



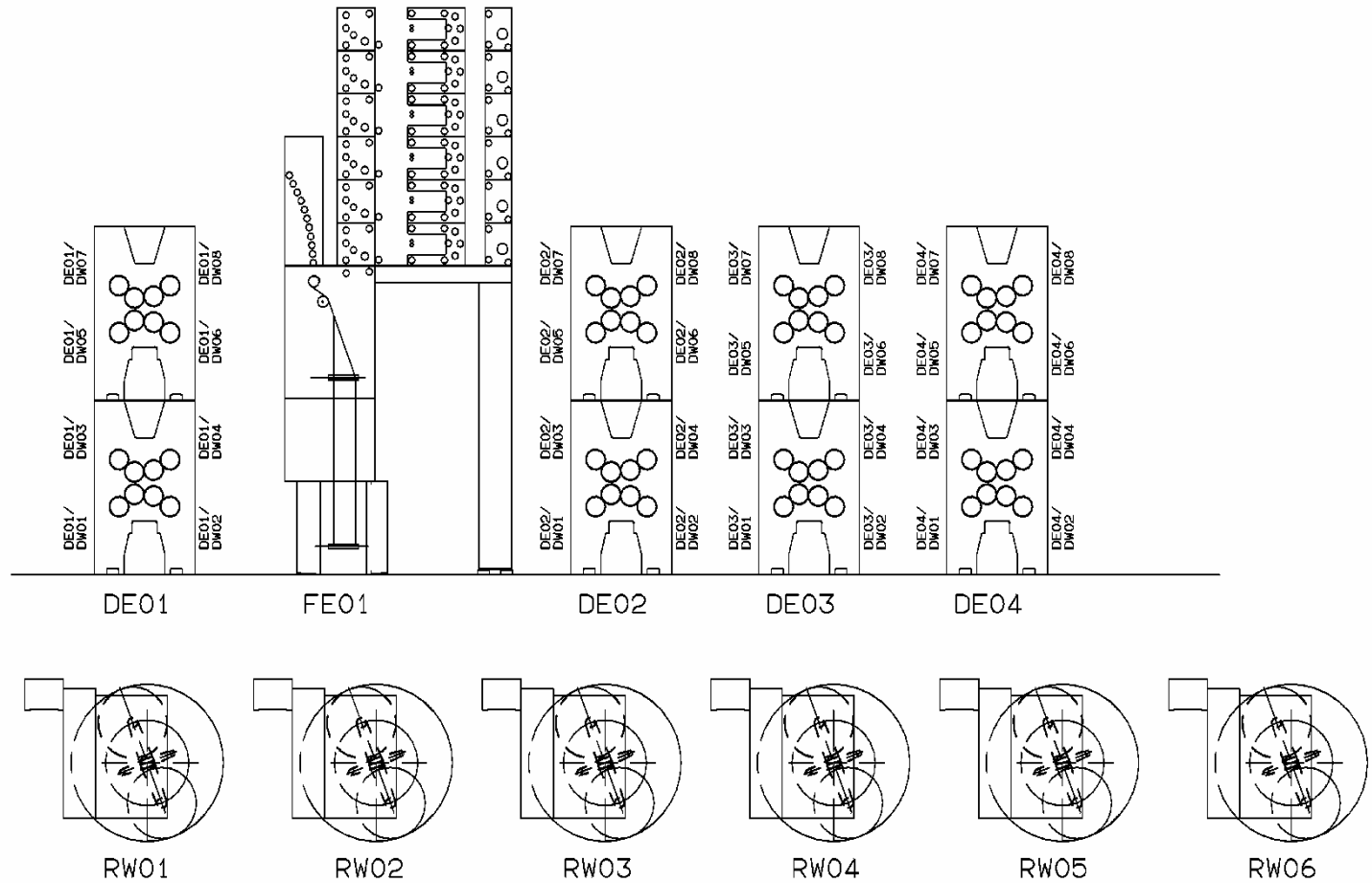
**SAVING NEWSPAPER PRODUCTION COST  
(USAGE OF STATISTICAL PROCESS CONTROL)**

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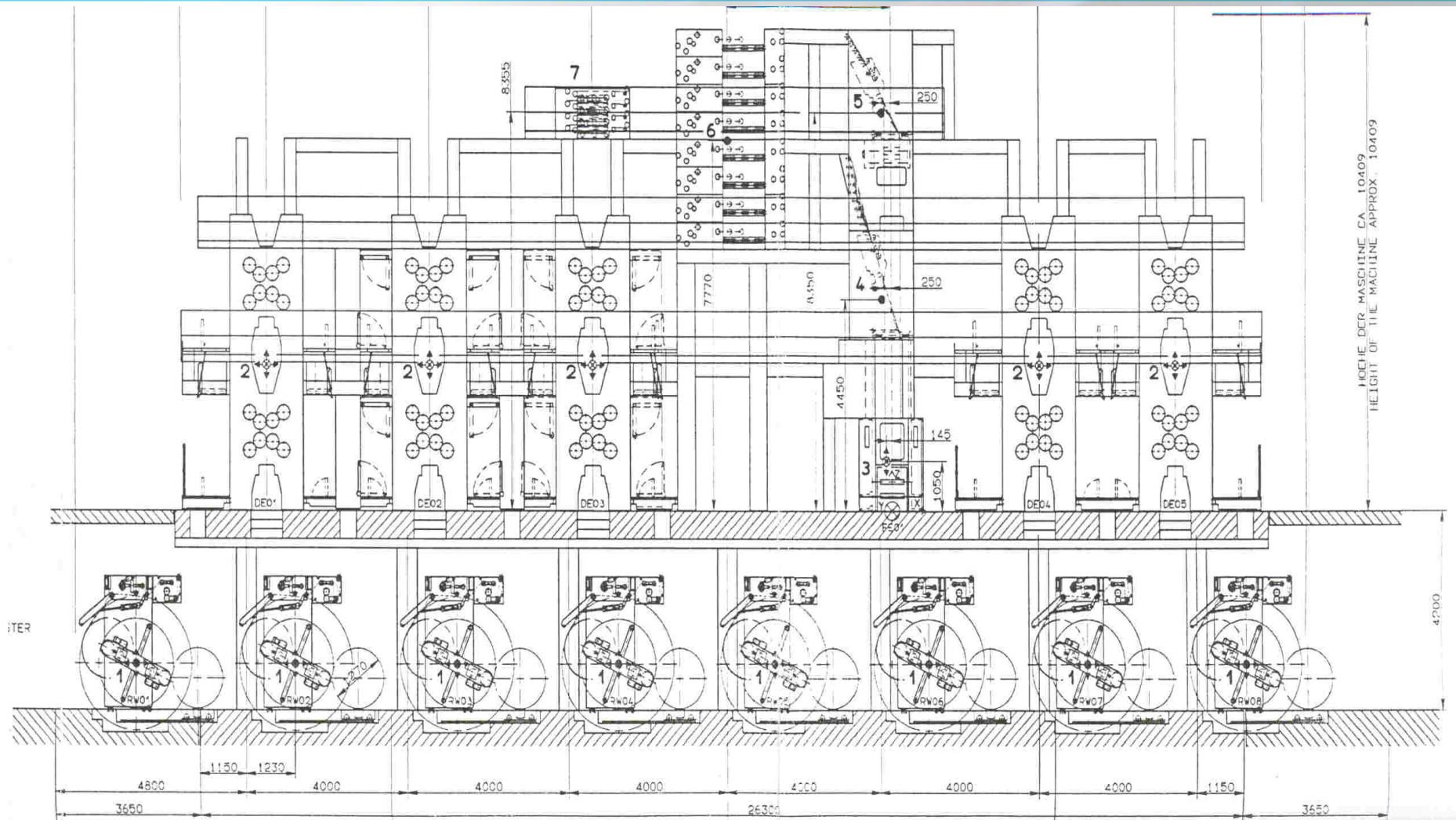
## TOI Delhi Plant at a Glance

- Total number of pages printed p.m. = 163 crores.
- Total Number of editions printed p.m. = 22.
- Number of plates made p.m. = 90000 – 100000.
- Total ink used p.m. = 162 MT.
- Total newsprint used p.m. = 8000 MT.

