

INTRODUCTION TO LEAN PROBLEM SOLVING

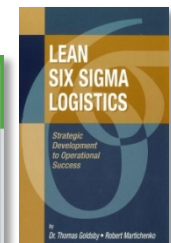
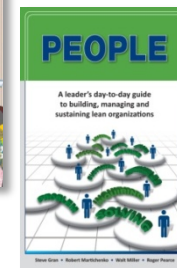
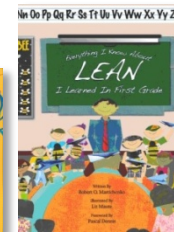
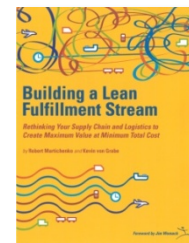
LeanCor Supply Chain Group

→ LeanCor offers a unique and strategic combination of services:

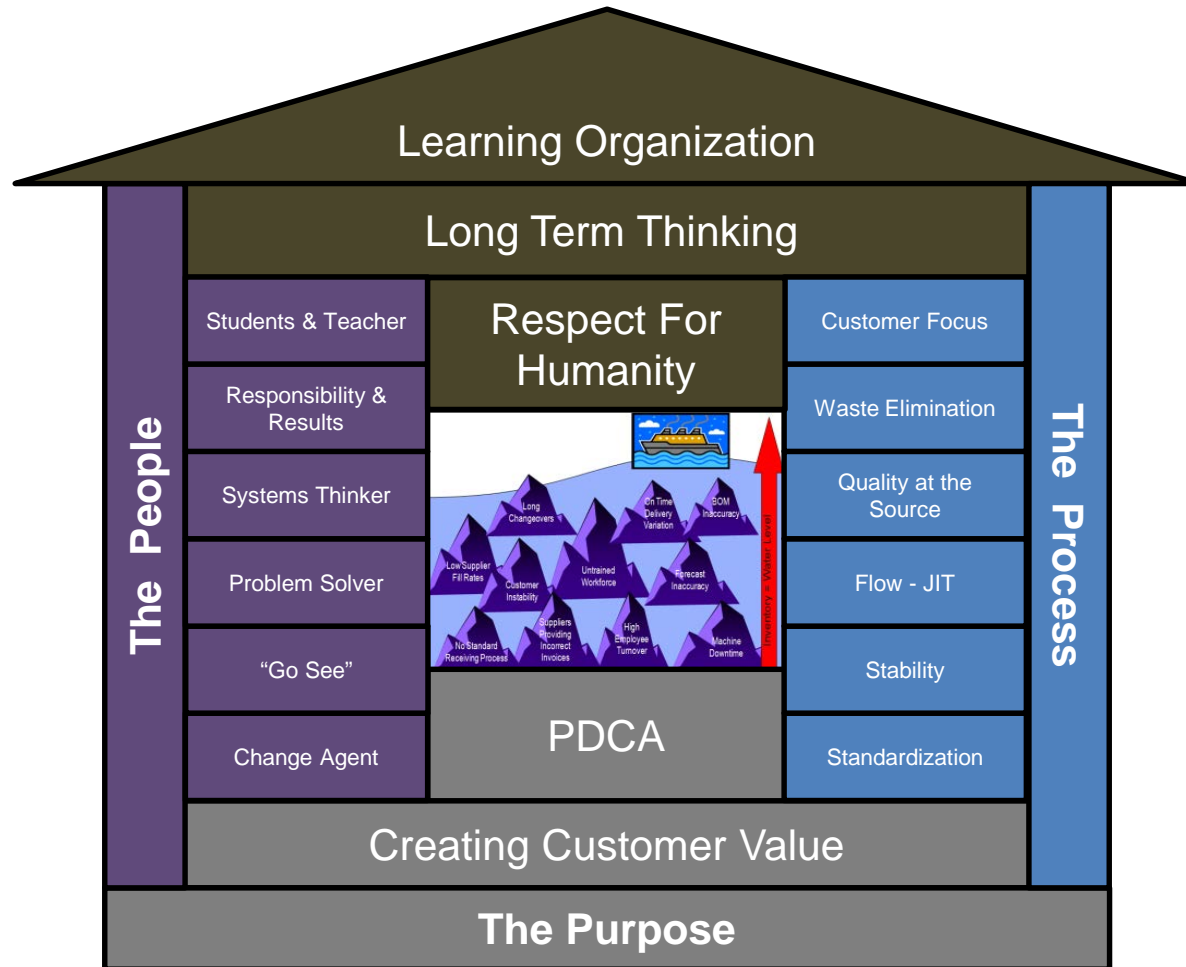
- Third Party Logistics
- Hands-on Consulting
- Training and Education

→ We partner with organizations to eliminate waste, drive down costs, and instill a problem-solving culture across their supply chain.

