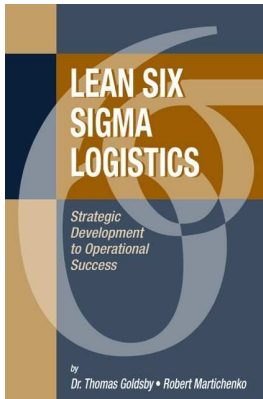




The Lean Supply Chain Fact or Fiction ?



***Robert Martichenko
President, LeanCor LLC***

Slide: 1



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Simple in Talk...Tough in Walk...

“If you are determined, and try hard enough, you can squeeze water from a dry towel”

Eiji Toyoda
Past President Toyota Motor Corp.

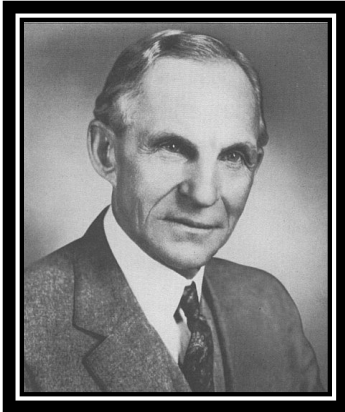
“Toyota, our exemplar company, continues to march from victory to victory...”

Jim Womack
President and Founder, Lean Enterprise Institute

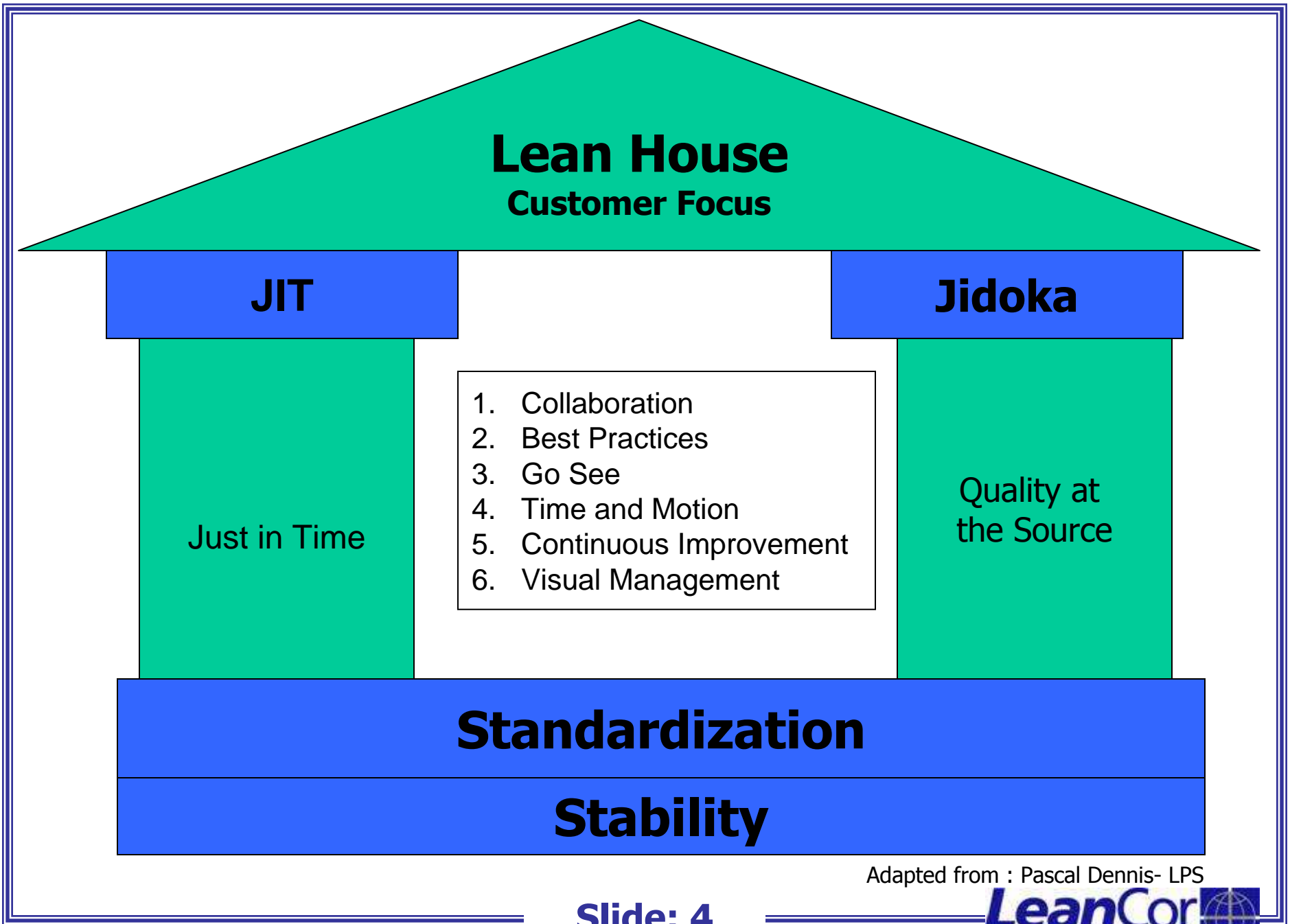
“We’re not Toyota”spoken to me personally by

