

WELCOME

Lean in Washington – The Basics!



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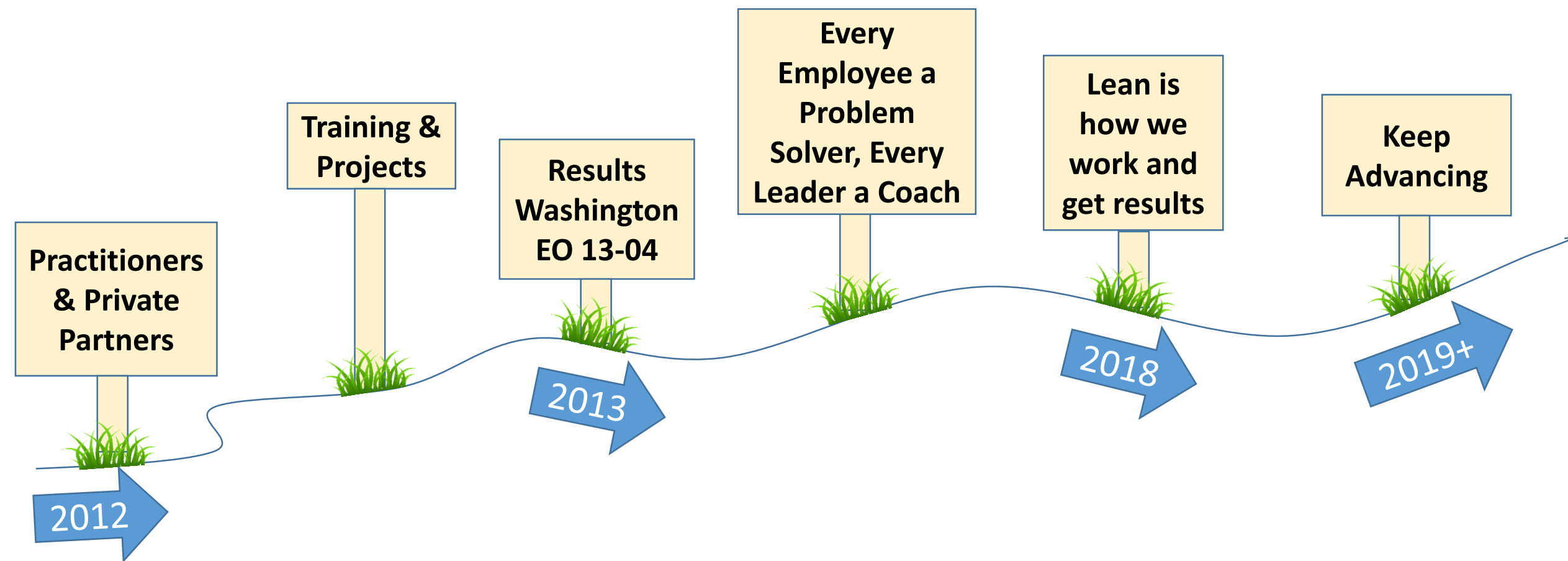
Today We'll...

- Hear how we define Lean in Washington state
- Gain insight into our state's journey
- Learn about common Lean tools or terms
- Understand that Lean is much more than tools
- Reflect and take action toward future learning

History of Lean



Washington State's Journey



Lean is...

*a way of leading and working,
built on respect and humility,
that uses continuous improvement,
to produce great results for
customers.*

Lean is for
EVERYONE
every day.

