

UNIT 1

Chapter 1

**INTRODUCTION
TO QUALITY**

DEFINITION OF QUALITY

- Few of the **definitions** :
 1. Predictable degree of Uniformity, Dependability at low cost and suited to Market
 2. Degree to which a set of inherent characteristics of the Product/Service fulfills the requirements
 3. Ability of a product or service that bears upon its ability to satisfy implied Expressed need

CUSTOMERS, SUPPLIERS AND PROCESSES

- For any org, there are some suppliers supplying the inputs required and some customers who will be buying the outputs produced.
- Products made by converting some inputs which may act as inputs to the next stage.
- External supplier provide input to the org and external customers receive output of the org.
- Suppliers may be customer and customer may be acting as supplier for somebody.



Two Types :

1. Internal Customer –

- Are the functions and projects serviced and supported by some other functions/ projects.
- “TQM” where each and every individual in supply chain must identify and support his customer.

2. External Customer –

- Are the external people to the org who will be paying for the services offered by the org.
- Buying products from org.
- Concentrates on external customer for their satisfaction, improve quality of its output.

TOTAL QUALITY MANAGEMENT (TQM)

- Is a principle intends to view internal and external customers as well as internal and external for each process, project and for entire org a whole
- Process and functions broken down into component elements
- Applying quality methods to the entire org whether a given function or part of an org faces external customers or not.
- **QUALITY MANAGEMENT APPROACH** : Dr. Edward Deming implemented quality management system driven by **"TQM"** and **"Continual Improvement"** in Japanese environment.

