

LEAN

It's Not Just for Manufacturing Anymore

- Definition of Lean
- The Five Principles
- Key Concepts
- Culture Change
- Application to Other Than Manufacturing
- Implications for the Accountants
- Call to Action

Lean Agenda

LEAN is:

“A systematic approach to identifying and eliminating waste (non-value added activities)

- Through continuous improvement,
 - By flowing the product,
 - At the pull of the customer,
 - In pursuit of perfection,
 - With the involvement of everyone”

Definition – The MEP Lean Network

- 1. Value to the Customer

Focus

Who is the Customer

What Do They Want/Need

Leadership

Vision

Direction & Support

The Five Principles

- 2. Value Stream

Process - Not Function

Value Added Activities

Eliminate Waste

The Five Principles

- 3. Flow & Pull

Customer Pulls Production

Single Piece Flow

Partnership with Suppliers & Customer

Goal - Perfection

The Five Principles

- 4. Empowerment

Multi-disciplinary Teams

Alignment of Purpose

Information and Authority for Necessary Actions

Accountability

The Five Principles

- 5. Perfection

Constant Improvement

Incremental Improvement

Zero Waste

Zero Defects

Zero Lost Information

The Five Principles

- The 5 S's
- Value Stream Mapping
- Standard Work
- Kaizen/Kaikaku
- Elimination of Waste
- Make it Ugly

Key Concepts

- THE 5 S's

Seiri

Organization

Sort

Seiton

Neatness

Straighten

Seison

Cleaning

Scrub

Seiketsu

Standardization

Standardize

Shitsuke

Discipline

Sustain

Key Concepts

- Value Stream Map:

Every activity, from Beginning to End

Current State: Create a clear picture of current material and information flow

Future State: Build a future vision of an improved process through elimination of non-value added activities

KEY CONCEPTS

Value Added

Any activity that increases the market form or function of the product or service (things that the customer is willing to pay for)

Business Value Added

Any activity that is necessary to run the business

Non-Added Value

Any activity that does not add market form or function or is not necessary

Value Stream Map

- Standard Work
 - Find the best way
 - Make it the only way
 - Must be repeatable
 - Document it!

KEY CONCEPTS

- Kaizen/Kaikaku
 - Kaizen – Gradual, unending improvement, setting and achieving ever higher standards
 - Kaikaku – Radical improvement of an activity to eliminate waste, e.g. reorganizing an entire process to a cellular one piece flow

Key Concepts

- Elimination of Waste - Muda
 - Overproduction
 - Waiting
 - Transportation
 - Unnecessary Processing
 - Inventory
 - Motion
 - Inspection

Key Concepts

- Make It Ugly
 - Expose/Don't Hide or Disguise
 - Peel Back the Layers
 - Ask Why 5 Times
 - Find the Root Cause
 - Eliminate the Problem/Waste

Key Concepts

MANAGEMENT

Empowerment = Loss of Power
Old Measurements Don't Work
Success Based on Old Ways

EMPLOYEES

Don't Trust Management
Fear of Job Elimination
Change Easier Than Management

EVERYONE REQUIRES TRAINING!
CULTURE CHANGE TAKES TIME

Culture

- Applying Lean in Other Areas
 - Focus on Value to the Customer
 - Value Stream Map the Process
 - Focus on Process – Not Function
 - Empowerment
 - Continuous Improvement
 - Eliminate Non-Value Added Work

Other Than Manufacturing

- Monthly Measurements Obsolete
- Standard Costing, Labor and Variance Reporting less Relevant
- Need to Develop New Measurement Tools
- Daily/Weekly Reporting (simple/visual)
- Need to be Part of Value Stream

But GAAP Reporting Requirements Remain

Implications for Accountants

- Make Accounting a Lean Organization
- Do Accounting for a Lean Organization

Challenges for Accountants

- Piece Work Incentive Shop
 - Work Orders Original Payroll Documents
- Unionized Work Force
- MRP-II-Long Production Runs
- High Seasonal Peak Demand
 - Wide fluctuation in Production Rates
 - Frequent Hire and Lay Off Cycles
- Metrics Direct Labor Based
- RIP Turns @ 10, FG @ 3
- New Product to be Implemented

Situation in 1990-1991

- Union Approved Day Work Shop
- Lean Implemented: Kanban Scheduling
- Any Model, Any Day, Any Time
 - Fewer and Less Severe Hire/Layoff Cycles
- New Metrics Based on:
 - Customer Satisfaction
 - Continuous Improvement
- RIP Turns 20+; FG 10+
- New Product Implemented

Solution - 1992

- Customer Satisfaction
 - Rate Linearity-Make the Daily Rate
 - Mix Linearity-Make the Daily Model Mix
- Continuous Improvement
 - Decreasing Cost of Units Produced
 - No Direct Labor. Focus on Conversion Costs
 - What is a Unit Produced When You Make many Different Models?

New Metrics

Line A 0---0---0---0---0---0---0---0---0---0---0---

Sum of Work = 10 Total Product Cycle Time = 10

Line B 0
 |
0---0---0---0---0
 | |
 0 0
 | |
 0 0

Sum of Work = 10 Total Product Cycle Time = 5

Total Product Cycle Time

Conversion Cost Budget

\$ 300,000

	Units	Work	Total	TPCT	Total
Line A	1,000	10	10,000	10	10,000
Line B	1,000	10	10,000	5	5,000
Total			20,000		15,000
CC Absorb.			\$ 15		\$ 20
Absorption					
Line A			\$ 150,000		\$ 200,000
Line B			150,000		100,000
Total			\$ 300,000		\$ 300,000

Conversion Cost Absorption

- Lead the Change - TEACH
 - Generate Excitement
 - Quantify the Benefits
 - Develop the Necessary Measurement Tools
- Support the Change - LEARN
 - Kaizen Events
 - Value Stream Teams
 - Simplify the Information

Call to Action

- IMA – Statements on Management Accounting – Lean Enterprise Fundamentals
- Northwest Wisconsin Manufacturing Outreach Center
- Boeing Company
- Toyota Production System – Beyond Large-Scale Production, Taiichi Ohno, Productivity Inc., 1988
- Manufacturing Extension Partnership

SOURCES