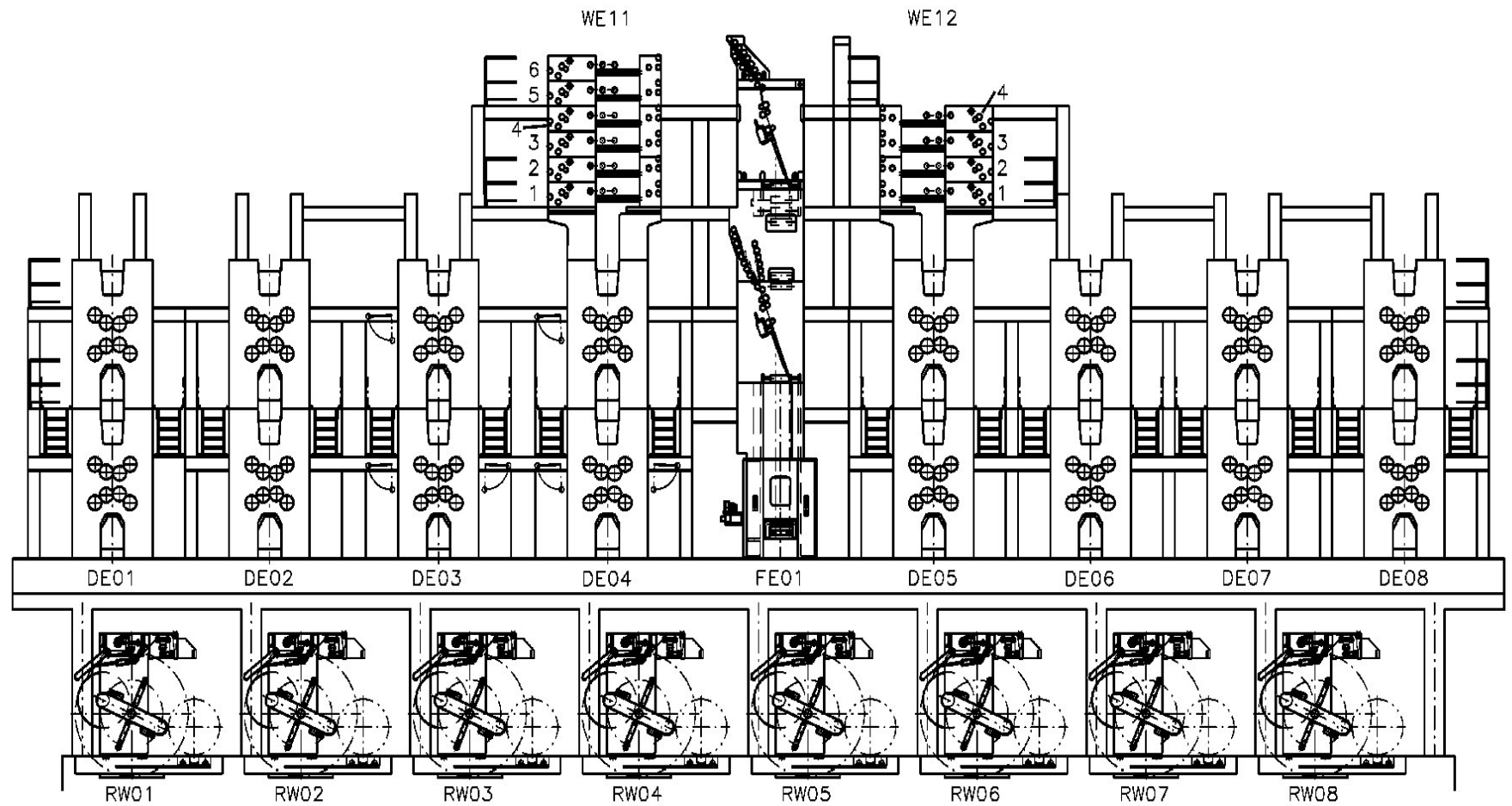
# Geoman A Press



# Geoman B Press

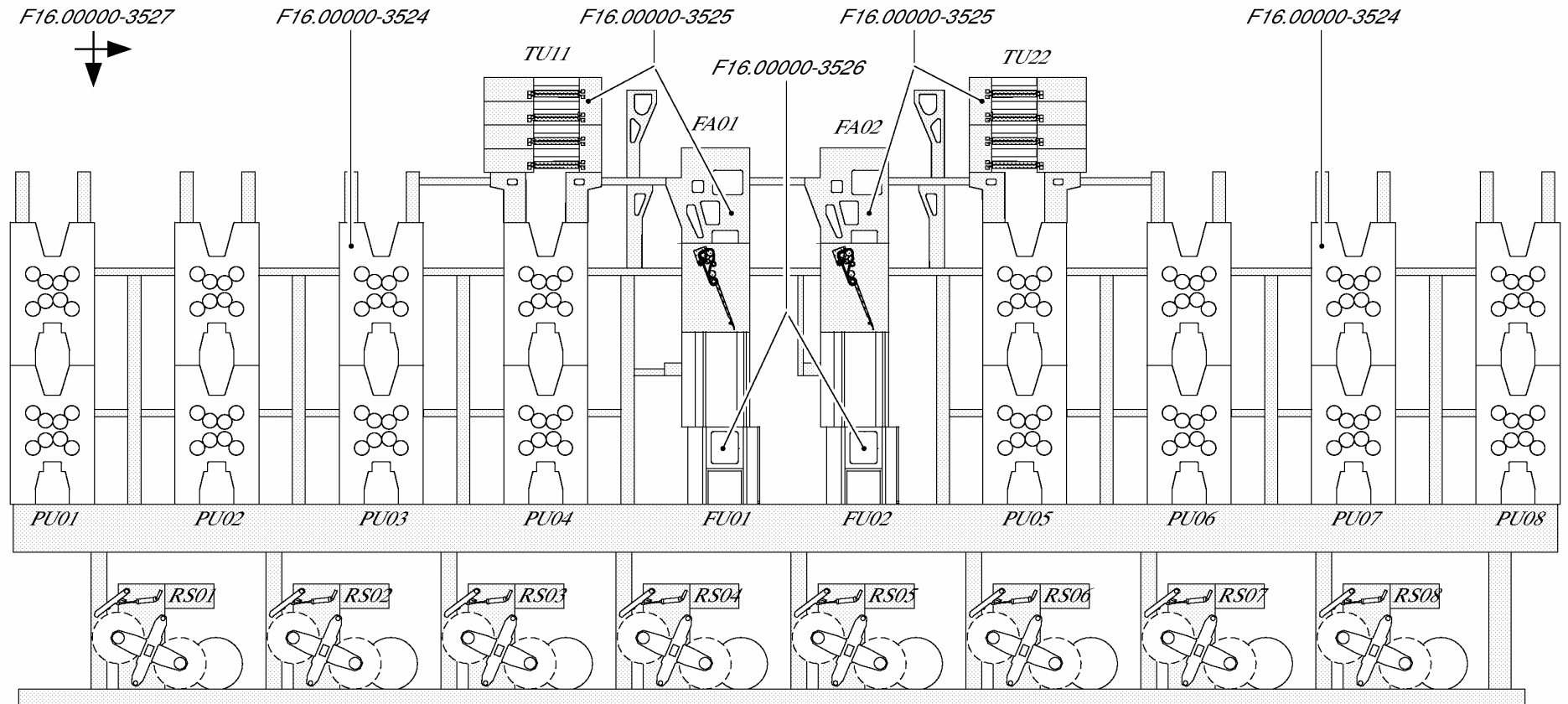


# Colorman C Press





# Colorman D Press



*COLORMAN*

*Toi Delhi D*

4 070 641  
28193

# Types of Costs

## Annual Fixed Costs

- Power
- Water

## Direct Variable Costs

- Newsprint
- Ink
- Plates

# The Story of Cost Reduction...

- Training provided on Statistical Process Control (more than 50 people trained in Delhi branch for press & prepress)
- Formation of teams to take up SPC Projects (started in Delhi with 4 teams. At present, at least 20 functional teams all across India)
- Continuous monitoring done by internal as well as external consultants (QCI, ISI)
- Training provided on Minitabs software
- Web based AIMIS launched across all branches
- Continuous Improvement Groups formed



# Energy Audit leading to Power Costs Reduction

- Improvement of Power Factor to unity
- Application of online tap changer in Transformers
- Installation of harmonic filters
- SEGR improvement of DG sets
- Check for under loaded or overloaded motors and correct if necessary
- Change angle of CT fan blade to increase efficiency.
- Fix VFD for Air Compressor
- Replace Aluminium blades with FRP blades for CT fans.
- Change single glaze to double glaze windows.
- Check for lighting lux and correct if necessary.
- Decrease operating voltage of lighting by providing separate lighting transformers.
- Install 28 W FTL instead of 36 W FTL.

# Challenges in Newsprint cost reduction

- Multiple suppliers of newsprint
- Storage at multiple warehouses
- Poor newsprint handling
- Lack of training in handling of newsprint

# Multiple Suppliers

- Jeonju (Norske Panasia)
- Abitibi Grandfalls
- Abitibi Clermont
- Chapelle Darblay
- Emami
- Guangzhou
- Kondopoga
- Tipco
- Pudumjee
- Dublin
- Surabaya Agung
- Chenming
- White Birch
- Abitibi Mersey
- Stora Enso
- UPM Schongau ...

