

# Efficiency & Sustainability in Logistics

## A Perspective from Johnson Controls

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# Today's Presentation

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- An Introduction to Johnson Controls
- Our Perspective on Sustainability
- Embedding Sustainability in Logistics
- Observations, Learnings and Suggestions

# Our Company



- Founded in 1885
- \$38 billion sales
- 140,000 employees
- 62 consecutive years of increasing sales
- 32 consecutive years of dividend increases

# Three world-class growth businesses

## Building Efficiency

- Creating quality indoor environments that are energy efficient, comfortable and safe

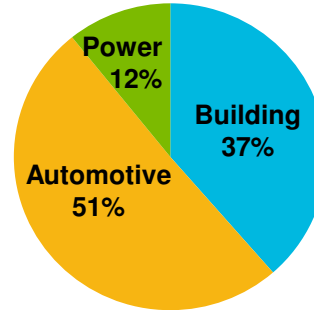
## Power Solutions

- Providing dependable starting power for cars today and the energy efficient hybrid vehicles of tomorrow

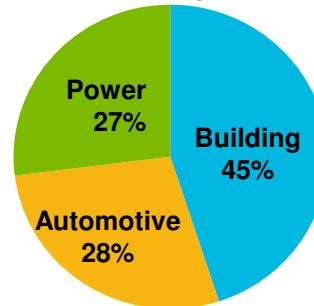
## Automotive Experience

- Delivering world-class technologies that improve the driving experience and are environmentally friendly

2007 Sales: \$34.6B



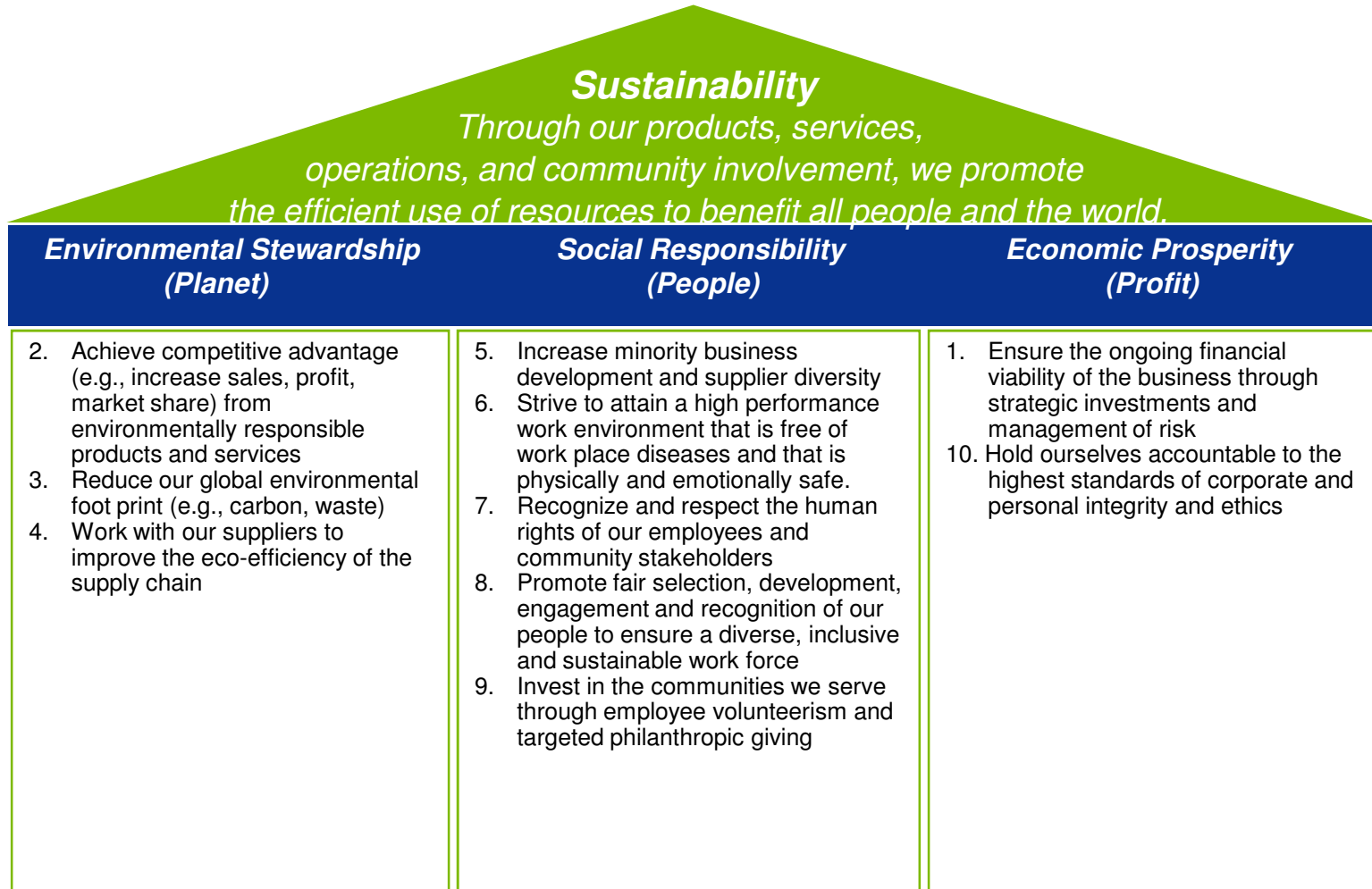
2007 Earnings: \$1.3 B



# Sustainability at Johnson Controls

Value

Key Strategies



# Sustainability Initiatives in Action

## Environmental:

### Reducing our Carbon Footprint



- Pledged to reduce its total GHG emissions intensity per dollar of revenue by 30 percent from 2002 to 2012