6 VP’s, 13 Directors, 20 GM’s and 27 Material Managers

The Road to Lean



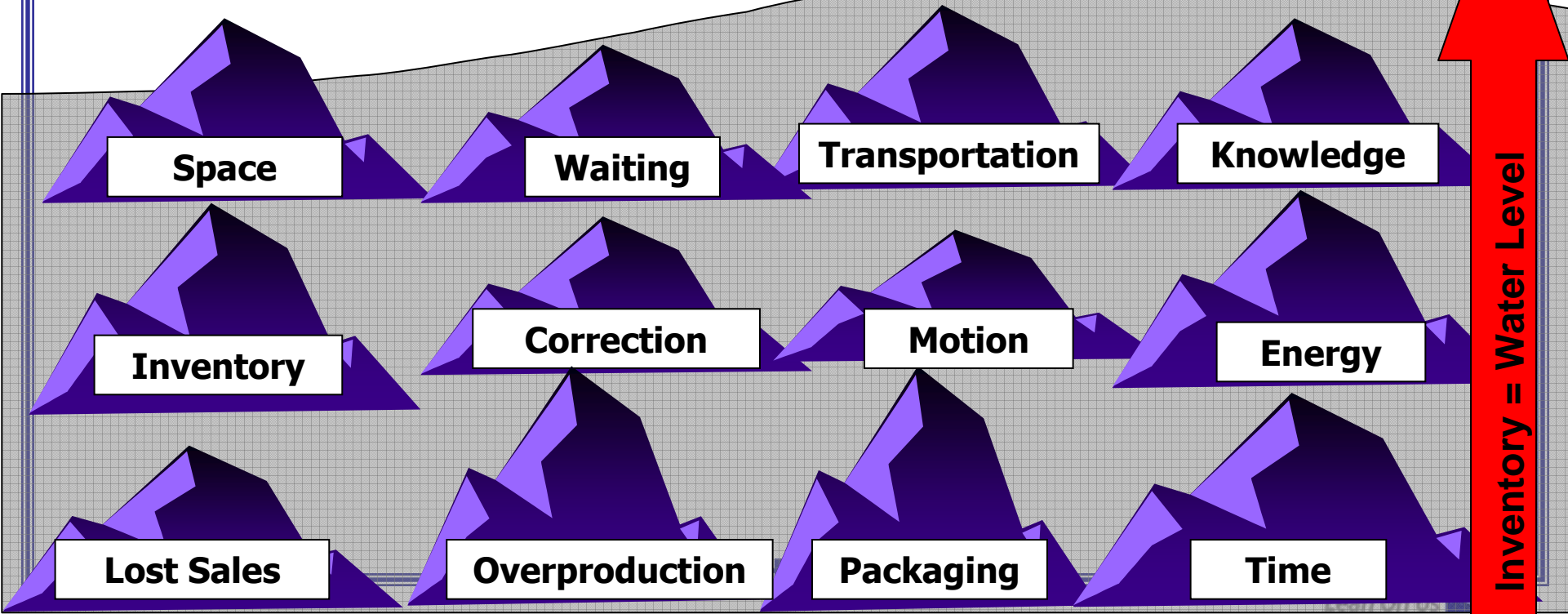
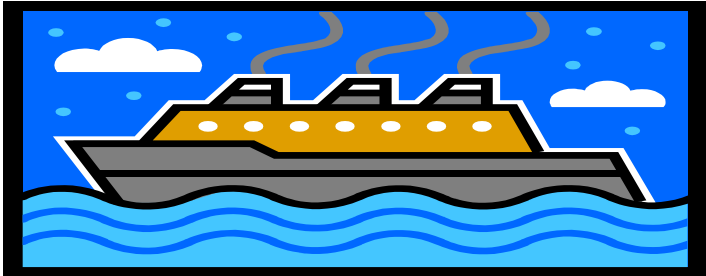
- 1900: Craft Production
- 1908: Frederick Taylor – Scientific Management
- 1908: Ford Model T – Mass Production
- 1920's: GM – Mass Production – Labor-Options
- 1940's: WW2 – Japan Reconstruction - Deming
- 1950's: Eiji Toyoda visits Ford River Rouge- More Deming
- 1960's-70's: Toyota Production System –, Taiichi Ohno-TQM
- 1980's-90's: Womack/Jones– Lean Thinking – Motorola Six Sigma
- 2000 + : What's Next ?