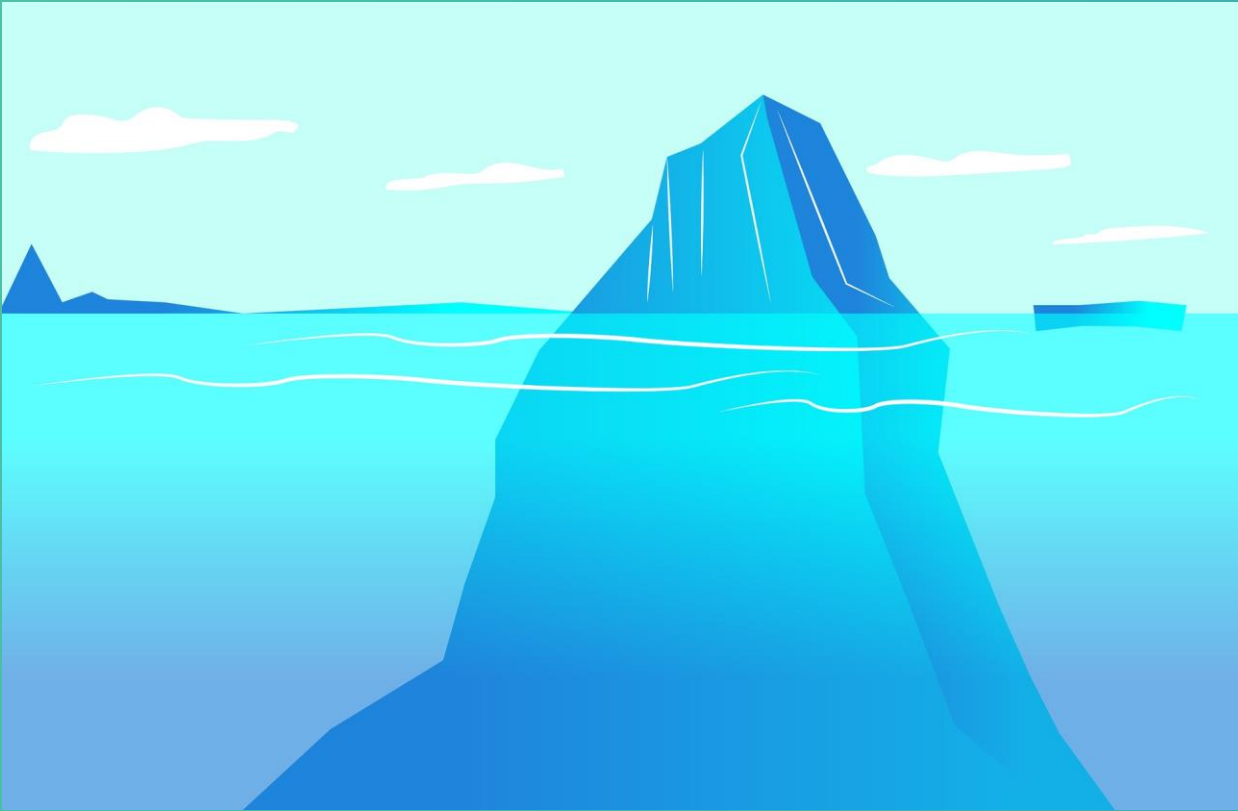


Way of Working



Lean is for everyone every day.

