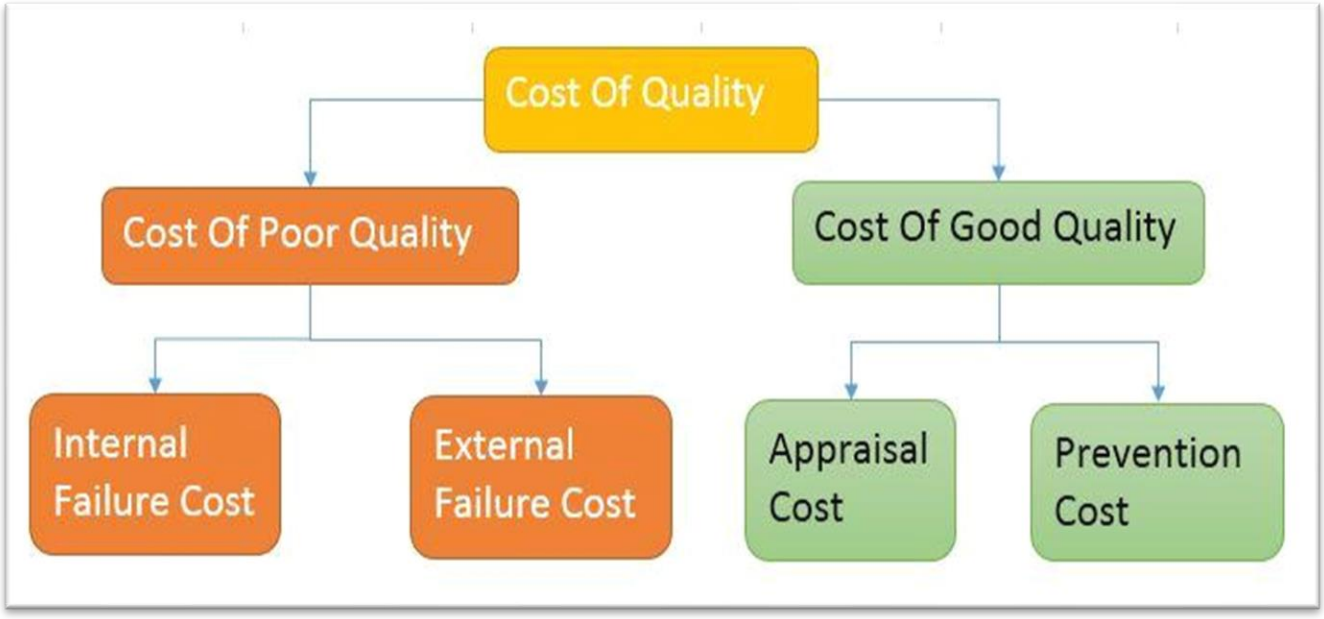
OPMT 1106 Quality Management

Assignment - 02

MUSTAFIZUR RAHAMAN

BCIT ID : A01327488

Quality Cost Analysis:



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Sr No	Description	Type Of quality	Cost of quality	Percent of Total quality
1	Qualification of supplier product	Appraisal Cost	$675	0.45
2	Laboratory support	Prevention cost	$575	0.39
3	Process control measurement	Appraisal Cost	$1,960	1.31
4	Field performance evaluation	External Failure Costs	$2,555	1.71
5	Depreciation allowance	Appraisal Cost	$2,354	1.58
6	Review of Test and Inspection data	Appraisal Cost	$265	0.18
7	Measurement equipment	Prevention cost	$585	0.39
8	Inspection and Test Materials	Appraisal Cost	$554	0.37
9	Purchasing appraisal cost	Appraisal Cost	$155	0.10
10	Maintenance & Calibration labor	Prevention cost	$4,558	3.05
11	Retrofit costs	Prevention cost	$360	0.24
12	Warranty Claims	External Failure Costs	$39,890	26.73
13	Recall costs	External Failure Costs	$28,000	18.76
14	Disposition costs	Internal failure costs	$250	0.17
15	Troubleshooting costs	External Failure Costs	$38,675	25.92
16	Scrap costs	Internal failure costs	$22,000	14.74
17	Material Review and CAR costs	Appraisal Cost	$4,560	3.06
18	Supplier Reviews	Appraisal Cost	$1,200	0.80
19	Operator quality education	Prevention cost	$50	0.03
		Total cost	$149,221	100



Observation:

Here, most of the costs occur due to external failure and that is about 73%, which is the major issue.

