

FIT2090

BUSINESS INFORMATION SYSTEMS AND PROCESSES

Lecture 6

Quality Tools

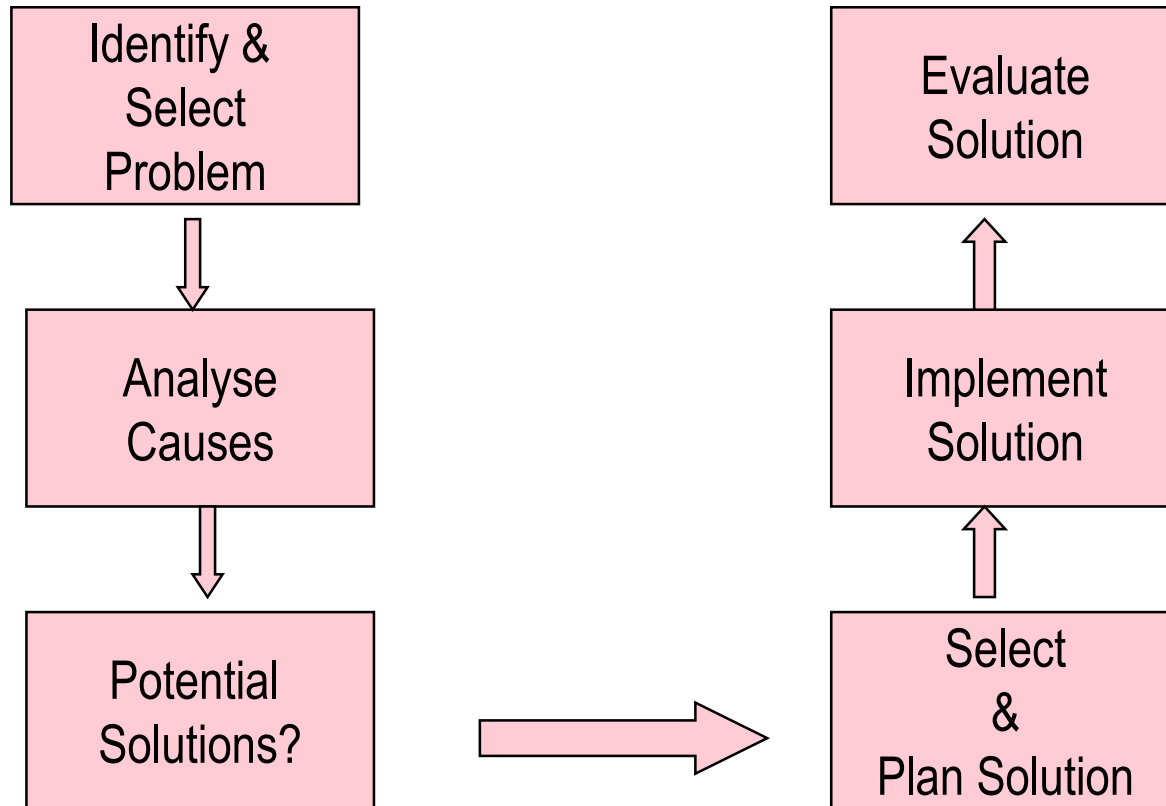
CLAYTON, FACULTY OF INFORMATION TECHNOLOGY
MONASH UNIVERSITY



Quality Tools for Business Process Improvement

The Problem Solving Process

The Quality Improvement Process



Brainstorming

Step 1: Select Team

Step 2 : Define Issue

Step 3: Explain Rules

Step 4: Generate Ideas

Step 5: Record Ideas

Step 6: End Session

Step 7 : Discuss Ideas

Step 8: Formulate Action Plans

The “Seven Basic Tools”

- Check Sheet
- Process Flow Charting
- Pareto Analysis
- Cause and Effect Analysis
- Scatter Diagrams
- Histograms
- Control Charts

Check Sheets

A Defective Item Check Sheet

Cooker Component Replacement

Time Period : 24 - 28 August 2016

One mark per component replaced



MODEL 2250

Fan

Starter

Transformer

Capacitors

MODEL 2260








Fan

Starter

Transformer

Capacitors


Check Sheet for Enamel Chips on a Refrigerator

Left	Front Top	Right
		
	Front Bottom	
 		 

Defective Cause Check Sheet

Equipment	Worker	Mon		Tue		Wed		Thur		Fri	
		am	pm	am	pm	am	pm	am	pm	am	pm
Machine 1											pm
Machine 2											

