PIM Training Program

Getting Started with Problem/Opportunity

Analyzing a Problem

Agenda

This session is the first of the **Getting started with a problem/opportunity** program.

PIM Program Introduction	Session Details

1. Analyzing a problem ⬅
2. Requirements gathering
3. SMART problem statements
4. Project customer impact
5. Practice problem statements

Session Facilitator: Karthic Raja (L5 – Product Manager)

Session Duration: 3 hours

Note that at the end of this program, you will be evaluated on your ability to write clear business problem statements.

Session Objective

The first step in resolving a problem is to define the problem and clearly articulate it. At the end this session you will be able:

- Define a business problem
- List the characteristics of a problem statement
- Perform preliminary analysis to clearly define a problem

Understanding Business Problem

Business Problem: Definition

What is a Business Problem?

A Business Problem is a scenario or a challenge which adversely affects the profitability, reputation or business continuity. A business problem is an opportunity for an organization to improve. However, not all business problems need can be resolved.

Why Define a Business Problem?

Defining a Business Problem will help:

- Identify the primary problem that needs to be resolved in any scenario
- Define the scope of the problem and its impact
- Identify the root causes of the problem and not just the symptoms of the problem
- Identify sustainable solutions for business problems
- Focus on **'Solution to what'** than **'What is the solution'**

Where can a Business Problem Exist?

Finance	Business	Product/Service	Customer	Process
• Cost • Sales • Profit/Loss	• Business Model • Regulations • Price Competition • Change/Transformation	• Product Positioning • Demand • Supply • Promotion • Time to Market • Branding	• Customer Relationships • Customer Experience • Vendor Experience	• Quality • Ops-Excellence • Operations

Business Problem Characteristics

Characteristics of problem:

- Presence of a symptom

- Magnitude of the problem

- Time of the event
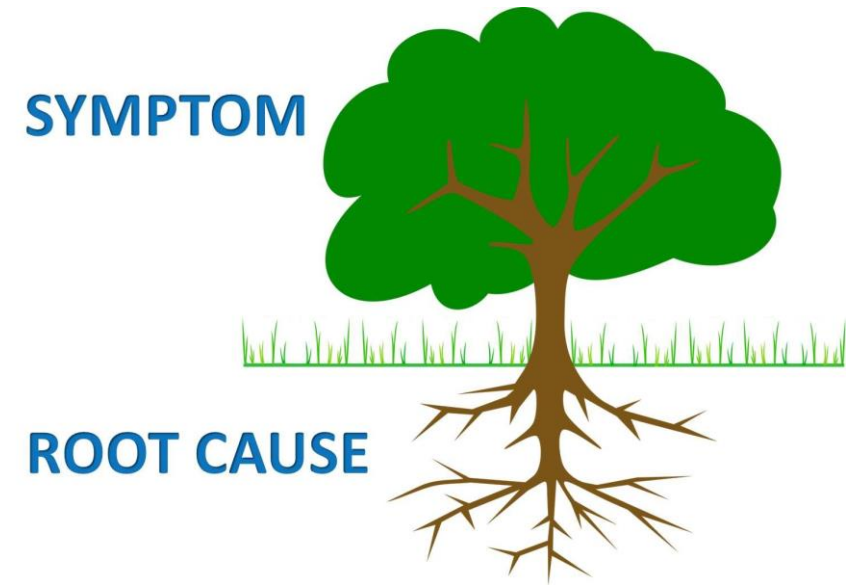
- Seriousness of the problem

- Spatial location

Business Problem Characteristics - Symptom

Characteristics of problem:

Presence of a symptom

A symptom is anything that happens as a result of a problem.

Example: Company's gross **sales dropped** by 25% in 2019.

Business Problem Characteristics – Magnitude

Characteristics of problem:

Magnitude of the problem

Magnitude of the problem defines the size or extent of a problem scenrio.

Example: Company's gross sales dropped by **25% ($3.5M)** in 2019.

Business Problem Characteristics – Time

Characteristics of problem:

Time of the Event

The season of the year in which the symptom of the problem was observed.

Example: Company's gross sales dropped by 25% ($3.5M) in **3rd quarter (Q3) of 2019.**
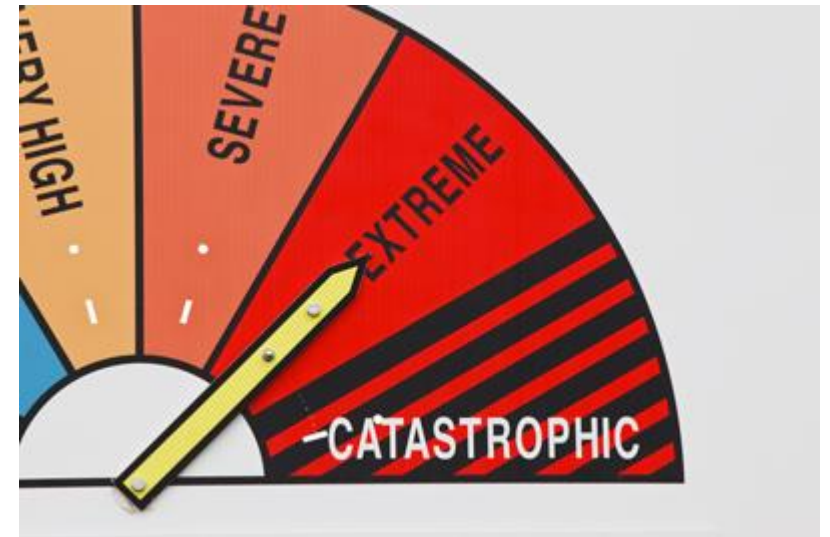
Business Problem Characteristics – Severity

