

MBB Project

Reducing the rejection level of solar component (Front Glass) from $>1.10\%$ to $< 0.60\%$ in the Annealed Glass

By

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Mentor: Dr. R K



Define Phase

Company: _____

Product: _____

Plant Location: _____

Department: _____

Department or Plant Turnover: -- --

Problem Statement: _____

Business Case: _____

Total number of customers: __ _

Complaints received: 50(= 5 %) _ _ _

Complaints received from Photovoltaic sector: --- 3 (= 5% of 50)

Define Phase

Goal Statement: -- --

Scope: _ _ _

Time Schedule:

Define: 20 Jan 2025

Measure: 20 Jan 2025

Analyze: 20 Jan 2025

Improve: 20 Jan 2025

Control: 20 Jan 2025

Approved by:

Name:

Designation:

Name:

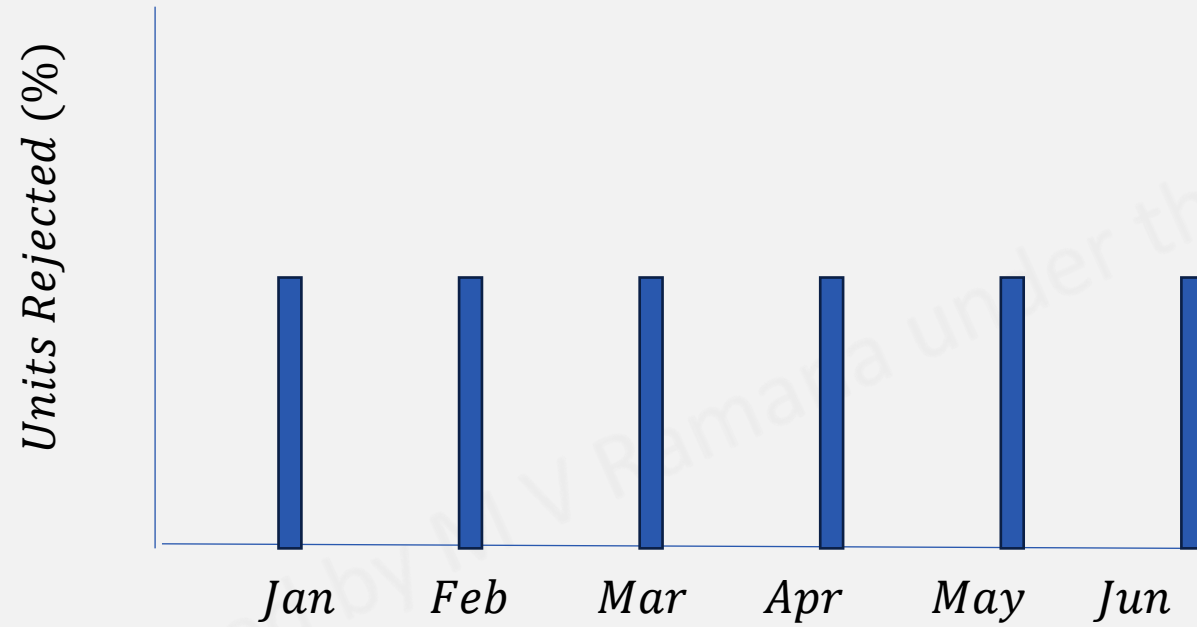
Designation:

Name:

