How To Support Your Supply Chain Operations with Lean Inbound Logistics

Georgia Tech

Supply Chain Management Series

Lean Inbound Logistics

February 17-18, 2016 | Savannah, GA

www.scl.gatech.edu/lil

Georgia Tech Supply Chain & Logistics Institute

LeanCor TRAINING AND EDUCATION

Your Presenter: Brad Bossence

Brad Bossence
Vice President of Consulting
LeanCor Supply Chain Group
Lecturer, Georgia Tech SCL

Career Focus:

20 years of third party logistics and consulting experience with a specific focus in Lean Culture Transformation, Executive Coaching and Supply Chain Advancement.

Currently Responsible For:

Leading LeanCor Consulting services, including end to end supply chain strategy, tactical material flow improvement, strategy deployment and people development.

Industry Group Speaker:

Atlanta WERCouncil President, AME, CSCMP, GTSCL, Institute of Industrial Engineers, Lean Enterprise Institute, Georgia Center for Logistics,
Honda Lean Network

Q&A with Reemer Youmans

As Director of Distribution Center Operations for HUGO BOSS, Reemer Youmans leads company-wide initiatives to manage inventory, reduce costs, improve processes and procedures, enhance scheduling, and reduce labor costs—while meeting or exceeding productivity goals and quality assurance standards.

HUGO BOSS's fully automated distribution center in Savannah services 700+ points of sale in the USA and has an annual outbound volume of over 9 million units. Reemer supports the budgeting, forecasting, and administration of a $14 million annual operating budget. He supervises 5 managers, 9 supervisors, 110 hourly employees, and 50-to-150 temporary workers, depending upon the season.

With over 15 years in the industry, Reemer's background includes retail distribution center operations, construction, and manufacturing.

Reemer holds a B.S. in Business Administration with focus in Industrial Management as well as a Lean Supply Chain Professional Certificate from the Georgia Tech Supply Chain and Logistics Institute.

Supply Chain & Logistics Management

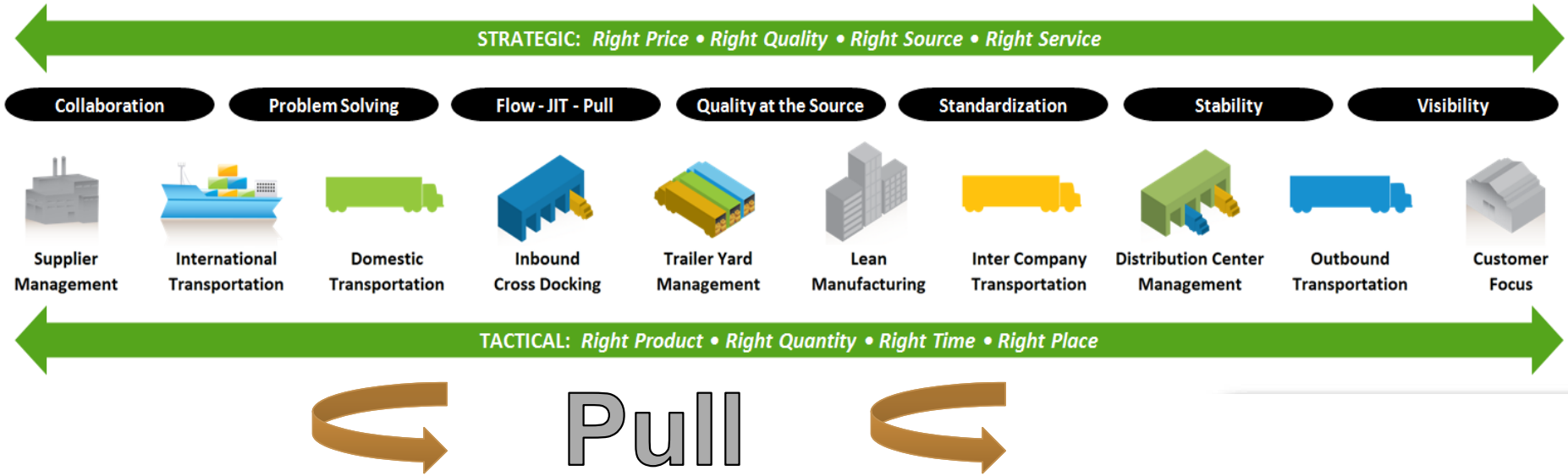
- ✓ Logistics are sections of the orchestra
- ✓ Supply Chain Management is the conductor who sets the rhythm for all logistics functions
- ✓ Trying to optimize each logistics function independently will sub optimize the supply chain
- ✓ Optimize the supply chain by enabling the logistics functions to work systematically

Foundational Thinking

- The goal of a business is to maximize customer value, at the lowest possible total cost, while treating people and the world with respect.
- Supply Chain Performance of an organization is a reflection of the overall performance of the organization.
- Business decisions are made in all parts of a business, but the good and bad of a decision will manifest itself in the supply chain (another department usually)
- Waste manifested in the Supply Chain will be most evident in: customer fill rates, inventories, working capital, rework, lead time and operating costs. (Inbound Logistics!)

