Lean Enterprise Introduction

Steve Heidtke
Lean Six Sigma Black Belt

Ohno's Perspective

"All we are doing is looking at the time line from the moment the customer gives us an order to the point where we collect the cash. And we are reducing that time by eliminating the non-value-added wastes"

Ohno, 1988

Course Topics

- Kaizen
- 5S – work place organization
- Value Stream
- Set-up Reduction
- Kanban – Pull Systems
- Takt Time
- Flow

The Toyota Way

- *We place the highest value on actual implementation and taking action.* Fujio Cho

- Operational Excellence is a Strategic Weapon

- What is a Lean Enterprise?
  - The end result of applying the Toyota Production System to all areas of your business.

LEAN THINKING

Key Principles of Lean Thinking

➤ **VALUE -** what customers are willing to pay for

➤ **VALUE STREAM -** the steps that deliver value

➤ **FLOW -** organizing the Value Stream to be continuous

➤ **PULL -** responding to downstream customer demand

➤ **PERFECTION -** relentless continuous improvement (culture)

--- <u>Lean Thinking</u>, Womack and Jones, 1996

What is Lean?

A lean organization understands customer value and focuses its key processes to continuously increase it.
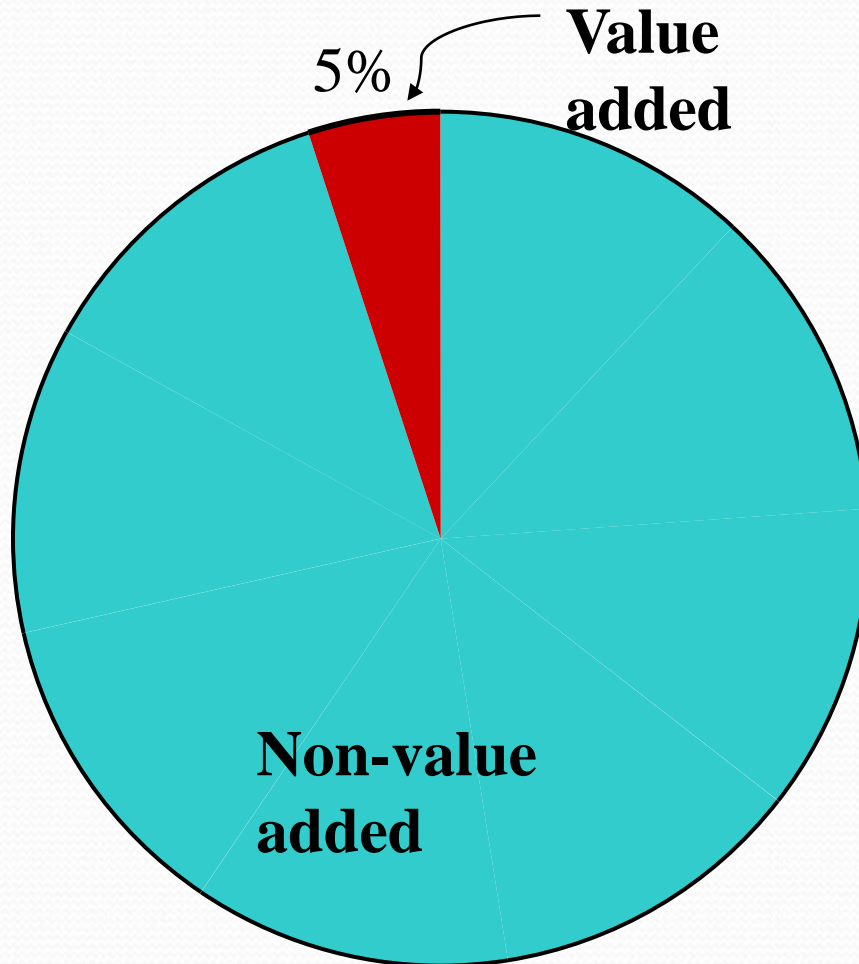
The ultimate goal is to provide perfect value to the customer through a perfect value creation process that has zero waste.

www.lean.org

Lean Goals

- Zero defects
  - mistake proofing
- 100% value-add
  - eliminating waste
- Lot size of one
  - one-piece flow
- Pull of the customer
  - Kanban
- Sustaining continuous improvement
  - Kaizen

Lean = Eliminating the waste

5% → **Value added**

Non-value added

7 Wastes – TIMWOOD

- **T**ransportation
- **I**nventory
- **M**otion
- **W**aiting
- **O**ver processing
- **O**verproduction
- **D**efects

- 8th Waste
  - Safety

Typically 95% of <u>Total Lead Time</u> is Non-Value Added!!!

