



# 49<sup>th</sup> Conference of Federation of Corrugated Box Manufacturers of India

DECEMBER 17 - 19, 2021 | ITC ROYAL BENGAL, KOLKATA



FCBM CONFERENCE  
**2020NE**  
MAN · MACHINE · MATERIAL

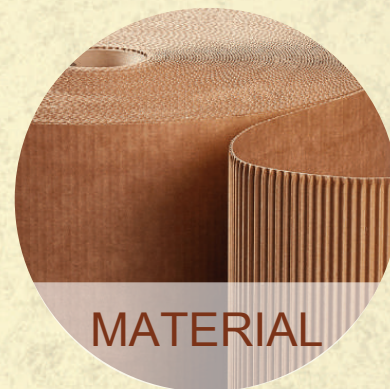
## REMINISCENCES With Technical Proceedings *For The First Time*



MAN



MACHINE



MATERIAL

Hosted by:



Eastern India Corrugated Box  
Manufacturers' Association

**CorruPack  
2020NE**



India's Leading Manufacturers & Exporters of  
**Water-Based Flexographic Inks**

## **WATERBOND<sup>®</sup>** WATER-BASED PRINTING INKS



ECO-FRIENDLY



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ODOURLESS



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Corrugation Printing Inks For  
Kraft Paper & Paper Board



## **GALAXY PLUS**

Corrugation Printing Inks For  
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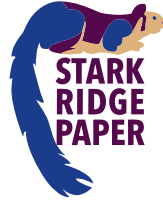


Hosted by



# BRAND PARTNERS

## KOHINOOR PARTNER



## PLATINUM PARTNER



## DIAMOND PARTNER



## GOLD PARTNER



## SILVER PARTNER

## KIT PARTNER



## BRONZE PARTNER



## TEAM EICMA



**Bharat Kedia**  
Conference Chairman



**Hemant Saraogi**  
Conference Advisor

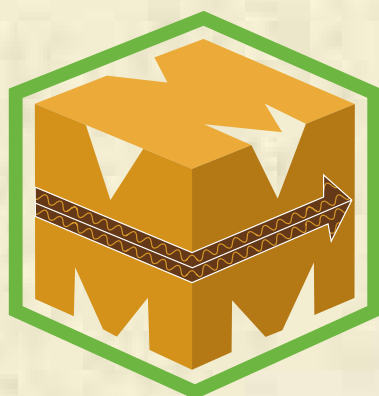


**Milan Kumar Dey**  
FCBM President



**Mohit Bajaj**  
EICMA President

CONFERENCE COMMITTEE			
Sub-Committee	Names		Contact Number
Administration & Compliances	Chairman	Pradip Agarwal	9831017092
	Co-Chairman	Nitesh Chowdhury	9831067855
	Team Member	B.N. Kedia	9331035835
Brand Promotion	Chairman	R.G. Agarwala	9831207166
	Co-Chairman	Sorav Jhawar	9830026160
	Team Members	Alok Agarwal	9831074874
		Mohit Bajaj	9331235444
Corrutar	Chairman	Chaitali Chakraborty Jain	9830096629
	Co-Chairman	Anurag Newar	9831027366
Creatives & Branding	Chairman	Vaibhav Sanwaria	9599901824
	Co-Chairman	Chetan Shah	9830043888
	Team Members	Rohit Bajaj	9831824273
Cultural Programme	Chairman	Mohit Bajaj	9331235444
	Co-Chairman	Vaibhav Sanwaria	9599901824
	Team Member	Harsh Agarwal	9836048550
Exhibition	Chairman	Achyut Chandra	9830057060
	Co-Chairman	Sukesh Agarwal	9163377246
	Team Member	Sandeep Gupta	9830091818
Finance Management	Chairman	Nitesh Chowdhury	9831067855
	Co-Chairman	Arun Kumar Jhanwar	9830157222
Hospitality - Banquets, Food & Beverage	Chairman	Rajarshee Datta	9830281569
	Co-Chairman	Soumitra Choudhury	9831007114
	Team Member	Anil Kumar Goyal	7797851819
Hospitality - Rooms	Chairman	Soumitra Choudhury	9831007114
	Co-Chairman	Rajarshee Datta	9830281569
Kits, Memento, Souvenir Distribution Management	Chairman	Anurag Newar	9831027366
Ladies Entertainment	Chairman	Ritu Agarwal	9330124665
	Co-Chairman	Indu Saraogi	9433011668
	Team Member	Reshme Dey	9830220032
Logistics & Travel	Chairman	Nitesh Chowdhury	9831067855
	Co-Chairman	Rituraj Agarwal	9331022646
	Team Member	Kalpesh Shah	9830043444
Press & Publicity	Chairman	Achyut Chandra	9830057060
	Co-Chairman	Soumitra Choudhury	9831007114
Reception & Welcome	Chairman	Mohit Bajaj	9331235444
Registration	Chairman	Narendra Kumar Jhunjunwala	9748572778
	Co-Chairman	Sameer Mehta	933108509
Sightseeing, Mandir Darshan	Chairman	Rituraj Agarwal	9331022646
	Co-Chairman	Praveen Agarwal	9830057763
	Team Member	Kalpesh Shah	9830043444
Social Media	Chairman	Jai Saraogi	9051650205
Souvenir	Chairman	Chetan Shah	9830043888
	Co-Chairman	Yuvraj Shah	9874231888
Stage, Hall, AV Management, Proceedings & Protocol	Chairman	Sorav Jhawar	9830026160
	Team Member	Abhay Agarwal	9830332295
Technical	Chairman	Ram Kumar Sunkara	9820086841
	Co-Chairman	Abhay Agarwal	9830332295
	Team Members	Sorav Jhawar	9830026160
TEAM MEMBERS			
Supported By	Chairman	Manish Agarwal	9830025008
	Co-Chairman	Anish Das	9830938538
	Team Member	Arpit Sanwaria	9830151333
		Prabir Sarkar	9564506652



**FCBM CONFERENCE**  
**2020NE**

**MAN · MACHINE · MATERIAL**

DECEMBER 17 - 19, 2021  
ITC ROYAL BENGAL, KOLKATA

## CONFERENCE 2021 THEME

*Team EICMA looks forward to welcoming you all to the 49th FCBM Conference and “CorruPack 2020NE” exhibition to be held from Dec 17-19, 2021 at ITC Royal Bengal, Kolkata.*

A logo can be described as the face of a conference. It is the first thing that a potential delegate, exhibitor, sponsor or a speaker will notice about the event. A logo is much more than just an image, it is a point of identification with the theme of the conference and sets the tone for the event. The conference logo, arrived at after much deliberation and debate, as approved by the FCBM M.C., reflects the theme and ethos of the upcoming 2021 FCBM Conference:

1. The Three M's or M Cube are meant to emphasize the three most basic, yet important aspects in the manufacture and marketing of corrugated board boxes: MAN, MACHINE & MATERIAL.

- First M - MAN: The role and mindset of the workforce, management and entrepreneur with proper training, knowledge, motivation and application will give the world the desired product at optimal costs.
- Second M - MACHINE: Latest technologies available to the industry.
- Third M - MATERIAL: The availability of various raw materials and prudent application of the same.

2. Green lines around the 3 M's signify the importance of green, environment-friendly boxes which needs to be worked on further and marketed, especially in times when the Government is trying to find suitable replacements for single-use plastic.

3. Leaves from 2020NE signify that we are growing towards the next decade with positive footprints for the next generation. Leaves provide energy for the trees to remain healthy and grow, and similarly, boxes provide the impetus to our consumer industries and economy to flourish.

4. Arrow on Box shows the growth trajectory for the industry on optimum usage of the 3 M's - Man, Machine & Material. We, as an industry, can continue to grow and flourish by going back to our roots and mastering the three key elements, which are the fundamentals of our industry.



## MESSAGE FROM GOVERNOR OF WEST BENGAL



राज्यपाल, पश्चिम बंगाल  
**Governor of West Bengal**  
রাজ্যপাল, পশ্চিমবঙ্গ

30<sup>th</sup> November, 2021.

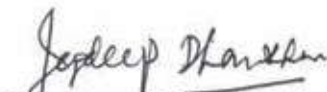
### MESSAGE

I extend my heartiest greetings to the Members of the Eastern India Corrugated Box Manufacturers' Association (EICMA), an affiliated Association of Bharat Chamber of Commerce, for their initiative to organize 49<sup>th</sup> FCBM Conference at Kolkata.

I hope the present conference being held in Kolkata after a gap of 12 years will go a long way to establish Kolkata as a Global Hub for manufacturing of Corrugated Box, given the talent and dedication of your esteemed Members.

I wish the Association will contribute further to Nation-Building and the conference will deliberate on the issues towards this.

Wishing the conference a grand success.

  
(Jagdeep Dhankhar)

## MESSAGE FROM MINISTER IN-CHARGE



ড. পার্থ চ্যাটার্জী

ভারপ্রাপ্ত মন্ত্রী

শিল্প, বাণিজ্য ও উদ্যোগ বিভাগ,  
তথ্য প্রযুক্তি এবং বৈদ্যুতিন বিভাগ এবং  
পরিষদীয় বিভাগ  
পশ্চিমবঙ্গ সরকার



**Dr. Partha Chatterjee**

**Minister-in-Charge**

Departments of Industry, Commerce and Enterprises,  
Information Technology & Electronics and  
Parliamentary Affairs  
Government of West Bengal

No. – F-1/ICE/MIC/65/21-22

### Message

*It's a matter of great pleasure that Eastern India corrugated Box Manufacturers' Association is going to organise 49<sup>th</sup> FCBM Conference at Kolkata and moreover going to publish a Souvenir, constaining the messages from the important dignitaries, articles by experts and stalwarts of the industry, to commemorate the symposium. I take this opportunity to extent my felicitations to all the members of the Association and strongly expect that in presence of esteemed dignateries they would continue to embark on its endeavour to improve Corrugation Industry sector through 49<sup>th</sup> FCBM conference along with souvenir.*

  
(Dr. Partha Chatterjee)

## MESSAGE FROM MINISTER OF MSME GOVERNMENT OF WEST BENGAL



**শ্রী চন্দ্রনাথ সিংহ**

ভারপ্রাপ্ত মন্ত্রী

ক্ষুদ্র ছোট ও মাঝারি উদ্যোগ এবং বস্ত্র (বস্ত্র ও হস্ততাঁত) দপ্তর  
পশ্চিমবঙ্গ সরকার

১২, বি.বি.ডি. বাগ (পূর্ব), প্রথম তল, কোলকাতা - ৭০০০০১

দূরভাষ : (০৩৩) ২২১৪-৫৬৬৩ / ১৫৬৪ (ফু.ছো.মা.উ.ব.)

ফ্যাক্স : (০৩৩) ২২১৪-৫৬৬২ (ফু.ছো.মা.উ.ব.)

E-mail : mssenard@gmail.com



**Sri Chandranath Sinha**

Minister Incharge

Micro, Small & Medium Enterprises and Textiles (Tex. & HL)

Government of West Bengal

12, B. B. D. Bag (East), 1st Floor, Kolkata - 700 001

(033) 2214-5663 / 1564 (MSME&T)

Fax : (033) 2214-5662 (MSME&T)

E-mail : mssenard@gmail.com

D.O. / Memo No. 279/MIE/MSMET/21

Dated. 09/12/2021

### MESSAGE

It gives me immense pleasure to know that Eastern India Corrugated Box Manufacturers' Association an affiliated Association of Bharat Chamber of Commerce is organising the 49<sup>th</sup> FCBM conference at Kolkata with the theme "Man-Machine-Material" which will be held from 17<sup>th</sup> to 19<sup>th</sup> December, 2021 at the ITC Royal Bengal, Kolkata.

I hope this oldest and renowned chamber will continue its efforts to contain the messages from important dignitaries, articles by experts and stalwarts of the industry with special attention.

I send my greetings and best wishes on this auspicious occasion and hope that the 49<sup>th</sup> FCBM conference at Kolkata would be successful.

09.12.21

(CHANDRANATH SINHA)

Bharath Kedia

Former President and Chairman-Conference

Eastern India Corrugated Box Manufacturers' Association

# MESSAGE FROM MINISTER OF COMMERCE & INDUSTRY, CONSUMER AFFAIRS, FOOD & PUBLIC DISTRIBUTION & TEXTILES



पीयूष गोयल  
PIYUSH GOYAL



वाणिज्य एवं उद्योग,  
उपभोक्ता मामले, खाद्य और सार्वजनिक  
वितरण तथा वस्त्र मंत्री, भारत सरकार  
MINISTER OF COMMERCE & INDUSTRY,  
CONSUMER AFFAIRS, FOOD & PUBLIC DISTRIBUTION AND  
TEXTILES, GOVERNMENT OF INDIA

## MESSAGE

I am delighted to note that the Eastern India Corrugated Box Manufacturers' Association (EICMA), an affiliated Association of Bharat Chamber of Commerce, is organising the 49th Federation of Corrugated Box Manufacturers (FCBM) Conference after 12 years from 17-19<sup>th</sup> December 2021 in Kolkata.

I congratulate the organisers in publishing a souvenir on this occasion. The souvenir covers relevant information and details about the technology, raw materials, branding, accessories, global best practices, etc. of interest to the packaging fraternity.

It is essential to impart the latest skill and technology to our MSMEs engaged in the sector for making quality products available to domestic and world markets, which is in line with Hon'ble Prime Minister Narendra Modi ji's 'Make in India' initiative and achieving *Aatmanirbharta* in manufacturing.

I sincerely hope that the FCBM conference enables free exchange of ideas among the participants and organisers about the latest developments in this sector. I extend my best wishes for the success of the initiative.

Piyush Goyal

## MESSAGE FROM MINISTER OF MSME GOVERNMENT OF INDIA



नारायण राणे  
NARAYAN RANE



सत्यमेव जयते



मंत्री  
सूक्ष्म, लघु और मध्यम उद्यम  
भारत सरकार  
Minister  
Micro, Small & Medium Enterprises  
Government of India

### MESSAGE

I am happy to know that Eastern India Corrugated Box Manufacturers' Association (EICMA) is hosting the 49<sup>th</sup> Federation of Corrugated Box Manufacturers of India (FCBM) Conference at Kolkata during December 2021 and a Souvenir is being bought out to mark the occasion.

The role of EICMA in the development of corrugated sector, having the dominant presence of MSMEs, has been well acknowledged. I am sure, the Conference will provide excellent opportunities to the participants to share their best practices, knowledge and experience for the development of the sector.

I wish the event all success.

(Narayan Rane)

Place: New Delhi

Date:

## MESSAGE FROM FCBM PRESIDENT



MILAN KUMAR DEY  
President

It gives me immense pleasure to welcome delegates, brand promoters, speakers and all participants to the **49th Annual Conference of the Federation of Corrugated Box Manufacturers of India (FCBM)**, hosted by EICMA.

We assure you a great deal of knowledge sharing and intense interactions during the technical sessions based on the conference theme, M-Cube – **Man, Machine and Material**, followed by delightful cultural events and fellowship befitting legendary EICMA hospitality.

A conference of this magnitude does not organize itself. It is heart-warming to note that, despite the challenges of the pandemic – the dedication, enthusiasm and hard work put in by members of all the conference sub-committees who started working on the preparation for the conference for over a year now, to make this national event a reality. I express my special thanks and appreciation to all. We hope you enjoy your stay in our **city of joy - Kolkata**.

**A big thumbs-up to the entire EICMA team for putting up a dream conference!**

I would like to share a quote by Ashleigh Brilliant, *“Keep some souvenirs of your past, or how will you ever prove it wasn’t all a dream?”*



## ABOUT THE CONFERENCE



The Annual Conference of Federation of Corrugated Box Manufacturers of India (FCBM) is the convergence of the corrugated box industry, its consumers, machinery manufacturers, paper mills and others associated with this ever-growing business segment.

The event is hosted each year by one of the Regional Associations under FCBM. The 49th FCBM Conference is being hosted by Eastern India Corrugated Box Manufacturers' Association (EICMA) from 17th - 19th December 2021.

KOLKATA – the host city exudes an old-world charm with heritage buildings on one hand and modern edifices on the other. The metropolis which boasts of the first Metro Rail in the country still retains the hand-pulled rickshaws and old-fashioned trams. The vibrant nightlife and spiritual dawn visits to Kalighat temple and Dakhineswar are a must-see. "The City of Joy" - rich in tradition and culture celebrates thirteen festivals in twelve months according to a well-known Bengali

saying. Sweet delicacies of Bengal - rasogolla, mistidoi and rabri are not to be missed, while in Kolkata. The Jagganath Temple in Puri, in the neighboring state of Orissa, is an overnight train journey from Kolkata.

ITC Royal Bengal, the venue, is located on the cusp of the business district and the city, and is an ode to the region's cultural heritage and lineage. This magnificent edifice towers over Kolkata's skyline and blends fine indigenous architecture with contemporary design. With its passion for perfection and its pursuit of beauty and grace, ITC Royal Bengal represents the state of Bengal and the unique fervor of its citizens for celebrating and nurturing the finest across the myriad facets of life.

Technical Sessions with renowned speakers from within the industry and experts in their field are being planned on subjects relevant to the changing business environment. Efforts are being made to ensure that the sessions are lively, interesting and interactive.

CorruPack – 2020NE, an Exhibition, is also being designed at the conference venue providing a prospect to witness the latest technology and resources available to the industry. The exhibition will facilitate one to one buyer-seller meetings.

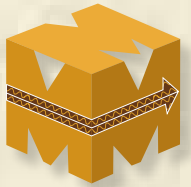
The Cultural Committee promises evenings to be a cocktail of rich traditional and entertaining programmes. Sightseeing arrangements are also being planned in the itinerary for delegates and their families.

Team EICMA welcomes all delegates to The 49th FCBM Conference with great warmth and much enthusiasm.

### BRIEF SYNOPSIS OF 49TH FCBM CONFERENCE

<b>Date</b>	December 17 <sup>th</sup> to December 19 <sup>th</sup> 2021
<b>Venue</b>	ITC Royal Bengal, Kolkata
<b>Theme</b>	Man - Machine - Material
<b>Number of Stalls estimated</b>	60+
<b>Number of Delegates expected</b>	1000
<b>Number of Exhibitors expected</b>	50

## MESSAGE FROM CONFERENCE CHAIRMAN



**BHARATH KEDIA**  
Conference Chairman

Greetings from EICMA to delegates, brand promoters, exhibitors & esteemed speakers. Welcome to “**City of Joy**” for the 49th FCBM Conference.

The FCBM Conference is an event of significant importance to all of us at EICMA. We have been waiting for this day since twelve years. Just as the confluence of **Man, Machine & Material** gives our industry the desired result, the synergies of the young & experienced team members have infused new ideas during our journey towards the conference.

We started back around middle of 2020 under the vision of our Conference advisor **Sri Hemant Saraogi**, who cobbled up the team; with one idea leading to another, the support of our brand promoters, hard work of the **subcommittee chairmen & their team**, we present the Conference 2020One to you!

The Technical Sub Committee under the chairman ship of **Sri Ram Kumar ji Sunkara** will introduce us to technologies, raw material & human resource policies that will be an eye opener today, yet a part of our everyday business practices in the years to come.

The Cultural & Ladies Program Sub Committee have spent many a sleepless nights to ensure fun filled gala evenings, the fond memories of which will linger on with you for eternity. We have enjoyed putting up a dream conference with trademark Kolkatan hospitality, we do hope that you will have a delightful conference experience.

Ladies & Gentlemen - Welcome to 49th FCBM Conference.

**Abar Dekha Hobe!**



## MESSAGE FROM CONFERENCE ADVISOR



**HEMANT SARAOGI**  
Conference Advisor

Greetings to the readers of the souvenir!!

Being given the responsibility of the Conference Advisor is a matter of honour for me, in all honesty. I am pleased to see how seamlessly the young members of EICMA have organised the conference, under the thoughtful leadership of Bharatji Kedia and Mohit Bajaj.

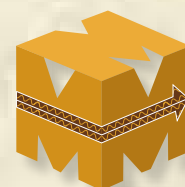
I wish with blessings of almighty we execute the deliverables upto the satisfaction and make our Delegates, Brand Partners and Speakers happy.

With great anticipation and eagerness, we welcome all our Delegates, Brand Partners and Speakers to the 49th FCBM Conference. We hope that we are able to execute the proceedings of the event successfully.

Team EICMA has emerged stronger and more resilient with all the challenges that we have collectively overcome, be it the pandemic and its mutating strains or the Political Elections that stood in the way for the planning. The team work that I have witnessed gives me immense pleasure to be part of this extra ordinary team.

With the blessings of Almighty and our reverent elders, I invite you all to participate and make this Conference a grand success.

“If everyone is moving forward together, then success takes care of itself” – Henry Ford



## FCBM OFFICE BEARERS



**MILAN KUMAR DEY**  
President



**VINEET JAIN**  
Vice President I



**DHARMENDRA PANDYA**  
Vice President II



**DEENU SHETTY**  
Hon. Secretary



**ROHIT BUBNA**  
Hon. Treasurer



**V. K. DEWAN**  
Ex-Officio



## FCBM MANAGING COMMITTEE MEMBERS



**Sudarshan G. Chary**  
ACCT



**S. Ram Raj Varma**  
ACCT



**Achyut Chandra**  
EICMA



**Biplab Kumar Datta**  
EICMA



**Hemant Saraogi**  
EICMA



**Bharath Kedia**  
EICMA



**Jayesh K. Patel**  
GCBMA



**Bharatbhai Patel**  
GCBMA



**Nitin B Patel**  
GCBMA



**Pulkit Shah**  
GCBMA



**Sunilbhai Purswani**  
GCBMA



**Amrutlal V Bhut**  
GCBMA



**Vijaybhai Patel**  
GCBMA



**Pankaj Yadav**  
GCBMA



**Dipakbhai J. Patel**  
GCBMA



**Mansukhbhai Sangani**  
GCBMA

## FCBM MANAGING COMMITTEE MEMBERS



Hemraj Choudhary  
HPCBMA



Sanjeev Jain  
HPCBMA



Vishal Goel  
HPCBMA



T. M. Raghavan  
KCBMA



Deepak Agarwal  
KCBMA



P. J. Mathew  
KECBMA



K. Krishnan  
KECBMA



Vijay Bangur  
MPCBMA



Aditya Raj Modi  
MPCBMA



M. C. Gupta  
NICMA



R. K. Bansal  
NICMA



Jeevan Nayar  
PCBMA



Vinod Kumar Garg  
RCBMA



Lohit Agarwal  
RCBMA



Sumit Goel  
RCBMA



K. Krishna Reddy  
SICBMA



S. Ramesh  
SICBMA



A.P. Anburaj  
SICBMA



K. Rajasankar  
SICBMA



S. Balavassudevan  
SICBMA



## FCBM MANAGING COMMITTEE MEMBERS



G. Raj Kumar  
SICBMA



M.S. Rajesh  
SICBMA



E V Radhakrishnan  
SICBMA



S.Sanjeeth  
SICBMA



S.K.Chauhan  
UPCBMA



Sandeep Arora  
UPCBMA



K.P. Singh  
UPCBMA



Hitesh Singh  
UPCBMA



Vincent Mathias  
WICMA



Ram Kumar Sunkara  
WICMA



Shridhar Prabhu  
WICMA



Bharat Parekh  
WICMA



Vinay Patel  
WICMA



Mayank Mehta  
WICMA



Anil Loya  
WICMA

## CO - OPTED MEMBERS



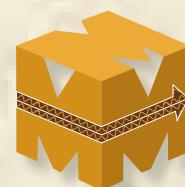
Dilip Patel  
WICMA



Ankkit Agarwal  
WICMA



B.K. Hari  
WICMA



## PAST PRESIDENTS OF FCBM



Late B. K. Doshi  
1971 - 72



Late H. B. Ajmera  
1972 - 74



Late H. P. Arora  
1974 - 75



Late Jaipal Gupta  
1975 - 76



Late A. B. Ajmera  
1976 - 77 | 1995 - 96



B. A. Shah  
1977 - 78



Late M. K. Ramasami  
1978 - 79



Late S. L. Chaudhry  
1979 - 80



Late S. N. Harlalka  
1980 - 81



Late S. S. Raju  
1981 - 82



Late M. K. Mehta  
1982 - 83



Late S. S. Kejriwal  
1983 - 84



Late T. R. Batra  
1984 - 85



Late M. L. Mehra  
1985 - 86



P. D. Shah  
1986 - 87



Satish Kapur  
1987 - 88



## PAST PRESIDENTS OF FCBM



M. L. Agarwal  
1988 - 89



M. D. Shah  
1989 - 1990



Pradeep Jain  
1990 - 1991



A. L. Annamalai  
1991 - 92



R. Muthaiyah  
1992 - 93



Late G. B. Chamaria  
1993 - 94



Late N. K. Dawar  
1994 - 95



Deepak Killawala  
1996 - 97



Ashwin A. Shah  
1997 - 98



Devchand Gala  
1998 - 99



Baldev K. Mehta  
1999 - 2000



Rohit Chopra  
2000 - 01



Santosh K. Lath  
2001 - 02



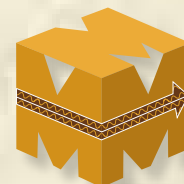
Ashok P. Vyas  
2002 - 03



S. J. Ajmera  
2003 - 04



Harish Madan  
2004 - 05



## PAST PRESIDENTS OF FCBM



**Manohar Shetty**  
2005 - 06



**Kirit B. Doshi**  
2006 - 07



**Satish Tyagi**  
2007 - 08



**Anil Kumar Reddy**  
2008 - 09



**Ram Gopal Agarwala**  
2009 - 10



**M. R. Gopalchary**  
2010 - 11



**Sunil Sethi**  
2011 - 12



**R. R. Ankola**  
2012 - 13



**Late Ramchand H. Arora**  
2013 - 14



**Late P. S. Shah**  
2014 - 15



**N. X. George**  
2015 - 16



**Greesh Sardana**  
2016 - 17



**Pradip Bosmaya**  
2017 - 18



**K. Arunachallam**  
2018 - 19



**V. K. Dewan**  
2019 - 20



## EICMA OFFICE BEARERS



**MOHIT BAJAJ**  
President



**ACHYUT CHANDRA**  
Vice President



**PRADIP AGARWAL**  
Hon. Secretary



**NITESH CHOWDHURY**  
Hon. Treasurer



**NARENDRA KR. JHUNJHUNWALA**  
Ex - Officio

## EICMA MANAGING COMMITTEE MEMBERS



Anil Agarwal



Arun Jhanwar



Chetan Shah



Harsh Agarwal



Nitesh Jain



Rajarshee Datta



Sorav Jhavar



Soumitra Choudhury



Vaibhav Sanwaria

## CO - OPTED MEMBERS



Alok Agarwal



Prabir Sarkar



## EICMA PERMANENT INVITEES



**R.G. Agarwala**



**R.K. Dani**



**Binoy Basu Mallik**



**Satish Kapur**



**B.D. Kothari**



**Deepak Kr Bengani**



**Hemant Saraogi**



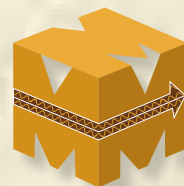
**Biplab Kumar Datta**



**Milan Kumar Dey**



**Bharath Kedia**



## EICMA SPECIAL INVITEES

SERIAL NUMBER	NAMES
1	Abani Kumar Kanungo
2	Aditya Agarwala
3	Ram Kumar Sunkara
4	Jivendra Mishra
5	Manish Agarwal
6	Chaitali Chakraborty Jain
7	Anurag Newar
8	Kanu Charan Nayak
9	Kamal Agarwal
10	N. C. Dani
11	Anish Das
12	Ritu Raj Agarwal
13	Siddhartha Chopra
14	Bishwa Nath Kedia
15	Jai Vardhan Saraogi
16	Vinay Shanghi
17	Navin Kumar Motani
18	Pravin Agarwal
19	Sandeep Gupta
20	Sameer Mehta
21	Jenil Thanky
22	Subrata Das
23	Sanjay Agarwal
24	Abhay Agarwal
25	Kirit Modi
26	Yuvraj Shah
27	Dwaipayan Das
28	Puja Banik
29	Manmohon Saraogi
30	Nilesh Chandalia
31	Kshitij Mariya
32	Kaushik Basak
33	Arpit Sanwaria
34	Sukesh Agarwal
35	Harshit Agarwal



## EICMA SUB-COMMITTEES

DEPARTMENT	NAME
Taxation	<b>Joint Chairman</b>
	Sameer Mehta
	Sanjay Agarwal
R&D Centre & Office Management	<b>Joint Chairman</b>
	Nitesh Chowdhury
	Pradip Agarwal
Building Committee	<b>Chairman</b>
	B.D. Kothari
Website	<b>Joint Chairman</b>
	Sorav Jhavar
	Vaibhav Sanwaria
	Rajarshee Datta
New Market Development	<b>Chairman</b>
	Achyut Chandra
	Co-Chairman
	Rajarshee Datta
	Harsh Agarwal
Press & Publicity	<b>Joint Chairman</b>
	Achyut Chandra
	Soumitra Chowdhury
	Chetan Shah
New Member Drive	<b>Regional Chairman</b>
	Chaitali Chakraborty Jain
	Nitesh Jain
	Anil Goel
	Navin Kumar Motani
	Kanu Charan Nayak
Seminar & Skill Development	<b>Joint Chairman</b>
	Rajarshee Datta
	Abhay Agarwal
	Puja Banik
Grievance	<b>Chairman</b>
	Harsh Agarwal



**SANJEEVANI GROUP**

# **Sanjeevani Adhesives**

**Bonding India since decades...**

## **ABOUT US**



Sanjeevani Adhesives is a group engaged in manufacturing of adhesive powder for the past Three Decades. Our 35 year old legacy is treasured from experiences which has helped us to achieve milestones in this field.