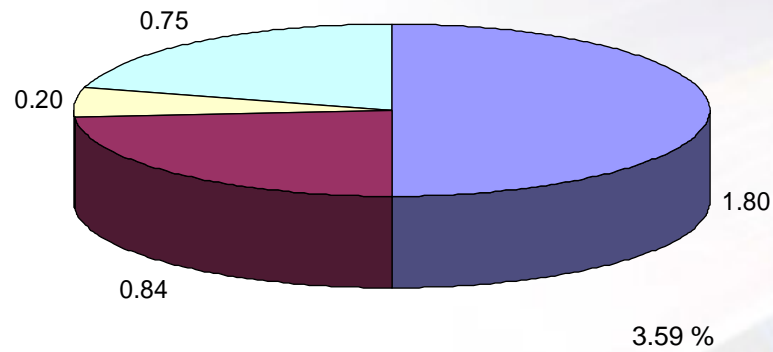
# Newsprint Waste

## Types of Newsprint Waste

- Printed Waste
- Tear off
- Sweeping
- Reel end

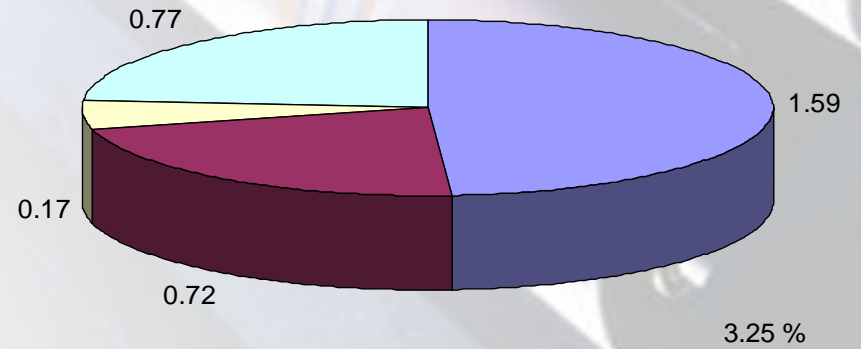
# Press wise Break up of Newsprint Wastes

Geoman waste (%)Aug-08 to July 09



■ Print waste   
 ■ Tear off   
 ■ Sweep   
 ■ Reel end

Colorman waste (%)Aug-08 to July 09



■ Print waste   
 ■ Tear off   
 ■ Sweep   
 ■ Reel end



# Factors causing Printed Waste

- Web breaks
- Auto pasting copies
- Higher start up waste
- Improper presetting
- Improper machine settings
- Poor ink water balance of inks
- Improper dosing of fountain

# Factors causing Tear Off Waste

- Transportation problem
- Bad storage
- Mishandling by forklift operator
- Multiple transportation of newsprint
- Multiple warehousing
- Mindset of press operator
- Keeping bare partially used newsprint reels on the press floor

## Cost of Web Break

Copies wasted after web break = 140000 cph/3600secs X 5secs  
(for press stoppage) = 194 copies.  
Re webbing = 100 copies.

- **Newsprint Cost**

Restart waste = 1000 copies.  
Therefore total = 1294 copies.  
Considering 24 pg edition, weight = 133.2 kg  
Cost (@Rs.40 per kg) = Rs.5328/-

- **Ink cost = Rs.381/-**

Hence, Total cost per web break = Rs.5709 (considering a 24 pg edition on a press with a cut off 546 mm and a speed of 140000 cph).



## **Project 1**

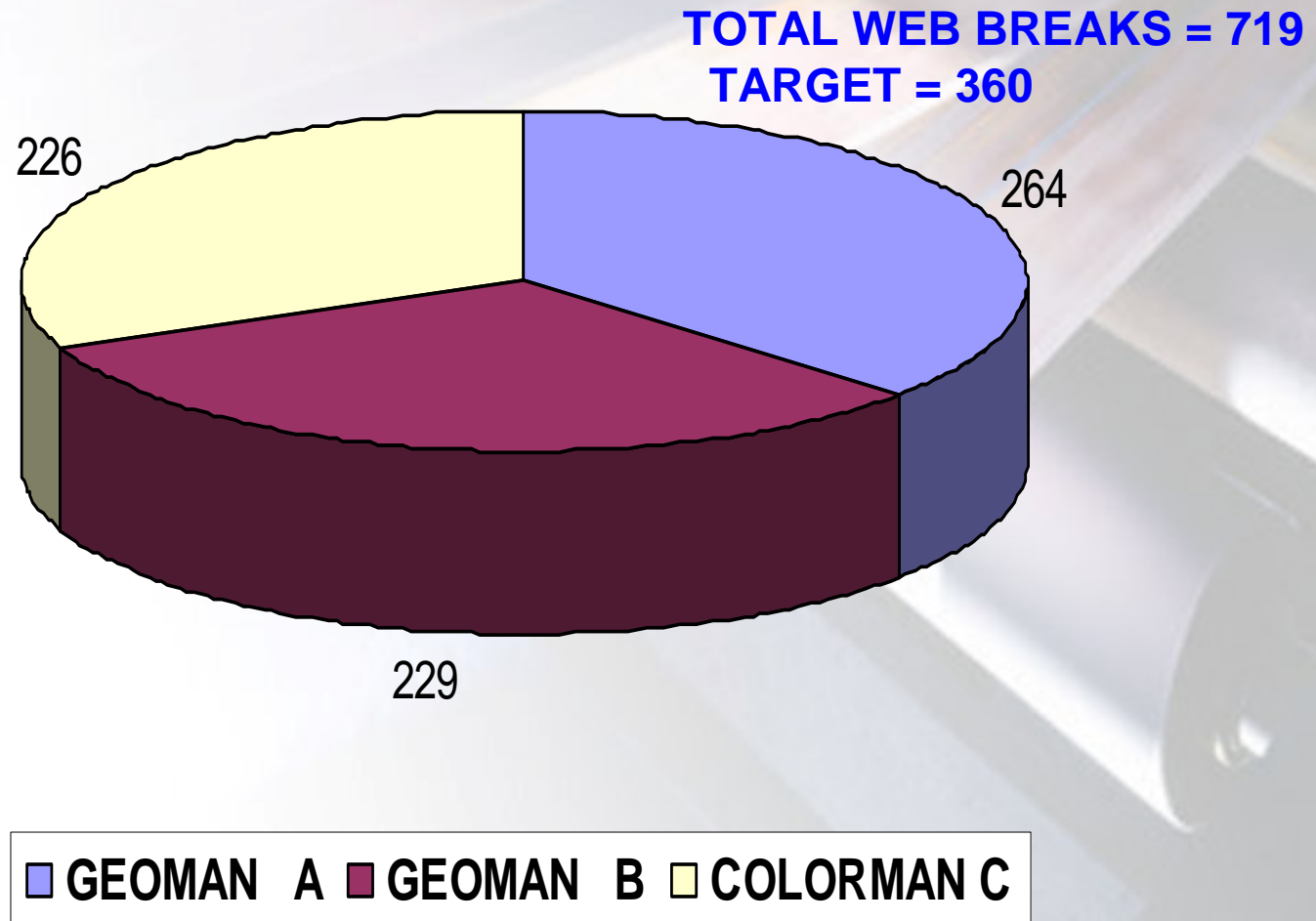
# **Web Break Reduction**

# Methodology

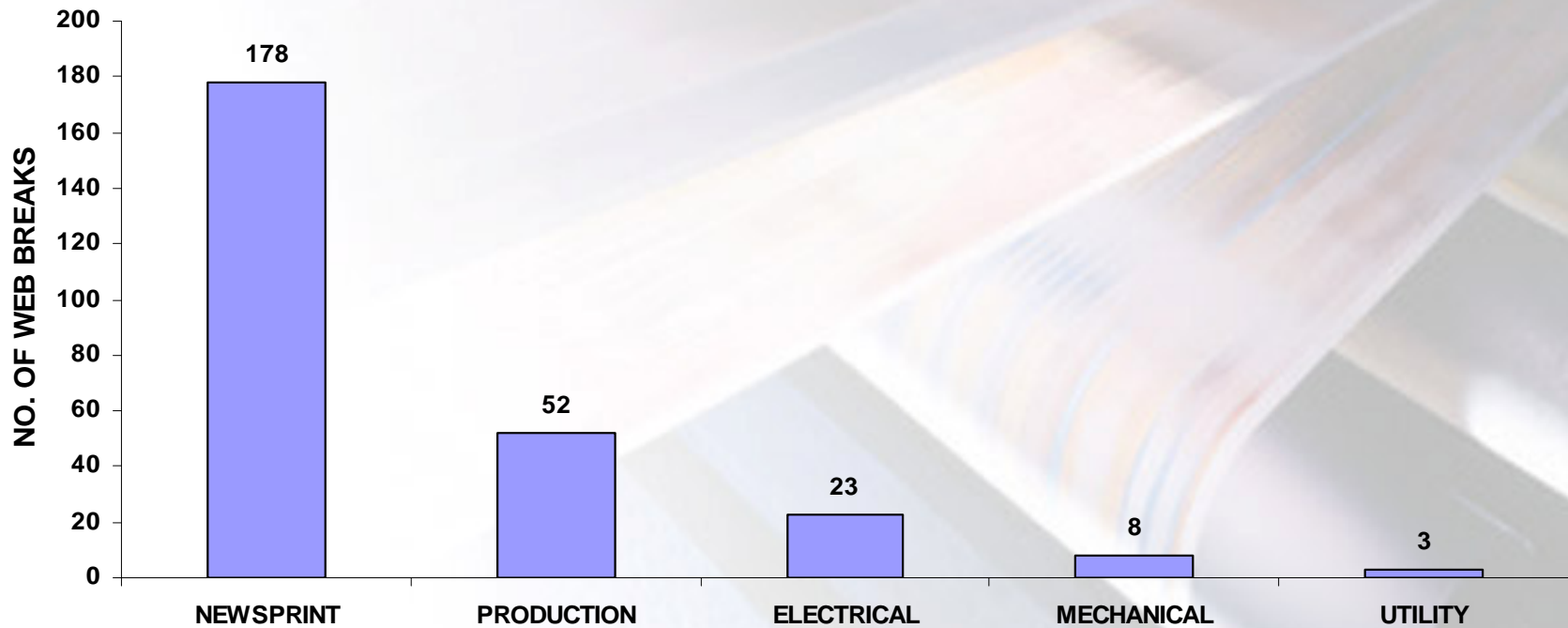
- Data collection:  
Web break figures for all three presslines from July 07 to June 08.
- Data Analysis:  
Press wise, brand wise
- Statistical Tools Used:  
Pareto, Brain storming, Fish Bone