Human Experience Matters



- Respect
- Humility
- Diversity
- Problems are good
- Ok to make mistakes

Customers



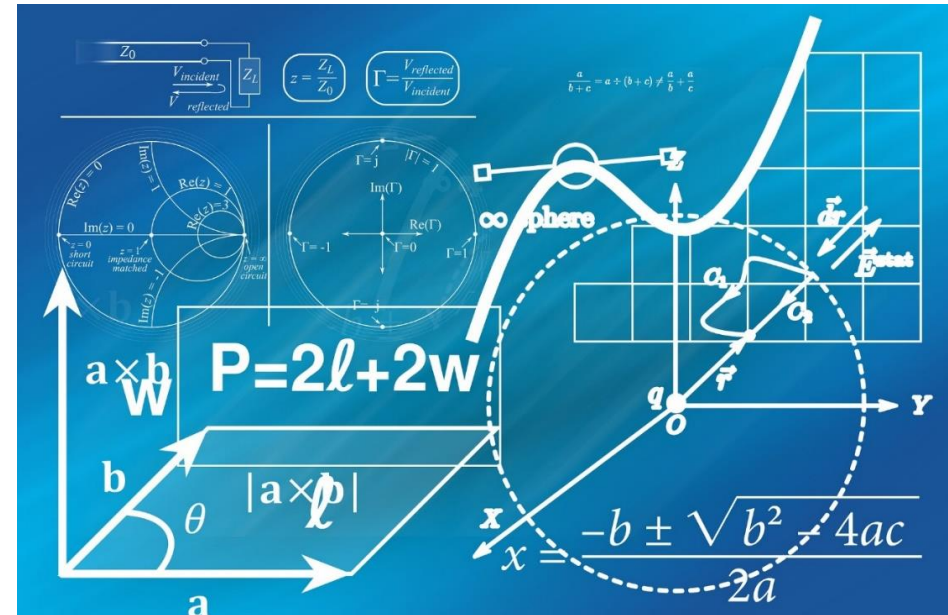
Employees



Change
for the
BETTER

Language

WILLKOMMEN
欢迎 स्वागत
BIENVENIDA
WELCOME
BIENVENUE ようこそ
добро пожаловать
ترحيب BEM-VINDO



You don't have to use foreign or technical terms to be able to use Lean.

