Reusable Supply Chain Packaging and the Circular Economy

Presented by:
Bob Petersen
VP, Marketing and Product Management
ORBIS Corporation
Reusable Packaging: Defined

Reusable assets that move, store, handle and stage product in the supply chain and circular economy, across all industries. Designed to travel in a loop.
The Move to a More Circular Economy

Source: Coda Plastics
Why Reusable Packaging for the Supply Chain?

1. Drives sustainable supply chains and a circular economy
2. Reduces waste
3. Cuts automation downtime
4. Optimizes labor
5. Keeps plants and equipment clean
6. Optimizes transportation
Why Now?

Today’s consumer cares about buying from sustainable brands and that includes the supply chain.
% who agree that they would pay more for eco-friendly products

- **Gen Z** (16-21): 58%
- **Millennials** (22-35): 61%
- **Gen X** (36-54): 55%
- **Baby Boomers** (55-64): 46%

*Source: GlobalWebIndex Q2 2018  Base: 111,899 Internet Users aged 16-64*
% of Eco-Conscious Consumers who say they expect the following from an eco-friendly product

- 81% To do the least damage to the environment in general
- 74% Made from recycled/sustainable materials
- 68% To be cruelty-free in general
- 55% Made using ethical labour and sourcing practices
- 52% To be affordable

Eco-Conscious Consumers are defined as those who say that concern for the environment affects their day-to-day purchase behavior.

Source: GlobalWebIndex July 3rd - July 10th 2018  Base: 277 (UK) & 257 (U.S.A.) Eco-Conscious Consumers aged 16-64
TOP SUSTAINABILITY PURCHASING DRIVERS

Global Respondents vs. Those Willing To Pay More*

- The products are made by a brand/company that I trust: 62% (72% increase)
- The product is known for its health & wellness benefits: 59% (70% increase)
- The product is made from fresh, natural and/or organic ingredients: 57% (69% increase)
- The product is from a company known for being environmentally friendly: 45% (58% increase)
- The product is from a company known for its commitment to social value: 48% (56% increase)
- The product’s packaging is environmentally friendly: 41% (53% increase)
- The product is from a company known for its commitment to my community: 41% (53% increase)
- I saw an ad on TV about the social and/or environmental good the product’s company is doing: 34% (45% increase)

*Note: Key sustainability purchasing drivers were categorized as either "very heavy influence" or "heavy influence" by the indicated percentage of respondents.
Source: Nielsen Global Survey of Corporate Social Responsibility, Q1 2015
Typical Reusable Tote Application

Application:
• 60,000 reusable totes
• Made with recycled content
• Replacing fiber corrugated fleet
• 6 trips/year
• 8 year tote life
• 22 lb tote load
• 300 mile trip
• Separate backhaul trip
• 90% recycle rate at end-of-life

Reduce Energy Usage by 31%
Reduce Solid Waste by 79.5%
Reduce GHG by 38.3%
Typical Reusable Pallet Application

Application:
- 3,000 reusable pallets
- Replacing wood fleet
- 4% replacement rate
- 6 trips/year
- 8 year pallet life
- 700 lb pallet load
- 300 mile trip
- Backhauled at time of delivery
- 90% recycle rate at end-of-life

Reduce Energy Usage by 71%
Reduce Solid Waste By 72%
Reduce GHG by 3.21%
Case Study: Cosmetic Packaging

- **Goal:** Waste reduction related to wood pallets and tier sheets
- **Result:** Better worker handling, streamlined automation and reduced waste
**Environmental Analysis Pallet**

**ENERGY**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Consumed</td>
<td>181.37 Million BTU's</td>
<td>685.63 Million BTU's</td>
</tr>
</tbody>
</table>

**SOLID WASTE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Waste</td>
<td>1.72 Tons</td>
<td>6.17 Tons</td>
</tr>
</tbody>
</table>

**GREENHOUSE GAS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 Equivalents</td>
<td>10.66</td>
<td>10.56</td>
</tr>
</tbody>
</table>

---

**PROPOSED PACKAGING IMPROVEMENT OPPORTUNITY**

**ENERGY**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement</td>
<td>71.55%</td>
<td>476.27 Million BTU's of Energy Saved</td>
</tr>
</tbody>
</table>

**SOLID WASTE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement</td>
<td>72.89%</td>
<td>4.45 Tons of Solid Waste Saved</td>
</tr>
</tbody>
</table>

**GREENHOUSE GAS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement</td>
<td>3.21%</td>
<td>0.35 Tons of CO2 Equivalents Saved</td>
</tr>
</tbody>
</table>

---

**Pallet Environmental Results**

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (million BTU's)</td>
<td>Production:</td>
<td>Use:</td>
</tr>
<tr>
<td></td>
<td>78.25</td>
<td>30.16</td>
</tr>
<tr>
<td></td>
<td>2.41</td>
<td>4.69</td>
</tr>
<tr>
<td></td>
<td>66.55</td>
<td>5.97</td>
</tr>
<tr>
<td></td>
<td>189.37</td>
<td>665.63</td>
</tr>
<tr>
<td>Difference</td>
<td>-476.27</td>
<td>-4.45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Plastic Pallet</th>
<th>Wooden Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Waste (tons)</td>
<td>Production:</td>
<td>Use:</td>
</tr>
<tr>
<td></td>
<td>0.31</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>0.58</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>0.79</td>
<td>1.77</td>
</tr>
<tr>
<td></td>
<td>10.63</td>
<td>10.96</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.35</td>
<td>-0.55</td>
</tr>
</tbody>
</table>

---

**Energy (Million BTUs)**

- **Plastic Pallet**: 700
- **Wooden Pallet**: 500

**Solid Waste (Tons)**

- **Plastic Pallet**: 10
- **Wooden Pallet**: 15

**Greenhouse Gas (Tons of CO2 Equivalents)**

- **Plastic Pallet**: 10
- **Wooden Pallet**: 15
The Key to Getting Started – Holistic View of the Supply Chain

- Analyze
- Design
- Prove
- Implement
- Evolve
Now is the Time

2/3 of customers are willing to pay more for sustainable products. 88%

More than 3/4 of consumers expect businesses to be supporting efforts to stop climate change.

9/10 consumers expect businesses to do more than just turn a profit. Percentage of customers who would stop buying a product if they learned of irresponsible business practices.

For more information:

Speaker email: bob.petersen@orbiscorporation.com
Website: www.orbiscorporation.com
Or visit MODEX Booth 8419