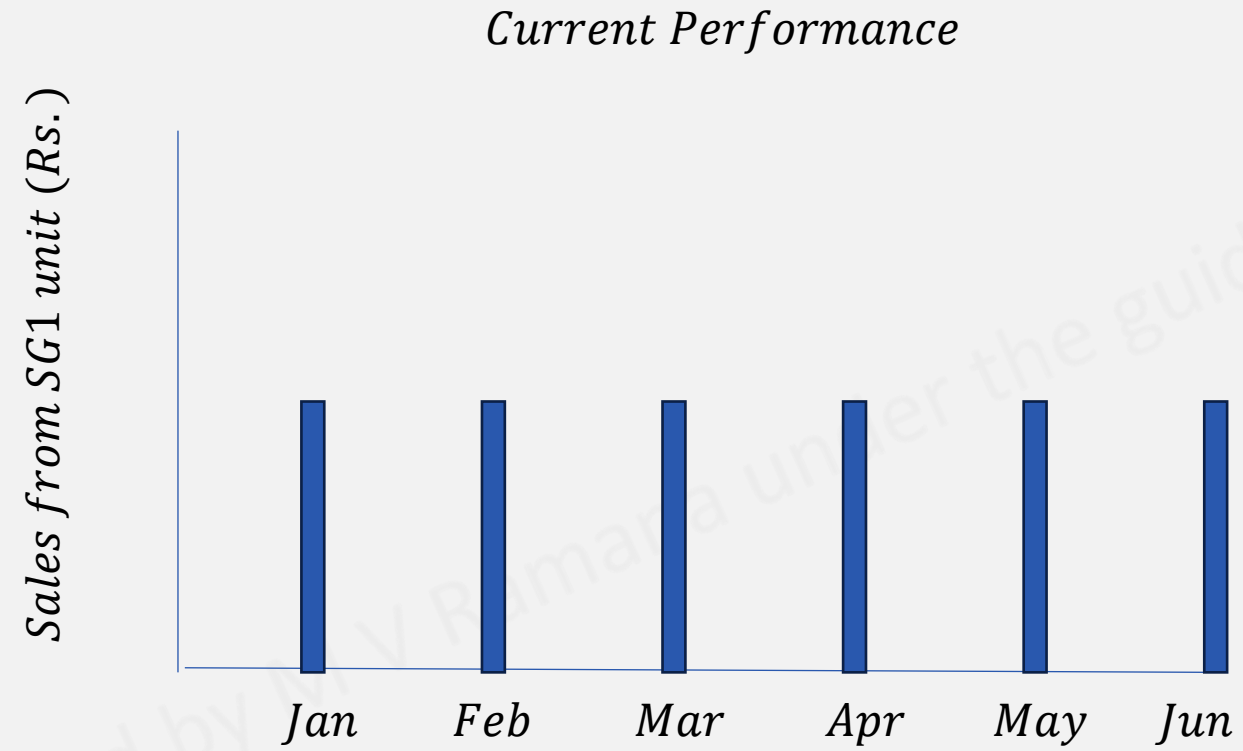
Designation:

