Supply Chain Management 101
The Importance of Supply Chain Management in Planning and Designing for Successful Freight Systems

Kate Vitasek
Managing Partner, Supply Chain Visions
Faculty, University of Tennessee
Welcome - Kate Vitasek

- Thought Leader in Supply Chain Management
  - Woman on the Move in Trade and Transportation” by the Journal of Commerce
  - “Rainmaker” by DC Velocity Magazine
  - Woman of International Influence” by Global Executive Woman Magazine
  - Stevie Award Finalist for Woman in Business for “Best Entrepreneur”
  - Thought leader and “Resolute Benchmarker” by Supply Chain Management Review

- Contributor/Author to 7 books and over 150 articles, including the Council of Supply Chain Management Professionals *Supply Chain Process Standards*

- Served on Board of Directors for the Council of Supply Chain Management Professionals and Deliver Committee for Supply Chain Council
Session Topics

*Introduction to Supply Chain Management*

*Case Study: Washington State DOT*

*Example Supply Chains*

*Interactive Working Session*
Supply Chain Management (SCM) - Some Caveats

- SCM is like art
  - Multiple terms exist
  - Everyone has their own interpretation
  - The key is understanding the customer’s own terminology

- SCM is a strategy
  - “It is not about moving stuff”

- SCM is not a fiefdom
  - It crosses organizations and functions and even companies

- SCM is not rocket science
  - Or is it?
# The Evolution of Supply Chain Management

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
</table>
| 1940  | - WW II brought global logistics to the forefront to solve distribution problems.  
       | - The heart of logistics is transportation. |
| 1950  | - The founding of corporate Transportation Departments.  
       | - Focus on reducing cost per hundred weight. |
| 1960  | - The age of Physical Distribution Management, a cross functional approach.  
       | - The introduction of total cost concepts. |
| 1970  | - Total cost gained legitimacy and broad acceptance.  
       | - The introduction of cost verses service trade off, top line revenue growth and bottom line profitability.  
       | - Focus on finished goods distribution strategies. |
| 1980  | - Advent of Materials Management the focus on upstream from manufacturer to supplier.  
       | - Balanced approach to both inbound and outbound inventory movement and positioning.  
       | - “Supply Chain Management” coined by Booz Allen. |

Adapted from *SCM: The past is Prologue*, D. Bowersox, CSCMP Quarterly 2007 and WSDOT Moving Washington for 100 Years
# The Evolution of Supply Chain Management

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>- Senior leaders embrace the concept of end-to-end integration.</td>
</tr>
<tr>
<td></td>
<td>- The introduction of supply chain collaboration and alignment.</td>
</tr>
<tr>
<td>2000</td>
<td>- Movement to customer centric supply chains that respond to customer demand verses anticipating it.</td>
</tr>
<tr>
<td></td>
<td>- Introduction of technology that allows collaboration, real-time responsiveness, operational excellence and interactive management.</td>
</tr>
<tr>
<td></td>
<td>- Council of Logistics Mgmt formally changes name to Council of Supply Chain Mgmt Professionals.</td>
</tr>
<tr>
<td>New</td>
<td>- Information-driven supply chains.</td>
</tr>
<tr>
<td>Frontiers</td>
<td>- Development of supply chains with a net-zero environmental impact.</td>
</tr>
<tr>
<td></td>
<td>- The development of interactive business models and extreme postponement strategies.</td>
</tr>
</tbody>
</table>

Adapted from *SCM: The past is Prologue*, D. Bowersox, CSCMP Quarterly 2007 and WSDOT Moving Washington for 100 Years
Supply Chain Management (SCM) Defined

Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all Logistics Management activities.

Importantly it also include coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers.

In essence, Supply Chain Management integrates supply and demand within and across companies.

