Supply Chain Management in Turbulent Times

Kingsgate Marriott at the University of Cincinnati
April 20, 2010
Supply Chain History

Stonehenge
5,000 years ago

Roman Empire
2,000 years ago
What is Supply Chain Management?
Supply Chain Management

“Is the integration of business processes from original suppliers through end-users that provides products, services and information that add value for customers”
Suppliers’ Supplier
To
Customers’ Customer
“Supply Chain Management” is More Than Just “Logistics”!

“Demand Management”

- Demand Planning
  - Outbound Logistics
    - Customer Relationship Management
    - Sales Order Mgt.
    - Post-Sales Support

“Focal Firm”

- Operations/Manufacturing (Product/Service) Strategy
  - Process Design and Management
  - Project Management

“Supply Management”

- Procurement
  - Inbound Logistics
  - Supplier Relationship Management

Financial Resource Management

Supply Chain Integration

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The Evolution of SCM

Prehistoric

Post WWII

1982

2000

More Attention From Senior Management

How long will it take??

Inception of SCM

Sales, Manufacturing, Purchasing, Transportation

Sales/Logistics/Operations

SCM

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Page 9
A horizontal process view is the foundation to Supply Chain Management.

Supply Chain management processes cut across the silos. It’s horizontal.
Most supply chains are global

[Diagram showing the connections between suppliers, manufacturing, distribution, and customers, highlighting the global nature of supply chains.]
Electronics Supply Chain

Component Manufacturers
- Intel
- Texas Instrument
- AMD
- LSI Logic
- National Semi

Distributors
- Arrow
- Avnet
- Pioneer
- Premier
- Bell
- Solectron
- SCI
- Celestica
- Flextronics
- Jabil
- Sanmina

Contract Manufacturer
- IBM
- HP
- Compaq
- Lucent
- Motorola
- Dell
- Alcatel
- Nortel
- Cisco

OEMs
- Ingram Micro
- Tech Data Corp
- Merisel, Inc
- Brightpoint
- CellStar

Finished Goods
Distributors / Channel Partners
- Retailers & End Consumers
  - Retailers
    - Best Buy
    - Radio Shack
    - CompUSA
  - End Consumer
    - Enterprise Sales
    - E-commerce purchase

Reverse Logistics

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## Best in Class Performance & Potential Savings

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total Revenue Billions</th>
<th>Best in class</th>
<th>Median Logistics Costs</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals &amp; Pharmaceuticals</td>
<td>$641b</td>
<td>3.9%</td>
<td>11.2%</td>
<td>$46.8b</td>
</tr>
<tr>
<td>Computers &amp; Electronic</td>
<td>$356b</td>
<td>4.0%</td>
<td>8.3%</td>
<td>$15.3b</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>$470b</td>
<td>3.3%</td>
<td>8.3%</td>
<td>$23.5b</td>
</tr>
<tr>
<td>Consumer Packaged Goods</td>
<td>$3,231b</td>
<td>4.9%</td>
<td>9.2%</td>
<td>$138.9b</td>
</tr>
<tr>
<td>Defense &amp; Industrial</td>
<td>$1,991b</td>
<td>4.3%</td>
<td>10.2%</td>
<td>$117.5b</td>
</tr>
</tbody>
</table>

Source: SRI International
Benefits of SCM

- Strengthens vendor/customer relations
- Facilitates planning at all levels
- Allows all partners in the supply chain to monitor shipment progress
- Minimizes bottlenecks created by waiting for proper documents
- Enables all parties to participate in process improvements
- Eliminates duplicate efforts
- Enhances supply chain security
A study by Georgia Tech showed that a company’s stock price drops 8% when the company experiences a glitch in its supply chain.

A study at Miami University of Ohio showed that when a company adopts a new supply chain innovation, the company’s stock price increases.

A study by Bain & Company showed that companies employing sophisticated supply chain methods enjoyed 12 times greater profit than companies with unsophisticated methods.