## Web Break figures (All 3 Press lines)

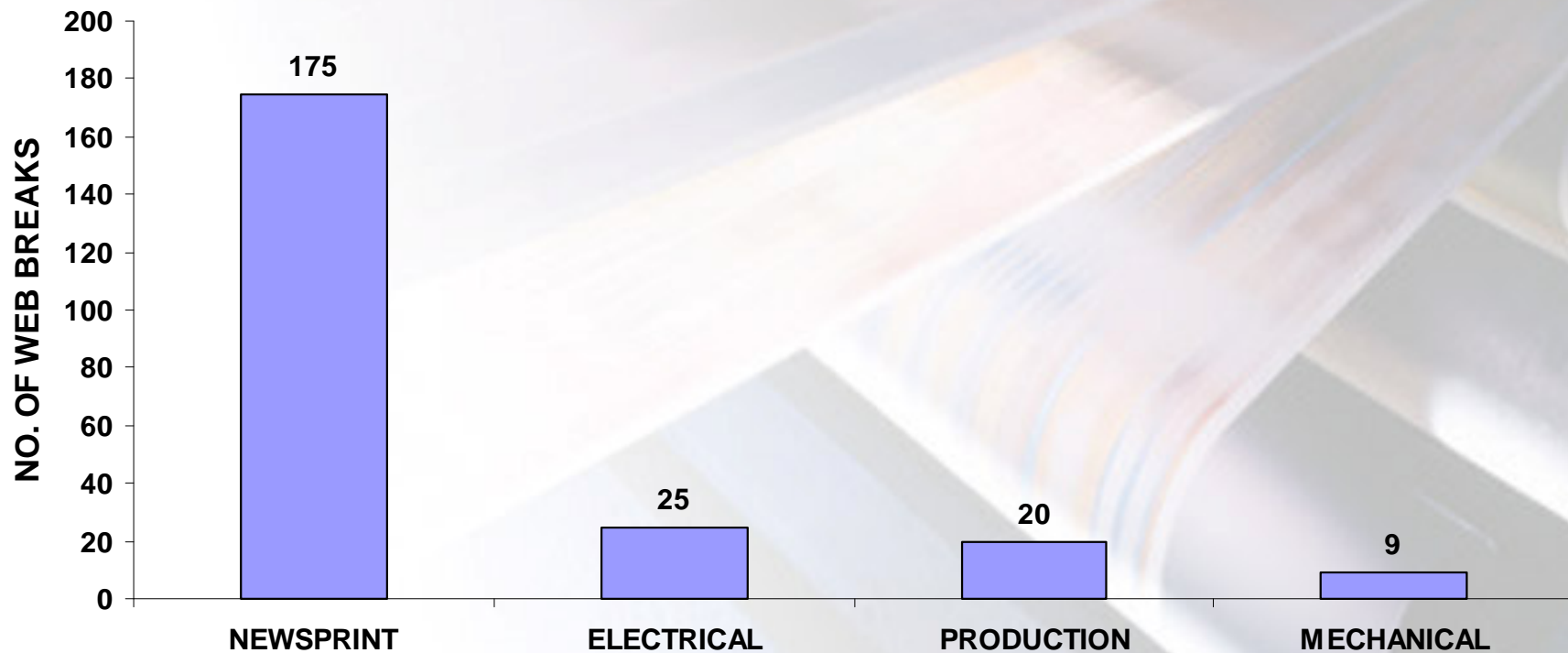


# Data Analysis (Presswise – Geoman A)



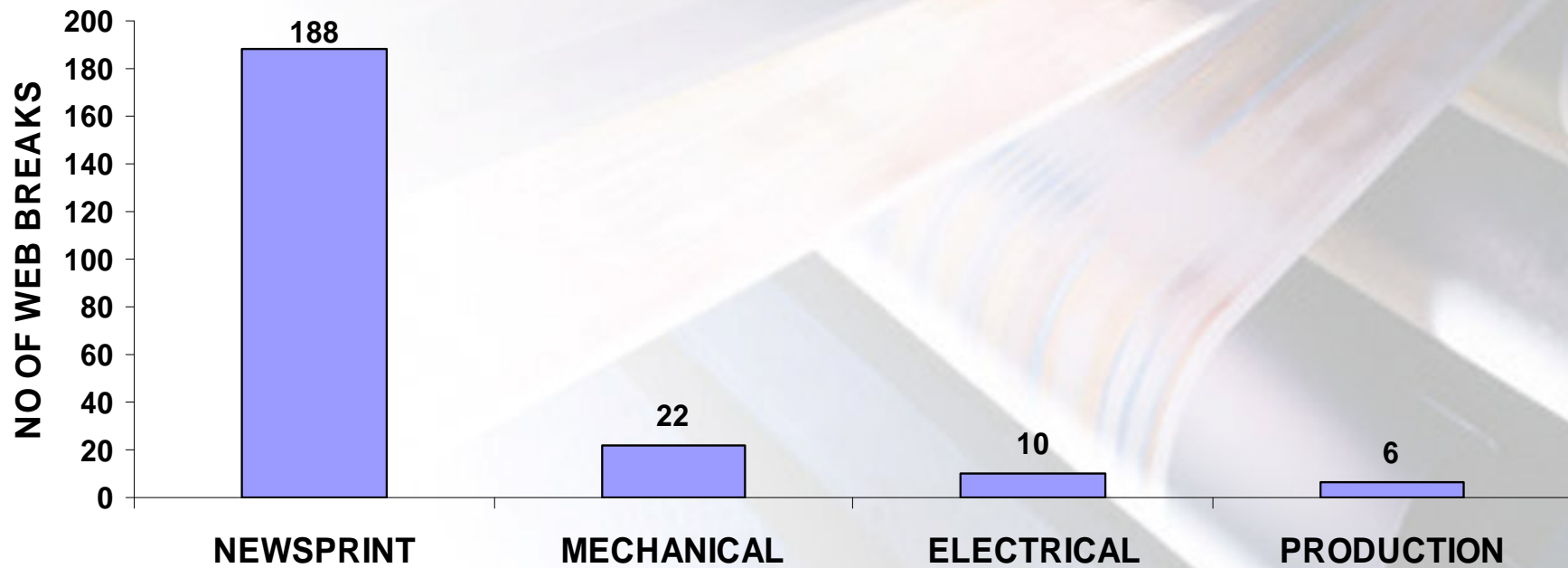
GEOMAN - A	Total
NEWSPRINT	178
PRODUCTION	52
ELECTRICAL	23
MECHANICAL	8
UTILITY	3
Grand Total	264

# Data Analysis (Presswise – Geoman B)



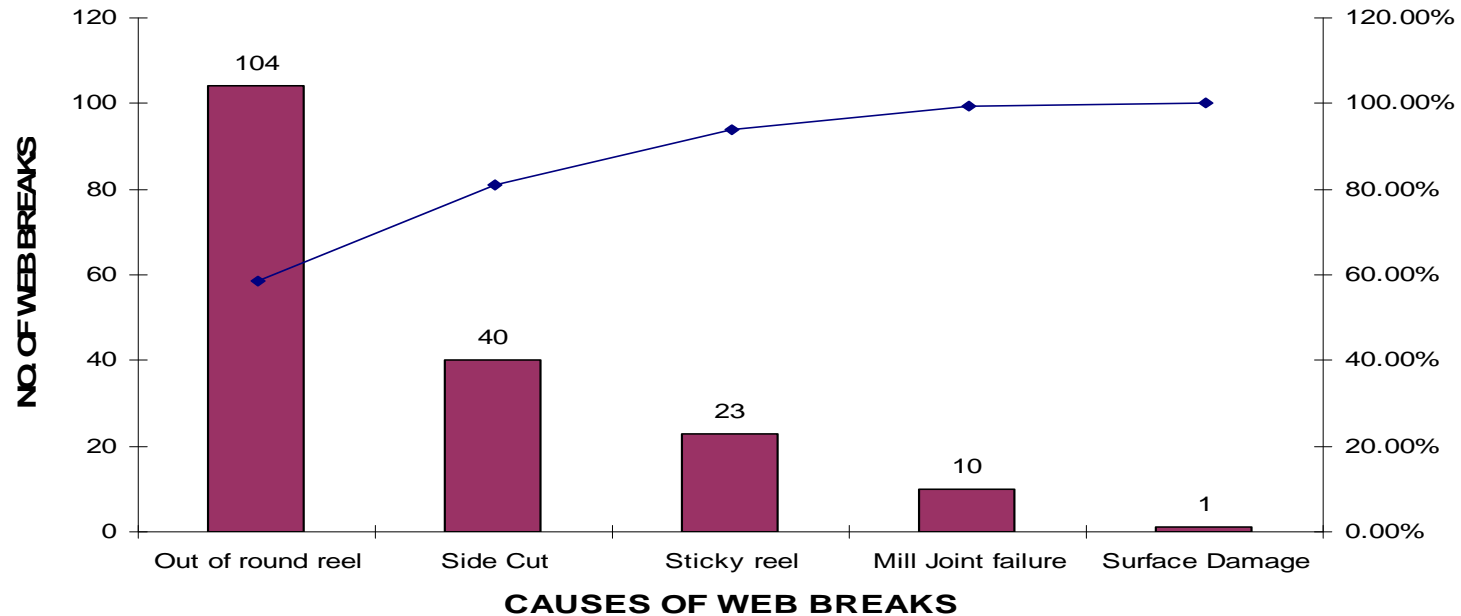
GEOMAN - B	Total
NEWSPRINT	175
ELECTRICAL	25
PRODUCTION	20
MECHANICAL	9
Grand Total	229

