Problem Solution - 5 Why's Analysis

5 whys as part of lean manufacturing is a problem solving technique that allows you to get at the root cause of a problem fairly quickly. It was made popular as part of the Toyota Production System (1970's.) Application of the strategy involves taking any problem and asking "Why - what caused this problem?"

Benefits Of The 5 Whys.
   It helps to quickly identify the root cause of a problem.
   It helps determine the relationship between different root causes of a problem.
   It can be learned quickly and doesn't require statistical analysis to be used.

When Is 5 Whys Most Useful?
   When problems involve human factors or interactions.
   In all types of business situations whether solving a lean manufacturing or for any other business problem.

Example of a five Why Analysis. **...Here is our "wheel" life example.**

1. Why is our largest customer unhappy? Because our deliveries of bicycles have been late for the last month.
2. Why have our bicycle deliveries been late for the last month? Because production has been behind schedule.
3. Why has production been behind schedule? Because there is a shortage of wheels.
4. Why are we having a shortage of wheels? Because incoming inspection has rejected a large number of wheels for not being round.
5. Why are we rejecting so many parts? Because purchasing switched to a cheaper wheel supplier that has inconsistent quality.
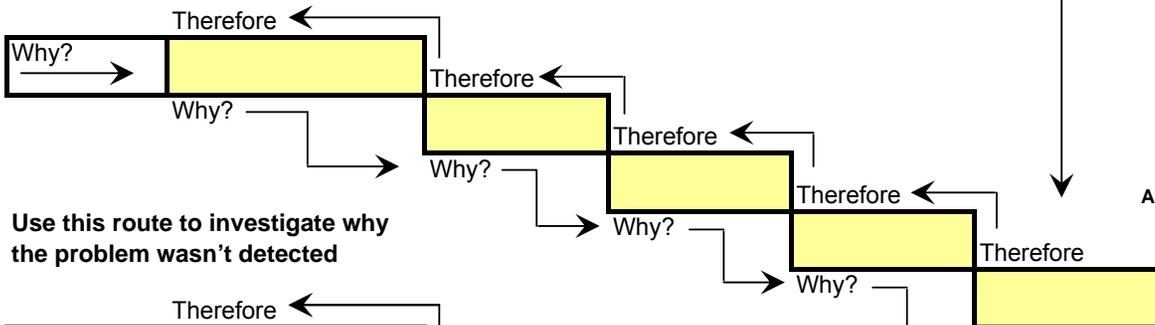
Problem Solution - 5 Why's Analysis Worksheet

Part Number:	Date:	Area:	Product/Process:

Problem Description:

Use this route to specify the nonconformity that is being investigated.

Root Causes

Corrective Action & Responsibility

Date

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

A

Use this route to investigate why the problem wasn't detected

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

B
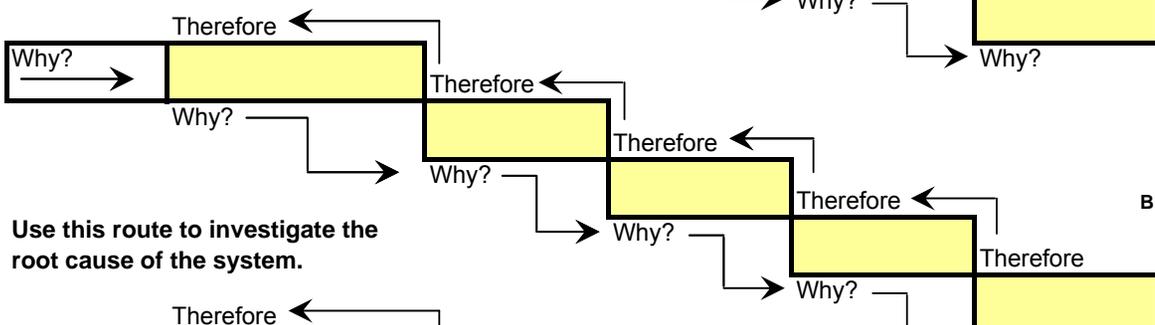
Use this route to investigate the root cause of the system.

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

Therefore
Why?

C
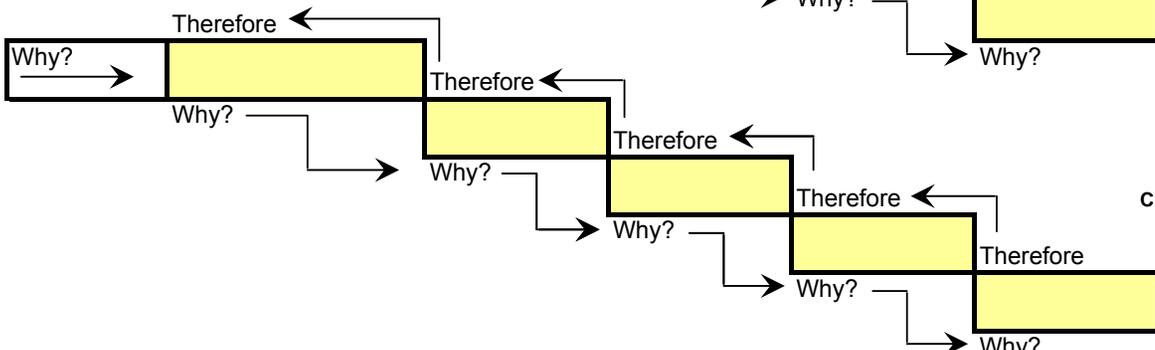
	Corrective Action & Responsibility	Date
A		
B		
C		

