

Optimizing Global Operations Through Packaging

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Supply Chain Optimizers

- Founded in Toronto in 1985
 - Have completed over 500 packaging projects
- Staffed with logisticians + packaging engineers
 - Seven are affiliated with universities so our training ability is very high
- Linked to similar consulting firm in Shanghai
- Partner with many 3PLs including two of global top 10
 - SCO supports them with packaging expertise

Basic Premise

- The shipping case or bag is the lowest echelon building block in the supply chain
 - impacts handling, storage, freight, damage
- Packaging optimization focus is on holistic supply chain between shippers & receivers
 - opportunity comes from correlating packaging, warehousing, transportation for lowest total cost between members

Supply Chain Issue

- Shipping case size, strength and shape decision is typically made by:
 - Engineering
 - Quality Control
 - Manufacturing
 - Corporate Packaging
 - Research & Development
 - Marketing
 - Corrugate Supplier
 - Plant Management
- *The costs show up in Logistics which is usually not involved in this decision*

Optimization Approach

- Considers all engineering aspects but focuses on total supply chain impact
 - Eliminating carton void uses less packaging material
 - More cases/pallet makes both handling & storage more efficient
 - Increased density lowers freight cost by getting more cartons into same space

International Considerations

- Long ocean freight move really multiplies cost impact
 - International air freight even more expensive
 - Much bigger environmental impact
- European manufacturers are quite advanced in packaging optimization
 - Asian suppliers are very under-educated
 - Lack of virgin pulp in Asia
 - Double & Triple wall boxes are the norm

Wal-Mart Example

Kid Connection Toys

Improving packaging on 200 private label toy products generated first year savings of:

- 3,425 tons of corrugated materials
- 5,190 trees
- 727 ocean containers from Asia
- 1,358 barrels of oil
- **\$3.5 million in transportation costs**



- Freight forwarding & warehousing division of A.P. Moeller-Maersk – world's #1 ocean carrier
- 10,000 employees - 280 offices - 90 countries in Africa, Asia, Australia, Europe, North America, Middle East, and Latin America
- Major focus on large retailers such as Target, Wal-Mart, Home Depot, Macy's, J C Penney, Marks & Spencer, Danish Supermarket Group

Damco Viewpoint

“Changing package characteristics and packaging practices can remove cost. A simple step such as reducing box height by two centimetres may save money on the box, transport, warehousing and possibly even on damaged goods. Packaging optimisation almost always contributes positively to reduce climate and environmental footprint.”

- Erling Nielsen - Global Head of Supply Chain Development

Damco & SCO

- SCO is part of Damco's 'GreenLogistics' offer
- Both companies are widely recognized for extensive international experience
 - Joint presentations to many global clients
 - Programs in Buenos Aires, London, Rotterdam, Stockholm, Copenhagen, Toronto & Calgary
 - Plans for India, China, Viet Nam, Singapore
- Damco's *Supply Chain Carboncheck* tool helps clients reduce logistics carbon footprint



RG Barry Background

- **\$125m Slippers and Casual Footwear (middle market wholesaler)**
- **Publicly traded – DFZ**
- **Major Brands – Dearfoams, EZ Feet and numerous private labels.**
- **30m units sold annually**
- **Key accounts include:**
 - Wal-Mart, Target, Kohl's, JC Penney, Macy's
- **Approximately 60% market share in US.**
- **Business model**
 - 30% Weekly replenishment (make to stock)
 - 70% holiday gift program (make to order)

From a supply chain perspective the “nickels & dimes” matter greatly!



Timing is everything !!

The Situation

- ✓ In the midst of a business turnaround.
- ✓ Footwear industry already moved to China.
- ✓ Deflationary pricing model at retail.
- ✓ Shrinking gross margins.
- ✓ Rising SG&A.

Internal Issues

Several Complications

- ✓ Largest competitor sourced 100% from China & winning business based on price
- ✓ Department stores were losing to Mass Merchants.
- ✓ Wal-Mart & Target considering buying slippers direct from China.