Adapted from : Pascal Dennis- LPS

**The
Learning
Organization**

River of Waste



Supply Chain & Logistics Management

Supply Chain Management

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 includes 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 management within and across companies.

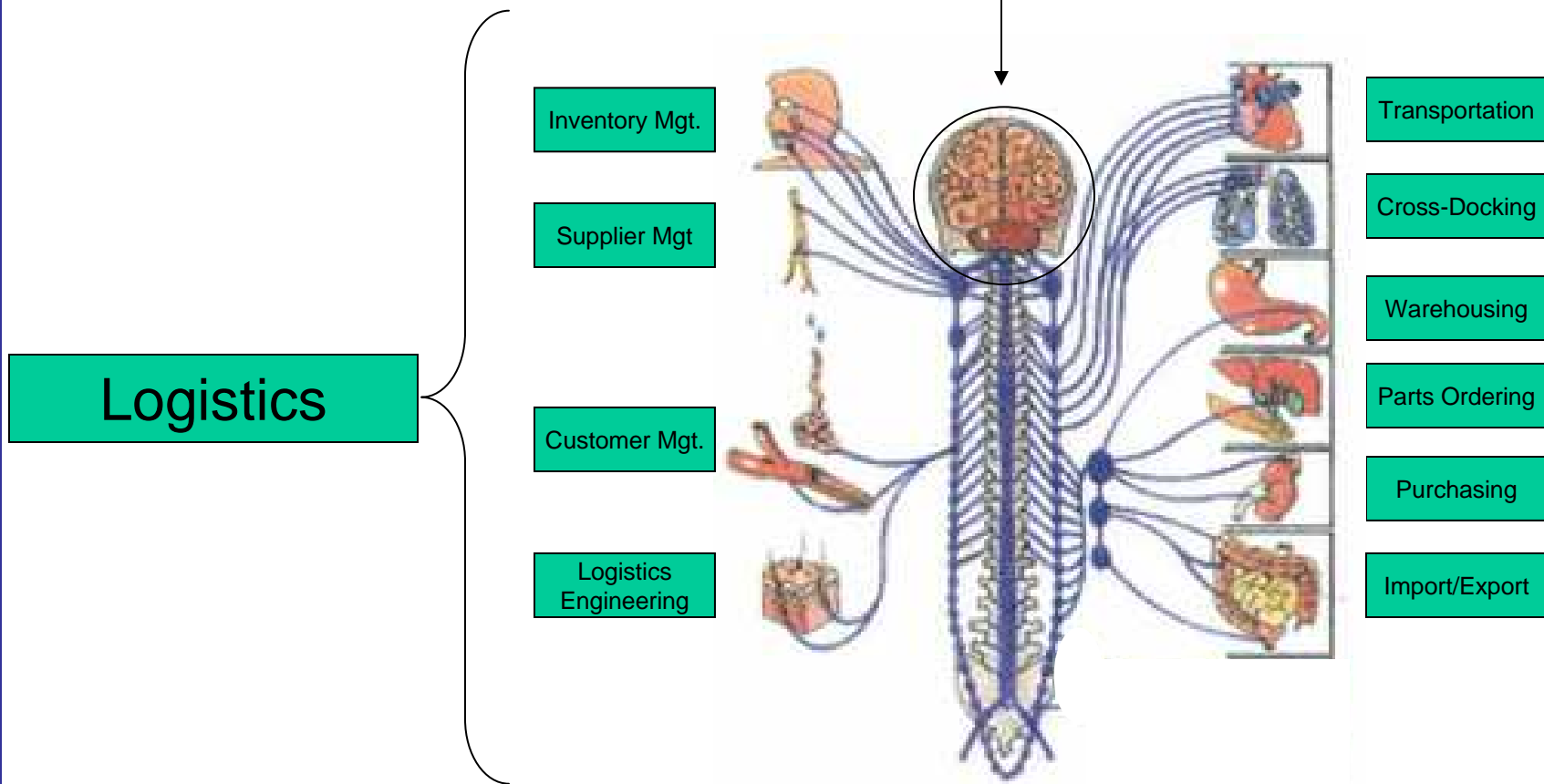
Logistics Management

Logistics Management is that part of Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.