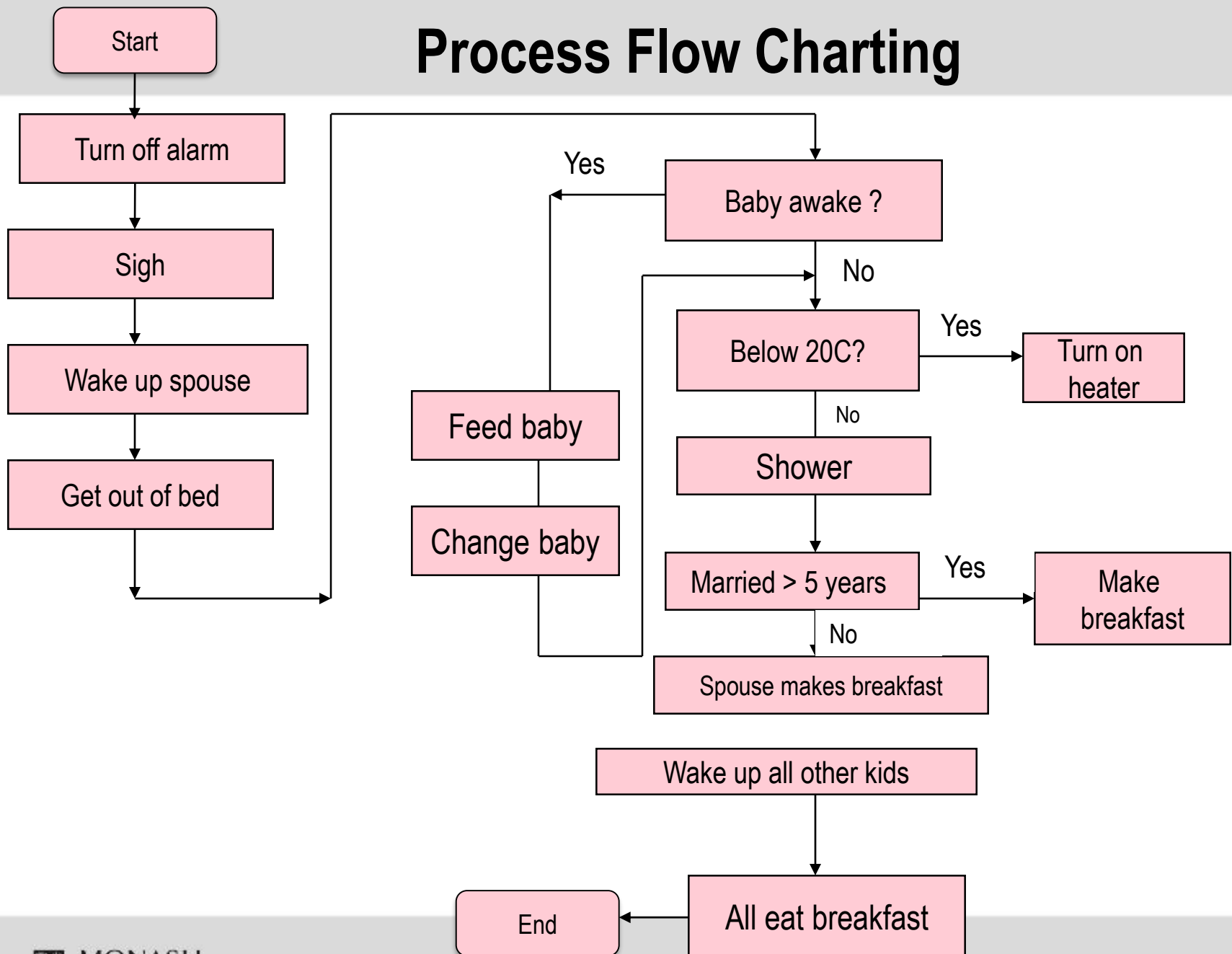
☆ Surface Scratch
○ Defective Finish

 Wrong Shape
S Others

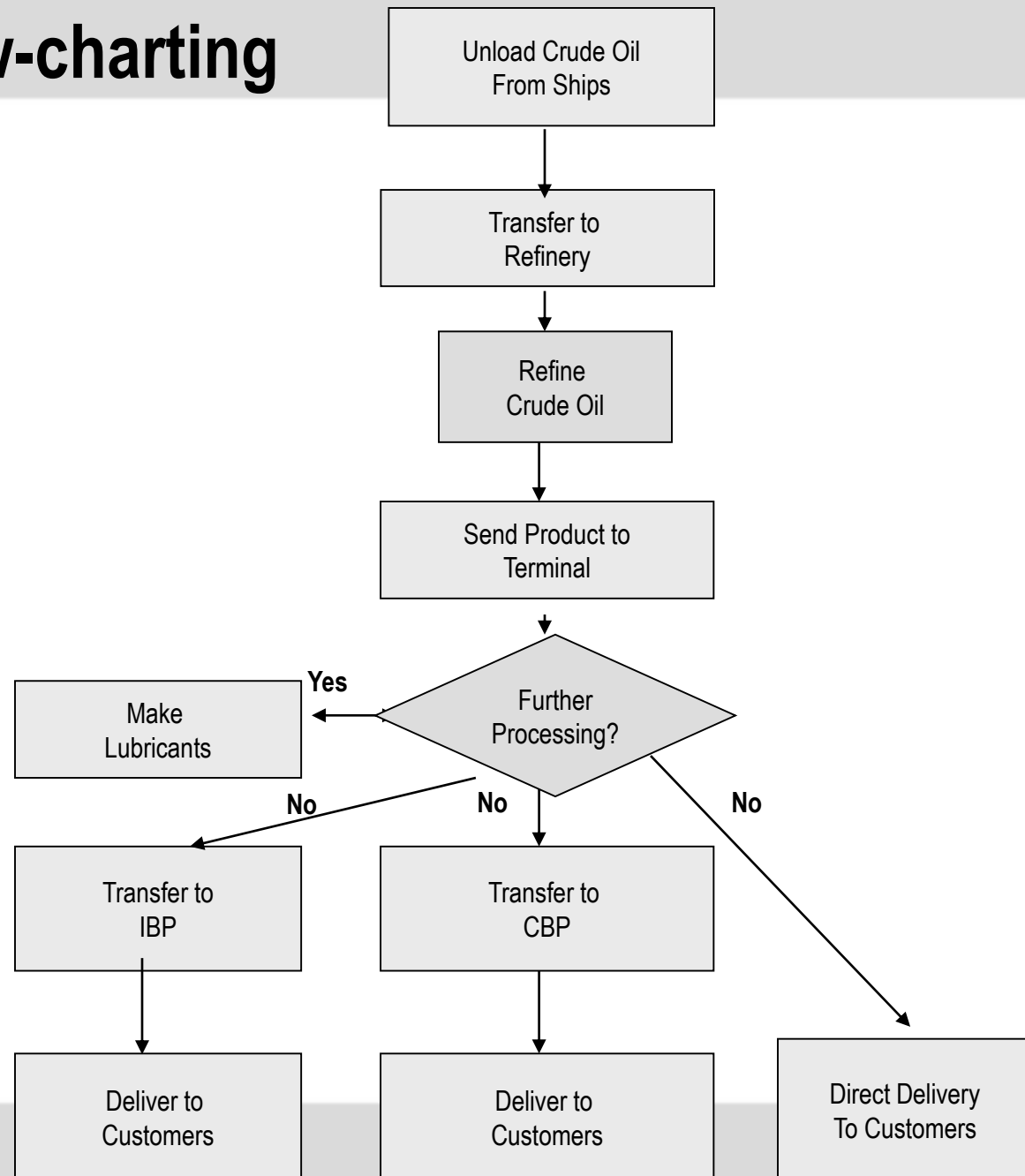
A Check-up Confirmation Sheet

Maintenance Check Sheet		
Machine Type:		
Plant No.		
Complete checks as indicated.		
Tick the appropriate box and comment		
Clean Toolholder	Daily	
Clean Chuck		
Run Test Cycle		
Check Lubrication	Weekly	
Check Tool Condition		
Check Coolant		
Flush Coolant Tank	Monthly	
Re-lubricate		