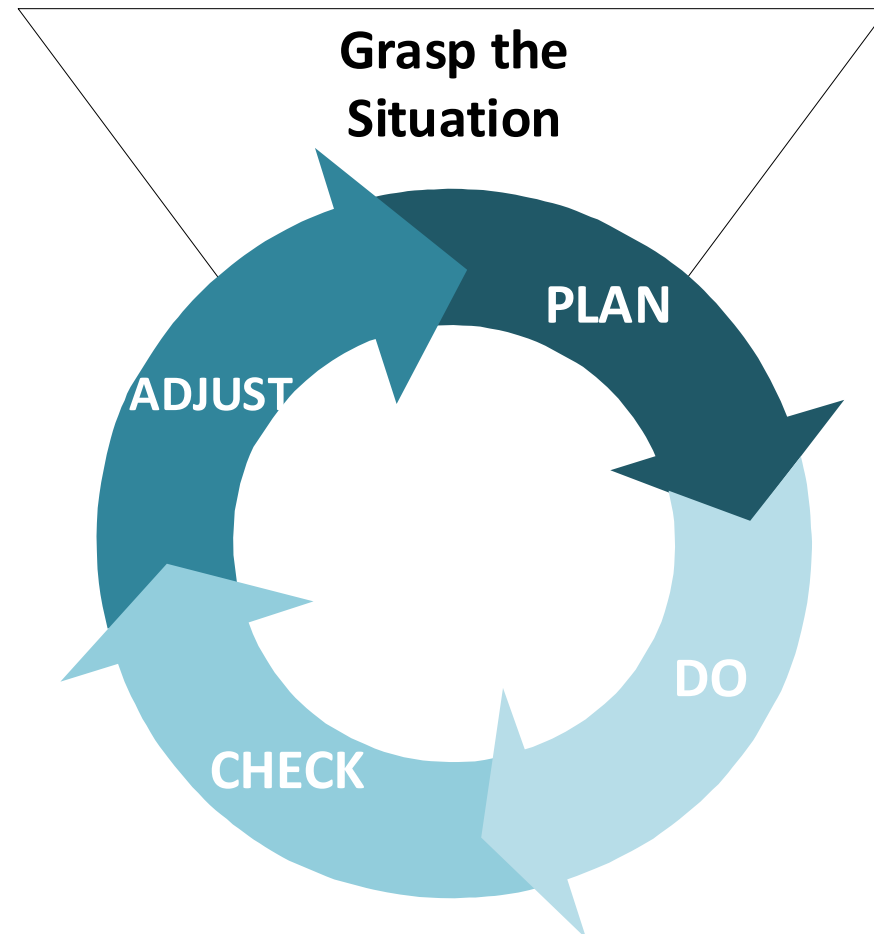
Consistency



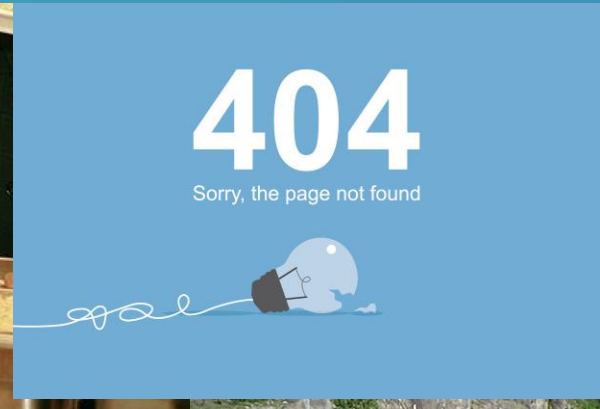
Principles

gPDCA

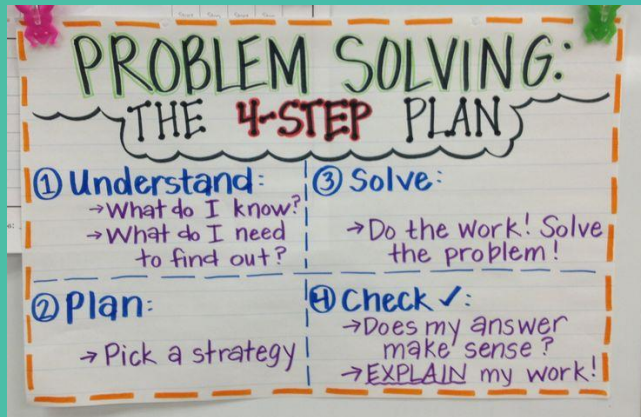
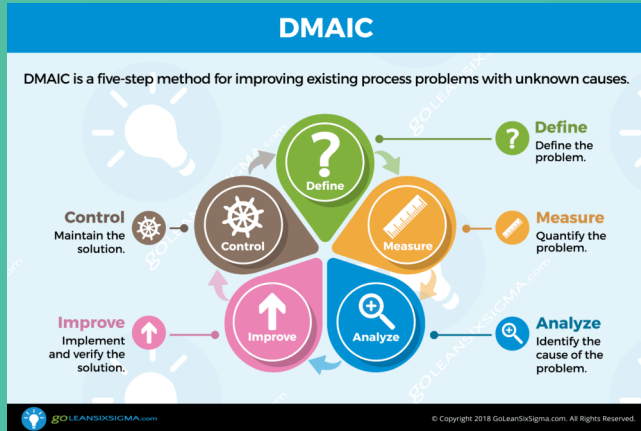
- Grasp the Situation
- Plan
- Do
- Check/Study
- Adjust/Act



8 Wastes



Problem Solving



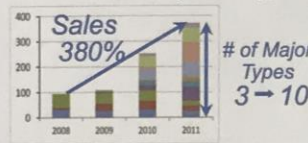
Managing to Learn — A3 Example #3: Reducing Assembly Defects — Mary's Case

Title: Reduce Scratches in Assembly

1. Background

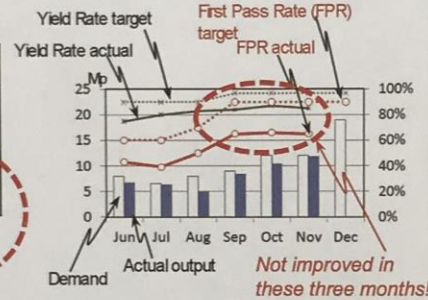
- Device-K is our next main product!
- Increase in variety of mounting/casing types
- Quality is a key success factor in assembly as well as in the chip process

Device-K Sales Plan by Product Type

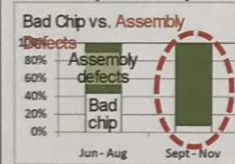


2. Current state (Based on November data)

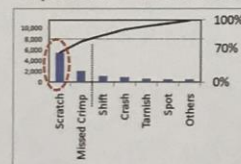
| Metrics | Target | Actual |
|-----------------------|--------|--------|
| Output/Demand | 100% | 99.2% |
| Yield Rate | 97% | 85.2% |
| First Pass Rate (FPR) | 90% | 65.1% |



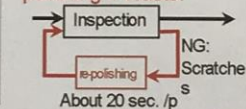
92% of defects were caused by Assembly!



