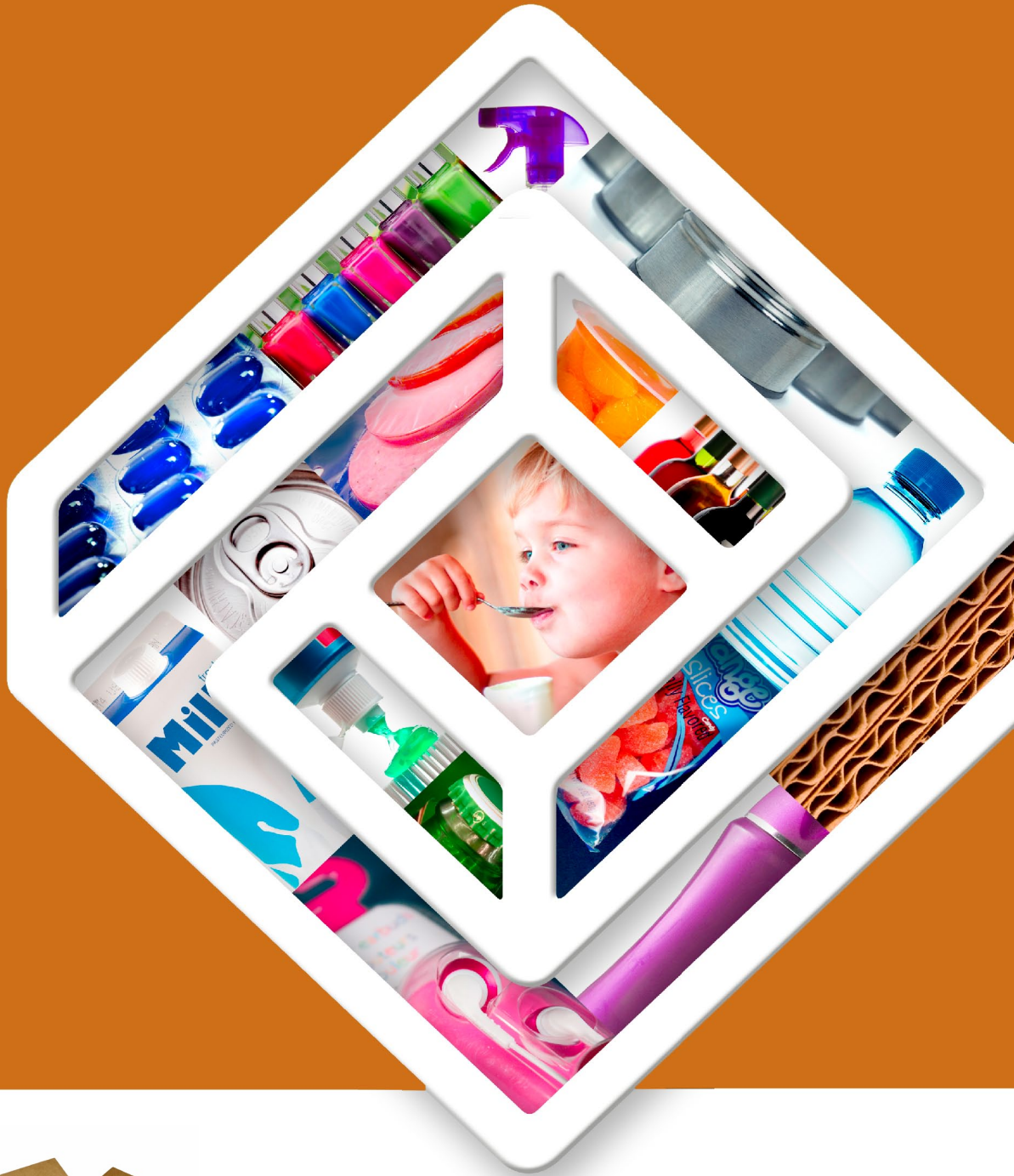


# Packaging:

At the Forefront of E-Commerce  
Growth & Sustainability



**AMERIPEN<sup>®</sup>**

American Institute for Packaging and the Environment

## Introduction



The size and pace of e-commerce (online sales) growth in the United States is staggering: Retailers reported e-commerce sales of \$263 billion in 2013, up 16.9% from 2012.<sup>1</sup> Also, the 200 million digital shoppers in America today spend an average of \$2,785 annually, up 25% since 2011.<sup>2</sup>