Characteristics of problem:

Seriousness of the problem

This characteristic talks about the quality or status of the problem.

Example: Company's gross sales dropped by 25% ($3.5M) in 3rd quarter (Q3) of 2019. This drop has **significantly impacted** the overall P/L (Profit/Loss) of the organization.
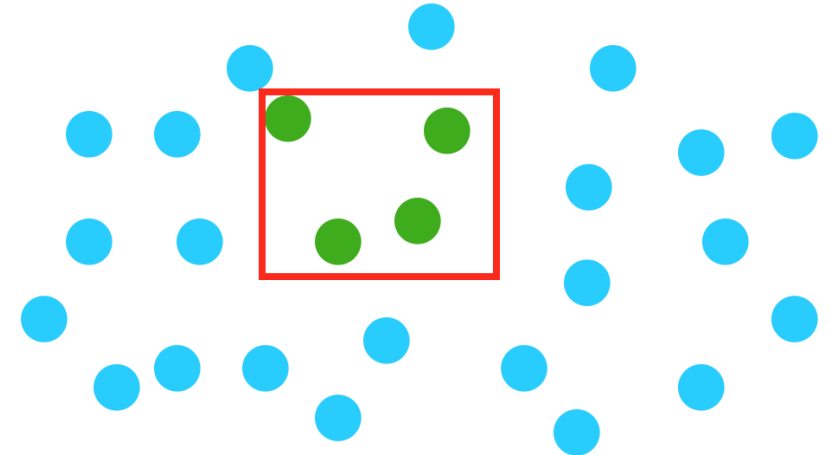
Business Problem Characteristics – Location

Characteristics of problem:

Spatial Location

This defines the location or the occupying space in the larger schema.

Example: Company's gross sales dropped by 25% ($3.5M) in 3rd quarter (Q3) of 2019. This drop has significantly impacted the overall **P/L (Profit/Loss) of the organization**.

Understanding Business Problem

An example Problem statement

On an average, the current boarding system wastes roughly 4 minutes per boarding session, resulting in a total of 20 wasted man-hours per day across all ABC flights. This represents a waste of roughly $400 per day or $146,000 per year.

Problem Analysis

Problem Analysis

What is problem analysis?

Problem analysis is a process that includes a set of analytic tasks performed to increase the understanding of a problem scenario. It helps to simplify the problem, identify root causes of the problem and eventually resolve the problem effectively.

Problem Analysis – Preliminary Steps

Methods of preliminary analysis to clearly define the problem

❖ Rephrase the problem

❖ Expose and challenge assumptions

❖ Chunk up [Scaling up a problem]

❖ Chunk down [Scaling down a problem]

❖ Find multiple perspectives

❖ Reverse the problem

❖ Gather facts and numbers

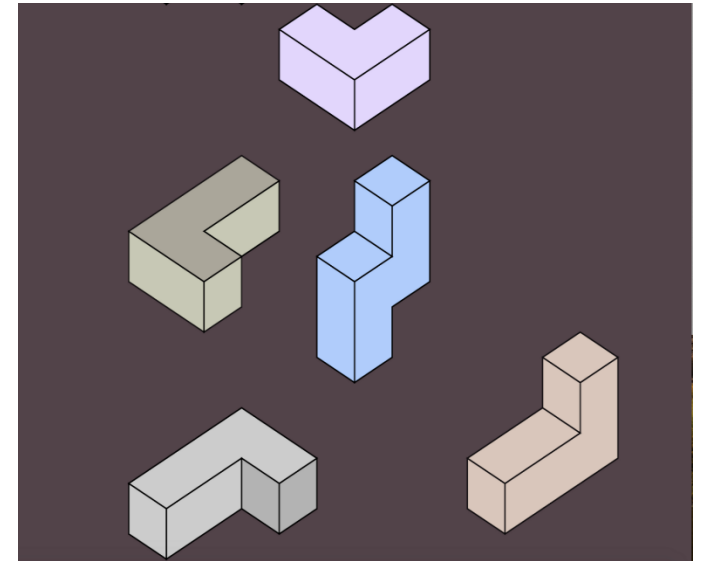# Problem Analysis - Rephrase

Preliminary analysis of problem:

Rephrase the problem

Problem statement: We need to find ways to increase productivity.

Rephrased statement: We need to find ways to make the job easier.