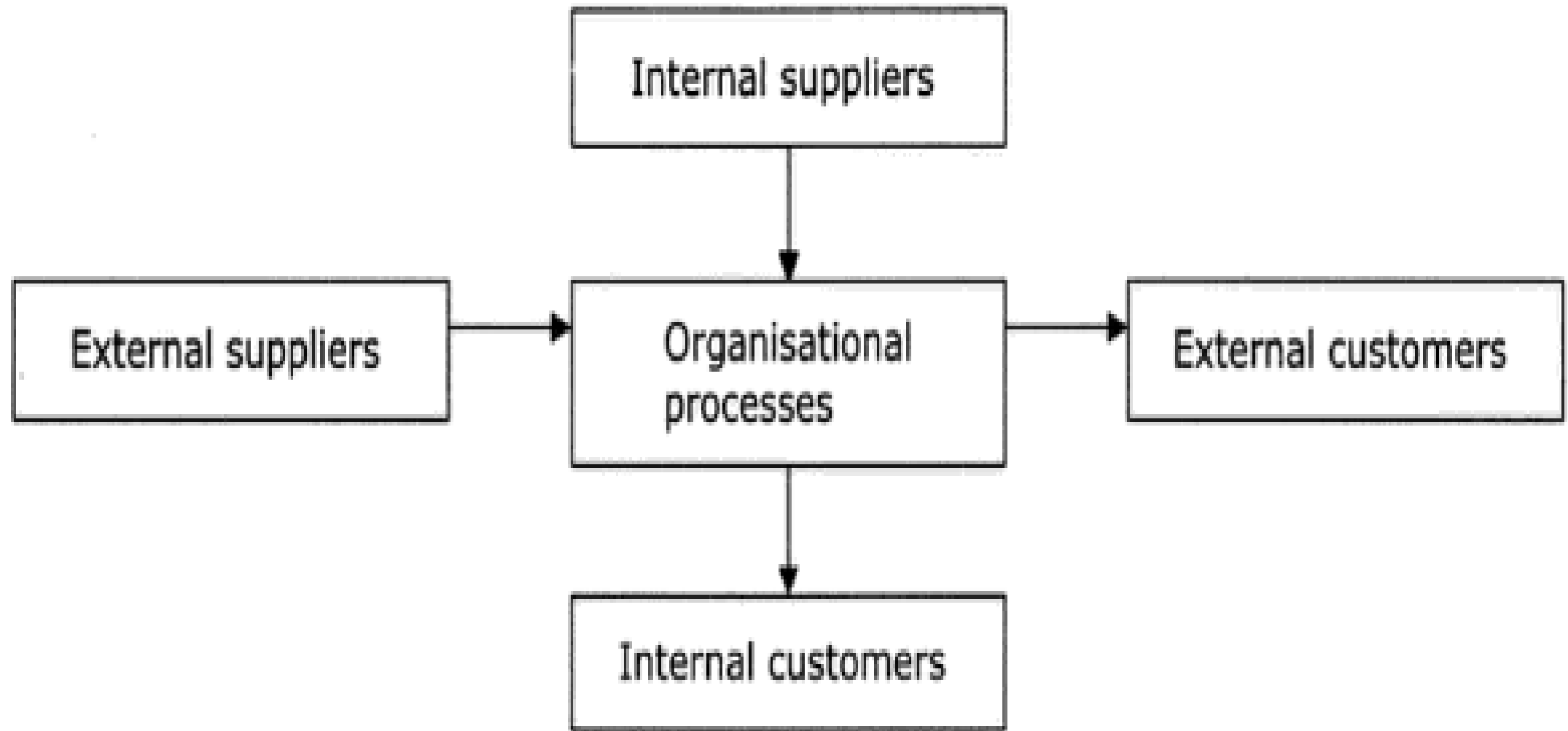


Fig. 1.3

Supply chain relationship between suppliers and customers

QUALITY PRINCIPLES OF TOTAL QUALITY MANAGEMENT

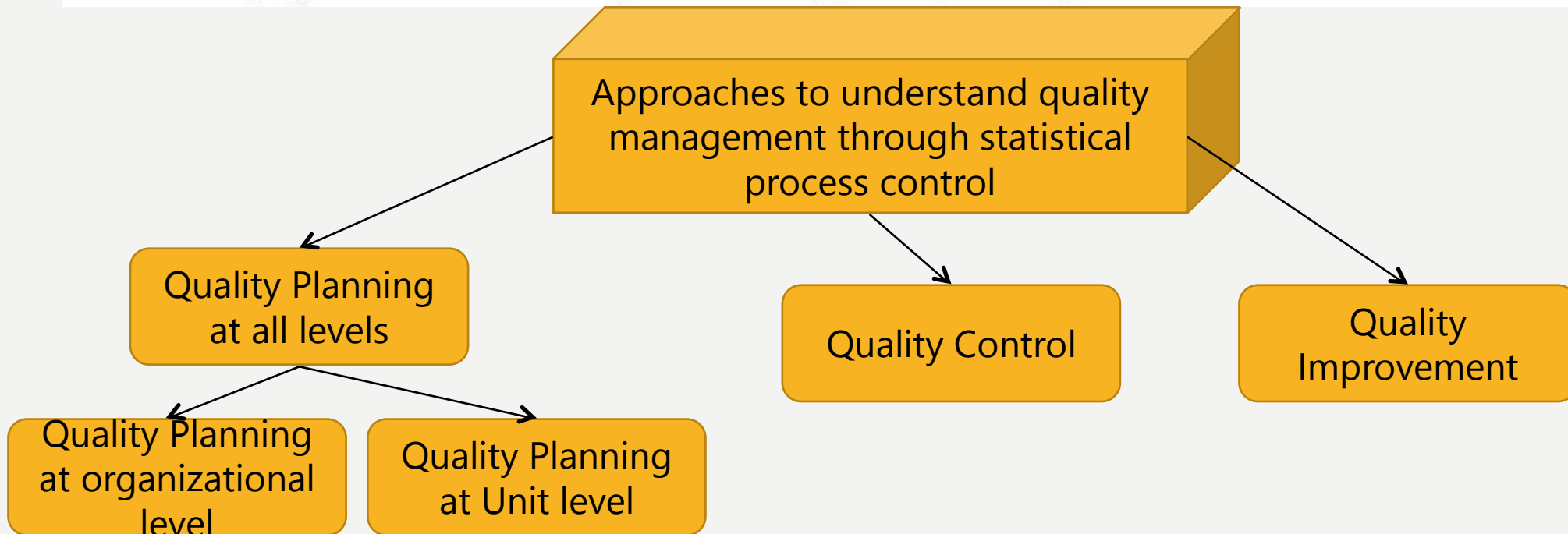
'Total quality management' works on some basic principles of quality management definition and implementation. These have evolved over a span of experimentation and deployment of quality culture in organisations.