- **Value-added:**
  - ANY ACTIVITY THAT PHYSICALLY CHANGES THE MATERIAL BEING WORKED ON (not rework/repair!)
  - Any activity the customer is willing to PAY for.
    - Machining   Knitting
    - Drilling   Spreading/Cutting
    - Assembly   Dying
    - Painting   Sewing
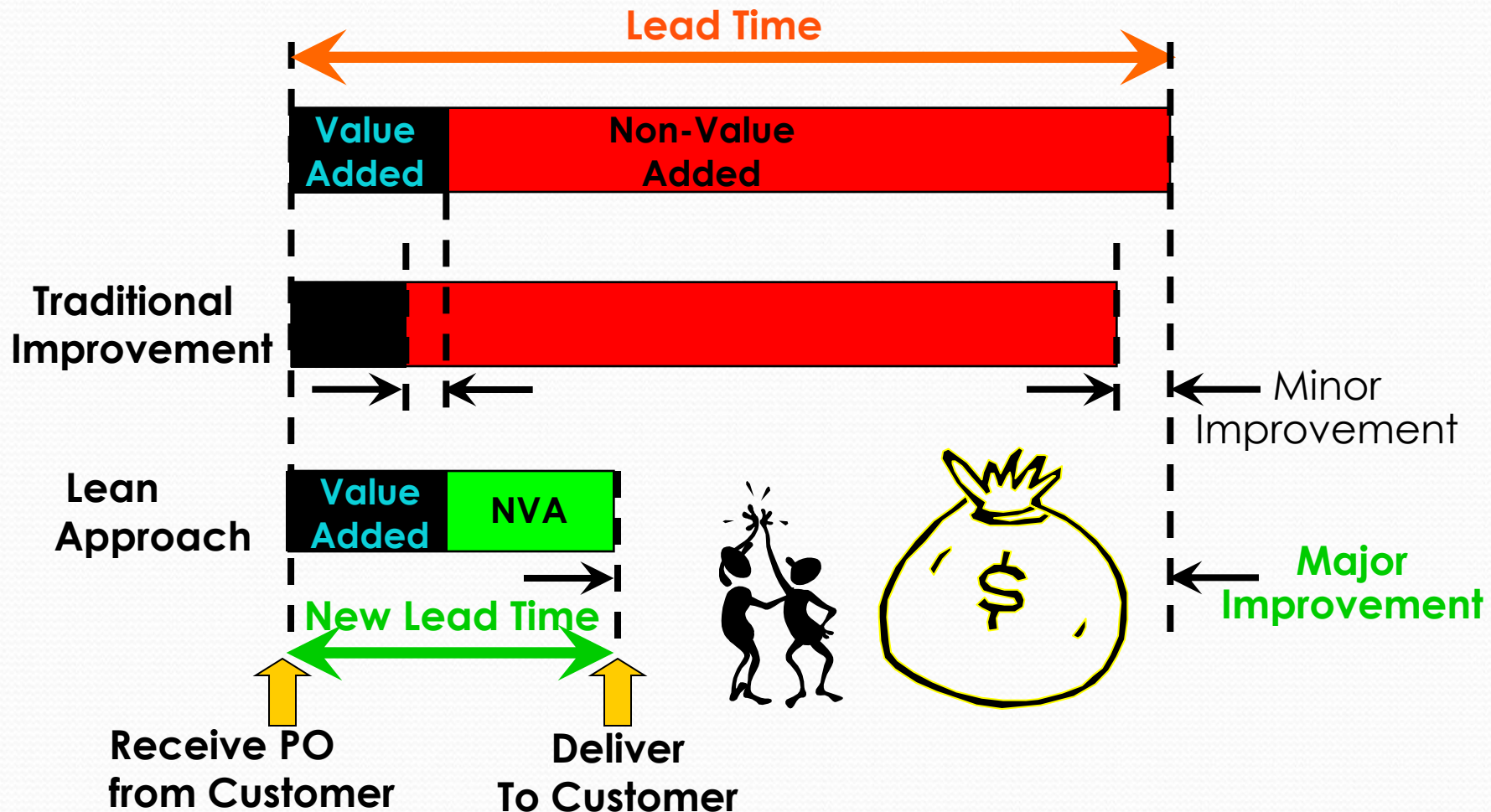- **Non-value added:**
  - ANY ACTIVITY THAT TAKES TIME, MATERIAL, OR SPACE BUT DOES NOT PHYSICALLY CHANGE THE MATERIAL
  - Any activity the customer is NOT willing to pay for.
    - Sorting   Stacking
    - Counting   Checking
    - Getting Ready to Work

