

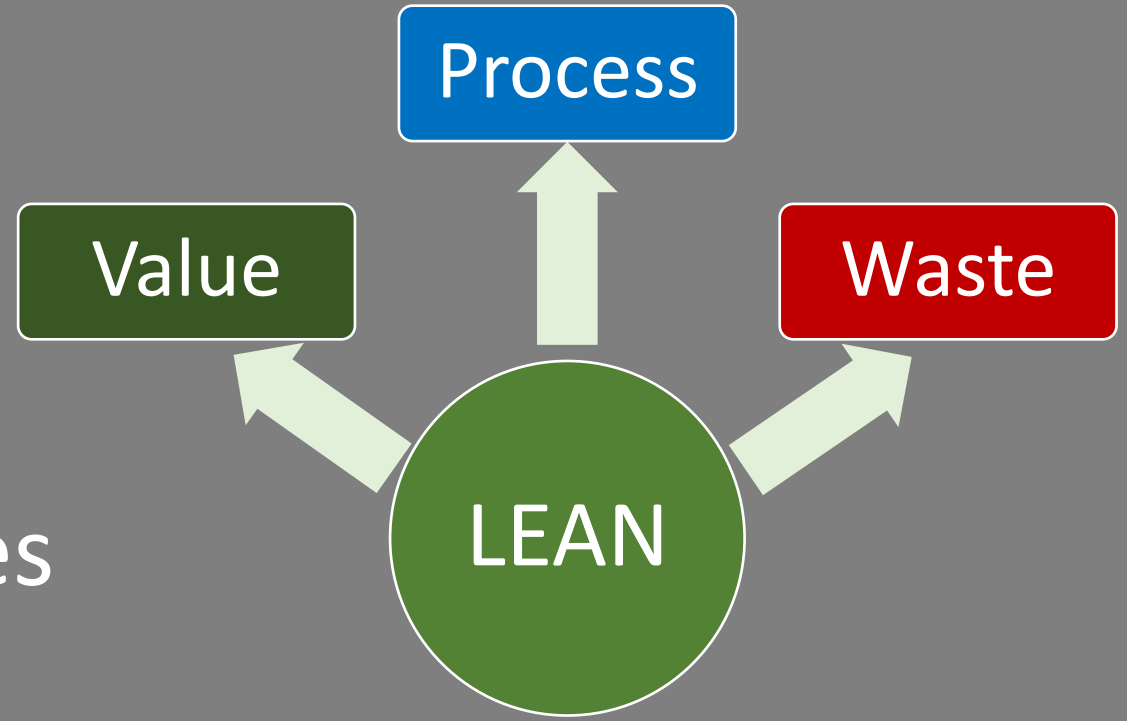


What is Lean Six Sigma?

Tracy Owens

OUTLINE

- Lean Principles
- Process Analysis
- Improvement Techniques



Plus, there will be a homework assignment...

LEAN IS CUSTOMER FOCUSED

- Moments of Truth:

Every interaction with your Customer - *Who?*

A chance to improve or damage that relationship

Obvious: public meeting, counter service, phone conversation

Less obvious: using your website, receiving an incorrect bill, reading comments



- First-Time Quality

If one person allows a mistake to move through the process
how many other people will be affected?



BRIEF INTRODUCTION to LEAN

PRINCIPLES of LEAN

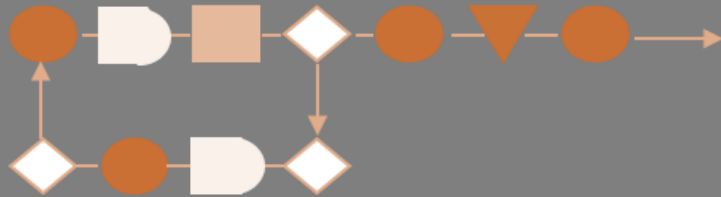
- Focus on **VALUE**
- Define the **VALUE STREAM**
- Optimize **FLOW** of work
- Let customers **PULL** the work
- Pursue **PERFECTION**