## Financial:

### Implementing the Branch of the Future Today



- Redesigned and right-sized field branches by implementing touchdown/ plug-in spaces, hotel workstations, and workstation booking tools
- Reduced cost by \$120K per year over 10 year lease

## Social:

### Driving Diversity through the Supply Chain



- \$1.7B in purchases from diverse suppliers
- "Strong supplier diversity initiative translates into more business and strengthens relationships with our customers."

# Sustainability Goals Within Our Supply Chain



## Logistics focus:

- Reducing our internal logistics impact
- Working with external suppliers to find ways to deliver our goods and services to our constituents more efficiently.

# Our Approach

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1. Think about our full supply chain:
2. Apply Technology where possible
3. Try and remove complexity
4. Build a dedicated function
5. Train the users
6. Monitor results carefully
7. Make continuous improvements

# JCI Supply Chain Practices

<b>FACTORY LOCATION</b>	Optimize footprints considering all issues, including inbound/outbound logistics
<b>ROUTE PLANNING</b>	Establish milk runs, consider backhauls
<b>REQUIREMENTS SCHEDULING</b>	Provide adequate lead time windows Scheduling considerations to optimize route planning
<b>RECYCLING EFFORTS</b>	Round trips used for lead, battery delivery Waste management recycling metrics
<b>CONSOLIDATION CENTERS</b>	Ocean freight consolidation Truck consolidation / route planning
<b>PACKAGING STRATEGIES</b>	Review designs prior to release for impact; re-assess existing product designs to optimize; maximize use of returnables, including “knock downs”; Disassemble for shipping
<b>MANAGEMENT REPORTING</b>	Visibility of Premium Freight to approve and reduce Mileage / Fuel Consumption Reporting
<b>VEHICLE SELECTION</b>	Switch to smaller vehicles in fleet Move to hybrids, LPN vehicles Refuse rental car “free” upgrades

## Creating Smart Environments

### Closed loop battery recycling

*...providing Johnson Controls, its customers and the environment with significant benefits*

#### Why it's smart

Ensures required supply of lead

Recycled lead less subject to volatile LME

Added value service to customers.

Unit price tied to return of used batteries

Makes lead-acid batteries the most highly recycled consumer product in North America

**Johnson Controls is working with customers and governments in Asia and Europe to adopt the successful NA recycling model**

### North America Lead-acid battery recycling

Johnson Controls  
Manufacturing  
Plant

Retailer



**Lead:** smelted, reused

**Poly cases:** ground, reused

**Acid:** neutralized, reused

# Driving Green - Fuel Contest

## Contest Rules

- The contest measures individual performance (MPG) improvement.
- Baseline established.
- Reporting provided to the regions on a monthly basis
- Top five drivers from each region with the greatest overall MPG improvement will be recognized