# Data Analysis (Presswise – Colorman C)



COLORMAN - C	Total
NEWSPRINT	188
MECHANICAL	22
ELECTRICAL	10
PRODUCTION	6
Grand Total	226

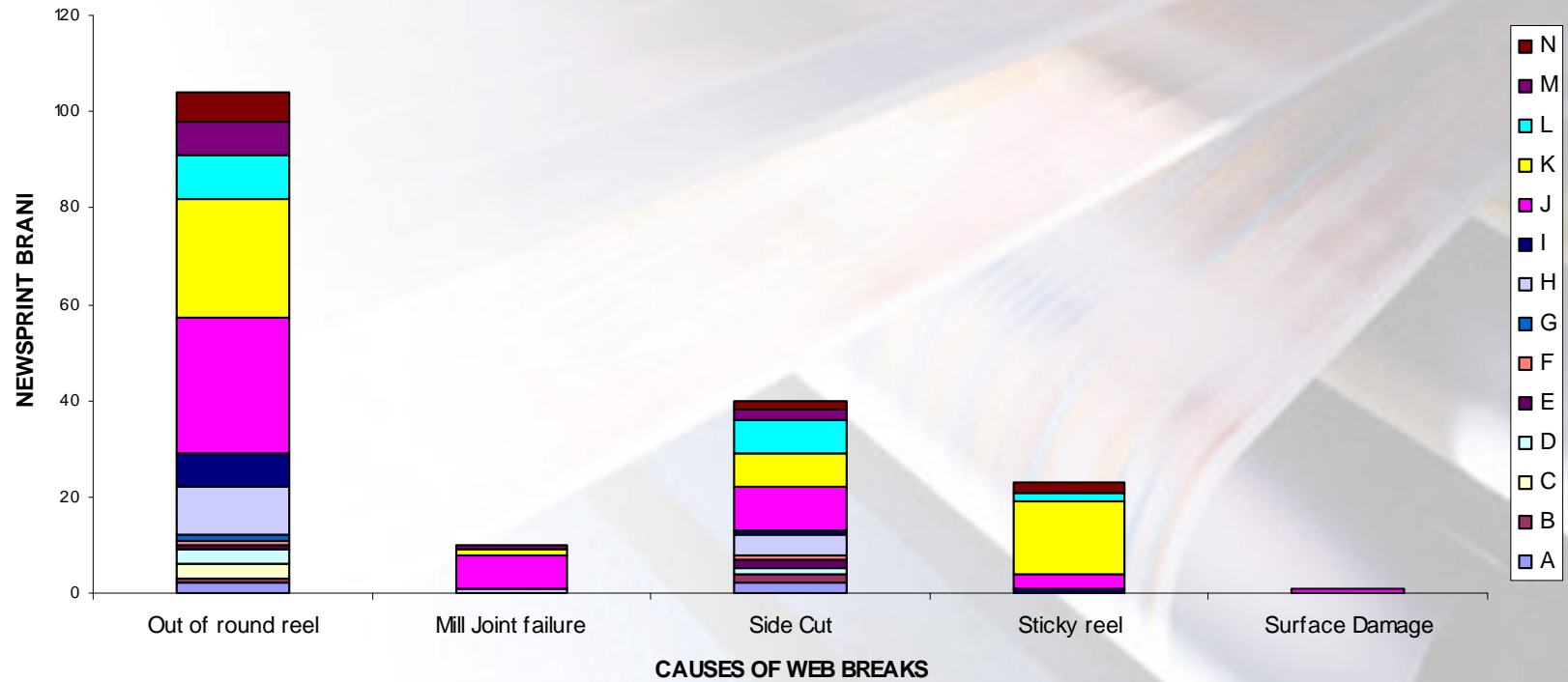
# Pareto of Geoman A Web Breaks



CAUSES OF WEB BREAKS	NO. OF WEB BREAKS	CUM. PERCENTAGE
Out of round reel	104	58.43%
Side Cut	40	80.90%
Sticky reel	23	93.82%
Mill Joint failure	10	99.44%
Surface Damage	1	100.00%
<b>Grand Total</b>	<b>178</b>	



# Data Analysis (Brandwise – Geoman A)



Causes	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Grand Total
Out of round reel	2	1	3	3	1	1	1	10	7	28	25	9	7	6	104
Mill Joint failure								1		7	1		1		10
Side Cut	2	2		1	2	1		4	1	9	7	7	2	2	40
Sticky reel									1	3	15	2		2	23
Surface Damage										1					1
Grand Total	4	3	3	4	3	2	1	15	9	48	48	18	10	10	178

# Brain Storming

## OUT OF ROUND REEL

- Poor Transportation.
- Improper Storage.
- Poor unloading and stacking procedure.
- Poor winding of reels.
- Improper ageing of paper .
- Poor Core ( Less strength).

# Brain Storming

## STICKY REEL

- Very strong adhesive used in stickers.
- Water soaked reels.
- Glue on side ends during wrapping of reel.

# Brain Storming

## SIDE CUT

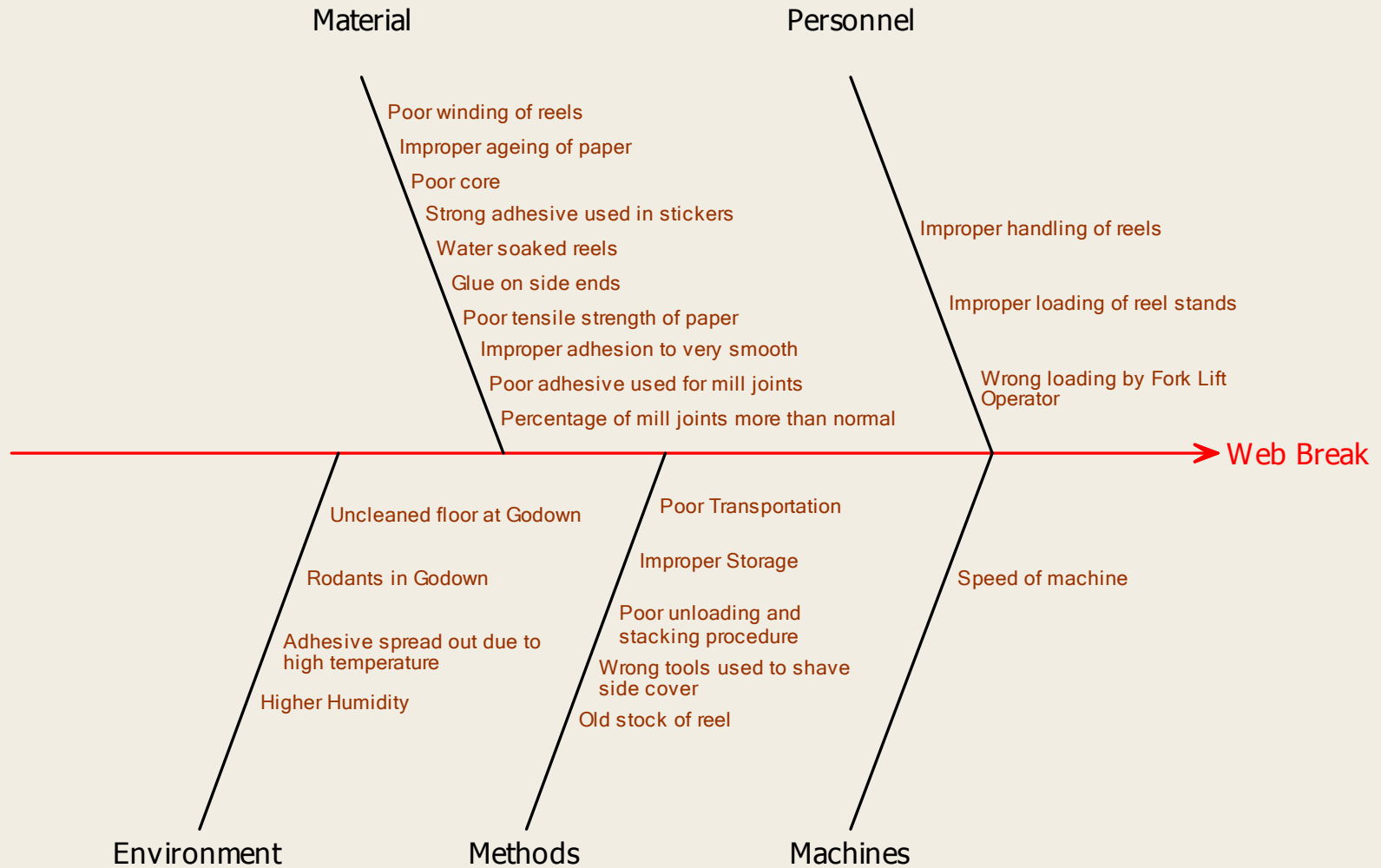
- Improper Unloading at godown and Shop floor.
- Wrong tools used to shave the side covers of reel.
- Improper handling of reel in shop floor.
- Unclean floor at godown.
- Wrong handling by fork lift operator.
- Rodents in godown.

