

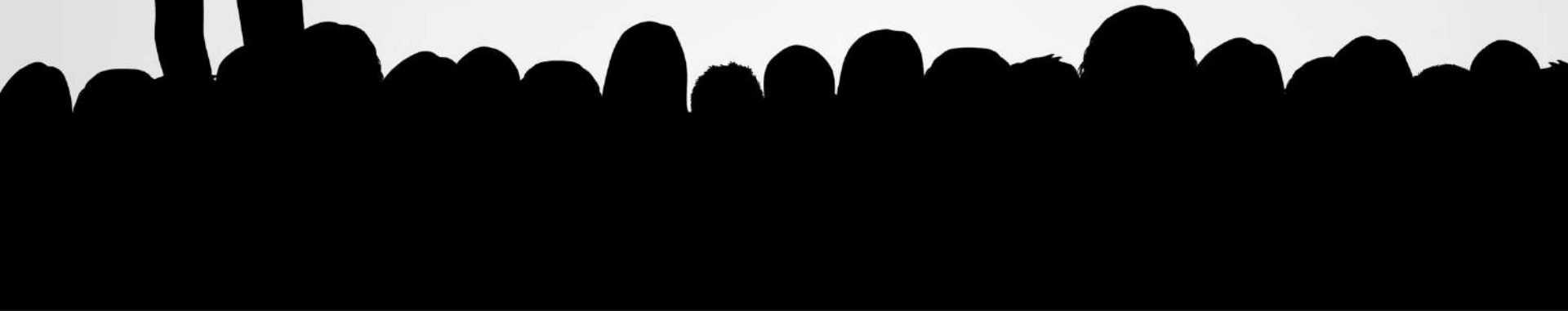


**Hitech Print Systems Limited**



# Presentation on Quality Control

Circle Name : Vivekananda







Circle Name : Vivekananda



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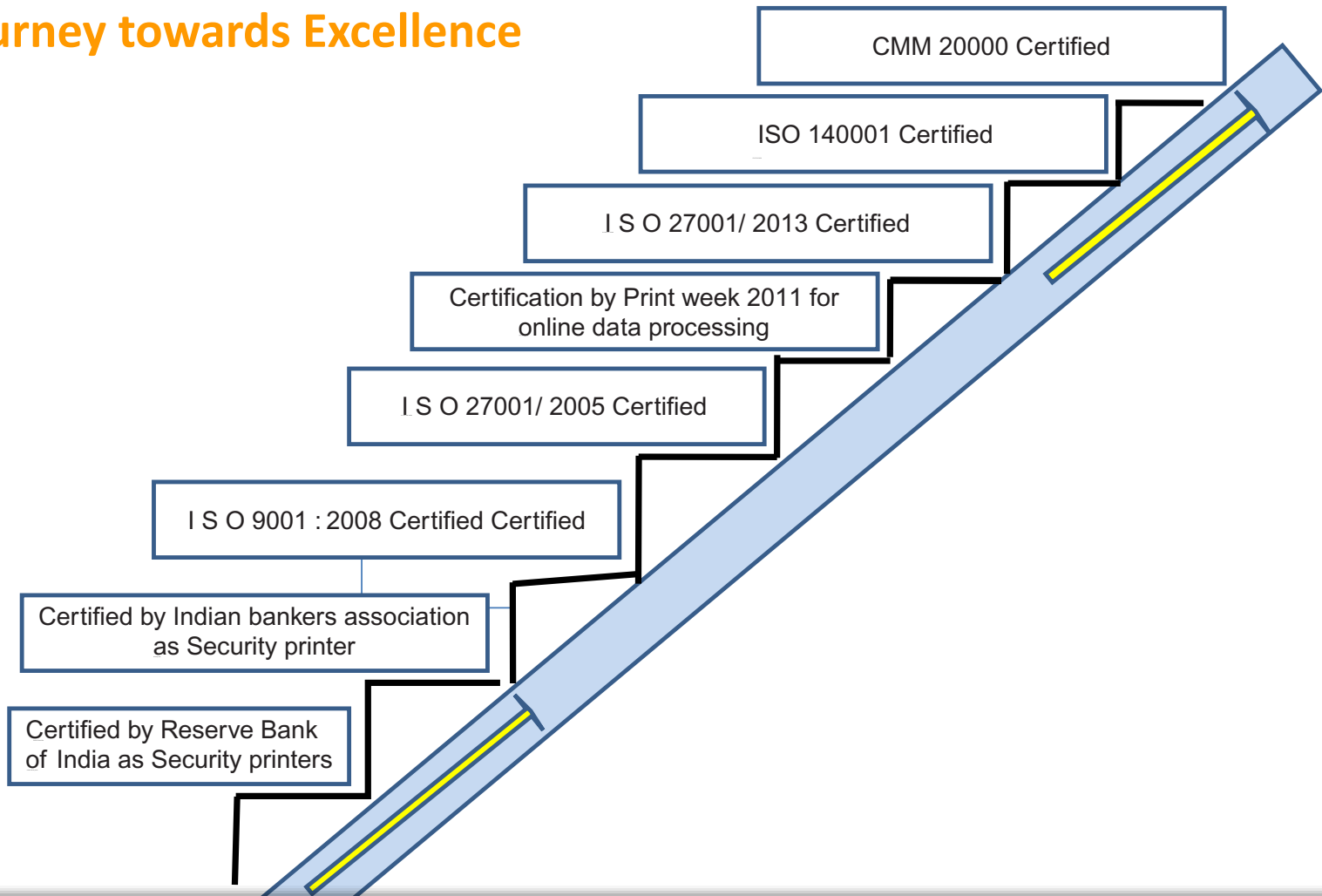
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## Journey towards Excellence