Problem statement: We need to find ways to increase Customer Experience (CX).

Rephrased statement: We need to find ways to develop Customer Experience (CX).

Problem Analysis – Challenge Assumptions

Preliminary analysis of problem:

Expose and Challenge Assumptions

Problem assumption: If we are starting a restaurant, then the assumption is 'Restaurants have a menu'.

Challenging assumption: Why not a business model where 'Customer bring dish ideas for the chef to cook'.
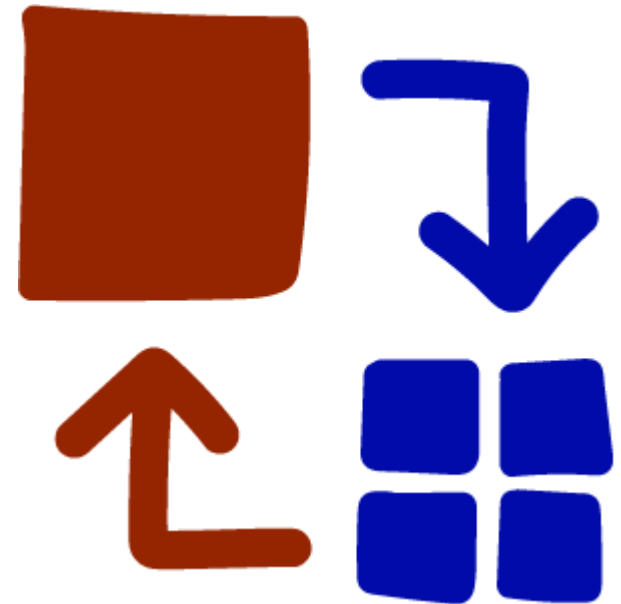
Problem Analysis – Chunk Up

Preliminary analysis of problem:

Chunk Up [Scaling up a Problem]

Problem Question: I want to get <u>more customers</u> to my business in order <u>to increase sales</u>.

Scaled up problem: What about making bigger sales each time? What about making your customers return more often?
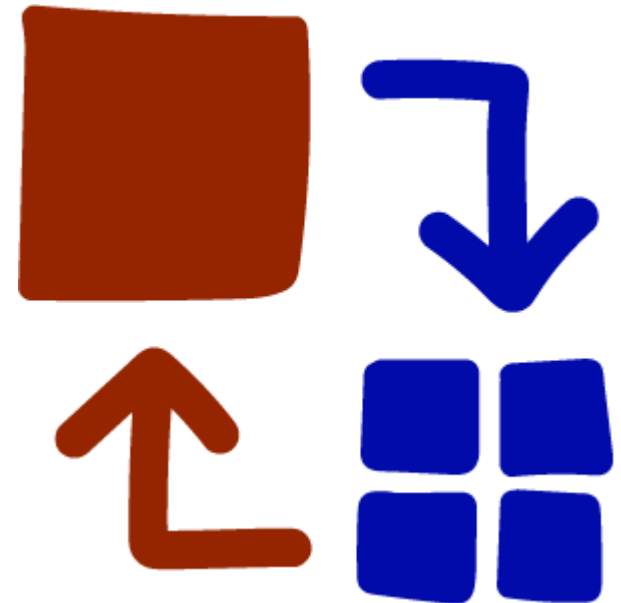
Problem Analysis – Chunk Down

Preliminary analysis of problem:

Chunk Down [Scaling down a Problem]

Problem Question: I want to get <u>more customers</u> to my business in order <u>to increase sales</u>.

Scaled down problem: I want to get more retail, dealers, and wholesalers to my business in order to increase sales.
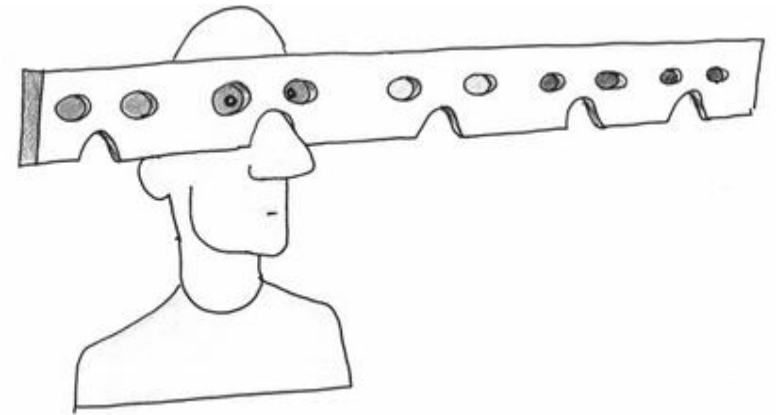
Problem Analysis – Multiple Perspectives

Preliminary analysis of problem:

Find multiple perspectives

Problem statement: I want to get more customers to my business in order to increase sales.

Adding multiple perspectives: How would customers see this? How would Vendor Managers see this?
How would In Stock Manager (ISM) see this?

