

CCCAOE 2019 Spring Conference, April 3 - 5, Sacramento, CA

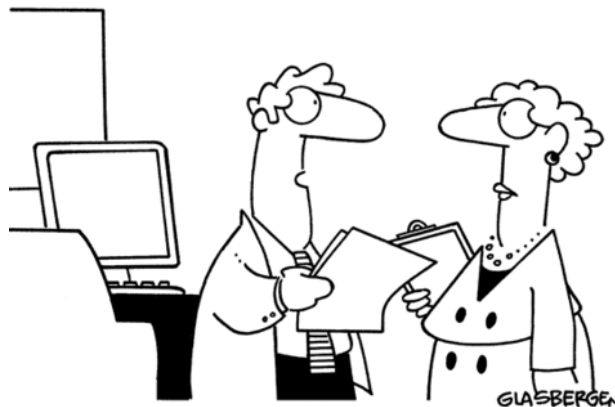
Key to Problem Solving: Define the Problem 1st! (Regency Ballroom F)

Gurminder Sangha, Sector Navigator Advanced Manufacturing. Proudly hosted by College of the Sequoias.

Believe it or not, a simple step of understanding and defining the problem first prior to solving the problem is not taken that leads to significant "wastes". It is absolutely essential for an individual or a team to first develop a problem statement to find realistic and cost-effective solutions. The attendees of the "Key to Problem Solving: Define the Problem 1st!" workshop will learn how to define problem statement that will serve as a core first step towards developing effective solutions.



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**"My team has created a very innovative solution,
but we're still looking for a problem to go with it."**

*Presented by: Gurminder Sangha, Sector Navigator – Advanced Manufacturing
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Quality Process Model

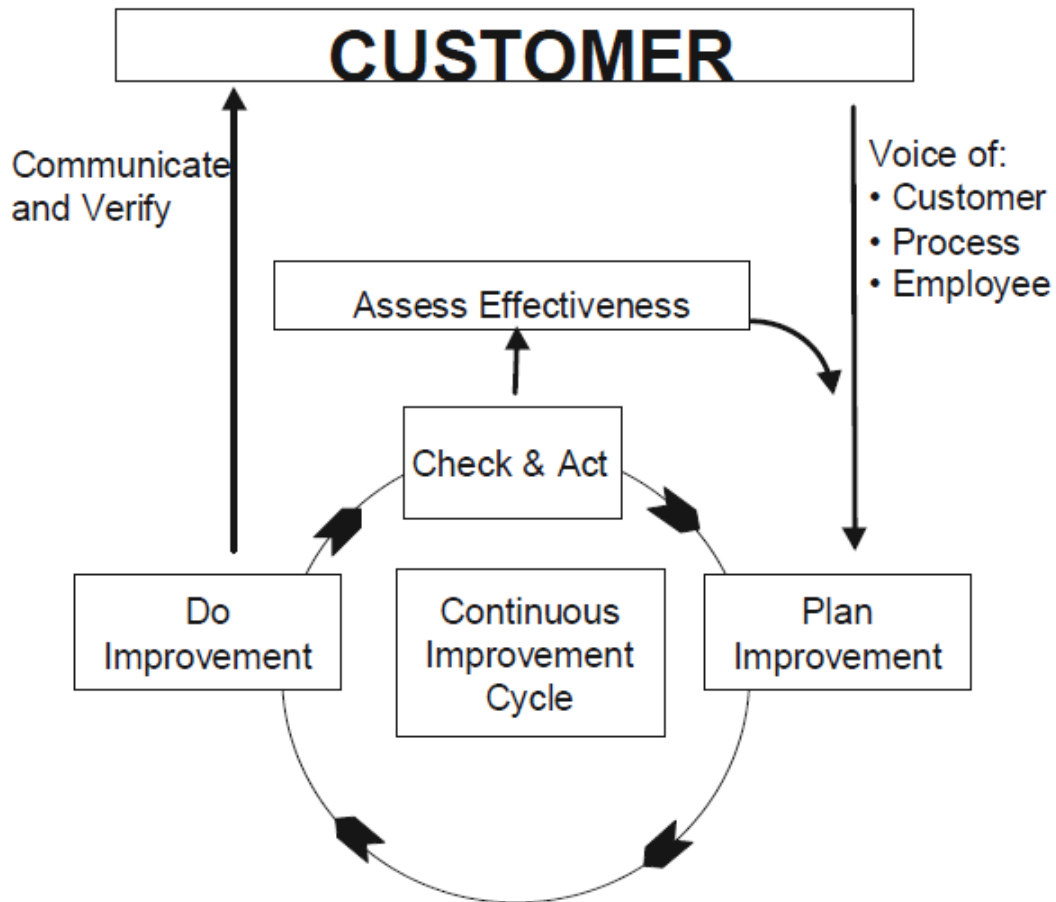


Fig 1: Quality Process Model: A formal system of continuous improvement which enables employees to meet customer requirements.