# Brain Storming

## MILL JOINT FAILURE

- Poor adhesive used for Mill joint.
- Percentage of Mill joint in reels more than norms.
- Old stock of reel used.
- Adhesive spread out due to higher temperature.
- Higher Humidity.
- Poor Tensile strength of paper.
- Improper adhesion due to very smooth surface of paper.
- Speed of the machine.

# Cause and Effect for Web Breaks





# Types of Damage

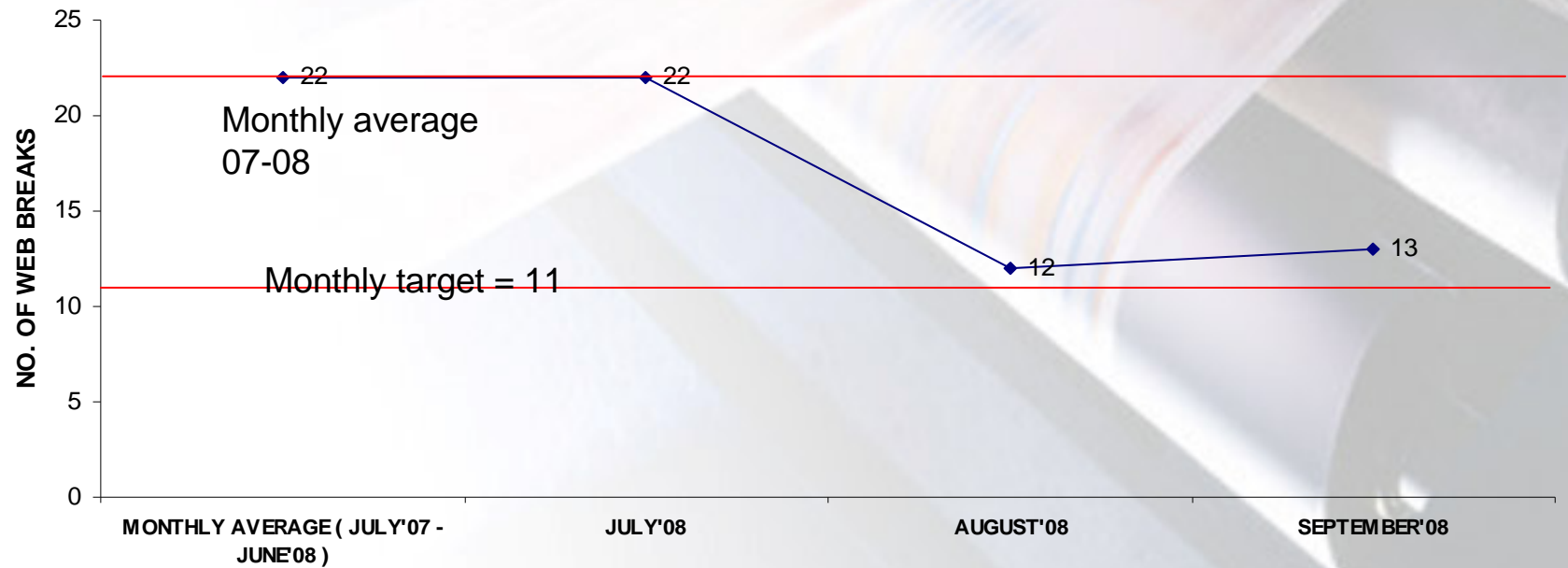


## Steps taken for Reducing Newsprint Waste

- Truck floor repaired and rubber sheet put
- Training provided to forklift operators
- Issue of adhesive brought to the notice of newsprint mill
- Storage pattern changed
- Old stock segregated and consumed or sold off as scrap
- Issue of poor winding taken up with newsprint mills

# Geoman A : 3 Monthly Review

GEOMAN A MONTH WISE WEB BREAKS





## **Project 2**

# **Tear off Waste Reduction**

## Definition

- Tear off is the top most portion of the newsprint reel which if damaged should be removed before use.



# Reasons for Tear Off Waste Generation

- Side damage
- Deep edge cut
- Water soak





## Side Damage



- Sometimes tear off has to be taken off by stopping the machine during production as damaged portion may be in between.

# Deep Edge Cut

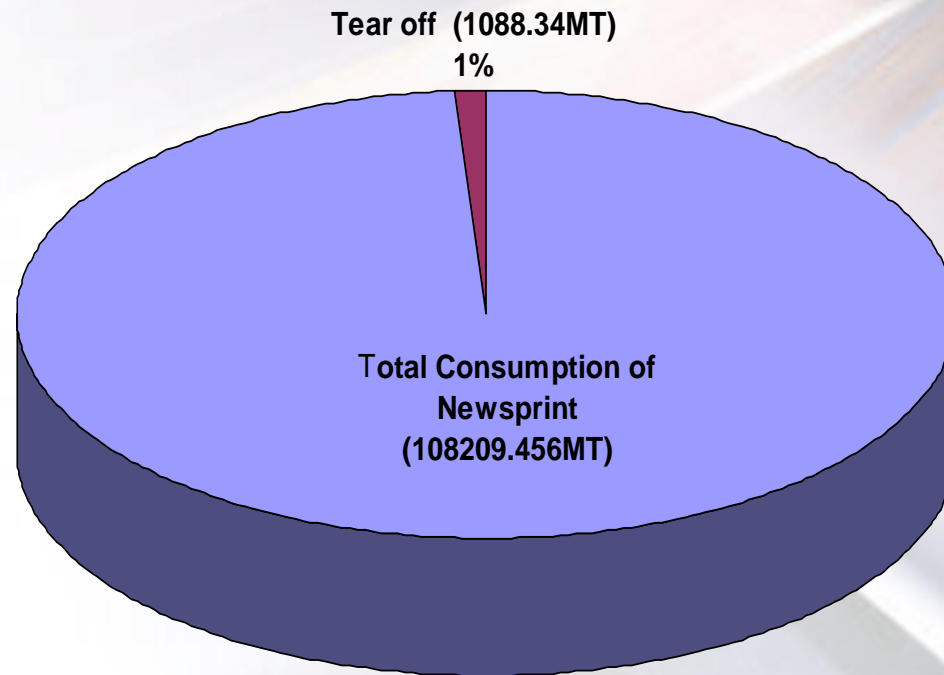




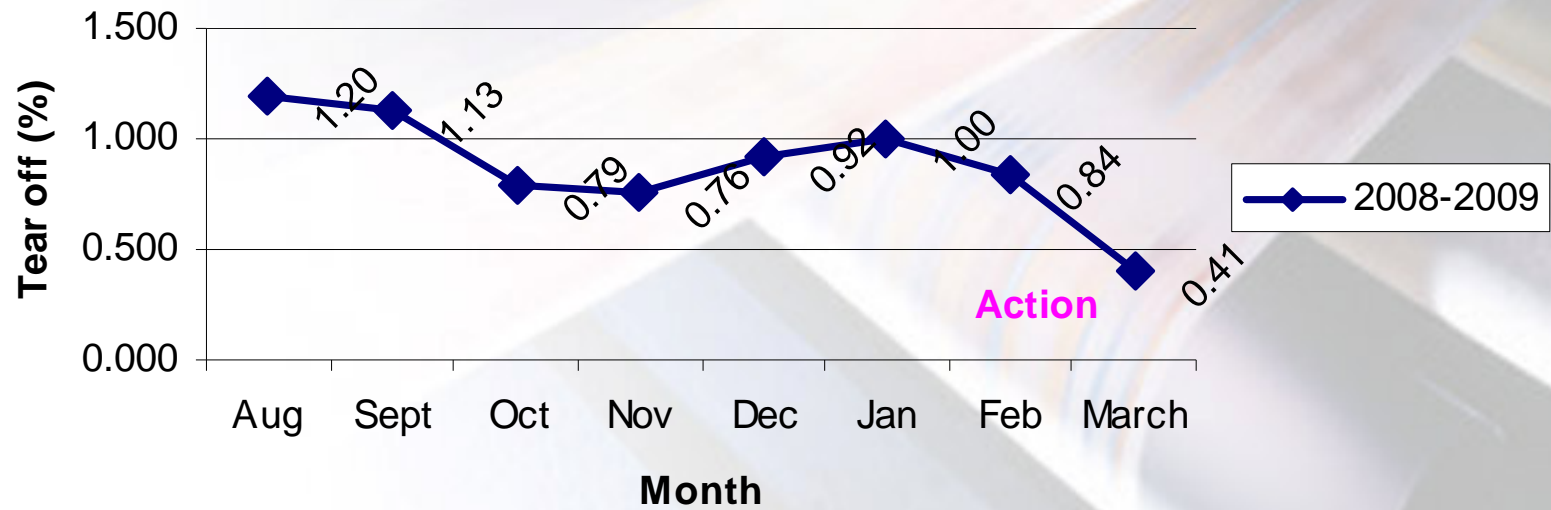
# Water Soaked



# Total Newsprint Consumption v/s Tear off in % from Jan'08 to Jan'09



# Tear Off Waste (Trend before Action Taken)



## Steps Taken for Tear off Waste Reduction

- Any reel having surface or edge cut more than 1” segregated & used in day printing only after proper inspection.
- Taking newsprint reels on Colorman C press only from container for the months March-April '09 (action initiated).
- Ensuring that wrappers of reels are not taken off before they are carried to the machine reel stand (Exhibit 1).
- Reel inspection on the reel stand done by rotating the reel in the anti clock direction so that there is no paper waste.
- Using soft rubber pieces as stoppers for newsprint reels storage.
- Using cushion for unloading of reels (Exhibit 2).
- Repacking of reel ends with wrappers instead of leaving them bare open on the floor (Exhibit 3).
- Shape of crow bars changed to reduce damage