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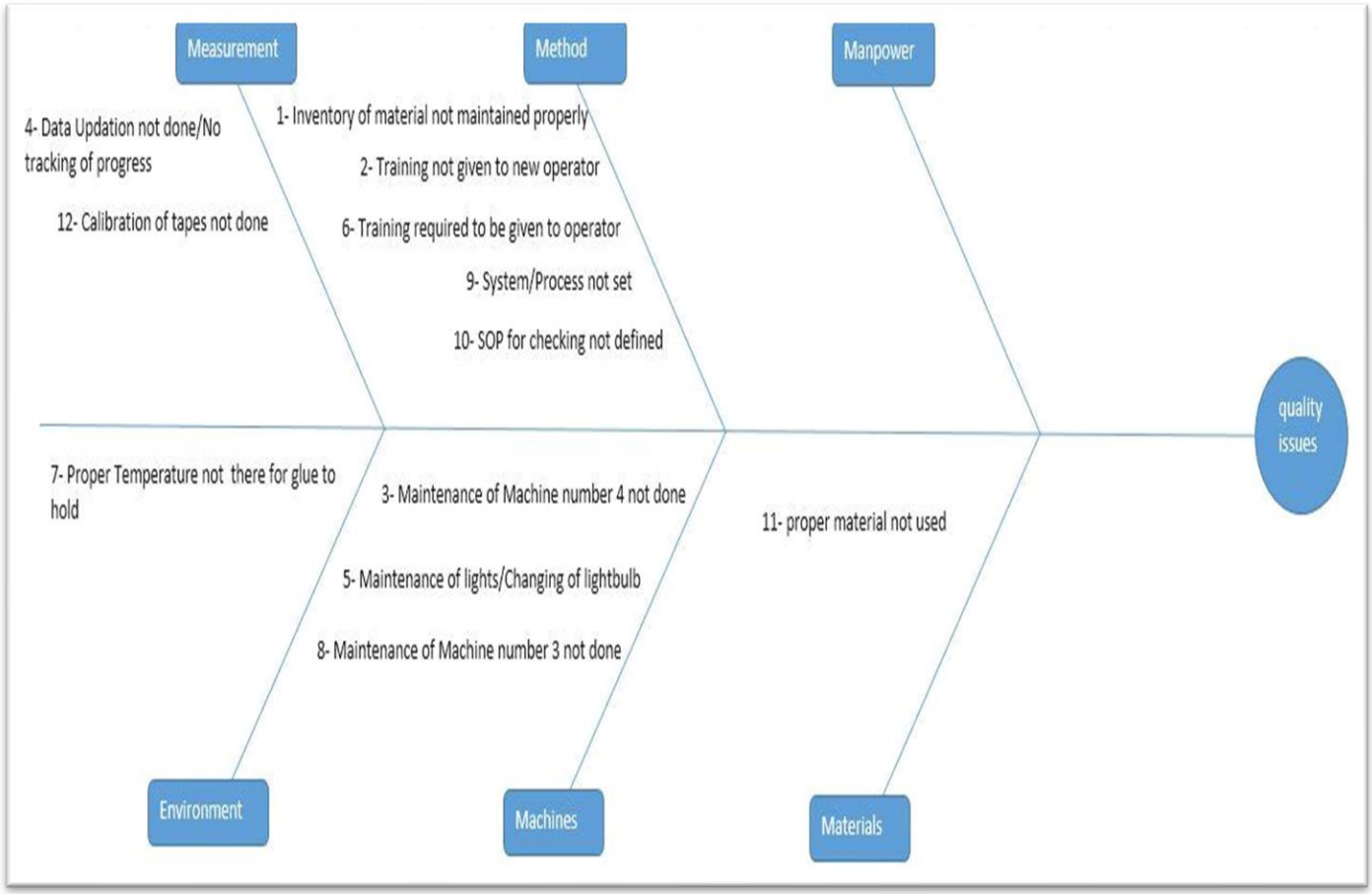
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Recommendation:

There should be careful about the following factors:

- Repairs and servicing: Of both returned products and those in the field
- Warranty claims: Failed products that are replaced or services that are re-performed under a guarantee
- Complaints: All work and costs associated with handling and servicing customers' complaints
- Returns: Handling and investigation of rejected or recalled products, including transport costs

Ishikawa Diagram:



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Observation:

Ishikawa diagram has viewed as a graphical depiction of hypotheses that could explain the failure under investigation. It serves to quickly communicate these hypotheses to team members, customers, and management. Hypotheses that have been investigated can also be marked on the Ishikawa diagram to quickly show that they are not the cause of the failure.