- Develop Constancy of purpose of definition and deployment of various initiatives
- Adapting to new philosophy of managing people/stakeholders by building confidence relationships
- Declaring freedom from mass inspection of incoming/produced output

- Stop awarding of lowest price tag contracts to suppliers
- Improve every process used for development and testing product
- Institutionalize training

QUALITY MANAGEMENT THROUGH STATISTICAL PROCESS CONTROL

Dr Joseph Juran is a pioneer of statistical quality control with a definition of improvement cycle through Define, Measure, Monitor, Control and Improve (DMMCI). One must understand the interrelationships among customers, suppliers and processes used in development, testing, etc. and establish quality management based on metrics program. There are three parts of the approach, namely,



1. QUALITY PLANNING AT ALL LEVELS

1. Quality planning at organizational level : planned at organizational level and it
2. Quality planning at Unit level :

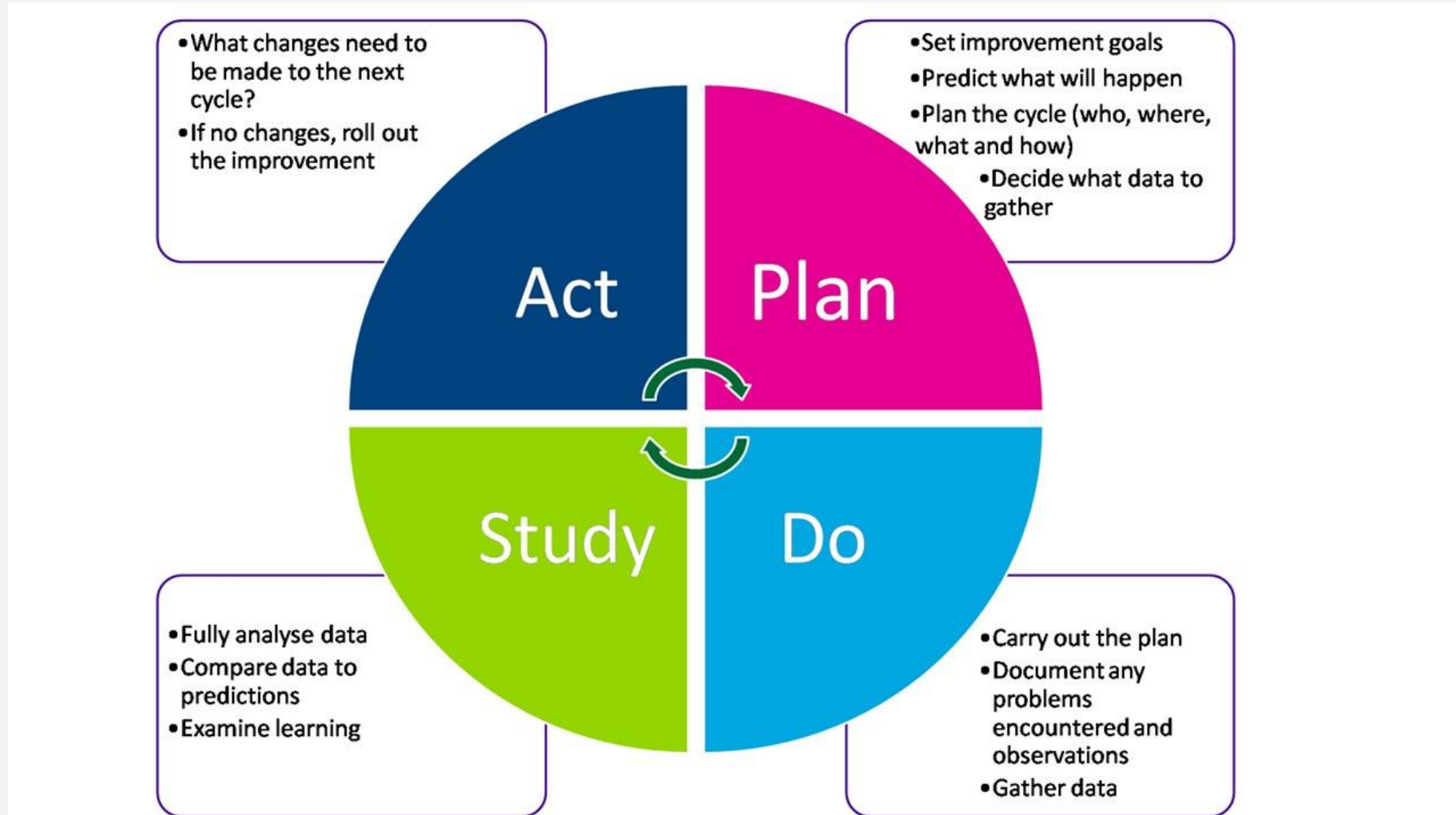
QUALITY MANAGEMENT THROUGH CULTURAL CHANGES