We are best known for our prompt after sales service and creating innovative solutions through on-site R&D. Our geographical presence and techno-economic improvement has helped us to manufacture quality outputs at minimal rate with optimal utilization of resources

## **Solutions For**

- > Semi Automatic Plants**
- > Flute Laminators**
- > Neutral Gum**
- > Side Pasting**

- > Automatic Plants**
- > Additives**
- > Dextrine**
- > Paper Tube / Core / Angle Board**

## RECIPIENTS OF S. N. HARLALKA AWARD - 2020



**Hemant Saraogi**  
FCBM Managing Committee Member

Mr. Hemant Saraogi is a commerce graduate from St. Xaviers Kolkata and is in Corrugation Industry since the last 38 Years. He is the Managing Director of KIG Kraft Tech Containers Pvt Ltd and Hind Packaging, based in Kolkata and is also a stake holder at Pondicherry & Baroda units.

He is a Past President of EICMA and has been serving in the FCBM Managing Committee since last thirty five years. He is respected in the FCBM fraternity for his pragmatic & neutral approach. He has worked behind the scenes by supporting various chairmen of FCBM subcommittees from EICMA & has mentored leadership at regional association level & created a formidable bench strength for the next decade.

Mr. Hemant Saraogi has been active in various trade bodies and also a member of various National/State level organizations like Bharat Chamber of Commerce, FOSMI, Howrah Chamber Commerce and Governing council member of St. Xaviers College Alumni.

## RECIPIENTS OF S. N. HARLALKA AWARD - 2020



**K. Arunachallam**  
President FCBM  
2018 - 19

We take pleasure in introducing Mr K Arunachallam, an executive member of FCBM from SICBMA since 1985. Mr KA joined his family's packaging nearly 40 years ago. He has, since then, diversified his business in the areas of textiles, plantation and real estate.

He has been actively involved in FCBM MC for more than three decades sharing variety of portfolios with great responsibility and sincerity. He was elected as FCBM President in 2018 and made sterling contribution to the federation during his tenure.

He is very actively involved in social causes and is deeply religious with a keen interest in Vedic culture. He is happily married to Mrs Vasanthi and is blessed with three dynamic sons who are helping him in his business. If his body supports he is looking forward for alliances with suitable like minded persons to increase his family and businesses.



## RECIPIENTS OF S. N. HARLALKA AWARD - 2021



**V. K. Dewan**  
**President FCBM**  
**2019 - 20**



Shri V.K. Dewan started his career in the packaging industry way back in 1975 at a time when packaging industry in Jaipur was in a nascent stage. He played a pioneer role in developing Corrugation industry of Jaipur and Rajasthan. Currently, he has two units in Jaipur & 5 ply automatic plant in Rudrapur, Uttaranchal.

He founded RCBMA in the year 1999 and has served as it's president for several tenures. He was the sole torch bearer for Rajasthan in FCBM for many years. Later on he went on to become the president of FCBM in the year 2018. He has also been active socially at various platforms like Lions Club and has served as president of Jaipur Industrial area association.

He has spent his life mentoring RCBMA for more than 25 years now. From an association of meagre 10-15 members it has raised to a level of more than 150 members from almost all cities of Rajasthan. He says his dream has come true when he sees RCBMA members being recognised in FCBM at national level.

## RECIPIENTS OF S. N. HARLALKA AWARD - 2021



**Kirit Modi**  
Managing Director  
Horizon Packs Pvt. Ltd



After completing his post-graduation at one of the premier management schools in India (Indian Institute of Management, Kolkata) in 1971, he handled various assignments in corporate environment & Paper industry in Senior Management position. Having pioneered the concept of pan-India distribution of Kraft Paper in 1979, he ventured into Packaging industry as a measure of forward integration in 1991. He has created an all-India presence in this industry with 10 manufacturing locations in last 30 years. He currently oversees the management of **HORIZON PACKS** group, which is the largest Corrugated Box Making group in India.

His experience of over 40 years in the fields of Kraft paper, Test Liners and equivalent grades & Corrugated box packaging gives him the unique overview of the market trends, which is leveraged to maintain strong growth momentum. He was bestowed prestigious **DISTINGUISHED ALUMNUS AWARD** in 2012 by **Indian Institute of Management, Kolkata** for his entrepreneurial success & vision.

He is the President Emeritus of Indian Corrugated Case Manufacturers' Association (ICCMA), ex-Member of Managing Committee of Federation of Corrugated Box Mfrs. Association (FCBMA) and also the ex-Chairman of its' Paper Mills Coordination Committee.



## RECIPIENTS OF B. K. DOSHI AWARD - 2020



**P S R Prasad**  
Managing Director  
Jayaraj Fortune Packaging Pvt. Ltd.

Mr. P S R Prasad is Managing Director at Jayaraj Fortune Packaging Pvt. Ltd., Guntur, Andhra Pradesh. Mr. Prasad graduated in Mechanical Engineering from Nagarjuna University, Andhra Pradesh and post graduated from IIT-Madras in Industrial Management in the year 2002.

Worked as a software engineer in India and abroad for few years before returning to India to start his own business. In the year 2008, at the age of 28, started with an automatic plant in the name of Jayaraj Fortune Packaging Pvt. Ltd., to service tobacco industry with High Strength Export Worthy Corrugated Boxes.

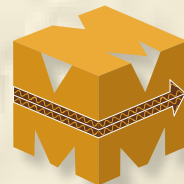
Presently, Jayaraj Fortune Packaging runs two 7-ply automatic corrugation lines and is specialized in high strength and extra-large corrugated boxes for heavy duty and bulk packing requirements.

Innovation as its core strength, Jayaraj Fortune has extended corrugation capabilities by designing, prototyping and producing various boxes which deliver more than 5000kg of compression load.

Jayaraj Fortune is leading importer of Virgin Kraft Liner Board into India for self-consumption and also a leading exporter of corrugated boxes from India. It is an Authorized Economic Operator (AEO) –T1 Certified and also a Star Export House Recognized by Govt of India.

Jayaraj Fortune has pan India customer base and Channel Partner network through which customers are serviced just in time with their high strength and specialty box requirements.

Mr. Prasad is an avid reader, hobby software programmer and a tennis player.



## RECIPIENTS OF B. K. DOSHI AWARD - 2021



### **Anand Bangur The Packaging People**

Mr. Anand Bangur, is leading a successful group of companies headquartered in Ujjain (M.P) under the banner of "The Packaging People." His 1st unit came into production in the year 1983. Mr. Bangur, is an alumni of the prestigious Shri Ram College of Commerce, Delhi and has an experience spanning three & half decades in the packaging industry. Mr. Anand Bangur is a leading manufacturer of high-quality specialty packaging products – Corrugated fibreboard boxes, kraft paper & plastic packaging setups in India & abroad.

He is recipient of the prestigious National Award for Outstanding Entrepreneurship in Manufacturing MSME and was awarded by Hon. PM of India Shri Narendra Modi. Other National Awards received are for Innovation in Polymeric Products, presented by Hon. Minister of State (Chemical & Fertilizers) Shri Srikant Kumar Jena & National Award for R&D in MSME Presented by Hon. President of India Smt. Pratibha Patilji.

#### **Various Business divisions under his leadership are:**

- Corrugated fiber board box
- Kraft paper & board manufacturing
- Plastic packaging for pharmaceutical products
- Plastic packaging for cosmetics, food & agro products, electrical appliances, textiles, garments, auto ancillaries
- Frozen foods industry
- Hygiene Products

**He has set up a state of art unit, for refluting of corrugation rolls at Pithampur in collaboration with J.S. Machine, China.**

He has joint ventures in China & has set up a green field project in USA. He is ranked as No.1 Player in India, in Rigid Packaging for Regulated Generics Pharma Market, enjoying status of only "Indian" company with international manufacturing (USA & CHINA) presence in segment. Products comply with the international standards adhering to regulatory policies.

#### **Infrastructure:**

- Corrugation division: spread across.....,000 m2 over 10 locations
- Paper mills
- Plastic division:...,000,000 m2 spread over 8 locations.



## RECIPIENT OF ESKAY AWARD 2020 FOR BEST REGIONAL ASSOCIATION



**Alok Agarwal**  
President KCBMA



### KARNATAKA CORRUGATED BOX MANUFACTURERS' ASSOCIATION

Karnataka Corrugated Box Manufacturers Association was formed in the year 1990 by a small group of Motivated and Dedicated Corrugators primarily from Bangalore. Today the association has 108 members from all major manufacturing locations of Karnataka.

The association has a very strong foundation and the seniors hone the juniors to take up the association's responsibilities in a structured manner.

The focus of KCBMA has been to educate all its members with the best practices of the industry. The Managing Committee focuses on a minimum of 3 Technical Seminars per year. Experts are called in from various fields to impart knowledge to the members.

KCBMA was also the pioneer to start Paper Mill Visits every alternate year. The members have had the opportunity to visit Mills like Gudan, Shubam, West Rock and South India Paper Mills. The paper mills are chosen carefully giving due merit to the size of operations and the quality of Kraft paper being produced by them. During the visit one technical discussion

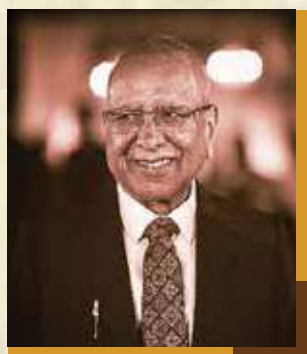
is arranged between the Mill's Technical team and the members.

KCBMA has also been contributing to the cause of the FCBM by organising the MC meetings every alternate year.

KCBMA was the first regional association to organise both Part I and Part II of the Certificate Course in Corrugated Box Manufacturing organised by the Seminar Committee of FCBM. It is also the proud winner of the Second "Best Seminar Organising Association Award"

During the Pandemic when the Physical Seminars were not possible the Managing Committee took it upon themselves to keep the Members updated and well informed by conducting many seminars mentioned below. This effort has been recognised by the FCBM Committee and the "Eskay Award-2020" for outstanding performance by a regional association has been given to KCBMA. This recognition has boosted the morale of the Team at KCBMA and we will strive harder to keep our members abreast with technology and the best practices of the industry.

## LIFETIME ACHIEVEMENT AWARD



**Shri Ram Gopal Agarwala**

Born on 15th December, 1943 in Kolkata (formerly known as Calcutta) in a Marwari well-knitted and bonded family (5th generation in Kolkata). A Xaverian who stood 1<sup>st</sup> in his schooling days in every competitive exams and in M.Com he stood 1<sup>st</sup> Class 1<sup>st</sup> after that he did LLB and Costing.

He along with his younger brother Late Shyam Sundar Agarwala started Paper Packaging Unit in 1969. He is currently the Managing Director of M/s Pioneer Packaging Industries Pvt. Ltd (Unit 1 & Unit 2) with an installed capacity of 5500MT/month. The units are run by well-trained Pioneer Team with him being in Dhoni.

He is a member of EICMA since 1972 and was co-opted in FCBM Managing Committee and since then he is the Managing Committee member in one capacity or the other.

He became Honorary Secretary Of EICMA in the year 1984 and continued till 1991 ,after that he was appointed President of EICMA in the year 1991 till 1997. He was also appointed as a Chairman of Taxation Committee Of FCBM in the year 2000 and continued till 2007. He became the President Of FCBM on December 2009.

In the year 2010 under his tenure parity was brought in Excise Rates for Corrugated Board

Boxes and Kraft Paper in the Union Budget. He is still an active member of FCBM and contributing to the development of the corrugated packaging. In the year 2000 he formulated a Model Cost Sheet in EICMA Workshop and also presented that in FCBM AGM and was appreciated by all. He became the GC Member of ICCMA and now is Taxation Committee Chairman & Managing Committee member of ICCMA. He had also been a part of Bharat Chamber of Commerce and is presently Co Chairman Indirect Tax Committee.

Mr. Ram Gopal Agarwala (known as RGA) has been a very socially active person and is associated with many social organisations in some capacity or the other. He has always been an icon and guiding force in the success story of Pioneer Packaging Industries Pvt Ltd and to every person who was and is associated with him. He believes in team work and his Mantra is,

**"To be Successful one should be Disciplined and work for Specific Goals with Time Management ."**

We are proud that Shri Ram Gopal Agarwala is part of EICMA family and EICMA Team feels honoured in presenting him **"The Lifetime Achievement Award"**.



## CORRUSTAR WINNERS OVER THE YEARS

The Corrustar Awards have been instituted by FCBM to generate awareness and to improve standards of packaging in the areas of functional design and increase visual appeal, and also, to generate new avenues for the use of Corrugated Board and Boxes. This award is given once a year and the awards ceremony coincides with the annual conference of FCBM. The contest is open to all types of Corrugated Packaging. Only those packages which have been designed by a member of FCBM are eligible for entry.

### 2019

Consumer Pack - Packers Products, New Delhi  
Transport Pack - Devashish Food Pack & Research Pvt Ltd., Solan H. P  
Material / Fitments - Harsh Packaging, Jaipur  
Innovation - Packers Products, New Delhi  
POP Display - Packers Products, New Delhi  
Beyond Packaging - Viva Packaging Products, Gandhinagar, Gujrat, Ahmedabad

### 2018

Consumer Pack - Manali Cartons, Chennai  
Transport Pack - Jayaraj Fortune, Guntur  
Material / Fitments - Sai Packaging Industries, Pune  
Innovation - Manali Cartons, Chennai  
POP Display - Ace Enterprises  
Beyond Packaging - Ace Enterprises

### 2017

Consumer Pack - Packers Products, New Delhi  
Material / Fitments - Packers Products, New Delhi  
Innovation - Sai Packaging Industries, Pune  
POP Display - Ace Enterprises, Mumbai  
Beyond Packaging - Viva Packaging Products

### 2016

Consumer Pack - Packers Products, New Delhi  
Material / Fittings - Riddhi Packages (P) Ltd, Baddi. H.P.  
Transport Pack - Latha Industries, Chennai  
Innovation Pack - Packers Products, New Delhi  
Best Printing - Supack Industries Pvt Ltd, Rajkot

### 2015

Consumer Pack - Akshar Printing & Packaging Works, Kolkata  
Material / Fittings - Latha Industries, Chennai  
Transport Pack - Devashish Food Pack & Research Pvt Ltd.  
Innovation Pack - Latha Industries, Chennai  
POP Display - Packers Products, New Delhi  
Best Printing - Eskay Cartons P. Ltd., Chennai

### 2014

Consumer Pack - Akshar Printing & Packaging Works, Kolkata  
Material / Fittings - Riddhi Packages (P) Ltd, Baddi. H.P.  
Transport Pack - KIG Kraft Tech Containers (P) Ltd, Kolkata  
Innovation Pack - Latha Industries, Chennai  
POP Display - Packers Products, New Delhi  
Best Printing - Supack Industries Pvt Ltd, Rajkot

### 2013

Transport Pack - Divine Packaging Industries, Chennai  
Consumer Pack - Latha Industries, Chennai  
Innovation Pack - Viva Packaging Products, Ahmedabad  
Material / Fittings - Packers Products, New Delhi  
POP Display - Packers Products, New Delhi

### 2012

Transport Pack - Latha Industries, Chennai  
Consumer Pack - Jayna Industries Pvt. Ltd, Mumbai  
Innovation Pack - Viva Packaging Products, Ahmedabad  
Material / Fittings - Packers Products, New Delhi  
POP Display - Packers Products, New Delhi

### 2011

Consumer Pack - Securipax Packaging (P) Ltd  
Material / Fittings - Latha Industries, Chennai , Packers Products, New Delhi  
Transport Pack - Packers Products, New Delhi  
Innovation Pack - Viva Packaging Products, Ahmedabad  
POP Display - Packers Products, New Delhi  
Best Printing - KCL Ltd, Faridabad



## CORRUSTAR WINNERS OVER THE YEARS

### 2010

Consumer Pack - Packers Products, New Delhi  
Material / Fittings - Latha Industries, Chennai  
Transport Pack - Latha Industries, Chennai  
Innovation Pack - Jayna Packaging Pvt. Ltd., Mumbai  
POP Display - Packers Products, New Delhi  
Best Printing - Multiply Paper Packaging P. LTD., Noida

### 2009

Transport Pack - Pioneer Packaging Industries Pvt. Ltd., Kolkata  
Innovation Pack - Packers Products, New Delhi  
Consumer Pack - Tulsyan Enterprise Pvt. Ltd., Kolkata  
Material / Fittings - Latha Industries, Chennai  
POP Display - Packers Products, New Delhi

### 2008

Transport Pack - Latha Industries, Chennai  
Innovation Pack - Jayna Packaging, Mumbai  
Consumer Pack - Jayna Packaging, Mumbai  
Material / Fittings - Latha Industries, Chennai  
POP Display - Amit Pack-Age, New Delhi  
Best Printing - Multiply Paper Packaging Industries Pvt. Ltd, Noida

### 2007

Transport Pack - Khemka Containers Ltd. Faridabad  
Innovation Pack - Multiply Paper Packaging Industries Pvt. Ltd, Noida  
Consumer Pack - Karam Packaging Pvt. Ltd, Noida  
Material / Fittings - Khemka Containers Ltd. Faridabad  
POP Display - Khemka Containers Ltd. Faridabad  
Best Printing - Multiply Paper Packaging Industries Pvt. Ltd, Noida

### 2006

Transport Pack - Packers Products, New Delhi  
Innovation Pack - WellPack Industries, Uttranchal  
Consumer Pack - Jayna Packaging Pvt. Ltd, Mumbai  
Material / Fittings - SnS Containers Pvt Ltd., Dehradun  
POP Display - Jayna Packaging Pvt. Ltd, Mumbai  
Best Printing - Multiply Paper Packaging Industries Pvt. Ltd, Noida

### 2005

Transport Pack - Kasturi Packaging, Coimbatore  
Innovation - SnS Containers (P) Ltd., Dehradun  
Consumer Pack - Dhingra Graphics and Packaging, Noida  
Material/ Fittings - Multiply Paper Pkg. Inds. Pvt. Ltd., Noida

POP Display - Multiply Paper Pkg. Inds. Pvt. Ltd., Noida  
Best Printing - Multiply Paper Pkg. Inds. Pvt. Ltd., Noida

### 2004

Transport Pack - Karam Packaging Pvt. Ltd., Noida  
Innovation - Kiran Enterprises, Noida  
Consumer Pack - Packers Products, Delhi  
Material/ Fittings - Multiply Products, Noida  
POP Display - Packers Products, Delhi  
Best Printing - Multiply Products, Noida

### 2003

Transport Pack - Karam Packaging Pvt. Ltd., Noida  
Innovation - Multiply Paper Pkg. Inds. Pvt. Ltd., Noida  
Material/ Fittings - Packers Products, Delhi  
POP Display - Viva Packaging Products, Ahmedabad

### 2002

Transport Pack - Brown Kraft Industries Ltd., Mumbai  
Innovation - Jayna Packaging Pvt. Ltd., Mumbai  
Consumer Pack - Girnar Packaging, Mumbai  
Material/ Fittings - Packers Products, Delhi  
POP Display - Packers Products, Delhi  
Best Printing - Wonder Craft Inds. Ltd., Vadodara

### 2001

Transport Pack - Brown Kraft Industries Ltd., Mumbai  
Innovation - Viva Packaging Products, Ahmedabad  
Consumer Pack - Viva Packaging Products, Ahmedabad  
Material/ Fittings - Wadpack Pvt. Ltd., Bangalore.  
POP Display - Viva Packaging Products, Ahmedabad  
Best Printing - Wonder Craft Inds. Ltd., Vadodara

### 2000

Transport Pack - Dolsun Containers Pvt. Ltd., New Delhi  
Innovation - Packers Products, New Delhi  
Consumer Pack - Viva Packaging Products, Ahmedabad  
Material/ Fittings - Packers Products, New Delhi  
POP Display - Jayna Packaging Pvt. Ltd., Mumbai  
Best Printing - Wonder Craft Pkg. Pvt. Ltd., Baroda

### 1999

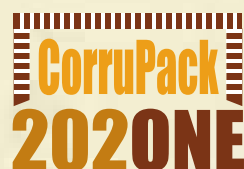
Transport Pack - Novel Packaging, Pune  
Innovation - Jayna Packaging Pvt. Ltd., Mumbai  
Consumer Pack - Packers Products, New Delhi  
Material/ Fittings - Jayna Packaging Pvt. Ltd., Mumbai  
POP Display - Jayna Packaging Pvt. Ltd., Mumbai  
Best Printing - Jayna Packaging Pvt. Ltd., Mumbai



## TECHNICAL SESSIONS

SL	SUBJECT	SPEAKER
1	<i>Stress, Team &amp; Management for Success - "Man Need Not Work Like A Machine for Materials Gains"</i>	<b>Dr. Gnanvatsal Swami</b> Life Coach & Eminent Speaker
2	<i>Human Capital (Resources)... The make-or-break factor in today's times for SME's</i>	<b>Mr. Vijay Panjabi</b> Director, Radheshyam Packwell Pvt. Ltd.
3	<i>Improving the performance of employees thru KRA (Key Responsible Area) and KPI (Key Performance Indicators)</i>	<b>Mr. Nirmal Sadgir</b> Director, DBS Packaging Pvt Ltd. Pune
4	<i>IIOT in box company (Industrial Internet of Things)</i>	<b>Mr. Mayank Chidri</b> Founder & Director, IOTSYS Technologies Private Limited, Pune
5	<i>Corrugated Board Manufacturing Cluster – Is it a Reality?</i>	<b>Mr. M. S. Rajesh</b> Managing Director, Tirupur Corrugators Private Limited
6	<i>Packaging Inks – changing regulatory landscape</i>	<b>Mr. Jatin Takkar</b> Head - Product Safety & Regulatory, Siegwerk India
7	<i>Effluent Treatment of Ink Wash in Box Plant</i>	<b>Mr. Abhay Agarwal</b> Director, NPI paper and Paperboard Pvt Ltd
8	<i>Effluent Treatment of Starch Wash in Box Plant</i>	<b>Mr. Bhaskar Reddy</b> Director, Amylodex Pvt. Ltd, Hyderabad
9	<i>New concept in FG storage</i>	<b>Mr. P. V. Ashwin</b> Director, Mohan Boards Pvt Ltd. Kolkata
10	<i>Packaging schools in India and abroad</i>	<b>Mr. Nirav Chhajer</b> Director, Pack O Pack Industries, Mumbai
11	<i>Relation between Bursting strength of Kraft before and after ply separation of corrugated board by water soaking method</i>	<b>Mrs. Madhura Parag Mahajan</b> Head of Dept, Printing Technology, Pune Vidyarthi Griha's College of Eng & Tech
12	<i>Environmentally sustainable Vegetable Inks for Flexo Printing of Corrugated Boxes</i>	<b>Mr. Bodi Kampani</b> Managing Director, Chairman Young Concepts India Inc.
13	<i>Cost Index for Corrugated boxes</i>	<b>Mr. Ramkumar Sunkara</b> Chairman R & D Committee, FCBM <b>Ms. Geetika Goyal</b> Analyst
14	<i>Corporate Social Responsibility (CSR) and Indian Companies Act.</i>	<b>Mr. Gobind Gurbani</b> CEO, Pinkcity Chemicals (Corrugated Box Division)

# EXHIBITORS AT



SL	EXHIBITORS	STALL NO
1	STARK RIDGE PAPER	13
2	ECOTECH PAPERS	14
3	B.R.D MANUFACTURING COMPANY	16
4	SEVEN11 INDUSTRIES	49
5	JAGDAMBA ENTERPRISES	8
6	BHAGWATI KRIPA PAPER MILLS PVT LTD	12
7	LEGEND PACK CO. LTD	15 & 28
8	NYLOPLATE CREATIVE ENGRAVERS LLP	5
9	SANJEEVANI GUM UDYOG	6 & 7
10	ANANYA PAPER INDUSTRIES PVT LTD	17
11	AMYLODEX PVT LTD	18
12	GMS INTERNATIONALS / AGSP IMPAX CORP	19
13	MAXTHERM BOILERS PVT LTD	20
14	ENERGY PLUS	22
15	MOUNT KAILASH PRINTPACK MACHINES, CHENNAI	23
16	SHREE BALAJI SOLUTIONS	26
17	INSUN CO LTD - KOREA	27
18	PARAMOUNT CREATIVE VENTURES PVT LTD	29 & 30
19	HEBEI XINGUANG CARTON MACHINERY MANUFACTURE CO LTD	31
20	MARSHAL WIRE INDUSTRIES	33
21	McSPAAR TEST SYSTEMS & CHEMICALS PVT LTD	34
22	ROBUS INDIA	35
23	DHANUKA GROUP	37
24	KEENMATICS	42
25	DIGIFLEX	43
26	SPB GROUP	44
27	STANDARD ADHESIVE & CHEMICAL WORKS	45
28	VEEPEE GRAPHIC SOLUTIONS (P) LTD	46
29	PIDILITE INDUSTRIES LIMITED	48
30	BOBST	54
31	MOUNT KAILASH PRINTPACK MACHINES, CHENNAI	55 & 56
32	LINUX MACHINES INCORPORATION	40
33	MAXTHERM (INDIA) PRIVATE LIMITED	47
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ISO 9001:2015



FSC:C40024



1397:1990

**BIS Certified Kraft Paper Manufacturer**



## Quality Product

Parameters	Value / Range
Trimmed Deckle	357 c.m.
Grammage	120 gsm to 230 gsm
Bursting Factor (BF)	18 BF - 28 BF
Moisture	6.5-8%
Plybond	250J/M2 (min), Max Limit as per requirement
RCT / SCT Values	As per standard specification
Cobb Value	As per standard specification

- Our quality tests are carried out on the parameters of : Dimensional Accuracy, Finishing, Strength and Durability.
- Quality Control Parameters: We are following several quality parameter checks at different stages of production, which enables in maintaining high quality standards: GSM, Burst Factor, RCT, SCT, Breaking Length, Tear Factor, COBB, Tensile, Plybond.
- QCS system with minimum GSM variation.