Transportation as Part of the Overall Supply Chain Strategy

- **Total Cost of Fulfillment**: Build models and lead and make decisions based on Total Cost of Fulfillment.
- Recognize that all decisions have unintended consequences and as leaders we must become systems thinkers.



Inbound Logistics Performance = Organizational Performance

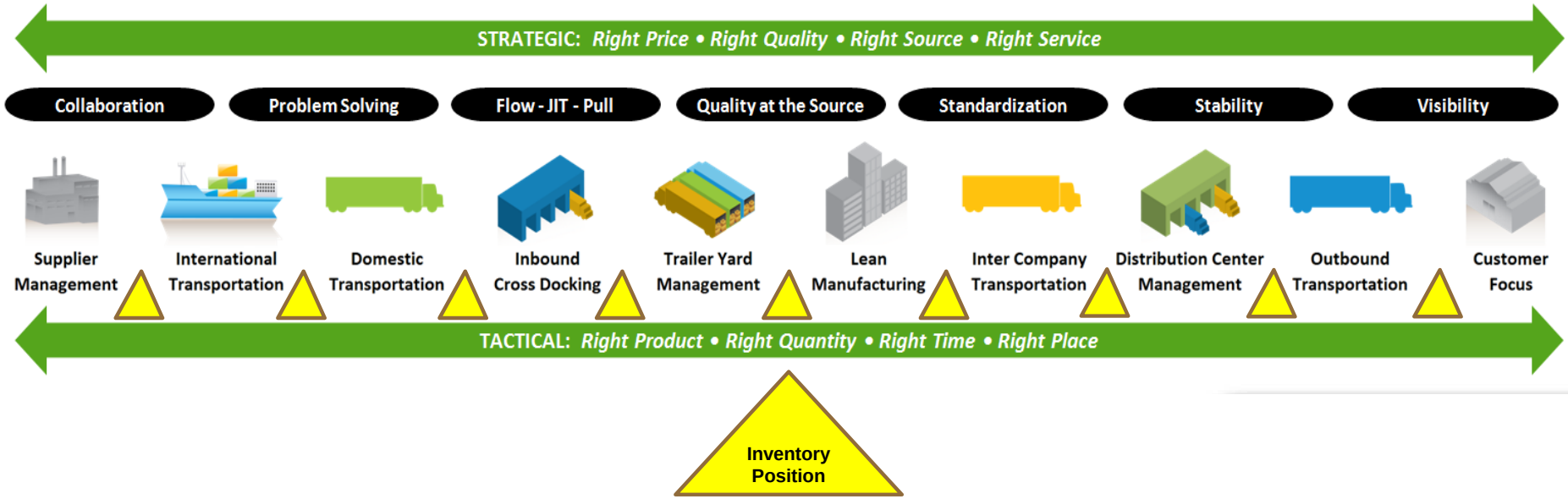
- The goal of a business is to maximize customer value, at the lowest possible total cost, while treating people and the world with respect.

- Overall performance of an organization is reflected as the 10 Rights

Fulfill the	**Right Product**
to the	**Right Customer**
in the	**Right Quantity**
in the	**Right Quality**
at the	**Right Time**
from the	**Right Source**
at the	**Right Price**
at the	**Right Cost**
with the	**Right Service**
all within the	**Right Complexity**

Inbound Logistics as Part of the Overall Supply Chain Strategy

- **Total Cost of Fulfillment**: Build models and lead and make decisions based on Total Cost of Fulfillment.
- Recognize that all decisions have unintended consequences and as leaders we must become systems thinkers.



Lean vs Traditional Inbound Logistics

Definition A:

- Suppliers provide visibility to shipments
- Routes are designed and tendered daily
- Rate per mile is rigorously managed
- Cost per supplier is rigorously managed
- Incorrect shipment quantities are managed at delivery

Poll Question

Which best describes Lean Inbound Logistics?