Source: The National Council of Supply Chain Management Professionals
A Typical Supply Chain

Traditionally, businesses “PUSH” their products down the customer channels.
The “Bullwhip” Effect

These traditional supply chains amplify instability of demand at each stage

Why is this?
….And It Gets Even More Confusing When Companies Go Global

Source: ChainLink Research
The Problem

As customers expand worldwide, the supply chain requirements and capabilities expand.

- Lead times expand
- More costs are embedded into the enterprise
- Information flow is more complex and prone to error
- Working capital needs increase

As companies outsource, there are more and more touch points.
How Can Focusing on the Entire Supply Chain Help?
Supply Chain Management: The GOALS

1. WASTE ELIMINATION
2. TIME COMPRESSION
3. FLEXIBLE RESPONSE
4. UNIT COST REDUCTION
5. CUSTOMER SATISFACTION = REVENUE GROWTH

Which is the most important?
What’s the Big Deal?

What makes SCM so different from good old Transportation and Warehousing?

- It’s much broader and more complicated – due to more ‘players’ and more functions.
- It involves precise coordination and lots of cooperation and collaboration among firms and functions.
- It requires an entirely new mindset of how to do things: focused on speed, quality, working together, sharing costs and savings.
- It requires that functional silos be torn down.
The Evolution Will Continue

“I really do believe that supply chain management will be the defining discipline in the 21st century.”

--Ralph Drayer
Former P&G Logistics Officer
Supply Chain Management
Processes and Participants
Supply Chain Participants

SCM is made up of many participants that must work together within the supply chain

- **Suppliers.** Source of raw materials, component parts, semi-manufactured products, and other items that occur early in the supply chain - unfinished or non-consumable products.

- **Manufacturers.** Makers of products. Many consider them to be the heart of the supply chain.

- **Distributors.** Responsible for the packaging, storing, and handling of materials at receiving docks, warehouses, and retail outlets.

- **Retailers.** These are the manufacturer's customers - the stores that buy the actual products. Throughout this course, retailers will also be referred to simply as customers.

- **Consumers.** This is the ultimate user - the person who goes into a store and buys the product.

Who controls the supply chain?
Supply Chain Partners

Partners help Participants by providing infrastructure, equipment and labor when needed.

- Freight Companies (local and national)
- Railroads
- Ocean Cargo Companies
- Package and Parcel Companies
- 3PL/4PLs
- Brokers/Forwarders/Consolidators
- Ports
- Inland Drayage Companies
- Air Cargo Companies
Supply Chain Processes

SCM is made up of many processes that must be performed within the supply chain. These form the foundational building blocks for the work to be done.

- Forecasting
- Purchasing
- Production Planning
- Inventory Control
- Warehousing
- Order Management
- Distribution
- Transportation
Supply Chain Processes - Defined

- **Forecasting:** The process of *estimating future demand* using various techniques and methods.

- **Purchasing:** The functions associated with *buying the goods and services* required by the firm.

- **Production Planning:** The process that creates *detailed plans and schedules* to produce product, taking into account resource, material, and dependency constraints to meet deadlines.
Supply Chain Processes - Defined

- **Inventory Control:** The process of ensuring the availability of products through *inventory administration* (accuracy, strategy & optimization).

- **Warehousing:** The *storing of goods* and warehouse activities (receiving, put-away, picking, shipping, and inventory control).

- **Order Management:** The planning, directing, monitoring, and controlling of the *processes related to customer orders*, manufacturing orders, and purchase orders.

- **Distribution:** *Outbound logistics*, from the end of the production line to the end user. It includes all activities related to physical distribution, as well as the return of goods to the manufacturer.
Supply Chain Processes - Defined

- **Transportation:** The *movement of goods* by land, sea, or air shipment. Activities, including managing shipment scheduling through inbound, out-bound, intra-company shipments, documentation management, and third party logistics management.
The Key is Figuring Out the Best Way That Participants and Processes Should Work Together
Sample Framework: SCOR Model Linking Processes and Participants

Source: Supply Chain Council
Session Topics

*Introduction to Supply Chain Management*

*Case Study: Washington State DOT*

*Example Supply Chains*

*Interactive Working Session*
Why Does Washington State Need a Strategic Plan for Freight Systems?