The ease, convenience, and comfort of shopping at home, along with the huge variety and competitive pricing found at many e-retailers, mean that strong growth is likely to continue. For reference, the U.S. Department of Commerce estimates that e-commerce today represents only 5.8% of total retail sales, providing plenty of room for additional expansion.<sup>3</sup>

## The Importance of E-Commerce in Local Communities

The growth of e-commerce presents a number of benefits to local communities: It provides local retailers, merchants, and manufacturers with a vastly larger pool of potential customers, leading to possible gains in employment, sales, and tax revenues. It can also expand local hiring and facilities growth by national and global logistics firms, as well as by local third party suppliers.

## The Roles of Packaging in E-Commerce

Because e-commerce typically involves direct-to-consumer delivery, packaging must perform a variety of critical jobs related to maintaining the expected value and functionality of the products contained within. For example:

- Primary and secondary packages contain the purchased product (a toy in a paperboard box or a jar of skin crème in a paperboard sleeve).
- Cushioning and stabilizing materials prevent damage, breakage, and spillage (Kraft paper, “packing peanuts”, air pillows, and bubble packing).
- The shipper or outer package contains all of the above and provides delivery and return information (corrugated boxes, high-strength envelopes, and mailers ).



## What is a Sustainable E-Commerce Packaging System?

Let's start with a definition: *Sustainable packaging delivers products in the condition expected by consumers, and does so with minimum economic, environmental, and social costs.*

This definition takes a “big picture” view by looking at the related impacts of both the delivered product *and* its packaging. The approach ensures that the full economic and environmental costs of e-commerce delivery systems are properly evaluated.

## Strategies That Promote Sustainability

### Primary and Secondary Packaging

One of the key strategies available to marketers is to look for potential savings related to reduced complexity in packaging materials for products sold through e-commerce versus traditional in-store channels. For example, e-commerce versions of products do not generally need:

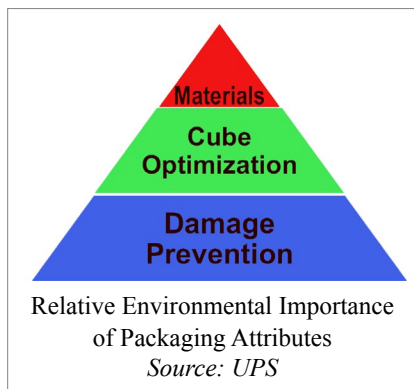
- Theft protection (e.g., blister packs).
- Large “footprint” for on-shelf merchandising appeal.
- Complex multi-material packaging designed to display specific product features (toy and electronics packaging).
- Secondary packaging (outer box or sleeve for cosmetic jars).

### Outer Packaging

Lifecycle studies by both industry and government <sup>4,5</sup> consistently draw the same conclusion: From an economic and environmental standpoint, *the most important role of packaging is damage protection*. Think about a \$1500, big screen television set: The cost-effective packaging that gets it safely from a warehouse in Omaha to a home in Orlando is most likely the best choice *regardless of the materials used*.

Tied to damage prevention is “cube optimization,” which ensures that packaging stacks for maximum efficiency during transport, handling, and warehousing. Cube optimization also minimizes product damage and energy consumption, thus playing a major role when assessing economic and environmental sustainability.





Finally, marketers and e-retailers must look at the materials to be used, the weight/volume of those materials, and their source reduction, reusability, and recycling/recycled benefits and opportunities – *in that order*.

Research confirms these conclusions. A study by the State of Oregon Department of Environmental Quality<sup>6</sup> indicates that:

1. Upstream impacts, including protection, are more important than downstream impacts related to recovery and other post-use considerations.
2. While recyclability and use of recycled content are important, using less in the first place (material reduction) is a higher priority.
3. Reducing box size and total fiber content can produce significant economic and environmental savings.

#### Innovation

Packaging suppliers are constantly looking for new ways to reduce the environmental impact of packaging. These include:

- Foams made from mushrooms and other agricultural-based resources that biodegrade and can be home composted.
- Bubble cushioning that can be inflated and deflated for multiple uses.
- Custom solutions that provide maximum protection with minimum materials on a per-shipment basis. (See last page.)