Definition B:

- Shipping days are communicated to each supplier
- Network is designed by engineers and is adjusted based on plan vs. actual
- Total landed cost is rigorously managed
- Incorrect shipment quantities are managed at pick-up

Step 1: Make Demand Visible, Select Your Pilot

A TMS must easily integrate with our other systems

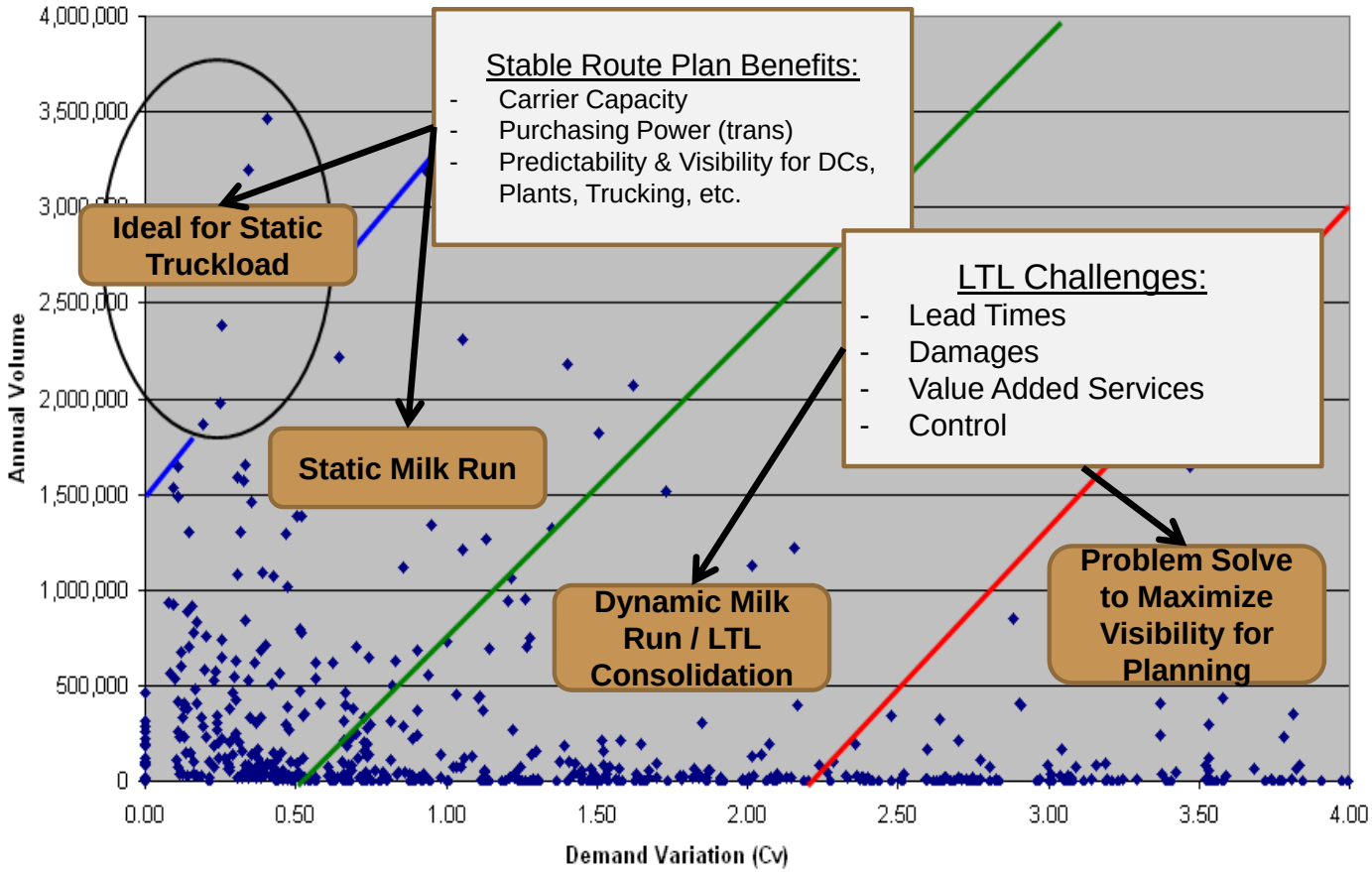
- Provide visibility to data in real-time for proactive problem solving
- Find value in your transportation
  - Opportunity to ensure **optimal routing** in terms of customer business rules and service (i.e. transportation cost)
  - Connect transportation to **manufacturing and inventory strategy**