Process Flow Charting

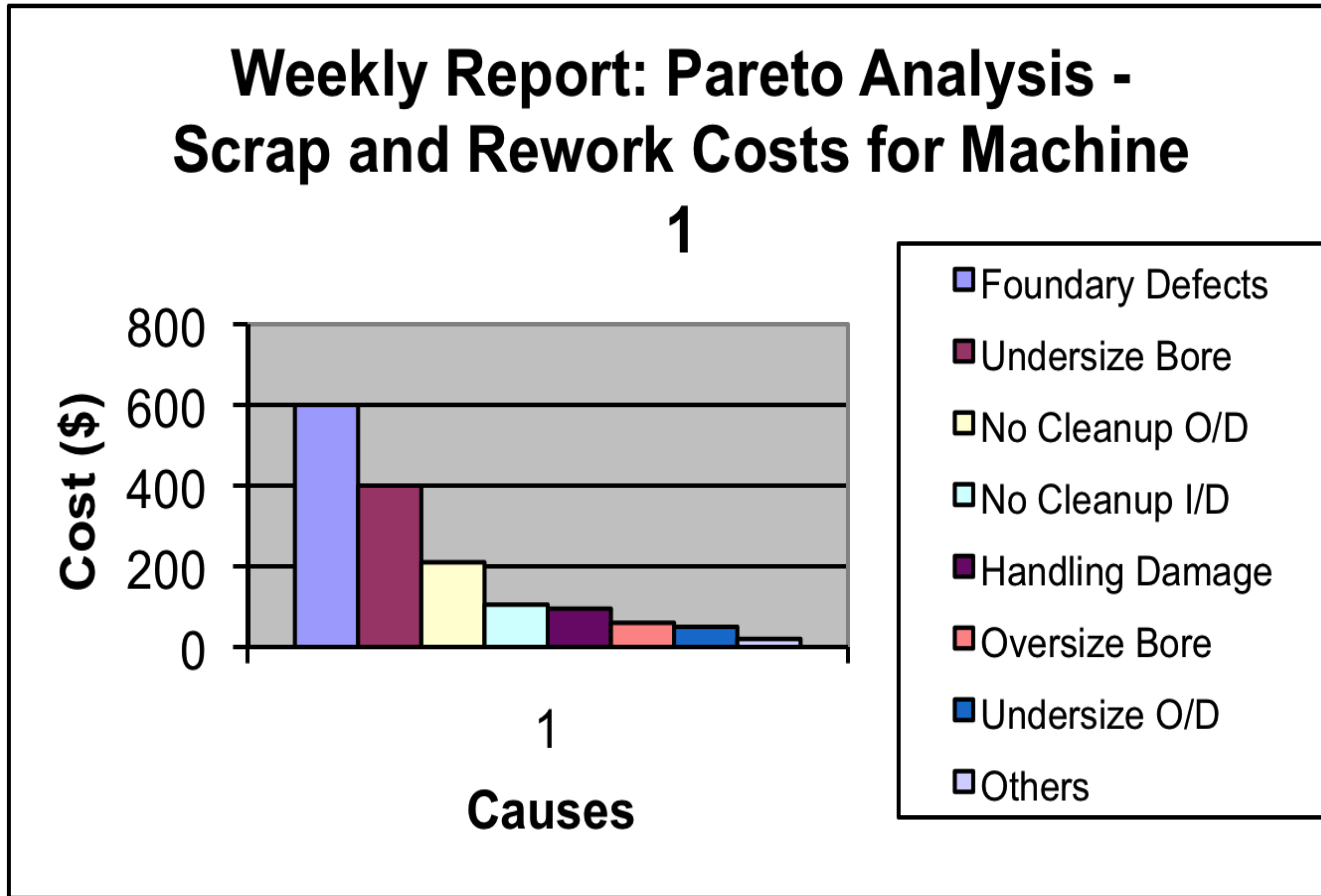


Process flow-charting



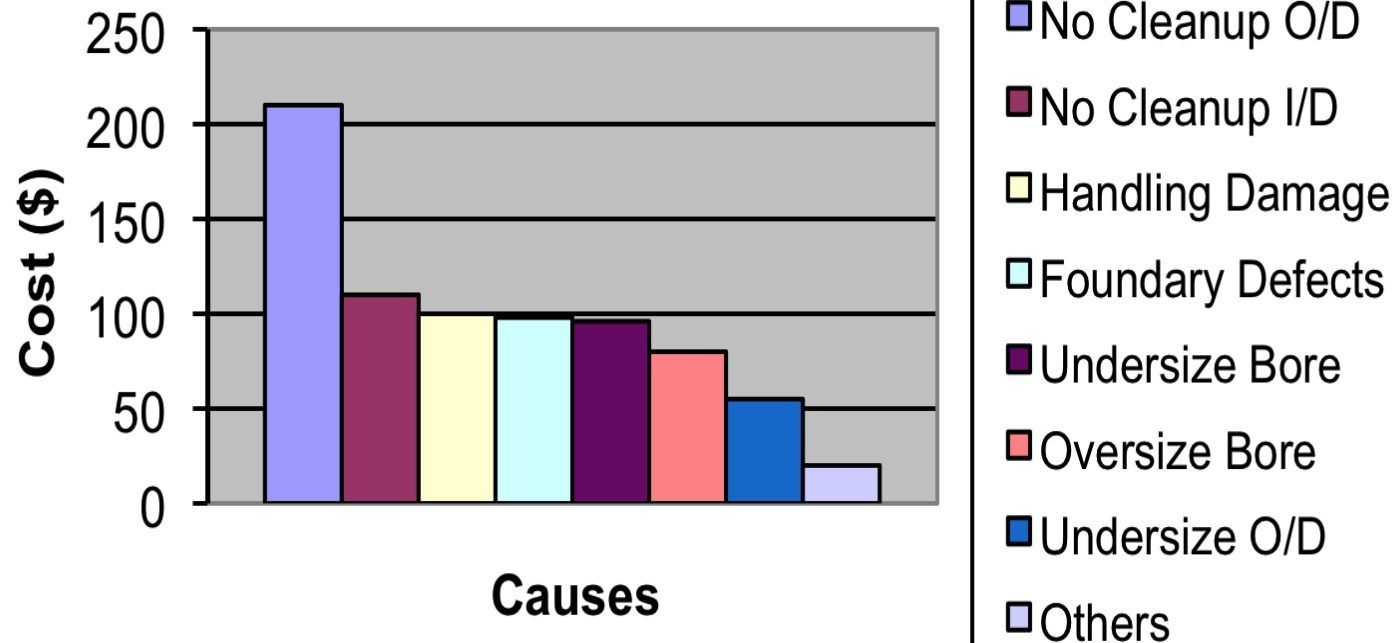
Pareto Analysis