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## Quality Circle-Vivekananda Problem Selected

**“Reduction in Make ready waste”  
in 20.5 II**





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Quality Circle Team : Vivekananda

Date Started : 03-01-2022



Leader  
G. Satyanarayana



Deputy Leader  
V. S. Narayana



Member  
J. Srinivas Rao



Member  
A. Suryanarayana



Member  
Sk Baji



Member  
D. Rajarathnam



Member  
P. Narendra



Member  
M. Thambi kumar

**Facilitator**  
K.V.Sai  
G.M

**Under Guidance of**  
B.Manoharan  
Sr. V.P.

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## Vivekananda Team & Attendance Record

Sl. No.	Name	Jan %	Feb %	Mar %
1	G. Satyanarayana	66	85	50
2	V.S. Narayana	66	85	50
3	J. Srinivas Rao	66	42	66
4	A. Surya Narayana	100	100	66
5	Sk Baji	50	71	50
6	D. Rajarathnam	66	14	83
7	P. Narendra	83	57	83
8	M. Thambi Kumar	50	85	50
Note:	Attendance continue to be low inspite of repeated efforts by the facilitator - Mr. K.V. Sai			



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## Meeting Schedule and no. of meetings held

- ❖ Mondays and Thursdays                      2.30 pm to 3.0 pm
  
- ❖ Total no of meetings held-                      28 meetings till April 2nd
  
- ❖ Monitoring the results                              May & June 2022





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## Road Map

### MILE STONE CHART Hitech Print Systems Ltd.

Team : Vivekananda  
Project Started on 04-01-2022

PDCA	SI. No.	STAGE	PLAN Date															
PLAN	1	IDENTIFICATION OF PROBLEMS	PLAN	10-1-22														
			ACTUAL															
	2	SELECTION OF PROBLEM	PLAN		7-1-22													
			ACTUAL															
	3	DEFINING THE PROBLEM	PLAN			3-2-22												
			ACTUAL															
	4	ANALYSIS OF PROBLEM	PLAN				10-3-22											
DO			ACTUAL															
	5	IDENTIFICATION OF CAUSES	PLAN					25-3-22										
			ACTUAL															
	6	FINDING ROOT CAUSE	PLAN						3-4-22									
			ACTUAL															
	7	DATA ANALYSIS	PLAN							17-4-22								
			ACTUAL															
	8	DEVELOPING SOLUTIONS	PLAN								2-5-22							
			ACTUAL															
	9	FORESEEING PROBABLE RESISTENCE	PLAN									6-5-22						
CHECK			ACTUAL															
	10	TRAIL IMPLEMENTATION AND	PLAN										22-5-22					
			ACTUAL															
	11	REGULAR IMPLEMENTATION	PLAN													29-5-22		
ACT			ACTUAL															
	12	FOLLOW UP AND REVIEW	PLAN														1-6-22	
			ACTUAL															



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## Step 1 - Problem Identification

The team has decided to concentrate on wastage reduction through analysis of earlier data to identify the major cause