- There are investment constraints: political, financial and economic.
- Washington State’s freight systems strategic plan must:
  - Balance the cost of investments with resulting economic output;
  - Direct limited resources to their most productive use; and
  - Set clear priorities linked to the growth of jobs and the state’s economy.
The Goal of Washington State’s Freight Systems Strategic Plan Is to Support Broad Industry Sectors

I. Global Gateways
International and National Trade Flows Through Washington

II. Made in Washington
Regional Economies Rely on the Freight System

III. Delivering Goods To You
Washington’s Retail and Wholesale Distribution System

Washington is a Global Gateway

Goal:
- Increase import/export volumes.

Requirements:
- Port infrastructure that pulls from other west coast port options.
- Access to ports with the least amount of delay.
- Highways that are not congested or restricted.
- Regulation and weigh stations that minimize delay.
- Rail access into and out of state.
- Available land and facilities to support operations.
- Northern border crossings that are not congested.
What is Being Shipped?

Washington State Value of Freight Shipments
(2004: Billions of Dollars)

Made in Washington
Regional economies rely on Freight System

Delivering goods to you
Washington’s retail and wholesale distribution system

Global Gateways
International and National trade flows through Washington

Source: U.S. Customs Bureau; WA State Dept. of Revenue.
**Fast Facts: Washington is a Global Gateway**

Import volume at Seattle and Tacoma ports has grown by 32 percent since 2003.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>5,719,497</td>
<td>4,867,073</td>
<td>4,897,346</td>
<td>4,709,339</td>
</tr>
<tr>
<td>Long Beach</td>
<td>4,792,722</td>
<td>4,395,942</td>
<td>3,716,775</td>
<td>3,114,221</td>
</tr>
<tr>
<td>New York</td>
<td>3,672,643</td>
<td>3,390,308</td>
<td>3,146,569</td>
<td>2,819,407</td>
</tr>
<tr>
<td>Savannah</td>
<td>1,602,339</td>
<td>1,482,728</td>
<td>1,287,550</td>
<td>1,130,581</td>
</tr>
<tr>
<td>Charleston, SC</td>
<td>1,510,869</td>
<td>1,511,935</td>
<td>1,401,522</td>
<td>1,252,674</td>
</tr>
<tr>
<td>Norfolk</td>
<td>1,419,327</td>
<td>1,318,831</td>
<td>1,200,244</td>
<td>1,095,579</td>
</tr>
<tr>
<td>Oakland</td>
<td>1,410,533</td>
<td>1,372,231</td>
<td>1,192,487</td>
<td>1,070,474</td>
</tr>
<tr>
<td>Houston</td>
<td>1,289,841</td>
<td>1,231,186</td>
<td>1,090,571</td>
<td>943,459</td>
</tr>
<tr>
<td><strong>Seattle</strong></td>
<td>1,223,266</td>
<td>1,339,641</td>
<td>1,044,270</td>
<td>818,684</td>
</tr>
<tr>
<td><strong>Tacoma</strong></td>
<td>1,095,316</td>
<td>1,154,350</td>
<td>937,202</td>
<td>936,951</td>
</tr>
<tr>
<td><strong>All U.S. Ports</strong></td>
<td>28,555,590</td>
<td>26,444,652</td>
<td>24,187,570</td>
<td>21,853,267</td>
</tr>
</tbody>
</table>

Source: Journal of Commerce PIERS Database

TEU = Twenty-foot Equivalent Units
Fast Facts: Washington is a Global Gateway

While import volume on the west coast is growing, Washington State’s share of total port traffic over the past four years has remained flat.

Should Washington State try to increase its share of west coast import traffic? If so, what significant infrastructure changes should you plan for?

