

Sustainable Packaging and Ink

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Sustainability was the buzz word in the packaging industry during 2006. The idea of sustainability is gaining momentum, and if your customer has not bought the subject up already, they likely will in the future.

Sustainability awareness was rolled-out to the general public in 2005 when BP asked in their television advertising, "What is the size of your carbon footprint?"

Environmentalists have been questioning the impact businesses and consumers are having on greenhouse gases, and the impact those emissions are having on global warming.

Regardless of anyone's opinion on the impact we humans are having on the weather, we all certainly understand supply and demand after the run-up on energy prices over the last two years. So, even those of us that may be unconvinced on the seriousness of global warming can easily see the business impact that takes place when demand for a material exceeds the supply. And, many of the materials we use in the ink industry come from natural resources with a finite supply.

Defining Sustainability

So, how do we define sustainability? In a few words, sustainability is "a way to meet the needs of the present without compromising the ability of future generations to meet their own needs."

There are a variety of different definitions, but the bottom line is to make and distribute products that do not diminish the earth's natural resources, and to dispose of these products in a way that it is not harmful to human life or the earth's ecosystems.

A popular way to approach packaging

sustainability has been called the 4Rs:

1. Reduce
2. Reuse
3. Reclaim
4. Recycle

While these concepts have been around for decades, they have been in and out of popular favor depending on the popular culture, and the degree to which the popular culture is promoting an environmental agenda.

In early 2005, the Sustainable Packaging Coalition (SPC) was formed. The SPC is an industry work group started by an environmental non-government organization (NGO) called Green Blue.

SPC was originally made up of 20 to 30 companies who had an interest in promoting packaging sustainability. Some of the companies are consumer products companies like Johnson & Johnson, Microsoft, Nike and Kraft foods, others are materials suppliers promoting products that supported sustainability, and still others are companies who make packaging. A number of the printers in our industry have joined the SPC, including Exopack, Graphic Packaging, Georgia Pacific, Huhtamaki, MeadWestvaco, Printpack and Tetra Pak. Recently the membership of SPC has grown significantly. The tremendous growth of the organization and the intense interest within the packaging industry was the result of key initiative from Wal-Mart.

Wal-Mart Takes an Interest

In late 2006, Wal-Mart announced its own sustainability program. Its program is very aggressive and has specific targets. The Wal-Mart program is very comprehensive and covers its operations. Among its target metrics

are several that will impact the packaging industry. They are:

- Reduce packaging across its supply chain 5 percent by 2013.
- Reduce solid waste by 25 percent.
- Have 20 percent of its supply base aligned with sustainable products.

Packaging sustainability is a small part of Wal-Mart's total program of sustainability. Wal-Mart is reviewing its entire operation to improve its overall sustainability.

Wal-Mart has expanded the 4Rs to 7Rs. They are:

1. Remove
2. Reduce
3. Reuse
4. Recycle
5. Renew
6. Revenue (improve sustainability while not increasing prices)
7. Read (educate yourself and the consumer)

To back up this initiative, Wal-Mart has announced that this will be a high priority for the company, and part of its buyers' compensation package will be linked to improvements made on sustainable packaging. This has gotten a significant amount of news coverage and has created a large amount of concern among Wal-Mart's suppliers. Wal-Mart buyers have the leverage to push some items through the industry that other companies could not.

Wal-Mart has created a scorecard it will use to evaluate sustainability and has asked its suppliers to begin loading the detailed information related to each SKU. As you can imagine, this is a huge amount of work and is just beginning.

The scorecard is based on:
15% - greenhouse gases / CO₂ per ton of production
15% - material value

15% - product to package ratio
15% - cube utilization for transport
10% - transportation
10% - recycle content
10% - recovery value
5% - renewable energy usage
5% - innovation

From this information, a score will be generated and your packaging will be ranked and compared to other packaging. Needless to say, the packaging with the highest sustainability, and lowest cost, will be identified as the preferred product.