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Step 1- Problem Identification - Contd Team has Identified following Problems and Categorised as ABC

- |   |   |
|---|---|
| High Wastage  | A |
| 1. Wrong fixing of plate  | A |
| 2. Impression problem is more in 3 <sup>rd</sup> unit   | C |
| 3. Dancer problem in unwind unit causing paper cut  | B |
| 4. Improper cleaning of Blankets, Ink roller and plate  | A |
| 5. Wrong direction of paper feeding   | A |
| 6. 2 <sup>nd</sup> Perforation Cylinder for non standard length perforation not set properly. | A |
| 7. Slit paper reels problem.  | B |

•





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Step 1- Problem Identification - Contd Team has Identified following Problems and Categorised as ABC

## High Wastage

- |   |   |
|---|---|
| 1. Ink leakage from SCITEX  | A |
| 2. Colour mixing ratio not proper                                     | A |
| 3. Sheeter position not parallel to the machine.                      | A |
| 4. Web aligner one side sensor not working.                           | B |
| 5. 1 <sup>st</sup> unit ink duct keys not working                     | B |
| 6. Skip perforation not set properly                                  | A |
| • Difficulty in synchronizing Cylinder position due to Sensor problem |   |
| A   |   |
| • Setting of folding fan not as per requirement.                      | A |



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## Categorization of Identified Problems

Category	Category details	No of identified problems
A	Problem solving by self	<b>11</b>
B	Problem solving with others help	<b>4</b>
c	Problem solving with the support of management	<b>1</b>



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## Analysis of A grade Problem

Team through Brain storming eliminated following causes as insignificant for wastage reduction

1. Wrong direction of paper feeding
2. Slit paper reels problem.
3. Wrong fixing of plate
4. Web aligner one side sensor not work
- 5 1<sup>st</sup> unit ink duct keys not working





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## Problems short listed for Root cause analysis

The team has short listed 9 problems for root cause analysis for reduction in wastage

### Problems identified

High Wastage

Improper cleaning of Blankets  
Ink roller and plate

Ink leakage from SCITEX

Colour mixing ratio not proper

### Root causes

This requires further analysis . Team has decided to collect data for 2 Wks

Cleaning methodology being practiced is a proven method. However to ensure perfection the team has decided to make a documentation

Considering the various SCITEX Problem a QC is formed.

Presently appropriate measures are being done. This will be eliminated by providing a weighing scale.



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## Problems short listed for Root cause analysis

Sheeter position not parallel to the machine	To ensure proper position the existing mounting position will be modified
Skip perforation not set properly	The team has decided to develop a documented method for uniform setting
Difficulty in synchronizing Cylinder	The team has decided to develop a documented method for uniform setting
Setting of folding fan not as per requirement.	The team has decided to develop a documented method for uniform setting



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The Wastage data for Oct, Nov, Dec of 2021 were reviewed by the team

## Stage 2 & 3 Problem selection & Data collection

Month	Print Kgs / %	Cut Kgs / %	Core Kgs / %	Trim Kgs / %	Total Kgs / %
Oct	4153 8.29%	916 1.83 %	740 1.48 %	1519 3.03 %	7328 14.64 %
Nov	3745 12.97 %	846 2.92 %	590 2.04 %	592 2.05 %	5773 19.9 %
Dec	2991 16.34 %	598 3.27 %	369 2.02 %	532 2.91 %	4490 24.52 %