# Steps Taken for Tear off Waste Reduction

- Forming a core group of executives in all 4 presslines to ensure close monitoring of reels for any sort of damage before mounting them on reel stand. A meeting is held every week and proper feed back taken.
- Clamp pads of forklifts repaired and training provided to drivers.
- The roads both inside the plant as well as surrounding it was repaired.
- Loading pattern in trucks changed from 18 to 12 per truck
- Truck flooring repaired to avoid damage

# Reel Loading with Wrapper on

Exhibit 1



# Unloading of Reels on Cushioning Mattress

Exhibit 2





# Repacking of Reel ends with Wrappers

Exhibit 3



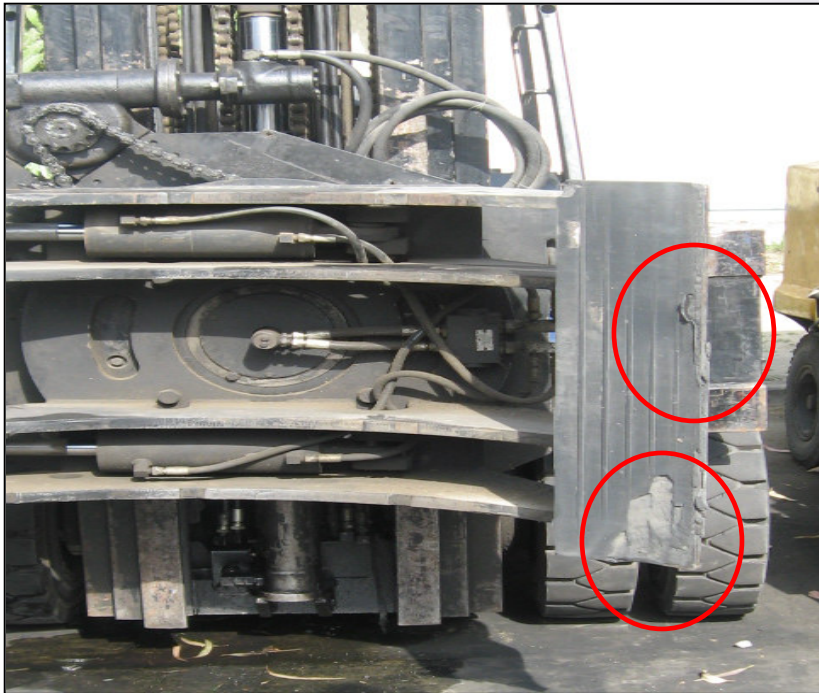
## Handling with Sharp Crow Bars Causes Surface Damage





# Modified Clamp Pads of Forklifts

- Then



Old Pads

- Now



New Pads



# New Loading Pattern

- Then



Double layer loading (18 reels)

- Now



Single layer loading (12 reels)

# Reel Handling by Forklift Drivers

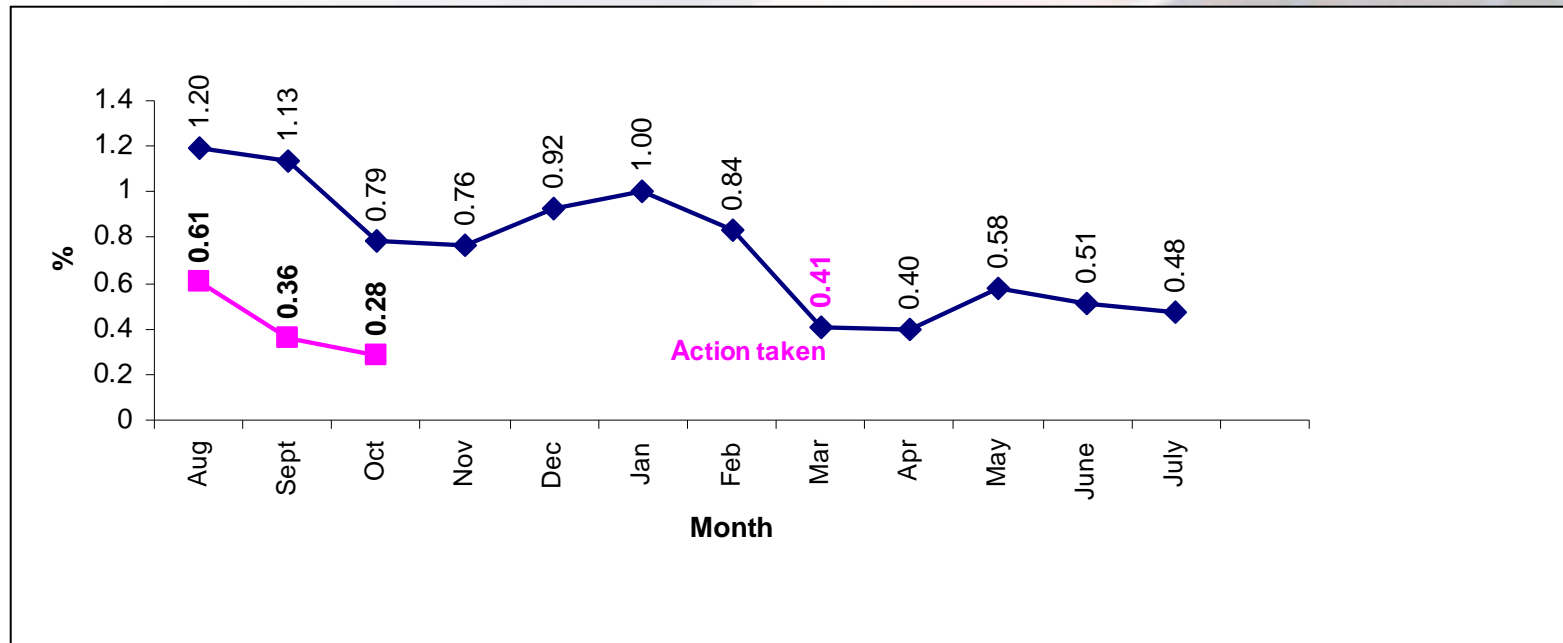
- Then



- Now



# Tear Off Waste Figures (till date)





## Savings & Conclusion

- The average figures for the period Aug-Feb '08-09 was 0.95 % for tear off waste.
- The average tear off waste for the period Mar-Sep '09 has reduced to 0.48 %. The savings ( $0.95 - 0.48 = 0.47$  %) amounted to 224.39 MT. This translates into total savings of  $224.39 \times \$ 545 = \$ 122,292.55$ .
- The tear off waste reduction journey has begun in right earnest and every month we challenge ourselves to obtain figures that were not achieved earlier. (Oct 2009 figures = 0.28 %).

## What next ?

- Design & launch of online AIMIS for all branches across India
- Close coordination and development of newsprint manufacturers
- Continuous Improvement Groups working on aspects of water consumption reduction, ink and plate cost reduction, etc.
- Formation of BCCL Production group in Google where new ideas, projects are shared among branches
- Result has been a total culture change across BCCL as well as in developing the customer centric viewpoint of vendors



# All India MIS for Newsprint

The screenshot shows a Microsoft Internet Explorer browser window titled "All India MIS - Microsoft Internet Explorer". The address bar displays "http://10.117.1.150/". The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The toolbar contains navigation buttons (Back, Forward, Stop, Refresh, Home) and a "Go" button. The main content area features a red header with the "ALL INDIA MIS" logo and a crest. Below the header, the page is divided into two columns. The left column contains a "Welcome to Enterprise AIMIS" section with a message about the "Enterprise Newsprint Performance Tracker" and a quote: "Productivity is never an accident. It is always the result of a commitment to excellence, intelligent planning, and focused effort." The right column contains a "User Login" section with input fields for "Login ID" and "Password", a "Login" button, and a link for "NEW Registration". The footer of the page includes "Copyright © 2008 Bennett, Coleman & Co., Ltd. All Rights Reserved" and "Presented by Production IT". The browser's status bar at the bottom indicates "Local intranet".