Poll Question

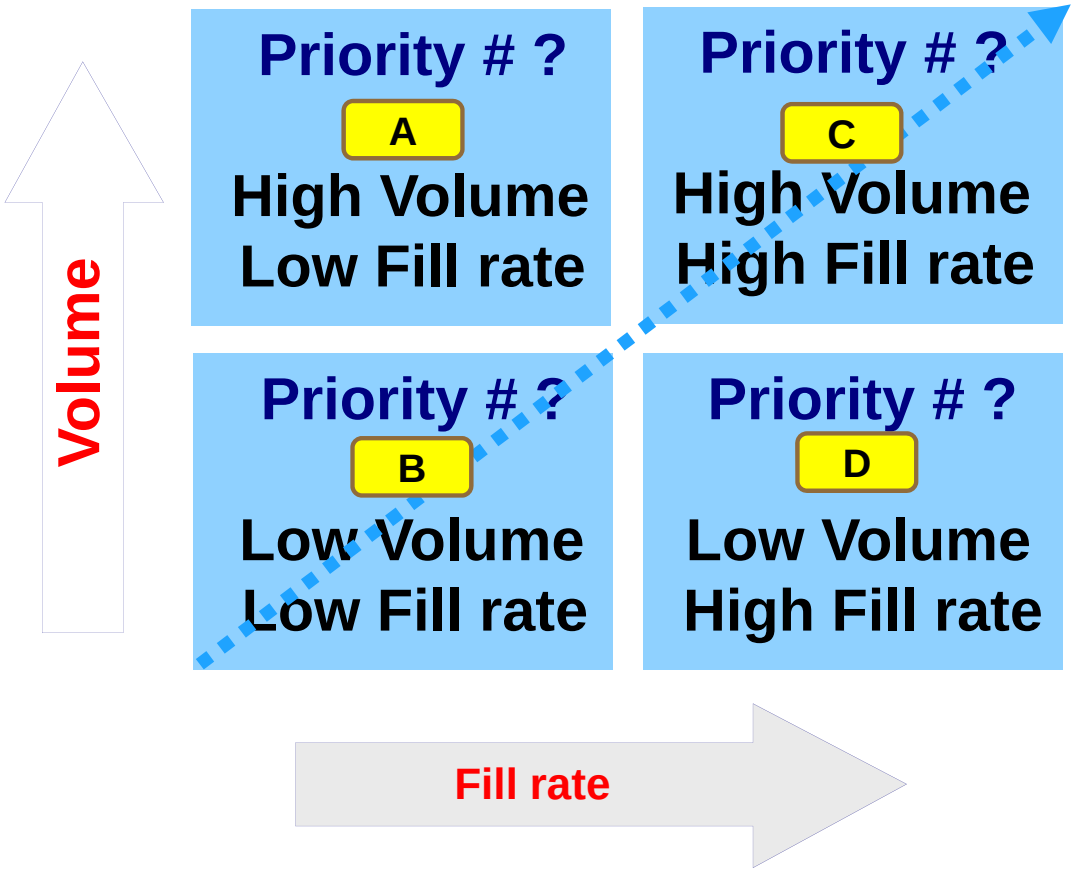
A: Forecast data drives our inbound material flow