TEU = Twenty-foot Equivalent Units
Container Port Growth is Driving the Need for More Warehouse Space

- In the PNW, every 10,000 TEUs shipped creates a need for an additional 1M SF of warehouse space according to CB Richard Ellis Brokerage. That’s a ratio of 1:100

- The ports of Seattle and Tacoma:
  - Handled about 4M TEUs in 2005.
  - Both ports plan rapid growth in the next 5-10 years.
  - Typically, 30 percent of inbound containers are trucked to warehouses along the I-5 corridor and about 70 percent are directly transferred to intermodal rail.
  - Port growth could create a demand for an additional 150M sf of warehouse space along the I-5 corridor.

How will this impact WSDOT’s plans?
Made In Washington

Goal:

• Increase manufacturing and agricultural volumes and lower operating costs.

Requirements:

• Reliability and access throughout the road system.
• Rural roads that are all-weather accessible.
• Rail access into and out of the state.
• Inland waterways and ports to handle growing volumes.
• Low-cost freight options (rail, water).
• Regulations and weigh stations that minimize delay.
Fast Facts: Made in Washington

What are Washington State Industries Shipping?

Monthly Loads by Industry Sector

- Wholesale, 386,299, 47%
- Trucking, 173,062, 21%
- Manufacturers, 207,894, 25%
- Wood, 8,322, 1%
- Agriculture, 51,786, 6%

Fast Facts: Made in Washington

Where are Washington-made products going?

48% Stays in State

52% Goes Out of State
Fast Facts: Made in Washington

Snapshot of Eastside Wholesalers
(largest freight segment by # of shipments)

- 205,279 average loads per month (25% of the total surveyed)
- Ships via every type of shipping method
- 50% / 50% split in state vs out of state shipments

What do you think are the profiles of the other segments? Why is knowing the profile important?
Delivering Goods To You

Goal:
  • Ease of local truck delivery.

Requirements:
  • Reliability and access throughout the road system.
  • Regulations and weigh stations that minimize delay.
Fast Facts: Delivering the Goods to You

The highways are getting more congested...

The number of trucks on US highways has grown by 27 percent over the last 23 years.

Source: US Department of Transportation
Fast Facts: Delivering the Goods to You

However, most truck trips in Washington are from smaller trucks delivering goods to local markets.

- In 2005, almost ten times more light and medium trucks than heavy trucks were licensed in Washington State.
- Up to 80 percent of truck trips operate in the local distribution system.
Defining Delivery

…and these delivery trucks are being held to tighter and tighter delivery windows.

<table>
<thead>
<tr>
<th>Customer Defined Measure of “On Time Delivery”</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>On or before appointment time</td>
<td>13.3</td>
</tr>
<tr>
<td>+ 15 minutes from the appointment time</td>
<td>4.1</td>
</tr>
<tr>
<td>+ 30 minutes from the appointment time</td>
<td>8.5</td>
</tr>
<tr>
<td>+ 1 hour from the appointment time</td>
<td>8.9</td>
</tr>
<tr>
<td>-1 hr to +0 hours from the appointment</td>
<td>.9</td>
</tr>
<tr>
<td>On the requested day</td>
<td>40.5</td>
</tr>
<tr>
<td>On the agreed upon day</td>
<td>23.7</td>
</tr>
</tbody>
</table>

Source: 2007 Warehouse Education Research Council Benchmarking Study

Why is more precise delivery becoming the norm?

Almost 40% of shippers say their customers define on-time delivery to within a pre-defined window
Session Topics

*Introduction to Supply Chain Management*

*Case Study: Washington State DOT*

*Example Supply Chains*

*Interactive Working Session*
Supply Chain Management: The GOALS

1. WASTE ELIMINATION
2. TIME COMPRESSION
3. FLEXIBLE RESPONSE
4. UNIT COST REDUCTION
5. CUSTOMER SATISFACTION = REVENUE GROWTH

Which is the most important?
Which SCM Goal Does Each of These Companies Rank as #1?