Problem Analysis - Reverse

Preliminary analysis of problem:

Reverse the problem

Problem statement: I want to get more customers to my business in order to increase sales.

Reversed problem: What I should be doing to decrease my sales.

Problem Analysis - Facts

Preliminary analysis of problem:

Gather facts & numbers

Problem statement: I want to get more customers to my business in order to increase sales.

Problem with facts & figures: Need to increase sales by 30% to improve P/L by adding 12k more prime customers.
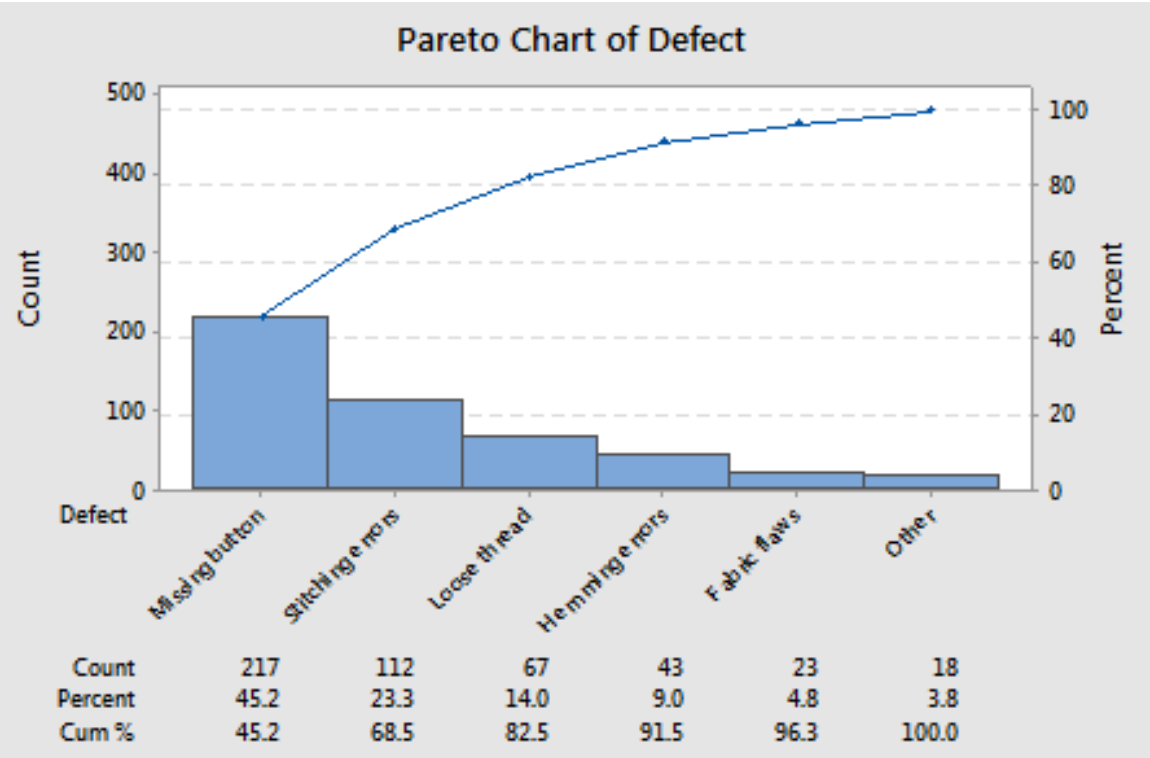
Problem Analysis Tools

Problem Analysis Tools - Pareto

Pareto Chart [80:20 principle]:

Pareto chart is used when analyzing problems or causes and you want to focus on the most significant.

Pareto Chart of Defect

	Count	Percent	Cum %
Missing button	217	45.2	45.2
Stitching errors	112	23.3	68.5
Loose thread	67	14.0	82.5
Hemming errors	43	9.0	91.5
Fabric flaws	23	4.8	96.3
Other	18	3.8	100.0

Category	Defects	Percentage	Cumulative %
Missing Button	217	45.21%	45.21%
Stitching Errors	112	23.33%	68.54%
Loose thread	67	13.96%	82.50%
Hemming errors	43	8.96%	91.46%
Fabric flaws	23	4.79%	96.25%
Others	18	3.75%	100.00%
Total	**480**		