B: Demand data drives our inbound material flow

Pilot Selection: Find Stability

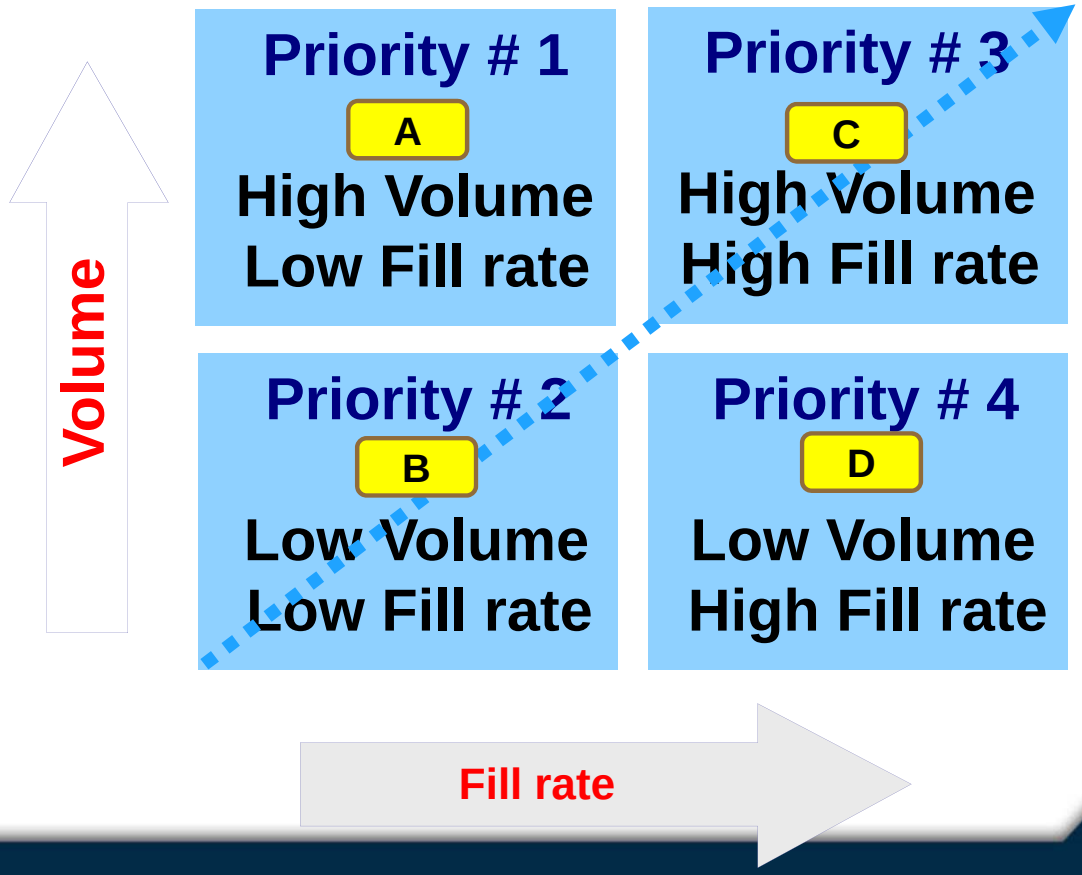


Of These 4 Suppliers, Where Would You Start?



Poll Question
Which supplier would you pilot milk run activity?

Pilot Selection: Solve Material Flow Problems



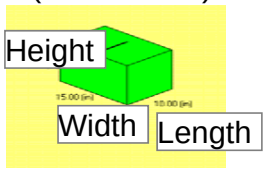
Step 2: Milk Run Design & Plan For Every Part (PFEP)

- Central database of all critical information required to make business decisions relative to material flow

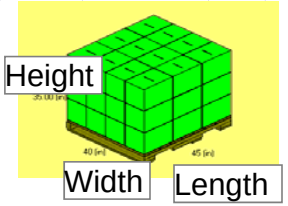
- Planned Pull systems: connects consumption through replenishment

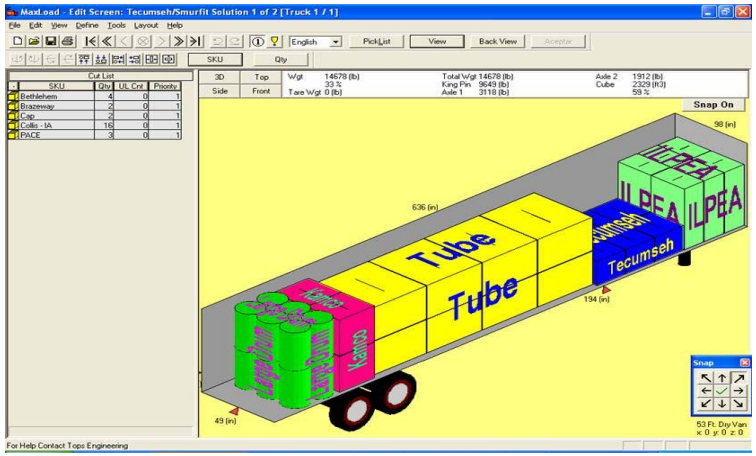
GENERAL DATA								
Destination Plant Part #	Plant Name	(Supplier #)	Supplier Name	Part Description	Average Daily Usage (pcs.)	Container Type (card board box, tote, bulk bin, barrel, skid pack, etc.)	Container Length (IN)	Container Width (IN)
1255896	North	496	LeanCor	Lean Six Sigma Logistics Literature	1296	Box	15	10
1246655	South	496	LeanCor	Lean Brochures	864	Box	15	10
1948				Sigma Logistics DVDs	2592			10

Part Data (Dimensions)



Pallet Data





53' Dry Van Utilization:

Traditional Transportation Design:
- ✓ 26 Floor Spots (standard skids)
- ✓ 44,000 Pounds

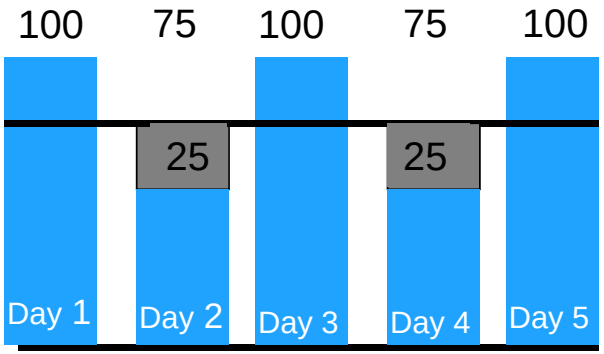
Lean Transportation Design:

Liquid Cube = 52.5'x98.5"x110"
= 52.5'x8.17'x8.67'
= 3948 Cubic Feet
= 146.21 Cubic Yards