Measure Phase

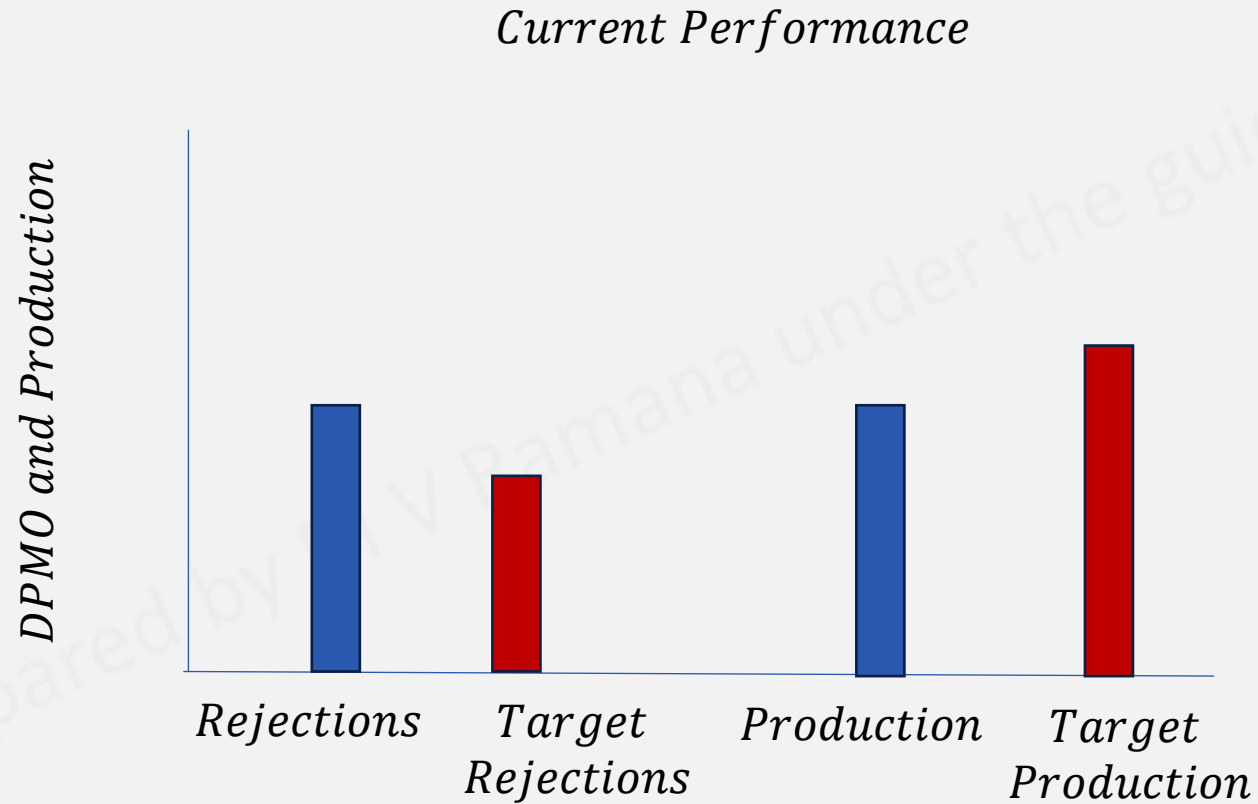
Current Performance



Measure Phase



From the previous 2 slides and goal statement workout this graph data for y axis values



Analyze Phase

Description of cause factors

M11
M12
M13
M14
M15
M16
M21
M22
M23
M24
M25
M26

M31
M32
M33
M34
M35
M36
M41
M42
M43
M44
M45
M46

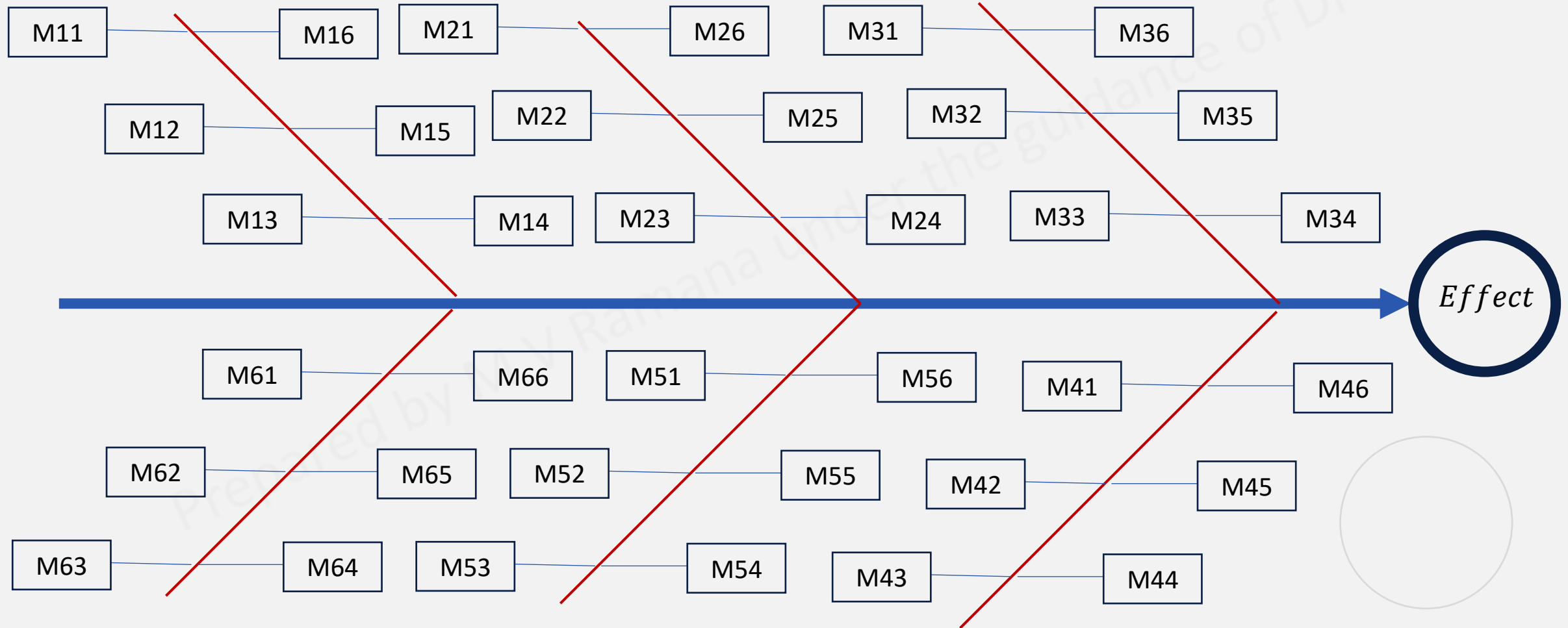
M51
M52
M53
M54
M55
M56
M61
M62
M63
M64
M65
M66