It is safe to say this has caused everyone to scramble. In many cases, the information may not be readily available to complete the scorecard data entry, which means the Wal-Mart suppliers will be asking its suppliers (the printer/converters) to provide information and support.

Sustainability of Inks and Coatings

It is fair to say printers will be asking their suppliers for help and support. In fact, we have already begun to get inquiries related to sustainability of inks as well as general questions on sustainability. Wal-Mart is not including inks, coatings and adhesives in this initial round of activity. Inks, coatings and adhesives are not part of the scorecard. Wal-Mart personnel have said this at several conferences, but it has not been documented in writing at this point.

Sustainability, biodegradability and compostability for inks and coatings are complex subjects. To my knowledge, little scientifically-based life cycle analysis research has been done in this area. Water inks, which most people consider to be more environmentally benign, contain raw materials that are petrochemical-based. Some solvent inks, coating petrochemical-based solvents, also contain raw materials coming from renewable resources. It is certainly a very complex, and complicated, subject.

Wal-Mart has exempted inks, coatings and adhesives from the scorecard activity for a very good reason. These materials make up such a small portion of the

mass of the entire package, it makes little sense to expend significant effort to make changes to a material which will have a minimal overall impact on the sustainability of the package.

In addition, inks are a visible part of the package that the consumer can see. Inks have a large impact on the final performance and esthetics of the package. The recycle content of paper can be changed and the consumer will likely not see the change. A film can be downgauged and the consumer may not see a change. Brand equity is often based on product consistency. A branded product must be very careful in changing the package. If a change is perceived, the consumer may wrongly believe the product has also been changed. For all of these reasons inks are well down the list of items that will be changed based on sustainability.

But this doesn't mean that we can't or shouldn't look at what can be done to improve sustainability as it relates to inks and coatings. If a printer is interested in addressing the sustainability of inks and coatings, I suggest they look into the following items.

1. Ink film thickness: Reducing the ink film thickness and printing stronger inks will consume fewer materials, and the print will dry with less energy.

2. Inventory management of press returns: Good management will reduce the amount of inks being scrapped.

3. Ink ordering: Only order, or make up, enough ink for the job. Too much ink made for a print order often ends up as waste.

4. Press wash up: Set up procedures to minimize the wash materials being used and the inks left in the press being washed out.

5. Additive usage: Monitor additive usage to ensure inks are not altered in a way that makes them unusable for current or future press runs.

6. Ink storage: Ensure inks are stored in such a manner where their quality will not be negatively impacted. Used containers should have lids on tight. Inks should be stored inside at moderate temperatures.

There are other issues that can be looked into, but the key is reducing the

amount being used, and the amount being wasted. By doing so, we will make our operations and products more sustainable, and we will reduce costs.

The SPC has said in the past that there currently is no such thing as a completely sustainable package. The short-term goal is to incrementally improve sustainability. As suppliers to the printing industry, and as printers in the industry, we can make small incremental improvement individually and collectively make significant gains in the sustainability of the products we supply. ■

Michael Impastato, vice president of market development for Flint Group North American Packaging, was introduced to printing ink 30 years ago at Inmont, when he first became involved with specialty gravure inks. In 1983 he moved to CZ Inks where, starting as division manufacturing manager, he moved through several marketing positions to become national accounts manager. In 1996 he was named senior vice president and general manager of Progressive Ink, and in 2000, he joined Flint Ink. In 2006, Mr. Impastato received the prestigious Printing Ink Pioneer Award from the National Association of Printing Ink Manufacturers (NAPIM).

In 1991, Mr. Impastato played a vital role in developing model legislation for the Coalition of Northeastern Governors on behalf of NAPIM's Heavy Metal Task Force. This model legislation has since been adopted by more than 15 states and has become a standard environmental tenet for the formulation of packaging inks. He is a recognized author of technical articles on flexo inks, which have appeared a variety of leading printing and packaging trade journals over the past 10 years and he has been a speaker at more than six leading associations in the packaging field. He has been especially active in the Flexible Packaging Association, where he has been treasurer and represented the ink industry on numerous committees.