

*Using Plastic  
Reusable Packaging  
To Go Green*



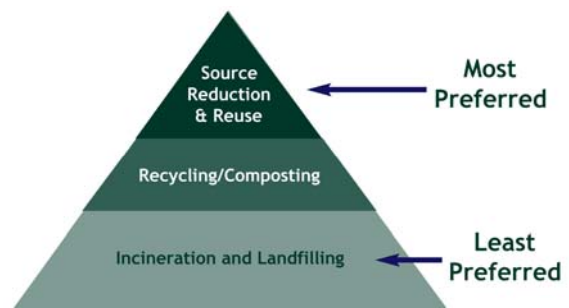
## Going Green

### World Class Companies Strive for Sustainability Across the Supply Chain

As leading companies continue to refine their environmental practices to drive sustainability, they scrutinize every point in their supply chain, including the packaging used to move, handle or store their product, for opportunities to make positive environmental impacts.

### Plastic Reusable Packaging Supports Environmental and Sustainability Initiatives

The use of plastic reusable packaging effectively stops waste at the packaging source to prevent the entry of disposable packaging in the solid waste stream. The long service life of reusable containers and pallets allow them to be used over and over again in place of single-use corrugated boxes and limited-use wood pallets. When compared to single-use or disposable packaging, reusable packaging enables significant "source reduction".



Source: Environmental Protection Agency

### Sustainability Defined

The Environmental Protection Agency (EPA) defines "sustainability" as the "ability to achieve economic prosperity, while protecting the natural systems of the planet and providing a high quality of life for its people." The EPA established three tenets of sustainability: economic, social and environmental. ORBIS helps today's global companies support these tenets of sustainability with reusable packaging.

According to USA Today, Wal-Mart says it will reduce solid waste from its US stores by 25% within 3 years and vows to cut greenhouse gas emissions by 20% within 7 years. In addition, Wal-Mart realized it can save hundreds of millions by cutting transportation costs with a more optimized shipping fleet. <sup>7</sup>

Ford Motor Company recently renovated its historic River Rouge plant into "one of the most environmentally sound factories in the world." <sup>8</sup> In 1999, Bill Ford Jr., then Ford Motor Company Chairman of the Board, proposed to overhaul the entire Rouge complex. Re-establishing the environmental spirit his great-grandfather, Henry, had instilled in the company, Bill Ford set out to "lay the groundwork to transform a 20th century industrial icon into a model of 21st century sustainable manufacturing." <sup>9</sup>

## **What Makes Packaging Sustainable?**

The Sustainable Packaging Coalition has defined criteria for sustainable packaging. It states that to meet sustainability requirements, packaging must:

- Be beneficial, safe & healthy for individuals and communities throughout its life cycle
- Meet market criteria for performance and cost
- Sourced, manufactured, transported, and recycled using renewable energy
- Maximize the use of renewable or recycled source materials
- Be manufactured using clean production technologies and best practices
- Be made from materials healthy in all probable end of life scenarios
- Be physically designed to optimize materials and energy
- Be effectively recovered and utilized in biological and/or industrial cradle to cradle cycles

By design, plastic reusable packaging products meet most sustainability requirements and strongly support the three tenets of sustainability.

## **How does Plastic Reusable Packaging Impact the Three Tenets of Sustainability?**

Economic impacts:

- Reduces Packaging Costs: One computer manufacturer was spending more than \$1.7M/year in single-use packaging. It estimated that with a \$187,500 investment in reusable bulk containers and dunnage, it saved approximately \$1M/year in packaging.
- Generates Rapid ROI: Check Printers (Nashville, TN) implemented reusable containers and experienced a financial payback within just 9 months, with a Return on Investment of over 430%, over a 5 year service life.
- Reduces Costly Product Damage: General Electric Appliance (Louisville, KY) reduced damage to inbound component parts by 85% after implementing reusable containers.
- Reduces Labor Costs: With small-lot packaging implemented at their assembly lines, Ford saved up to 3 feet of walking distance for each part, equating to 54 hours per year or 1.35 man weeks. <sup>1</sup>
- Reduces Inventory/Space Requirements: CAMI Automotive cut inventory up to 40% with reusable packaging and related process improvements. <sup>2</sup> Another manufacturer implemented reusable containers and pallets and re-allocated 20,000 square feet of production space.