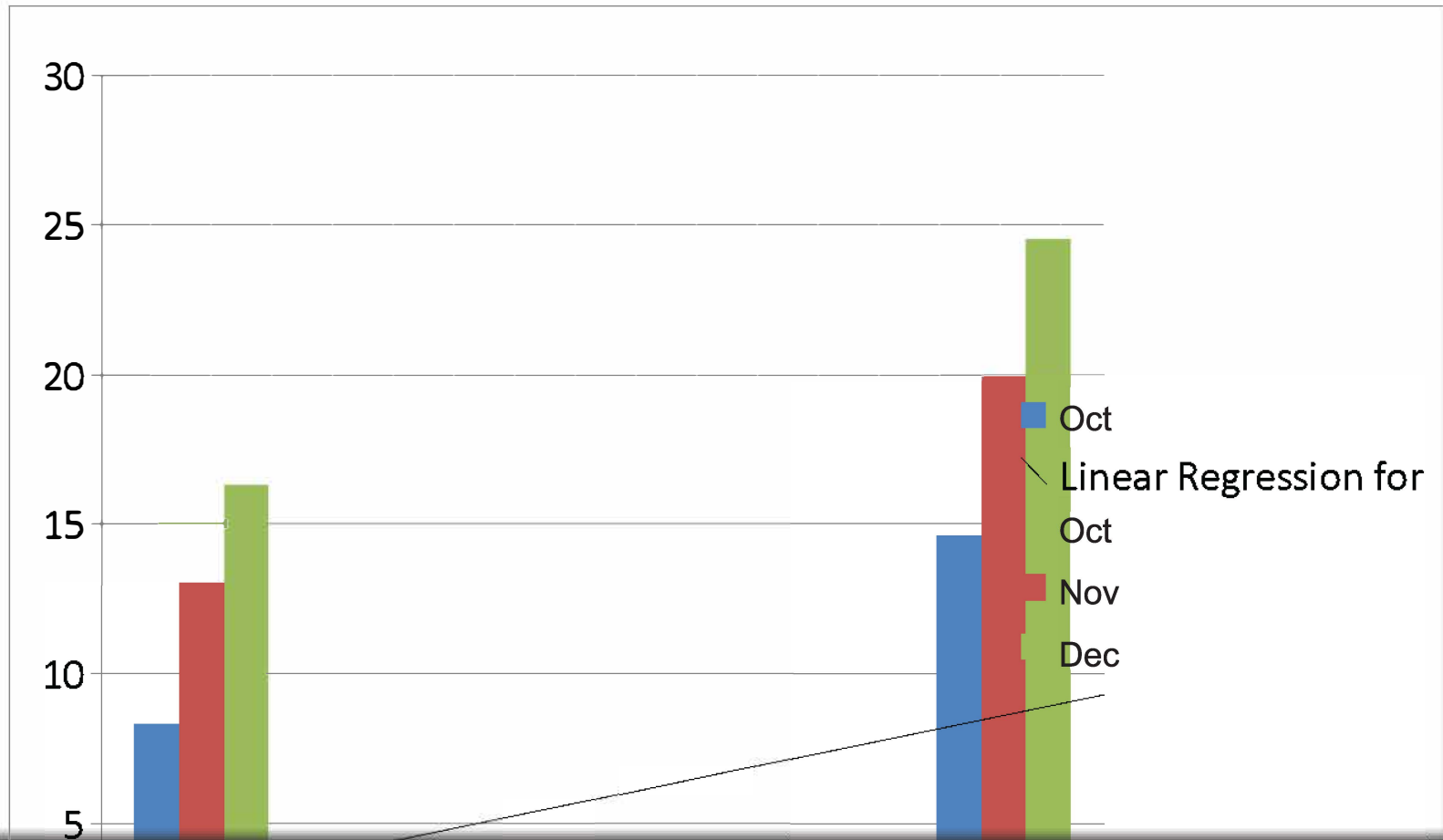


Circle Name : Vivekananda



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Wastage trend defect wise for 3 Months



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## Step 4 - Problem Analysis

- The team has reviewed 3 months data through brain storming and concluded that the print waste contributes major % in wastage.
- Since the print waste consists of various reasons , the team has decided to collect data on print waste reasons
- Details of print waste collected for 2 wks are



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## Step 5 - Problem Selection

- Details of print waste collected for 2wks period for analysis are as follows
- 1) Print process waste during running of the job 6.56%
- 2) Setting waste ( New job) 3.02 %
- 3) Scitex waste 1.33%
- 4) Wrong fixing of plate 0.55%
- 5) Scum waste 0.28%

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## Step 2 - Problem Selection

- Pareto analysis on the data collected





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## Step 3 - Data Collection

- The item 1 Print waste is the major cause for wastage. However print waste % is subject to Job profile, short run jobs and other setting parameters, Team decided to concentrate on 2<sup>nd</sup> item setting ( Make ready Waste) for problem solving .
- Accordingly the problem identified and defined as

**REDUCTION IN MAKE READY WASTE**



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## Step 6 - Identifying the causes