→ Locations:
LeanCor US, LeanCor Canada



The Lean Enterprise System



Lean Thinking - Fundamentals

- ✓ Articulate Your Purpose and Customer Value Proposition
- ✓ Build the Learning Organization
- ✓ Show Respect for People
- ✓ Show Respect for Processes- Stability, Standardization, Quality at the Source
- ✓ Make Problems Visible - Solve Problems in Real Time
- ✓ Eliminate All Waste- Do Only Those Things That Add Value to the Customer
- ✓ Think Long Term as Well as Short Term
- ✓ Continuously Improve: Get Better Every Day
- ✓ Teach the Power of Process Review and use a simple and standard problem solving model

Lean Defined

“To eliminate waste and satisfy customer needs at the lowest possible cost with consideration and respect for humanity of employees.” - *Taiichi Ohno*

**It's a journey—of continuous improvement
with perfection unattainable.**



The Problem Solver

What does this even mean?

- What is a **problem**?
- What are **different types of problems**?
- What is a **solver**?



What is a Problem?

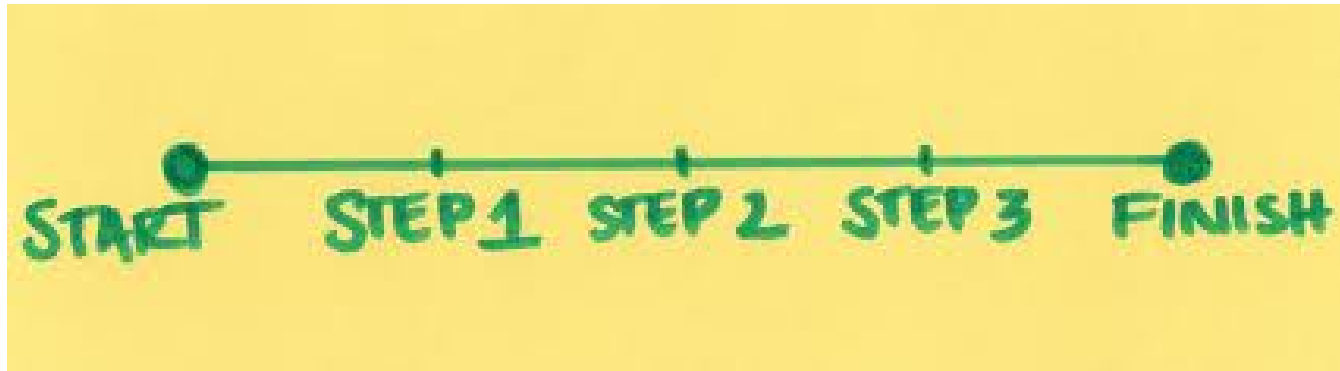
- ➔ A problem can be defined as any deviation from the standard or an unfulfilled customer need.
- ➔ Problems can be classified into one of three types:



1. Standard is not achieved
 - Example - We do not meet 100% on-time performance for delivery within 120 minutes
2. Standard is achieved but has now changed, so we are no longer meeting it
 - Example – We were meeting 100% on-time performance for delivery within 120 minutes, but we must now meet delivery within 90 minutes and cannot meet that new standard
3. Standard is not consistently achieved
 - Example – We deliver product within 120 minutes, most of the time.

Problem Solving and Process

- What we need to recognize is that most problems are associated with **processes**.
- Therefore, the Lean Problem Solver needs to be a **process** thinker.



Application Question

What is a process?

Brilliant Processes

If it's all about processes, we should know what a process is:

A systematic series of actions directed to some end.

Process Elements:

- Supplier
- Input
- Procedure
- Timing
- Output
- Measure
- Customer

$$Y = f(x)$$

Business is about taking **inputs** and transforming them into **outputs** that our customer will see value in. How well we do this determines how well our organization performs.

Inputs and Outputs

What other inputs are required to make this
delicious burger?



$$= f(\text{meat} + x + x)$$

Second Law of Thermodynamics

In a system, a process that occurs will tend to increase the total entropy of the universe.

Second law of thermodynamics



Entropy: The steady deterioration of a system or society.

System: A group of interacting, interrelated, or interdependent elements forming a complex whole.

What does this have to do with Problem Solving?

Application Question

- What problem solving models do you use in your organization?
- Why is it critical to have formal problem solving models?



Problem Solving

- There is always a PLAN to every process, and we constantly have to check our process against our plan to make sure it is meeting all requirements.
- When our process is not performing to plan, we must welcome that problem as an opportunity to improve and use the tools available to us to eliminate the root cause of that problem.