Social impacts:

- Fully Recyclable: Reusable packaging is designed to be fully recovered and reprocessed into other useful products at the end of its service life.
- Improves Workplace Safety: Worker injuries at CAMI Automotive (lacerations from opening boxes and strains from lifting heavy or awkward loads) were reduced after converting to reusable packaging in the late 1990s. <sup>2</sup>

- Improves Workplace Efficiency: At Daimler-Chrysler's Belvidere, IL plant, line-side assembly areas were reduced by 270 ft, resulting in less worker walk-time. Parts handling was also reduced by 27%. <sup>3</sup>

Environmental impacts:

- Prevents waste from entering solid waste stream
- Reduces Greenhouse Gas Emissions: Franklin Associates studied the life cycles of two types of containers (single use and reusable) to identify and quantify energy and material inputs and emissions to the air, water, and land over the life cycle of a product system. (cradle to grave) In this Lifecycle Inventory Study, Franklin Associates found that the use of reusable containers reduced greenhouse gas emissions by 39%. <sup>5</sup>
- Improves Transportation Efficiency, resulting in fewer trips and reduced fuel costs: CAMI Automotive increased truckload cube utilization on inbound trucks to 85% - 90%, with reusable packaging. <sup>2</sup>
- Supports Source Reduction: Reusing items is another way to stop waste at the source because it delays or avoids that item's entry in the waste collection and disposal system. <sup>6</sup> According to the Lifecycle Inventory Study, reusable packaging produce 95% less total solid waste <sup>5</sup>
- Requires Less Energy: According to the Lifecycle Inventory Study, reusables require 39% less energy over their service life. <sup>5</sup>

### **Collaboration is the KEY to Getting Started with Reusable Packaging**

How much time is spent on packaging? According to the Ohio State University Supply Chain Management Research Groups' 2003 Survey of Career Patterns in Logistics, logistics professionals have a 60% degree of authority over packaging, but spend just 5% of their time on it. <sup>10</sup>

According to John Anderson of Ford Motor Company, "Packaging cannot be considered as an end in its own right. It exists as part of the material system (supply chain) and must be engineered with that in mind." <sup>11</sup>

A well-planned plastic reusable packaging program requires expertise and an in-depth understanding of the specific operation, the entire supply chain and the marketplace trends that face the company. Careful collaboration with an experienced reusable packaging provider will ease integration.

1. **ANALYZE** The process should begin with a careful analysis of the entire operation and supply chain to identify the product/material flow, the packaging application (work-in-process, storage, distribution, etc.) and packaging objectives (protection, improved transportation efficiencies, etc.)
2. Before a reusable packaging decision can be made, it is important to demonstrate and **PROVE** how the packaging and related support services translate into measurable efficiencies. The

potential return on investment can be calculated. Metrics like time, cost reductions, safety, cleanliness and warehouse utilization are documented for benchmarking.

3. Next is **DESIGN**....After discovering the specific needs of the entire operation, a comprehensive reusable packaging program is planned. The objective is to optimize the supply chain whenever and wherever possible. To validate the solution, a pilot packaging program is conducted.
4. **IMPLEMENT** Once the reusable packaging program is planned, the specific packaging is delivered and seamlessly integrated into the system. Leading packaging partners oversee the entire implementation to ensure long-term system success. (i.e. automated equipment interface, worker acceptance, proper handling, etc.)
5. It doesn't end there. Supply chain systems are dynamic and the packaging programs that support them must **EVOLVE** with them. New product launches, quality improvements, changing production processes and new labor practices may require new and more innovative packaging. Experienced packaging providers will continually re-evaluate for future opportunities for optimization.

## What are the Challenges?

### *Stakeholder Acceptance and Endorsement*

As with any supply chain based project, the true success of the reusable packaging program depends on stakeholders across the supply chain embracing the benefits.

Forty-six percent of supply chain executives cited resistance to process change as the major factor that will impede their supply chain performance. <sup>12</sup>

Although it's possible to physically implement reusable packaging rapidly, but the biggest pitfall is lack of acceptance from people who are affected by the change.

Packaging is one of the few areas that impact almost every function in an organization. All of the people who touch the part or package should be represented and educated as part of implementation. Experienced packaging providers are available to provide on-site support to help plan and facilitate a smooth and most cost-efficient transition.

In most organizations, accomplishing this involves planning, training and testing to ensure that all the players embrace the new processes and work effectively with the new system.