External Issues

The Resolution

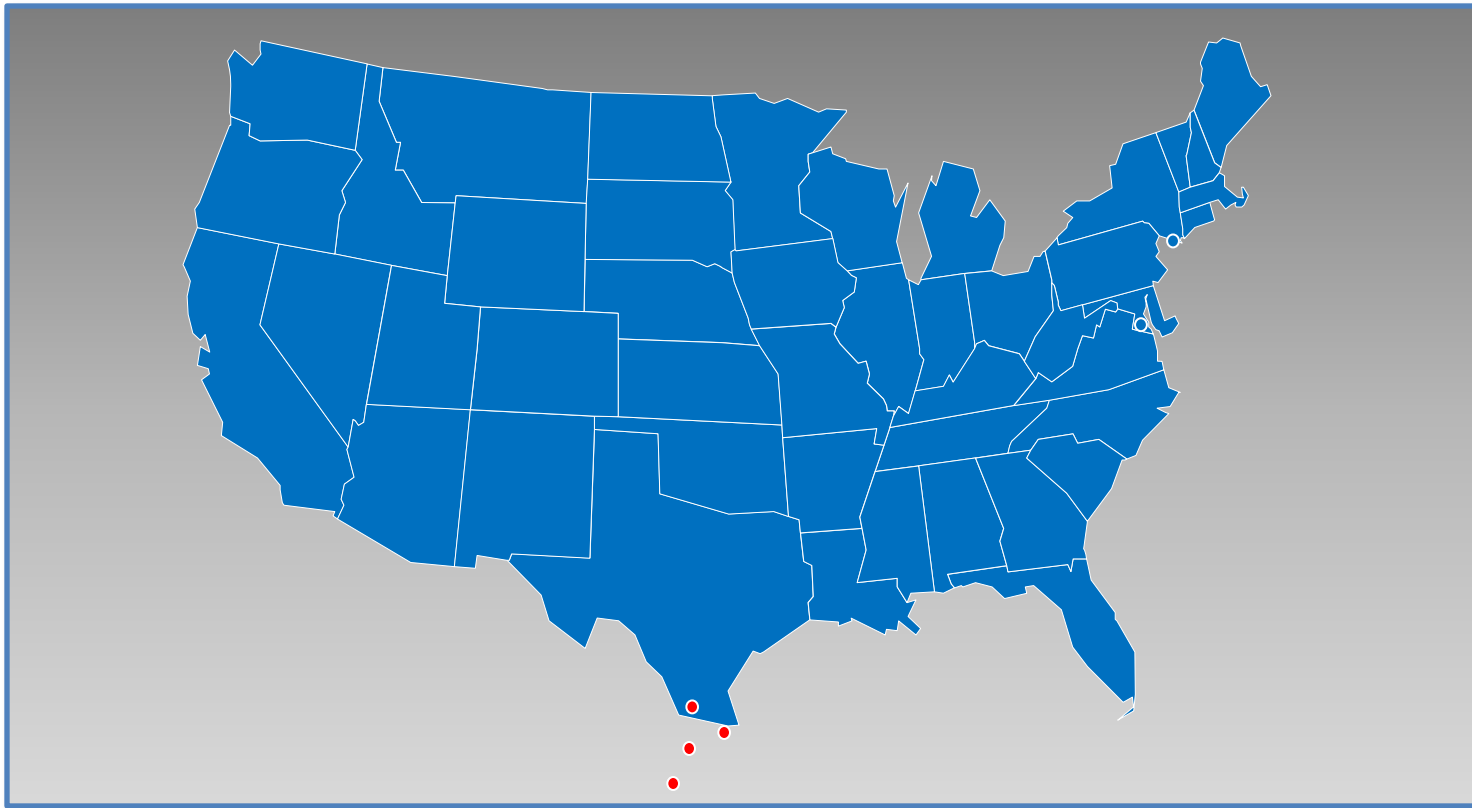
- ✓ Closed 2 manufacturing facilities in Mexico.
- ✓ Closed 1 distribution center in Mexico.
- ✓ Sourced 100% of production to China.
- ✓ Outsourced US distribution.
- ✓ Developed a global supply chain strategy

Strong Appetite for Change !!