LEAN TECHNIQUES

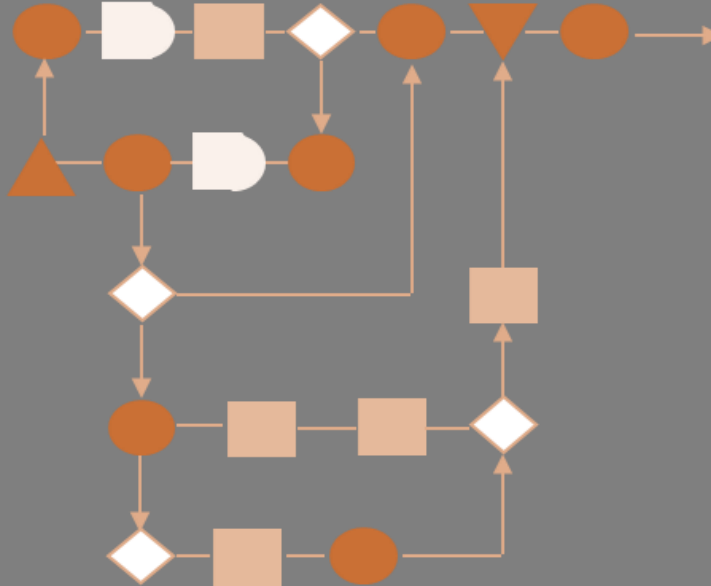
- Voice of the Customer
- Value Stream Mapping
- Waste Analysis / 5S / 5Why?
- Kanban and Kaizen
- Plan-Do-Study-Act

PROCESS MAPPING

How you *think* it is...



How it *really* is...



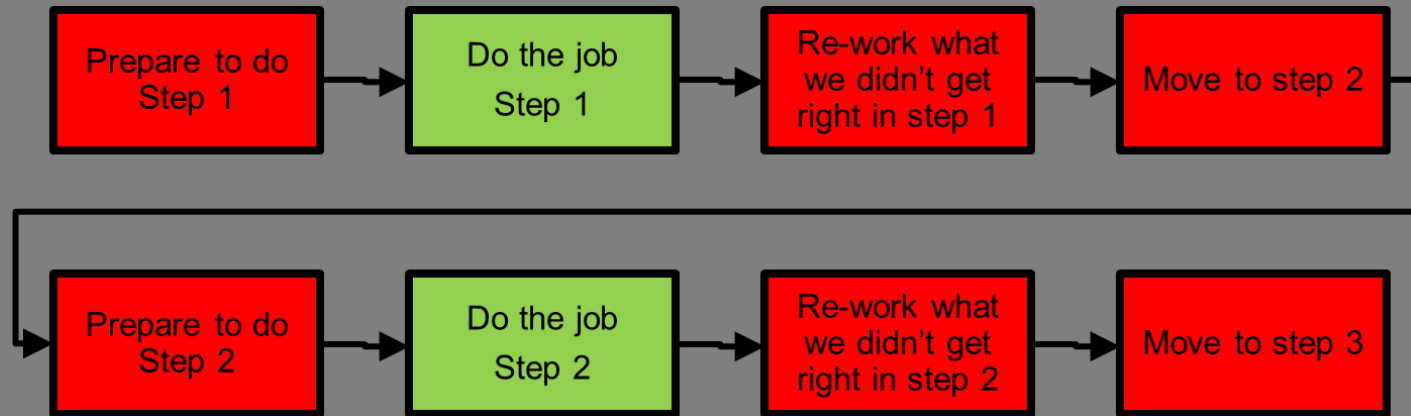
How you *would like* it to be...

PROCESS ANALYSIS

Eliminate Non-Value-Adding Activities

Accelerate Speed to Revenue

Errorproof the Work so that Rework and Scrap are Avoided



NON-VALUE-ADDING WORK

“VALUE” is the thing your customer wants

“VALUE-ADDING” is any work you do that either **PRODUCES**
or **DELIVERS** the **VALUE**

“NON-VALUE-ADDING” is everything else!

