Lean Manufacturing: Now & Then

John Newlyn, CSCP, CFPIM, CIRM
Marco Fabila, CPIM, CPM

Advancing Productivity, Innovation, and Competitive Success
What we will cover

- Who We Are
- What is APICS
- The History of Lean Manufacturing
- Applying Lean Principles to Your Business
- The San Joaquin Valley Chapter of APICS
Who We Are

- John Newlyn, CSCP, CFPIM, CIRM
  - APICS Instructor and Past District Manager for the Pacific Western District of APICS
  - Senior Production Planner at Pelco by Schneider Electric
- Marco Fabila, CPIM, CPM
  - APICS Instructor and Past President of the San Joaquin Valley Chapter of APICS
  - Senior Project Manager at Pelco by Schneider Electric
What is APICS

APICS is a professional society focused on sharing best practice concepts in the areas of materials and operations management, supply chain management.

Involvement in APICS can transform organizations and careers.
APICS Definition

Lean Production: A philosophy of production that emphasizes the minimization of the amount of all the resources (including time) used in the various activities of the enterprise…

APICS Dictionary, 12th Edition
The History of Lean Manufacturing

Let’s start with *then* and Henry Ford and his Model T

- Interchangeable parts
- Standard work flow
- Moving conveyance
- Inventory turns across the entire company every few days
- Publishes *Today and Tomorrow* in 1926
Problems of the Ford Model

- Lack of variety
- No options until late in the product life cycle
- 20 year new-model development cycle
1930s-1950s Toyota

- Taiichi Ohno
- Led to the Toyoda Production System
- Shifted focus of the manufacturing engineer from individual machines and utilization to the flow of product through the total process
- Fast changeover
- Self-monitoring machines
- Basic pull manufacturing
1990

- Lean Thinking followed in 1996.
1990

- Specify the value desired by the customer
- Identify the value stream
- Continuous flow the value adding steps
- Introduction of pull through all the steps
- Manage toward perfection | reduce waste
Lean: Now & Then

Lean manufacturing publications, consultants and concepts have exploded throughout the manufacturing world and into service and non-manufacturing business.

US companies doing some form of Lean? 80 %
US companies satisfied with what they do? 2 %
Lean is...

A passionate belief that there’s always a simpler, better way
Lean is...

A continuous drive to identify and **eliminate** waste
Lean is…

A strategy of shortening the timeline from order to completion
Lean is…

A way of thinking that causes everyone to use their talent to improve the business everyday.

- Kaizen
The Seven Wastes

1. Transportation
2. Inventory
3. Motion
4. Waiting
5. Over-Production
6. Over-Processing
7. Defect
8. Talent (Hidden Waste)
5S... The FOUNDATION For Lean

An organized workplace is a safer workplace that lends itself to higher standards of quality, productivity, and personal well being!

- **SORT** *(SEIRI)*
  Eliminate or get rid of unnecessary items, not needed

- **STRAIGHTEN** *(SEITON)*
  A place for everything and everything in its place

- **SHINE** *(SEISO)*
  Cleaning and looking for ways to keep it organized

- **STANDARDIZE** *(SEIKETSU)*
  Do all work in accordance with documented visual standards

- **SUSTAIN** *(SHITSUKE)*
  Each individual to assume ownership in their work area
Lean Tools

- 5S
- Andon
- Bottleneck Analysis
- Continuous Flow
- Heijunka (shared resource scheduling)
- JIT
- Kanban

- Muda
- Overall Equipment Effectiveness
- Plan, Do, Check, Act (PDCA)
- Error Proofing (Poka Yoke)
- SMED
Lean is...

A culture that extends the ideas of Lean thinking across all of the business processes using a common toolset.
Advancing Productivity, Innovation, and Competitive Success

Lean Business Key Objectives...

Minimize Cost

Conventional: Cost + Profit = Price

Lean: Price – Cost = Profit
What the customer is willing to pay for
Non Value Added Activity

An activity that takes time, resources or space, but does not add value to the product itself = ADDS COST
Value Stream Mapping

Spectra Lower Dome

Lower Dome Assembly
4 Stations
P/T = 0:00:55
Uptime = 100%
C/0 = 1 Shift

Inspect and clean
1 Station
P/T = 0:00:05
Uptime = 100%
C/0 = 1 Shift

Building box and label
3 Stations
P/T = 0:00:39
Uptime = 100%
C/0 = 1 Shift

Pack off
2 Stations
P/T = 0:00:20
Uptime = 100%
C/0 = 1 Shift

Uptimes:
- Lower Dome Assembly: 100%
- Inspect and clean: 100%
- Building box and label: 100%

Value Added:
- Lower Dome Assembly: 0:00:55
- Inspect and clean: 0:00:05
- Building box and label: 0:00:39
- Pack off: 0:00:20

Non-Value Added:
- Lower Dome Assembly: 0:02:54

Daily Report

Master Schedule
6 weeks

Value Stream Mapping

Advancing Productivity, Innovation, and Competitive Success
Single Piece Flow

Success
Production Schedules

Replace Items Consumed

Advancing Productivity, Innovation, and Competitive Success
Advancing Productivity, Innovation, and Competitive Success

Kanban

Production linked to customer demand (external and internal)
In PULL - products flow via visual signals

What gets measured...

What gets measured VISUALLY...
Lean Thinking

Lean Tools
• Value
• Flow
• Pull
• Kaizen

Lean Strategy
• ROI
• Gemba
• Financial Accountability
APICS San Joaquin Valley Chapter

• www.apics-sjvc.com

• 2013 Education Kickoff Meeting
  Pelco
  3500 Pelco Way, Building 5
  Clovis, CA
  November 20th, 2012
  Registration at 6:00, Meeting Starts at 6:30PM
References

• APICS Dictionary, 12\textsuperscript{th} edition.
• \url{http://www.lean.org/whatslean/history.cfm}, retrieve October 6\textsuperscript{th}, 2012.
• \url{http://www.leanproduction.com/top-25-lean-tools.html} retrieved October 1\textsuperscript{st}, 2012.