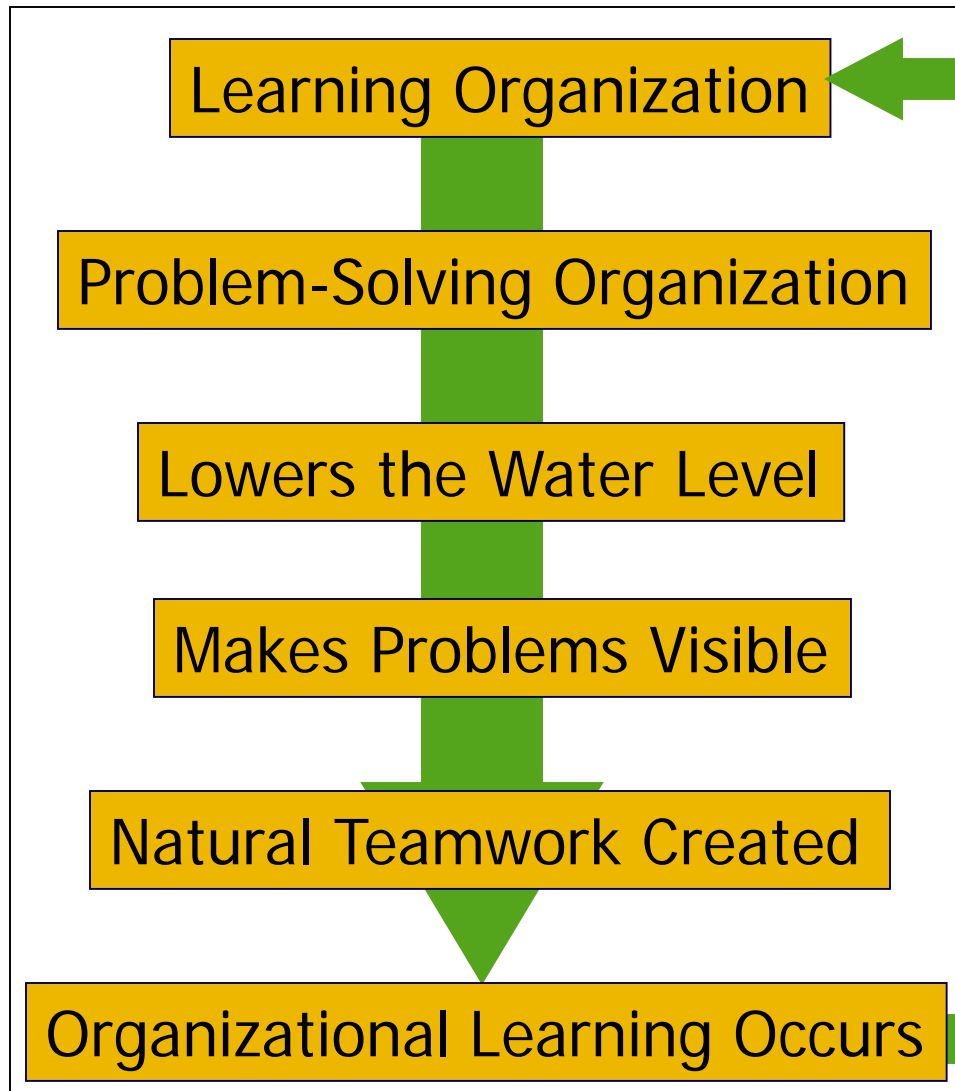


Problem Solving
without PDCA is
just
FIREFIGHTING!

ORLOE Problem Solving Model

Operate	Do the Work & Identify the Problem
	Plan & perform the work. Identify gap between plan vs. actual condition.
Review	Define the Problem
	Document & validate current state. Develop a clearly defined problem statement.
Learn	Determine Root Cause
	Identify all possible causes to the problem. Isolate critical few root causes to the problem.
Optimize	Identify Solutions
	Develop solutions that address the root causes to the problem. Ensure the solutions support the entire value-stream.
Execute	Implement & Sustain the Solution
	Communicate, train, and Implement the solution. Measure and monitor the impact of the solution.

Reinforcing the Learning Organization



Lean Organizations Think Differently

Traditional Thinking	Lean Thinking
Push - Economies of Scale - Make the Numbers - Unit Cost	Pull - Make (move) only what the customer has ordered
Batch and Queue - Make (Order) and Move Big Batches	One Piece Flow - Move small batches and keep them moving
No standards or complicated standards hidden in a binder	Simple, visible standards for all critical processes for all to see
Move the product, let defects flow down the supply chain	Stop the process immediately - Deal with defects at root cause
Engineers solve problems and create the best way to do work	The people doing the work design it and solve the problems
Hire brilliant people to try to fix broken processes	Empower regular people to improve upon brilliant processes
Hide problems by throwing inventory and resources at them	Expose problems by reducing inventory and resource levels
Managers work in offices and manage with data and reports	Managers "go and see" and manage with data and facts
Execute fast and go on to the next "new" thing	Plan, Do, Check, Act...Getting the <i>Right Things Done Right</i>
A problem is an unclear opportunity... it is optional to fix it	A problem is a deviation from the standard...it must be fixed
The cause of a problem is people... we ask who?	The cause of a problem is the process...we ask why (5 times)
We become defensive if others suggest problems in our area	We are thankful others see what we do not see ourselves
The business is a collection of independent departments	The business is a system of inter-dependent processes
Focus on outputs and cost reduction	Focus on inputs and lead time reduction
If it's not broken, don't fix it	It can always be improved

Questions?

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Lean is good...
...waste is bad.



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