Culture is the collective beliefs, values, and actions organizational members use to pursue a company's mission.

Philip Crosby's approach to quality improvement is based on cultural change in an org towards **total quality management**.

- Identifying areas in which quality can be improved depending upon process capability measurement and organizational priorities.
- Instituting teams representing different functions and areas for quality improvement can help in setting the change of culture.
- Setting measurable goals in each area of organization can help in improving processes at all levels.
- Giving recognition to achievers quality goals will boost their morale and set a positive competition among the teams leading to organization improvement.

CONTINUAL (CONTINUOUS) IMPROVEMENT CYCLE



QUALITY IN DIFFERENT AREAS

Area	Examples
Airlines	On-time, comfortable, low-cost service
Health Care	Correct diagnosis, minimum wait time, lower cost, security
Food Services	Good product, fast delivery, good environment
Postal Services	fast delivery, correct delivery, cost containment
Academia	Proper preparation for future, on-time knowledge delivery
Consumer Products	Properly made, defect-free, cost effective
Insurance	Payoff on time, reasonable cost
Military	Rapid deployment, decreased wages, no graft
Automotive	Defect-free
Communications	Clearer, faster, cheaper service

BENCHMARKING AND METRICS

Benchmarking is a strategy tool used to compare the performance of the business processes and products with the best performances of other companies inside and outside the industry.

Metrics

A precise description of what is measured including: numerator, denominator, inclusions and exclusions