Wall Street: New found respect for SCM. In one SCM MBA program in the US, 21/32 grads received job offers from Investment Banking firms because of the importance of SCM to their clients!!
Features → Benefits → Value

• Single focus must be on the creation of value
• Key questions include
  – Value for whom?
  – How to create value through supply chain management?
  – How to measure and quantify the value that is created?
• Significant improvement needed in key areas such as:
  – Understanding customers’ needs
  – Performance measurement and KPIs
  – Quantification of value and determination of ROI
The Challenge is “Change”:

“It is not the strongest of the species that survive, nor the most intelligent, but those most responsive to change” (Charles Darwin)

“Consider how hard it is to change yourself, and you’ll understand what little chance you have of changing others.” (Albert Einstein)
State of Logistics

Magnitude

Impact
## U.S. Logistics Cost as Percent of GDP in 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>$ Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying Costs - $ 2.026 Trillion All Business Inventory</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>103</td>
</tr>
<tr>
<td>Taxes, Obsolescence, Depreciation, Insurance</td>
<td>273</td>
</tr>
<tr>
<td>Warehousing</td>
<td>111</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>487</strong></td>
</tr>
<tr>
<td>Transportation Costs</td>
<td></td>
</tr>
<tr>
<td>Motor Carriers:</td>
<td></td>
</tr>
<tr>
<td>Truck - Intercity</td>
<td>455</td>
</tr>
<tr>
<td>Truck - Local</td>
<td>216</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>671</strong></td>
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<tr>
<td>Other Carriers:</td>
<td></td>
</tr>
<tr>
<td>Railroads</td>
<td>58</td>
</tr>
<tr>
<td>Water (International 33 Domestic 5)</td>
<td>38</td>
</tr>
<tr>
<td>Oil Pipelines</td>
<td>10</td>
</tr>
<tr>
<td>Air (International 16 Domestic 25)</td>
<td>41</td>
</tr>
<tr>
<td>Forwarders</td>
<td>30</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>177</strong></td>
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<tr>
<td>Shipper Related Costs</td>
<td>8</td>
</tr>
<tr>
<td>Logistics Administration</td>
<td>54</td>
</tr>
<tr>
<td><strong>TOTAL LOGISTICS COST</strong></td>
<td><strong>1,397</strong></td>
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</tbody>
</table>
U.S. Business Logistics Costs

<table>
<thead>
<tr>
<th>Year</th>
<th>Costs ($ Trillions)</th>
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<tbody>
<tr>
<td>1999</td>
<td>0.92</td>
</tr>
<tr>
<td>2000</td>
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<td>2001</td>
<td>0.97</td>
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<td>2002</td>
<td>0.92</td>
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<tr>
<td>2003</td>
<td>0.95</td>
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<td>2004</td>
<td>1.03</td>
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<tr>
<td>2005</td>
<td>1.18</td>
</tr>
<tr>
<td>2006</td>
<td>1.31</td>
</tr>
<tr>
<td>2007</td>
<td>1.39</td>
</tr>
<tr>
<td>2008</td>
<td>1.34</td>
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</tbody>
</table>
The U.S. Business Logistics System Cost is the Equivalent of 9.4 Percent of Current GDP in 2008

<table>
<thead>
<tr>
<th>Carrying Costs - $ 1.965 Trillion All Business Inventory</th>
<th>$ Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>47</td>
</tr>
<tr>
<td>Taxes, Obsolescence, Depreciation, Insurance</td>
<td>252</td>
</tr>
<tr>
<td>Warehousing</td>
<td>122</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>420</strong></td>
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</tbody>
</table>

Transportation Costs

<table>
<thead>
<tr>
<th>Motor Carriers:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck - Intercity</td>
<td>460</td>
</tr>
<tr>
<td>Truck - Local</td>
<td>220</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>680</strong></td>
</tr>
</tbody>
</table>