Source CSCMP

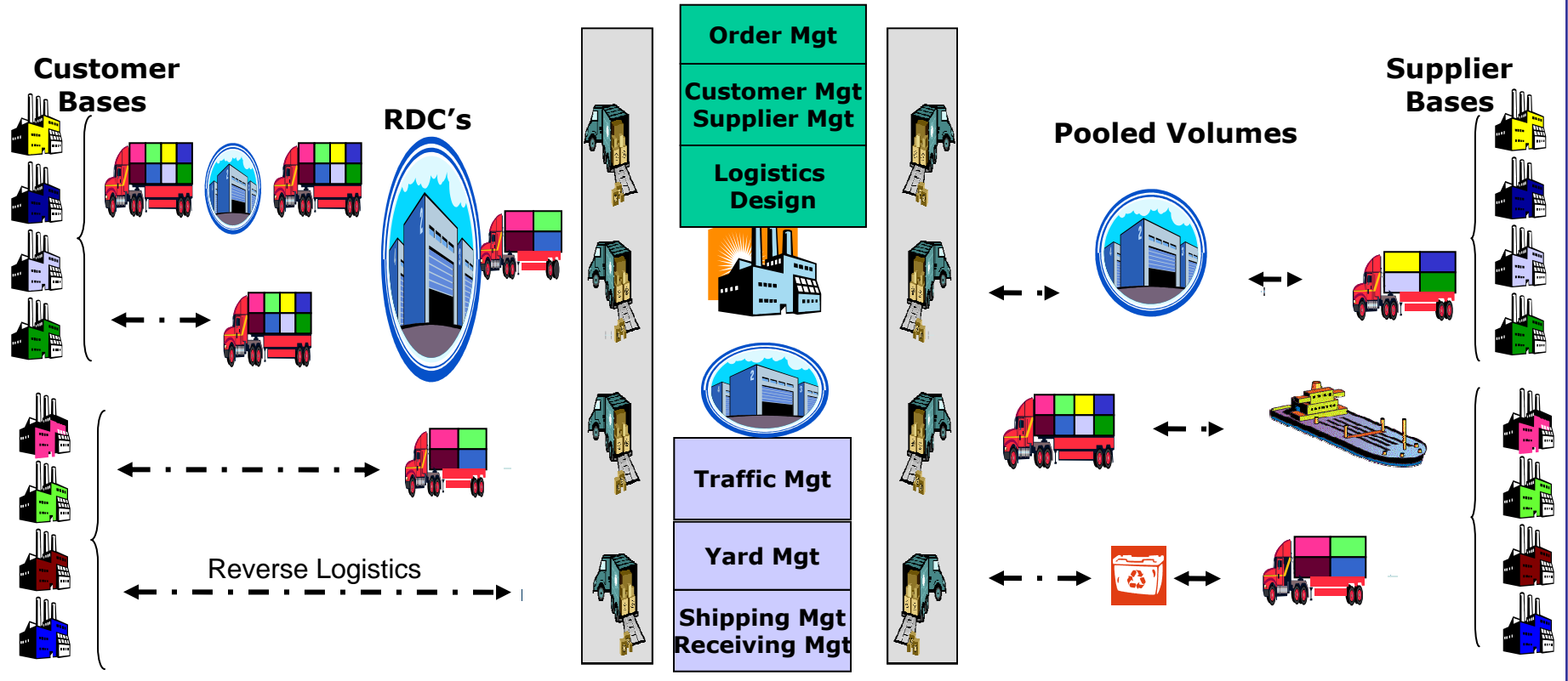
Supply Chain & Logistics Management

Supply Chain Management



What part of Lean Logistics don't you understand?

Right Part • Right Quantity • Right Time • Right Place • Right Price • Right Quality • Right Source • Right Service



Delivery Frequency
Delivery Verification
Window Times
Customer Compliance
Feedback Mechanism

Network Ownership
Network Optimization
Shipping Schedule
Carrier Performance
Reduced Lead Time

Planned System
Event Mgt
Pull Replenishment
Visibility & Stability
Trailer Activity.

Cross Docking
Yard Control
Receiving Schedule
Levelled Flow
Delivery Frequency

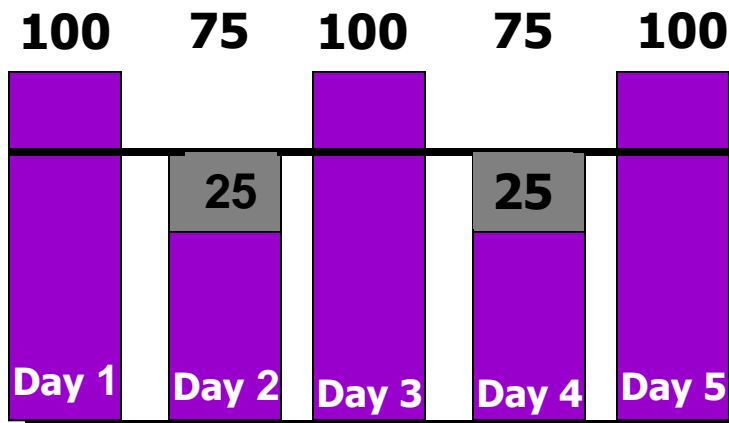
Pick Up Frequency
Pick Up Verification
Supplier Compliance
Feedback Mechanism