Legacy Supply Chain

Moved from.....a regional and high cost supply chain



- High fixed costs related to manufacturing and distribution
- Low freight spend

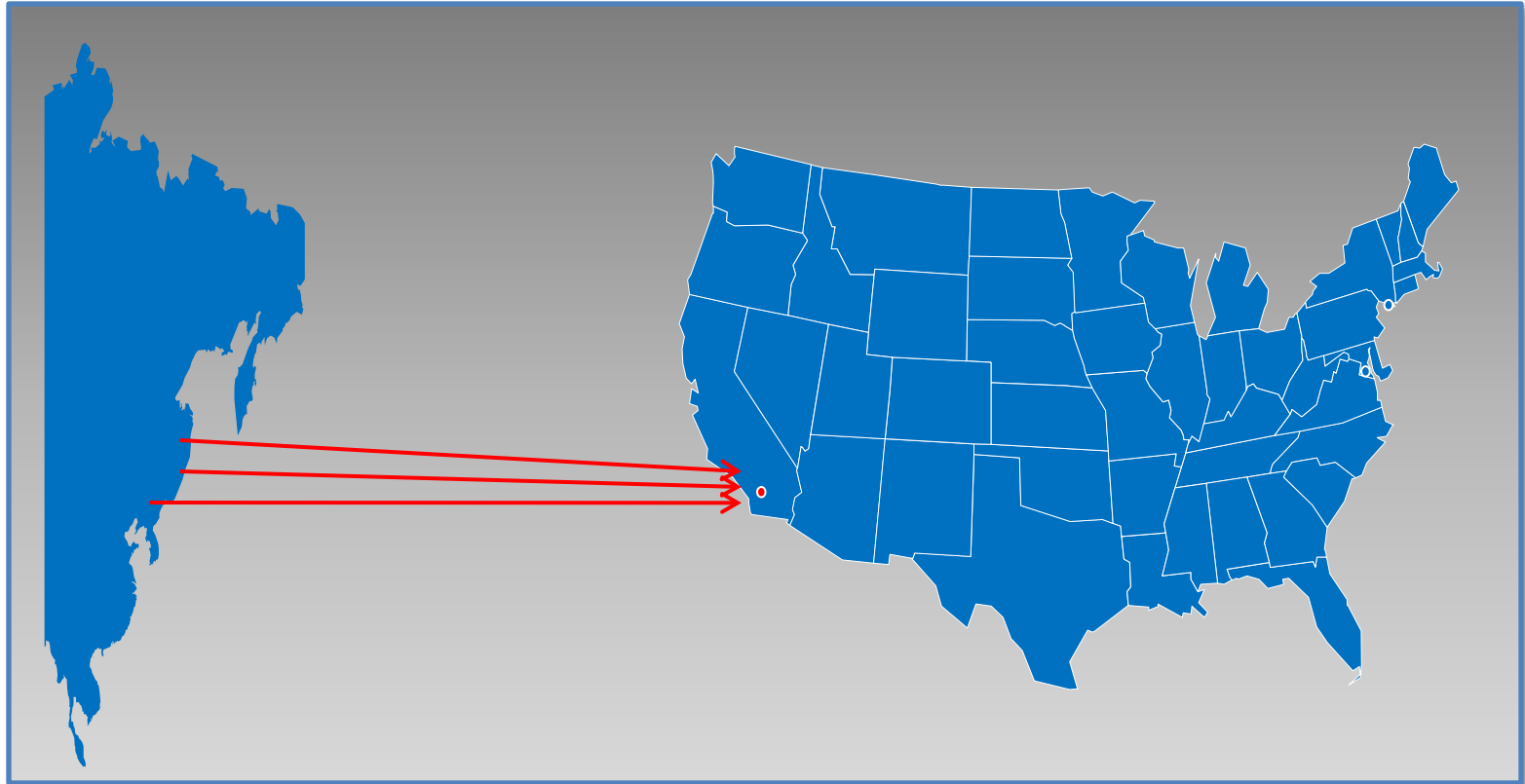


R.G. Barry Corporation

the *Dearfoams* company

Optimal Global Supply Chain

Toa global, low cost and flexible supply chain



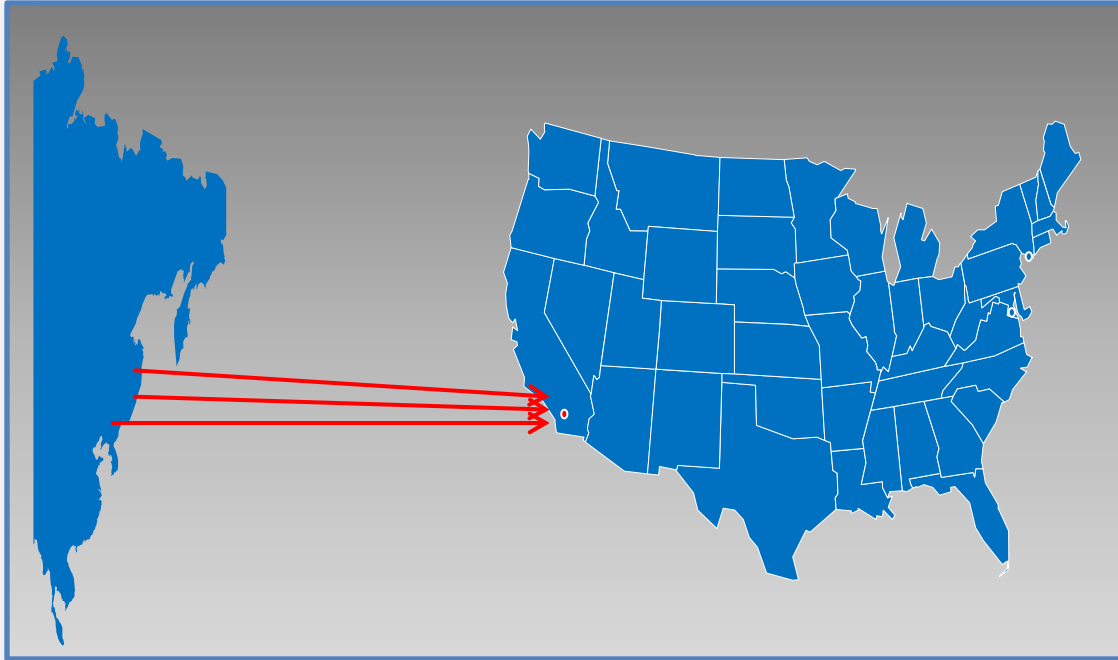
- 100% variable cost structure
- High freight spend



R.G. Barry Corporation

the *Dearfoams* company

Our Thinking



- ✓ **Complete the production transformation and mitigate risk**
- ✓ **Begin to attack freight spend in order to optimize transformation.**
- ✓ **Attack carton density.**
- ✓ **Considered 3PL warehouse agreements to reward density improvement.**

Engaged Supply Chain Optimizers to move the needle further!



The Approach

Phase 1

SCO completed a High-level assessment.

- ✓ Sample SKU's
- ✓ Collected Data
- ✓ Reviewed handling processes
- ✓ Identified "potential" value proposition

1 - 2 weeks

Phase 2

Identified "A" SKU's which maximized the value.

- ✓ Focused on Wal-Mart
- ✓ Gathered Data
- ✓ **Initiated change management activities**

2 - 3 weeks

Phase 3

SCO completed analysis and recommendations.

- ✓ Analysis slowed due to poor quality data
- ✓ Iterative process
- ✓ RGB validates opportunity
- ✓ **Expanded change management activities**

4 - 6 weeks

Phase 4

Implementation

- ✓ Pull in Manufacturing and Logistics Partners
- ✓ Established timeline
- ✓ Develop scorecard with Finance organization
- ✓ **Continue change management activities**