### OUR CORPORATE ADDRESS: ECO TECH PAPERS

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# FCBM COMMUNITY



## FCBM: JOURNEY DOWN THE MEMORY LANE



*Late Shri. B.K. Doshi,  
Founder President of  
WICMA and FCBM*



*First FCBM Conference  
Bombay (1971-72)*



# FCBM: JOURNEY DOWN THE MEMORY LANE



## THE FORMATION OF FEDERATION

During this period, similar associations had taken shape in Delhi (NICMA), Calcutta (EICMA) and Chennai (SICBMA) initiated by veterans like S.L. Chaudhary, M.L. Mehra, A.B. Ajmera, Harlalka, M.K. Ramaswami, H.P. Arora, S.S. Raju and others.

It was again under the guidance of B.K. Doshi that the for associations got together under the umbrella of the Federation.

The Federation Of Corrugated Boc Manufacturers Of India (FCBM) became a registered body in 1972.

As the years rolled on more and more Regional Associations came into the fold of FCBM.

The 49th FCBM Conference being held in Kolkata in December 2021 brings together members from 13 Regional Associations across India. The conference is hostel by EICMA.



## MESSAGE FROM EICMA PRESIDENT



**MOHIT BAJAJ**  
President

It is a matter of pride & honour for any Regional Association to host a FCBM Conference. EICMA is privileged to host the same in Golden Jubilee year of FCBM. I welcome all Delegates, Speakers, Brand Promoters and other participants to the 49th Conference of the Federation of Corrugated Box Manufacturers of India.

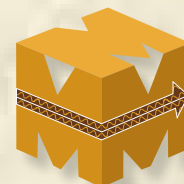
This conference will offer a premise for our members to gather and interact intensively with the industry experts on their concerned topics. I am sure the eminent speakers will cover the theme **M-Cube: Man, Machine and Material** from different perspectives. I am privileged to say that this conference will definitely offer suitable solutions to the common issues faced by our fraternity with a futuristic approach.

The interactive technical sessions would be followed by Cultural events on both evening with fellowship & many surprise packages under our hospitality. As they say **"Dream don't work unless you do"**, the success of this Conference is solely on the dedication and efforts of innumerable members who started working on the preparations for over one year in many ways to make this dream become a reality. Eventually I express my special thanks and appreciation to all.

***"There are some people who live in a dream world, and there are some who face reality; and then there are those who turn one into the other".***

I hope you all enjoy this memorable event & stay in our city of joy.

## REGIONAL ASSOCIATIONS



**Eastern India Corrugated Box Manufacturers'  
Association**

**EICMA - Head Office  
9/1, Syed Amir Ali Avenue  
Kolkata - 700017**



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Nitesh Chowdhury	Hon. Treasurer
Narendra KR. Jhunjunwala	Ex – Officio



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401, Vaibhav Kunj Apartments,  
1- 2- 605, Tower Tank Bund Road,  
Hyderabad – 500 080  
Telangana, India



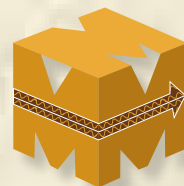
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C/o. Radhe Packaging Plot No.  
1075,  
Kadi-Kalol Road, Chhatral-382729

## REGIONAL ASSOCIATIONS



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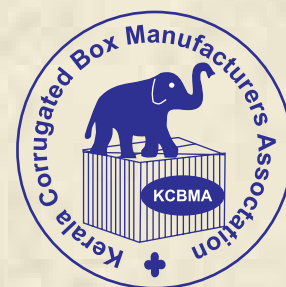


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173220 Parwanoo, Himachal  
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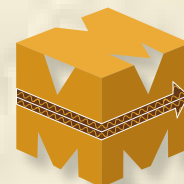
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Industrial Area, Indore - 452015.  
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## REGIONAL ASSOCIATIONS



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PUNJAB CORRUGATED BOX  
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**PCBMA (Punjab Corrugated Box  
Manufacturers' Association)**  
Village- Gaunspur, Hambran Road,  
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**Rajasthan Corrugated Box & Board  
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LG-13,14,15,krishan Kripa-3,  
Subhash Nagar,  
Jaipur - 302016



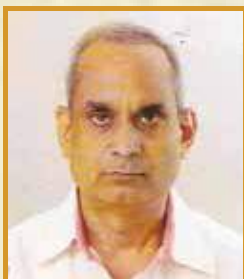
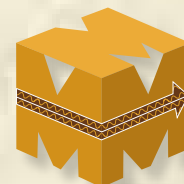
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**The South India Corrugated Box  
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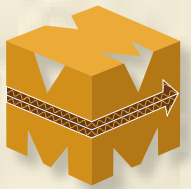
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## GLIMPSES OF PAST FCBM CONFERENCES



# GLIMPSES OF PAST FCBM CONFERENCES





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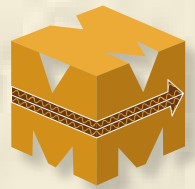
**Email : totlatrades@gmail.com**

Contact Person : Nisheeth Kumar Totla | **Mobile : +91 98300 88000**

## **“Think of Paper, Think of Us”**

*44 years in service to the Corrugation Industry*

# ADAPTING TO THE NEW NORMAL



**Kirit Modi**  
**Horizon Packs Pvt. Ltd.**

There are no doubts in anyone's mind today that we are in midst of the new normal. COVID has not only expedited but also amplified various trends and changes in our economic environment.

The advent of the pandemic and the start of a "New Normal", as we call it, have brought with it a series of unprecedented changes in the way businesses, across a number of industries, function. With regard to the paper and paper-based packaging industry, there are four major micro-level changes which can be categorised as – Fundamental, Structural, Incremental/ Directional and Technology-led transformations.

## FUNDAMENTAL CHANGES

*Here are the major changes:*

- 1. Volatility in pricing of all commodities including major raw materials like Paper, Coal, Oil, Starch etc.**
- 2. Chinese ban of Waste import - its' impact on availability & pricing**
- 3. Export opportunity of Kraft paper for Indian Kraft mills and its' impact on domestic supply situation & pricing**
- 4. Emergence of E-Commerce demand**

All these factors in conjunction have impacted the demand and supply dynamics and their combined impact has affected the pricing and availability of the inputs for the paper and paper packaging industry. The current commodity super-upcycle is causing significant volatility, adding fuel to the fire.

## STRUCTURAL CHANGES

### **1. Emergence of Integrated Players & Bigger corporates entering in this arena.**

The emergence of integrated players is set to transform the packaging sector. Also, in the recent past, we have witnessed a number of large corporates entering the corrugated box industry.

### **2. Consolidation wave - Mergers & Acquisitions**

Furthermore, major consolidation wave – i.e. Mergers & Acquisitions, is expected to be under way soon. This is likely to have a profound effect on the packaging industry's growth prospects and long-term outlook.

## DIRECTIONAL/INCREMENTAL CHANGES

### **1. Light-weighting**

In recent years, there has been a notable emphasis in product design to use lesser material to make light-weight packaging materials. The light weighting package material is a long-term gain both from an economic and environmental perspective and it is going to be a key trend in the future. This trend will necessitate the change in the box costing mechanism too - moving from per kg to square metre basis in line with international norms.

### **2. Development of finer flute grades**

In the paperboard packaging industry, the demand for finer flute grades is well-positioned for an increase in market growth owing to its potential for revolutionising both corrugated containers and folding cartons.



### 3. Importance of ESG to Sustainable Packaging

There has been a heightened focus on the environmental, social and governance (ESG) measures. Traditionally, packaging converters have played the role of the compliant supplier to their larger and more powerful brand-owning customers. However, in the current scheme of things, manufacturers are emphasising recycling, research and implementation of innovative methods that can make a difference in the long run. This can be accomplished by adopting the practices of a circular economy and integrating processes that address waste prevention.

### 4. Modern Retail

With the emergence and rise of new formats in retailing and the evolution of modern retail, modern-day consumers are increasingly looking for a shopping experience defined by value for money as well as sustainability. Here, the role of paper-based packaging comes into play. We are on the verge of a packaging renaissance in which new recyclable and compostable packaging materials are projected to permeate the market in the future.

## TECHNOLOGY-LED

### 1. Automation - higher-end machines

It should be highlighted that with the emergence of the “new normal”, automation in the packaging industry, in particular, the application of high-end, sophisticated machinery has increased. The present pace of technological development is projecting profound changes. To support this growth, the packaging manufacturers are continuing to utilise improved technologies to provide added value to the end-users.

### 2. Digital Printing

Additionally, the advancement in digital printing technologies and their immediate impact on the packaging industry marks another significant evolution in the paper-based packaging industry.

### 3. Coating technologies

The use of functional coatings offers paperboard packaging improved water barrier,

deep-freeze applications as well as excellent print receptivity. It can also enhance the aesthetics of the packaging. The demand is for high-performance and sustainable coating in paper and paperboards.

### 4. Green energy

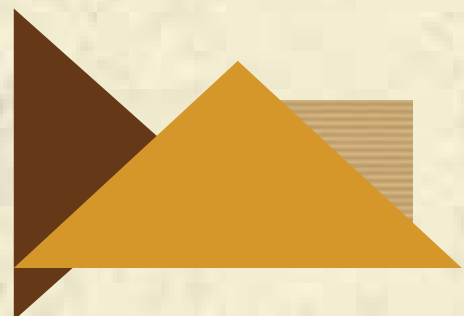
Also, the concept of ‘Green Energy’ is of crucial importance for the paper-based packaging industry. Since there are environmental concerns associated with power generation from non-renewable sources, it is high time that the use of renewable power, i.e. solar, power from bio-based, renewable sources, increases in the paper mills and packaging units. It will enable the industry to be more energy-efficient and sustainable.

At present, the corrugated box industry has been facing a sea of challenges in various areas owing to factors such as massive paper price hikes and a rise in the cost of other inputs as well.

Recently, we have witnessed a great surge in the price of coal which is the main source of energy for paper mills. Subsequently, this has led to an evident increase in the overall production costs of paper mills.

Thus, the energy crisis has had a huge impact on corrugated box manufacturers. Also, the price of imported waste paper has increased substantially for many reasons including almost a seven-fold increase in the global container freight charges on account of disruption in supply chain.

All things considered, it can be said that the huge upward price trends in a number of inputs and resources for the corrugated paper industry have dealt a massive blow. Unless box makers rise to the challenges and adapt to the new normal in creative ways, it will be difficult to pass through this challenging and evolving phase successfully.



# BOXES - THE MOST EXTRAORDINARY, ORDINARY THING IN THE WORLD



**Dharmendra Pandya**  
**M/s. Viva Packaging Products, Ahmedabad**

Friends, when we describe something or someone as extraordinary, that mean they have most extremely good, special & wonderful, outstanding quality comparing to ordinary one, right !

On one hand let's describe someone most Extraordinary, Ordinary - Albert Jones, Oliver Long, G.Smyth, Carl F.Dahl, Robert Gair Henry Norris, Robert, McKee all seems an ordinary name but their individual wonderful outstanding quality of unique inventions in the field of corrugated box industry made them all an immortal, most extraordinary, ordinary person - Let's see what make them extraordinary, ordinary.

Year-1871, Albert Jones of New York a patent was issued to for single-sided corrugated board.

Year-1874, Oliver Long invented corrugated board with linerboard on both sides.

Year-1874, G. Smyth invented a machine that could produce mass quantities of corrugated board.

Year-1879, Carl F. Dahl in Danzig, Prussia. Invented the Kraft paper process.

Year-1890, Robert Gair., Scottish immigrant, corrugated boxes were initially devised by him.

Year-1894, Henry Norris & Robert Thompson of U.S. produced first corrugated boxes in bulk.

Year-1964, McKee, Gander and Wachuta has been proposed formula of compression strength. ..Similarly

On other hand let's describe something most Extraordinary, Ordinary –Corrugated Boxes- In year 1879, when Thomas Edison patented lightbulb first, same time in year 1890, Robert Gair invented the pre-cut corrugated box. Corrugated Boxes are the greatest invention since the lightbulb, and doing a great job protecting, transporting products & lightbulbs too. Although it might seem a box is just a box, innovations in corrugated boxes have continued since Robert Gair's

initial brainwave almost 130 years ago. Corrugated boxes are so common, it can be easy to take them for granted. We tend to think about what we put in them, while barely giving the box itself a second thought.

But there are so many reasons which makes Corrugated Box-most extraordinary, ordinary thing in the world. Let's understand few most extremely good, special & wonderful, outstanding quality-

## **1. CFB means "Corrugated Fibreboard Box" but actually it is "Corrugated Fusion Box"**

Corrugated boxes are ordinary indeed. But they are so, so much more than ordinary due to its characteristic quality. We call CFB mean "corrugated fibreboard box", but for me as an engineer, designer, artist, manufacturer CFB means "corrugated fusion box". There are infinite fusions possible in terms of Architecture, Construction, Materials, Paper, Ply, Dimension, Size, Shape, Weight, Printing, Coating, Joints, and Water proofing, utility, just cumulative algorithmic sky is limit. It is infinitely customizable, foldable, Stackable, Cushion able, lightweight, Strong, Protective, Beautiful, Clean, Economical and Sustainable and renewable, recyclable at 95% carriers shipping container of choice for more than 100 years. Corrugated boxes are the most extraordinary ordinary thing in the world which can reduce shipping costs and waste! Almost 95% products are packed today in corrugated boxes only. That's pretty extraordinary, right?

## **2. Magical strong engineering structure with curved arches**

Corrugated board are just weak paper materials Combined, though, they transform the weaker pieces



into a rigid material suitable for packaging, shipping, and protecting goods have great engineering in its construction-Architects have known for thousands of years that a curved arch is the strongest way to span a given space. The inventors of corrugated fibreboard applied this same principle to paper when they put arches in the corrugated medium. These arches are known as flutes, and they enable corrugated to resist bending and pressure from all directions. These flutes are little engineering marvels and a key to corrugate protective qualities. On one hand the arches form rigid columns, capable of supporting a great deal of weight while on the other hand cushioning the container's contents. The flutes also serve as insulators, providing some product protection from sudden temperature changes. Is this not most extraordinary thing?

### **3. Generous remarkable service renderer during COVID-19 pandemic**

This pandemic realised people about generous service of corrugated box- During COVID-19 pandemic time remarkable generous service for humanity were rendered by corrugated boxes- Weather it was duty of bringing essential products of daily life, food, medicines, vaccine to the needy people safely at their doorsteps or to provide emergency services to the victims of corona virus in the non-packaging form of cardboard Beds, furniture, Partition, Face shield, in bulk quantity all over world instantly. Not only that but Corrugated box had also played an important role of emergency coffin just to save humanity and stop spread of corona infection amongst community. It was witnessed during COVID-19 time the presence of sanitised humble corrugated boxes in various mode near us weather it was corona testing dome, hospital, vaccination centre, even in home as safe carrier. But It was such a bad time for corrugated boxes when no one grant permission to it to enter in the house because of chances of corona virus infection. Just imagine how the best and safe services was rendered by corrugated boxes to bring 100 crore vaccine from manufacturer companies to its final destination user public all over India in short time. Is it not enough to realise Box- Most extraordinary ordinary thing in the world?

### **4. Corrugated Box stop Bacteria and keep fruit & vegetables fresh**

Recent Scientific work reveals that microorganisms die when they get trapped in paper fibres and die due to a lack of water and nutrients. Work conducted by Professor Rosalba Lanciotti and her research team at the University of Bologna's Department of Agricultural

and Food Sciences showed corrugated containers keep fruit and vegetables fresh up to three days longer than RPCs. The research revealed that microorganisms died much quicker when placed on corrugated surfaces where they get trapped in the paper fibres and die due to a lack of water and nutrients. Conversely, the research showed that microorganisms survive longer on plastic surfaces of RPCs.

One more recent research evaluated the survival of the COVID-19 virus on different surfaces and reported that the virus can remain viable for up to 72 hours on plastic and stainless steel, up to four hours on copper, and up to 24 hours on corrugated board. Is this not wonderful extraordinary quality of corrugated box?

### **5. E-commerce- Online shopping brings boxes to consumers' attention**

Corrugated is the primary mode of packaging used in today's e-commerce and subscription economy. The rise of e-commerce, accelerated by the pandemic, along with resulting changes in shopping behaviours means consumers are more aware of packaging than ever before. The coronavirus crisis has already led to some of the sharpest declines in recent times in demand for certain types of corrugated packaging while accelerating growth for others—such as corrugated packaging for e-commerce shipments that are emerging as lifelines in this new world. The ecommerce packaging market is forecasted to experience growth during the next five years.

While shopping behaviours and product delivery mechanisms are undergoing dramatic changes, one thing has remained constant: the humble corrugated box maintains its humbleness as the packaging material of choice for carrying those products from one point to other point. E-commerce raises the visibility of corrugated as more boxes are delivered to consumer homes and offices. The rise of e-commerce and the current backlash against plastics RPCs and single-use packaging means that consumers are more aware of corrugated packaging than ever before. Is that not enough to tell extraordinary service quality?

### **6. Corrugated boxes reduced freight cost**

Less weight less freight cost -Results of various case studies about costs of transporting various commodities in corrugated vs. reusable plastic containers (RPCs). Study showed that corrugated is the more economical choice because corrugated containers are lighter than plastic. It provides the

greatest cube efficiency, and its light weight allows a truckload to cube out before it weighs out – meaning that every available inch of space is optimally utilized, minimizing freight and handling costs with fewer trucks, less fuel, and lower emissions. Corrugated maximizes every inch of shipments providing more protection and lower cost. Latest engineering have reduced the ply and board grammage to make it lighter than ever.

### **7. CAD, Dimensional alignment and material accuracy to work with Robotic Packaging & Drone service**

CAD operated design, better quality of raw materials and emerging latest technologies of production line have achieved zero accuracy in alignment and dimensions of making corrugated boxes. Today corrugated boxes are much sophisticated to work easily with robotics operated packaging filling line. Today corrugated boxes are been using in drone operated courier service due to accuracy and light weight. Is it not amazing extraordinary ordinary thing?

### **8. Corrugated Box work as advertising medium - A mobile billboard**

Yes for a brands, corrugated boxes serve as mobile billboards that showcase a product's image wherever they land. In stores, corrugated substrates also allow for eye-catching, modular display units that can be set up quickly and recycled at the end of a promotion. While the outside of corrugated shipper boxes has been largely ignored, that seems to be changing. Some retail giants, such as Amazon, are driving the trend of branding shipping boxes. Corrugated box have one of the big ability to convey a message through high-impact graphics helps to sell products and ideas. When a package is delivered directly to a consumer's door, that delivery presents a golden opportunity to promote the brand, reinforce the relationship with the buyer, provide information and excitement all in a functional container whose versatility could easily go untapped. Thanks to improvements in printing technology, corrugated can now more effectively serve as a product's advertising billboard when used as a primary package or display container. So while a corrugated box is an ordinary part of day-to-day life, its multifunctional capabilities make it and most extraordinary vehicle for brands.

### **9. Corrugated Box - A blank canvas for advertisement**

Corrugated packaging is a blank canvas for your custom artwork and branding Exciting technical

advances are being made in corrugated manufacturing, enabling the package to more powerfully fulfil key marketing functions. Plus, digital printing capabilities have improved dramatically over the past few years to support direct printing of intricate and colourful graphics on corrugated board.

Corrugated and digital printing — a powerful combination. As the digital print market evolves, corrugated packagers are able to adopt new processes and systems to address the demands of brands.

### **10. Corrugated box - Sustainable, Renewable and Recyclable**

Corrugated box is one of the best example of sustainable products. Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic and other requirements of present and future generations.

Corrugated packaging is renewable. The journey of the corrugated box begins in a sustainably-managed forest. There, certified foresters and loggers harvest just enough trees to make packages. And for each tree harvested, three more are planted to take its place. Corrugated packaging is a completely renewable resource: environmentally responsible, recyclable and compostable.

Corrugated is the most recycled packaging material: 96 percent of corrugated produced was recovered for recycling and almost all of that material was used to make new products. Recycling corrugated packaging decreases solid waste disposal. Collected fibre is then reused to make new corrugated packaging, allowing for the use of less new raw material. Corrugated box fibres are used 7-10 times to make new boxes and other paper products.

Being a corrugated box designer, manufacturer we should create and run new program aims to enhance and elevate the image of corrugated box packaging, focus interest on the unique attributes of corrugated and combat misperceptions about the industry so that users and consumers feel good about choosing, receiving, using and recycling corrugated box packaging. There are many good qualities "CFB" have but these above qualities is enough to simply justify - Box-Most extraordinary ordinary thing in the world.



# B.R.D.

PAPER CORRUGATED BOARD & BOX MAKING MACHINERY



High Speed Automatic 5 Layer Corrugated Board Production Line



Flexo Folder Gluer ( FFG ) 300 Pcs / min.



Economic Speed 3 PLY MINI Plant Gas Heating System



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# B.R.D.

PAPER CORRUGATED BOARD & BOX MAKING MACHINERY



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- \*SPARE PARTS



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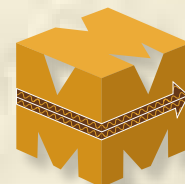
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## WEST MEETS EAST



**Pankaj Shah**  
**Mehta Paper Industries**

The title of this article seems to be written backwards. Yes, it is.

There is an age-old idiom, “East meets West”. It is often used for a blend of cultural aspects of two different geography and economy. Underlying assumption is East is ‘learning’ from West and adopting its relevant facets for progress. For our industry - corrugated packaging - this is truly the case.

Western world - USA and Europe - innovated corrugated material and the industry was born around 1900. Wooden crates and boxes started giving way to this new innovated material.

India began importing corrugated boards and domestically converting into boxes, starting around mid-fifties. The industry in India was born around 1950's. A gap of about 50 years! India was about five decades behind.

In true sense, East met West, and the pioneers learned the tricks of the trade. Wooden crates and boxes started giving way to this new imported material, in India as well. From Pioneer era to SSI era, the industry grew but faced many gaps in technology and materials.

Technology issues – Wash boarding, Finger lines, crushed flutes, ragged slots, fuzzy printing, rusted stitch joints, dimension variability and few others – were somehow managed.

Material issues – non tandardization, low strength fibres and some others – led to higher fibre usage to compensate for low strength.

Since some technology was absorbed and localised, and material availability increased to

reduce imports to miniscule levels – gap with West reduced. Say, the gap reduced from 50 years to maybe, 25 years.

Post globalization in 1990's and subsequent removal of SSI regime, the industry took more steps – in leaps and bounds – to meet West. Corrugated boards' production was automated. Many of the earlier technology and material gaps were successfully closed.