Product Design Cycle: Pitfalls!

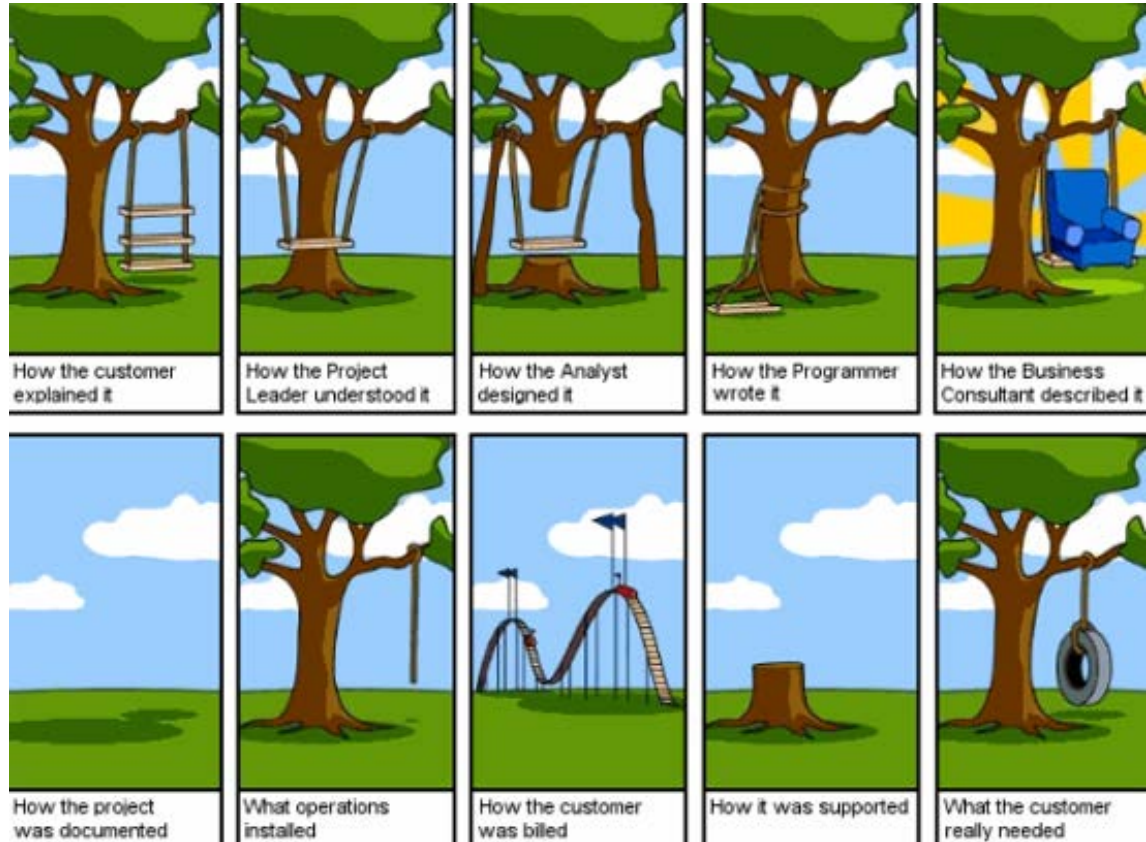
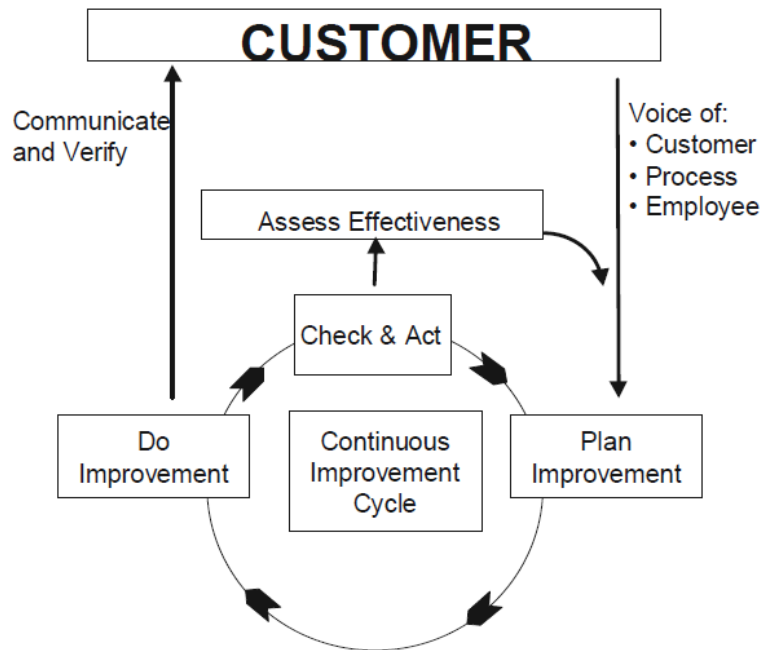