Analyze Phase

Cause factors are identified from VOB, VOC, COPQ and brainstorming.

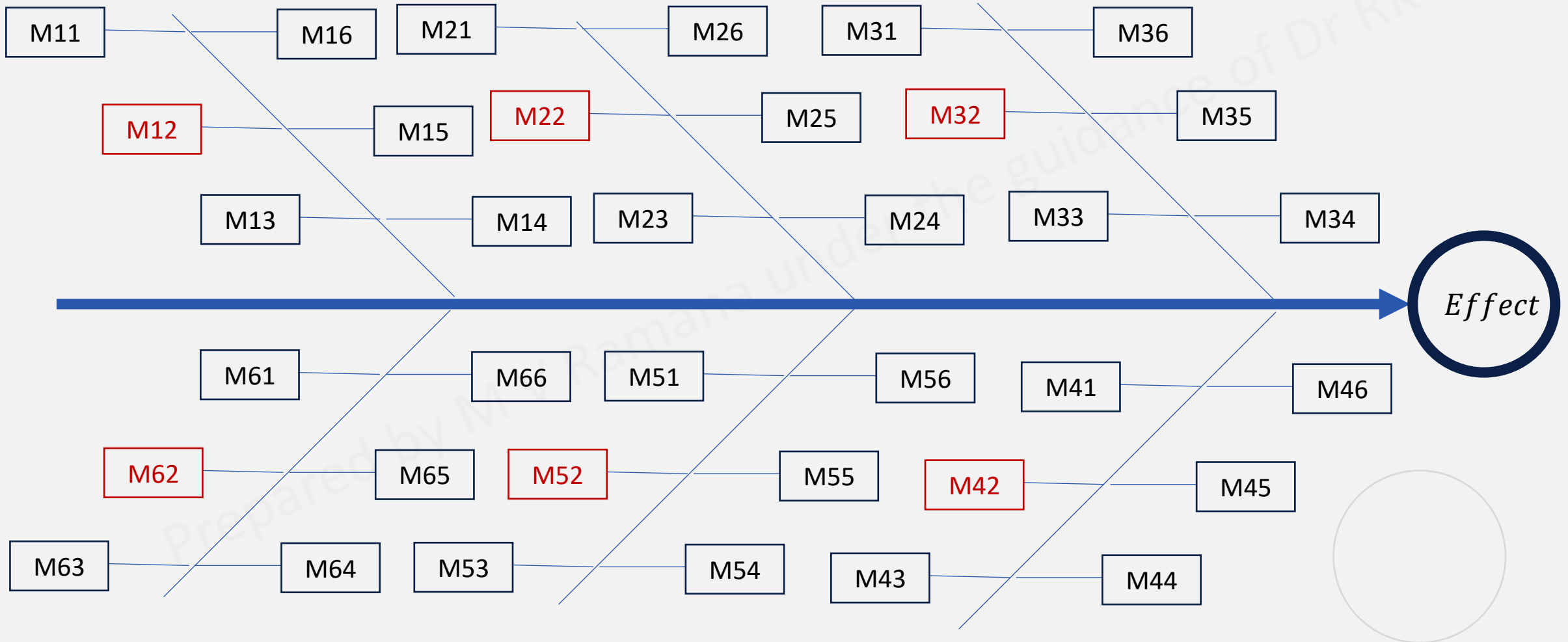
Identified Cause factors are visualized in the cause and effect diagram here.