Other Carriers:

| Railroads                                             | 63        |
| Water (International 33 Domestic 6)                   | 39        |
| Oil Pipelines                                         | 10        |
| Air (International 16 Domestic 24)                    | 40        |
| Forwarders                                            | 32        |
| **Subtotal**                                           | **184**   |

Shipper Related Costs

| Logistics Administration                               | 52        |

**TOTAL LOGISTICS COST** 1,344

20 April 2010
Logistics Cost As A Percent of GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost (as % of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>9.9</td>
</tr>
<tr>
<td>2000</td>
<td>10.3</td>
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<tr>
<td>2001</td>
<td>9.5</td>
</tr>
<tr>
<td>2002</td>
<td>8.8</td>
</tr>
<tr>
<td>2003</td>
<td>8.6</td>
</tr>
<tr>
<td>2004</td>
<td>8.8</td>
</tr>
<tr>
<td>2005</td>
<td>9.5</td>
</tr>
<tr>
<td>2006</td>
<td>9.9</td>
</tr>
<tr>
<td>2007</td>
<td>10.1</td>
</tr>
<tr>
<td>2008</td>
<td>9.4</td>
</tr>
</tbody>
</table>
Total U.S. Business Inventories

Source: U.S. Department of Commerce, Census Bureau

Billions of Dollars

1,120
1,320
1,520
1,720
1,920
2,120
2,320


20 April 2010
Supply Chain Management in Turbulent Times
The Inventory to Sales Ratio Rose Sharply in the Second Half of 2008

Source: U.S. Department of Commerce, Census Bureau
U.S. Average Commercial Paper Rates Have Fallen Dramatically in 2008

Source: Board of Governors of the Federal Reserve System
# The U.S. Business Logistics System Cost is the Equivalent of 9.4 Percent of Current GDP in 2008

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<td>Warehousing</td>
<td>122</td>
</tr>
<tr>
<td>Subtotal</td>
<td>420</td>
</tr>
</tbody>
</table>

## Transportation Costs

### Motor Carriers:
- Truck - Intercity: 460
- Truck - Local: 220

Subtotal: 680

### Other Carriers:
- Railroads: 63
- Water (International 33 Domestic 6): 39
- Oil Pipelines: 10
- Air (International 16 Domestic 24): 40
- Forwarders: 32

Subtotal: 184

## Shipper Related Costs
- 8

## Logistics Administration
- 52

**TOTAL LOGISTICS COST**: 1,344

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Supply Chain Management in Turbulent Times
Index of Logistics Costs as a Percent of GDP 1988 - 2008

- Inventory
- Transportation
- Total

GDP Growth and Logistics Cost Growth

![Bar Chart: GDP Growth and Logistics Cost Growth](chart.png)
Transportation Infrastructure Report Card

2009 Grades

- Roads: D
- Bridges: C
- Rail: C-
- Inland Waterways: D-
- Ports and Harbors: inc

Source: American Society of Civil Engineers
Summary

• 2008 Logistics Costs fell to $1.3 trillion

• Logistics cost were equivalent to 9.4 percent of GDP in 2008

• Transportation costs rose 2.0 percent and now account for 6.1 percent of nominal GDP

• Inventory carrying costs declined 13.2 percent and now account for 2.9 percent of nominal GDP – both decreased inventories and lower interest rates contributed

• The weak dollar spurred demand for U.S. goods pushing up exports. Higher shipments of export goods partially offset the drop in domestic shipping demand in 2008.
Cost As A Percent of GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost as a percent of GDP</td>
<td>9.9</td>
<td>10.3</td>
<td>9.5</td>
<td>8.8</td>
<td>8.6</td>
<td>8.8</td>
<td>9.5</td>
<td>9.9</td>
<td>10.1</td>
<td>9.4</td>
</tr>
</tbody>
</table>
The Changing Costs of Logistics

• From 2000/2004 Logistics Costs Declined
  – Low Energy Costs
  – Deregulation
  – Increased Information Technology

• Starting in 2005 Logistics Costs Increased
  – Rising Energy Costs
  – Rising Inventories
  – Declining Transportation Capacity
Wholesale Vs. Retail Inventories