Traditional Improvement
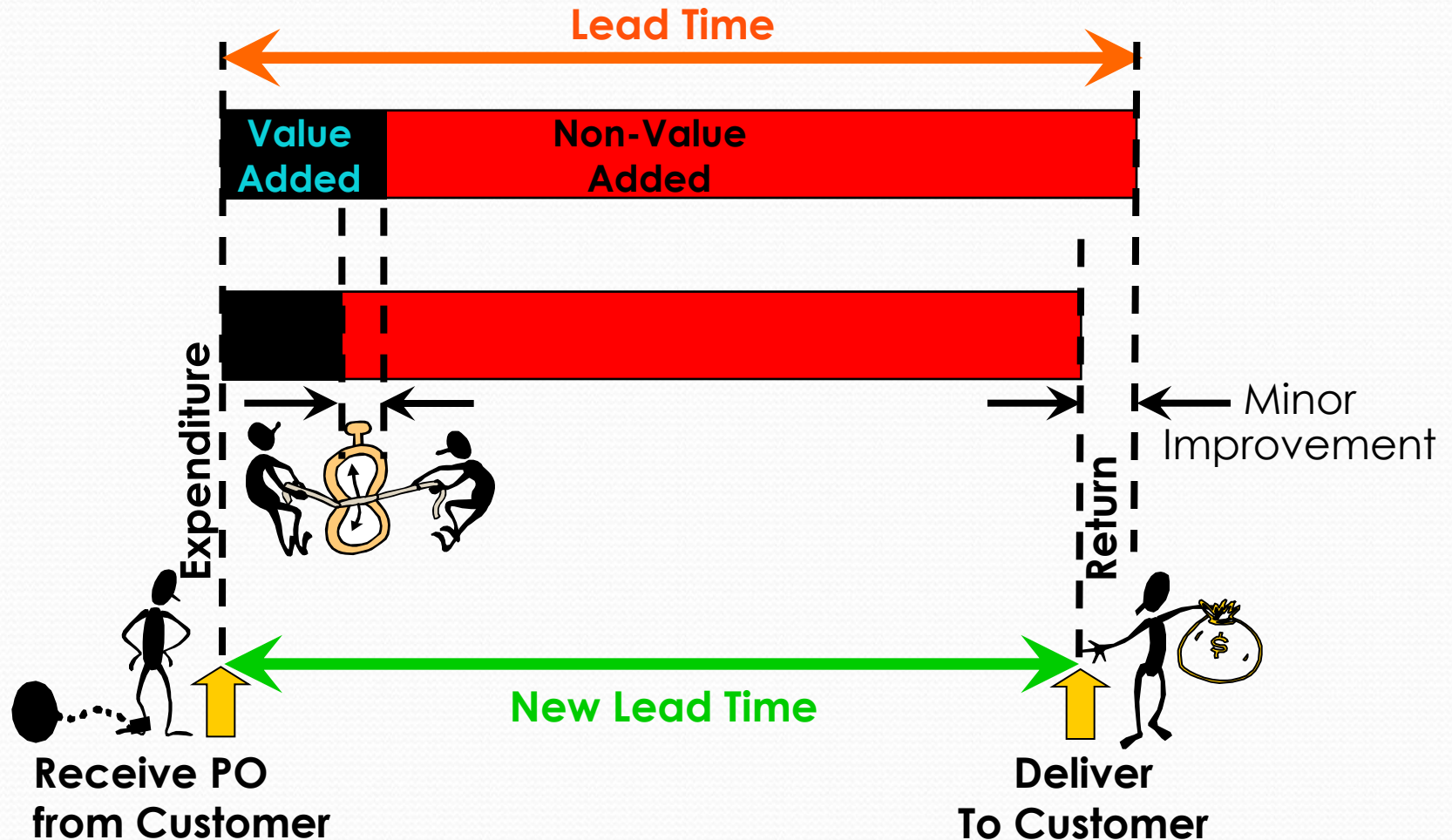
Lean improvement to Lead Time

Focus on non-value added activity

Lead Time

| Value Added | Non-Value Added |

Traditional Improvement

Minor Improvement

Lean Approach

| Value Added | NVA |

New Lead Time

↑ **Receive PO from Customer**

↑ **Deliver To Customer**

Major Improvement

Lean Lead Time Video

Lean: Value Stream and Non Value Example (Click to see video)