Pareto of Causes of Scrap in a Machining Process



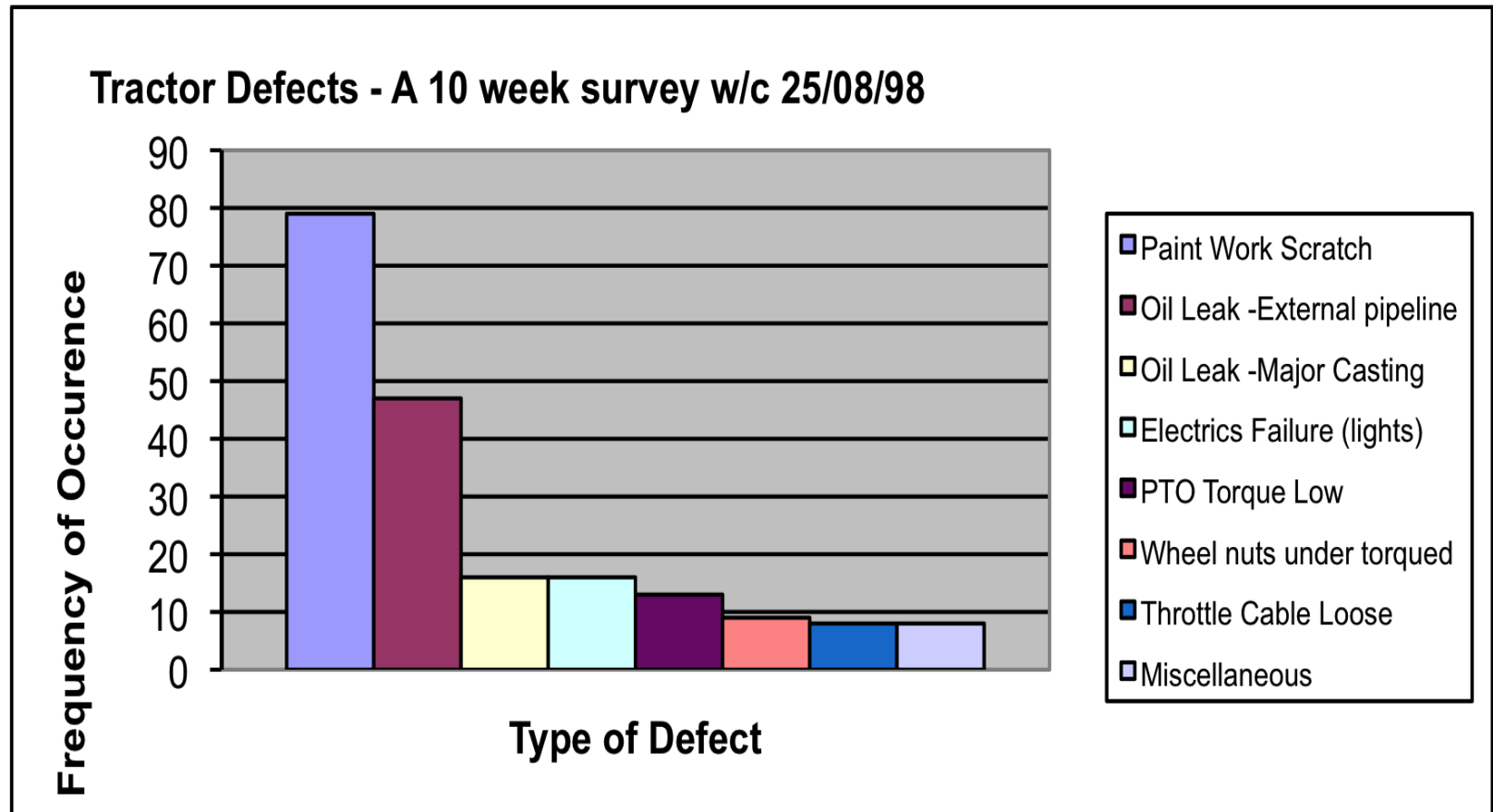
After corrective action undertaken on the two top causes