### *Initial investment*

The initial investment in plastic reusable packaging is different than the simple purchase of traditional packaging like corrugated boxes and wood pallets. A cost analysis

conducted for one major tier one automotive supplier cited that with a \$448,000 initial investment, they would experience a return on their investment in just 4-5 months. Additionally, they would reduce line-side space requirements by 44% and eliminate 280 tons of waste!

Check Printers, of Nashville, Tenn., realized that the one-time use corrugated boxes could be replaced by reusable plastic containers with a long service life. In fact, when initially implementing 7,000 plastic containers in their operation, financial payback occurred within just 9 months, with a Return on Investment of over 430%, over a 5 year service life.

If the initial investment is a concern, companies may be able to achieve immediate, significant savings by leasing or pooling their packaging. Leasing enables the usage of reusable packaging without an up-front investment. Operating leases are available in 36- or 48-month terms. Companies can achieve all the benefits of reusable packaging without adding debt, assets or capital expenditures to their balance sheet.

## **Overcoming the Challenges**

### *Begin with a pilot program*

Depending on your organization, it often is beneficial to start your reusable packaging roll-out with a pilot program, then learn from it, adjust the process and take the next step. By choosing to begin with a specific supplier, production line or delivery route, the organization can adjust operations gradually while still seizing the cost-savings opportunity. Moving step by step gives employees a chance to adapt to the new process, and see visible signs of success that builds momentum and preserves morale.

### *Involve Suppliers and Share the Savings*

Multiple players in the supply chain are affected by a change to reusable packaging. To achieve a smooth transition, it is important that suppliers understand how the change benefits them. It's only reasonable to allow suppliers some economic benefit if they are expected to convert to reusable packaging, and the best way to come to agreement is to share an honest perspective of why the change makes financial sense. Freight and handling charges, reverse logistics, container management and tracking are among the issues that should be addressed with suppliers.

### *Manage Packaging for Long-Term Benefit*

Once they implement reusable packaging and reap the immediate benefits, some organizations can become complacent about following the procedures that sustain long-term value from their packaging investment. Collaborating with an experienced reusable packaging provider will ensure long-term success. Leading providers will continue to evaluate your system for additional benefits. For example, they can provide services to track the use of reusable packaging in the operation to ensure that the system is providing the right amount of packaging to the right supplier or customer locations, at the right

time. Or they can coordinate washing or sorting services, oversee any equipment changes and address other issues necessary to manage the program.

### *Plan Ahead*

Don't wait until the last minute to consider the packaging portion of the supply chain equation. It's important to start planning the packaging and pursuing potential supply chain impact as soon as a change is anticipated. Be sure to allow time to test prototypes of the containers in the supply chain, and to work with and adjust various areas of the plant to facilitate the flow of goods. In order to maximize the line-side use of a hand-held reusable tote, for example, be sure to consider material handling needs, such as leaving enough space for containers to be delivered to the line by the appropriate equipment. If line-side space is configured too tightly, it can interrupt the movement of goods to the line. And, plastic containers and pallets should be tested to ensure they interface with high-speed automated equipment, to ensure ease of use.

### **About ORBIS**

ORBIS Corporation, a subsidiary of Menasha Corporation, helps world-class customers move their product faster, safer and more cost-effectively. ORBIS uses proven expertise, industry-leading knowledge,



innovation, superior products (containers, pallets and dunnage) and supply chain services (pooling, cleaning and logistics) to implement plastic reusable packaging systems.

Specifically, ORBIS plastic containers and pallets are used for work-in-process, storage and distribution applications within the supply chain. They are ideal for multiple trip applications in a closed-loop environment. They can also be used effectively in a managed open-loop system, with reverse logistics in place

to return empty packaging for re-use or replenishment.

### **ORBIS' Focus on Recyclability**

At the end of their service life, plastic reusable packaging products can be fully recycled into other useful products. ORBIS provides its customers with an alternative to the disposal of excess, surplus, damaged or obsolete plastic reusable packaging, with its "[Recycle with ORBIS](#)" program. This program is designed to efficiently recover, recycle and reprocess plastic packaging products at the end of their service life. ORBIS purchases or provides credit towards a future purchase, in exchange for excess plastic packaging. Customers use visit the "[Recycle with ORBIS](#)" section of the web site to expedite the recycling process.

With strong industry, supply chain and application experience, ORBIS experts strive to support customers' environmental initiatives. Using a proven approach, ORBIS professionals analyze their customers' systems, design a solution and execute a reusable packaging program for long-term cost savings and environmental sustainability.

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