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Director, COR Team
(Corporate Operational Response)

Lean Transformations:

Common Themes That Lead Success

My Lean Journey



1980s

My Lean Journey

Today

Plant Turnarounds
Lean Transformations
Operational Excellence
Mergers and Acquisitions
Operations Improvement

25 Countries

> 100 Plants



1. What is Lean?
2. What are the drivers of transformational successes and failures?

Lean Thinking Approach to Transforming Organizations

From Fighting Fires to Innovation: An Analogy for Learning

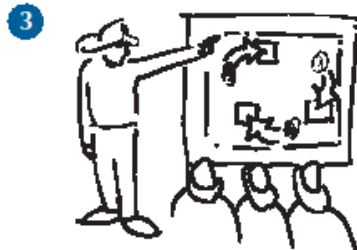
Learning is an essential attribute of high-performing organizations. Effective, well-deployed organizational learning can help an organization improve from the early stages of reacting to problems to the highest levels of organization-wide improvement, refinement, and innovation.



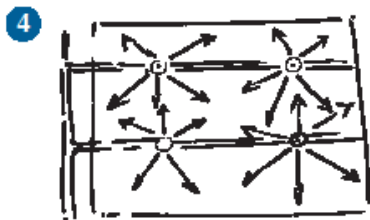
1
Reacting to the problem (0–5%)
Run with the hose and put out the fire.



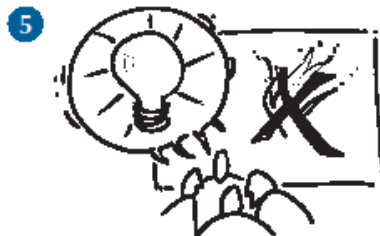
2
General improvement orientation (10–25%)
Install more fire hoses to get to the fires quickly and reduce their impact.



3
Systematic evaluation and improvement (30–45%)
Evaluate which locations are most susceptible to fire. Install heat sensors and sprinklers in those locations.



4
Learning and strategic improvement (50–65%)
Install systemwide heat sensors and a sprinkler system that is activated by the heat preceding fires.



5
Organizational analysis and innovation (70–100%)
Use fireproof and fire-retardant materials. Replace combustible liquids with water-based liquids. Prevention is the primary approach for protection, with sensors and sprinklers as the secondary line of protection.

Steps toward Mature Processes

An Aid for Assessing and Scoring Process Items

Reacting to Problems (0–25%)



Operations are characterized by activities rather than by processes, and they are largely responsive to immediate needs or problems. Goals are poorly defined.

Early Systematic Approaches (30–45%)



The organization is beginning to carry out operations with repeatable processes, evaluation, and improvement, and there is some early coordination among organizational units. Strategy and quantitative goals are being defined.

Aligned Approaches (50–65%)



Operations are characterized by repeatable processes that are regularly evaluated for improvement. Learnings are shared, and there is coordination among organizational units. Processes address key strategies and goals.

Integrated Approaches (70–100%)



Operations are characterized by repeatable processes that are regularly evaluated for change and improvement in collaboration with other affected units. The organization seeks and achieves efficiencies across units through analysis, innovation, and the sharing of information and knowledge. Processes and measures track progress on key strategic and operational goals.

What Is Lean?

Bill's Email To Me:

Sorry for the question. I don't want to seem stupid about knowing what Lean is about.

But, What is Lean? Simple description.

I see so many descriptions of Lean when I check. But asking someone who has been thru many experiences, you probably have a very good description.

I see one definition is "creating more value for customers with fewer resources or, maximize customer value while minimizing waste".

so Lean =Customer Value/Resources

I know it's not that simple.

Thanks,

Bill

Attendee Responses

- Optimizing Customer Value
- Elimination of Waste
- Optimize Efficiency
- Doing the right things right.
- Standardizing -
- Flowing at the pace of the Customer
- Synchronized Flow of Value.
- Value/Waste

What Is Lean?

My Response To Bill's Email:

1. Understanding what your customer considers as VALUE.
2. Knowing your CURRENT STATE (being brutally honest).
3. Then having a clear vision of the IDEAL STATE; which is the maximum amount of VALUE WORK FLOWING through an organization with everyone linked and aligned to complete VALUE ADD WORK with the absolute minimum amount of NON-VALE ADD actions/activities.
4. Then, being able to see your roadblocks, create a roadmap to continuously solve problems and improve processes (PROBLEM SOLVING and CONTINUOUS IMPROVEMENT) to remove those roadblocks.
5. Which will progress you from the CURRENT STATE to the IDEAL STATE.

Yes, all kinds of definitions. You have to find what works for you. But few people really understand it's all about Value, Flow, and Problem Solving. Never assume something that is in your way cannot be removed. Those who are not lean, are the ones who cannot find the fortitude to remove the roadblocks.