Weekly Report: Scrap and Rework Costs : Machine 1



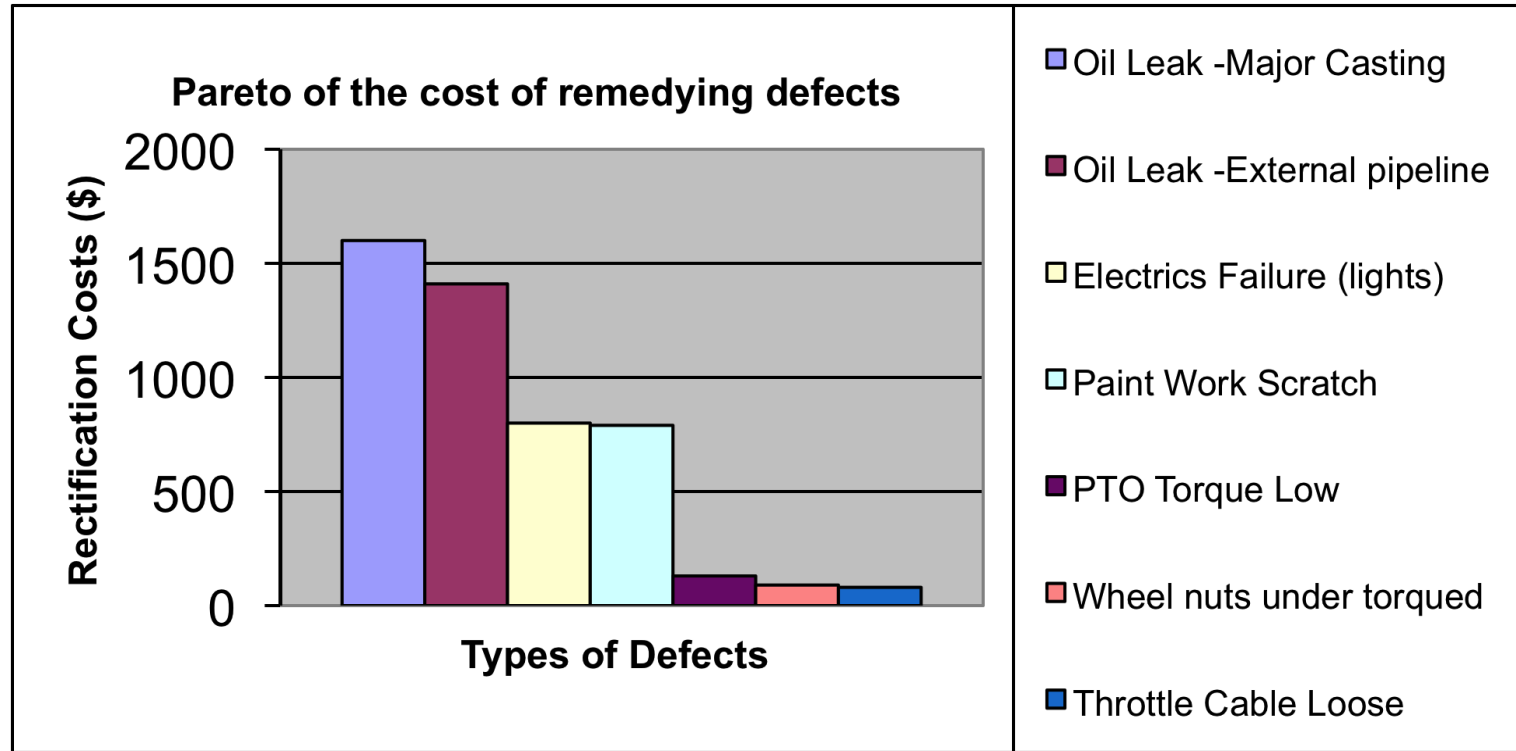
Example of Pareto Analysis

Pareto Diagram For a Tractor Audit



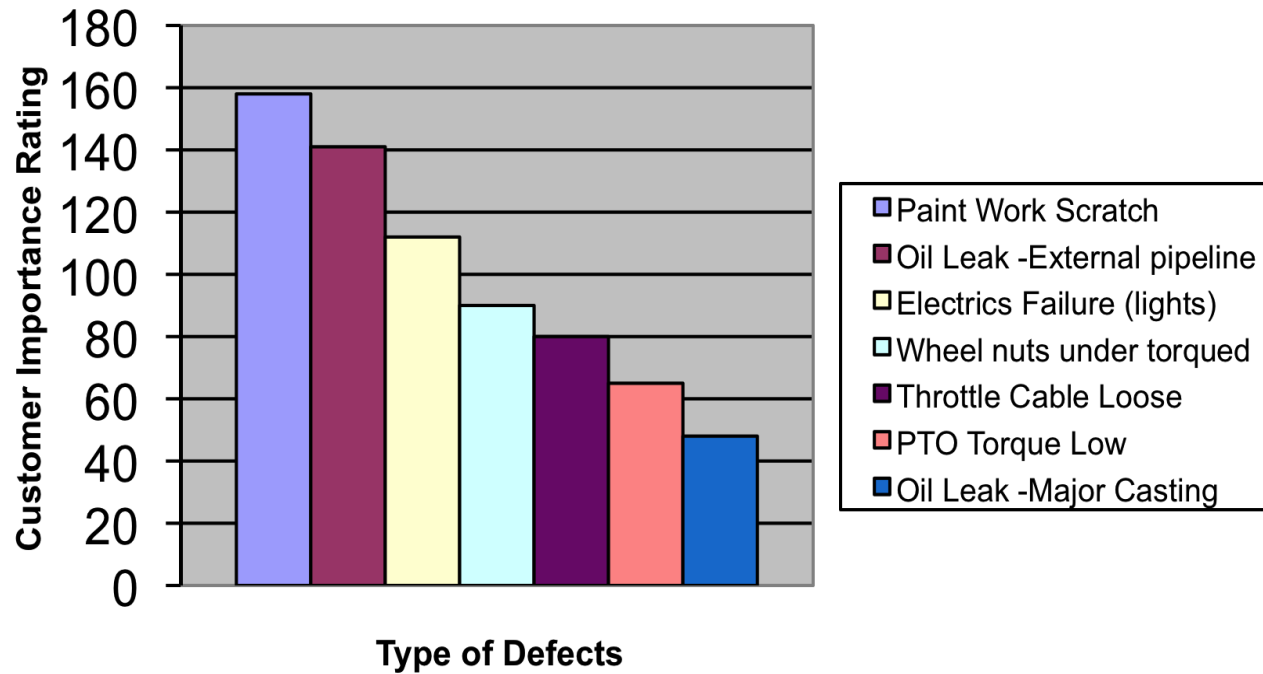
Total number of units audited were 200

Pareto of the cost of remedying defects over the study period



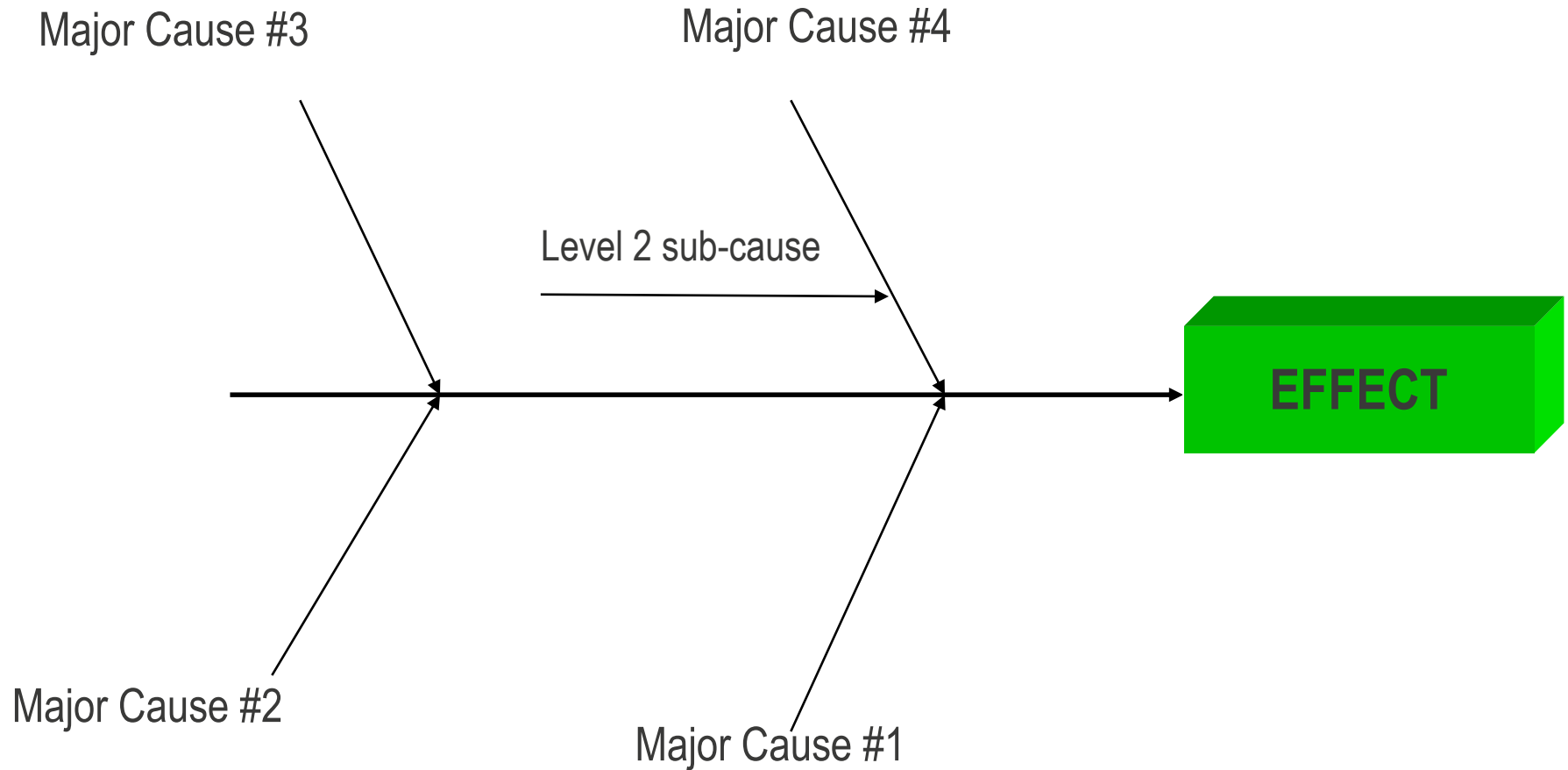
Pareto of customer dissatisfaction caused by defect categories