### Listing of problem causing wastage in Make ready

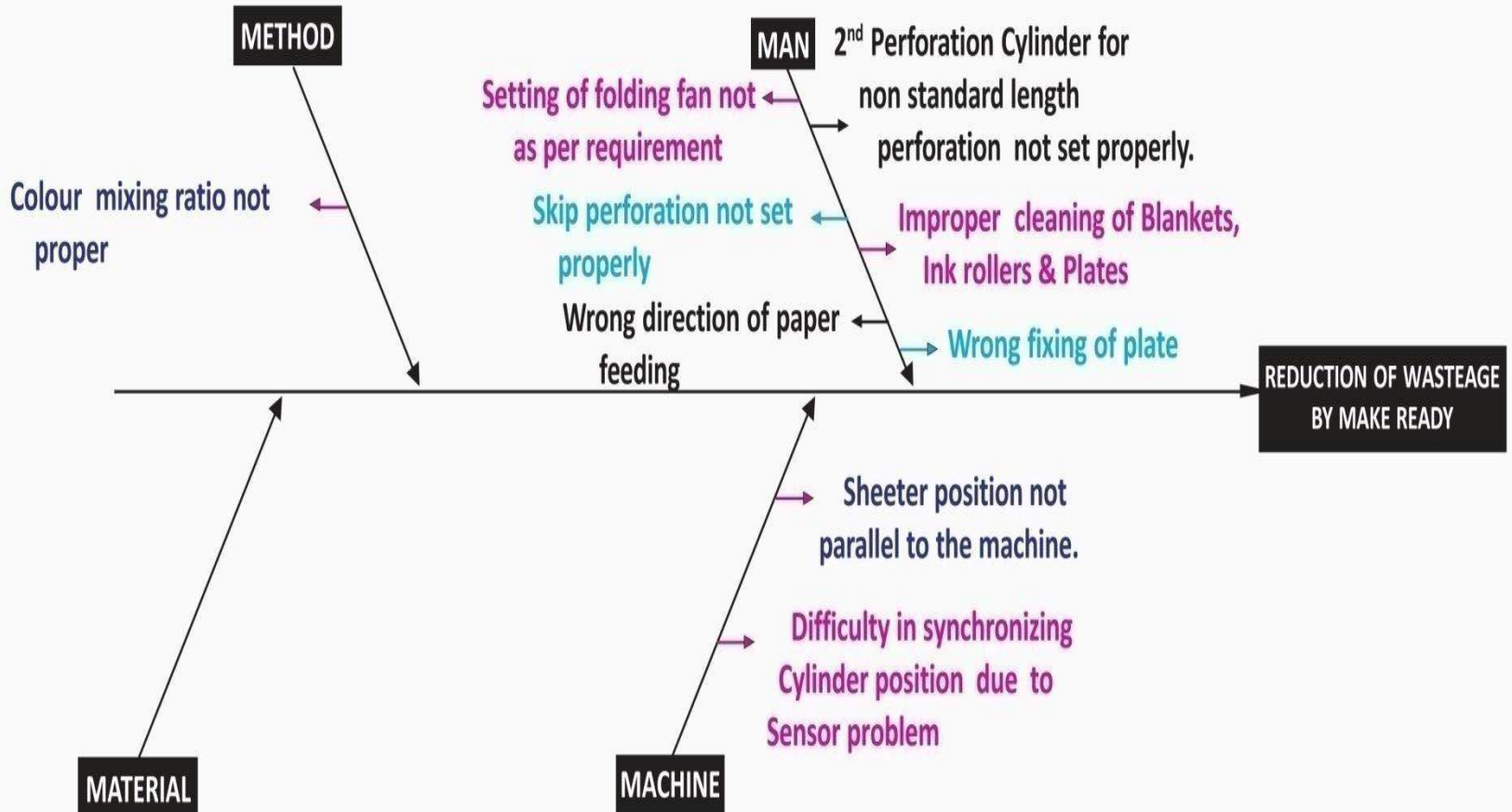
Team during analysis of problem further identified 9 causes which will minimize the wastage during make ready

- 1) Wrong fixing of plate
- 2) Improper cleaning of Blankets, Ink rollers & Plates
- 3) Wrong direction of paper feeding
- 4) 2<sup>nd</sup> Perforation Cylinder for non standard length perforation not set properly.
- 5) Colour mixing ratio not proper
- 6) Sheeter position not parallel to the machine.
- 7) Skip perforation not set properly
- 8) Difficulty in synchronizing Cylinder position due to Sensor problem
- 9) Setting of folding fan not as per requirement.