On technology front – terms such as Splicers, Fingerless, Quick flute change, thin blade slitting, Conveyors for material handling, Lead edge feeders, Printer Slotter Die Cutter Folder Gluer Bundler as one machine, Vacuum ink wash up, Rotary punching and others were no longer ‘unknown’ or ‘alien’. Those in the industry attending the conferences and exhibitions regularly, met the West here in India. Who' who in machinery and technology in the world has been here. Interacted with us. Visited our plants. On material front – duty free import of raw material for export – led the way to bring in the higher strength and higher speed friendly material. This led to some learning and domestic materials improved.

Today, an estimate of say, 10 year gap may not be too far from realty. So, in seventy years, Indian Corrugated Packaging Industry has not only met 'West' but reduced the gap from five decades to may be one decade. Impressive growth and stellar achievement by the industry.

World uses US\$190B of corrugated material annually. In India, the number is US\$ 4B. Small but growing >15% per year.

Raw material import is < 3% and export of boxes



is <1%. So, the industry is largely domestic. The point to note is Corrugated Industry has supported country's packaging needs. Contributed to environment. Made government proud of its 'Atmanirbhar Bharat' initiative.

In 2021, seventy years later, a generation has changed. Pioneers have moved on. Industry is now in the hands of younger, more educated, more resourceful and progressive thinking industrialists. They will surely overcome newer challenges and grow the industry further.

Technology issues – In process calliper loss, humidity affected strength loss, out of square boxes, small orders, Manual truck loading/unloading and others – will surely be overcome in due course. Material issues – Odour, Cracking, Open joints, Lack of standard grades and others when overcome, will make us aligned with international practise.

On commercial side – switch from 'per kg' to 'per M2' conversion to align with global practise, transit from material standards to performance standards to align with West, adopt ERP [as some already have] to align with improved business management, digitise printing to align with small orders, offer multi colour printing to align with retail marketing of packed products, minimise lead time to align with e commerce timely delivery needs and such other new challenges – will need to be quickly resolved.

Leading Indian entrepreneurs and technology savvy nextgen industrialists have already installed state of the art high speed machinery matching the best in the world. Hourly box production is now reaching 20,000 and more. Box plant floor space now exceeds one lac sq. ft. Investment in Plant & Machinery, which was capped at 30 lacs during SSI regime, now has grown many fold – a factor of 100+.

These newer plants have closed the gap. East seems to have met West in these box plants. As India grows to US\$5T economy and beyond, Corrugated Packaging Industry is bound to grow more and more. This industry is mostly owner driven, well educated, well-travelled globally and eager to absorb new technologies.

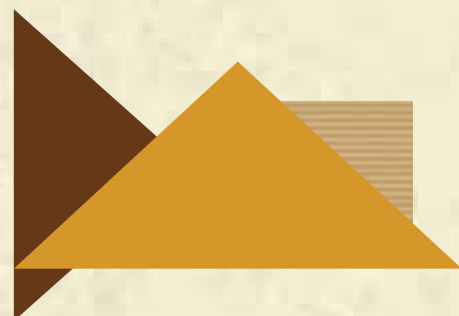
Corrugated Machinery manufacturing seem to have already shifted to East. Volume of business in China, Taiwan, South Korea, Japan and India combined – East - far exceed that in USA and Europe – West. World wide exhibition of corrugated packaging industry has shifted from Dusseldorf, Germany to Shanghai, China several years ago, validating that focus of the industry is now – East.

China has 900M smart phone users, India has 440M, Indonesia 160M, Japan 75M, Vietnam 60M – Total East will approach 2B.

Compare this with USA 270M, Mexico 70M, Germany 65M.....will not even approach 1B. So, the focus is now clearly – East.

India is already undisputed leader in software. In few years, AI, IoT, 5G, 3D..... will no longer be just buzz words. They will be reality.

The day is not far, when the age-old idiom will no longer be written the same way. It will be proudly written as '**WEST MEETS EAST**'.



# PLAIN BROWN BOX NO MORE-CORRUGATED IS BRIMMING WITH OPPORTUNITY



**Haresh Mehta**  
**Jayna Packaging**

Multicolor printed corrugated boxes are already being used for various products but the new entrants on the scene are SRP (Shelf Ready Packaging) & RRP (Retail Ready Packaging) are already making headway into the retail market. FMCG companies are already adopting this. But it's in its infancy stage.

We , corrugators, instead of waiting for the small scale & medium scale retail products manufacturer approaching us, we should approach them explaining the benefits of SRP & RRP helpful in selling their products in the modern trade outlet. The scenario is changing very fast. The old 'Kirana' shops are changing to Self-Service stores where SRP & RRP will play a major role in a brand establishment.

Besides Brown Boxes & Multicolor printed corrugated boxes, there are numerous applications of our popular, more versatile Corrugated Board are possible.

Why do I like corrugated boards??

Can I make a Corrugated Boat, which actually can float in the water??

Can I dine in a restaurant where all furniture is made of Cardboard/cardboard?

Can my kids slide on the Slide, which is made entirely out of corrugated cardboard??

Can I make my retail store of garments out of corrugated cardboard??

Can I make a sculpture out of this?

YES, all these are made of corrugated board. Not only these, there are many more products which we use in our daily life, made out of non-sustainable material like wood, plastics, metal etc, can be designed & made out of corrugated board which are lightweight, durable

easily formed, easily transportable, Economical & more over its sustainable too, it's today's requirement.

Amazingly Corrugated board is far stronger than the material it's made of- the kraft paper. It's wavy flute-like structure sandwich between layers of kraft paper has enormous strength. It's an ancient architectural structure based on Arch & Pillars. Which sustains great weight.

I just love the corrugated Board material for its versatility, ease of converting, easy availability, and flexibility & moreover it's not expensive at all to create many things. In fact, it can be a designer's dream material. It's not explored the way it should have been globally to its limitless boundaries.

Predominantly it's major use as Packaging material globally. One has to have corrugated boxes to ship it to the wholesale & retail market.

Off-late it's making it's way into retail market as Sales promotional products, the need of the day in modern trade marketing replacing products made from Metal, wood & plastics where ever need for the few of the advantages like:-

- It's economical
- it's lightweight
- shipped in Flat condition, save on transportation cost
- easy to assemble
- easily available
- easily recyclable & sustainable

Because of so many advantages, who will not like it?

I just love the material for its many advantages. I'm passionate about the Corrugated Board. It's telling you, 'Hey make my use, stretch your imagination beyond it's boundaries. 'I'M WITH YOU.'



## JAYNA'S INNOVATIONS

### Corrugated Bed

To deal with the hospital bed shortage, we have developed a HEAVY-DUTY DISPOSABLE-RECYCLABLE CORRUGATED BED (Single bed for COVID 19 Isolated patients). The number of hospitals and beds needed for Covid-19 patients has been shooting up with the increase in cases being tested positive for the virus. The Centre also said the government is taking vital steps, to the extent of being over-prepared, to combat the deadly virus. Many hospitals across the nation have reported the need for more hospital beds in order to keep up with the growing number of Covid-19 cases. Keeping this in mind, Jayna came up with a recyclable, lightweight and cost-effective solution – a medical bed made of corrugated fiberboard.

- Eco-friendly
- Cost-effective
- Is lightweight can withstand 300kg weight.
- Can be sanitized.
- Can withstand daily moping.
- Transported in flat-pack.
- Convenient to handle.
- No metal pins no staple used.
- Disposable & Recyclable.
- The most compact shipper Box, easy to transport, store & handle.

### Cardboard Furniture for COVID Hospital

Jayna offers Disposable Cardboard Furniture for Isolation centers, Hospitals, Clinics & many more

- Cardboard Furniture:
- Cardboard Chair
- Cardboard Stool
- Cardboard Rack
- Cardboard Dustbin
- Cardboard Desk

The Cardboard Furniture are made of corrugated fiberboard.

- Strong & Light weight
- Easy to assemble & Dismantle
- Convenient to handle
- Can be sanitized.
- Disposable & Recyclable.
- Foldable (Supplies in Knock-Down condition)

### Cardboard Cafe

This is India's first cafe designed & made out of 100% cardboard. The design concept explores "out of the

corrugated board - box thinking" unpackaged into a 100% sustainable corrugated board experience that advocates usage of environment-friendly products and renewable energy to combat climate change, global warming. Corrugated board is 100% recyclable and biodegradable.

It is an extremely versatile material, which exhibits excellent acoustical properties. The entire landscape of corrugated board including the cavernous free flowing volumes on side walls, furniture, products, light fixtures etc. have been sculpted from corrugated board.

One of the table flowing out of the cavernous wall make a very unique structure with , no-legs support a very unique designed product.

Following are the products have been made for the cafe:

All the products made out of 100% corrugated board

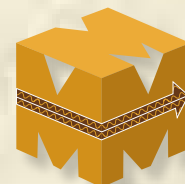
- 2 seater chair along with 2 seater table
- 4 seater chair along with 4 seater table
- 6 seater chair along with 6 seater table
- Bar chair
- Bar table
- Bespoke wall (cavernous free-flowing side walls)
- Signage's
- Cutlery box
- Bill box
- Menu card
- Shelves

### RE-DESK

Accept and Adjust is the need of the hour as we all are in the grip of a lockdown, but the show must go on even in this hazy weather, "Work from Home". We, at JAYNA, are always on-the-go to workout innovating solutions to meet new challenges, "Office At Home"

Solution:- **RE-DESK:** RE-DESK is RE-Cyclable, RE-Volutionary, RE-Thought traditional desk, derived from sustainable heavy-duty corrugated cardboard. Supplied in a compact flat-pack. Can be stowed away and easily stacked. It is light yet stands sturdy and tall. Add-on functions like organizer, shelves, wire-grip for cables, a place for tea/coffee mug and easy maintenance too. Working Standing-up, as the study says, offers health benefits for mind, body and back which enhances work efficiency.

**RE-Invent, RE-Juvenate, RE-Charge yourself with RE-**



### **DESK. Be a part of the RE-Volution. Corrugated Boat**

The largest cardboard structure in the world with the dimensions 88ft in height, 25ft width, and 9ft length. Jayna Packaging attempted Guinness world record for largest cardboard by making a paper boat.

Purpose of the project was to raise awareness regarding the water crisis present across the world. According to the press release, there are 844 million people with no access to safe water.

"Cardboard is eco-friendly, as it is made out of recycled paper. By making such huge sculpture with cardboard using recycling ideas, we can contribute to the cause of prevention of water pollution," On completion of the project, It comprised of 3050 CNC pieces which were interlocked and assembled like a jigsaw puzzle. The boat was kept for display in the Somaiya college campus for seven days. Later moved to various exhibitions and galleries to spread awareness regarding the water crisis.

### **Slide for Children**

BRING THE PLAYGROUND HOME.  
Don't let weather dictate when your kids can't go to the park to run around. Rain or shine, this indoor slide is ready to deliver hours of fun at the snap of a finger!

STURDY AND ECO-  
FRIENDLY. Our Strong  
cardboard slide is super

durable and safe. It's also 100% recyclable when you're done with it.

### **T- Shirt Packaging**

The corrugated T-shirt packaging which can be used as a pen stand.

Cardboard, the material considered to be of very low value, hardly any strength. That's how the product is known. But the same corrugated board, designed & used in differently, creatively, the product is of amazing value.

Simply cut the perforated area fold it after tearing & lock the bottom flap to use as a pen stand.





# **MADAN PACKAGING PRIVATE LIMITED**

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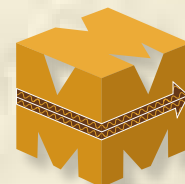
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[milan@madanpackaging.com](mailto:milan@madanpackaging.com)**



## A SLICE OF GOODNESS: PIZZA BOXES



**Mr. Shlok Kedia**  
**Director**  
**(Ginni Gopal Boards Pvt Ltd)**

With a knock on the door and a box in your hands, you know your pizza's arrived.

The pizza box has been keeping it safe for a half hour or more, making sure nothing happened in transit. As you breathe in the savory plumes of steam and dig into the slices it's easy for you to forget all the hard work that has gone into creating the pizza box.

It is often said for countries like the U.S that "Around two-thirds of all pizza consumed is delivered in a box," but it now holds true for the Indian Market as well.

The pizza box as we know it probably came into being in 1960s when the corrugated box started to take the place of the thin, single-layer paper bags or paper boxes. The boxes evolved into the typical form we now know and love: square shape and approximately two inches thick, made from 3ply fluted corrugated board. The corrugated pizza box gave it added strength and heat retention due to its 3 layered structure.

Moreover, if we see the shape of the corrugated pizza box has basically remained unchanged in the last 60 to 65 years.

Recently there has been a rush to use less paper in the packaging and a lot of efforts are now put

in to ensure that a pizza box does a better job at transporting the pizza.

Some major innovations in the Pizzabox sector are as follows :

- My dear friend Mr. Vinay Mehta has achieved global recognition with the "VENTIT" design of pizza boxes with built-in ventilation on the lid that is indirect so that steam can escape but it maintains conduction which helps in maintaining the temperature inside the box.
- Some companies are doing built-in ventilation on the base which allows the crust to remain crispy.
- Some have designed a box with a metallic coating on the inside for higher heat retention.
- There are talks on trials going with a round-shaped pizza box.
- Boxes are now structured to reuse in form of stands, pizza slice plates, or even toys/board games to play on, etc.

We at Ginni Gopal Boards Pvt Ltd have been in the business of corrugated box making for the last 45 years however the last 11 years in pizza box making has been very challenging. It is an art that has been difficult to master but with help of my team, the latest machines, and good suppliers we are able to make a presence in the niche industry.



As a box maker when you think of a pizza box, one generally thinks of making a strong and sturdy pizza box with nice and attractive printing.

However, it is important to stop thinking like a box manufacturer and start thinking of oneself as a food producer. Only with this changed mindset, one can explore this dynamic industry.

**With whatever experience I have in the industry I would like to share some salient features formaking pizza boxes:**

**Facility Audits:** Since the pizza touches directly to the box, it comes under primary food packaging. All International Food safety standards and of FSSAI needs to be followed adhered to at all times. Housekeeping and Hygiene levels need to be of a high standard which is at par with handling food products. FSMS, ISO 22000, BRC, GMP, FSC are some of the certifications for a manufacturer.

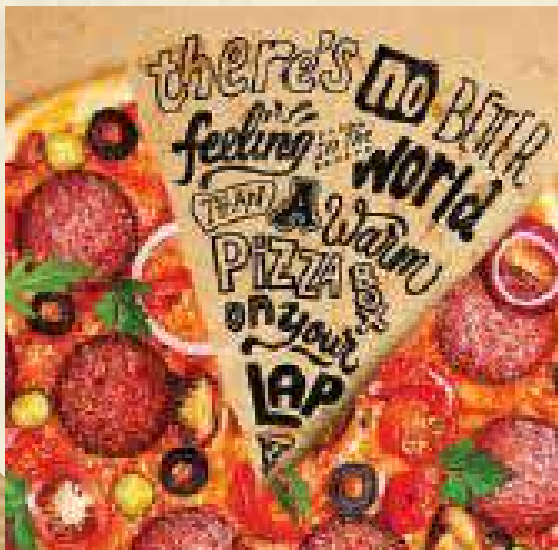
**Raw Materials:** Even if the customer insists on a cheap price product it is important not to use recycled paper for a pizza box. Nowadays consumers sue pizza companies for large amounts or create negative publicity on social media if any problem is found in a pizza. In such cases, the pizza company first targets the box maker. Finding hair-like materials, dirty-looking paper, foul paper smell are some of the common features of recycled paper. It is important to use virgin paper with food-grade properties along with food-grade inks, adhesives, and oils.

**2 Tops:** Any corrugated box has one top layer which is always given the most importance. A pizza box has 2 tops because the inner layer is also equally important as the outer layer. On one hand, the top layer needs fine printing and on the

other hand, the bottom layer is the food contact layer so any oil stains, hands marks, fingerprints in the inner layer are not acceptable.

**Material Handling:** It is important to keep absolutely minimum human contact during the process of manufacturing. Total automation and palletization are key factors for material handling in a pizza box. It is the only way one can keep the boxes away from any contamination which could be in form of bacterias or viruses.

Another important aspect of pizza boxes is that it is totally recyclable and around 90% of the corrugated produced each year is successfully recovered for recycling. Pizza sellers have an opportunity to promote goodwill and positivity by reminding customers to recycle their boxes. The "Corrugated Recycles" emblem should be printed on every pizza box, at a minimum, to drive the message home. Letting customers know that they can make a positive contribution by recycling those boxes is a great way to capture a spirit of cooperation that is good for everyone. The box industry gets more raw materials back for making new products.





**Bhagwati Papers**



## Chairman's Views

Dear Friends,

We are meeting at an appropriate platform - wherein we should discuss and decide our steps for the development of our so dear Industry.

You will agree about the ever increasing scope of rise of our Packaging Industry. But are we taking advantage of the situation or we are engulfed into Undesired and Non Professional decisions and could not benefit ourselves - either by our own fallacies or surrendering to our well deserved business interests and images too.

We have a Tricycle of the buyer - which may be a MNC, Paper Mill and the most important in the chain - the converter.

Please allow us to identify as to where we stand today and / or how is the image and prospects of our Industry.

The Pertinent question is whether we are aware of our standing before our buyer. Does he believe upon the converter and the facts as enunciated before our buyer.

The answer is negative. He believes that we will succumb to our own statements sooner than expected.

The Paper Mills, we must confess, do not keep a right stand and succumb to sales and demand pressures sooner than the creation of facts before their clients.

Thus there becomes an all over confusion and unfortunately there comes a big mess of faith and belief. The client becomes SURE once again that pressure and continued pressure only works.

So if we are interested in the growth of our Industry in general and oneself in particular - we will have to be united with our sincere efforts to be wise and take necessary efforts.

We are required to identify the games mongers and dissociates with the necessary links. We must differentiate between serious and non serious players in either of the sectors.

This would be the ideal solution that we look for.

Our best wishes to all our friends in the industry.

P K Mehra

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# Stark Ridge Paper

## HOW CAN A PAPER MILL BE GOOD FOR THE ENVIRONMENT?



Above: A View Of Stark Ridge Paper's 200TPD Kraft Paper Mill in Dhalbhumgarh, Jharkhand

### How can a paper mill be good for the environment and the local community?

To put it simply, by following Stark Ridge Paper's practice of mindful manufacturing which builds their environmental and social initiatives seamlessly into their manufacturing process.

To begin with, they manufacture **100% recycling-based** kraft paper. They annually divert **about 60,000 tons of waste cardboard** from landfills and convert it into kraft paper. This eliminates the need for wood pulp, which in turn **reduces deforestation** and protects the forests.

Their one-of-a-kind ETP (Effluent Treatment Plant) designed by

Paques, Netherlands, makes them a **Zero Liquid Discharge** unit. All waste water is recycled & reused for manufacturing in a **closed loop system**. Very little fresh water is added to the system and no effluents are produced, so they **neither deplete nor pollute the local water table**.

The ETP reactor also **produces biogas**, which is used to power their boiler, **saving 3-5 tons of coal** per day, and reducing their overall carbon footprint.

**Byproducts** of the manufacturing process are distributed to the local community members in an effort to support the local economy. Stark Ridge Paper has provide machinery and

training to local residents to **make core pipes and edge protectors** which they later buy back to package their paper rolls. In this way, they **support ancilliary industries & reduce wastage**.

Some by-products are also used to **make papiér maché egg trays** for a local poultry farm. This helps to **support local cottage industries** while **further reducing wastage**.

In 2020, Stark Ridge Paper distributed over 200 tons of paper and equipment to **over 500 women from self-help groups** to learn how to **make paper bags**. This drove the adoption of paper bags over single-use plastic bags,

**empowering the women and further benefitting the environment.**

The **mills's green zone** is designed to provide a **natural habitat for local species**, safe from poaching and deforestation. A perfect example of a species that benefits from the green zone is the **Malabar Giant Squirrel**, a threatened species found only in the deciduous forests of the Deccan Plateau region of India, including in Jharkhand, where the mill is located. It was only natural that the Malabar Giant Squirrel would become Stark Ridge Paper's logo & mascot.



**"Our logo - Starky - is our reason for being."** says CEO Dwipayan Patnaik. "He represents why we do what we do the way we do it. Every time manufacturers & consumers choose kraft paper over virgin paper, we consume less wood pulp, cut down less trees, destroy less habitats, and ultimately, save thousands of species of flora & fauna from going extinct. Starky is a clear, ever-present reminder to **make a responsible choice.**"

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Contd. On Back Cover>



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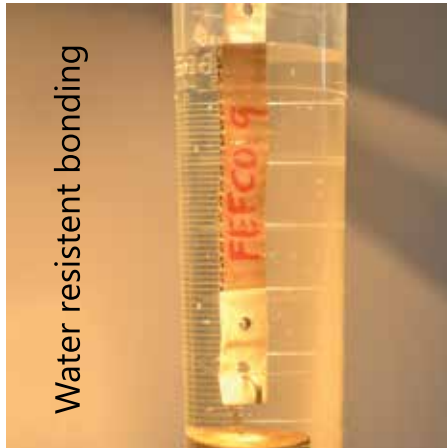
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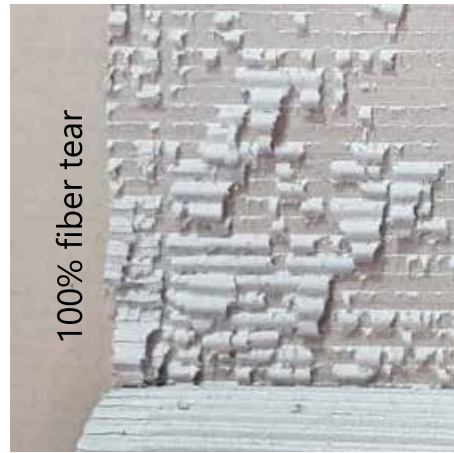
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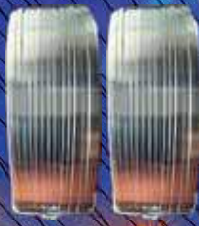
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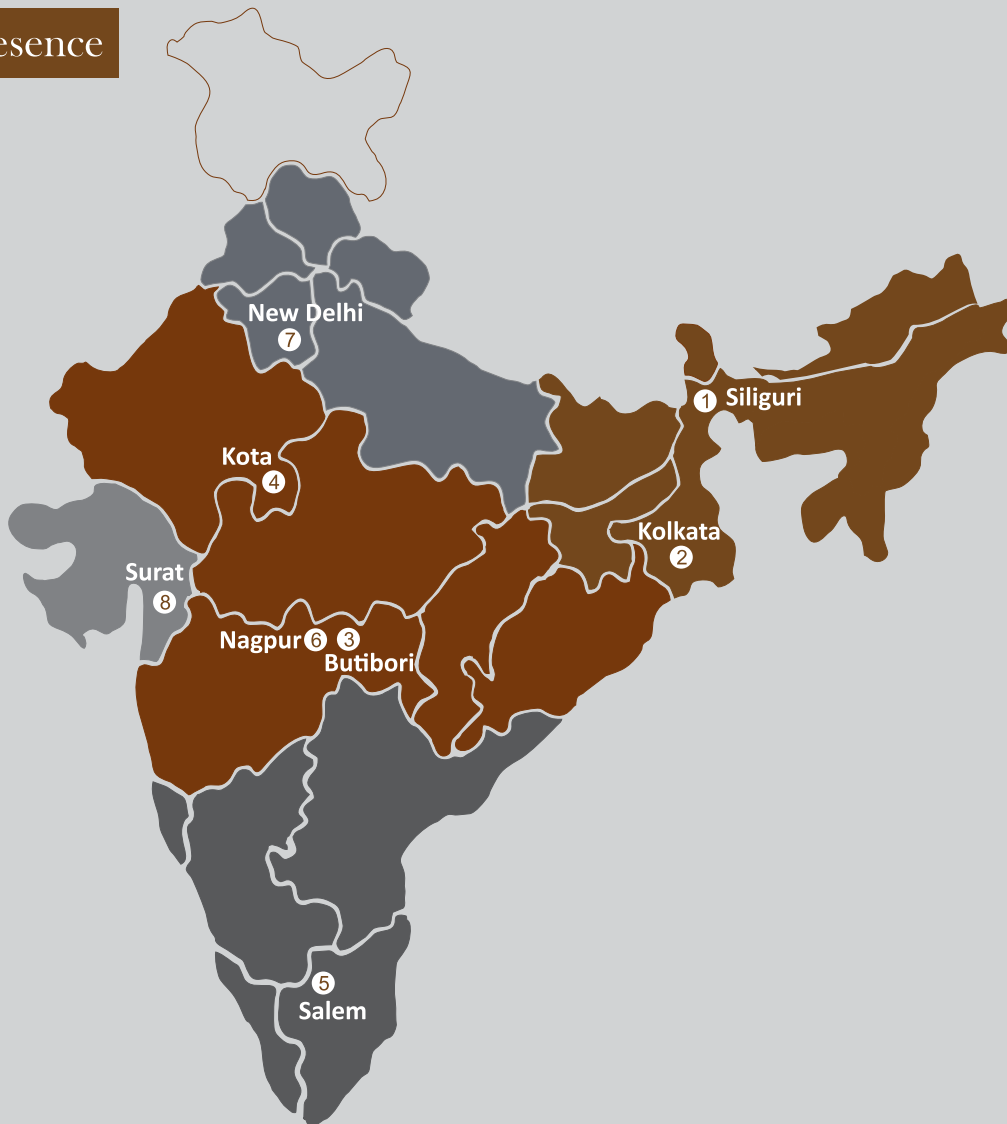