Sr No	Description	Nos of times issue ocurred	Percentage of total issues	Remarks
1	Process failure(training not given,SOP not defined etc)	5	41.67%	As per Pareto principle of 80:20,80% of outcomes (or outputs) result from 20% of all causes (or inputs).If first 2 issues are resolved 80% quality issues will be gone
2.	Maintenance of machines. 20% problem	3	25.00%	
3	Material not ok	1	8.33%	
4	Caliberation issues	2	16.67%	
5	Temperature issues	1	8.33%	

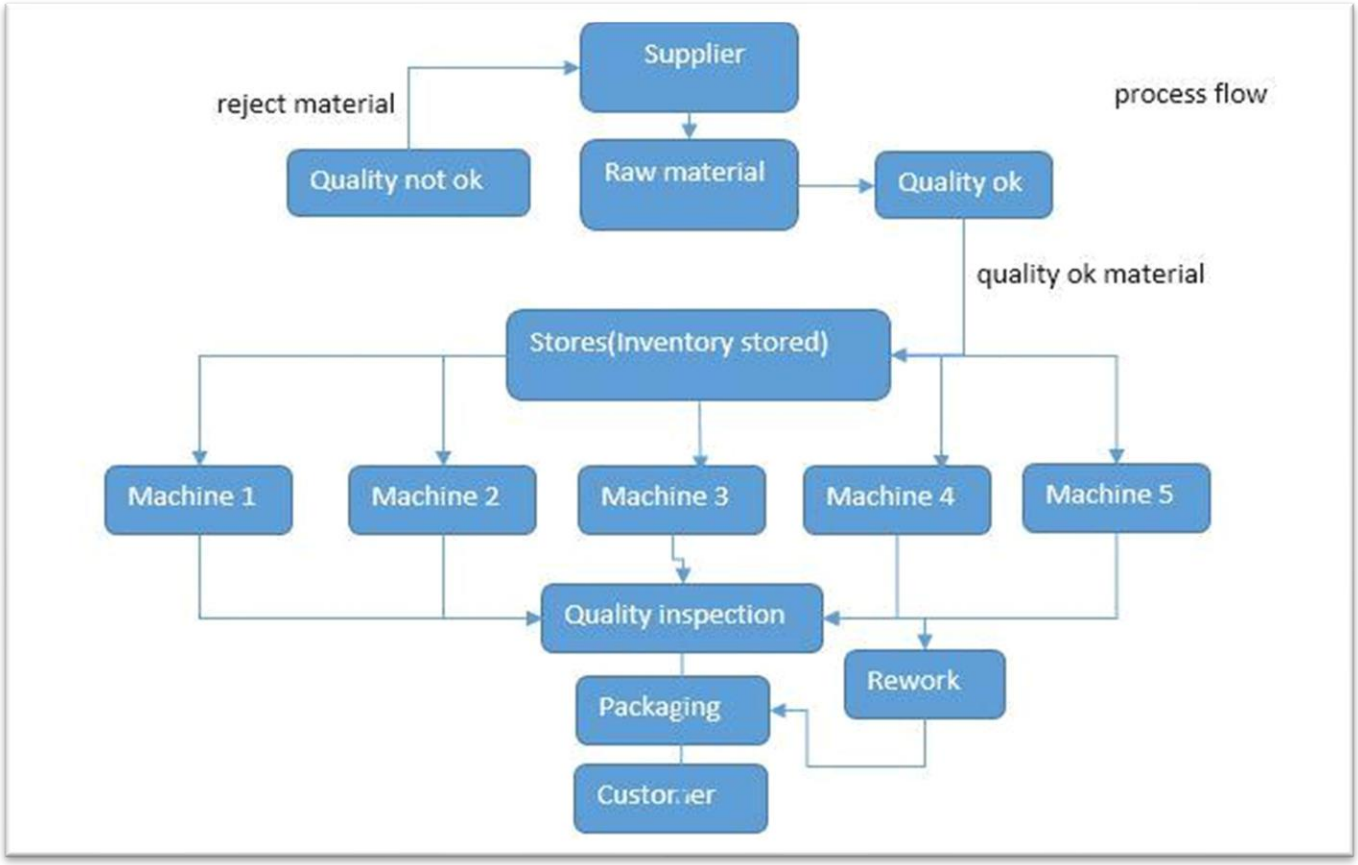
Recommendation:

Proper training should be given to the employees in an effective way. Define the whole SOP to the employees in detail. Maintaining Machinery regularly also be another vital step to resolving the problem.