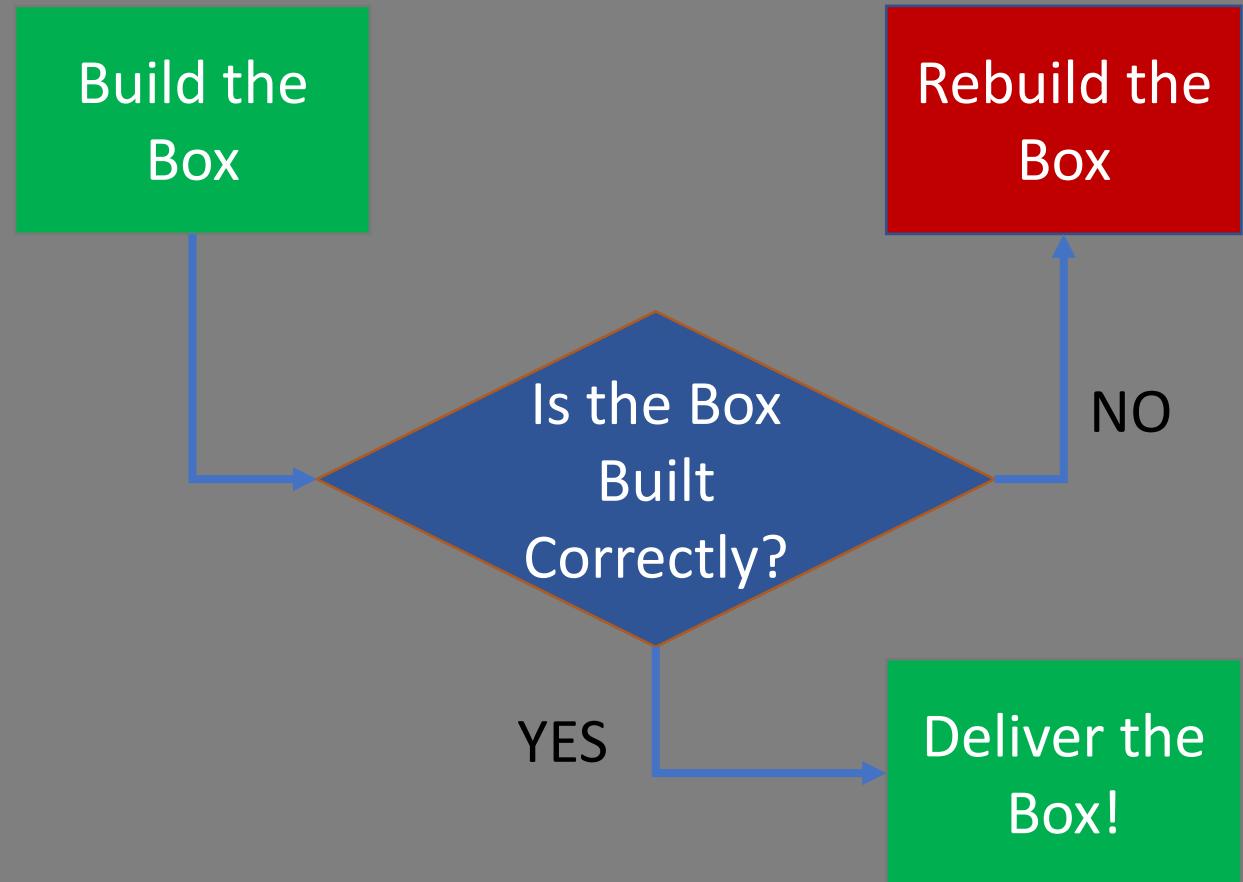
For regulatory requirements
and other non-negotiables,
do only as much as required



REWORK

When work is not done correctly the first time:

- 1) It must be fixed by somebody
- 2) We annoy the customer by having to make the correction
- 3) We cannot work on something else



W-H APPROACH

Agree with the team on the major steps and/or deliverables for this work process

For each milestone ask

- a. **WHO** is responsible?
- b. **WHAT** exactly is the deliverable?
- c. **WHEN** is it needed?
- d. **WHERE** will the work be done or sent?
- e. **WHY** is it necessary?
- f. **HOW** will it be done?
- g. **WHO** needs to be notified?