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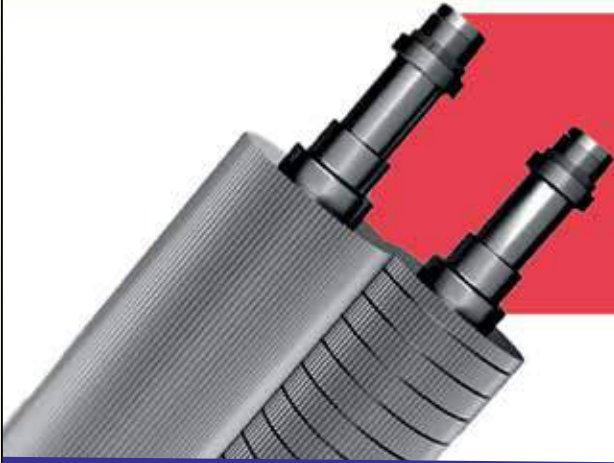
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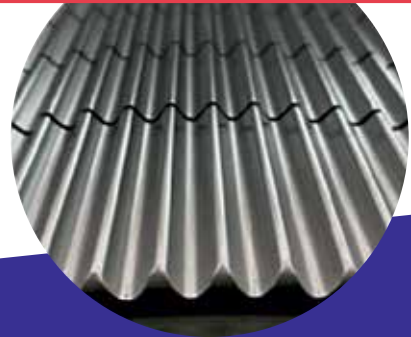
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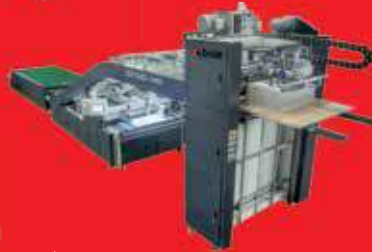
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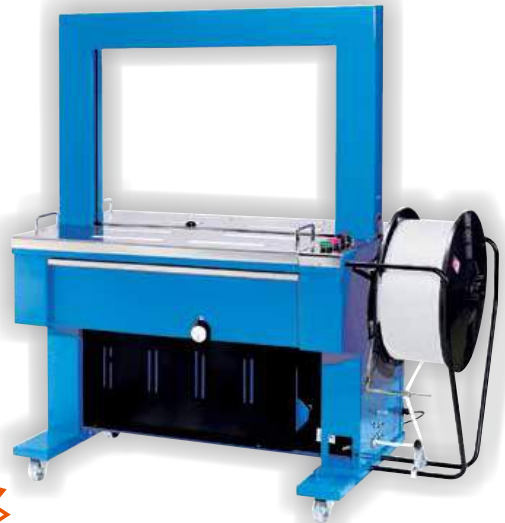
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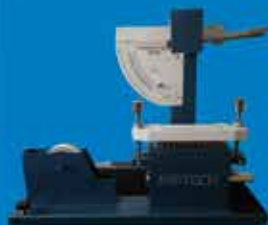
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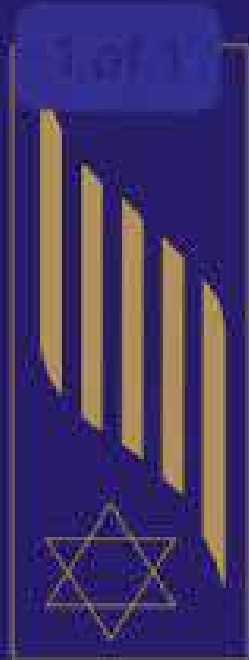
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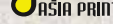
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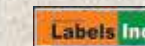
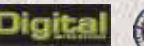
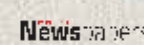
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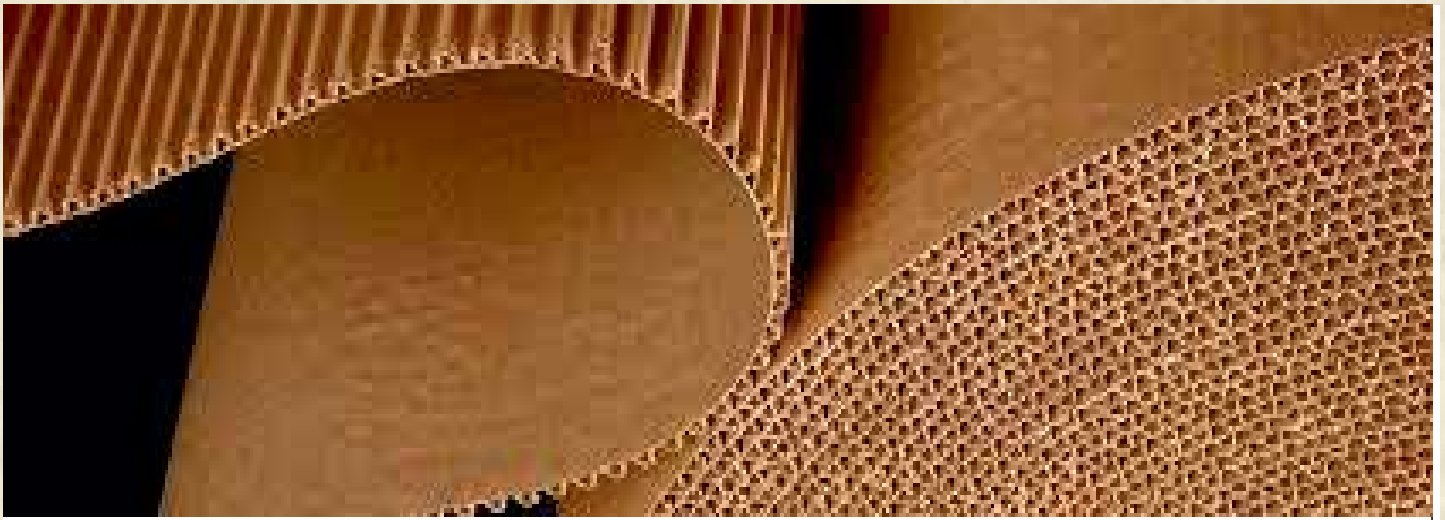
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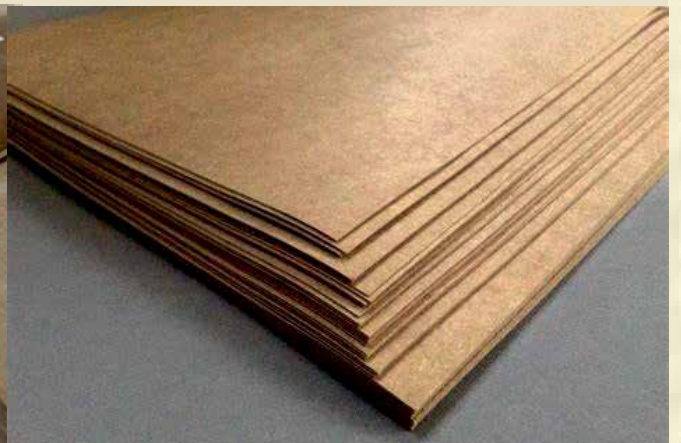
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the 49th FCBM conference  
all Success*

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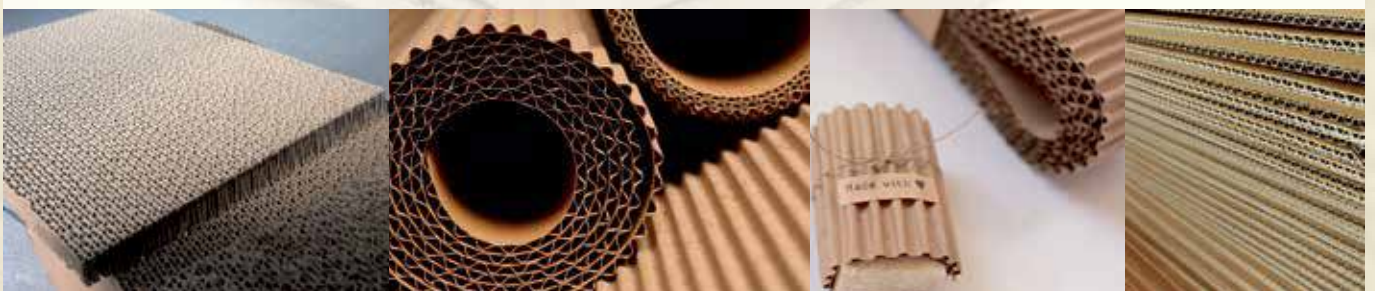
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FOR THE BRILLIANT SUCCESS!*



*AND MANY MORE  
WHO WERE BUSY  
WORKING BEHIND  
THE SCENES...*

## CONFERENCE PROGRAM SCHEDULE

### Friday, 17th December - Day 1

09:00 AM - 03:30 PM	Welcome Delegates
08:00 AM - 04:00 PM	Registration
09:00 AM - 12:30 PM	Corrustar Entries
10:00 AM - 05:00 PM	Registration & Spouse Kit Distribution
11:45 AM - 12:15 PM	<b>CorruPack 2021 Inauguration</b>
12:30 PM - 01:30 PM	<b>FCBM Fifth M.C. Meeting</b>
01:00 PM - 02:30 PM	Lunch
02:30 PM - 03:30 PM	<b>Corrustar Judging</b>
03:00 PM - 04:00 PM	<b>Technical Session I - Stress, Team &amp; Time Management For Success by Dr. Gnanvatsal Swami</b>
04:15 PM - 05:00 PM	Once Upon A Time In FCBM - Tete-a-tete With Past Presidents
05:30 PM - 07:00 PM	<b>Conference Inauguration</b>
07:00 PM - 07:30 PM	Hi-Tea
07:30 PM - 10:30 PM	Cultural Program, Cocktails & Dinner

### Saturday, 18th December - Day 2

09:30 AM - 02:00 PM	Registration & Kit Distribution
10:00 AM - 02:00 PM	Brand Promoters Presentation
09:30 AM - 11:30 AM	<b>Technical Session II</b>
11:30 AM - 12:00 PM	Tea Break
12:00 PM - 02:00 PM	<b>Technical Session III</b>
01:30 PM - 03:00 PM	Lunch
02:00 PM - 04:00 PM	Corru Clinic
02:30 PM - 04:00 PM	<b>Technical Session IV</b>
04:00 PM - 04:30 PM	Tea Break
04:30 PM - 06:00 PM	<b>Technical Session V</b>
07:30 PM - 10:30 PM	Cultural Program, Cocktails & Dinner

### Sunday, 19th December - Day 3

09:30 AM - 11:00 AM	CorruPack 2021 Visit
11:00 AM - 12:30 PM	<b>FCBM AGM</b>
11:30 AM - 12:00 PM	Tea Break
12:45 PM - 01:30 PM	<b>FCBM First M.C. Meeting</b>
01:00 PM - 03:00 PM	Lunch

## FAMILY EVENTS

### Friday, 17th December - Day 1

12:30 PM - 02:00 PM	Games & Entertainment
---------------------	-----------------------

### Saturday, 18th December - Day 2

06:00 AM - 08:30 AM	Kalighat Temple Visit
11:00 AM - 01:30 PM	Ladies Carnival

### Sunday, 19th December - Day 3

11:00 AM - 01:30 PM	Games & Entertainment
---------------------	-----------------------

## AB – THE LEGEND LIVES ON....



Late A.B. Ajmera  
1934-2017

With our heads held high in pride, we bow down in respect, in paying homage to the legendary Ajmera ji - the father of the Corrugated Box Industry, the Pioneer of automation technology In India, the godfather of FCBM, EICMA & IIP, the encyclopaedia of excise & taxation, the expert technocrat, an orator par excellence, a master of communication, an elite gentleman, connoisseur of life, socialite, philanthropist & above all - a great human being.

Shri Anantrai B. Ajmera, known as the doyen of the Corrugated Box Industry in India, was born in Gujarat and brought up in Kolkata. He joined his family business in 1952 at the age of 18 years. Ajmera ji was the Founder Member of the Indian Institute of Packaging in 1966. He founded FCBM and EICMA in 1972. He served as FCBM President in 1976-77 and again in 1995-96. He was President of Eastn India Corrugated

Box Manufacturers' Association from 1981 to 1985. He was instrumental in bringing together an otherwise fragmented industry. He was an expert in matters related to Excise and Taxation pertaining to the Corrugation Industry and has served as Chairman of Excise & Taxation Committee of FCBM in 1992-93, 1996-97 and 2002-03. His concerted efforts and constructive ideas helped the Federation to draw the attention of policy makers to the plight of the corrugation industry. In 1975, Ajmera ji was inducted as a Committee Member of Packaging, Ministry of Defence and has served on numerous sectional committees responsible for setting IS Standards. He represented the interest of the corrugation industry as a committee member of FICCI in the year 2000.

Ajmera ji's contribution to the growth of the Indian corrugation industry has been both direct and indirect. His was the first automatic corrugation plant imported into India in 1962 which was in operation till a few years before. Ajmera ji was awarded the Harlalka Award in 1988 – the highest award given by FCBM in recognition of his contribution to the corrugated box industry. He has also won many awards and accolades from All India Federation of Master Printers, FCBM, EICMA, ICCMA and IIP. A person of great respect and conviction, Ajmera ji was indeed an undisputed leader.

Anu Bhai, as he was fondly called, breathed his last on the forenoon of 20th December, 2017 at the age of 84 at Kolkata. The void created by his demise can never be filled in the Association and other organisations where he provided effective leadership, but he will live in the hearts of every member of the corrugation fraternity.

*"Sir, the footprints left by you in the sands of time, will be etched in our memory, today, tomorrow, always..."*

## MILESTONES IN THE JOURNEY OF THE LEADER



1966  
Founder Member of Indian  
Institute of Packaging



1972  
Founder Member of FCBM  
Founder Member of EICMA



1975  
Inducted as  
Committee Member of  
Packaging  
(Ministry of Defence,  
Govt of India)



1976  
1976-77 & 1995-96  
President of FCBM



1981  
1978 - 1985  
President of EICMA



1998  
Honoured with the  
"Harlalka Award" -  
Highest Award from FCBM



1990  
President of The Calcutta  
Swimming Club



1992  
1992-93, 1996-99 &  
2002-03  
Chairman of Excise &  
Taxation Committee of  
FCBM



2000  
Inducted as  
Committee Member of  
FICCI



2004  
Awards & Accolades from  
All India Federation of  
Master Printers



2009  
Life Time Achievement  
Award at 38th FCBM  
Conference, Kolkata



2012  
Life Time Achievement  
Award at 41st FCBM  
Conference, Mumbai



2013  
Life Time Achievement  
Award by ICCMA  
(Indian Corrugated Case  
Manufacturers Association)



2015  
Felicitation at  
The Golden Jubilee  
Celebration of Indian  
Institute of Packaging,  
Mumbai



2016  
Felicitation by EICMA



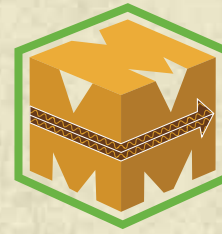
## GLIMPSES FROM CURTAIN RAISER 16<sup>th</sup> APRIL,2021





# 49<sup>th</sup> Conference of Federation of Corrugated Box Manufacturers of India

DECEMBER 17 - 19, 2021 | ITC ROYAL BENGAL, KOLKATA

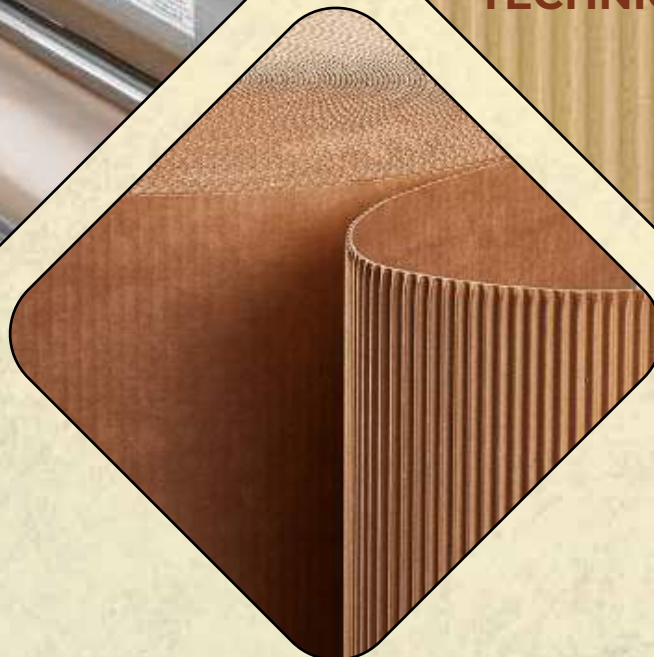


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**GLIMPSES OF  
THE CONFERENCE &  
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## MESSAGE FROM CONFERENCE ADVISOR



**HEMANT SARAOGI**  
Conference Advisor

"12 years ago we at EICMA hosted the 38th FCBM Conference. Those times were different, EICMA was a small association with just a handful of committee members.

In 2020 again, we had the opportunity, which had to be shifted to 2021, owing to the pandemic.

The young and vibrant Team EICMA was bubbling with enthusiasm. My compliments for the immensely successful conference."

## MESSAGE FROM CONFERENCE CHAIRMAN

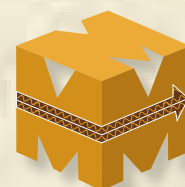
This booklet is an attempt to recreate the wonderful time you all gave us during the three-day event. We had the opportunity to play host for such an august gathering.

Sri Chetan Shah & Yuvraj Shah, Chairman & Co-Chairman, Souvenir Committee, have meticulously encaptured the presentations by the eminent speakers during the five technical sessions.

The proceedings are loaded with a wealth of information. I am sure this will be a reference book for all of us.



**BHARAT KEDIA**  
Conference Chairman



## MESSAGE FROM FCBM PRESIDENT

It was a joy for me to be inducted as President of the FCBM at the 49th. FCBM Conference, hosted by my home association EICMA in the City of Joy, Kolkata.

I am thankful to Sri Ramkumar Sunkara, Chairman, technical Committee for conducting informative technical sessions revolving around the conference theme – “MCUBE – Man, Machine & Material” & to the expert speakers on the insightful deliberations. I am sure you will find the technical proceedings section useful for future reference!!



MILAN KUMAR DEY  
President

## MESSAGE FROM EICMA PRESIDENT



MOHIT BAJAJ  
EICMA President

To lead an enthusiastic team and make the milestone event a success, is a task weighed with enormous responsibility. Looking back at those three days, there is a feeling of joy and a sense of satisfaction.

The success of the conference has been due to your active participation.

It is my pleasure and privilege to present this booklet. I do hope, you enjoy reading this.

## RETIRED HURT... BUT AFTER AN UNFORGETTABLE AND SUCCESSFUL INNINGS!



Rajarshee Datta



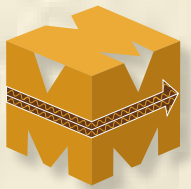
Abhay Agarwal



Yuvraj Shah

## CONFERENCE INAUGURATION 2021





## CONFERENCE INAUGURATION



## AWARDEES



## CORRUSTAR AWARDS

WINNERS
<b>Consumer Pack</b> Packers Products, Delhi
<b>Transport Pack</b> Packers Products, Delhi
<b>Material / Fitments</b> Packers Products, Delhi
<b>Innovation</b> MKB Print & Pack Solutions, Kolkata
<b>POP Display</b> Packers Products, Delhi
<b>Beyond Packaging</b> Viva Packaging Products, Ahmedabad
<b>Best Printing</b> Packers Products, Delhi



Corrustar Entries

Corrustar Award

## CORRUPACK 2021 INAUGURATION



17<sup>th</sup> December 2021

## FCBM 5<sup>TH</sup> MC MEETING 2021



## ONCE UPON A TIME IN FCBM TETE-A-TETE WITH PAST PRESIDENTS



17<sup>th</sup> December 2021

## CULTURAL PROGRAM, MOCKTAILS & DINNER



## GAMES & ENTERTAINMENT



18<sup>th</sup> December 2021

## BRAND PROMOTERS PRESENTATION



## LADIES CARNIVAL - HAWAIIAN FEST



18<sup>th</sup> December 2021

## CORRU CLINIC



## CULTURAL PROGRAM, MOCKTAILS & DINNER



## GAMES & ENTERTAINMENT



## FCBM AGM



19<sup>th</sup> December 2021

## FCBM FIRST M.C. MEETING



# TECHNICAL SESSIONS PROGRAMME

## Technical Session I (17th December 2021)

03:00 pm - 04:00 pm    Stress, Team & Time Management For Success  
**Dr. Gnanvatsal Swami**

## Technical Session II (18th December 2021)

09:30 am - 09:45 am    Introduction to technical seminar at 49th FCBM conference 2017  
**Mr. Ramkumar Sunkara** - Technical committee Chairman

09:45 am - 10:30 am    Cost Index for Corrugated boxes  
**Ms. Geetika Goyal & Ramkumar Sunkara**

10:30 am - 11:00 am    Relation between Bursting strength of Kraft Paper before and after  
ply separation of corrugated board by water soaking method.  
**Mrs. Prof.Madhura Parag Mahajan**

11:00 am- 11:30 am    IIOT in box company (Industrial Internet of Things)  
**Mr. Mayank Chidri**

## Technical Session III (18th December 2021)

12:00 pm - 12:30 pm    Human Capital (Resources) ...  
The make-or-break factor in today's times for SME's  
**Mr. Vijay Panjabi**

12:30 pm - 01:00 pm    Improving the performance of employees thru KRA  
(Key Responsible Area) and KPI (Key Performance Indicators)  
**Mr. Nirmal Sadgir**

01:00 pm - 01:30 pm    Packaging schools in India and abroad  
**Mr. Nirav Chhajed**

## Technical Session IV (18th December 2021)

02:30 pm - 03:00 pm    Packaging Inks – changing regulatory landscape  
**Mr. Jatin Takkar**

03:00 pm - 03:30 pm    Environmentally sustainable Vegetable Inks for Flexo printing of  
corrugated boxes  
**Mr. Bodi Kampani**

03:30 pm - 04:00 pm    New concept in FG storage  
**Mr. P. V. Ashwin**

## Technical Session V (18th December 2021)

04:30 pm - 05:00 pm    Effluent treatment of Starch wash in box plant  
**Mr. Bhaskar Reddy**

05:30 pm - 06:00 pm    Corrugated Board Manufacturing Cluster  
– Is it a Reality?  
**Mr. M. S. Rajesh**

06:00 pm - 06:30 pm    Corporate Social Responsibility (CSR) and Indian companies act  
**Mr. Gobind Gurbani**

## TECHNICAL SUB-COMMITTEE



Ram Kumar Sunkara  
Chairman – Technical Sub Committee

### FROM THE CHAIRMAN'S DESK

*The corrugated board packaging market is expected to grow at a CAGR of 8.1 % during the period of 2021 to 2026. The factors like rising e-commerce sales, growing demand for FMCG and pharmaceutical packaging are propelling the market growth.*

*To keep stride with the growing market, we need to keep upgrading our MAN, MACHINE & MATERIAL & ensure that our revenue graph is in the green.*

*Keeping this in mind the Technical Sub – Committee has planned IV technical sessions, which will introduce us to technologies, raw material & HR resource policies that will be an eye opener today, yet a part of our business practices in the years to come.*

*To whet your appetite for knowledge & excellence, I am pleased to present below, the topics & expert speakers finalized till date. We will be updating the same on receiving the confirmations from other speakers.*

*See you at the Technical Sessions for an interactive, knowledge sharing experience.  
Shekha Hobe!!*



Abhay Agarwal  
Co -Chairman



Sorav Jhawar  
Team Member



FCBM CONFERENCE  
**2020NE**  
MAN · MACHINE · MATERIAL  
DECEMBER 17 - 19, 2021  
ITC ROYAL BENGAL, KOLKATA

## TECHNICAL SESSION I



### Stress, Team & Time Management for Success **Dr. Gnanvatsal Swami**



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# STRESS, TEAM & TIME MANAGEMENT FOR SUCCESS



**Dr. Gnanvatsal Swami**

Life Coach & Eminent Speaker

## About Speaker:

By his profound knowledge and insights on a wide spectrum of subjects, Dr. Gnanvatsaldas has participated in various conferences and inspired millions of people across India, USA, Europe, Canada, Australia and New Zealand. He has been one of the most popular motivational speakers from BAPS creating an everlasting positive impact in people's lives transforming their intellectual quotient, emotional quotient and spiritual quotient.

He served as an interpreter with earlier BAPS Spiritual Head HH Pramukh Swami Maharaj in many of his religious world tours. He has been instrumental in carrying out many Youth Development and Social, Cultural projects of BAPS at Vadodara, Gujarat, India.

## Session Brief:

**"MAN NEED NOT TO WORK LIKE A MACHINE FOR MATERIAL GAINS"**

Everyone wants to succeed and in the course follow a journey where the mission always seems far. One keeps struggling between the challenges of the business or profession and the personal life.

The subject caption is self-explanatory and this motivational talk by Swamiji will unfold a lot of thought and views that could have an impact in transforming the thought process for the better both youngsters and matured minds.



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- Mind yourself, manage yourself and your world will automatically get managed.
- Make a choice that you don't want to live a life of constant complaining.
- Stress is an inevitable part of life, it's a package deal. Work, money or relationship, everything has a seed of stress in it, accept it. Managing it is just as crucial — there is no such thing as a stress-free life.
- When it comes to stress management, nothing works except your own strong, ethical and bold thought process.
- Your Intelligent Quotient, Emotional Quotient, and Spiritual Quotient levels will act as your weapons against stress.
- Don't expect others to change; change yourself, they will follow.
- Do your work and accept the result, you won't experience any stress.
- Success becomes golden only by failure.





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## TECHNICAL SESSION II



### Technical Session II (18th December 2021)

- |                     |   |
|---------------------|---|
| 09:30 am - 09:45 am | Introduction to technical seminar at 49th FCBM conference 2017<br><b>Mr. Ramkumar Sunkara</b> - Technical committee Chairman  |
| 09:45 am - 10:30 am | Cost Index for Corrugated boxes<br><b>Ms. Geetika Goyal &amp; Ramkumar Sunkara</b>  |
| 10:30 am - 11:00 am | Relation between Bursting strength of Kraft Paper before and after<br>ply separation of corrugated board by water soaking method.<br><b>Mrs. Prof.Madhura Parag Mahajan</b> |
| 11:00 am- 11:30 am  | IIOT in box company (Industrial Internet of Things)<br><b>Mr. Mayank Chidri</b>   |



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# COST INDEX FOR CORRUGATED BOXES



**Ram Kumar Sunkara**

Chairman - Technical Sub Committee



**Ms. Geetika Goyal**

Analyst

## About Speaker:

Ms. Goyal is B. Tech in chemical engineering from Banasthali University. Has MBA from Lal Bahadur Shastri Institute of management.