**ALL INDIA MIS**

### Welcome to Enterprise AIMIS

**Enterprise Newsprint Performance Tracker** is best viewed in IE 6.0 +. This site has built in graphic engine. To view this graphics ensure your system has [flash player 8.0](#) or you may download from the site itself. Any suggestions or thoughts are most welcome. Please drop in 033-22499044 / 22492974

**Happy surfing!! - Team P&D.**

**"Productivity is never an accident. It is always the result of a commitment to excellence, intelligent planning, and focused effort."**

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### User Login

Login ID :

Password :

**Login**

Don't have an AIMIS account?  
**For NEW Registration click here.**

Presented by Production IT

Local intranet

## MIS Report Viewer

🕒 2010-01-07 12:51:41

👤 Sudeep Bhattacharya

From Date:

2009-12-01

To Date:

2009-12-31

Report Type:

Machinewise

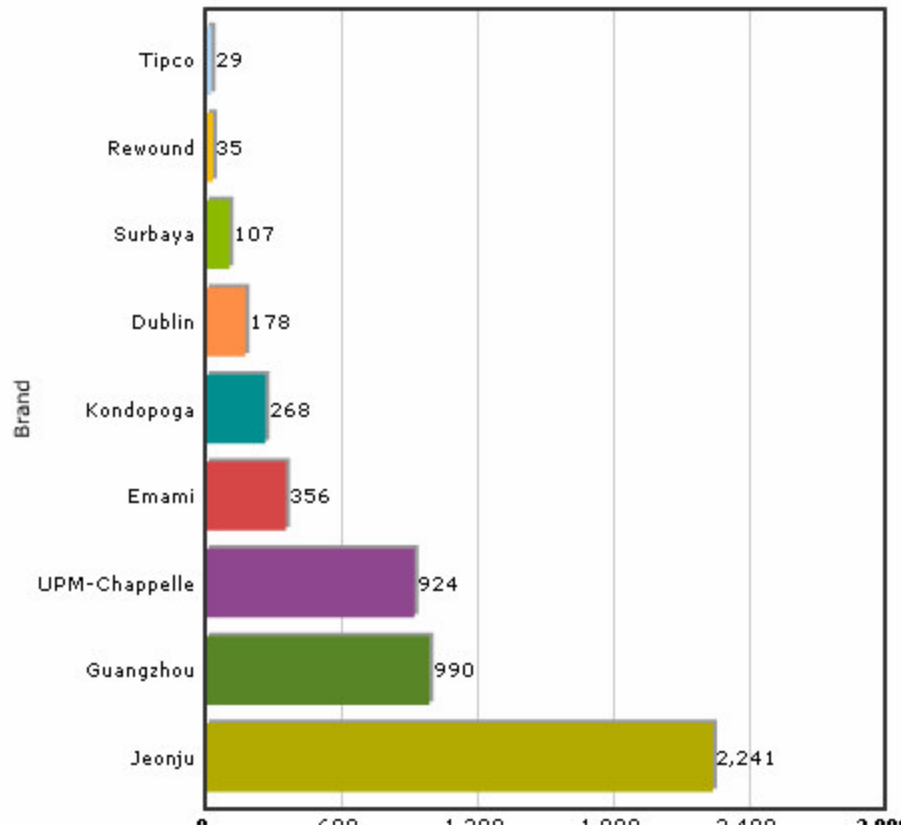
M/c Group:

MAN

Plant:

DLH-COLMAN

DLH-COLMAN-MAN - Brandwise Tonnage



## Machine-Wise Report

- ☐ [Sizewise Rolls used](#)
- ☐ [Brandwise Tonnage](#)
- ☐ [Brandwise R /B](#)
- ☐ [Sizewise Tonnage](#)
- ☐ [Local / Imported](#)
- ☐ [R/B Monthwise](#)
- ☐ [Branchwise Yield](#)
- ☐ [Tonnage Monthwise](#)
- ☐ [Branchwise R/B](#)
- ☐ [Pages Printed Monthwise](#)
- ☐ [Wastage View](#)

# AIMIS – Plant Wise Performance

The screenshot displays the AIMIS MIS Report Viewer interface. At the top, there is a navigation bar with the following options: Home, Entry, Edit, Reports, My Profile, and Logout. The main content area is titled "MIS Report Viewer" and shows the following details:

- Date: 2010-01-07 12:51:41
- User: Sudeep Bhattacharya
- From Date: 2009-12-01
- To Date: 2009-12-31
- Report Type: Machinewise
- M/c Group: MAN
- Plant: DLH-COLMAN

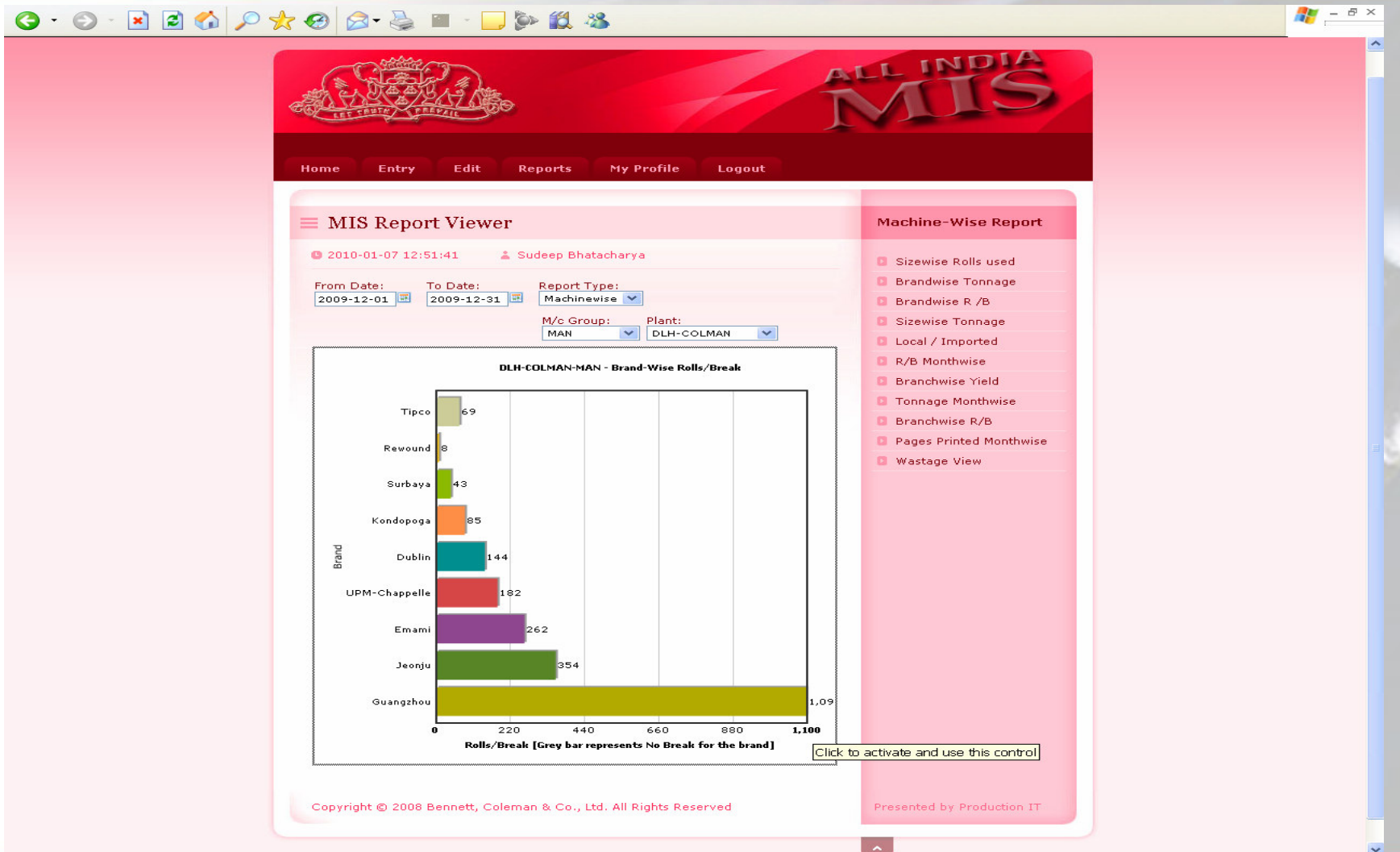
The central chart is titled "DLH-COLMAN-MAN - Plantwise Yield [Pgs/KG]". It is a horizontal bar chart showing the yield for the branch "DLH-COLMAN" as 228.38 Pgs/KG. The x-axis represents Yield [Pgs/KG] with a scale from 0.00 to 300.00 in increments of 60.00.

On the right side, there is a "Machine-Wise Report" sidebar with the following options:

- Sizewise Rolls used
- Brandwise Tonnage
- Brandwise R / B
- Sizewise Tonnage
- Local / Imported
- R/B Monthwise
- Branchwise Yield
- Tonnage Monthwise
- Branchwise R/B
- Pages Printed Monthwise
- Wastage View

At the bottom of the interface, there is a copyright notice: "Copyright © 2008 Bennett, Coleman & Co., Ltd. All Rights Reserved" and a note: "Presented by Production IT".

# AIMIS – Brandwise Web Break Data



# Recent figures for Newsprint Waste (Total)