Problem Analysis Tools - Fishbone

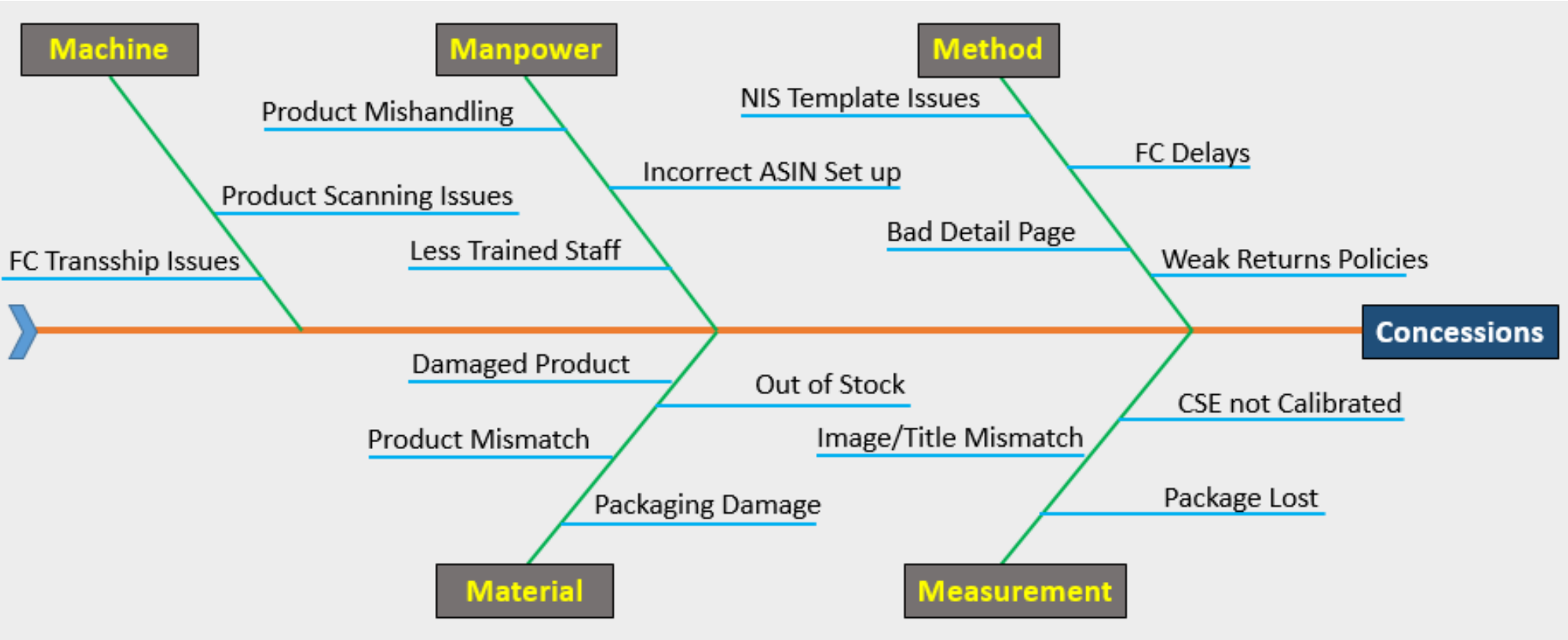**Cause and Effect <u>or</u> Ishikawa <u>or</u> Fish bone diagram:**

It is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes.
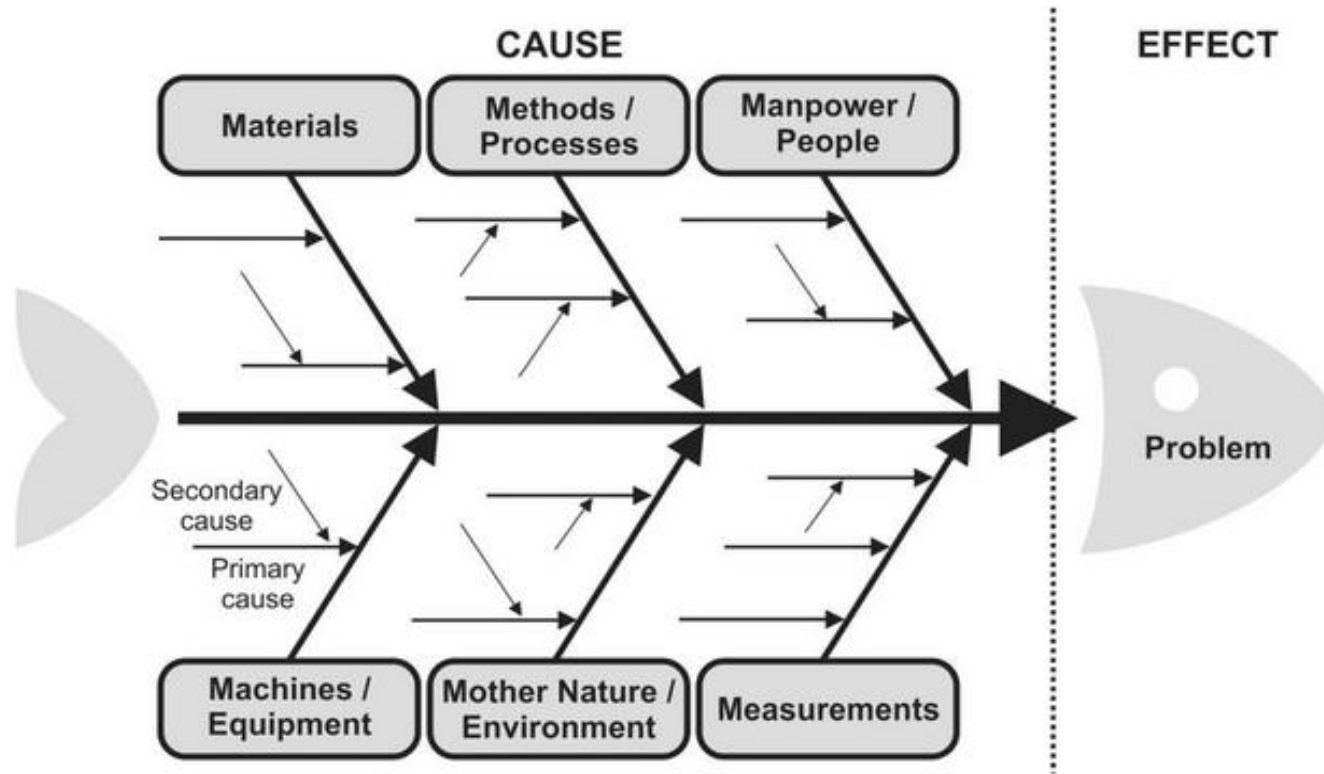
Problem Analysis Tools