Slide: 8

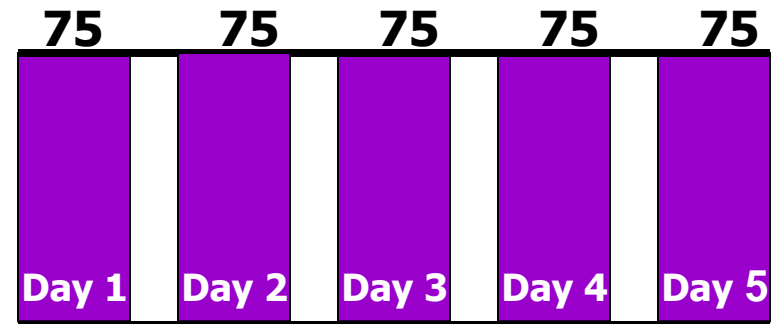


Lean Logistics Concept 1 of 3 – Lot Size

Plant Daily Requirements = x75



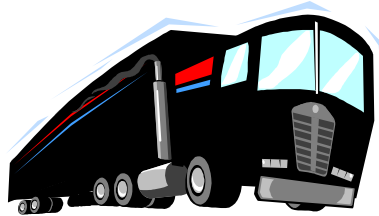
Order Lot Size = 50



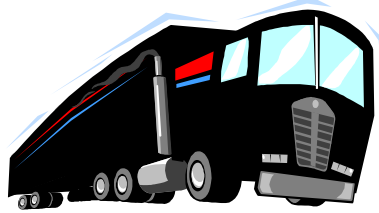
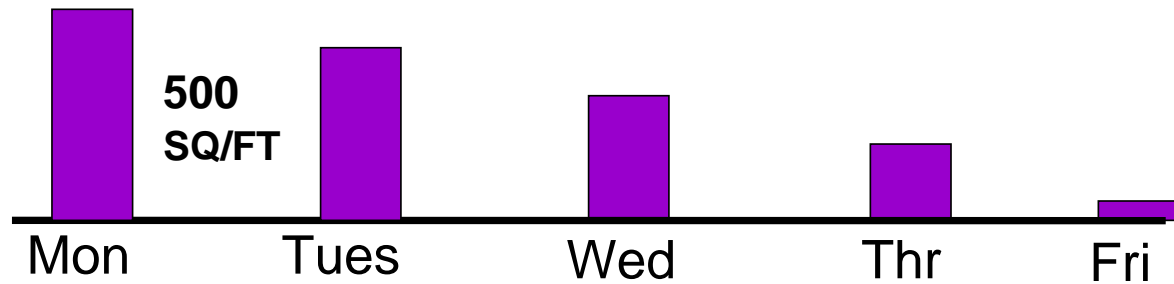
Order Lot Size = 25

What Happens Here ? What are the Implementation Challenges ?

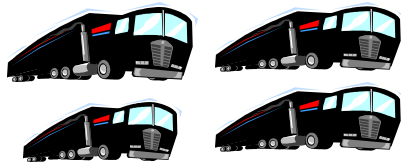
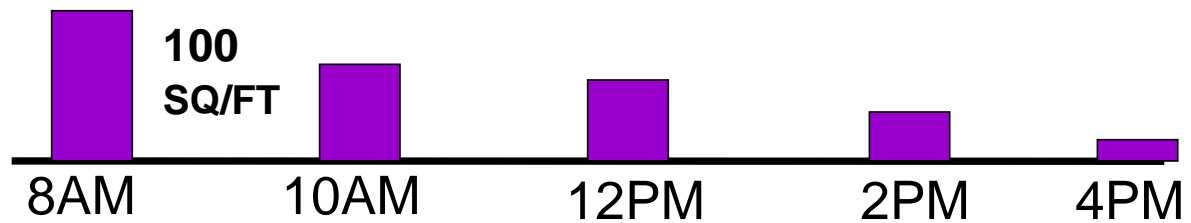
Lean Logistics Concept 2 of 3 - Frequency