Problem Solution Completed:	Solution Date:	Break point of the change in the process:	Implementation Date:

Root Cause Identification Tool

(complete for product involved in quality issue)

| Machine | Material | Man |

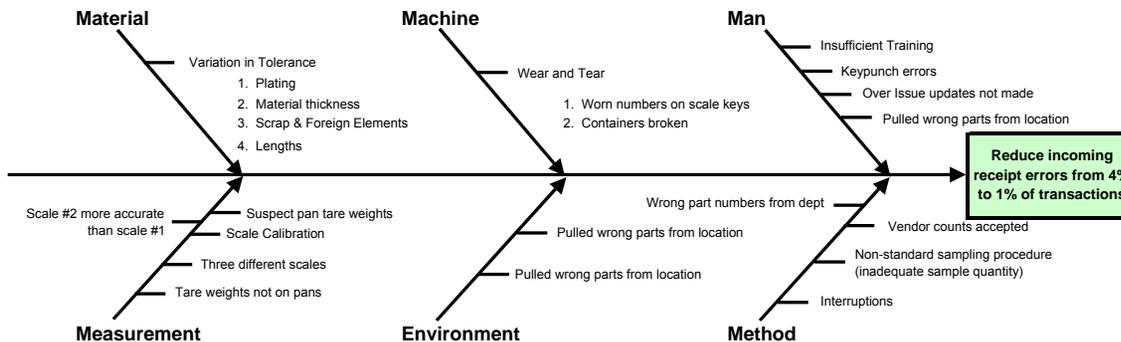| Method | Manpower | Environment |

Problem Statement
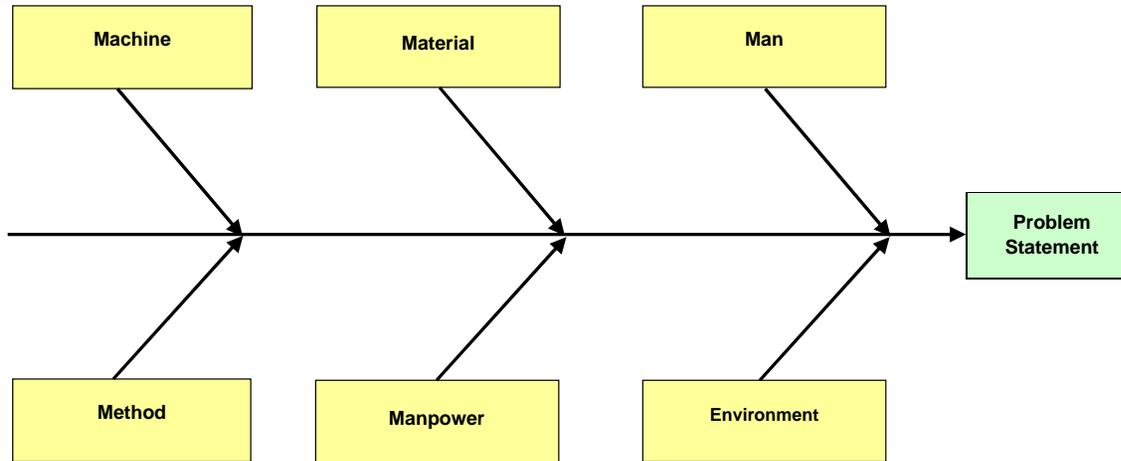
Cause and Effect (Fishbone Diagrams)

A cause and effect (fishbone) diagram:

- Breaks problems down into bite-size pieces.
- Displays many possible causes in a graphic manner.
- Is also called a cause & effect, 4-M or Ishikawa diagram.
- Shows how various causes interact.
- Follows brainstorming rules when generating ideas.

A fishbone session is divided into three parts: Brainstorming, prioritizing, and development of an action plan. Identify the problem statement and brainstorm the categories in a fishbone diagram. To prioritize problem causes, polling is often used. The three most probable causes may be circled for the development of an action plan.

Generally, the 4-M (manpower, material, method, machine) version of the fishbone diagram will suffice. Occasionally, the expanded version must be used. In a laboratory environment, measurement is a key issue. When discussing the brown grass in the lawn, environment is important. A 5-M and E Schematic is shown in the above illustration.

Material

Variation in Tolerance
1. Plating
2. Material thickness
3. Scrap & Foreign Elements
4. Lengths

Machine

Wear and Tear
1. Worn numbers on scale keys
2. Containers broken

Man

Insufficient Training
Keypunch errors
Over Issue updates not made
Pulled wrong parts from location

Reduce incoming receipt errors from 4% to 1% of transactions

Scale #2 more accurate than scale #1
Suspect pan tare weights
Scale Calibration
Three different scales
Tare weights not on pans

Measurement

Wrong part numbers from dept
Pulled wrong parts from location
Pulled wrong parts from location

Environment

Vendor counts accepted
Non-standard sampling procedure (inadequate sample quantity)
Interruptions

Method

IS-IS NOT MATRIX

Problem:	Is	Is Not	Distinctions
What occurs, what objects are affected?			
Where does the problem occur?			
When does the problem occur?			
Extent of problems			
Who is involved?			