Scratches are most often identified at inspection: 47% of assembly defects



Most scratches are repaired by re-polishing = Waste!

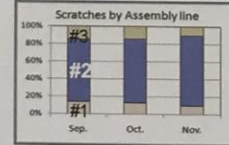
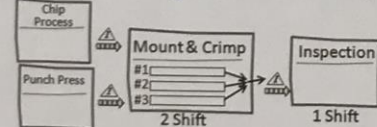


3. Target

- (1) Zero scratches! 15% to Zero → FPR = 90%
 - (2) Reduce missed crimp! 10% to Zero
- * Based on November data

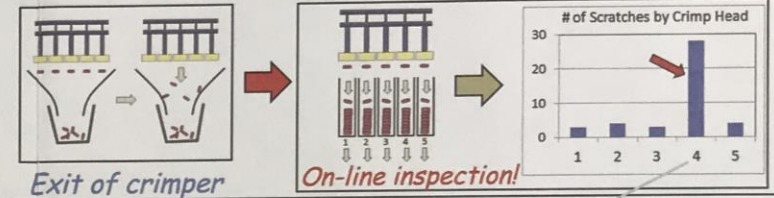
4. Analysis

4-1. Hypothesis & go see -1: Assembly line #2?



| | | |
|---------|-----------------------|--------------------------------------|
| Manager | Supervisor | Shop: Device-K Assembly |
| | Ichiro Dec. 15, 08 | Owner: Mary Update: Dec. 15, 2008 |

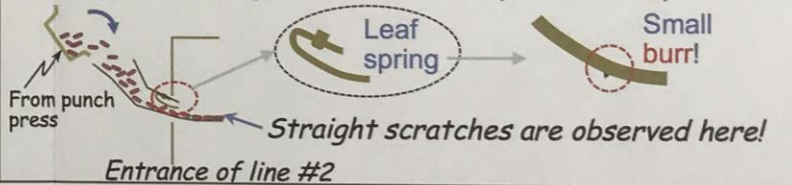
4-2. Trial-1: On-line inspection just after line #1 crimp



4-3. Second observation: types of scratches

| | |
|--------------|--|
| Rounded 70% | → Fixing crimper head 4 also reduced missed crimp defects. |
| Straight 28% | → Observed only in line #2 → Next go see-2 |
| Others 2% | → Observed in all lines → Punch press? |

4-4. Hypothesis & go see-2: First step of assembly line #2?



5. Countermeasures and plan

| # | Action item | Dec. 5 | 12 | 19 | 26 | Jan. | Responsibility | Status |
|---|--------------------------------------|--------|-----------------------------|--------------|--------------------|------|--------------------------------|----------|
| 1 | Fix crimper head | | | | | | Mary & Jack with Facility Team | Done |
| 2 | Fix leaf spring | | | | | | | Done |
| 3 | On-line inspection | Trial | | Prep. | 2-shift inspection | | Jimmy Mgr. Assembly | On track |
| 4 | Reduce inventories between processes | | Stop machines alternatively | Implement VM | Maintain | | Team | On track |

6. Result & next challenge

| Metrics | Target | Actual |
|------------|--------|--------|
| Yield Rate | 97% | 96.0% |
| FPR | 90% | 90.2% |

- (1) Remaining Defects
 - a) Scratches (2%)
 - b) Missed crimp (1%)
 - c) Others
- (2) "Why" after current countermeasures
 - a) Broken head - why?
 - b) Burr - why?

Produce Great Results for Customers



Lean is a way of leading and working, built on respect and humility, that uses continuous improvement to produce great results for customers.

Take Action!





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