Fig 3: Product Design Humor



Meeting of the Minds, Driven by Demand, September, 5-7, Monterey, CA

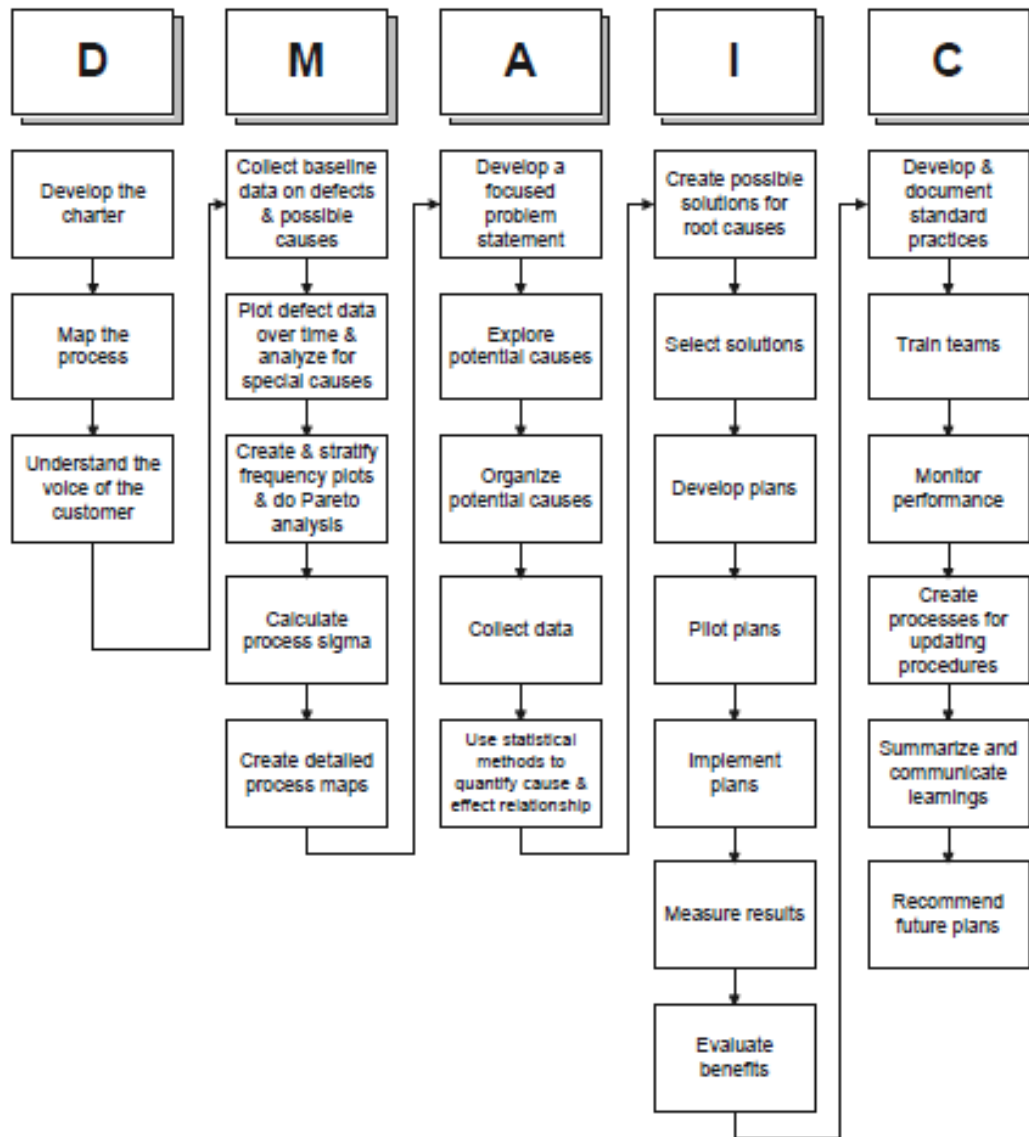
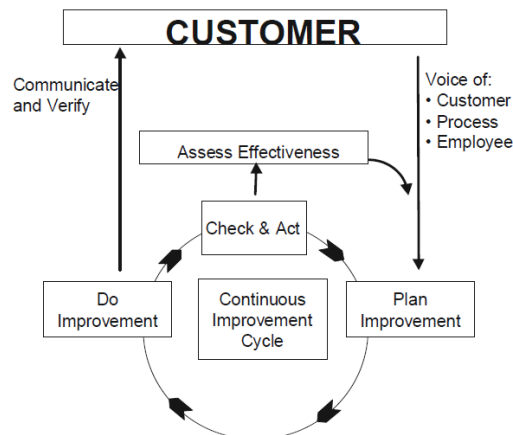