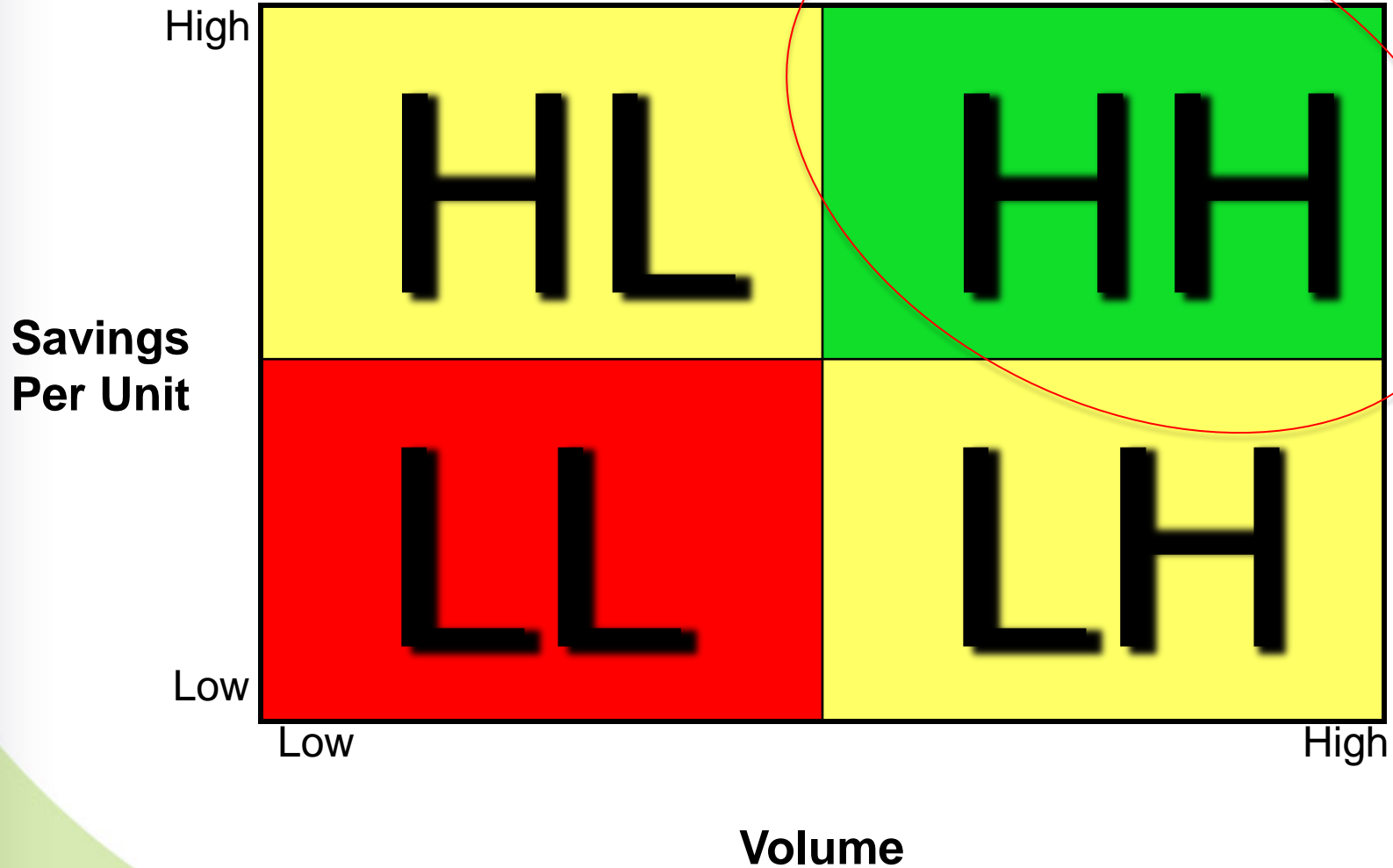
4 - 6 weeks

Phase 2, 3 and 4 run in parallel based upon when analysis of SKU's is completed. (11-17 weeks)





Item Selection





The Data Requirements

- ✓ **Client actual costs drive analysis**
- ✓ **Extensive data effort for RGB**
 - ✓ **Getting accurate data was much more difficult than expected**
 - ✓ **Many companies don't track internal costs accurately**
 - ✓ **Guidance from SCO was crucial**
- ✓ **Part of change management process**
- ✓ **Paradigm shift from Manufacturing focus to Supply Chain Mgmt**
- ✓ **Logistics Service Providers must be willing to reduce costs in relation to efficiency improvements by Client**
 - ✓ **SCO & Damco assist in process as needed**



The Operational Results

- ✓ **Very modest adjustments to outer carton dimensions**
 - Eliminated air
 - Designed cheaper, better performing boxes
 - Balanced complexity & efficiency

- ✓ **Reconfigured inner pack structure**

- ✓ **Reconfigured pallet structure**
 - Enabled higher stacking w/o damage

- ✓ **Suggested standard pack changes**
 - Increased Wal-Mart pack from 12 to 18



The Value – Year 1

Item	Cost/Benefit
- Reduced corrugate spend 15% (COGS savings)	\$ 200,000
-Reduced inbound freight spend 20% (600 fewer containers /COGS savings)	\$ 1,580,000
-Reduced warehouse storage requirements 25% (storage & handling / SG&A savings)	\$ 1,000,000
-Reduced miscellaneous expenses (damage, pallets, shrink, labels, etc.)	\$ 100,000
+ SCO fees	(\$)
+ Miscellaneous Internal project costs (temp labor, travel & IT)	(\$ 50,000)
Total Savings	➤ \$ 2,500,000

The “knowledge” transfer of is difficult to quantify....