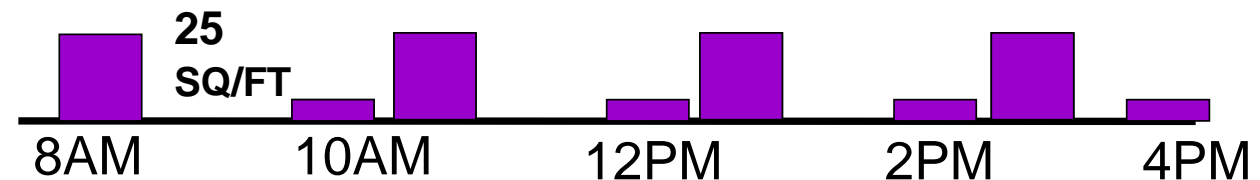
1 /week



1 /day

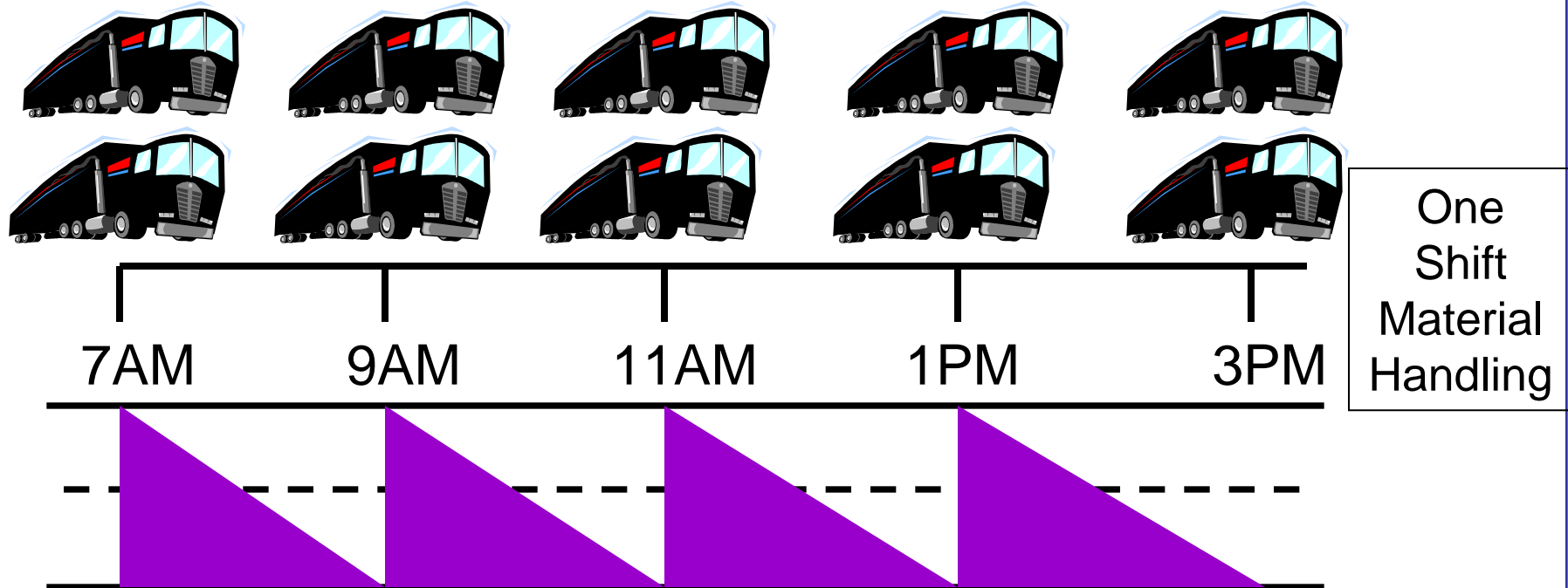


4 /day



What is the Effect on Inventory? What is the obvious challenge?

Lean Logistics Concept 3 of 3 – Level Flow



Where can we use this concept tomorrow ?

Unload Takt Time & Work Planning Calculation

Takt Time = Available Time / Demand

	Demand		What if ?		
			Demand	Demand	Demand
Daily Demand - Trailers	40	Trailers	60	60	80
Schedule Work Minutes / Shift	480	Minutes	480	480	480
Number Shifts Per Day	2	Minutes	2	2	2
Lunch Minutes	30	Minutes	30	30	30
Breaks	30	Minutes	30	30	30
Total Downtime Per Shift	60	Minutes	60	60	60
<i>Total Working Time / Day</i>	<i>840</i>	<i>Minutes</i>	<i>840</i>	<i>840</i>	<i>840</i>
Takt Time - Trailer Unloading	21	Minutes Per Trailer	14	14	10.5
Standard Work - Trailer Unload Process Time	45	Minutes	45	30	60
Total Work Demand Minutes - Per Day	1800	Minutes	2700	1800	4800
Avialable Time Per Team Member - Per Shift	420	Minutes	420	420	420
Optimal Number of Team Members	4.3	Team Members	6.4	4.3	11.4
Optimal Team Members Per Shift	2.1	Team Members	3.2	2.1	5.7
# Unloading Doors Required	2.1	Doors	3.2	2.1	5.7
# Lift Trucks Required	2.1	Lift Trucks	3.2	2.1	5.7

What Can we Learn from This ?