What Is Lean?

Bill's Response:

Thanks

It would seem ideal is an elusive state and continuously moving target??

What is ideal today might not be ideal tomorrow? I guess the reason for continuous improvement.

My Response:

Absolutely true! And ideal may not ever be achievable! But if you don't have a vision, you don't have a direction.

Lean Is:

- Delivering Maximum Customer **Value** with Less Effort
- Delivering Maximum Customer **Value** with Less Work
- Delivering Maximum Customer **Value** with Less Problems
- Delivering Maximum Customer **Value** Involving All People

It all starts with
“Delivering Customer Value”



Lean Principles

Understand Value

1. Understand **Value** as in the Eyes of the Customer (the next process)
2. Understand and categorize **Value** Add vs Non **Value** Add Activities
3. Understand and strive for **Value** Streams and Product Groups: Understand the Whole
4. Focus on the Flow of **Value** and eliminating the 7 wastes that disrupt flow
5. Focus on allowing the next upstream customer Pull **Value** from the prior process.
6. Implemented through the People by achieving **Value** for them.
7. Continuously strive for the ideal state or for perfection of producing **Value**



Value Add vs. Non-Value Add

+\$Making Money

Value Add Activities:

1. Are you physically changing the part or deliverable material?
2. Is it important enough to the customer that they'll pay for it?
3. Was it done right the first time with no rework or defect correction necessary?

-\$Spending Money

Non-Value Add Activities:

- Everything else that does not fall into all three of the above categories.
- Waste

Classify Every Task:

- Value Add Activities or Tasks
- Non-Value Add but currently necessary to run the business (type 1 muda)
- Non-Value Add and unnecessary now (type 2 muda)

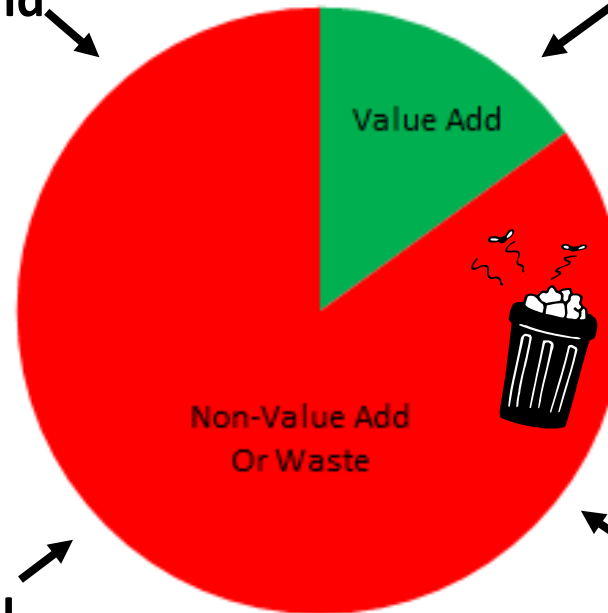
Value Versus Non Value Add or Waste

Examples:

- Working or Building inventory ahead of demand
- Defects such as rework and scrap.

Examples:

- Installing Bolts
- Torque Bolts
- Forming Panels
- Painting



Examples:

- Reach for wrench or Pencil
- Press button to release clamp
- Loading and Unloading

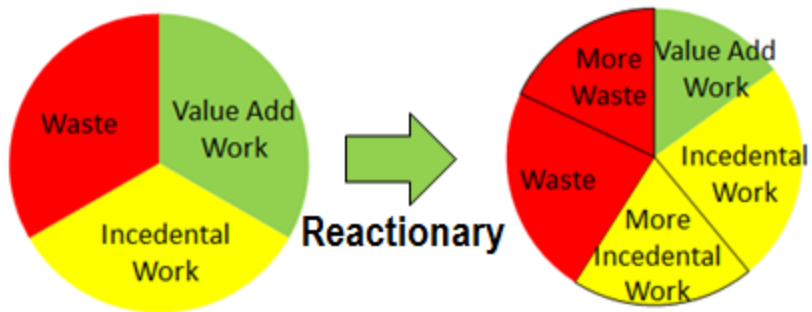
Examples:

- Looking for materials
- Walking to get materials
- Waiting on anything

Lean Thinking and Improving Work

Traditional Manufacturing

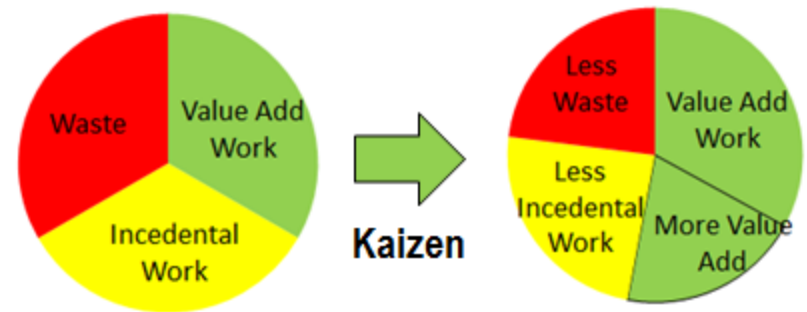
**More Work, More Incidental Work, More Waste:
Squeezes out Value Add**



37

Lean Thinking and Kaizen

Raising Efficiency through Kaizen



38

Can You Name The 7 Wastes?