(Billions of Dollars)

Source: U.S. Department of Commerce, Bureau of Economic Analysis
Substantially Higher Fuel Prices

Diesel

Jet Fuel

2000 2001 2002 2003 2004 2005 2006 2007
Fuel Efficiency
Ton-Miles Per Gallon

<table>
<thead>
<tr>
<th>Mode</th>
<th>Ton-Miles Per Gallon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barge</td>
<td>576</td>
</tr>
<tr>
<td>Railroad</td>
<td>413</td>
</tr>
<tr>
<td>Truck</td>
<td>155</td>
</tr>
</tbody>
</table>

Source: Texas Transportation Institute Study, Nov. 2007
Mode Utilization

Barge  Railroad  Truck
Global Comparison of Logistics Expenditures

**Economy**
- Higher Output--GDP
- Better use of resources
- Multi-use Infrastructure

**Businesses**
- Market Access
- Market Integration
- Cost Efficiency

**Consumers**
- More Goods and Services
- Wider Availability
- Lower Prices/Income

---

**U.S.**
9.4% GDP

**Asia** 13-20% GDP
**China** 15% GDP
**Europe** 12-14% GDP
**India** 13% GDP
**Japan** 11% GDP
**Mexico** 14% GDP

---

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The cost of logistics in the U. S. was $1.4 trillion in 2007; about 10.1% of our GDP (gross domestic product).

U. S. expenditure on logistics is larger than the national GDP of all but 12 countries. (For example, U. S. logistics expenditures are larger than the GDP of Spain).

Total domestic business inventories carrying costs rose 9 percent and now account for 3.5 percent of nominal GDP.

Transportation costs rose 5.9 percent and now account for 6.2 percent of nominal GDP.

In 1980 logistics represented 17.9% of America’s GDP. Today it is 10.1%. By comparison, estimated logistics costs represent 15% of China’s GDP and 13% in India.
Turbulent Times
The Perfect Storm

Credit Crunch

Crude Oil Prices

RECESSION
What We’ve Seen

Gasoline prices have risen lowered
And were they stop no one knows
What About the Market?

What Goes Up Can Also Go Down

2007

1938

2008

<www.trackrecord.com>
GDP as an Indicator

United States GDP Growth Rate

source: Bureau of Economic Analysis
# Economic Indicators

<table>
<thead>
<tr>
<th></th>
<th>April 7, 2010</th>
<th>August 10, 2009</th>
<th>May 12, 2009</th>
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<tbody>
<tr>
<td>DJI Index</td>
<td>10,897</td>
<td>9,337</td>
<td>8,469</td>
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<tr>
<td>Inflation</td>
<td>2.10%</td>
<td>-1.19%</td>
<td>-0.45%</td>
</tr>
<tr>
<td>GDP Growth</td>
<td>5.60%</td>
<td>-1.03%</td>
<td>-6.29%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>9.70%</td>
<td>9.40%</td>
<td>8.90%</td>
</tr>
<tr>
<td>Gold / Once</td>
<td>$1,130.00</td>
<td>$945.00</td>
<td>$917.00</td>
</tr>
<tr>
<td>Oil / Barrel</td>
<td>$87.05</td>
<td>$70.60</td>
<td>$58.85</td>
</tr>
<tr>
<td>Prime Rate</td>
<td>3.25%</td>
<td>3.25%</td>
<td>3.25%</td>
</tr>
<tr>
<td>Index</td>
<td>Series Index March</td>
<td>Series Index February</td>
<td>Percentage Point Change</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------</td>
<td>-----------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>PMI</td>
<td>59.6</td>
<td>56.5</td>
<td>+3.1</td>
</tr>
<tr>
<td>New Orders</td>
<td>61.5</td>
<td>59.5</td>
<td>+2.0</td>
</tr>
<tr>
<td>Production</td>
<td>61.1</td>
<td>58.4</td>
<td>+2.7</td>
</tr>
<tr>
<td>Employment</td>
<td>55.1</td>
<td>56.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Supplier Deliveries</td>
<td>64.9</td>
<td>61.1</td>
<td>+3.8</td>
</tr>
<tr>
<td>Inventories</td>
<td>55.3</td>
<td>47.3</td>
<td>+8.0</td>
</tr>
<tr>
<td>Customers' Inventories</td>
<td>39.0</td>
<td>37.0</td>
<td>+2.0</td>
</tr>
<tr>
<td>Prices</td>
<td>75.0</td>
<td>67.0</td>
<td>+8.0</td>
</tr>
<tr>
<td>Backlog of Orders</td>
<td>58.0</td>
<td>61.0</td>
<td>-3.0</td>
</tr>
<tr>
<td>Exports</td>
<td>61.5</td>
<td>56.5</td>
<td>+5.0</td>
</tr>
<tr>
<td>Imports</td>
<td>57.0</td>
<td>56.0</td>
<td>+1.0</td>
</tr>
<tr>
<td><strong>OVERALL ECONOMY</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Manufacturing Sector</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"December PMI data indicate that the global manufacturing sector approaches 2010 on a positive footing. The headline PMI rose to a 44-month high, with rates of growth in production and new orders accelerating. Employment also rose slightly for the first time since March 2008. If a rebound in the manufacturing labour market can be maintained, this should aid with sustaining the broader recovery. Price pressures are rising, but mainly as a result of the improving economic climate."