Marketed Solution to Key Customers

Presented to Wal-Mart

- ✓ 15% reduction in corrugate
- ✓ 20% reduction in freight
- ✓ 25% reduction in distribution

→ Recaptured national distribution
\$10 million

Presented to Target

- ✓ 15% reduction in corrugate
- ✓ 20% reduction in freight
- ✓ 25% reduction in distribution

→ Awarded men's volume
\$5 million

Strong Influencer



Key Process Change

New Product Development / Commercialization Process

Today, provided supplier:

- ✓ Product Specification
- ✓ Retail Packaging Specification

Tomorrow, provided supplier:

- ✓ Product Specification
- ✓ Retail Packaging Specification
- ✓ **Carton Specification**
- ✓ **Inner Pack Configuration**
- ✓ **Container Load Diagram**

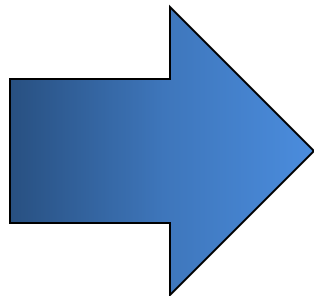
This change was “phased in” and required technology configuration



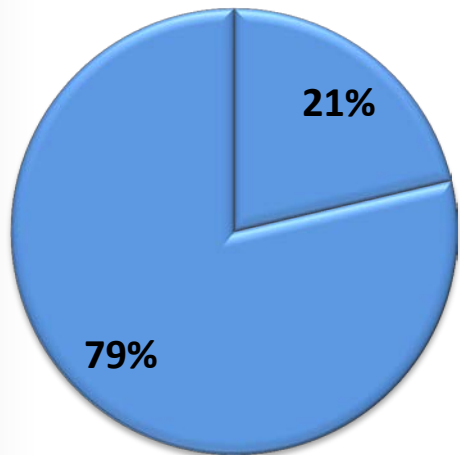
Major Sustainability Play

Illustration

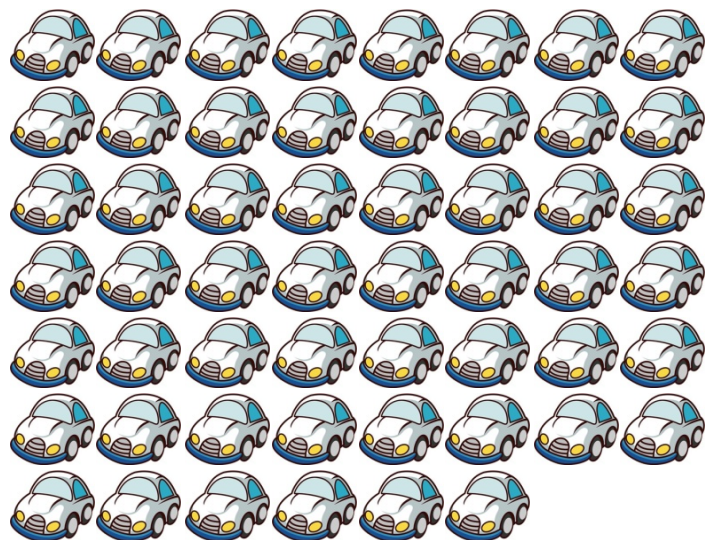
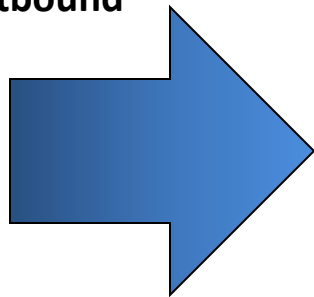
Inbound GHG Savings =
102,605 kgs CO₂



Equivalent to 15 American cars
per year



■ Inbound
■ Outbound



Equivalent to 54 American cars
per year

Outbound GHG Savings =
378,742 kgs CO₂



Key Learnings

- ✓ **Executive sponsor is critical to accelerating success.**
- ✓ **Recognize organizations true core competencies.**
- ✓ **Overcome “ We can do this internally” skeptics.**
- ✓ **Strong & flexible supply chain partners facilitate savings.**
- ✓ **“Speed to Value” is an attitude!**
- ✓ **Data integrity is critical (quality of the item master file).**
- ✓ **SCO supports post-implementation.**

Damco in India

Focusing on the pharmaceutical industry by offering 'green logistics' with a focus on reducing carbon footprints. Green logistics services increase efficiency by **optimizing package sizes and materials** or by increasing use of more efficient transport modes. Process will cut costs by double-digit percentages .

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Packaging Optimization Summary

- Synchronizes relationship of shipping containers, warehousing & transportation to achieve lowest total supply chain cost
- Deceptively simple but amazingly effective
- In full alignment with principles of lean management
- An opportunity for significant operational cost improvement
- Has world-wide application

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