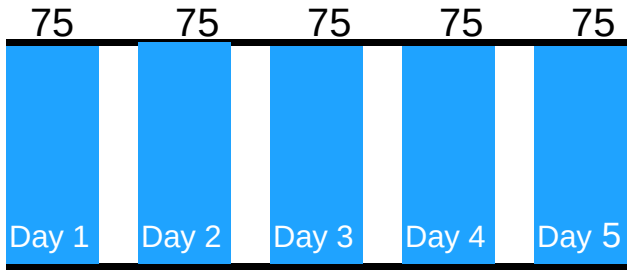
Design Cube = 52.5'x98"x104"
= 52.5'x8.17'x8.67'
= 3719 Cubic Feet
= 137.73 Cubic Yards

Lean Logistics Concept 1 of 3: Lot Size

Customer Daily Requirements = x75



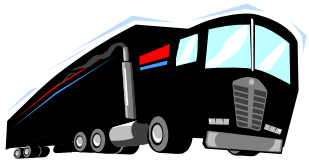
Order Lot Size = 50



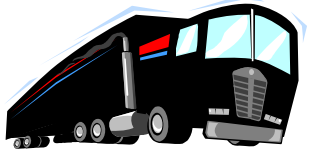
Order Lot Size = 25

What Happens Here?
What are the Implementation Challenges?

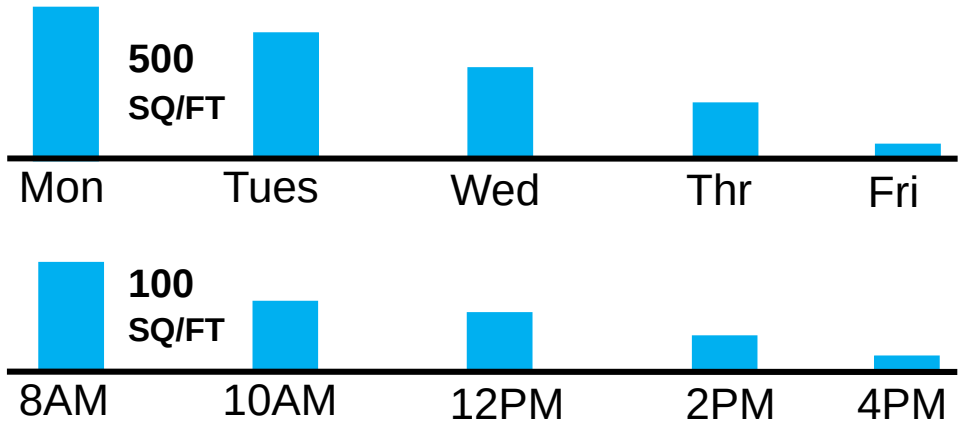
Lean Logistics Concept 2 of 3: Frequency