Analyze Phase

Validated cause factors are selected using cause and effect matrix.

Mxx validated



Analyze Phase

Description of cause factors

M11

M21

M31

M12

M22

M32

M13

M23

M33

M14

M24

M34

M15

M25

M35

M16

M26

M36



Analyze Phase

Description of cause factors

M41

M42

M43

M44

M45

M46

M51

M52

M53

M54

M55

M56

M61

M62

M63

M64

M65

M66



Analyze Phase

validated x factors are tested for significance

Hypothesis Tests

			Conclusion To Improve or Not
Test 1 for M12 Proportional Test	$H_0:$ $H_a:$	$p \text{ value}$ $\geq \alpha$	
Test 4 for M22 Proportional Test	$H_0:$ $H_a:$	$H_0:$ $< \alpha$	
Test 3 for M32 Average Test	$H_0:$ $H_a:$	$H_0:$ $< \alpha$	

If p value is $< \alpha$, then reject the H_0 ; If p value $\geq \alpha$, fail to reject the H_0



Analyze Phase

validated x factors are tested for significance

Hypothesis Tests

			Conclusion To Improve or Not
Test 4 for M42 Proportional Test	$H_0:$ $H_a:$	$p \text{ value}$ $\geq \alpha$	
Test 5 for M52 Proportional Test	$H_0:$ $H_a:$	$H_0:$ $< \alpha$	
Test 6 for M62 Average Test	$H_0:$ $H_a:$	$H_0:$ $< \alpha$	

If p value is $< \alpha$, then reject the H_0 ; If p value $\geq \alpha$, fail to reject the H_0