Global Manufacturing PMI Summary
50 = no change on previous month.

<table>
<thead>
<tr>
<th></th>
<th>Nov</th>
<th>Dec</th>
<th>Change</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Global PMI</td>
<td>53.7</td>
<td>55.0</td>
<td>+</td>
<td>Expanding, faster rate</td>
</tr>
<tr>
<td>Output</td>
<td>56.8</td>
<td>58.2</td>
<td>+</td>
<td>Expanding, faster rate</td>
</tr>
<tr>
<td>New Orders</td>
<td>56.7</td>
<td>58.6</td>
<td>+</td>
<td>Expanding, faster rate</td>
</tr>
<tr>
<td>Input Prices</td>
<td>53.4</td>
<td>58.5</td>
<td>+</td>
<td>Rising, faster rate</td>
</tr>
<tr>
<td>Employment</td>
<td>49.4</td>
<td>50.2</td>
<td>+</td>
<td>Rising, change of direction</td>
</tr>
</tbody>
</table>
Chart 2. 12-month percent change in CPI for All Urban Consumers (CPI-U), not seasonally adjusted, Feb. 2009 - Feb. 2010

Percent change


20 April 2010

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Industrial Production & Capacity

Federal Reserve Board August 2009

Production and capacity

Ratio scale, 2002 output = 100

Revised

Previous

Capacity

Production

1999 2001 2003 2005 2007 2009

140

130

120

110

100

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Supply Chain Management in Turbulent Times

Page 49

Freese & Associates, Inc.
How This Translates

Transportation for 2009, was flat or down because of:

• **Volumes being down for trucking** the largest segment.
  – In the current environment it was very difficult for rates to increase.
  – For the last two years fuel surcharges have been a significant chunk of revenue.
  – With fuel prices falling in the latter part of the year and volumes down many carriers eased off on the surcharges.

• **Rail volumes although the fourth highest have ever been flat to slightly up,**
  – because pricing has been soft and surcharges were removed.

• **Air Freight was down because,**
  – volumes are down,
  – fuel pricing hurt economics.