1 /week

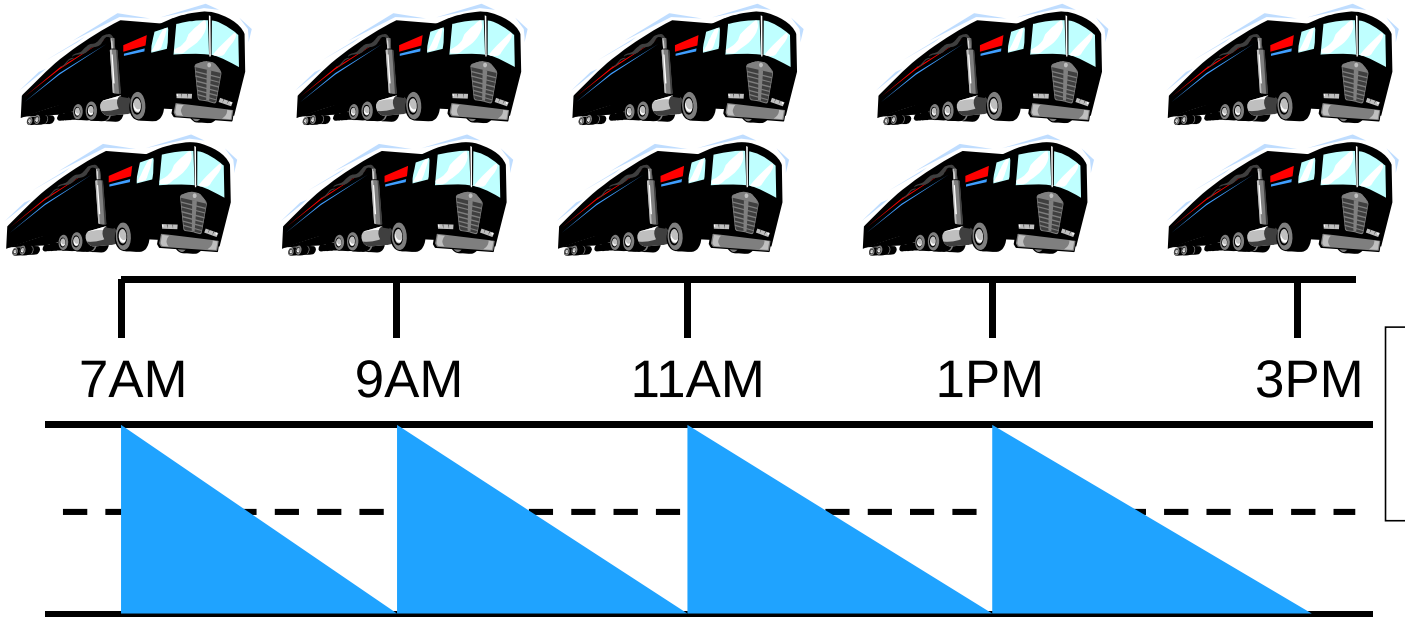


1 /day



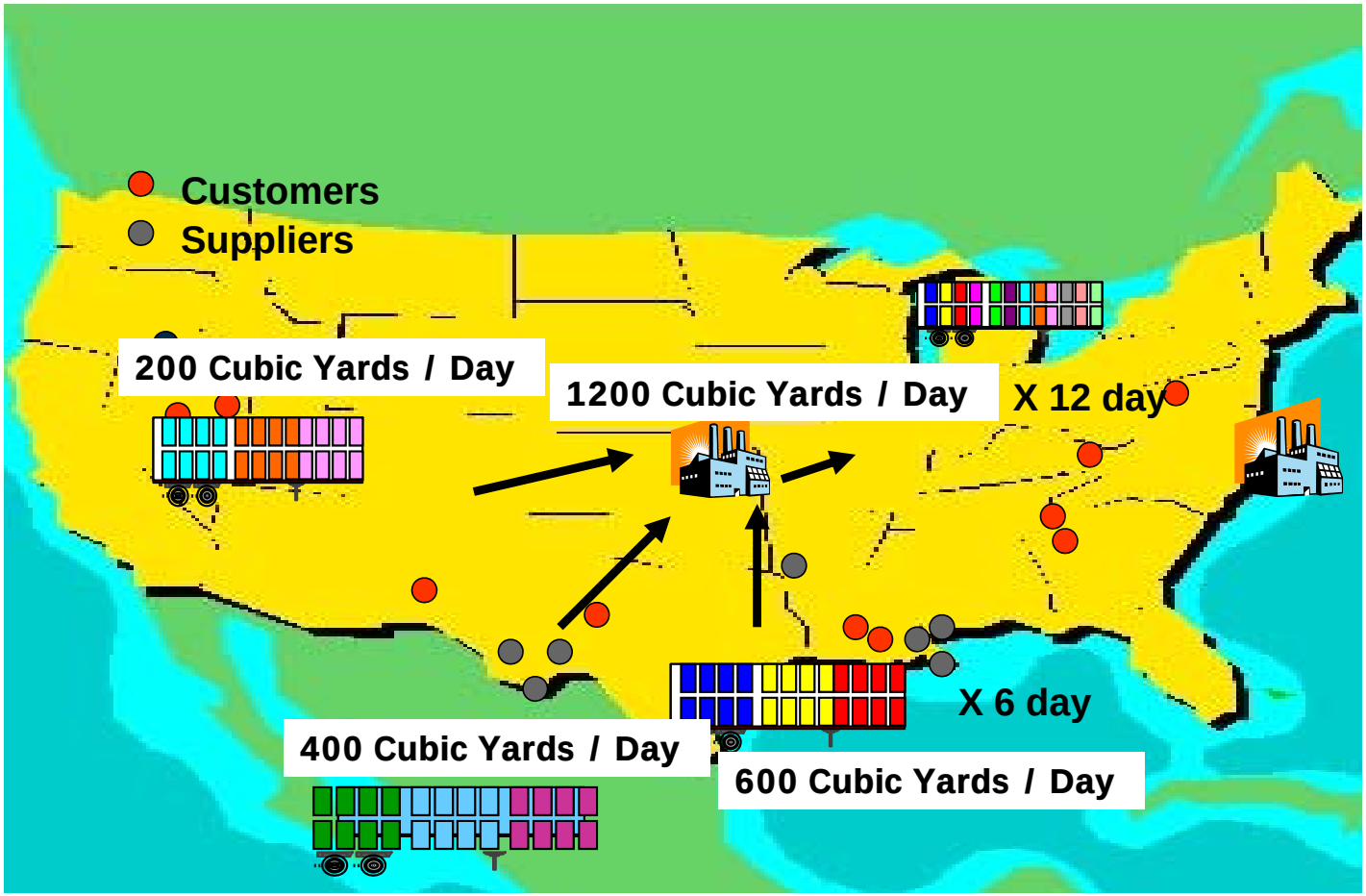
Delivery Frequency Analysis					
1 Truck Load = 1 Week Store / Distribution Center Requirements					
	Monthly	**Weekly**	**Daily**	**2X Day**	**4X Day**
Delivery Frequency (One Part or SKU #)					
Space Used for Inventory (SQ Feet)	2000	500	100	50	25
Average Days on Hand (Days Inventory)	10	2.5	0.5	0.25	0.125
Minimum Order Lead Time	1 month	1 week	1 day	12 hours	6 hours
Percent Improvement from Increased Frequency					
Space Used for Inventory (SQ Feet)		75%	80%	50%	50%
Average Days on Hand (Days Inventory)		75%	80%	50%	50%
Minimum Order Lead Time		75%	80%	50%	50%