I. Global Gateways
   - Ashley Furniture Industries, Inc.
   - Gap Inc.
   - Microsoft
   - Walmart
   - Target

II. Made in Washington
   - Boeing

III. Delivering Goods To You
Total Cost Concept

Supply chain managers evaluate product costs as *Total Costs*

- Products incur cost as they flow through the supply chain.
- Product costs are made up of material costs, conversion costs, transportation costs and inventory costs.
- A Total Cost Analysis is a decision-making approach that considers minimization of total costs and recognizes the interrelationship among system variables such as transportation, warehousing, inventory, and customer service.

The goal is to deliver product to customers at the lowest total cost... so each supply chain decision is important.
# Example of Total Cost

<table>
<thead>
<tr>
<th>Product Cost</th>
<th>Material Costs</th>
<th>Conversion Costs</th>
<th>Logistics Costs</th>
<th>Inventory Costs</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier 1</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$0.20</td>
<td>$0.10</td>
<td>$2.30</td>
</tr>
<tr>
<td>US Based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier 2</td>
<td>$0.70</td>
<td>$0.50</td>
<td>$0.80</td>
<td>$0.20</td>
<td>$2.20</td>
</tr>
<tr>
<td>Asia Based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>($0.30)</td>
<td>($0.50)</td>
<td>$0.60</td>
<td>$0.10</td>
<td>($0.10)</td>
</tr>
</tbody>
</table>

**Reason**
- Lower raw material cost
- Lower Labor Cost
- Longer production runs
- Higher Transportation cost
- Longer lead time
- Higher inventory carrying cost
- Higher on-hand balances
- Net savings is less than expected
- Longer lead-times
- Higher supplier risk

**Component Difference** = ($0.80)

**Supply Chain Difference** = $0.70

**Net Difference** = ($0.10)
Companies Who Manage Total Supply Chain Costs Well Have a Real Advantage

Percentage of Company Revenue Spent on Supply-Chain Activities

<table>
<thead>
<tr>
<th>Industry</th>
<th>Best in Class</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semiconductor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaged Goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appliances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Efficient Supply Chains Increase Profit

Source: PRTM
Top supply chain risks, or the things that keep supply chain managers awake at night…

Top risks and concerns as cited by shippers and 3PLs in a trucking association survey were…

• Managing transportation costs was the number one risk …
  - Rising fuel costs and potential fuel shortages
  - Rising labor costs
  - Driver shortages and restrictive work rules

• Followed by infrastructure concerns…
  - Deterioration of highway infrastructure and congestion
  - Changes to import/expert security regulations
  - Overcrowded ports and lack of infrastructure
  - Rail shortages and deterioration of rail infrastructure
  - Shortages in ocean freight carriers

Source: NASSTRAC 2007 Survey
1. Short Haul Trucking to port in China
2. Broker/Consolidator
3. Load ship
4. Ocean Transport
5. Broker/Consolidator
6. Port Load/Un-Load in Tacoma
7. Intermodal Rail to Arcadia, Wisconsin
8. Short Haul Trucking from Rail Terminal to DC

1. Long Haul Trucking to Retail Store
2. Short Haul to Retail Store

1. Local Delivery
Discussion Topics

- Which WSDOT strategy is impacted by Ashley Furniture’s supply chain decisions?

- Why would Ashley (and other companies) import through the Port of Tacoma?
## P&G’s Distribution Reinvention

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>By 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of warehouses</strong></td>
<td>450</td>
<td>225, likely to consolidate outsource providers</td>
</tr>
<tr>
<td><strong>Product Mix on Pallets</strong></td>
<td>Mostly full pallet or partial pallet</td>
<td>More mixed pallets with multiple products and focus on increasing velocity</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>Less Than Truck Load and Truck Load short hauls</td>
<td>Mostly Truck Load/longer hauls</td>
</tr>
<tr>
<td><strong>Frequency of Delivery</strong></td>
<td>Same</td>
<td>Same to More</td>
</tr>
<tr>
<td><strong>Inventory</strong></td>
<td>$6.9 Billion</td>
<td>Reduced</td>
</tr>
</tbody>
</table>

Companies such as P&G are using network optimization tools to drive lower network costs and improve efficiencies.