Process and the Value Stream

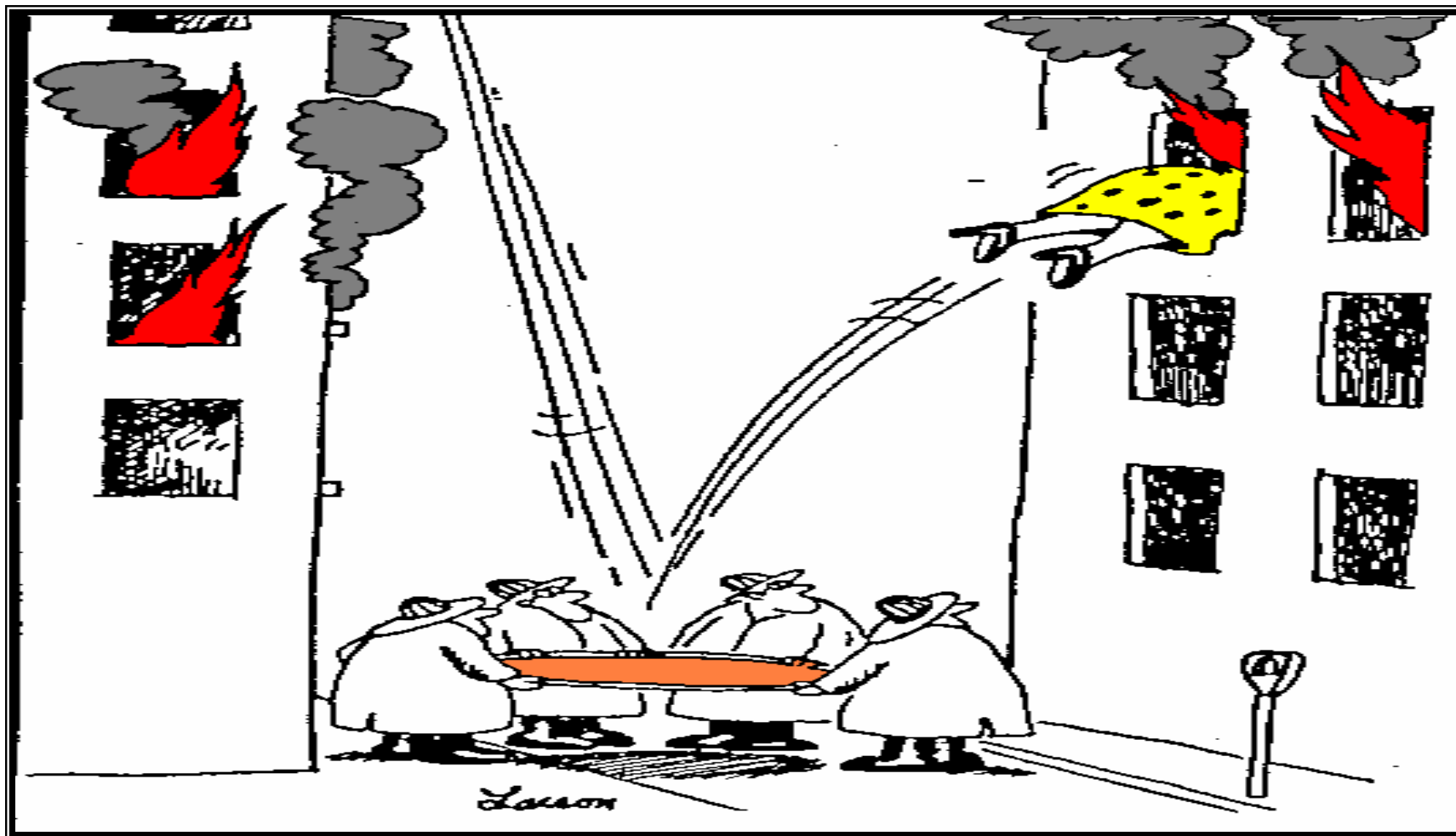
“Brilliant Process Management is our Strategy”

“We get brilliant results from average people managing brilliant processes” ...

“We observe that our competitors often get average (or worse) results from brilliant people managing broken processes”

Toyota Motor Manufacturing

Continuous Improvement



The Measurement Head Shake...

Decision Making – Dr. Russ Ackoff

Where Do You Operate?