Customer Importance Rating Pareto



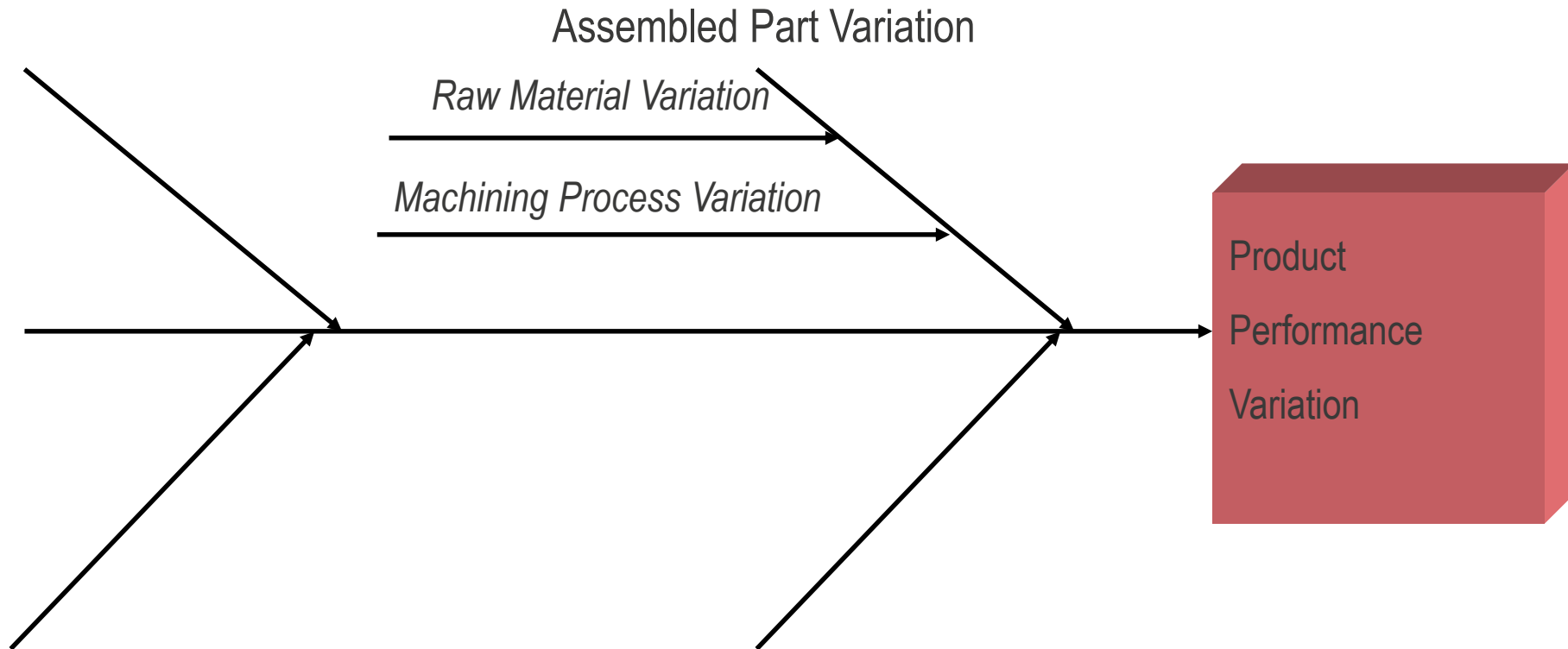
Cause and Effect Analysis

General Format for a Cause and Effect Diagram (Ishikawa Diagram)



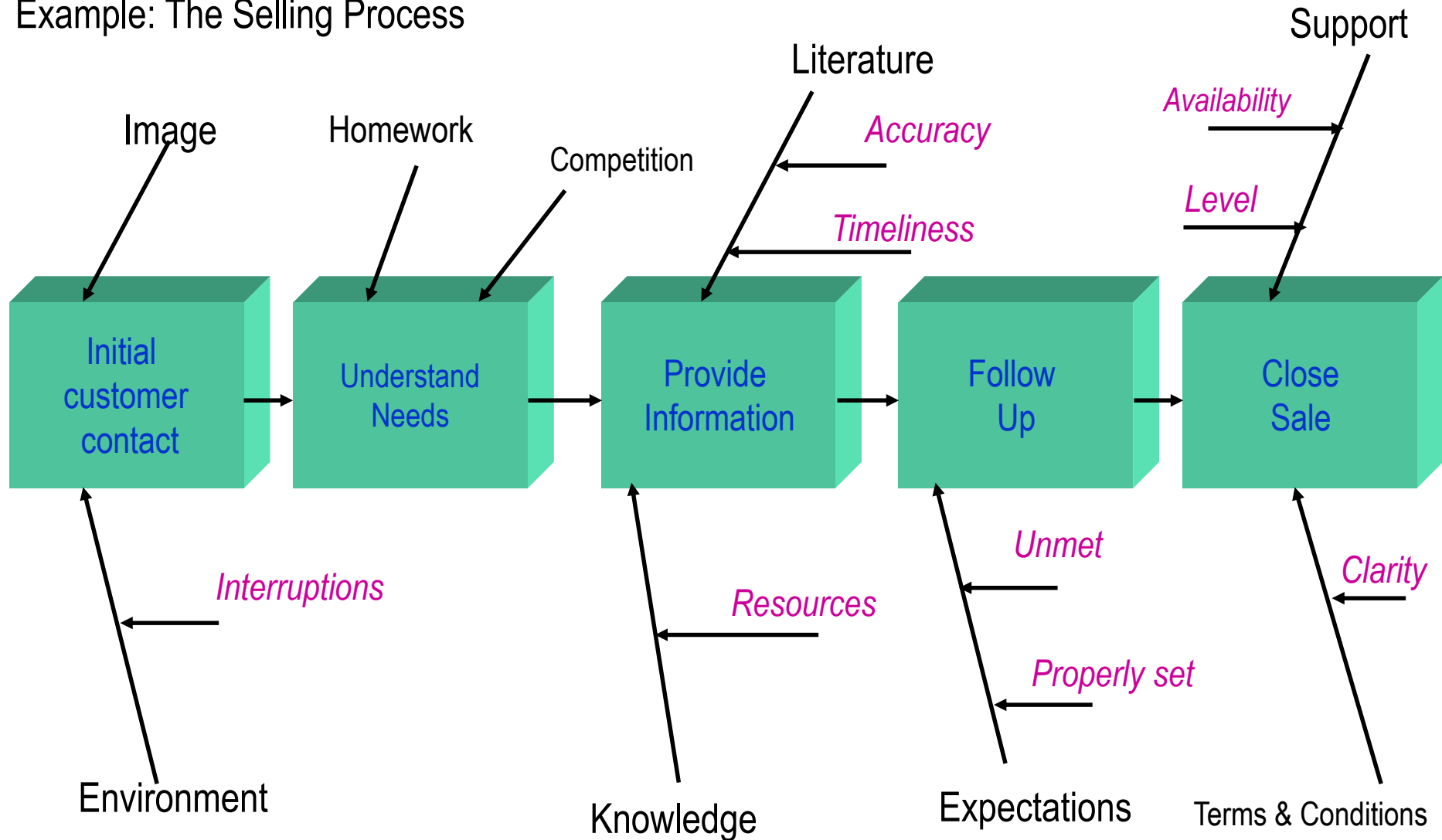
Dispersion Analysis Type Diagram

What is causing the dispersion (variation)?