Lean Logistics Concept 3 of 3: Level Flow



Where can we use this concept tomorrow?

Transportation Design & Velocity



Step 3 and Beyond: PDCA

- ✓ Disciplined Route Management
- ✓ Disciplined PO / Supplier Management through real-time communication
- ✓ Disciplined Carrier Management Program
- ✓ Total Cost Management

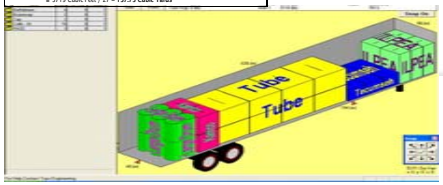
Do - Check - Adjust

Part #	Supplier Name	Avg. Daily Usage	Parts per Container	Length (IN) / Container	Width (IN) / Container	Depth (IN) / Container	Cubic Inches used per day	Cubic Feet ("1728")	Cubic Yards/Day ("27")
111	Supplier 1	2500	5	24	20	12	2880000	1666.67	61.73
222	Supplier 1	64000	1000	12	10	12	92160	53.33	1.98
333	Supplier 1	64000	1000	12	10	12	92160	53.33	1.98
444	Supplier 1	1500	25	24	20	12	345600	200.00	7.41
								TOTAL	73.09
555	Supplier 2	3200	1	12	10	12	4608000	2666.67	98.77
666	Supplier 2	3500	20	16	20	24	1344000	777.78	28.81
777	Supplier 2	3000	50	24	20	12	345600	200.00	7.41
888	Supplier 2	7500	10	12	10	12	1080000	625.00	23.15
999	Supplier 2	5500	25	16	20	24	1689600	977.78	36.21
								TOTAL	194.34
								Route Total	267.43
								Design Cube	137.73
								Frequency	1.94

Trailer Utilization

Liquid Cube – 52.5 feet long x 98.5 inches wide x 110 inches high
– 52.5 feet long x 8.2 feet wide x 9.17 feet high = **3948 Cubic Feet**
– 3948 Cubic Feet / 27 = **146.21 Cubic Yards**

Design Cube – 52.5 feet long x 98 inches wide x 104 inches high
– 52.5 feet long x 8.17 feet wide x 8.67 feet high = **3719 Cubic Feet**
– 3719 Cubic Feet / 27 = **137.73 Cubic Yards**



Q&A with Reemer Youmans

As Director of Distribution Center Operations for HUGO BOSS, Reemer Youmans leads company-wide initiatives to manage inventory, reduce costs, improve processes and procedures, enhance scheduling, and reduce labor costs—while meeting or exceeding productivity goals and quality assurance standards.

HUGO BOSS's fully automated distribution center in Savannah services 700+ points of sale in the USA and has an annual outbound volume of over 9 million units. Reemer supports the budgeting, forecasting, and administration of a $14 million annual operating budget. He supervises 5 managers, 9 supervisors, 110 hourly employees, and 50-to-150 temporary workers, depending upon the season.

With over 15 years in the industry, Reemer's background includes retail distribution center operations, construction, and manufacturing.

Reemer holds a B.S. in Business Administration with focus in Industrial Management as well as a Lean Supply Chain Professional Certificate from the Georgia Tech Supply Chain and Logistics Institute.

How To Support Your Supply Chain Operations with Lean Inbound Logistics

Georgia Tech

Supply Chain Management Series

Lean Inbound Logistics

February 17-18, 2016 | Savannah, GA

www.scl.gatech.edu/lil

Georgia Tech Supply Chain & Logistics Institute

LeanCor TRAINING AND EDUCATION