



The Association for Packaging
and Processing Technologies



RECYCLED FIBERS • CORRUGATED FIBER BOARD • WRAP-AROUND • SHRINK WRAP • BLISS BOX • RSC

2014
SECONDARY
PACKAGING MARKET
RESEARCH STUDY

2014

11911 Freedom Drive | Suite 600 | Reston, VA 20190 USA

The Findings of a Market Research Study that Assess the Current
Use and Trends of Secondary / Transport Packaging



The Association for Packaging
and Processing Technologies

2014 Secondary Packaging Market Research Study

PMMI The Association for Packaging and Processing Technologies

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“The trend in secondary packaging – designers are looking for solutions to minimize use of fiber to reduce board thickness.”

– VP, Fibre Box Association

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Food



Beverage



Dairy



Personal
Care



Industry Experts,
Associations,
Universities



Material
Suppliers



Contract
Packagers



SECTION ONE

EXECUTIVE SUMMARY



“The cost savings equation to figure out is where do you look to find the best solution. Is it the primary packaging or are greater cost savings found in the secondary shipper?”

— Sr. Packaging Engineer, Leader in food packaging

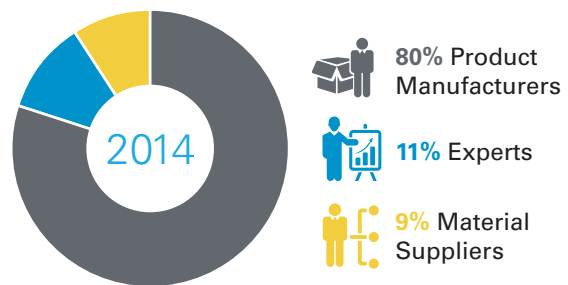
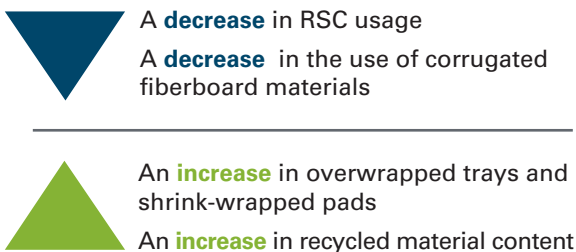
Secondary packaging engineers continue to look for cost savings wherever possible. Light-weighting materials, using more recycled corrugated board and reducing the volume of secondary packaging remains top of mind. The traditional role of secondary packaging has been to protect the primary package as it travels through the supply chain to its final retail destination. Secondary packaging is now playing a dual role and increasingly becoming a merchandising tool to attract consumers at the point of sale.

PMMI’s 2014 report on secondary packaging delivers up-to-date awareness on the trends that continue to drive change, how consumer package goods (CPG) companies are lowering overall packaging costs and what machine builders can expect in future end-of-line equipment needs.

The secondary packaging industry remains dynamic. The trends in 2008 and those identified in 2014 will continue to affect and influence decisions in the future.

WHAT WERE THE RESULTS BETWEEN 2008 AND 2014?





The 2014 Secondary Packaging Report summarizes interviews with 55 product manufacturers and industry experts. They provide insight into the unique challenges in the following industries; food, beverage, dairy, and personal care.







In 2008, all of the companies surveyed were making changes to reduce their costs in secondary packaging and achieve a higher sustainability rating – all to meet retail demands driven by consumer preferences. Six years later, nearly half of the participating companies have implemented those changes and don’t foresee making further changes.



TRENDS DRIVING CHANGE

 <p>Consumers</p> <p>Shoppers seek packages made from biodegradable, recycled and sustainable materials. <i>— Food Online, December 2013</i></p> <p>Consumer spending picks up again in July as confidence returns. Household spending reported from Visa Europe research shows spending has increased for the tenth month in a row since the end of 2013. <i>— This is Money.co.uk, August 2014</i></p>	 <p>Retailers</p> <p>Retailers, like club stores and dollar stores, demand more velocity-based packaging (the right number of packages per case) and shelf display containers. This requires greater equipment flexibility for faster changeover. <i>— Product Manufacturers Interviewed October 2014</i></p>	 <p>Packaging</p> <p>Use of flexible packaging is increasing in food and emerging in beverage and dairy. The stand-up pouch requires greater support from the secondary carton. Sometimes it requires new machinery. <i>— Material Suppliers Interviewed October 2014</i></p>	 <p>Raw Materials</p> <p>Rising oil prices partnered with breakthroughs in printing suggest eco-friendly packaging may replace PET. Paperboard is gaining popularity and function-ability in food packaging due to the feasibility and cost-effectiveness to print on heavy weight and glossy materials. <i>— Food Online, January 2014</i></p>
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CONSUMER BUYING HABITS DRIVING CHANGE