Fig 4: The DMAIC Process Flow



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Problem Statement

Problem Statement:

- What is the best way to describe the deviation or the issue we are being confronted with?

Purpose:

- A problem statement describes how the actual (current) state differs from the desired (future) state. A Problem Statement defines the work of a problem-solving team. The writing and acceptance of a clear Problem Statement is necessary to a team's success.
- A problem statement is a concise description of the issues that need to be addressed by a problem solving team
- Kaoru Ishikawa, a Quality Management philosopher said: "You will have a problem half solved by defining it correctly on the first day"

A problem statement:

- Is clear, concise and SPECIFIC
- Does NOT include CAUSES of the deficiency
- Does NOT include likely actions or SOLUTIONS

When to Use:

- At the beginning of the problem solving process.

Procedure:

- **Define the business objective.** In order for the solution to be successful, what business objectives must be met?
- **Determine limitations and boundaries.** Conditions that must be considered including time and costs.
- **Write the Problem Statement.** Be concise and make the statement quantitative. **Do not imply a solution to the problem!**

Problem Statement Format:

A well-written problem statement will follow the "T.I.M.E." format:

- What is the current situation? (Today)
- What is the ideal situation? (Ideal)
- How will success be measured? (Measure)
- Why is solving this problem important? (Essential)

Obtain Agreement on statement from the entire team and team sponsor.

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Examples of Problem Statements

- Better Problem Statement:** The number of late shipment complaints at our plant in 2007 was 49. Any order that is not shipped complete by the specified customer due date is a nonconformance. The number of late shipment incidents must be reduced by 75% by December 2008, in order to retain customer loyalty.
- Poor Problem Statement:** Human resources is taking too long to fill personnel requests.

Better Problem Statement: Recruiting time for software engineers for the flight systems design department in San Jose is missing the goal of 70 days 91 percent of the time. The average time to fill a request is 155 days in the human resources employee recruitment process over the past 15 months. This delay is adding costs of \$145,000 per month in overtime, contractor labor, and rework costs.

- Poor Problem Statement:** Inventory levels are too high and must be reduced. Or, having too few forklifts is making inventory levels too high.

Better Problem Statement: Inventory levels at the West Metro inventory storage process in Scottsdale are consuming space, taking up asset management time, and creating cash flow issues. Inventory levels are averaging 31.2 days, with a high of 45 days. These levels have exceeded the target of 25 days 95 percent of the time since January 2012. \$250,000 could be saved per year if inventories were at the targeted level.

- Poor Problem Statement:** Our hospital has a problem with the number of insurance claim forms submitted with errors to the insurance company.

Better Problem Statement: Insurance claim forms originating at the Fremont North Memorial emergency department are causing a loss of revenue, excessive rework costs, and delayed payment to the hospital. Forty-five percent of the claim forms have errors, with an average of 2.3 defects per form.



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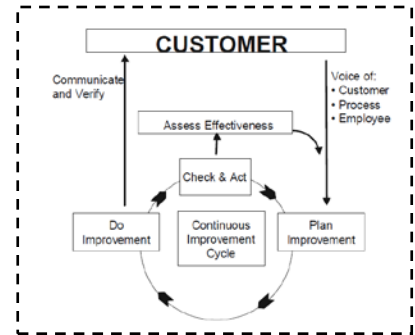
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Exercise: T. I. M. E. Problem Statement Development

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T.I.M.E. Problem Statement	
T oday:	
I deal:	
M easure:	
E ssential:	

Form 1: TIME Problem Statement