Source: Cleaning Up on Distribution, Traffic World, Jan 15 2007
Discussion Topics

- How does P&G’s reinvention of its distribution strategy impact Washington State’s transportation system?

- What is inventory velocity and why is it important?

- How will gas prices impact P&G’s strategy?
Wal-Mart’s Import Center

Wal-Mart created a flow-through import center in Houston
Wal-Mart’s New Import-Focused Warehouse

Wal-Mart’s 4 Million Square Feet Warehouse in Bay Port (Houston), Texas

Photo courtesy of Cliff Lynch
Discussion Topics

- Why would a Houston-based import center be more efficient for Wal-Mart than a West-Coast-based facility?

- What if all of the top 20 national retailers did the same thing as Wal-Mart? What would be the impact to the WSDOT? What about the impact to the state’s economy?
Boeing’s Original 737 Manufacturing Plant
Boeing’s Lean 737 Manufacturing Plant
Discussion Topics

- What are the major impacts for Boeing to have their suppliers ship product "Just-In-Time" (smaller and more frequent shipments) to the plant with "Kits" ready to be assembled on the plane?

- How do these smaller and more frequent shipments affect WSDOT?

- What percent of Boeing’s inbound parts shipments are send via air shipment?

- How does this impact Boeing outbound shipments?
High Tech Manufacturer’s Original Supply Chain

- Component Manufacturing
- Finished Goods Component Assembly
- Finished Goods Final Kit-out
- Retailer

14 Outsourced throughout China, Taiwan, Malaysia

- Ireland Company Owned Facility
- 10 Company Owned Locations WW

4 Weeks → 4 Weeks → 3 Weeks + 2 Days → 1 Week

> 16 Weeks Total Inventory In the Supply Chain
High Tech Manufacturer’s New Lean Supply Chain

3 All in S. China

One Outsourced in S. China

10 Outsourced Locations WW

2 Weeks  1 Day  1 Weeks  2 Days  1 Week

<5 Weeks with 30% Total Savings
# Microsoft’s Outsourced Supply Chain

<table>
<thead>
<tr>
<th>Supply Chain Process</th>
<th>In-source</th>
<th>Outsource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecasting</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Purchasing</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Production Planning</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Inventory Control</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Warehousing</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Order Management</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Distribution</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Managing out costs and working capital

More and more companies like Microsoft are looking to Third Party Logistics Providers (3PLs). 3PL revenue has almost doubled since 2000.

Source: Armstrong & Associates

How Does More Outsourcing Impact WSDOT’s decisions?
WSDOT Freight Highway Systems Strategic Planning: Seven Steps

Step 1: Quantify freight customer requirements
Step 2: Identify existing performance gaps
Step 3: Get good data
Step 4: Predict future freight demand
Step 5: Estimate additional economic output created by meeting demand
Step 6: Develop solution proposals
Step 7: Prioritize solutions based on their ability to meet the state’s goals
Session Topics

*Introduction to Supply Chain Management*

*Key Drivers of Supply Chain Management*

*Example Supply Chains*

*Case Study: Washington State DOT*

*Interactive Working Session*
Interactive Learning Session

- Break into groups

- What were the three most important takeways for you?

- If you had a magic wand – what do you think should be done

- What are the biggest constraints?

- Please select a spokesperson to present your team’s answers
Thank You!

Kate Vitasek  
Founder, Supply Chain Visions  
Faculty, University of Tennessee

kate@scvisions.com

www.scvisions.com