 <p>Huge growth in e-commerce</p> <p>=====</p> <p>Increase in corrugated usage ▲</p>	<p>“There's huge growth in e-commerce globally, outside the U.S. secondary packaging is subject to packaging fees.” <i>— Industry Expert</i></p> <p>“Promotional packages for end panels are being reused by customers and need to be more durable.” <i>— Packaging Consultant</i></p>
 <p>More retail-ready secondary packaging; taken directly from pallet to shelf</p> <p>=====</p> <p>Decrease in RSC ▼</p>	
 <p>Secondary displays for in-store promotions</p> <p>=====</p> <p>Increase in corrugated usage ▲</p>	
 <p>Flexible packaging continues to increase in food production</p> <p>=====</p> <p>Increase in corrugated usage ▲</p>	

1.2



RETAILERS DRIVING CHANGE

 <p>Walmart Save money. Live better.</p>	<p>Score Card Points</p>		<p>Light weighting Sustainability Environmental stewardship</p>
	<p>Reduce In-Store Labor</p>		<p>Increased product protection Shelf-ready Variety of pack counts (smaller and larger)</p>
	<p>Get More Product on the Shelf</p>		<p>Multi-packs Greater product visibility Product security Smaller sized packages</p>

“The Walmart score card remains the bottom-line driver.”
— Professor, Packaging

PRIMARY PACKAGING DRIVING CHANGE

 <p>45%</p>	<p>Food Companies said: • flexible packaging continues to increase which requires greater strength from the secondary carton</p>
 <p>50%</p>	<p>Beverage Companies said: • light-weighting primary package • moving away from glass to plastic or cans • new product introductions in-the-works</p>
 <p>80% 60%</p>	 <p>Dairy and Personal Care Companies said: • no change to primary packages</p>

“Light-weighting primary packages requires better support from secondary packaging.”
— President, Material Supplier

RAW MATERIALS

A timely article from *Food Online*¹ states that due to the rising costs for upstream suppliers and an increased demand for shipping, the prices of paper and packaging products are rising. The price of corrugated boxes is expected to rise at an annualized rate of 3 percent through 2017. This will force CPG manufacturers to take a closer look at both their operations and suppliers.



The price of corrugated boxes is expected to rise at an annualized rate of 3 percent through 2017.

“Industries are using more corrugated open- and shrink-wrapped trays whenever possible.”
— Packaging Consultant



ADVANCEMENTS IN CORRUGATED MANUFACTURING

SAME ECT WITH LESS MATERIAL

Nearly half of the surveyed CPG companies specify the percentage of recycled fiber content in their corrugated board and even more specify the strength requirements through edge crush tests (ECT). The Mullen burst test is another way to measure corrugated strength.

In the 2008 report, 52 percent of participating companies were encountering machine problems when using corrugated materials with higher levels of recycled fibers. Even though the trend continues to use more recycled fiber content, two out of three CPG companies today report less downtime on end-of-the-line machinery because of the additives that are strengthening recycled corrugated material resulting in less failure.

Additionally, improved packaging equipment can now better handle thinner board, variations in recycled content along with improvements in printing, gluing and cutting.

- **Increasing recycled content**
- **Achieving stronger ECT:** corrugated is achieving higher crush strength scores using down weighted corrugated and less materials
- **Producing lighter gauge** without much failure due to advances with materials
- **Increasing material cost**

Despite the advances in materials and machinery over the past years, one out of three companies interviewed still struggle with the variation of recycled fiber content from corrugated suppliers, because it requires adjustments to their equipment to achieve optimal performance.

- Strength issues continue to cause problems with inconsistent scoring, warping and ultimately increased product damage
- Higher porosity levels are affecting print clarity causing substandard shelf appearance
- Foreign particles are setting off metal detectors during the inspection process



One out of three companies interviewed still struggle with the quality variation of recycled fiber content from corrugated suppliers.

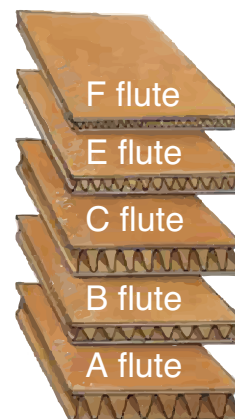
However, market dynamics play into how much recycled content is acceptable and logical. The level of recycled content is not to blame for all the issues; it's usually a combination of factors like transportation methods, supply chain handling, distance traveled and environmental conditions along the way.