BENCHMARKING

TYPES

Strategic

Performance

Process

APPROACHES

Internal

Competitive

External

Functional

Generic

SUPERIOR PERFORMANCE

PROBLEM SOLVING TECHNIQUES

DEFINITION



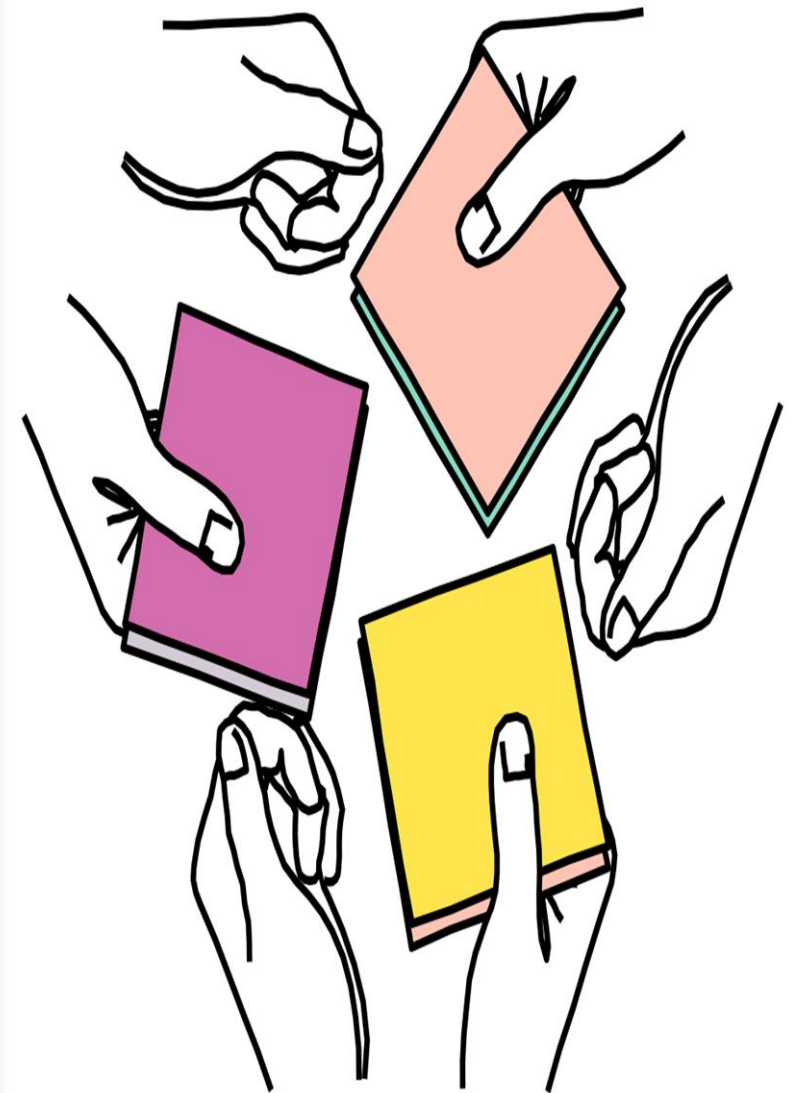
A systematic approach to defining the problem and creating a vast number of possible solutions without judging these solutions.

Problem solving is a *Cognitive Processing* directed at achieving a goal where no solution method is obvious to the problem solver.

Problem Solving is

"....the art of finding the ways to get from where you are now to where you want to be (assuming you do not already know how).

The 'Problem', therefore, is a the gap between the present situation and a more desirable one."