Milestone Mapping Sample

Milestone 1 - Application

5W2H

Who? Developer/Builder

What? Complete application

When? Need 30 days prior to econ dev deadline

Where? Must send to City Hall

How? Electronic filing is recommended

Whom to notify? Building dept must be informed on EC-2

Milestone 2 - Site Plan

5W2H

Who? Developer/Builder

What? Finished plat submitted

When? Within 15 days after application is received

Where? Send to Zoning

How? Electronic filing is required

Whom to notify? Building dept must be informed on EC-2

Milestone 3 - Plans Rvw

5W2H

Who? Building Department

What? Review to building code

When? Decision & documents needed within 21 days

Where? Leave at desk for pickup

How? Paper signature required

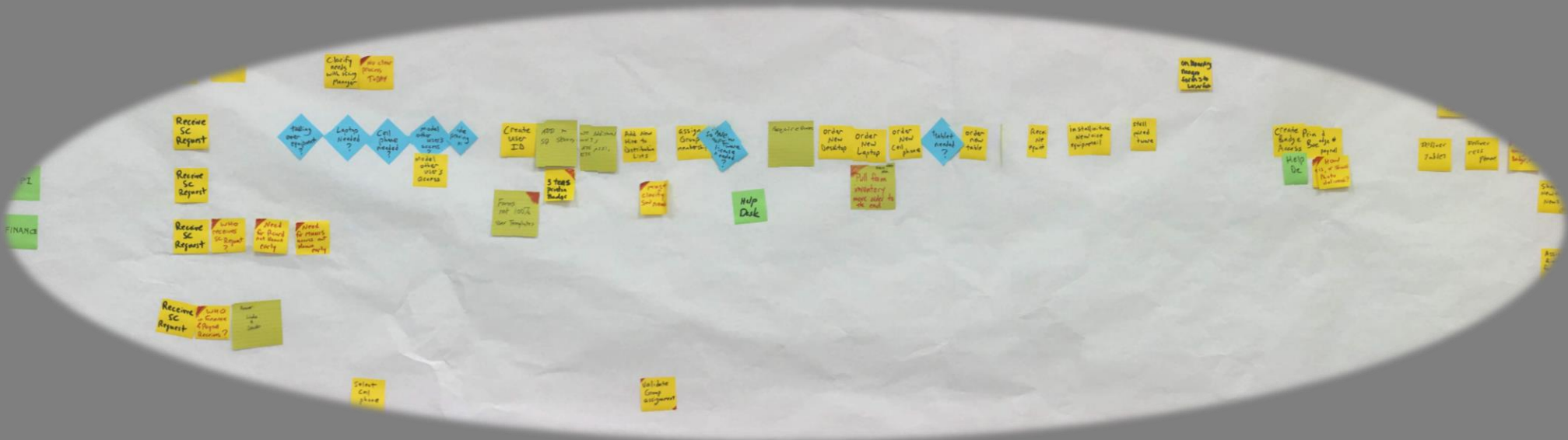
Whom to notify? Inform econ dev on EC-2 spreadsheet

SAVING MONEY with LEAN – MLO

1. Operator Motion – when operators have to search multiple places, time is wasted
2. Transporting Materials and Information – when you have to push, time is wasted
3. Finished Inventory (overproduction) – when it goes to waste*, costs are not recovered **not just products, services also go unused*
4. Work in Process – when you've bought more than you can use, costs are not recovered
5. Excess Processing – gold-plating a silver order costs money
6. Defects – they are scrapped, or someone must fix them
7. Waiting – when value is not being added, time is being wasted