- Look For TIM WOOD: The Master of Waste!

<u>T</u>	<u>I</u>	<u>M</u>	<u>W</u>	<u>O</u>	<u>O</u>	<u>D</u>
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A	V	T	I	E	E	F
N	E	I	T	R	R	E
S	N	O	I			C
P	T	N	N	P	P	T
O	O		G	R	R	S
R	R			O	O	
T	Y			C	D	
A				E	U	
T				S	C	
I				S	I	
O				I	N	
N				N	G	
				G		

Lean Thinking and Value Stream Mapping

Understand the "Whole"

Impediments to Flow
(7 Wastes)

Eye to the Customer

Current State

Ideal State

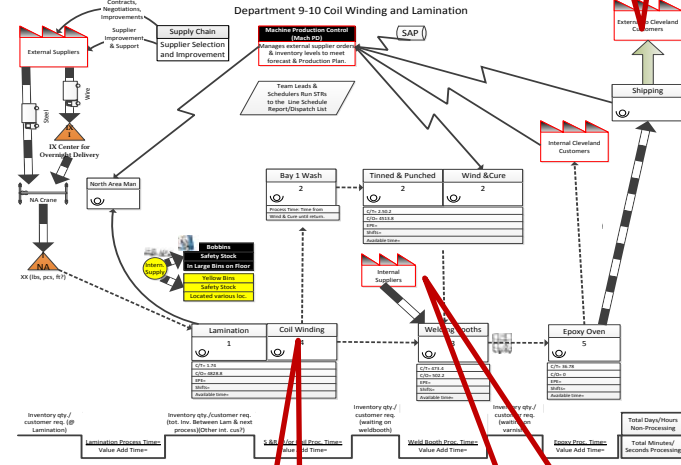
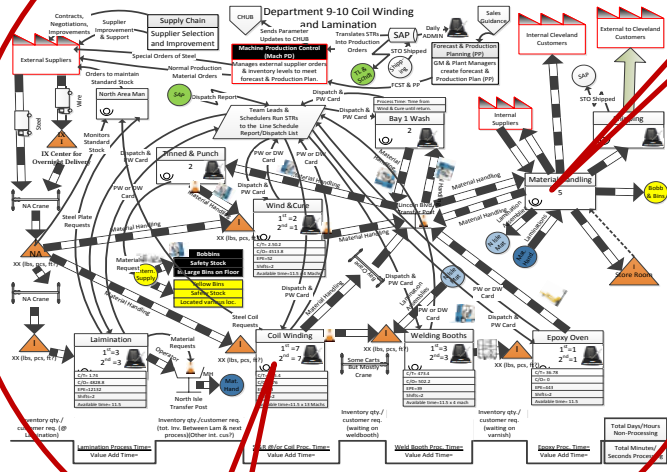
Action Plan & Execution

Continuously strive for the ideal state!

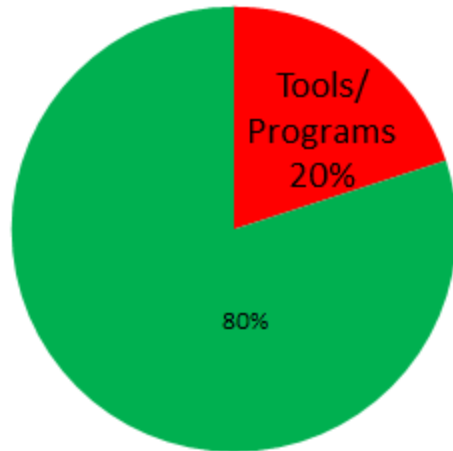
Strive for Ideal Flow!

Eye to the future

Identify Value Add vs Non Value Add



Transformational Success Factors



Tangible: Touch it - Feel it - See it - Grasp it

Versus

Intangible: Can't Touch it – Can't Feel it – Can't See it !