Worked in Mother Dairy fruits and vegetables Pvt. Ltd as executive and in Perfetti Van Melle as packaging Intern.

Worked as Industry Analyst at The smart Cube.

## Session Brief:

Everyone is aware how paper prices are increasing on daily basis like share prices Bombay stock exchange. Getting these price increase from customers has become a nightmare to all of us.

It is not only us, but even customers are having nightmares in trying to understand how and why these prices are going up.

Procurement department is having hard time to explain to upper management this price increase. In the process, they are demanding some authenticated information on price increase. Some customers are even doing their own internal analysis to arrive at some formula that can guide them to approach the price raise subject in more rational ways. Some customers are monitoring imported wastepaper prices on quarterly basis to understand paper price increase and accordingly approach the issue of price increase of corrugated boxes.

It is very important for us to understand how the customers are thinking on this subject.

Ms. Goyal who has done such an analysis for a multination company and will tell us how these companies are studying the issue of pricing of corrugated boxes.

It is very important for us to understand how the customers are thinking on this subject.

Ms. Goyal who has done such an analysis for a multination company and will tell us how these companies are studying the issue of pricing of corrugated boxes.

Mr. Ramkumar Sunkara will tell us how we can use the WPI (Wholesale Price Index) published every month by Office of Economic Adviser to Govt. of India under Ministry of Commerce & Industry, to inform customers about price changes. This is authenticated information as it is published by Govt. of India and be used as cost index for box pricing.



# COST INDEX FOR CORRUGATED BOXES

Ms. Geetika Goyal  
& Mr. Ramkumar Sunkara

## Kraft Paper Pricing Index and benchmarking of Conversion Cost For Corrugated Boxes

This presentation is an attempt of developing a road map for "identification of Kraft Paper Price Indexing Methodology"



### CONTENTS

- 1 Project Background
- 2 Project Title & Objectives
- 3 Current Issues, The Roadmap Adopted
- 4 Kraft Paper Pricing: Options Suggested, SWOT Analysis, Risk & Mitigation Policies
- 5 Conversion Cost Breakup: Industry Trend Analysis, Benchmarking
- 6 Analysis & Conclusion

### PROJECT TITLE & OBJECTIVES

**Identification of Kraft Paper price indexing methodology and validation of structured pricing model for corrugated boxes.**

**Objective 1:** To identify and evaluate a Kraft paper price index in order to inculcate transparency in the pricing model of corrugated boxes.

#### Sub Objectives:

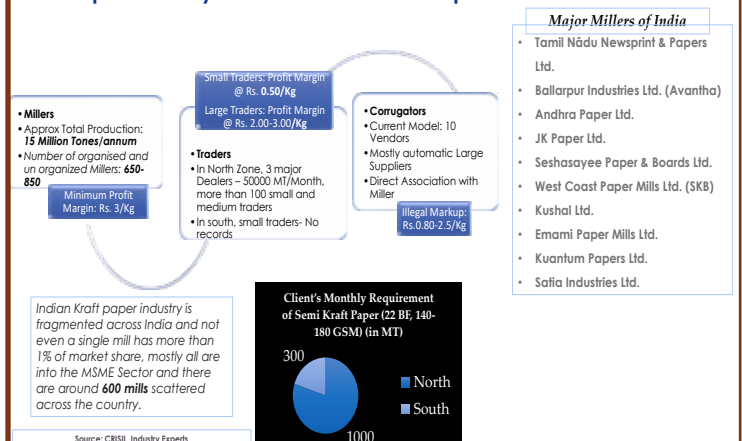
- The index should be **simple to track**, reflect the **overall price changes** in the market with a reasonable accuracy.
- The index should be easily understood and acceptable to the Carton suppliers as a carton pricing reference.
- The data for the index should be sustainably available and preferably published in public domain.

**Objective 2:** To compute a benchmark for the current conversion costs with component wise break up (power costs, labour costs, technology) and the validation of actual conversion costs of the major suppliers against the benchmark.

#### Sub-Objectives:

- To estimate the benchmark for each component of cost element in the conversion costs.
- To estimate the variation on conversion costs for different technologies.
- To establish relationship between the benchmark of current conversion cost of major suppliers against the identified benchmark.

### Kraft Paper Industry Overview Vis-a-vis Requirements



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## Current Scenario in Kraft Paper Pricing

No standard published data for tracking domestic Kraft paper prices

No published reliable data on price influencing factors of Kraft Paper

Lack of transparency and reliability of price data obtained from the market

Identification of a price index for kraft paper

Paper manufacturers hike prices, leave user industry fuming (Mar'21) : Please find [here](#)

## Current Scenario in Conversion Costing

An average conversion cost/Kg exists in the industry, the unbundling cost is not transparent

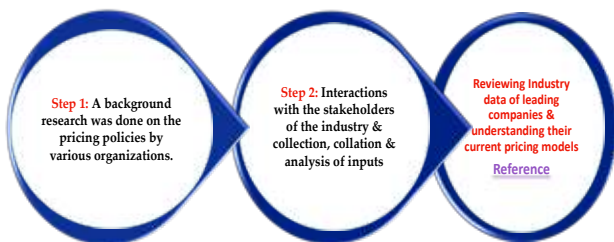
CHALLENGES IN CONVERSION COSTING

There is no benchmark for the cost elements

computation of a benchmark system for each component of conversion cost

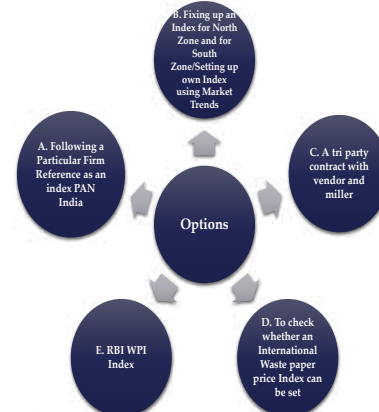
Source: Supply Chain Management Team of Client

## THE ROADMAP ADOPTED-Identification of Kraft Paper price index



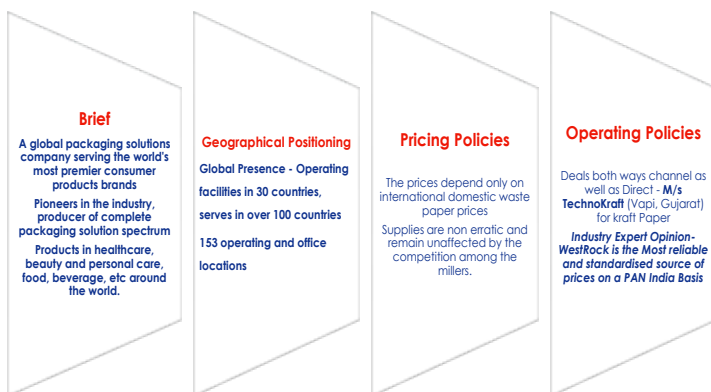
Source: Corrugated Box Manufacturers, RM Suppliers, Purchase Teams of other companies

## Options for the Identification of Kraft Paper price indexing methodology



Source: Vendors, Millers, ICCMA, Consultants

## OPTION-A :: FOLLOWING A PARTICULAR FIRM PRICE MODEL - WestRock



West Rock Quotation is available as reference here : [Westrock Quotation](#)

## IMPLEMENTATION PROCESS: WESTROCK PRICES

- Quarterly Price revision
- Value Engineering Services provided by West Rock to match the technical specifications as per High RCT values
- Direct Nomination or Self Nomination to the vendors to buy West Rock Paper
- Separate PO's for XXX and monthly disclosure of quantities taken by each vendor by the Miller
- 30 days payment policy and shipment with 7 days after placement of indent
- In case of Tri party agreement, XXX needs to extend its support to WR for payment issues

Value engineering was applied with Westrock paper for the 2.8 Ltr carton- [Click Here](#)

## SWOT ANALYSIS – WESTROCK

### Strengths

Strong market position, Widely accepted model in the industry  
Less price fluctuations – Quarterly price revision  
Process Strength- Easy procurement and shipment details  
High Quality Grade paper- COBB Value = 35 Gm/Sq Meter as against industry average of 60 Gm/Sq meter , Long Fiber Paper  
One Systematic model for All  
Supplier for leading MNCs- Adani, Bunge, Dabur, Havelis, Cargill

### Weaknesses

- Freight Charge difference
- Contact via dealer- extra expense involved

### Opportunities

Prices are available on request by the miller  
Easy and Fastest Implementation Model, Less admin time  
Focusing on expanding product range and Light weighting product concept  
Unaffected by the millers associations, cartelization's, malpractices, etc.

### Threats

- Forces of competition are ignored

"West Rock is the most reliable source to set an Index PAN India for semi Kraft Paper" - Mr. Kirit Modi, President of ICCMA (2017)

## Option B:: Setting Up An Index For Millers Zone Wise (North/South)/Setting Up Own Index Using Market Trends

- Process:
- Inviting quotations from the reputed millers of India
  - Understanding the basic ex factory price trend
- Sub option: I
- Choosing the most competent millers for the vendors of north & south zone
  - Price contract for a period of six months (Separate PO's)
  - After business association, XXX can analyze mark-to-market prices of Kraft paper as monthly prices and quantities of each vendor will be provided by the millers
- Sub option: II
- Choosing one base price for the vendors all over India by studying the market trend
  - Finalizing the most competent millers for the supply to vendors for 6 months

### Reputed Millers in North & West Zone

**North Zone:**  
Genus paper Mill  
Devpriya Industries  
Gangotri Paper Mills

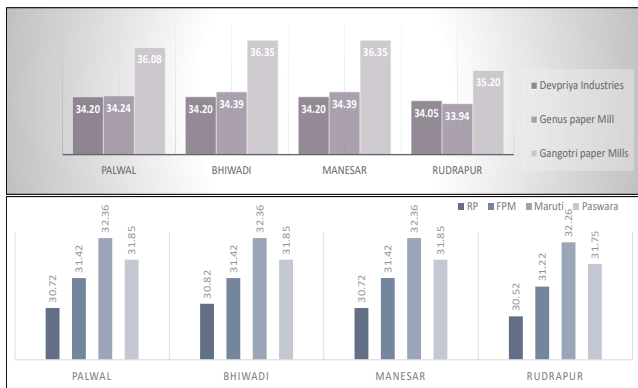
**West Zone:**  
WestRock  
Astron Paper Mills

### Reputed Millers in South & East Zone

**South Zone:**  
South India Paper Mills  
Suryaans Paper  
Jagdhatri Paper Mills

**East Zone:**  
Krishna Tissues  
Ecotech Papers

## QUOTATIONS FOR SEMI KRAFT PAPER NORTH ZONE- LANDED PRICE COMPARISON



Sources: Millers

Suggested Index (/Kg)

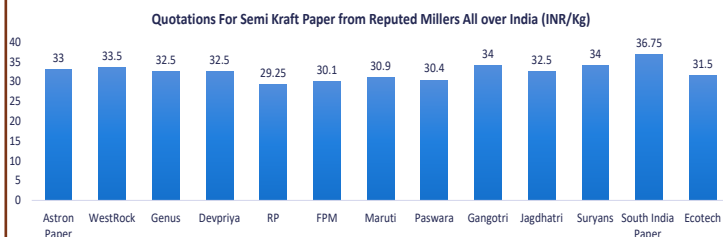
Palwal: Rs. 33.35

Bhiwadi: Rs. 33.40

Manesar: Rs. 33.35

Rudrapur: Rs. 33.18

## QUOTATIONS FOR SEMI KRAFT PAPER PAN INDIA- BASIC PRICE COMPARISON



Industry Average for Semi Kraft Paper (22BF, 140-180 GSM) = Average (All Millers Basic Price / total mills)

= ~Rs. 32/Kg

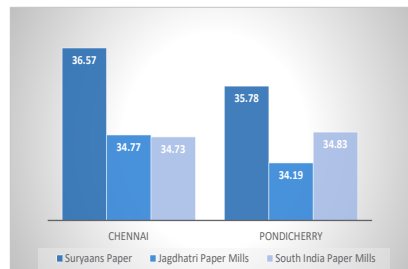
Suggested Ex Factory Price Parameter in (Rs./Kg)

Rs. 32.0/Kg

Sources: Millers

A consolidated quotation comparison sheet is [here](#)

## QUOTATIONS FOR SEMI KRAFT PAPER - SOUTH ZONE- LANDED PRICE COMPARISON



Suggested Landed Prices

Chennai: Rs. 34.73

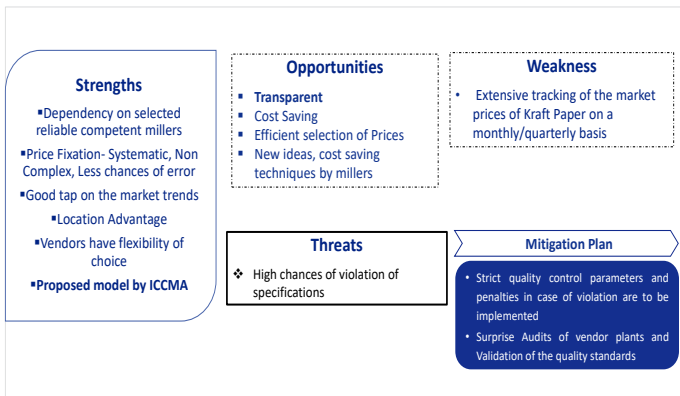
Pondicherry: Rs. 34.19

### Why higher prices of Kraft paper in South Zone vis-à-vis North Zone?

- More labor cost in South
- More power cost in South
- More fuel cost expense (extra freight charges)
- Grade Acceptance criterions are different (BF & GSM in North, HPF/HPL in south)
- Economies of scales is low in South

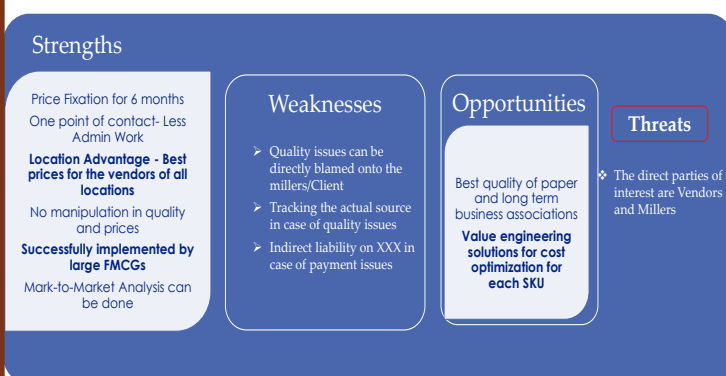
Shareholders	South Zone	North Zone
Labour Cost		
Skilled	22,500/Month	18,000/Month
Semi Skilled	18,000/Month	12,500/Month
Unskilled	11,000/Month	7,000/Month
Electricity	Rs. 8-8.5/Unit	Rs. 5.5-6.5/Unit
Fuel (Imported Coal)	Rs. 7/Kg	Rs. 4/Kg

## SWOT ANALYSIS – FIXING UP AN INDEX ZONEWISE



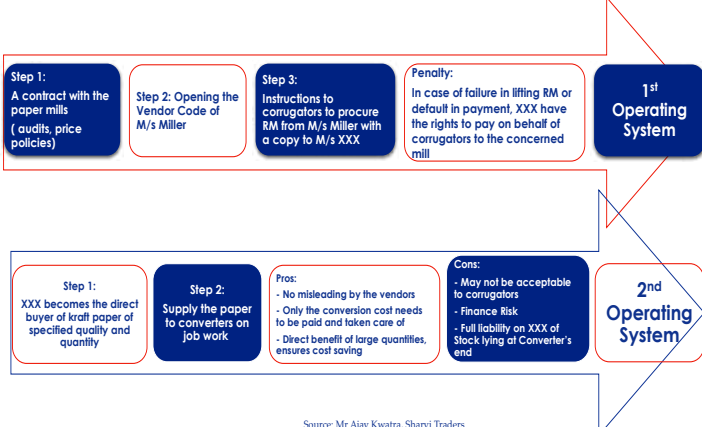
"CRISIL has been hired exclusively for setting an index zone wise, reports should be published by the end of Q3" – Industry Sources

## SWOT ANALYSIS :: OPTION-C :TRI PARTY CONTRACT WITH THE VENDORS AND MILLER

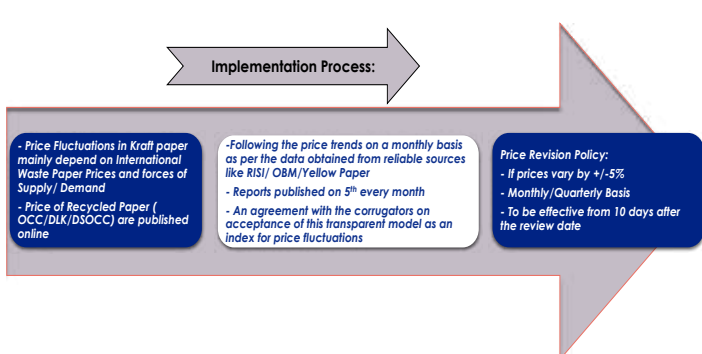


"With the implementation of this model, the vendors will not have the liberty to change the quality of paper" – Mr. Ajay Kwatra, Largest Dealer of Kraft Paper in North Zone

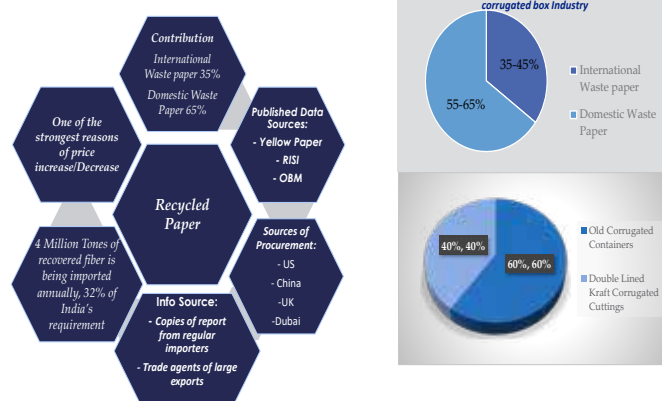
## OPTION-C ::TRI PARTY CONTRACT WITH THE VENDORS AND MILLER



## OPTION-D ::EXPLORING AN INTERNATIONAL WASTE PAPER PRICE INDEX METHOD



## Some Facts: OPTION-D



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## SWO ANALYSIS :: OPTION-D :: STARING AT INTERNATIONAL WASTE PAPER INDEX

### Strengths

- Transparent, Easy to Implement, simple to compute
- Reflects the overall price changes in the market with a reasonable accuracy
- Sustainably available
- Globally acceptable Model
- No additional admin work
- Huge dependency on international recycled paper

### Weaknesses

Inflation in the exchange rate, Freight amount and international Taxation policies might take a toll

### Opportunities

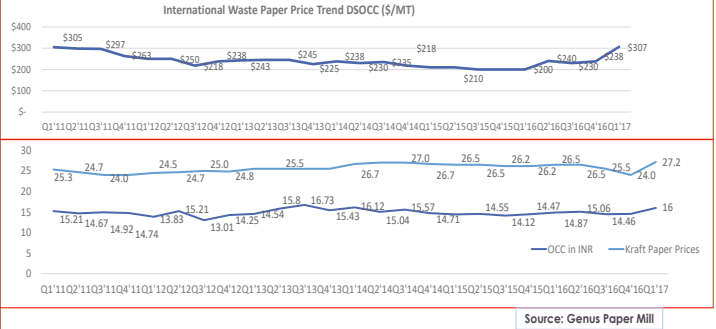
Full flexibility with the vendor to choose the miller, cost optimization  
Long term solution

"Setting the International Waste Paper Prices as the index is the safest choice" – Mr. Ajay Kwatra, Trader of Kraft Paper

## OPTION-D :: Market trend Analysis of Waste Paper Prices from 2011-17

Pearson Correlation value,  $r = 0.55$  (strong relationship)

- Directly affected by Demand and supply forces
- Reflection after 20-30 days in domestic prices



## OPTION-E::FOLLOWING THE WPI INDEX PUBLISHED BY RBI FOR KRAFT PAPER PRICES

### Implementation Process:

#### BASIS

- Whole paper industry moves in tandem
- Devising a formula for the company which can save time, threats and provide a sustainable long term solution

- Paper contributes 74% in the costing of a corrugated box
- The % change in the WPI Index for corrugated sheet is a near indicative of the overall Kraft paper price movement

#### Last 10 months price fluctuations as per the RBI WPI INDEX

Commodity Description	Feb-17	Jan-17	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16	Jul-16	Jun-16	May-16
Corrugated Sheet Boxes	129.2	130.1	129.8	131.7	130.5	132.1	134.8	132.2	130.8	128.2

## SWO ANALYSIS :: OPTION-G :: FOLLOWING THE WPI INDEX PUBLISHED BY RBI

### Strengths

- Transparent, Easily Available, Sustainable
- Easy to compute and implement
- Published data by the Government of India
- Trusted Source - reflects the market trends on a monthly basis
- Location Advantage – Suited model for XXX

### Weaknesses

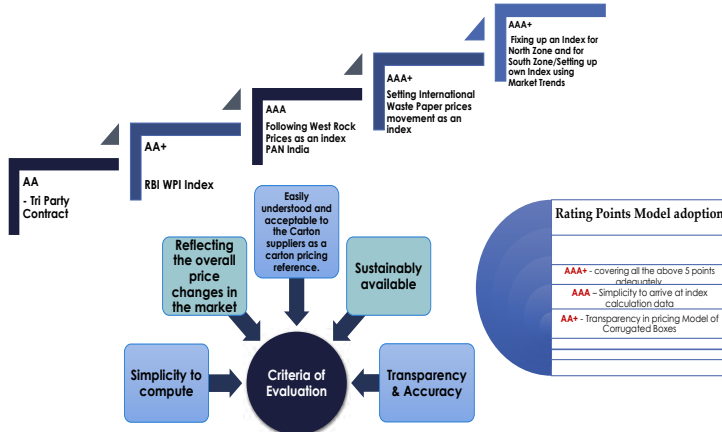
- May not reflect the actual changes in the grade of paper XXX requires- Semi Kraft Paper (22 BF)
- Difficult to compute the current market prices

### Opportunities

Full flexibility with the vendor to choose the miller and hence cost optimization

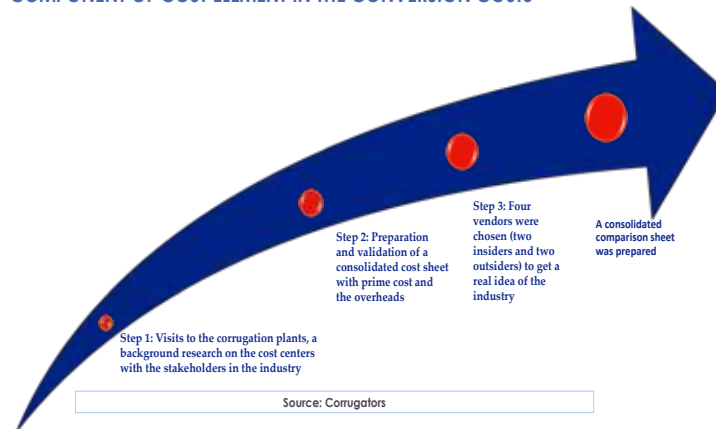
"This is the most suitable option for the Indian Corrugated Box Industry" – Mr. Ram Kumar Sunkara, Prominent Consultant to paper based packaging industry

## Conclusion & Credit Ratings for each option:



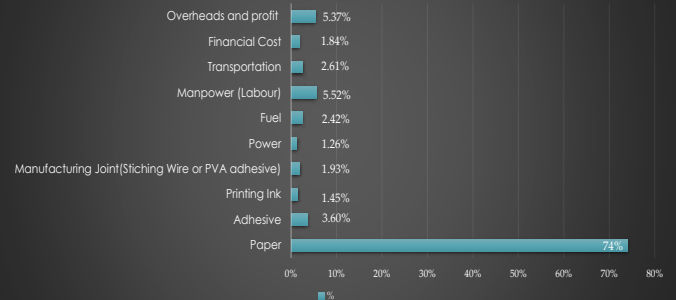
## Objective 2: To compute a benchmark for the current conversion costs with component wise break up (power costs, labor costs, technology)

## THE ROADMAP ADOPTED - TO ESTIMATE THE BENCHMARK FOR EACH COMPONENT OF COST ELEMENT IN THE CONVERSION COSTS

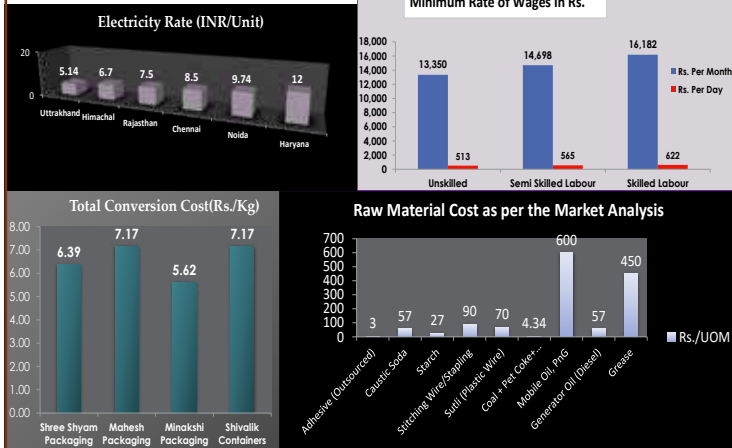


## Analysis: % contribution of each cost center to the Landed cost of Box

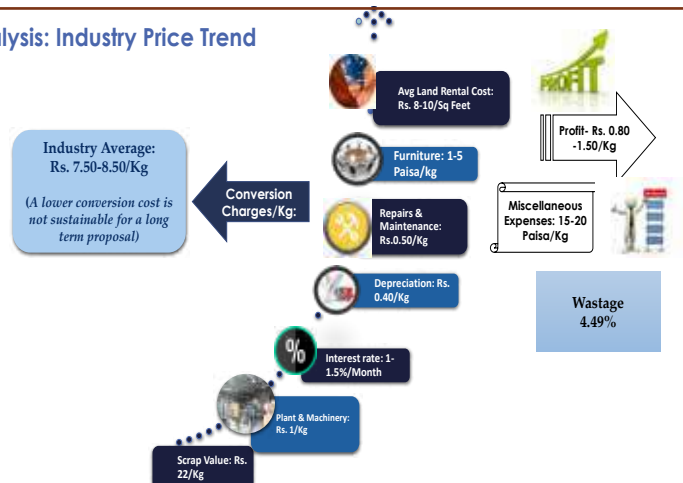
### Weightage of different cost centers of corrugated boxes



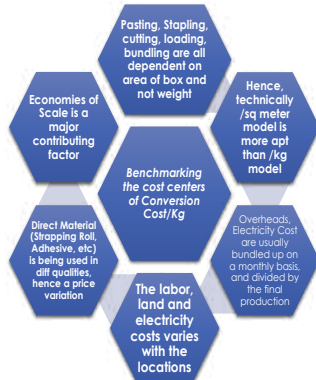
## Analysis: Average Market Rates



## Analysis: Industry Price Trend



## Some Further Observations – CONVERSION COST BREAKUP



Thanks

Knowledge rests not upon truth alone, but upon error also.