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Detailed Flowchart:



Observation:

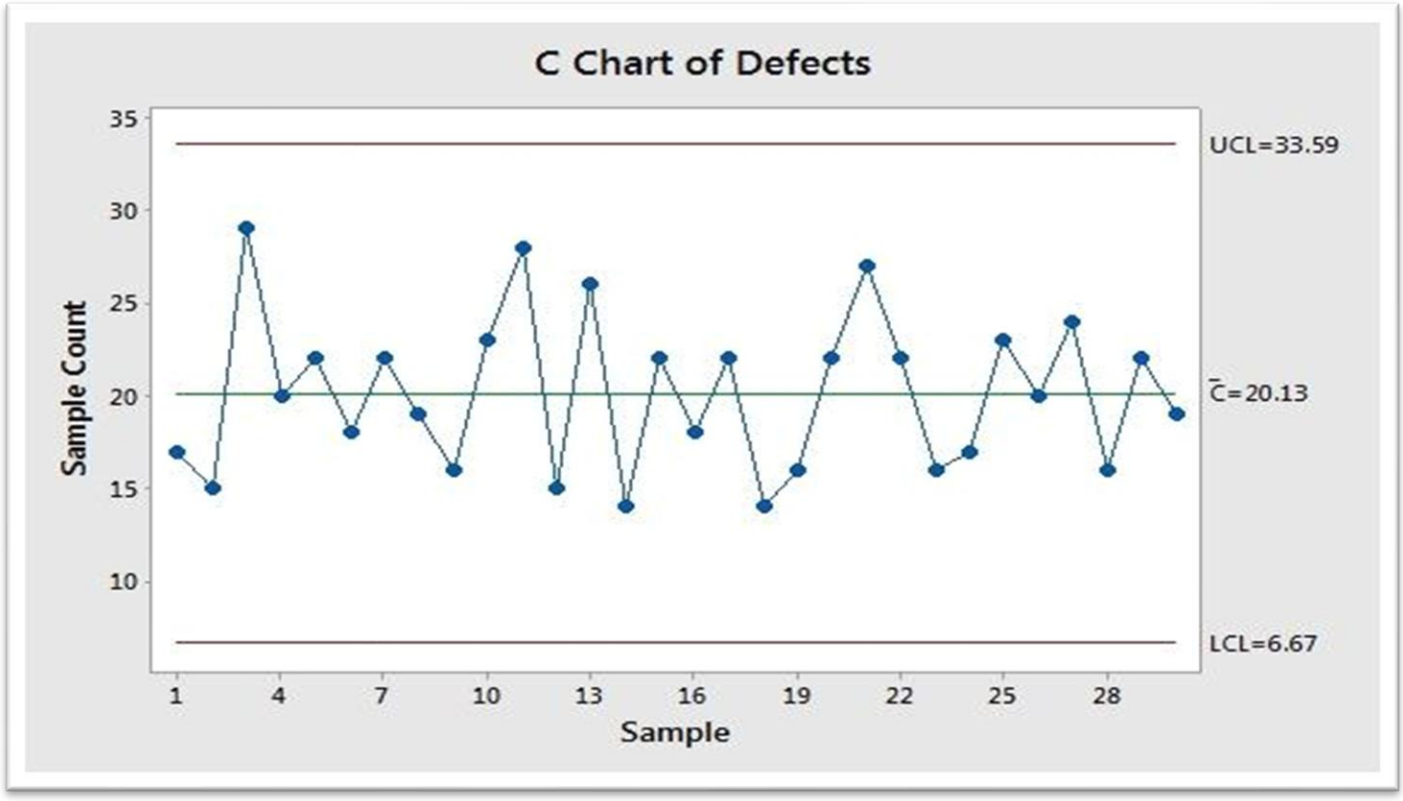
This is a process type flow chart.

Recommendation:

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Control Chart:



Observation:

This is a data type control chart.