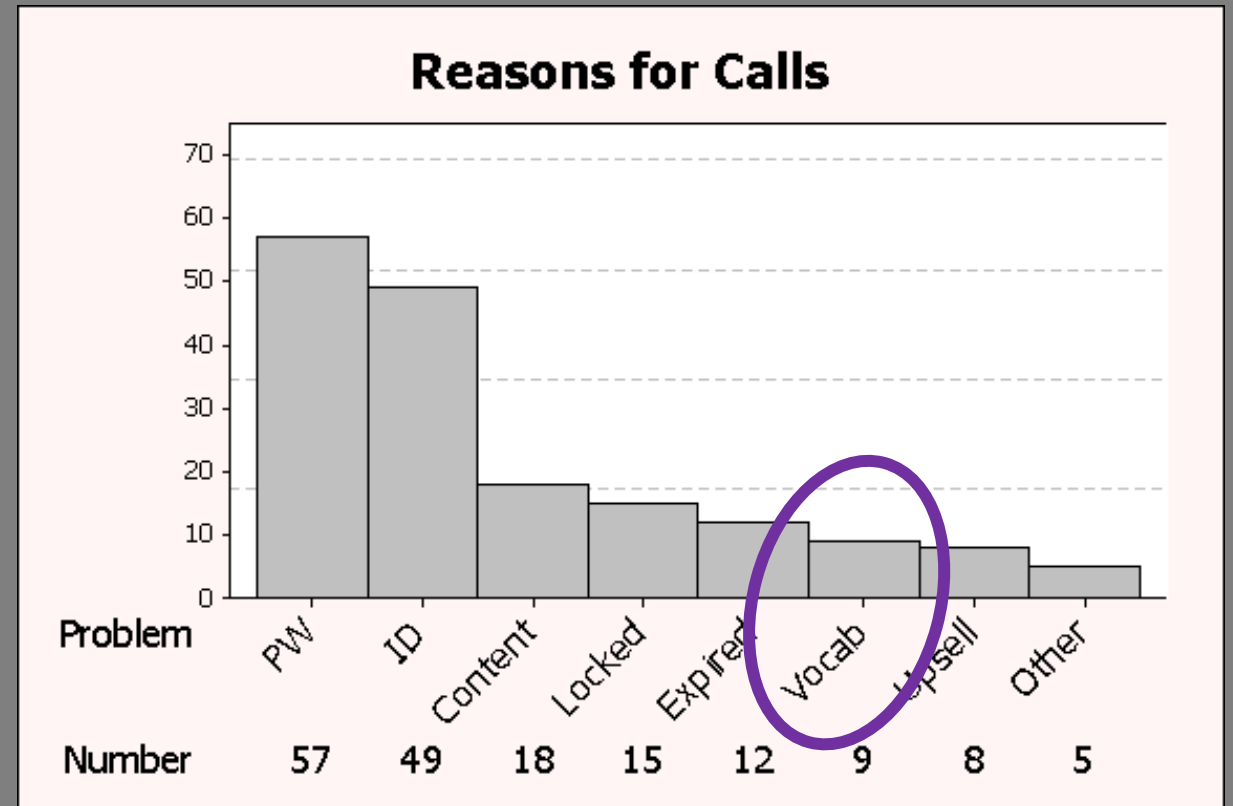
KAIZEN: make lasting improvements

1. Gather the right people
2. Evaluate the current state
3. Identify red flags and waste
4. Sketch a new process
5. Test it and refine it
6. Implement it today



THE PARETO CHART

- List of the Problems You Face
 - Sorted in Order of Frequency*
 - Look for Targets in the Tallest Bars
 - Lower Bars Can Be Good Targets
-
- Then Find Ways to:
 - *Resolve them More Quickly*
 - *Prevent them in the First Place*



*Can also be sorted by Severity

ERRORPROOFING the PROCESS

1. Elimination: Prevent possibility of errors
*Eliminate steps, remove unnecessary work, **Remove Fields on a Form***
2. Replacement: Substitute more robust process for error-prone actions
*Automation, **Standard Software** so everyone works on the current version*
3. Facilitation: Make it easy to avoid errors the first time
*Visual controls, drop-down menus, **Color-Coded Folders***
4. Detection: Make it easy to identify errors that do occur
*Real-time spell checkers, frequent metrics, **Sum Reconciliation***
5. Mitigation: Reduce the impact of any errors
*Fuses, redundant servers, **No Hassle Returns Policy***

5S: a first step toward Lean Thinking

整理 <i>Seiri</i>	SORTED: keep what you need close to you
整頓 <i>Seiton</i>	SET in ORDER: everything in its place
清掃 <i>Seiso</i>	SERVICEABLE: ready for use every time
清潔 <i>Seiketsu</i>	STANDARDIZED: practice all day, every day
躰 <i>Shitsuke</i>	SUSTAINED: part of the fabric of our org

**5S Saves Time and Effort by Staying
Organized and Disciplined**

INTERVENTION

Execute

- a) Problem is **identified**
- b) Solution is **known**
- c) It is **within our control**
- d) It is **certain** to be positive

Pilot Test

- a) Problem is identified
- b) Solution is known
- c) It is within our control
- d) **Uncertain** about the outcome

Start a Project

- a) Problem is identified
- b) Solution is **unknown**

Study Further

- a) Problem is **not well defined**

Negotiate

- a) Problem is identified
- b) Solution is known
- c) It is **not within our control**

Where to Find Improvement Opportunities

SPEED of the Process

Does the overall process take too long?

Do any of the steps in the process slow the overall process down?

Is it possible that the process is done too quickly?

ACCURACY of the Process

Where is rework needed to fix work that was done incorrectly?

What errors are caught in your shop before they reach the client?

What complaints are received from clients or customers?

Process **METRICS**

Is the process being measured today?

If not, start measuring for **SPEED** and **ACCURACY** right away!

Metrics will tell you when to act.

CONTACT

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