Improve Phase

Improvements done for the significant factors

Hypothesis Tests

Improvement for M12

Improvement for M22

Improvement for M32



Improve Phase

Improvements done for the significant factors

Hypothesis Tests

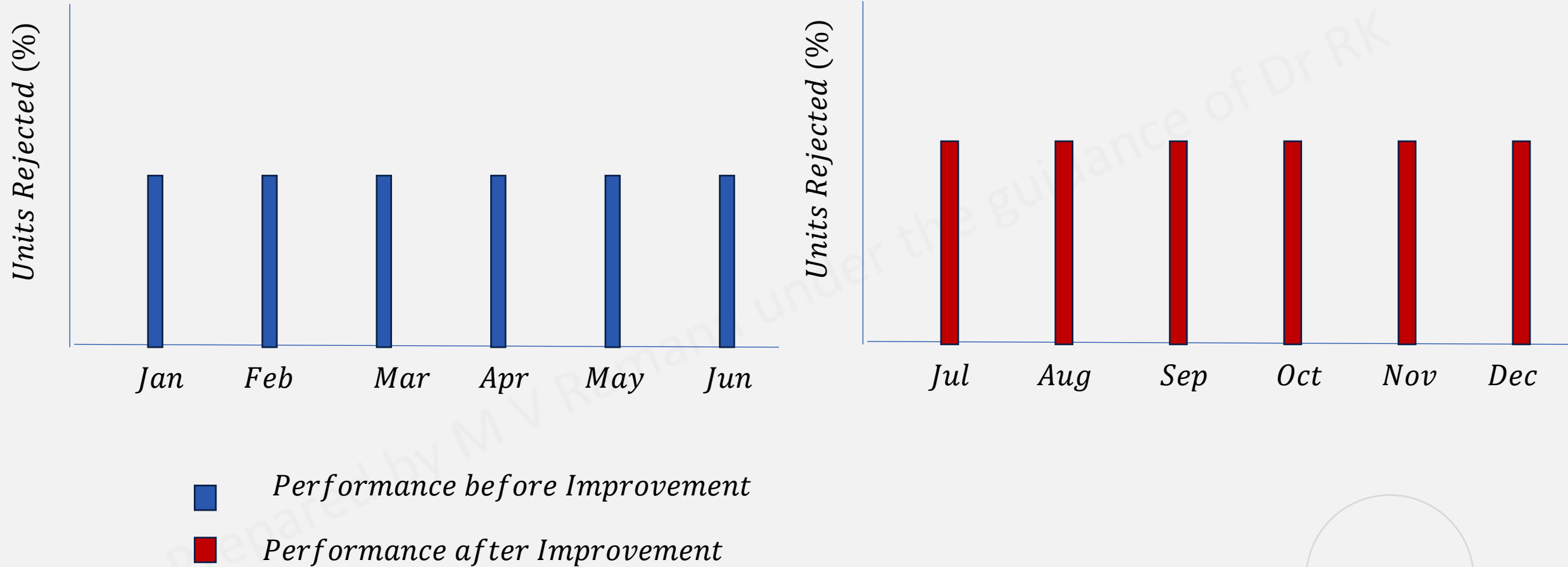
Improvement for M42

Improvement for M52

Improvement for M62



Performance before and after Improvement

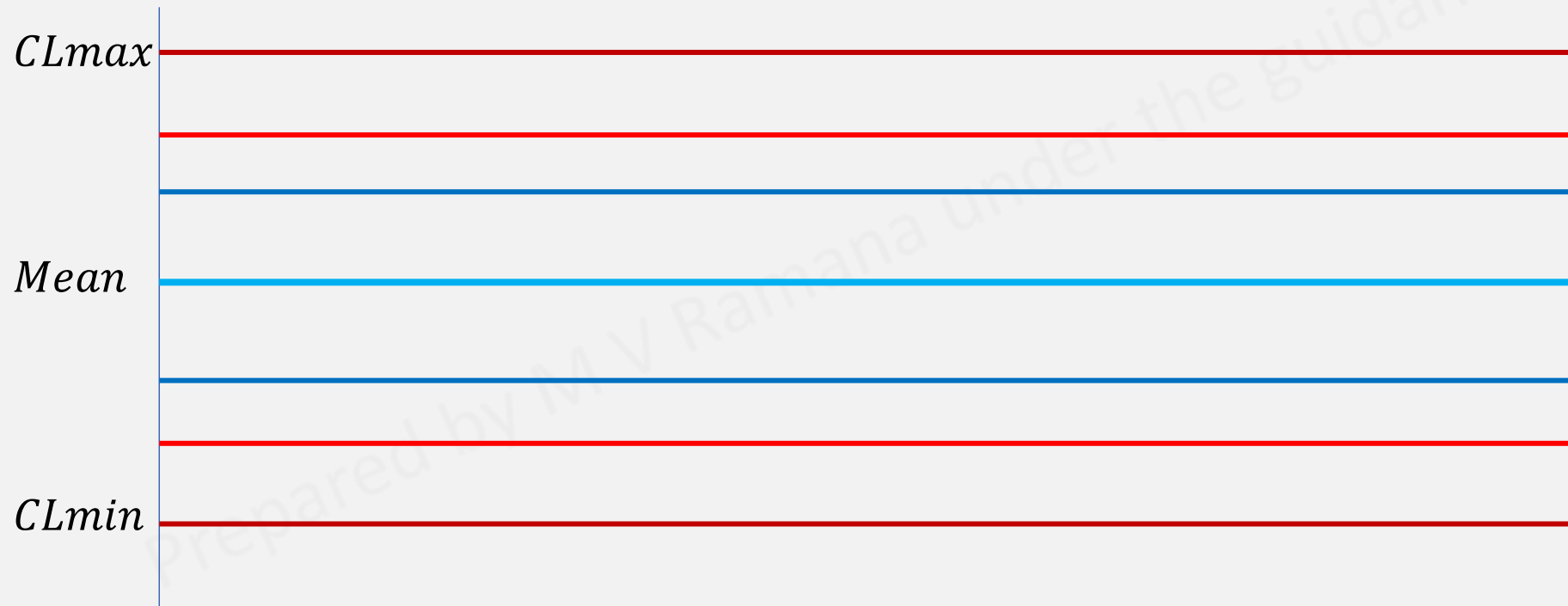


Control Phase

Improvements done for the significant factors

Control Plan

In order to maintain the improved performance control charts are prepared for the following factors



Control Phase

Improvements done for the significant factors

Documentation

Completed Project Charter

Minutes of meetings

Preventive Actions

Lessons Learnt



Thank You