1.4

PROCESSING METHODS OF CARTON STRENGTH

Over decades, corrugated board has evolved and developed to provide a wide range of products for different applications. Standard and non-standard categories of corrugated board are based on the type of flute, whether coarse, fine, or extra fine and the number of fluted walls whether single, double, or triple layered.

- High Pressure - Tightly compressed cardboard
- Cross linking - Change the fiber direction
- Laminated - Dual core board
- Additives - Improve the fiber adhesion



“The corrugated manufacturing business is improving liner and media combos to be structurally adequate — achieving the same ECT with less material.”

— *Packaging Manager, Manufacturer of Natural and Organic Products*

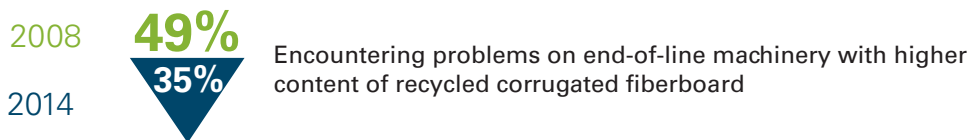
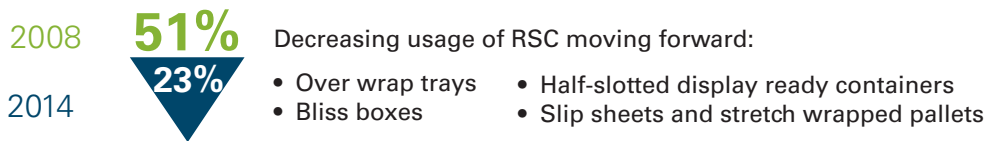
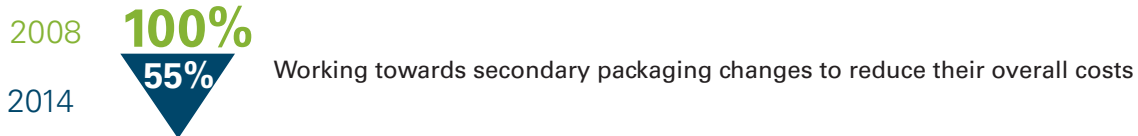


CHANGES IN USE OF SECONDARY PACKAGING: 2008-2014

Between 2008 and 2014, not only did many companies change how they used secondary packaging, they also altered the types of secondary packages used to protect their products. Because of this, fewer companies are making changes.



Secondary packaging shields and protects the product during transport and prevent wasteful loss



Secondary packaging increasingly used to attract consumers at the point of sale

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TRENDS DRIVING CORRUGATED USAGE

Reduction of materials is part of the supply chain optimization, but there are reasons why the use of corrugated board is both increasing and decreasing.

REASONS FOR THE DECLINE IN USE:

- Reduce transportation costs
- Right-size packaging
- Retail demands for shelf-ready trays
- Light-weighting materials
- Rising corrugated costs causing a switch to boxboard wherever possible
- Removing pads or trays to shrink wrap only

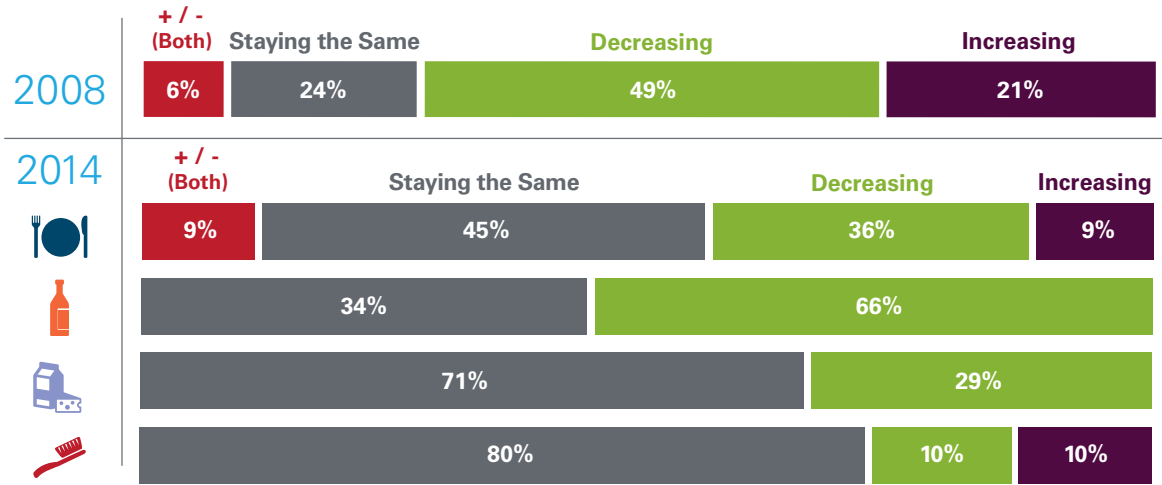
REASONS FOR THE RISE IN USE:

- Huge growth in e-commerce
- Secondary displays for in-store promotions
- Protection of flexible primary package
- Increased sales due to consumer spending



CHANGES IN CORRUGATED USAGE BY INDUSTRY

Over the last six years, the predicted decline of corrugated usage in secondary packaging has occurred. The primary product dictates that some markets are both increasing and decreasing their corrugated usage.



METHODS TO LOWER OVERALL COSTS IN SECONDARY PACKAGING



- No superfluous material
- More gap flap styles being used
- Thinner liner board, light-weighting
- Down gauging film-based materials
- Reduction in the use of corrugated



- More recycled content in grey board



- Tighter packages and less head space
- Use of trays to comply with shelf-ready requests



- Better cube utilization
- Pallet optimization

ADDED VALUE FROM MACHINE BUILDERS

CPG manufacturers are challenged in the years ahead to meet and fulfill the variety of retail demands that are ever changing, reduce costs everywhere or at least not increase costs, and chose materials to achieve package sustainability.

In pursuing these goals, manufacturers look to build a stronger collaboration with machine builders and material suppliers to optimize machine performance and material selection. They are asking suppliers to become more familiar with the specific and often unique manufacturing needs in each industry to better match machine solutions to the application. Machine builders can become a value-added partner by fostering open forums to discuss innovation and share packaging efficiencies to advance the entire packaging industry.

In addition, product manufacturers want machine builders to provide technically trained staff and machinery that is easy to use. This is critical for training and accommodating the differences in operator abilities.



“We have used the same equipment for a long time and need to make equipment adjustments when using increased levels of recycled fiber content because of performance issues, like diminished strength, print appearance, gluing adhesion and foreign speckles.”

— Director Packaging Technology, Beverage

BUILD CLOSER RELATIONS WITH CUSTOMERS BY KNOWING THEIR SPECIFIC INDUSTRY NEEDS

ACTION

Form stronger, closer partnerships with end users, know their industry
Greater collaboration: film manufacturers, machinery manufacturers and corrugated manufacturers
Open forums to discuss innovation
Provide staff with higher level of technical skills
Share packaging efficiencies
Flexible equipment with good training



OUTCOME

Knowledge of specific industry needs. Monitor optimal machine performance through on-site visits
Advance technologies in new machine design and materials to reduce overall costs
Ensure package design will work with the best material selection at the lowest cost
Machine solutions that match the application
Become a value-added partner
Accommodate the difference in the quality of operators and the variability of recycled corrugated board

1.7

SECONDARY PACKAGING OF THE FUTURE

- Additives like synthetic starches and composite materials will strengthen recycled corrugated board
- Light-weighting will continue
- Increased use of sensors and 2D data matrix codes will be used on secondary packaging for greater traceability
- Generic packaging and commonality in box sizes and future box styles yet to be designed
- Off-line printing as shelf-ready packaging increases
- Reusable or returnable containers, even at the consumer level

LOOKING AHEAD

Nearly half of the CPG companies surveyed say the types of secondary packaging in use will remain stable and therefore the level of corrugated board used will, generally, stay the same in the near future. Although with a predicted 3 percent rise¹ in corrugated material costs in the years ahead, CPG companies will continue to look for ways they can cut their costs, whether it be with the primary package or the secondary package.

Technology advances in machine automation, robotics and bio-polymer materials will continue to change the face of packaging. Secondary packaging will become more instrumental in the tracking process as track-and-trace regulations continue to drive innovation with smarter and smaller sensors, increased use of 2D data matrix codes and broader use of scanning technologies.

Sources and References

¹Escalating Costs of Paper & Packaging Will Force Manufacturers to Modify Operations, *Food Online*, 2014.



HERE'S WHAT YOU WILL LEARN IN THE FULL REPORT



What's trending in secondary packaging by market?



Will shrink wrap overtake corrugated board?



How is reuse and recycle changing secondary packaging?



What consideration is given to corrugated pallets?



Which industries will need new end-of-line equipment?



Why are end users asking for greater collaboration from machine builders?



What is the future growth of the global corrugated market?



What are the expectations for future machine design to reduce costs and improve throughput?



How will secondary packaging change in the next five years?

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