• **Water was down,**
  – both internationally and domestically.
The Future
What This Means in SCM

SCM Trends:

- **Reverse globalization** - new sourcing strategies, especially Mexico; rethinking many strategies
- **Changes in packaging design** - and routing to reduce ton-miles
- **Capacity issues** - loss of trucking capacity, excess capacity in container shipping industry, driver shortages
- **Transportation Companies** - Companies that come through this will be stronger, more agile players
- **Impact of the stimulus bill** - not enough nor aimed at the right spots to turn around SCM direction
- **Need For a Strong National Freight Transportation Policy** - needs to address entire supply chain, funding issues (reduced fuel consumption has hit the already inadequate Highway Trust Fund), best investment strategies, etc.
- **Fuel prices will be climbing again** - strategies to mitigate fuel volatility
What This All Means in SCM

• High fuel prices will led many to reevaluate their entire supply chains.
  – companies are reevaluating where they are sourcing their raw materials,
  – where they are locating their manufacturing centers, and
  – where they are locating their distribution centers.
  – No longer is moving manufacturing operations to China seen as a panacea.

• The rail and parcel/express sectors have weathered the best.

• LTL pricing is under the most pressure because demand is heavily tied to the industrial economy and capital spending, it is not as consolidated as the rail and parcel sectors, and it hasn't had enough capacity taken out relative to lower industry volumes.
The Future

• The Economy

• Oil Prices

• Shrinking Capacity

• And More
Green Trends

• Investors see “green” practices as a reflection of good management practices.
• Today: Public relations tactic.
• Tomorrow: Real economic value strategies.
  ➢ Energy cost inflation will help green ROI get even better.
• Cap and Trade
Green Trends Influencing Warehousing

DC / Warehouse Facility items being considered include:

- **Energy Creation measures**

- **Wind power units** – rooftop units - individual fans or horizontal row of blades at roof edge to capture air flow rising up and over building, & stand alone tower units.
Green Trends Influencing Warehousing

• Solar Power Stations

• Atop Warehouses / DC’s .... Why...???
  ✓ Large available flat areas - “just sit there”
  ✓ Solar panels not a great load factor
  ✓ You pay only for the solar energy produced, at prices equal to or below current retail energy rates.
China’s middle class has grown from 20% to 40% by 2020.

By 2010, 450 million Indians will have middle class incomes.

95% of the world population growth through 2050 will occur in developing nations.

Urban areas will produce nearly all of the population growth over the next 25 years.
What To Do When Supply Chains Go Wrong

20 April 2010

Supply Chain Management in Turbulent Times

APICS
The Association for Operations Management

Freese & Associates, Inc.
Resilience

• When things go wrong . . .

• Reducing vulnerability . . .

• Build in flexibility . . .

• Resilience can be a competitive advantage . . .
Resilience

Globalization is stretching supply chains at a time when market volatility is on the increase, exposing companies to greater risk.

• Resilience, a notion borrowed from material science, represents the ability of a material to recover its original shape following a deformation.

• Resilience can be achieved through redundancy

• Flexible or agile supply chains can help a company not only withstand disruptions by adapting quickly to changing conditions, but also better respond to the day-to-day gyrations of the marketplace.
Sustainability

• The most popular definition of sustainability can be traced to a 1987 UN conference. It defined sustainable developments as those that "meet present needs without compromising the ability of future generations to meet their needs“ (WECD, 1987).

• Reducing Costs and Eliminating Waste

• Energy Costs and Conservation
Sustainability

Sustainable Green Supply Chain

Environmental
Friendly Material

Environmentally
Friendly Processes

Environmentally
Friendly Output

Input

Transformation

Output

Reuse
Process

Recycled/Reduce
Redeemed Product
Recyclable Material

Redeem/Reuse/Improve
Reduce By-products

End of Life
Raw Material

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75% of the Global 100 Companies Issue Sustainability Reports

The Coca-Cola Company
PHILIPS
Unilever
WAL*MART*
STARBUCKS
COFFEE
McDonald’s
Disney
KRAFT
ExxonMobil
IBM
Microsoft
Pfizer
GAP
Ford Motor Company

P&G
IKEA
Up
Target
United Technologies
Google

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KEY ISSUES IMPACTING SUPPLY CHAIN MANAGEMENT

Trust

Financial Markets

Multiple Supply Chains
Managing Relationships

Old-line Management

Information Challenges
Questions?

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