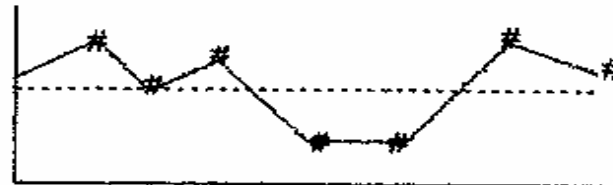
DATA

\$ # \$ % #
 % \$ % \$ # \$ # %
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INFORMATION

###	###	%	###	\$\$\$
###	###	%	###	\$\$\$
###	###	%	###	\$\$\$
###	###	%	###	\$\$\$

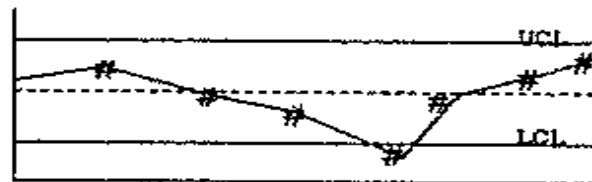
KNOWLEDGE



Understand

(Special Cause Variation)

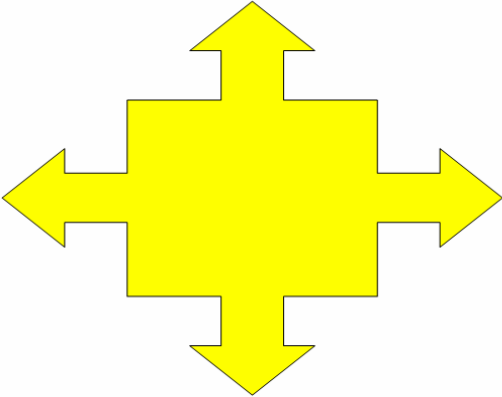
(Common Cause Variation)



WISDOM

“Predictive Management”

Lean Starts with a Plan !

								correlation / contribution				Accountability							
M	M	S	M	Implement Standard "Dashboard" for Measurement				M	M	S	S	S	S	S	M	X	X		
M	M	X	X	Develop Internal Supply Chain Council - Collaboration				M	M	M	M	M	M	S	S	X	X		
M	M	M	M	Implement Weekly Operations Review - PDCA				M	M	S	S	S	S	S	M	X	X		
M	X	X	S	Balance Delivery Frequency with Transportation Cost				M	M	M	M	M	M	S	M	X	X		
M	M	S	S	Trailer Yard Layout and Visual Management				M	M	M	S	M	S	S	M	X	X		
S	M	S	S	Receiving Schedule Implementation				M	S	M	M	M	S	S	M	X	X		
S	M	M	S	Daily Logistics Design Process Implementation				S	S	S	S	S	M	S	M	X	X		
S	M	M	S	Logistics Design Infrastructure				S	S	S	S	S	M	S	M	X	X		
M	S	M	S	PFEP Completion and Sustainment of File				S	S	S	M	M	M	S	M	X	M		
Tactics																			
Leveled Flow - Pull Replenishment Quality at Source - Error Proofing Pipeline Visibility - Visual Management Disciplined Logistics Engineering Strategies												Performance Targets - 24 Mths Complete PFEP File by July 2007 - All Parts Daily Design - by May 2007 - All Suppliers Cube Utilization - Improvement + 10% Transportation Equipment Productivity +10% Miles Ran - Reduction in Miles - 7.5 % Material Handling Productivity + 15%				team members			
																LeanCor Manufacturer Transportation Providers Suppliers			
				Breakthrough Goals															
				Baseline	Year 1	Annualized Year 1	Year 2	Annualized Year 2	correlation / contribution										
S	M	M	S	Transportation Cost Reduction	\$5,000,000	10.0%	\$500,000	5.0%	\$225,000	S	S	S	S	S	M	Legend M = Medium Correlatio			
S	M	M	S	Material Handling Cost Reduction	\$250,000	10.0%	\$25,000	5.0%	\$11,250	M	S	M	M	M	M				
S	S	S	M	Inventory Reduction - at 20% Carrying	\$6,000,000	15.0%	\$180,000	15.0%	\$162,000	S	S	M	M	M	M				
				Total			\$705,000		\$398,250										
				Total Savings - 24 Month Projection					\$1,103,250	correlation / contribution									



Supply Chain **Flow**

Supply Chain **Capability**

Supply Chain **Discipline**

Eliminating organizational waste by delivering supply chain excellence

Thank You
Robert@leancor.com
859-283-7590

Eliminating...

Inventory Waste

Transportation Waste

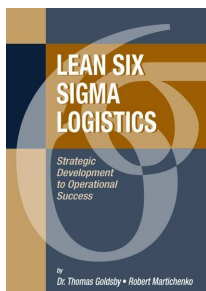
Space & Facilities Waste

Time Waste

Packaging Waste

Administration Waste

Knowledge Waste



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