Cause and Effect diagram [Example]:

Problem Analysis Tools - FMEA

Failure Mode Effect Analysis [FMEA]:

FMEA process involves reviewing the components, process steps to identify possible failures, and their corresponding cause and effects.

#	Process Function (Step)	Potential Failure Modes (Defects)	Potential Failure Effects	SEV	Class	Potential Causes of Failure	OCC	Current Process Controls	DET	RPN	Recommended Actions	Responsible Person & Target Date	Taken Actions
1	Application Login	Login fails when correct credentials are entered	User cannot access account	8	C	Logic error/database error	4	Posts general error msg	1	32	Send urgent notice to DBA & system administrator	Joe Josephson Release 4.2	In Process
2	Application Login	Login fails when correct credentials are entered	User cannot access account	8	N	External network failure	5	Posts general error msg	1	40	Talk to ISP about failover contract	Mr. Bossman 10/10/2010	Pending
3	Application Login	Customer logs into another user's account	User can access another's financial information	10	C	Logic error (different users can have same PW)	1	None	10	100	Include scenarios in test plan	Jack Jackson Release 4.2	In QA

GAP Analysis:

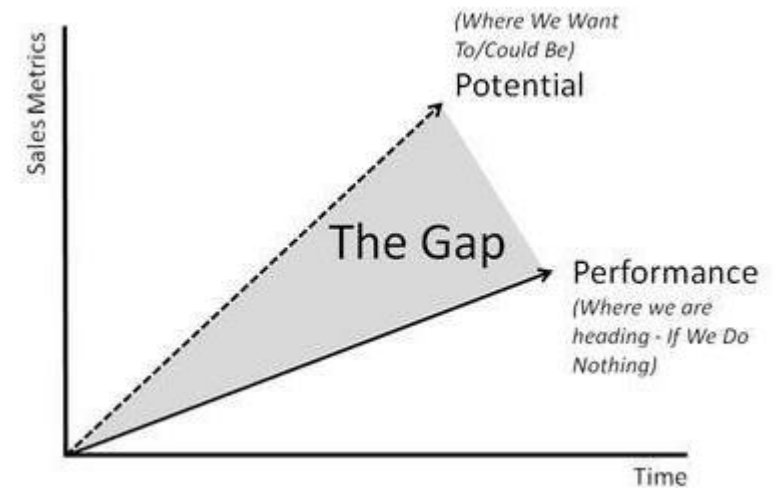It involves the comparison of actual performance with potential or desired performance.

The 4 steps of GAP analysis are as below:

Step 1: Where are we now? (Current State)

Step 2: Where do you want to be? (Future State)

Step 3: Identify the gaps (Gap analysis)

Step 4: Bring solutions to improve (Working State)