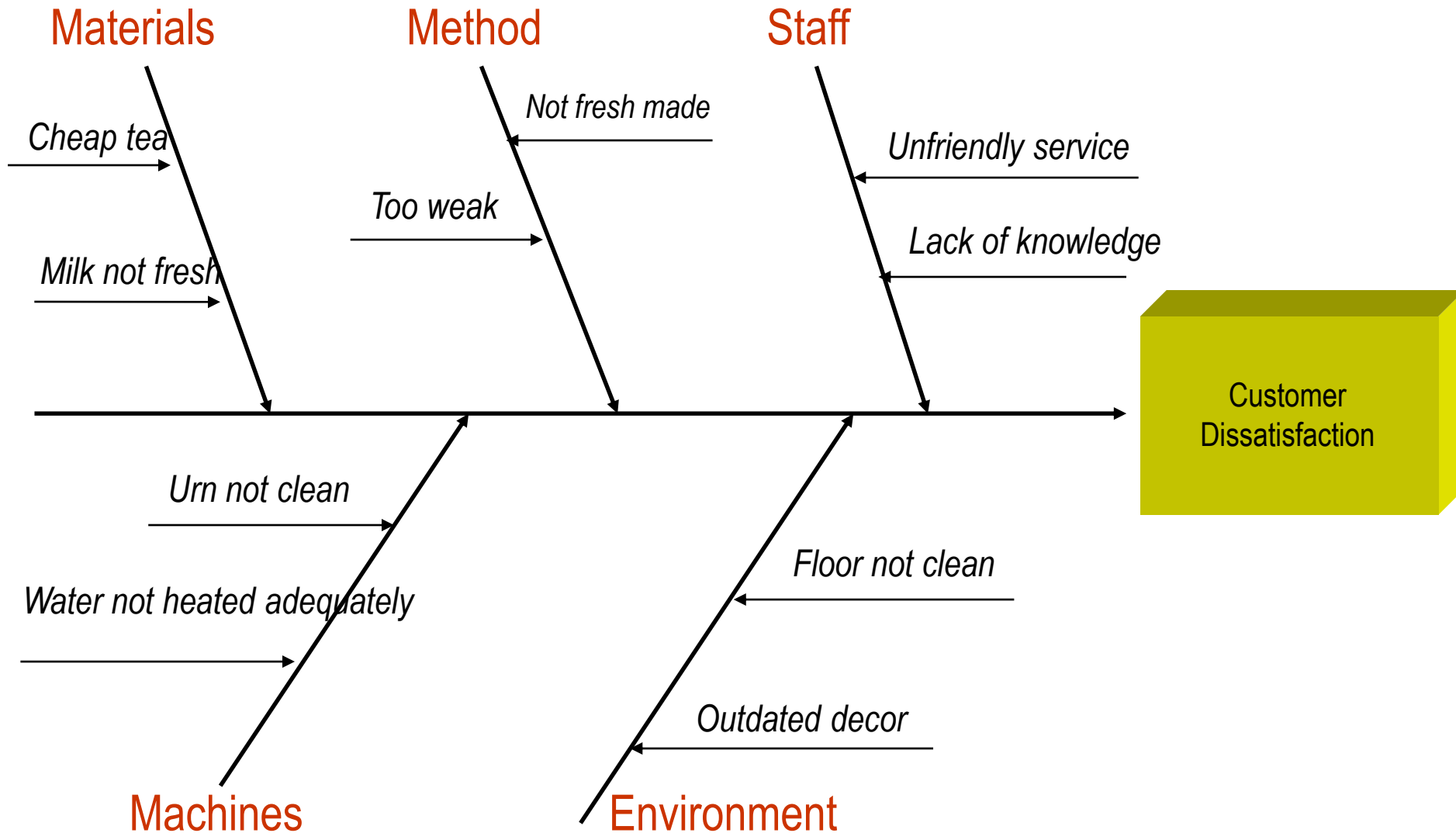


Process Classification Type

Example: The Selling Process

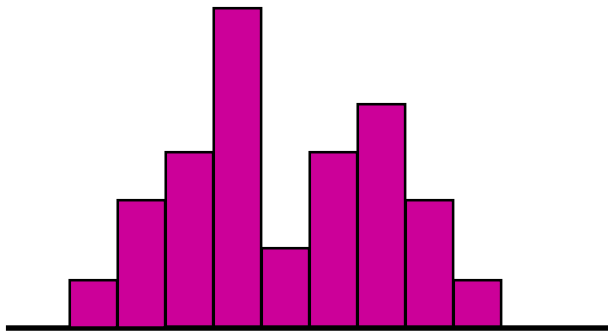


Cause Enumeration Type

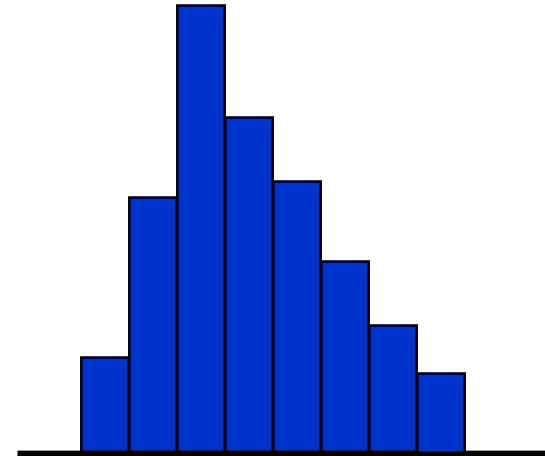


Histograms

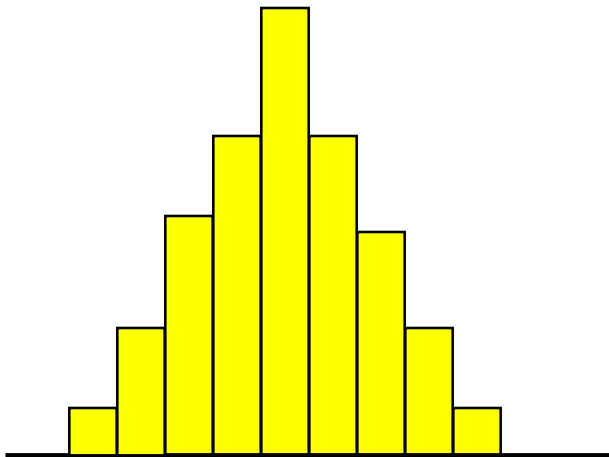
Double Peaked



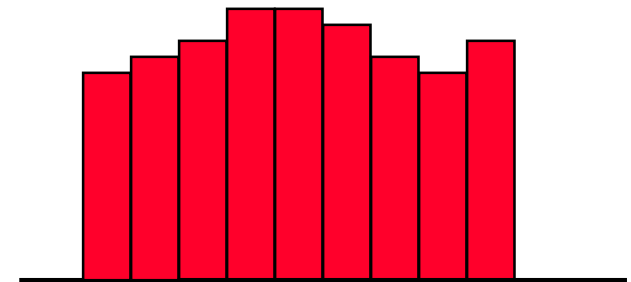
Skewed



Bell Shaped



Plateau



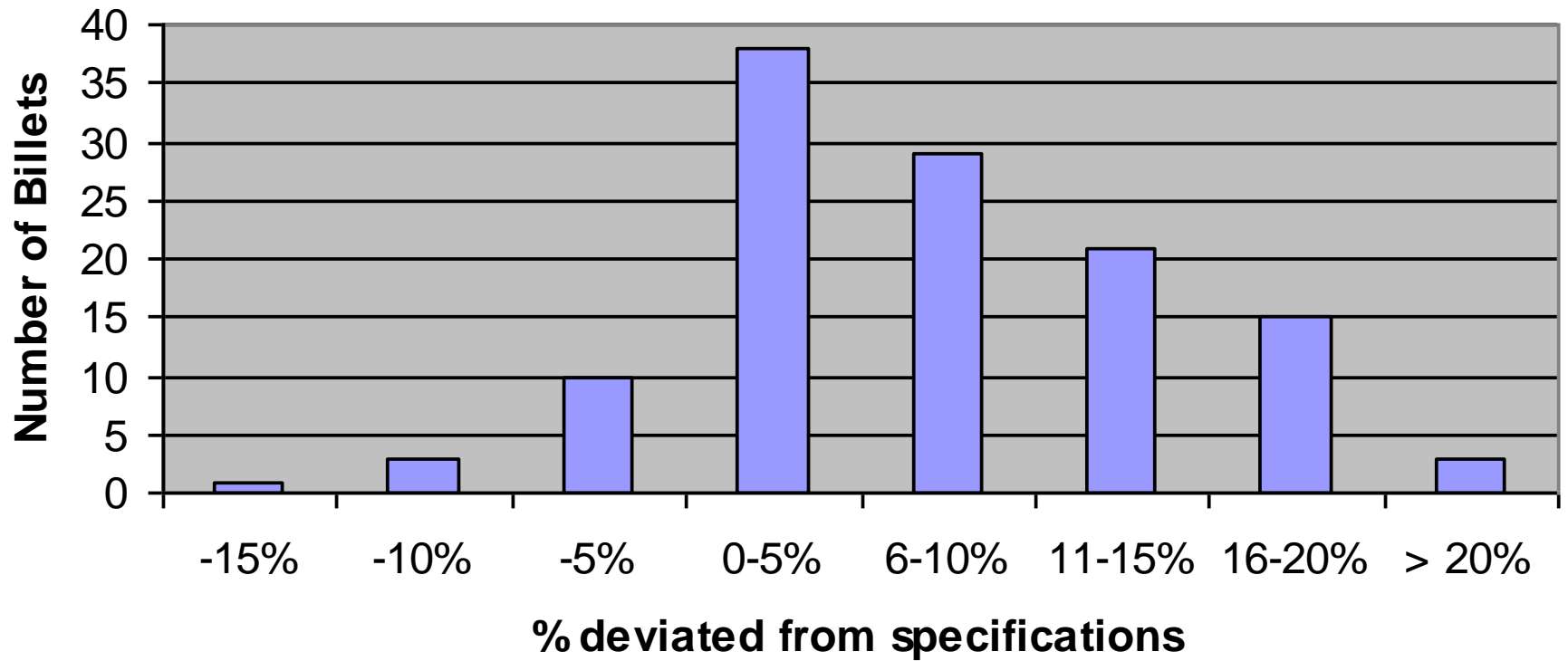
Raw Data

-15%	6%	7%	7%	9%	11%	12%	13%	14%	-5%
-10%	7%	8%	8%	1%	-5%	15%	15%	16%	17%
-10%	8%	1%	5%	2%	11%	11%	16%	19%	18%
-5%	9%	2%	10%	3%	12%	1%	17%	1%	22%
6%	10%	3%	-5%	4%	13%	2%	18%	2%	23%
