

LEANO Ohio
GREEN BELT
Transforming the Public Sector
Fishbone Root Cause Analysis

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Learning Objectives

- Maslow's Hierarchy of Needs
- Juran's Classification of Customer Needs
- Introduce Root Cause Analysis
- Review 5 Whys
- Identify the purpose of a Fishbone Diagram
- Describe how to use Fishbone Diagram to analyze a problem

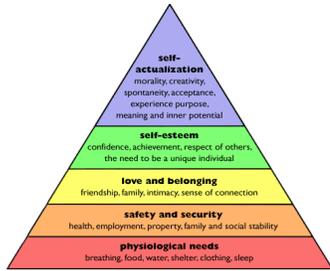
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“Every problem is an opportunity.”

-Kilchiro Toyoda, founder of Toyota

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Maslow's Hierarchy



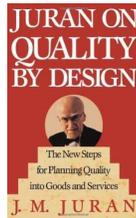
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Juran's Classification of Customer Needs

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!



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- Kiichiro Toyoda, founder of Toyota

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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**

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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!

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Root Cause Analysis Tools

Several Lean Six Sigma Root Cause Analysis Tools:

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

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why?
why?
why?
why?

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Five Whys

- 5 Whys: By repeatedly asking why you can peel away layers of symptoms to lead to root cause of a problem
 - Help Identify the Root Cause(s)
 - Simple and effective tool
 - Don't stop until you reach an answer that is fundamental

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Five Whys Example

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



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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

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Fishbone Diagram: Ishikawa

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What is a Fishbone Diagram

- A tool to help identify & display potential causes of a problem
- Involves the whole team
- Visually promotes "System Thinking"
- An organized form of brainstorming
- Prioritizes further analysis

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Ishikawa Diagram

- First used by Dr. Ishikawa of the University of Tokyo
- Frequently referred to as an “Ishikawa Diagram”



“Failure is the seed of success.”
-Dr. Ishikawa

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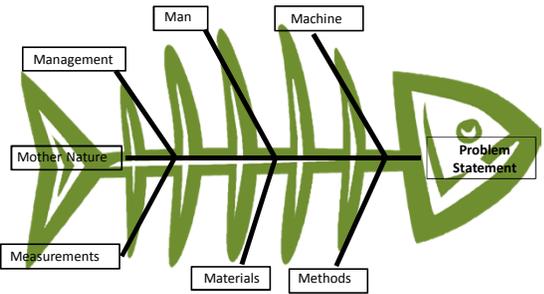
When to use a Fishbone Diagram

Use during *Define* to assess the current situation

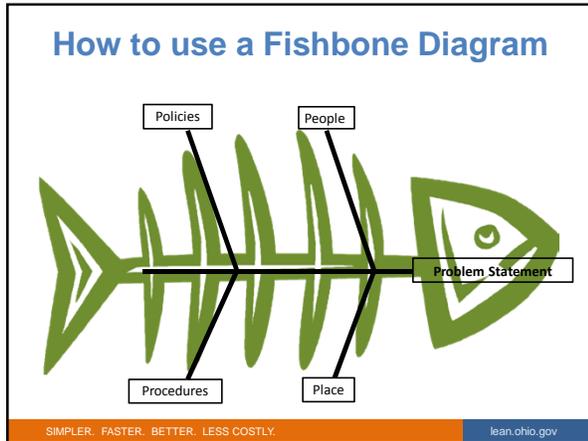
- To identify possible causes of a problem
- To identify the most likely cause and discover root causes
- To ensure that all perspectives are looked at and nothing is overlooked
- To preclude jumping to solutions
- To move from opinion to testable theories

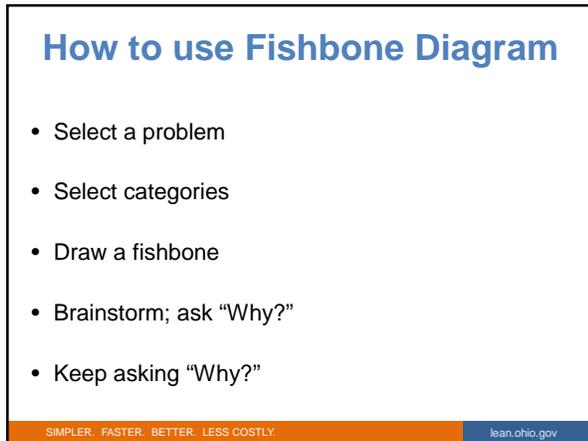
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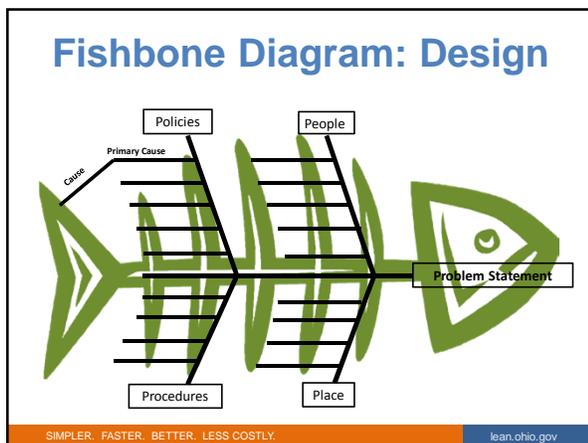
How to use a Fishbone Diagram



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Example

Problem Statement:

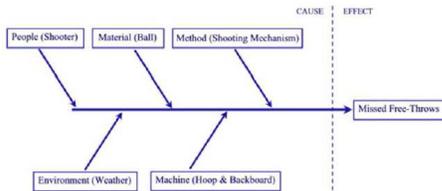
The team keeps missing free throws



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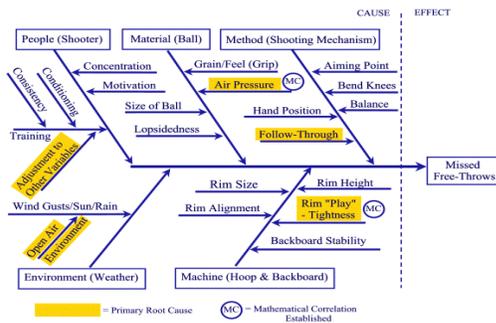
Fishbone Diagram



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Fishbone Example



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Next Step: Analyze the Data

Identify most likely cause

- Causes that have the biggest impact
- Causes that occur often

Verify causes

- With data
- That the causes actually produce the effect that you think they do

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Fishbone Diagrams: Tips

- Dig deeply into the causes of the causes
- Use data to verify
- **DON'T JUMP TO CONCLUSIONS!**



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Key Learning Points

The Green Belt should now be able to:

- Have a better understanding of the Customer's Needs
- Understand Maslow's Hierarchy
- Understand Root Cause Analysis and 5 Whys
- Create a Fishbone Diagram

QUESTIONS?

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