#### What Consumers Can Do

Given that e-commerce typically bypasses purchasing at traditional stores and puts more packaging in the hands of consumers, doing a few simple things (nicknamed “the 4 Rs”) can ensure that these materials do not end up in landfills:

- **Reduce and Consolidate Orders**  
Rather than order items individually, make a list and order multiple items from each e-retailer at the same time. This strategy reduces shipping fees, use of packaging materials, and energy consumption during transportation.



- **Reuse Packaging at Home**

Use boxes for storage. Save and reuse boxes and peanuts, cushioning, and air pillows for returns, gifts and items sent by mail, and sales made through online auction sites.

- **Return Packaging to Local Shipping Stores**

Many are happy to take back peanuts, pillows, and even boxes.

- **Recycle Corrugated and Other Materials**

Corrugated paper is a valuable commodity. Odds are, it can be recycled curb side, or taken to municipal recycling drop boxes and centers. Air pillows can also be recycled at many retail stores along with plastic films such as grocery and dry cleaning bags, bath tissue wrap, and bread bags.

#### Summary

**Packaging ensures that the ease, convenience, and cost savings that have fueled consumer demand and driven the growth of e-commerce can continue:**

- Packaging delivers \$260 billion worth of e-commerce consumer goods. Double digit growth is expected to continue in the foreseeable future.
- Packaging ensures that products reach recipients in peak condition, thus minimizing economic and environmental costs.
- Small businesses and other merchants are able to grow and benefit local economies, thanks to their ability to package and ship their goods anywhere in the world.

While it is in the best interests of marketers and retailers to constantly look for packaging systems that provide the greatest value with the least economic and environmental costs, there are also simple ways for consumers to help:

- Reduce and consolidate orders,
- Reuse packaging at home,
- Return packaging to local shipping stores,
- Recycle cardboard and other materials.





## Case Study: Reducing Packaging

One of the most pressing complaints faced by retailers is the issue of inefficient packaging. A major office supply chain and its e-commerce customers were frustrated that orders had to fit into standard size packages. This often meant that boxes were too large and thus had to be filled with many air pillows.

The solution turned out to be “on demand packaging” whereby containers are produced to handle specific orders. Instead of standard size boxes, each box is custom made for the order being shipped. The results are significant: corrugated usage declined by 15%, and air pillow usage was reduced by 60%.<sup>7</sup>



<sup>1</sup> Internet Retailer, *E-Retail Rolls in 2013*, February 18, 2014.

<sup>2</sup> Statista: <http://www.statista.com/statistics/183755/number-of-us-internet-shoppers-since-2009>.

<sup>3</sup> U.S. Census Bureau *E-Stats* and U.S. Department of Commerce.

<sup>4</sup> UPS presentation by Arnold Barlow, Senior Manager, *Sustainability Solutions: A Logistics Provider's Perspective on E-Commerce*, September 9, 2014.

<sup>5</sup> Oregon Department of Environmental Quality, *Life Cycle Inventory of Packaging Options for Shipment of Retail Mail-Order Soft Goods*.

<sup>6</sup> Ibid.

<sup>7</sup> Modern Materials Handling, *Smart Packaging, Happy Customers, Healthy Planet*, June 1, 2013



**AMERIPEN<sup>®</sup>**

American Institute for Packaging and the Environment

[www.ameripen.org](http://www.ameripen.org)

*When it comes to e-commerce growth and sustainability,*



**Packaging Delivers.<sup>™</sup>**

Published November 2014. AMERIPEN and the AMERIPEN logo are registered trademarks of the American Institute for Packaging and the Environment. “Packaging Delivers” is a trademark of the American Institute for Packaging and the Environment. All rights reserved. All other mentioned names of companies, products, and/or organizations may be trademarks or registered trademarks of their respective holders.

**DISCLAIMER:** This report was developed by an AMERIPEN working team consisting of packaging and materials management experts from across the public and private sectors. The conclusions and views expressed in this document do not necessarily reflect the views of every AMERIPEN member company or affiliate.

© 2014, American Institute for Packaging and the Environment. All rights reserved.

