LeanOhio Boot Camp: Transforming the Public Sector

Root Cause Analysis and Ishikawa

Maslow’s Hierarchy

- self-actualization
  - creativity, spontaneity, acceptance, experience, purpose
- self-esteem
  - confidence, achievement, respect of others, the need to be a unique individual
- love and belonging
  - friendship, family, intimacy, sense of connection
- safety and security
  - health, employment, property, family and social stability
- physiological needs
  - breathing, food, water, shelter, clothing, sleep
Juran’s Classification of Customer Needs

The **customer needs** are complex and will fall into five classifications:

- Stated
- Real
- Perceived
- Cultural
- Unintended

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Root Cause Analysis

• Getting to the Root of the Problem!

Every problem is an opportunity."

- Kiichiro Toyoda, founder of Toyota
Root Cause Analysis Definitions

• A root cause is a factor that causes a nonconformance and should be permanently eliminated through process improvement.
• Root Cause Analysis is a collective term that describes a wide range of approaches, tools, and techniques used to uncover causes of problems.
Root Cause Analysis

• Root Cause Analysis is all about getting to the root of the problem!

We want to make sure we are not treating the symptoms but curing the disease.

Example: Takes to long to get permit.....everybody work faster!
Root Cause Analysis Tools

Several Lean Six Sigma Root Cause Analysis Tools:

- 5 Whys
- Fishbone Diagram
- Pareto Chart
- FMEA
- SWOT: Strengths – Weaknesses – Opportunities - Threats
Five Whys

- 5 Whys: By repeatedly asking why you can peel away layers of symptoms to lead to root cause of a problem
  - Help ID Root Cause
  - Determine relationships
  - Simplest tools
  - Don’t stop until you reach an answer that is fundamental

Five Whys Example

**Problem Statement:** You are on your way home from work and your car stops in the middle of the road.
Five Whys Example

• 1. Why did your car stop?
  - Because it ran out of gas.

Five Whys Example

• 2. Why did it run out of gas?
  •  
    - Because I didn’t buy any gas on my way to work.
Five Whys Example

• 3. Why didn’t you buy any gas this morning?
  - Because I didn’t have any money.

Five Whys Example

• 4. Why didn’t you have any money?
  - Because I lost it all last night in a poker game.
Five Whys Example

• 5. Why did you lose your money in last night’s poker game?

- Because I’m not very good at “bluffing” when I don’t have a good hand.

Five Whys Example

• 1. Why did your car stop?
  - Because it ran out of gas.
• 2. Why did it run out of gas?
  - Because I didn’t buy any gas on my way to work.
• 3. Why didn’t you buy any gas this morning?
  - Because I didn’t have any money.
• 4. Why didn’t you have any money?
  - Because I lost it all last night in a poker game.
• 5. Why did you lose your money in last night’s poker game?
  - Because I’m not very good at “bluffing” when I don’t have a good hand.
Classic Five Why Example

Solution: Stop playing poker?

5 Whys and the Fishbone Diagram

The 5 Whys can be used individually or as a part of the fishbone diagram.

“If you don’t ask the right questions, you don’t get the right answers. A question asked in the right way often points to its own answer. Asking questions is the ABC of diagnosis. Only the inquiring mind solves problems.” – Edward Hodnett
Fishbone Diagram

Fishbone Diagram: What

- A picture of various system elements that may contribute to a problem
- Allows the organization of large amounts of information about the problem and its possible causes
- Creates a snapshot of collective knowledge about the problem
Fishbone Diagram: When/Why

Use during Define to assess the current situation

– To identify possible causes of a problem
– To identify the most likely cause and discover root causes
– To ensure that all perspectives are looked at and nothing is overlooked
– To preclude jumping to solutions
– To move from opinion to testable theories

Fishbone Diagram: How (7M’s)
Fishbone Diagram: How (4P’s)

Problem Statement

Policies

People

Procedures

Place

Fishbone Diagram: Design

Problem Statement

Policies

People

Procedures

Place

EXAMPLE

Fishbone Diagram: Analyze

Identify most likely cause candidates
- Causes that occur repeatedly
- Causes that have the biggest impact

Verify causes
- With data: Pareto Diagram, Run Chart, Histogram, Control Chart
- With others who work in or know the process
- That the causes actually produce the effect that you think they do
Fishbone Diagrams: Tips

• Use Fishbone Diagram on an ongoing basis
• Identify contributing factors to each cause
• Dig deeply into causes of the causes
• Do multiple diagrams to get at the root cause
• Use data to verify
• DON’T JUMP TO CONCLUSIONS!

Department of Prevention Example

Problem Statement: Why is the application process taking too long?
**Department of Prevention Example**

**Fishbone Diagram: Activity**

- Practice Fishbone Diagram by taking a simple problem and identifying as many potential causes as you can.
Try One

The Big Wheel

1. Too many complaints
2. Too many errors
3. Wrong form selected
4. Missed calls
5. Abandoned calls
6. Mis-transferred calls
7. Errors on forms received
8. Lost documents
9. Mis-filed documents
10. Printer jams
Fishbone Diagram: What Potentially could be the issue

Fishbone Diagram: Key Learning Points

The Green Belt should now be able to:
• Have a better understanding of the causative factors
• Create a Fishbone Diagram

QUESTIONS?