— Carl Gustav Jung



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# Wholesale Price Index (WPI) Cost Indexing for Boxes

Ramkumar Sunkara

Presented at 49<sup>th</sup> Annual Conference, 17-19<sup>th</sup> Dec 2021

Chairman-R & D Sub Committee

Federation Of Corrugated Box Manufacturers



## WHOLESALE PRICE INDEX (WPI) COST INDEXING FOR BOXES

### What WPI Means ?

- A **wholesale price index** (WPI) measures and tracks the changes in the price of goods before they reach consumers: goods that are sold in bulk and traded between entities or businesses (rather than consumers).
- Wholesale price indexes (WPIs) are one indicator of a country's level of inflation.

### Who measures WPI in India?

- The Ministry of Commerce and Industry
- The WPI is published by the **Economic Adviser in the Ministry of Commerce and Industry**.
- The Wholesale Price Index focuses on the price of goods traded between corporations, rather than the goods bought by consumers, which is measured by the Consumer Price Index.

### Why WPI is used in India?

- WPI is predominantly used for **converting GDP/GVA at current prices to the same at constant prices**. (Base year)
- The GDP deflator (often argued as the true indicator of inflation), which is defined as a ratio of GDP at current prices to GDP at constant prices multiplied by 100, closely tracks WPI inflation.
- GDP is Gross Domestic Product
- GVA is Gross Value Added
- GVA = GDP + subsidies on products – taxes on products.

#### WPI base year

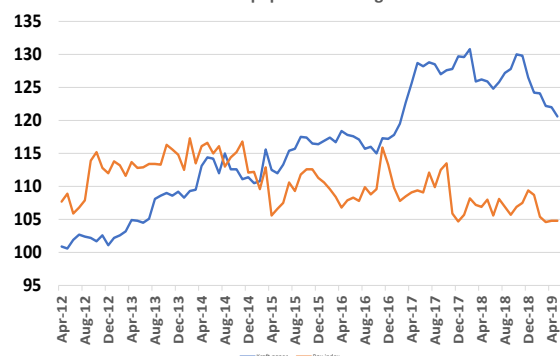
- Base year is 2011 - 12
- Index for Base year is 100

Month/Year	Kraft paper	Corr Box
April 2012	100.9	107.7
May 2012	100.6	108.9
June 2012	101.9	105.9
July 2012	102.7	106.8
Aug 2012	102.4	107.9
Sept 2012	102.2	113.9
Oct 2012	101.7	115.2
Nov 2012	102.6	112.8
Dec 2012	101.1	112.0

### WPI for Corrugated boxes – Weightage – 0.19469

- Kraft Paper – Weightage – 0.08220
- Starch
- Inks
- Stitching wire
- Diesel
- Coal

WPI Index Kraft paper and Corrugated box



## Summary of the group manufacture of Corrugated Paper and Paperboard

S. No.	WPI 2011-12			WPI 2004-05		
	Commodities	Weights	No. of Quotations	Commodities	Weights	No. of Quotations
	Manufacture of corrugated paper and paperboard and containers of paper and paperboard	0.31	52			
1	Corrugated sheet box	0.19	15	Corrugated Sheet Boxes	0.30	9
2	Corrugated paper board	0.02	9	Bristle Paper Board	0.08	6
3	Card board box	0.03	6	Card Board	0.04	5
4	Paper carton/box	0.08	22	Paper Cartons / boxes	0.12	5

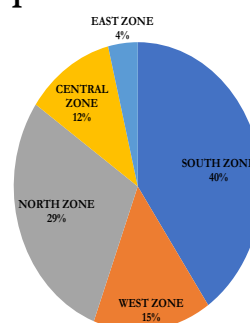
## Indices (Base 2011-12) of the manufacture of Corrugated Paper and Paperboard

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Manufacture of corrugated paper and paperboard and containers of paper and paperboard	107.7	112.0	114.2	113.5	114.7	116.1	116.7
Corrugated sheet box	110.8	114.1	114.2	109.7	109.5	108.9	107.3
Corrugated paper board	100.6	106.5	111.0	114.3	119.9	123.5	121.1
Card board box	109.2	112.4	114.9	115.2	113.2	122.9	124.5
Paper carton/box	100.7	107.6	114.8	122.3	127.5	130.3	136.8

## Tentative item basket of Corrugated Paper & Paperboard items based on ASI data 2016-17

S.No.	NPCMS	Description	Value(in Rs.)	Share	Cumulative
1	3215301	Boxes, corrugated sheet	13927,52,04,000	85.84	85.84
2	3212902	Corrugated paper	1121,69,42,000	6.91	92.75
3	3215101	Corrugated paper board	588,28,96,000	3.63	96.37
4	3212909	Paper rolls corrugated	588,28,95,000	3.63	100.00

## Zonal summary of Corrugated Paper and Paperboard Factories

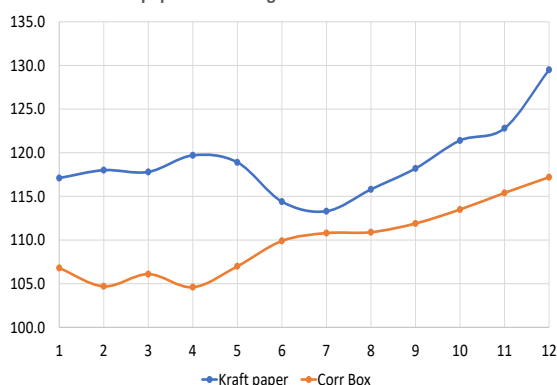


## Alternative classification of corrugated paper and paper board items

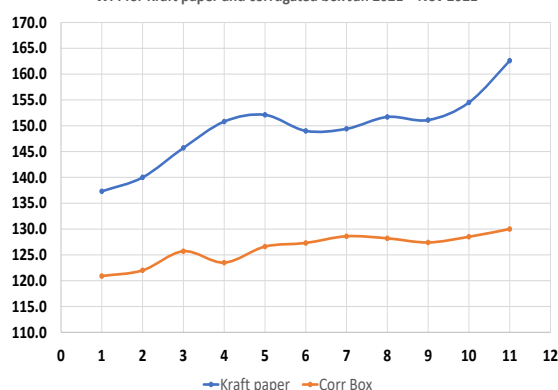
- In July 2019 we had a meeting with Concerned officers.
- We suggest that classification may be done using HSN code
- As per GST act, HSN code for corrugated boxes and paper are 4819 and 4808.

Month/Year	Kraft paper	Corr Box	Month/Year	Kraft paper	Corr Box
Jan 2020	117.1	106.8	Jan 2021	137.3	120.9
Feb 2020	118.0	104.7	Feb 2021	140.0	122.0
March 2020	117.8	106.1	March 2021	145.7	125.7
April 2020	119.7	104.6	April 2021	150.8	123.5
May 2020	118.9	107.0	May 2021	152.1	126.6
June 2020	114.4	109.9	June 2021	149.0	127.3
July 2020	113.3	110.8	July 2021	149.4	128.6
Aug 2020	115.8	110.9	Aug 2021	151.7	128.2
Sept 2020	118.2	111.9	Sept 2021	151.1	127.4
Oct 2020	121.4	113.5	Oct 2021	154.5	128.5
Nov 2020	122.8	115.4	Nov 2021	162.6	130.0
Dec 2020	129.5	117.2	Dec 2021		

WPI Kraft paper and corrugated box Jan 2020 to Dec 2020



WPI for Kraft paper and corrugated box Jan 2021 – Nov 2021



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17-19 December, ITC Royal Bengal, Kolkata

# RELATION BETWEEN BURSTING STRENGTH OF KRAFT BEFORE AND AFTER PLY SEPARATION OF CORRUGATED BOARD BY WATER SOAKING METHOD



**Mrs. Madhura Parag Mahajan**

Head of Department, Printing Technology,  
Pune Vidyarthi Griha's College of Engineering and Technology &  
GK Pate Wani Institute of Management, Pune

## About Speaker:

Mrs. Mahajan has Master degree (M.E) from Pune university in printing technology and is currently working for her Ph.D. in printing technology. She has Industrial, Teaching and Research experience spread over 25 years. She has published papers in National and international journals.

## Recognition / Awards

- Recognized as Best Teacher by Late. V.G. Joshi Trust, Pune in 2012
- Recognized for the efforts to conduct Print Olympiad, 3 rounds-competitions for western region printing students
- Presidential Print Award conferred by All India Federation of Master Printers, New Delhi

## Session Brief:

As an audit requirement, many a times corrugated boxes are sent for analysis of paper specification like GSM and BF used in fabrication of the boxes.

For this purpose, individual paper plies are separated by soaking the sample of corrugated board in water and carrying out ply separation.

After the ply separation, paper is conditioned and tested for GSM and Bursting strength.

Due to water soaking method, there is change in bursting strength of paper as compared to its value before fabrication into corrugated board.

This presentation will throw an idea on how water soaking of paper during ply separation process impacts the bursting strength and GSM before fabrication into corrugated board and after ply separation by water soaking method.



## Relation Between Bursting Strength Of Kraft Paper Before And After Ply Separation Of Corrugated Board By Water Soaking Method.

Mrs. Prof. Madhura Parag Mahajan



49<sup>th</sup> FCBM Conference

17 - 19 December 2021 | ITC Royal Bengal, Kolkata

### Relation between Bursting strength of Kraft before and after ply separation of corrugated board by water soaking method

Presenter  
Prof. Mrs. Madhura P. Mahajan



Pune Vidyarthi Griha's  
College of Engineering & Technology &  
GKPWIM, Pune, Maharashtra

## INTRODUCTION

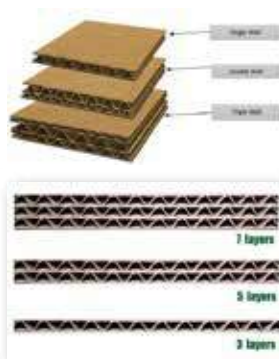
### What is a Corrugated Box?

- 1) A Corrugated box is made up of corrugated paperboard. It is composed of different sheets of paperboard sandwiched together folded into a box.
- 2) The basic function of corrugated box packaging is to protect products during distribution until the product is removed from the package.



## Types of Ply

- 1) The strength of the corrugated box can be divided in categories three ply, five ply, etc. More the ply layers, better is the strength.
- 2) Depending upon the number of plies (2,3,5,7,9) corrugated board is classified into single, double and triple wall.



## Measurement parameters of corrugated paperboard

Measurement parameters of corrugated paperboard are GSM, BS, Compression Strength, Stiffness, edge crush and hardness. The required ones for the project are :

- GSM (Grams per square meter)
- BS (Bursting Strength)
- BF (Bursting Factor)



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## Types of Flutes

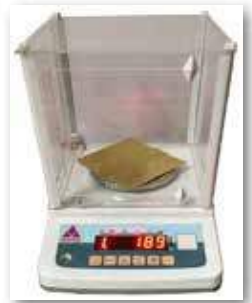
- 1) The middle sheet that is in a wave-shaped pattern of arches is known as flute.
- 2) There are flute sizes like A,B,C,E,F out of which C is the most commonly used in corrugation industry.
- 3) The letter designation relates to the order that the flutes were invented.



Image courtesy: companybox.com

## GSM

- 1) The term GSM stands for Grams per square meter. It is calculated by a GSM tester.
- 2) It allows buyers and suppliers to know exactly about the quality of paper that is being ordered.
- 3) The grammage is the weight of one square meter of corrugated board (unit is g/m<sup>2</sup> and measured under standard conditions: 27°C– 65% RH).
- 4) GSM of board can be evaluated from the separate grammage of component paper.



## Bursting Strength

- 1) A property of paper or paperboard used in packaging that measures its resistance to rupturing, defined as the hydrostatic pressure needed to burst a paperboard sample when it is applied uniformly across its side.
- 2) The measurement of Bursting Strength is described in ISO 2759. The unit is kPa.
- 3) Strength properties of board depend on BS. Whereas, price of board is determined by BF.



$$\text{Burst Factor (B.F.)} = (\text{Bursting strength B.S.} / \text{GSM}) \times 1000$$

## Problem Statement



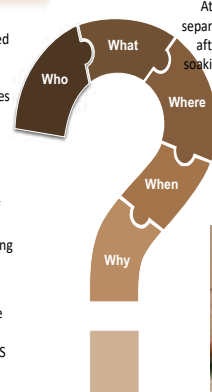
**Who**  
Problems are faced by customers & manufacturers regarding BS values



**What**  
BS reduces as morphology of paper changes after water soaking method



**Why**  
To analyze the percentage reduction of BS



**Where**

At the ply separation stage after water soaking process



**When**

When sample is sent for evaluation of BS



## OBJECTIVES

To measure and analyze different BS values for different grades of corrugated paper board (due to the addition of chemicals for different papers)

To investigate final result for establishing correlation between dry strength properties like BS and BF of each component paper before it has been fabricated into corrugated board, and after it undergoes ply separation by water soaking method.

To establish a standard to evaluate percentage reduction / increase of BS after ply separation and to solve the misinterpretation between client and consumer regarding BS values.



## SCOPE

1. Substrate: Kraft paper and corrugated paperboard as supplied by converters of different BS, BF & GSM values and configurations like 3 ply, 5 ply and variations in flutes e.g. B- flute, C- flute

2. International standards: Use of various ISO and TAPPI standards for experimentation procedure

3. Equipment for testing: Bursting strength tester, Humidity chamber (for conditioning & drying of paper specimen), GSM Tester, Cutting instrument: Knife, Tank of sufficient size for immersion

## LIMITATIONS

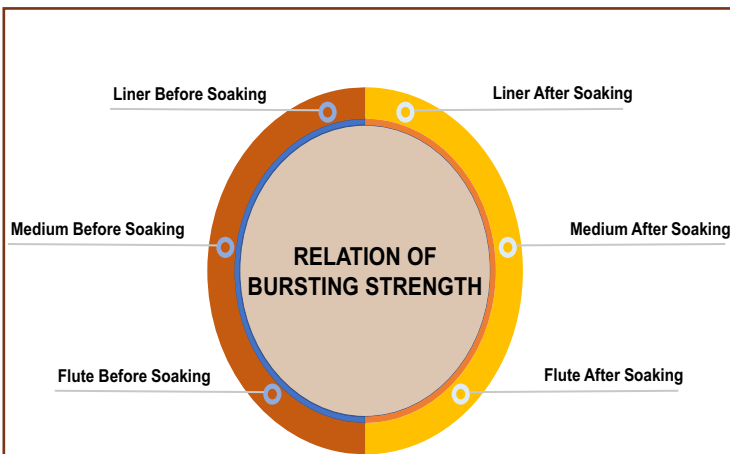
1. Converting kraft paper into corrugated paperboard (flute, liner and their gluing) involves pressure and temperature (heat) which may alter BF values.

2. Relative humidity can also alter BF values

## LITERATURE REVIEW

## Literature

- Albrecht, S. W. (1997). Study of corrugated liner paper and bondability by hot-melt adhesives. *Tappi journal*, 80(9), 190-192. done
- C'abalová, I., Kac'ík, F., and Kac'íková, D., "Recycling of paper—changes of mechanical and optical properties," *11th International Multidisciplinary Scientific GeoConference, Curran Associates*, Red Hook, NY, USA, 2011, p. 867. <https://sgem.org/sgemlib/spip.php?article455>
- El-Hosseiny, F., & Anderson, D. (1999). Effect of fiber length and coarseness on the burst strength of paper. *Tappi Journal*, 82(1), 202-203. done
- Gary M. Scott. (1994), Evaluation of long soaking times for rehydration of recycled fibers. *USDA Forest Service, Madison, USA* <https://www.tappi.org/publications-standards/tappi-journal/>
- ÇİÇEKLER, M., & ŞAHİN, H. T. (2020). A Study on Effects of Wetting-Drying on Bleached Kraft Paper Properties. *Bartın Orman Fakültesi Dergisi*, 22(2), 436-446.

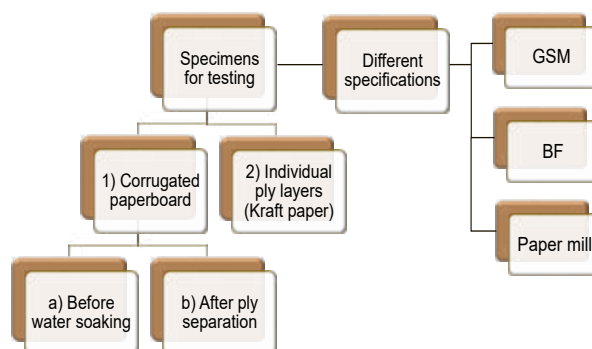


## METHODOLOGY

### 1.0 Selection of materials and equipment



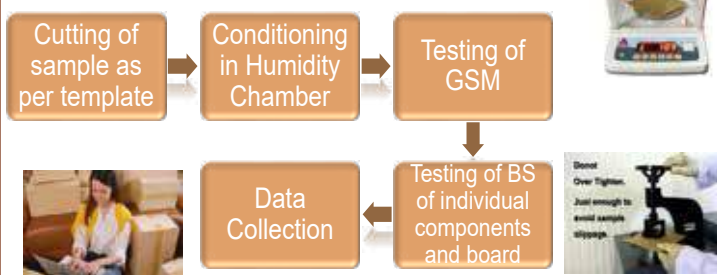
### 1.1 Creation of specimens for testing and measurements



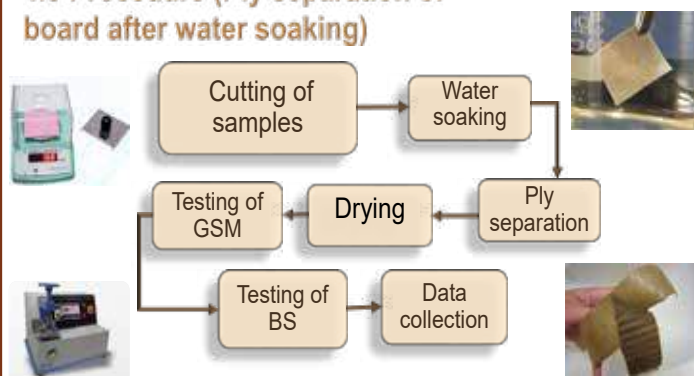
### 2.0 Implementation of Standards for experimentation

Standards	Title
ISO 3039	Determination of grammage of the component paper after ply separation in corrugated fibreboard
ISO 2759:2014	Measurement of BS by water soaking method
ISO 536	Determination of GSM.
ISO 187	Standard atmosphere for conditioning
TAPPI T810	Evaluating BS of corrugated boards

### 3.0 Procedure without water soaking (Kraft paper & board)



### 4.0 Procedure (Ply separation of board after water soaking)



### 5.0 Data collection and calculation of BF.

- After the experimentation, data will be collected for all the layers (top, flute, liner, bottom, etc.) for board and kraft papers.
- BF will be calculated.

### 6.0 Data Analysis

- Data collected will be analysed. The factors, their levels, factorial design for the design of experiments will be used for establishing the result.



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## Data Collection

3 Ply: Specified GSM, BF						
Samples	Top		Flute		Bottom	
	GSM	BF	GSM	BF	GSM	BF
Sample No. 1 (B flute)	140	18	140	18	140	18
Sample No. 2 (C Flute)	180	28	140	18	180	28
Sample No. 3 (C Flute)	250	28	150	22	150	22
Sample No. 4 (C Flute)	250	28	250	28	250	28

## Data Collection

5 Ply: Specified GSM, BF										
Samples	Top		B Flute		Middle		C Flute		Bottom	
	GSM	BF	GSM	BF	GSM	BF	GSM	BF	GSM	BF
Sample No.5	250	28	140	18	140	18	140	18	250	28
Sample No.6	250	28	140	18	140	18	140	18	180	28
Sample No.7	180	28	120	18	120	18	120	18	180	28
Sample No.8	180	28	140	18	140	18	140	18	180	28
Sample No. 9	250	28	140	18	140	18	140	18	250	28
Sample No. 10	250	28	140	18	150	22	140	18	180	28

## RESULTS



These are the scatterplot values of before and after Bursting Strength (BS) for respective samples. Correlation is 88.2%

## Calculation of percentage difference

TOP LINER					
BURSTING STRENGTH					
SR NO	SAMPLE	BEFORE	AFTER	DELTA	Percentage of change
1	SAMPLE 3	4.36	5.39	1.03	0.24
2	SAMPLE 4	4.96	6.55	1.59	0.32
3	SAMPLE 5	3.00	3.46	0.46	0.15
4	SAMPLE 6	6.86	8.18	1.32	0.19
5	SAMPLE 7	5.54	6.32	0.78	0.14
6	SAMPLE 8	8.50	9.30	0.81	0.09
7	SAMPLE 9	8.13	8.88	0.75	0.09
8	SAMPLE 10	6.65	6.74	0.08	0.01
9	SAMPLE 11	7.86	9.30	1.44	0.18
10	SAMPLE 12	7.869	8.341	0.472	0.06
AVERAGE				0.87	0.15

## Calculation of percentage difference

MIDDLE LINER					
BURSTING STRENGTH					
SR NO	SAMPLE	BEFORE	AFTER	DELTA	Percentage of change
1	SAMPLE 3	2.26	2.46	0.20	0.09
2	SAMPLE 4	2.78	3.38	0.61	0.22
3	SAMPLE 5	0.00	0.00	0.00	0.00
4	SAMPLE 6	3.23	3.39	0.16	0.05
5	SAMPLE 7	0.00	0.00	0.00	0.00
6	SAMPLE 8	3.72	4.42	0.71	0.19
7	SAMPLE 9	0.00	0.00	0.00	0.00
8	SAMPLE 10	4.23	4.66	0.43	0.10
9	SAMPLE 11	7.10	7.12	0.03	0.00
10	SAMPLE 12	0	0.00	0.00	0.00
AVERAGE				0.21	0.06

## Calculation of percentage difference

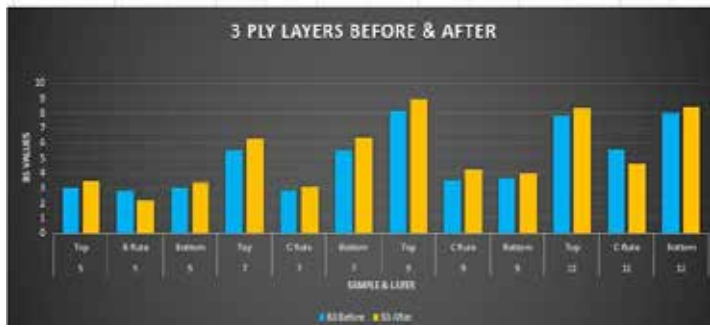
BOTTOM					
BS					
SR NO	SAMPLE	BEFORE	AFTER	DELTA	Percentage of change
1	SAMPLE 3	4.77	4.05	-0.72	-0.15
2	SAMPLE 4	4.89	6.22	1.33	0.27
3	SAMPLE 5	3.05	3.35	0.31	0.10
4	SAMPLE 6	6.51	8.52	2.00	0.31
5	SAMPLE 7	5.53	6.35	0.82	0.15
6	SAMPLE 8	5.29	5.72	0.43	0.08
7	SAMPLE 9	3.66	4.01	0.35	0.10
8	SAMPLE 10	5.44	6.18	0.74	0.14
9	SAMPLE 11	7.43	8.66	1.23	0.17
10	SAMPLE 12	7.967	8.375	0.41	0.05
AVERAGE				0.69	0.12

## Calculation of percentage difference

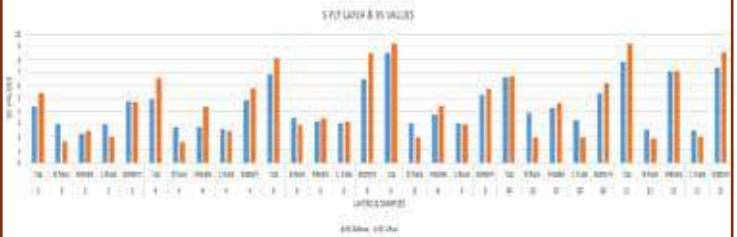
B Flute					
BS					
SR NO	SAMPLE	BEFORE	AFTER	DELTA	Percentage of change
1	SAMPLE 3	3.00	1.75	-1.26	-0.42
2	SAMPLE 4	2.80	1.61	-1.19	-0.43
3	SAMPLE 5	2.83	2.15	-0.69	-0.24
4	SAMPLE 6	3.48	2.93	-0.56	-0.16
5	SAMPLE 7	0.00	0.00	0.00	0.00
6	SAMPLE 8	3.09	1.95	-1.14	-0.37
7	SAMPLE 9	0.00	0.00	0.00	0.00
8	SAMPLE 10	3.84	1.92	-1.93	-0.50
9	SAMPLE 11	2.57	1.87	-0.71	-0.27
10	SAMPLE 12	0	0	0.00	0.00
AVERAGE				-0.75	-0.24

## Calculation of percentage difference

C Flute					
BS					
SR NO	SAMPLE	BEFORE	AFTER	DELTA	Percentage of change
1	SAMPLE 3	2.95	2.02	-0.93	-0.32
2	SAMPLE 4	2.66	2.46	-0.20	-0.08
3	SAMPLE 5	0.00	0.00	0.00	0.00
4	SAMPLE 6	3.08	3.13	0.05	0.01
5	SAMPLE 7	2.84	3.09	0.25	0.09
6	SAMPLE 8	3.10	2.86	-0.25	-0.08
7	SAMPLE 9	3.50	4.03	0.53	0.15
8	SAMPLE 10	3.26	1.92	-1.34	-0.41
9	SAMPLE 11	2.49	2.00	-0.49	-0.20
10	SAMPLE 12	5.59	4.633	-0.957	-0.17
AVERAGE				-0.33	-0.10



- The graph is representing BS VALUES of Before & after with respect to each layer of 3 ply samples. Blue bar shows before values while yellow bar shows after values.