- Shingo Institute
- Industry Week Magazine
- Lean Enterprise Institute
- Harvard Business Review

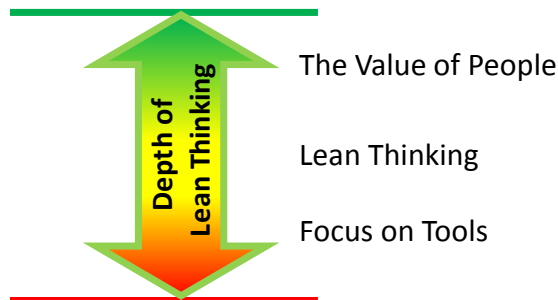
Give Up

50-75% First 5 years
>95% in 10 Years

Leadership's Attitudes, Practices, Behaviors, & Mindsets

Lean Thinking: Applying Lean Principles

The Value of People: How all workers, engineers, technicians, supervisors, etc.... Incorporated into Continuous Improvement.



Focus On Lean Tools

(The 20% or Tangible Portion)

Standardization

- Standardized Signs
- Standardized Floor Markings
- 5S Implementation
- Standardized Work
 - Takt Time, Level Load, Yamazumi, Standard Work Charts, Work Balance Tables
- Quality System (SPC, Control Plans, Work Instructions, etc...)

Sustain the Gains &

Continuous Improvement

- Advanced Six Sigma
- Layered Process Audits
- Develop Subject Matter Experts

Relentless Focus On Eliminating Waste & Variation

- SMED (Set Up Reduction)
- Initial Six Sigma Program
- Product Development (DFSS)
- Advanced Quality System
- Mistake Proofing (Poke Yoke)

Create Synchronized Information & Material Flows

- Value Stream Map: Current-Future State
- Kan Ban & Pull Systems
- Total Productive Maintenance (TPM)
- Water Spiders to replenish and move material through system

Leadership, Lean Thinking, and The Value of People (The 80% or the Intangible Portion)

Lean Thinking and Systems = Operational Excellence and Lean use many tools to improve processes. What ties the tools together into a system is Lean Thinking!

Operational Excellence

- Value People and their experience
- Deming 14 Principles, Shingo Principles, Baldrige Performance Excellence
- Leadership, Strategic Planning, Customer Focus, Information Management, People Focus, Process Focus, Results
- Policy Deployment
- Lean Thinking: Leaders are Teachers

Metrics/Cadence System

- Metrics Linking Top Level Business to Work Centers
 - Safety, Quality, Productivity, Delivery
- Huddle Meetings: Work Center-Value Stream-Plant
 - Red, Yellow, Green to highlight status
- The Heartbeat of a Well Balanced Operational Excellence, Lean Manufacturing, and Six Sigma System.
- Identify process gaps and pull people together to improve processes (cross-functional/collaborative)
- Lean Thinking: Connect all people in the Organization

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- Lean Thinking: Lead People focused on problem solving & improvements
- Lean Thinking: Link & Align Supply Chain

Relentless Focus On Eliminating Waste & Variation

- 7 Wastes are front & center
- SMED (Set Up Reduction)
- Initial Six Sigma Program
- Product Development (DFSS)
- Advanced Quality System
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- Effective Quality System is in place
- Root Cause Problem Solving/Stop & Fix
- Lean Thinking: Remove Barriers to Flow

Sustain the Gains & Continuous Improvement

- Advanced Six Sigma
- Layered Process Audits
- Develop Subject Matter Experts
- Lean Thinking: Everyone in the Organization involved in the Lean
- Continuous Improvement: Strive for improvement (with a direction) everyday.
- Reflect & Improve

It Takes Leadership and Lean Thinking To Make All These Tools Work Together As A System

System = A Whole that is Greater Than The Sum Of Its Parts!

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What Are Some Of The Common Themes From Around The World?

Leadership

- Leads the tour or stands quietly in the back ground?
- Takes credit or shows excitement about others accomplishments?
- Monitors activities or actively participates, mentors, and teaches

Metrics/Cadence

- Only at higher levels or cascaded down through the organization?
- Used to evaluate results or used as a voice of the process?
- Worker just enters information or they are an active participant?

All Levels Help Implement Improvements Together

- Are people able to implement their own ideas? Improve their Work Cells?
- Is Engineering, Purchasing, Scheduling, etc.. actively involved with workers?

Problem Solving

- Is there evidence throughout the operation of teams working on problems together?
- Do you see evidence of cross-functional and active problem solving?

Questions and Answers

Reference Materials

- Harvard Business Review article: *Decoding the DNA of the Toyota Production System*, Bowen & Spear, September - October 1999.
- Lean Foundations Training, Lean Learning Center, 2011
- The Toyota Way Fieldbook by Jeffrey K. Liker and David Meier
- Learning to See by Mike Rother and John Shook
- Lean Thinking by James P. Womack and Daniel T. Jones