Here Upper Uontrol Limit is 33.59 and

Lower Control Limit is 6.67

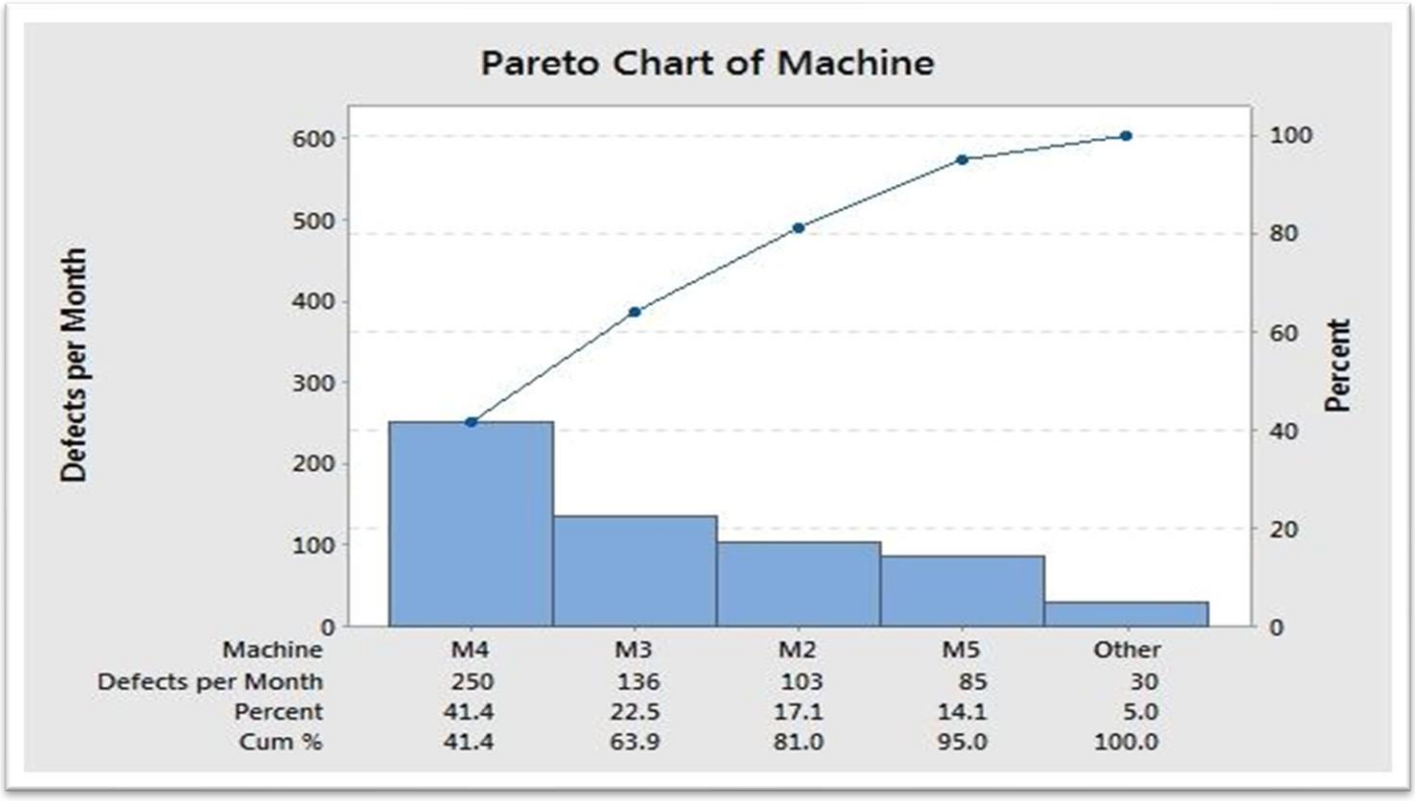
Control Limit is 20.13

Recommendation:

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Pareto Chart:



Observation:

The Pareto diagram helps to identify the vital few sources (M4, M3, M2) that are responsible for causing most of a problem's effects.

Categories in a pareto diagram measure either frequencies or consequences. The categories shown on the horizontal axis account for 100% of the possible observations. The relative frequencies of each specified cause listed on the horizontal axis decrease in magnitude.

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A pareto diagram has two vertical axes. The first one on left indicates frequency (41.4%, 22.5%, 17.1%, 14.1%, 5.0%) and the second on the right specifies cumulative percentage (41.4%, 63.9%, 81.0%, 95.0%, 100.0%) of frequency. The cumulative frequency curve identifies the few vital factors that warrant immediate attention.

Recommendation:

Machine M4 should be replaced or made it capable to work properly with fewer defects. Also should be working on machine M3 and M2 for better production.

AQL Calculation:

Lot Quantity- **25000 Pieces** General Level- **II**

	Major Issue	Medium Issue	Minor Issue
AQL	0.10	0.65	6.5
Sample Size	500	315	200
Access point	1	5	21
Reject point	2	6	22

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