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## Cause and Effect Diagram





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## Limitation in Data Collection

In printing industry there are no measurable parameters which will give numerical data for analysis

In the absence of numerical data corrective actions are taken on identified problems through

- |   |                    |                           |
|---|--------------------|---------------------------|
| ❖ | Machine problem    | Rectify/improve           |
| ❖ | Skill of employees | Identify and impart train |
| ❖ | Method             | Continuous improvement    |



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## Step 7 - Finding Alternate Solution

- Make ready involves many parameters and setting the same to achieve -Wastage reduction best result
- There are no alternate solutions to in setting parameters. All steps are to be followed in setting the machine to achieve customer requirement.



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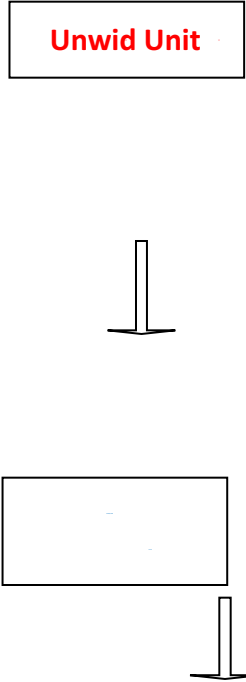
Problems	Corrective action
1) Wrong fixing of plate	This is occasional happenings with low % . Supervisors have trained the printers during new jobs .
2) Improper cleaning of Blankets, Ink rollers & Plates	On the job training /refresher training being given.
3) Wrong direction of paper feeding	On the job training /refresher training being given.
4) 2 <sup>nd</sup> Perforation Cylinder for non standard length perforation not set properly.	On the job training /refresher training being given.
5) Colour mixing ratio not proper	Class room training with pantone colour chart explained. and digital weighing machine provided for mixing ratios of ink.
6) Sheeter position not parallel to the machine.	Training imparted by Maintenance training being given and marking position provided on the floor
7) Skip perforation setting not proper	On the job training /refresher training being given.
8) Difficulty in synchronizing Cylinder position due to Sensor problem	Sensors are not repairable and spares are not available . Manual setting is being done.
9) Setting of folding fan not as per requirement.	On the job training /refresher training being given and provided measuring scale on the machine .

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## Machine position

## Machine parameters

## Method of adjustment

 <p>Unwid Unit</p>	⇒	Dancer Roller	⇒	By air control
		Brake	⇒	By Manual
		Web aligner	⇒	Two Sensors Adjustment
		Dampener water supply problem	⇒	By Manual control
		Ink feeding not uniform	⇒	To be set manually as per Requirement
		Webtek unit washing taking lot of time	⇒	To be changed the washing solution
		Ink form roller contact problem	⇒	Manual with the help of film strip & the ink patch should be 6 mm to 8 mm
		Non printing gap problem	⇒	To be adjusted through packing
		Impression problem in 2 <sup>nd</sup> and 3 <sup>rd</sup> units	⇒	To be set by manually

Continued in page 2

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Machine position	Machine parameters	Method of adjustment
<b>SCITEX</b>	Number position setting	<b>ADJUST MANUALLY</b>
	Charge shot and Ink leakage	Minimise machine stoppage
<b>Processing Unit</b>	Paper loose on gear side before hole punching stn	By replacing the existing roller
	Perforation of nonstandard length moving / changing	Perforation first cylinder to set manually
	Runners wornout	To be replaced
	Folding length setting	To be set as per size
<b>Sheeter</b>	Cutting cross	To be set runners
	Cutting not on the mark	Set the paper tension





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## Step 10 - Implementation Make ready Process

- With the developed flow chart and with corrective action taken on identified 9 causes and on the job refresher course the team has made MAKE READY on new setting and collected details of wastage.
- The team also interchanged the ideas and problems experienced during Make ready

Three months data collected on wastage is given in next slide



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## Step 11 - Check Performance Present Status of Make Ready Waste

Period	Wastage %	Remarks
January 2022	3.0	Quality Circle started in January
February 2022	2.2	
March 2022	2.0	
April 2022	1.2	
May 2022	0.8	
June 2022	0.8	

