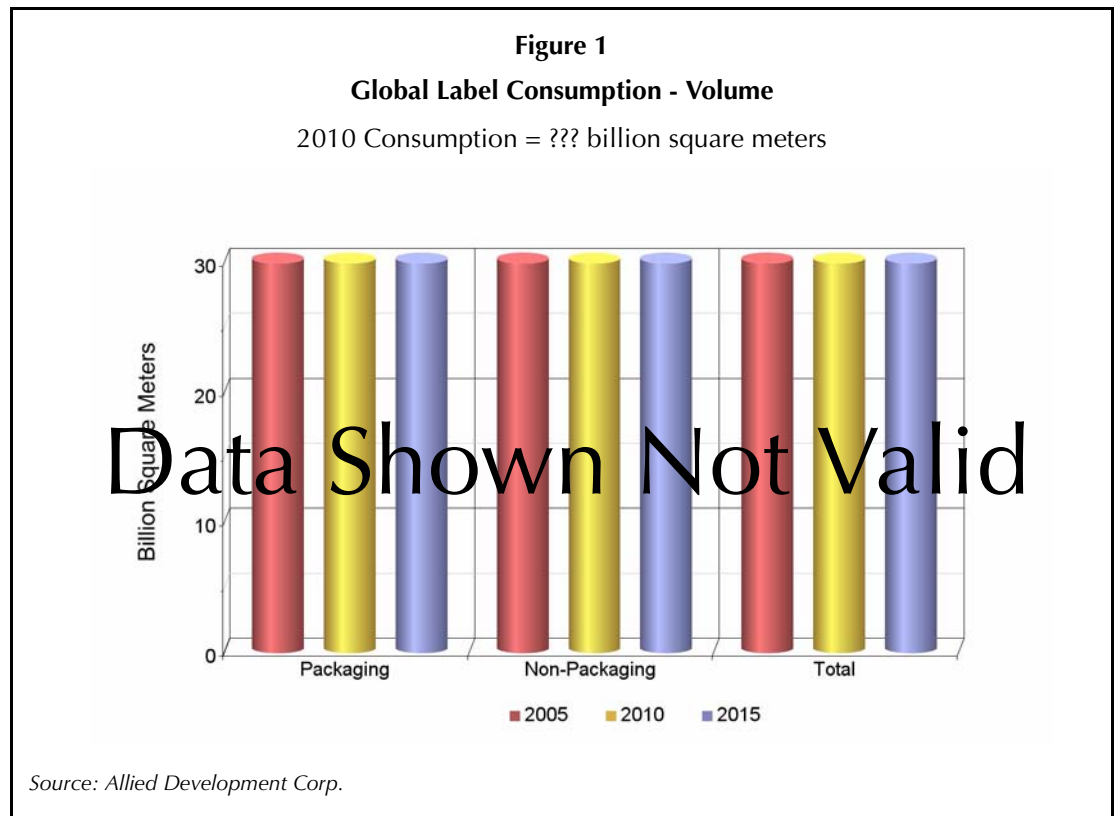


2. Label volume projections

We segmented the label market into packaging and non-packaging applications for this study. Figure 1 provides global label market volume measured in area (square meters) for the packaging segment, non-packaging segment, and total.



Consumption of packaging labels is far greater than non-packaging labels, when measured in area (Figure 1). The packaging labels market has benefitted from some of the highest volume and highest growth applications. Bottled water is among the most important. Although bottled water volume has faltered recently, it has served as a growth platform for many years. It will not achieve its high historical growth rates in the future, but it will continue to be a source of growth for the label market. Due to its large volume, even the modest growth rates we project for the future will provide substantial incremental label volume.

G. Case 7: Environmental analysis – self-adhesive label

Case 7 provides the results of the life cycle analysis we completed for a self-adhesive label on a beer bottle. This cradle-to-grave analysis includes manufacturing the label and applying it to a beer bottle during the filling operation. The primary metrics for the environmental analysis are energy consumption and greenhouse gas (GHG) releases.

1. Energy

Table 11 provides the energy consumption results for a self-adhesive label applied to a beer bottle.

Table 11				
Case 7: Beer Bottle with SA Label – Energy Results				
CATEGORY	MJ	%	MJ/lb	MJ/unit
Raw Materials				
Raw Materials Packaging				
Raw Materials & Packaging Transport				
Process				
Distribution Packaging				
Distribution Packaging Transport				
Transport to Customer				
Package Filling Process Energy				
Packaged Product Packaging				
Packaged Product Packaging Transport				
Packaged Product Transport				
Total Energy				

Data Removed

Source: Allied Development Corp.

Figure 11 pictures a printed aerosol can and an aerosol can with a shrink sleeve. It is nearly impossible to tell from the picture which has the shrink label, which illustrates that there are typically no quality concerns with a switch to a shrink label. For the record, the wasp and hornet spray is the printed can.

Figure 11
Print vs. Shrink Sleeve



Source: Allied Development Corp.

It is important to remember that in order to provide the high quality appearance illustrated in Figure 11, the shrink of the label must be perfectly controlled. High shrink around the circumference of the container is crucial, and shrink in the vertical direction of the container must be absolutely minimized.

Table 41 provides global label consumption for condiments, sauces, and dressings, segmented by geographic region.

Table 41
Global Label Consumption – Condiments, Sauces, and Dressings
(million square meters)

	2005	2010	CAGR	2015	CAGR
North America					
Europe					
Asia					
Rest of world					
Total					

Data Removed

Source: Allied Development Corp.

Europe leads consumption of labels followed by Asia and North America (Table 41). The wide range of products and package types have the net impact of increasing label consumption slightly. Growth will result primarily from the increasing use of packaged products in Asia and the ROW. Everything considered, label consumption will increase ???% per year in the condiments category through 2015.

It is also important to note that more film labels for “squeezable” products are being used in this category. More labels for the “no-label” look, and more self-adhesive labels will be used. The net effect of these trends will increase label market value.

Dairy products

The dairy products category includes a variety of dairy products, but it excludes milk, dairy beverages, and refrigerated cheeses previously analyzed. Specific products in the dairy category include ice cream, yogurt, sour cream, cottage cheese, cream cheese, butter and margarine, and dairy desserts.