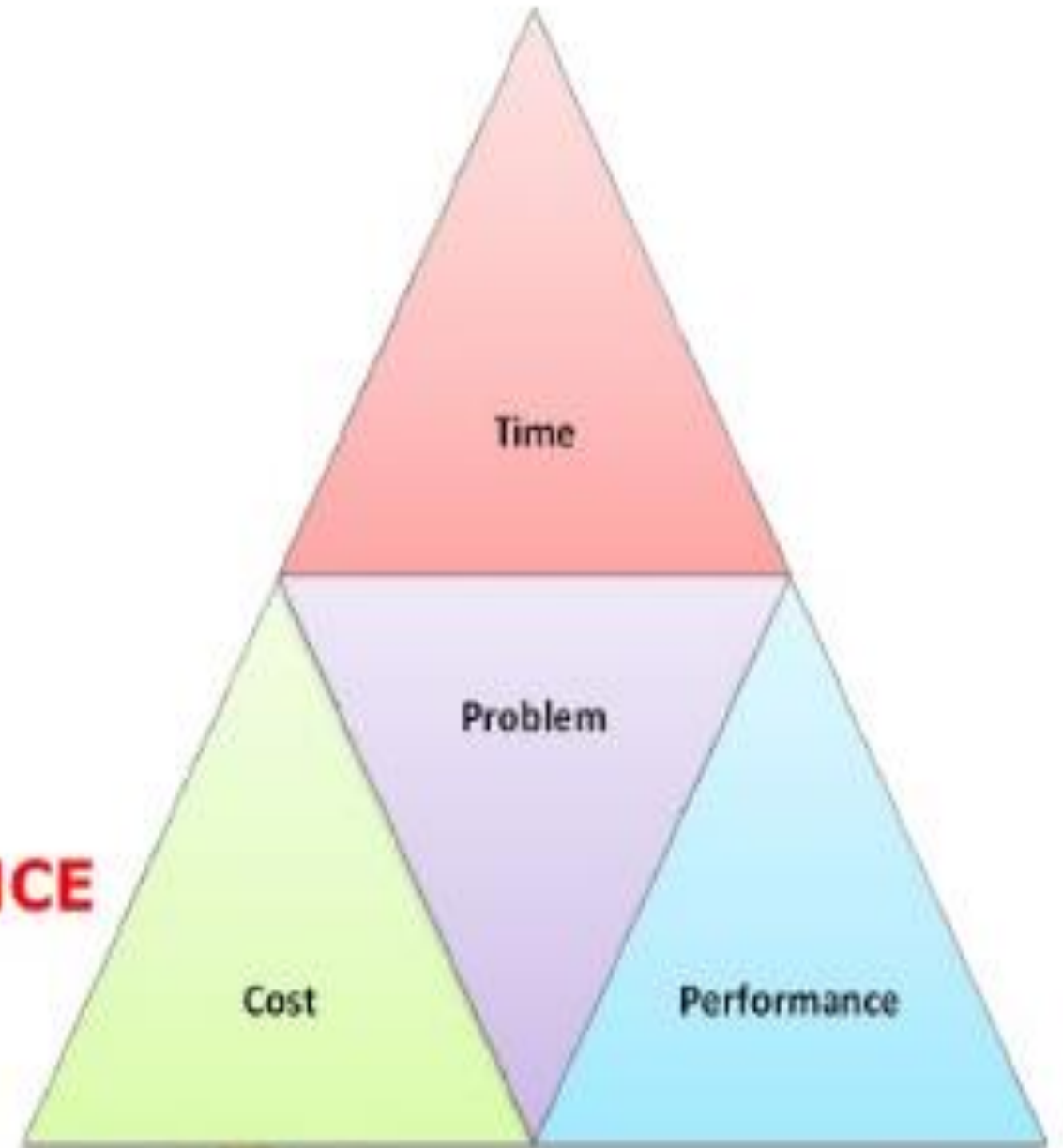


➤ **Something is a problem if:**

✓ **It makes you LATE**

✓ **It increases COST**

✓ **It degrades PERFORMANCE**



Qualitative

good
poor
long
heavy
flexed
rotated
spiffy

Quantitative

six meters
three seconds
fifty turns
two players
ten dollars

PROBLEM SOLVING TECHNIQUES

Qualitative

- Flexible
- Often recorded in narrative form
- Useful in answering the "why", "what", and "how" questions
- Loosely structured / use open-ended questions
- Focus group discussions
- Observations

Quantitative

- Less flexible
- Structured questionnaires designed to quantify pre- or post-categorised answers to questions
- Useful in answering the "how many", "how often", "how significant", etc. questions
- Answers to questions can be counted & expressed numerically

PROBLEM SOLVING SOFTWARE TOOLS



- While buying software for data management and statistical analysis, many org find it to be a big investment in terms of money, resources etc.
- **Question** : Why should one use software tools to solve problems about QUALITY ?

ADVANTAGES



1. Accuracy and speed is higher – as compared to manually



2. Decisions support offered by tool is independent of personal skills



3. Tools alleviate hard work

4. Tools can be integrated

DISADVANTAGES



1. Programs and tools need training before they can be used- cost ,time



2. All software / hardware prone for defects and these tools are exception's



3. Decision can be taken by human being not tool

TOOLS & TECHNIQUES

Table 1.3

Difference between tools and techniques

Tools	Techniques
Usage of tool is guided by the technique. Tool is of no use unless technique (to use it) is available.	Technique is independent of any tool.
Different techniques may use the same tool to achieve different results.	Same technique may use different tools to achieve the same result.
Tool improvement needs technological change.	Technique change can be effected through procedural change.
Contribution of tools in improvement is limited.	Contribution of techniques in improvement is important.