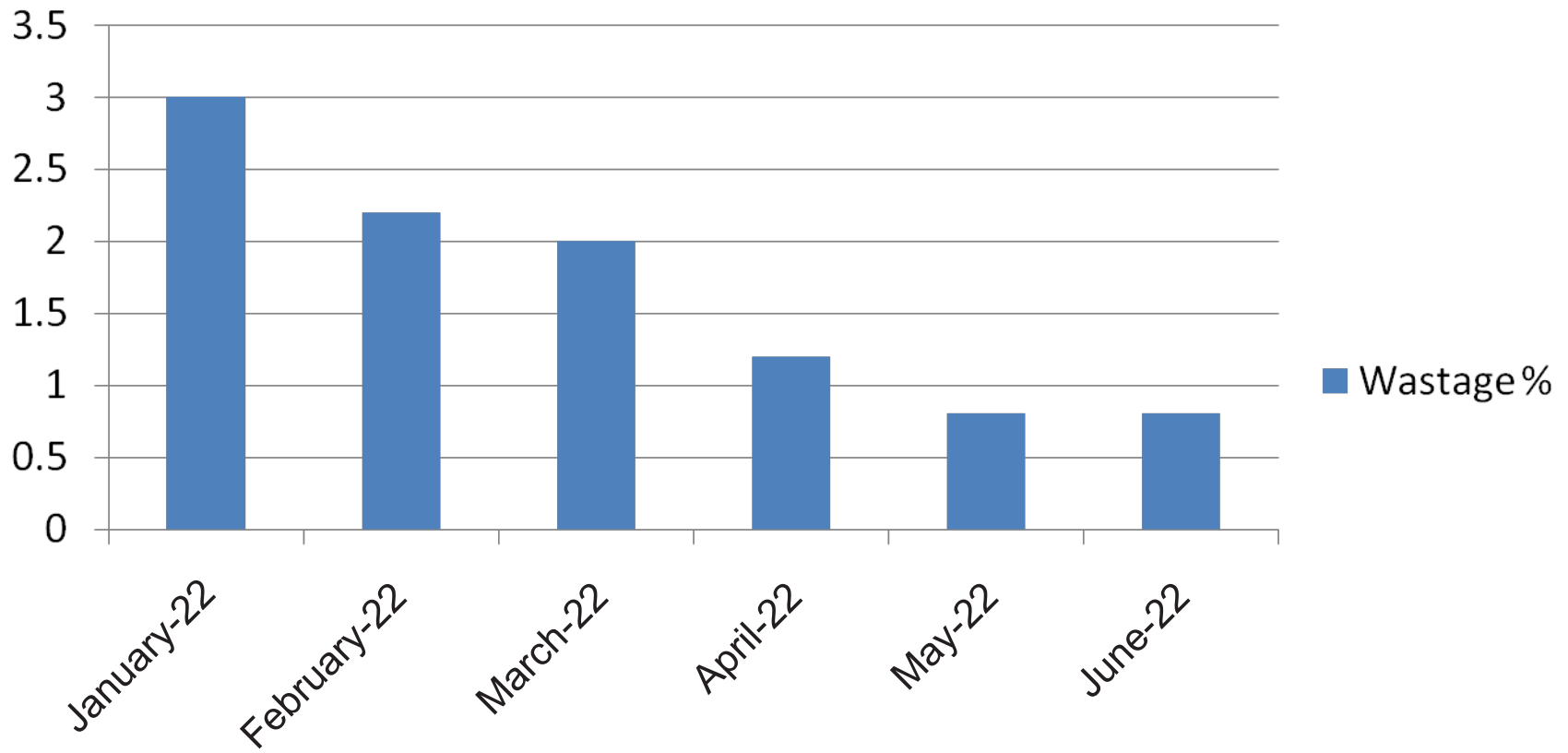
Achievements are through

- Motivation through review meeting , Interaction , On the job refresher training on setting parameters / Operating skills.



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### Wastage %





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# Savings through QC - Vivekananda



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# Achievements of QC- Vivekananda

- With the team efforts “Make ready waste” has come down from 3% in July to 0.8 % in June 2022.



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## Benefits to Team Members

- Team working
- Developed analytical capability
- Recognition within the group and by Superiors
- Interactions at all levels
- Knowledge sharing
- Personal satisfaction



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Quality Circle : Vivekananda - thanks giving by team members

- The team members of Vivekananda thank the HITECH management for giving this opportunity for our personal development.
- We also thank the supporting function staff with the special mention to maintenance staff , Production managers for achieving this given task.
- The team members will identify and inform the next project to take forward this Quality movement .





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**THANK YOU ALL**

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