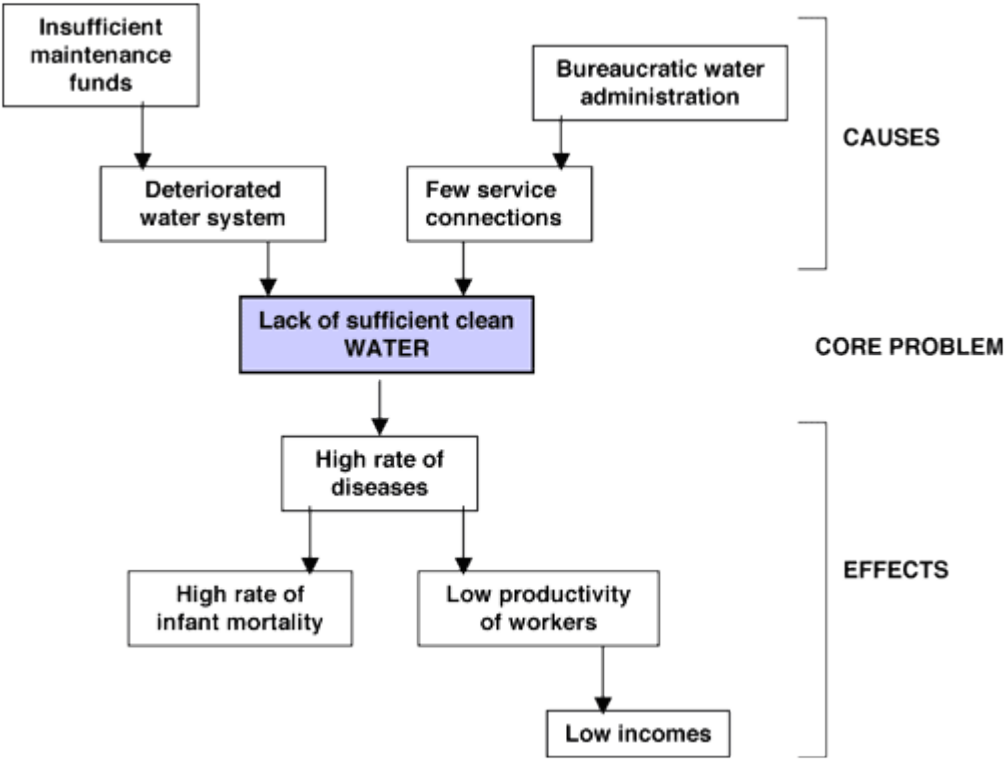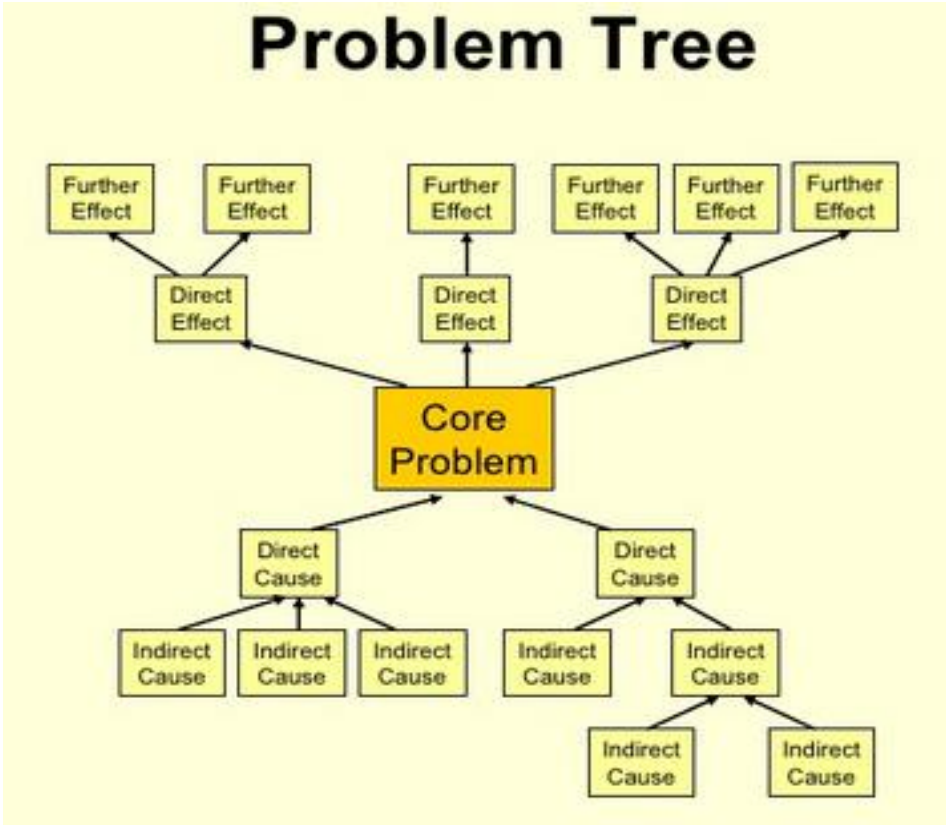# Problem Analysis Tools: Example

GAP Analysis [Example]:

Objective	Current State	Future State	Gap Identification	Gap Description	Factors	Remedial Action
To increase annual revenue	10 million/annum	25 million/annum by next three years	Yes	15 million/annum is the difference	• Sales personnel are not proficient with latest tools • Flawed processing of orders at Sales Office	• Review & Training based on the same • Update the order processing software
Profitability to be @ 8% on sales	Average 8% on sales	Average 8% on sales	No	N/A	N/A	N/A
Employee morale	Lack of employee morale at workplace	Employee morale to be enhanced	Yes	Lack of clarity in HR policy	Outdated HR Manual	Update the HR Manual in sync with current environs
Product feature &functionalities	Limited features & functionalities	To improve the same by next year	Yes	Does not have uniqueness	Product just launched so it has limited features & functionalities	Conduct review among existing customers & improve the product based on the same

Problem Analysis Tools – Problem Tree Analysis

Problem Tree Analysis:

It helps the project team get a quick glance of how a range of complex issues contribute towards a problem.