1%	10%	4%	12%	12%	14%	3%	19%	3%	2%
2%	9%	5%	-5%	13%	15%	4%	20%	1%	4%
3%	-10%	8%	13%	13%	-5%	5%	2%	2%	5%
4%	8%	9%	-5%	14%	15%	16%	3%	3%	4%
5%	6%	1%	14%	8%	1%	17%	-5%	6%	5%
5%	7%	2%	16%	9%	2%	18%	-5%	25%	6%

A Frequency Table

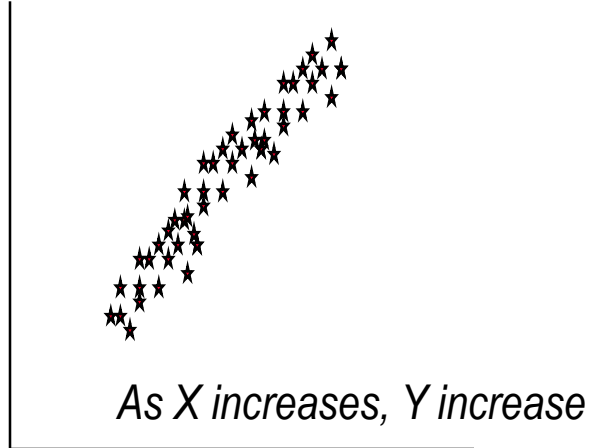
Class No	Class Range	Frequency
1	-15%	1
2	-10%	3
3	-5%	10
4	0-5%	38
5	6-10%	29
6	11-15%	21
7	16-20%	15
8	>20%	3

Castings Histogram

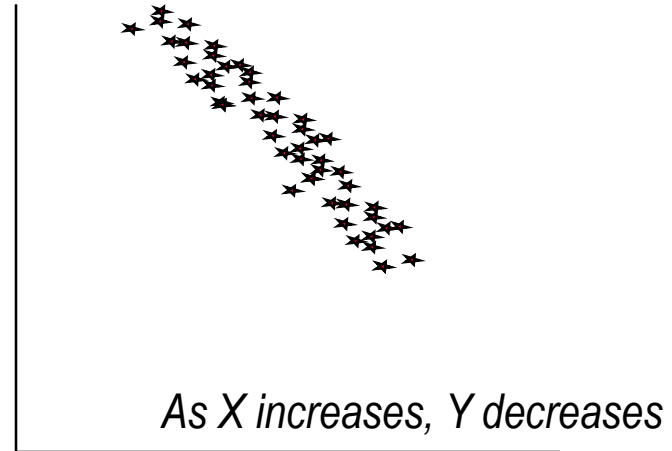


Scatter Diagrams

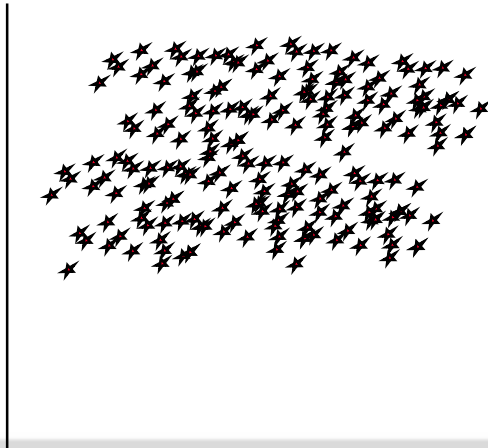
Positive Correlation



Negative Correlation



No Correlation



Possible Correlation