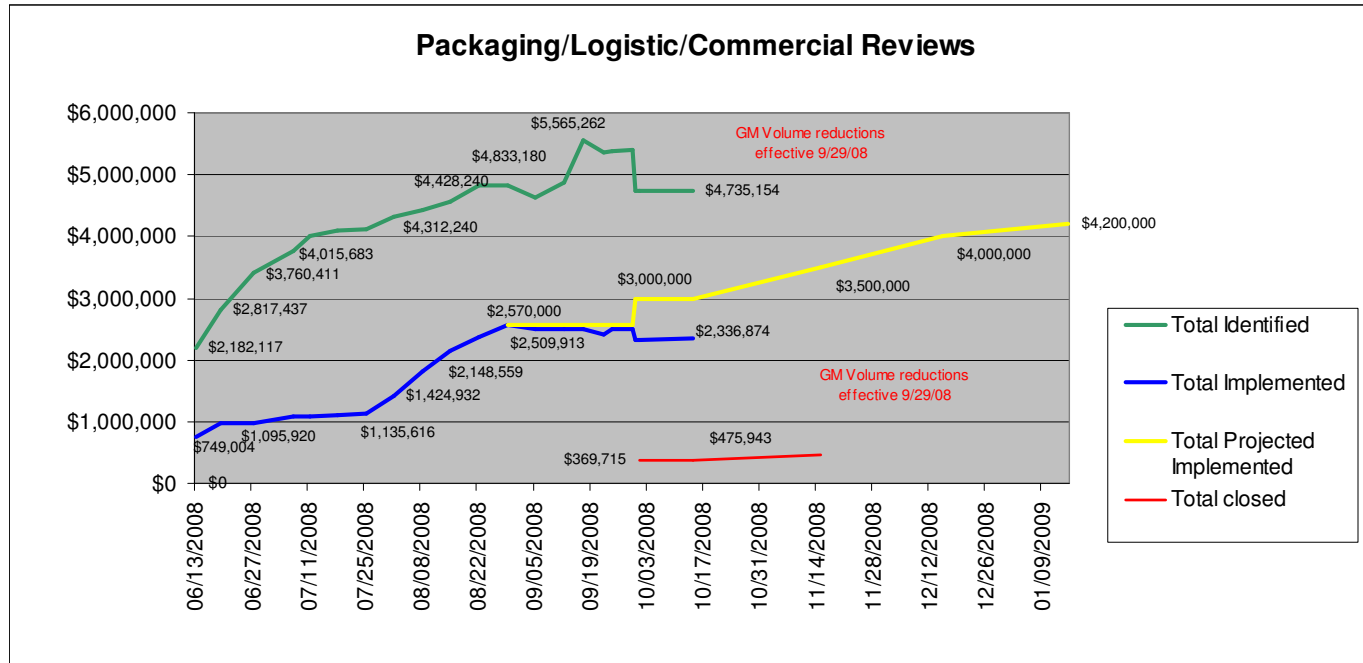
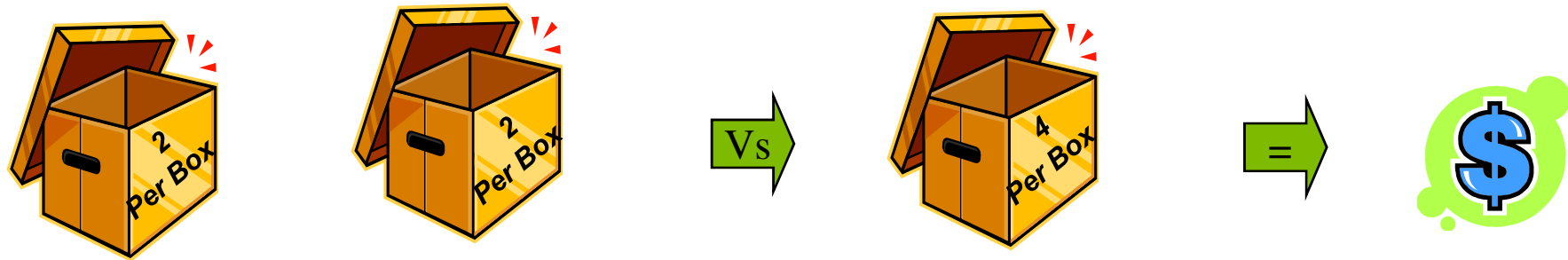
**Outcome: This idea failed in the translation to our “front liners.”**

**Reason: Severe weather, measurement transparency (maybe fairness?), non-congruent goals.**

Move on to other ideas...learn from it.

Region	Average of MPG	Count of Vehicle Type
Central - Service	12.1	229
Central - Systems	13.7	6
East Central - Service	12.5	173
East Central - Systems	13.0	31
Mid Atlantic - Service	12.3	118
Mid Atlantic - Systems	14.5	4
National Services	13.8	141
Northeast - Service	11.9	134
Northeast - Systems	12.6	3
Northwest - Service	12.5	189
Northwest - Systems	12.5	4
Other 4104	12.2	15
South - Service	13.6	189
South - Systems	13.9	15
Southeast - Service	12.8	221
Southeast - Systems	13.4	16
West - Service	13.0	60
West - Systems	16.0	1
<b>Grand Total</b>	<b>12.7</b>	<b>1549</b>

# Load Density Packaging Story at Automotive



## PD Benefits:

- 1. Transportation**
  - \$2.4M Implemented
  - \$2.3M In-process
- 2. Packaging**
  - \$750K avoided
- 3. Floor Space**

## If we could start over...

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### Do:

Establish milk runs, consider backhauls

Provide adequate logistics forward planning time

Develop and maintain accurate logistics data

Review designs for transport worthiness

Maximize use of returnable packaging

Ensure visibility of premium freight cost

Incent transportation providers to save energy fuel cost

### Don't:

Underestimate the impact of logistics on footprint changes

Decentralize carrier selection process

Forget to consider “empty miles” with carrier selection process

Ignore the competitive advantage that effective supply chain management delivers to your business

Handle freight any more times than absolutely necessary

## How do we get these ideas implemented at JCI?

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### We...

- Identify the best practice target at the plant level
  - Assemble a cross functional team representing the various functions involved
  - Share all the data and the size of the savings opportunity
  - Schedule review at the Plant with all resources, including suppliers
  - For packaging opportunities evaluate density, piece price, expendable vs. return, pack type
  - Set up new pack trials with due dates, owners and documentation
  - Follow up on results and implementation cost
  - Reward and recognize the team!
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