Problem Analysis Tools: Survey and Interviews

Survey & Interviews:

Surveys: A research method used for collecting data from a pre-defined group of respondents to gain information.

Interviews: A conversation where questions are asked and answers are given.

Surveys
1. Clearly define your problem
2. Clearly define your population for study
3. Develop a sampling plan
   a. Sampling methods
   b. Sample size calculation
   c. Data capture methods
4. Designing a questionnaire to minimize bias & errors
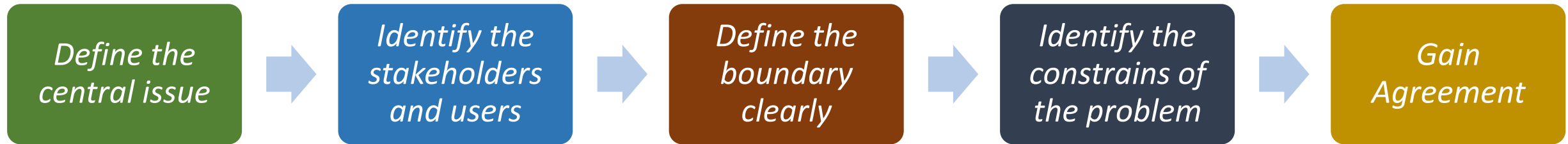5. Pretest of the questionnaire

Interviews
1. Clearly understand your problem
2. Take time to think through all the key aspects of problem
3. Ask pertinent questions and use the answers for analysis
4. Keep summarizing the understanding
5. Take notes on the problem facts provided

Problem Analysis Steps

Problem Analysis Steps

What are the steps in problem analysis?

The steps of problem analysis is to gain a better understanding before development begins of the problem being solved.

Define the central issue	→	Identify the stakeholders and users	→	Define the boundary clearly	→	Identify the constrains of the problem	→	Gain Agreement

Stakeholder: Includes everyone involved in a project. Customer, team, PIM, STLs, tech team support resource and everyone involved will be stakeholder
Customer: Someone who is benefitting from the problem resolution or opportunity. Customer could be user or someone trying to get a solution that will make it better for the customer
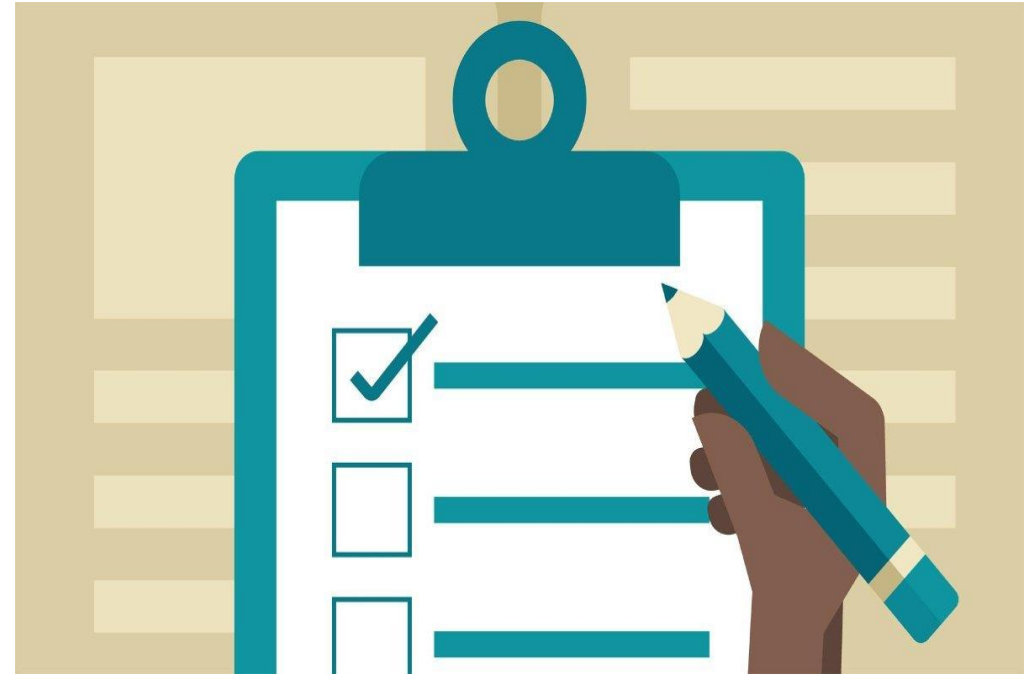**User:** Person who hands-on uses the product or solution
Sponsor: The STL or Leader or Manager who is sponsoring the project

Key Learnings

What did you Learn?

- Understanding Business Problem
    - What is a business problem?
    - Need to understand a business problem
    - Where can business problem exist?
    - Characteristics of problem

- Problem Analysis
    - What is problem analysis?
    - Methods of preliminary analysis of a problem

- Problem Analysis Tools
    - Pareto Analysis
    - Cause and Effect analysis
    - FMEA
    - GAP Analysis
    - Problem Tree
    - Survey and Interviews

- Steps in Problem Analysis

Thank You!