

Lecture 1

Introduction to Lean

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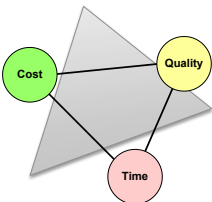
Outline

- Motivation
 - *Project: Cost, Time, Quality.*
 - *Traditional and New Philosophy*
- Small group introductions

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Motivation



Project

- The solution to a problem or the satisfaction of a need
- Under
 - Budget
 - Time Frame
 - Quality Requirements

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Motivation

Project

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Motivation

Add value

Project

- The solution to a problem or the satisfaction of a need
- Under
 - Budget
 - Time Frame
 - Quality requirements
- Features
 - Unique
 - Dynamic (Changes)
 - Complex (Several construction participants)
 - Process (Series of steps)
 - Temporal (Start – End)
 - Uncertainty

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Motivation

Add value

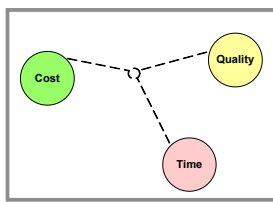
LEAN

- New Philosophy: Set of beliefs and values
- New body of knowledge
 - Principles
 - Techniques
- Features
 - Unique
 - Dynamic (Changes)
 - Complex (Several construction participants)
 - Process (Series of steps)
 - Temporal (Start – End)
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Motivation



Balance

Add value

Customer Needs

LEAN

- New Philosophy: Set of beliefs and values
- New body of knowledge
 - Principles
 - Techniques
- Features
 - Unique
 - Dynamic (Changes)
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Lean

Summary of the 14 Lean Principles

The basic principles that make up a Lean Production System include:

1. Define *value*, map the value stream, and identify/eliminate waste
2. Establish continuous process flow
3. Implement pull planning and scheduling
4. Level the workload
5. Solve quality problems immediately (stop-the-line)
6. Standardize work tasks and processes
7. Implement visual control
8. Use only reliable technology, processes, practices, and people
9. Develop exceptional leadership
10. Develop exceptional people
11. Develop collaborative relationships and build trust
12. Go to Gemba: See for yourself to understand the problem
13. Make decisions slowly by consensus and implement rapidly
14. Develop an excellent organization through continuous improvement and reflection

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Summary of Lean Tools

"Becoming Lean requires a *gradual mind shift*, but is enabled by proven tools including these:" (ReAlignment Group, Ltd)

- The Gemba Walk
- Value Stream Mapping
- PDCA improvement cycles
- A3 Problem Solving and Analysis
- Choosing by Advantages - decision making
- Target Value Design
- Set-based Design
- Pull Planning - Last Planner System
- 5S and Visual Control
- Standardized Work
- First Run Studies
- Kaizen Events
- Plus/Deltas

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Small Group Introduction



- Please answer the following questions:
 - What do you understand about LEAN?
 - What do you expect to learn at the end of this class?

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Review, Questions



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ACKNOWLEDGMENT

1. Cindy Menches, Ph.D., P.E.
2. Zofia K. Rybkowski, Ph.D.

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