that allows the consumer to send things back to the manufacturer or to the manufacturer's reclamation station.

Recycling is already happening with the black powder that's used in jet printers. It's also occurring with computers and computer equipment. It would be unwise for consumers to throw away the packaging that the computer equipment arrived in because if the equipment needs to be sent out for repair, that's the best way to send it.

**Information technology.** Smart packaging is going to become more important in the kitchen as information technology becomes more advanced. Eventually, there will be a point where the household appliances will talk to each other. The stove will talk to the refrigerator, the refrigerator will talk to the householder, and the trash bin will discuss with them all. All of that implies smart packaging to reduce the actual amount of human time in the kitchen. The ultimate goal would be a dinner setting of a family of four where one member makes a 15-second walk

through the kitchen, talks to the equipment, tells it what he or she wants, and 30 minutes later a meal for four is prepared and ready. This is followed by seven minutes of cleanup. All of that is doable today in principle. The problem is to reduce it to practice.

Other changes are on the horizon with information technology and its impact on packaging. Consider food and other products that are subject to decay and wear-and-tear. Information technology will provide an electronic tying of the expiration date to a price discount. For example, suppose a gallon of milk has three days before expiration: it would make sense to have that product automatically discounted 20-40 percent.

Taking into account the areas of future importance discussed previously, supply management organizations will be in a position not only to radically change a package's appearance but to reduce their costs as well.

---

*Information provided by **Joseph Coates**, president of Joseph F. Coates Consulting Futurist Inc., Washington, D.C.*

*To contact the author or sources mentioned in this article, please send an e-mail to [author@ism.ws](mailto:author@ism.ws).*