- BS VALUES of Before & after with respect to each layer of 5 ply samples.
- Blue bar shows before values while orange bar shows after values.

## DISCUSSION

- From the data and the graphical analysis we can see that there is an increase in the Bursting strength properties of all the 3 LINERS  
Reason: Soaking in water has released all the internal stresses in the paper built up in it during manufacturing, therefore higher BS values
- There is loss in strength properties observed in the MEDIUM (FLUTES)  
Loss is high in B flute  
Loss is less in C flute  
Reason: Fluting paper has to travel through the corrugating roll where a high amount of stress is generated resulting in the fracturing of the fibres.  
Higher stress built in B flute than in C flute.  
Medium gets impacted greatly as it runs through the corrugating process  
Reason: Due to web tension, splicers, preheating, friction, finally going into the corrugating role and finally coming out  
Number of flutes is higher in B flute, less in C flute  
Height of the flute of B is less than of the C.  
More stress is getting formed on the B flute, as the straight line level is less of the flute structure  
Whereas the height is C flute is more give lower amount of stress in it.

## SUMMARY



It will help to establish a reference for finding the change in percentage reduction of BS before and after ply separation of the component papers of corrugated paper board.



It will assist to minimize the misconception between manufacturers and customers regarding Strength property like BF values



Determination of range of varying values of Bursting strength (BS) before and after ply separation



## ACKNOWLEDGEMENT



Dr. Ram Kumar Sunkara  
Mentor



Unless you try to do something beyond what  
you have already mastered, you will never  
grow.

— Ronald E. Osborn



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# IIOT IN BOX COMPANY (INDUSTRIAL INTERNET OF THINGS)



**Mr. Mayank Chidri**

Founder & Director,  
IOTSYS Technologies Private Limited, Pune

## About Speaker:

Mr. Mayank Chidri is an alumnus of College of Engineering, Pune and IIM Indore. He is a passionate and dynamic entrepreneur who loves solving problems with Technology.

He has a diverse experience of working with an Auto OEM, a financial services firm and also look after day-to-day operations of a corrugated box manufacturing. He aims to transform the MSME sector in India with Technology driven products.

## Session Brief:

Unplanned Machine downtimes are very expensive. Controlling unplanned downtimes helps save direct costs and improve productivity.

CorruMonitor is India's first IIOT platform designed for Corrugated box Manufacturers. It helps them to

- Reduce Machine Downtime
- Improve Machine Utilization
- Maximize Plant Efficiency

CorruMonitor lets you conveniently monitor Job wise machine data in Real time, identify top reasons for Production Losses and Track Performance of Assets such as rotary dies. The platform also helps in Reducing Changeover time by using Job Analytics and Operator Analytics. You can get Alerts on your mobile for unexpected events that prevent you from running your plant at full capacity. The platform can be integrated with your current ERP system to with your daily operations.



# IIOT in box company (Industrial Internet of Things)

Mr. Mayank Chidri

## Industry 4.0 for Packaging

Mayank Chidri

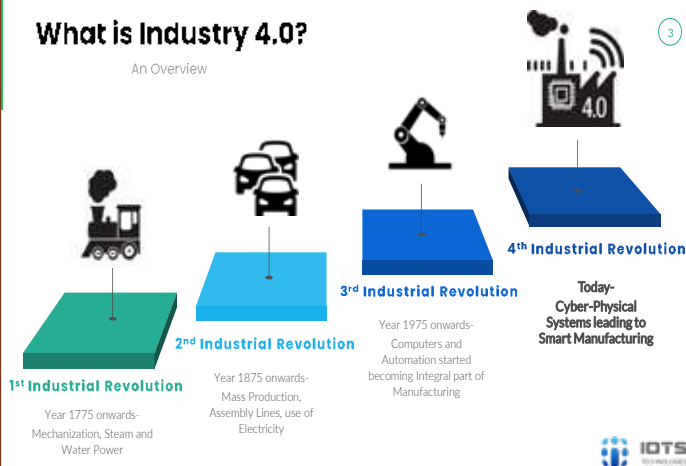


### Agenda

- 1. Industry 4.0**  
What is Industry 4.0 all about?
- 2. Technology**  
Various Technologies Involved in Industry 4.0
- 3. Industrial IOT**  
Details of Industrial IOT or IIOT
- 4. Packaging**  
How can this Technology benefit Packaging Manufacturers?
- 5. Use Case**  
We will take a look at a live use case
- 6. Going Forward**  
How we can help you achieve Digital Transformation

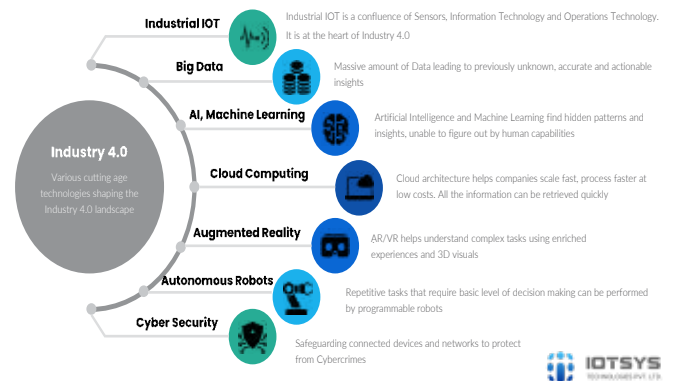
### What is Industry 4.0?

An Overview



### What is Industry 4.0?

Technologies Involved



### IIOT applications in Packaging Industry

Productivity Monitoring, Downtime Monitoring



### IIOT applications in Packaging Industry

Asset Life Monitoring



Assets such as Rotary die, Any I Cover are expensive. Tracking number of impressions an asset has done is extremely important.

Consumable Reports

Report ID	Tag Name	Consumable Name	Machine Name	Job Name	Start Date	End Date	Impressions Mtd	Status
1	Machine part	Warner Ink	3 Colour PMS - Dong Yang	AK Job	2021-06-12	2021-07-19	8920	Active
2	Printing machine part	Sticker Ink	Auto Station - Gashini	AK Job	2021-06-10	2021-07-19	22880	Active
7	Computer Workstation	Computer Ink	Automatic Compag	AK Job	2021-03-16	2021-07-19	246707	Active
8	Die report	Rotary die	3 Colour PMS - Dong Yang		2021-06-14	2021-07-19	8137	Active



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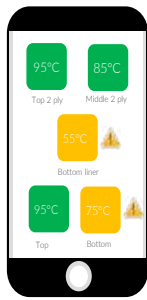


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## IIOT applications in Packaging Industry

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### Quality Control: Paper Temperature Monitoring



- Temperature & moisture control is critically important in corrugated board manufacturing
- With proper temperature control, defects in the board such as Warp, pucker, blistering and a weak glue bond can be prevented, ensuring a high quality finished product

#### Single Facer

- Temp of medium after preconditioner, before fluting
- Liner temp b/w preheater and gluing
- Fluted medium temp between preheater and gluing

#### Triple Stack preheater

- Single face web temperature and moisture preheater and glue unit
- Liner temperature between preheater and glue unit

#### Double Backer

- Single face web temperature between glue unit and double backer
- Liner temperature between glue unit and double backer

#### Hot Plate

- Corrugated board top side temperature
- Corrugated board bottom side temperature



## IIOT applications in Packaging Industry

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### Possible Applications

- Preventative Maintenance
  - Bearings
  - Shaft
  - Motor
- Worker Safety solutions
  - Sensor based alarm systems
  - Assessing employee performance by capturing work rate, idle time or work time
- Paper Consumption Monitoring
- Boiler Management
- FG quality monitoring



## Use Case

9

### Productivity Monitoring, Downtime Monitoring



#### Objective 1: Monitor Manufacturing Productivity (OEE) accurately

- Overall assessment of plant-wide manufacturing productivity
- OEE = Availability% x Performance% x Quality%
- Impossible to get the accurate data with manual entry



#### Results

- Accurate data collected from sensors instead of manual entry
- Client was able to find out machine issues quickly
- Client was able to find out machine issues quickly
- Utilization levels of these machines was compared easily



## Use Case

10

### Productivity Monitoring, Downtime Monitoring



#### Objective 2: Machine NVA downtime monitoring

- To monitor machine performance and downtime
- Intermittent stoppage time



#### Results

- Client was able to monitor machine downtime
- Intermittent stoppage time was identified and fixed
- Quality level which was higher than intermittent stoppage time was identified and fixed
- Client was able to find out machine issues quickly



## Use Case

11

### Productivity Monitoring, Downtime Monitoring



#### Objective 3: Track machine/job asset life

- Track machine/job asset life
- Track machine/job asset life



#### Results

- Client was able to track machine/job asset life



## Going Forward

12

### Achieving Digital Transformation



- Business problem identification
- Brainstorming
- Digital capabilities Assessment



- Define Success criteria
- Estimation of duration & effort
- Scope
- Resources



- Implementation
- Horizontal Deployment
- Training
- Data collection
- Analytics
- ERP Integration



- Measure Business Impact
- Periodic Review
- Maintenance
- Back to Step 1



The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them.

— Sir William Bragg



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## TECHNICAL SESSION III



### Technical Session III (18th December 2021)

- |                     |  |
|---------------------|--|
| 12:00 pm - 12:30 pm | Human Capital (Resources) ...<br>The make-or-break factor in today's times for SME's<br><b>Mr. Vijay Panjabi</b>                           |
| 12:30 pm - 01:00 pm | Improving the performance of employees thru KRA<br>(Key Responsible Area) and KPI (Key Performance Indicators)<br><b>Mr. Nirmal Sadgir</b> |
| 01:00 pm - 01:30 pm | Packaging schools in India and abroad<br><b>Mr. Nirav Chhajer</b>  |



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# HUMAN CAPITAL (RESOURCES) ... THE MAKE-OR-BREAK FACTOR IN TODAY'S TIMES FOR SME'S



**Mr. Vijay Panjabi**

Director,  
Radheshyam Packwell Pvt. Ltd.

## About Speaker:

Vijay Panjabi is a Director at Radheshyam Wellpack Pvt Ltd since 2000 and overseeing its operations, along with his brothers Vishal and Vikram.

The company was established in the year 1975 by his father Shri Ramesh Panjabi in a small 400 Sq. Ft. shed in Pune. Today the company continues to grow. A built up area of almost 1, 10,000 Sq. ft., a fully automatic plant & latest state of art facilities in the five star Chakan industrial area of Pune.

## Session Brief:

Employee retention is a phenomenon where employees choose to stay on with their current company and don't actively seek other job prospects. The opposite of retention is turnover, where employees leave the company for a variety of reasons.

Every company and industry have a varying retention rate, which indicates the percentage of employees who remained with the organization during a fixed period.

Today we are seeing a lot of turnovers of employees due to new plants coming up. We invest a lot in employee, and he leaves job due any reason, it is a big loss for the organization.

Radheshyam Packwell is a corrugated box manufacturing unit located in Pune. They have a state of art automatic production line.

Radheshyam Packwell have reduced employee turnover by implementing various programmes. One of them QIT (Quality Improvement Team) has achieved a great success in retaining employees, increasing productivity, reducing cost, enhancing work safety.

Learn how they have done it.



## Human Capital (Resources) ... The make-or-break factor in today's times for SME's

Mr. Vijay Panjabi

**Presenter :-**

**Mr. Vijay Ramesh Panjabi**

**Director**

**Radhesham Wellpack Pvt Ltd**

One of the most common discussion over so many years we always have during our meets.

- "Aadmi log ka problem hai"
- "Log tikta nahin"
- "Kitna bhi karo inke liye 1000-2000 ke liye bhaag jaata hai"

That's it, We stop our discussion there & mostly its back to normal again

We too were facing similar concerns.

- High attrition
- We were losing lot on productivity
- High wastages
- New people at higher wages
- Lot of stop gap arrangements resulted in delayed dispatches etc.

We were fed up with all this on a daily basis...  
We genuinely gave it a thought ....A deep thought.....

- Why do they leave without intimation ??
- Why Absenteeism ??
- Where are we lacking ??
- What do we do to ensure they work positively, happily, Joyfully with responsibility & accountability ??

After lot of brainstorming, we again had a few questions.

- Are we treating them well ??
- Are we providing them with the right training ??
- Are we paying them well ??
- Is their job description well described ??
- Is there any overlapping of duties, which is resulting in confusion ??
- Are the happy & looking forward to working with us ??

We had to find answers for all...

We took a call, that we really need to invest in people.....

Investments by the way of right training, right motivations, fair payments, positive communication, delegation & empowerment too..

Its been almost two years of sincere & dedicated efforts by the top management, trainers, & most importantly our people...

The results are....

- Our attrition is down form almost 15% to 1% levels today.
- Zero accident for the past almost 7 months.
- Our productivity is up by almost 15%.
- Our wastages are down to negligible levels.
- Our machine breakdowns are down to the minimum.
- A very clean & well maintained factory premises & work area
- Our people are happy to take up new responsibilities, challenges, & really look forward to any work.
- The most important, their families are happy to see the positive transformation & there personal & professional lives.



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### 1. SMEs must motivate 'internal customers' for faster growth

Employees can make or break an organisation. The right motivation will go a long way in boosting their morale and commitment, which, in turn, means good business

Employees are an organisation's most valuable resource. They can be integral to the success of the organisation or a liability— a waste of space and budget.

Most performers are motivated by money but it doesn't buy loyalty. Here are some potent motivators, with the cost ranging from zero to moderate, that will more than pay back in the long run:

### 2. Recognition

Annual awards or employee-of-the-month can be limiting. Consider a company-wide monthly most valuable performer (MVP) award that is based on suggestions from co-workers. An MVP award should be based on overall performance during the month and take into account the attributes that are most important to the firm such as teamwork, problem-solving and creativity.

### 3. Field trips

Invite your star performers to client meetings or trade shows. The employee will get to know the clients and develop a better understanding of them. They will also see the reality of the "glamorous" trips that your staff must take.

### 4. Credit

The less credit you take and the more you allow your employees to enjoy, the better it is. It is a rare environment where the "little guy" gets credit for something they did.

### 7. Communicate

Whether over the phone, on paper, video, audio or the internet, the more frequently an employee is communicated with on the state of the company, the more motivated and involved will they be. Quite often while helping companies execute strategy I come across managers complaining: "Corporate does not keep me in the loop. I feel like I don't count."

### 8. Flexibility

Providing employees with a flexible schedule that can accommodate their lifestyle can be very motivating and can differentiate your workplace from that of competitors. Understanding that an employee would like a 40-hour workweek (at 40 hours of pay, of course) and accommodating her may win her loyalty for life, ditto for flex schedules that give employees freedom to attend to personal matters.

### 5. Be vulnerable

Share information on your company's performance and your feelings about it. In some organisations, it would be impossible to open the books and disclose financial performance but come as close as you can.

Show your staff how you made or lost money during the quarter and ask for feedback. You may be surprised by the response you get.

The biggest reason financials are not disclosed is that management is afraid that the employees will feel that the owners are profiting too much.

On the contrary, your employees will probably be surprised as to how little you profit and will be overwhelmed by how much taxes, benefits, travel, shipping and utilities cost. Some organisations take this step further and share the profit with the employees.

### 6. Allow for greatness

Giving your employees a chance to do something outstanding is probably all that they need. Top performers seek out opportunities to express themselves and to stand out. Your job is to support them in their quest for excellence and allow them to make some mistakes in the process.

### 12. Ask for inputs

Along with communication, ask for input on the design of your product or service or solicit feedback on a particular programme. Just being asked is an honour, even if you don't or can't implement the idea.

### 13. Let go

Letting go of difficult, unprofitable customers (or employees) sends a good signal. It allows employees to know how much you value them or their efforts. It increases the value of your firm and also shows you are not willing to deal with unproductive relationships—customers or employees.

### 14. Eliminate internal competition

It is tough enough that you have competitors plotting your demise. There is no reason to contribute to the carnage with an incentive programme that pits departments or employees against each other. Allow more than one performer to achieve high standards or you run the risk of demotivating those who know they can't win.

### 9. Time

Do not underestimate your importance to your employees. Taking time out for lunch or small talk can be a memorable and motivating experience for them. Have lunch with an employee instead of a fellow executive, you may have more fun. The same goes for taking time to celebrate success.

### 10. Lead by example

Doing the "right thing", being courageous and being loyal are qualities that we need to show before we can ask for them. When you show that character, it inspires the entire organisation to perform better.

Basic rule: don't ask anything of others that you are not willing to do yourself.

### 11. Employees are customers

Treat them as customers because without employees there would be no customers. When in doubt, treat the employee with the same respect and understanding you extend to a customer.

### 15. Speak up

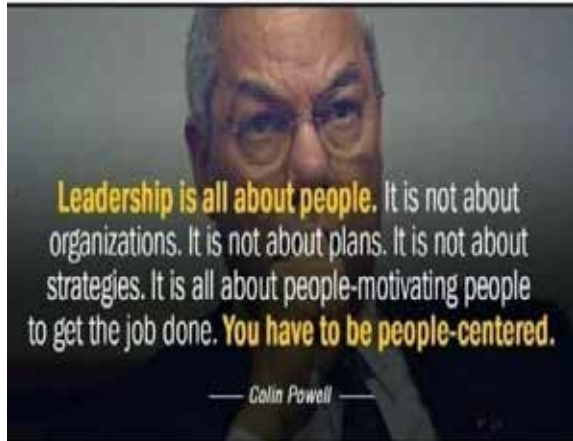
Most corporate executives have little time to meet their obligations, let alone speak on behalf of their company to business clubs. Consider allowing key employees to represent you and speak on behalf of your company. They will enjoy being an ambassador and may better empathise with your schedule demands.

### 16. Be generous with wearables

Reward employees with company polo shirts, caps, pens and whatever wearables are available. There is another benefit in this: your employees become walking billboards for your company.

Some motivations are more strategic. First, try your best to motivate employees to do the things that you are motivated by. In other words, if increasing company profits is your primary motivation, focus your efforts on motivating employees to do the same. Any other motivations could work against you. For example, motivating employees to sell even if it is not profitable.





**THANK YOU**



*A leader is best when people barely know he exists, when his work is done, his aim fulfilled, they will say: we did it ourselves.*

— Lao Tzu



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# IMPROVING THE PERFORMANCE OF EMPLOYEES THRU KRA (KEY RESPONSIBLE AREA) AND KPI (KEY PERFORMANCE INDICATORS)



**Mr. Nirmal Sadgir**

Director,

DBS Packaging Pvt Ltd. Pune

## About Speaker:

Nirmal is commerce graduate from the University of Pune and Management studies from S P Jain Mumbai.

A seasoned Entrepreneur with diverse professional experience of over 12 years having keen interest and expertise in Corrugation Industry Segment.

## Session Brief:

Like many management terms, the word performance management has been interpreted and the concept implemented, in many ways. But the major goal in any good performance management is to ensure that employees' activities – what they do and how well they do them – are in sync with the goals of the organization while maintaining a motivated and happy workforce. To achieve it we must answer these questions.

1. Do your employees know what we are expecting from them?
2. Are their role areas identified?
3. Do your employees have clarity of weightage of their performance area?
4. How effectively their performance is being measured?
5. How frequently their work has been appraised?

DBS Packaging Pvt Ltd is a semi-automatic corrugated box manufacturing company located out of Pune. They implemented KRA and KPI in their factory and have achieved very good results. It has given them so much confidence, that they currently in expansion mode and installing automatic plant.



## Improving the Performance of employees through KRA & KPI

Presented by Nirmal Sadgir  
CEO – DBS Packaging Pvt Ltd

Improving the performance of employees thru KRA (Key Responsible Area) and KPI (Key Performance Indicators)

Mr. Nirmal Sadgir

nirmal@dbspackaging.com

9822939323



### Does this situation exist in your Organisation ?

- Employees do not know what we are expecting from them.
- You don't know if employee is really performing as expected.
- Their role areas are not identified.
- Employees don't know what is the major performance area in their role.
- Performance is being measured by assumptions, memory and behaviour.
- Employees appraisal is being conducted by end of the year.

Then your company is at **High Risk**



### What is Performance Management

The word performance management has been interpreted and the concept implemented, in many different ways.

But the major goal in any good performance management is to ensure that employees' activities – what they do and how well they do them – are in sync with the goals of the organization while maintaining a motivated and happy workforce



### Key Elements in Performance Management

- Role Chart** - Organization structure should be created according to Roles not designation and seniority.
  - Role Clarity** - Every employee in any organization should have clarity on what is role in the organization.
  - Competency** - Based on the roles Functional, Technological & Behavioural competencies should be mapped
  - Empowerment** - We should empower employees to take Financial and functional decisions to minimize lead time.
  - Role Areas** - We should map value wise weightage and time consumption percentage .
- Functional and Administrative reporting clarity – Along with the role whom he is reporting is also a key. Else Employee gets confused to whom to report boss or super boss.



Only if you Measure, then you can achieve it.  
ie KRA & KPI

**Key Result Area (KRA)** - Every employee is loaded with 100 tasks, responsibilities, "Bahut Kaam hai" etc

Setting up KRA for every employee is not a rocket science. It is just out of those 100 responsibilities, when he has to finish certain task and by what quality.

Eg of KRA – Ensure in-house rejection should not exceed by "x%" of total production cost for a month.

**Key Performance Indicator (KPI)** – Setting up KPI is just a measurable matrix of any KRA. It will indicate the level of performance of an employee.

Eg of KPI – Ensure In-house rejection should not exceed by 1% of total production cost for a month.



Performance Appraisal Form						
Nov-21						
PERSONAL DETAILS						
Name :			Designation:			
Department:			Reporting to:			
Date of Joining:			Appraised by :			
Period Under Review			From	1st Nov 2021	To	30th Nov 2021
Role	Front line					
Please assess the employees' proficiency level on each competency by using the following rating scale						
Section A: Evaluation of Key Result Areas ( Domain)						
Self Appraisal			Appraisal by Appraiser			
Sl. No	Performance	Target	Actual	Weightage	Score	Final
1	Active operation execution	100%	75.00%	30%	75	23%
2	Ensure rejection does not exceed by	1%	1.20%	20%	120	24%
3	Active machine productivity by	90%	65.00%	20%	72	14%
4	Active labour productivity by	90%	69.00%	15%	77	12%
5	Power Consumption should not exceed by	1%	0.80%	10%	100	10%
6	Ensure major NC in internal and external audit does not exceed by	0	0	5%	5	5%
Total				100%	449	87%



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# PACKAGING SCHOOLS IN INDIA AND ABROAD



**Mr. Nirav Chhajer**

Director,

Pack O Pack Industries, Mumbai

## About Speaker:

B.S in Industrial Technology and Packaging  
from California Polytechnic State University.

## Activities and Awards

- AICC Structural Design Student Competition Winner
- 48-hour repack 2019 – Placed top 10

## Projects and Research Papers

- Senior Project - Influence of Fiberboard Container Design on its Bulging Performance Impacted by Compression
- Alternative Coatings Project - Analyzing different types of cardboard boxes and carrying out different tests to find the best coated box.
- Beer Box Testing – Handle Jerk Testing and Tensile Testing

- Performance Testing of Stretch Wraps – Tensile Properties Test, Containment Force Test, Incline Impact Test & Rotational Edge Drop Test
- Business Management Research Paper - Evaluated the operations and decision making of a company and the reason behind its acquisition.

## Session Brief:

Next generation is looking for education in packaging field. There are many universities and colleges giving undergrad and master's degree in packaging. Know all about them from Nirav who has done extensive study on this. He obtained his Bachelor of Science degree in packaging from US college. He will share his experience.



## Packaging schools in India and abroad

Mr. Nirav Chhajed

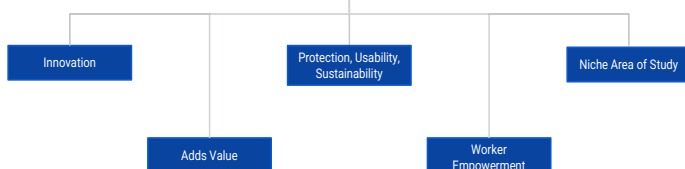
### PACKAGING SCHOOLS IN INDIA & ABROAD

NIRAV CHHAJED  
PACOPACK INDUSTRIES

#### Introduction



#### Why Packaging?



#### Packaging Schools in India

There are many different institutes all around India which provide various courses which cover some areas of packaging but the major 2 institutes which have a specialized course/degree in packaging in India are:

- Indian Institute of Packaging
- SIES School of Packaging



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## 1. Indian Institute of Packaging

- 2 Years full-time Post-Graduate Diploma in Packaging (PGDP)  
Eligibility - Graduates in Science, Technology, Engineering, and allied fields.
- 3 Months Full Time Certificate Course in Packaging (ITC)  
Eligibility - Graduates preferably in Science/Engineering
- Diploma in Packaging - Distance Education Programme  
18 months correspondence course which is conducted on annual basis.
- In addition to above concentrated courses, there are some other courses which cross paths within the field of packaging:  
Weekly Short Courses  
Executive Development Programmes (EDP)



## 2. SIES School of Packaging

School of Packaging/ Packaging Technology Centre at SIES (South Indian Education Society) was established in 2001 at Nerul, Navi Mumbai, India. This institute provides the following courses:

- Postgraduate Program in Packaging Science & Technology
  - Eligibility: BSc/Btech or B.E/ Bpharm
  - Type: Full time
  - Duration: 2 Years
- Graduate Diploma in Packaging Technology
  - Eligibility: None
  - Type: Part Time
  - Duration: 1 Year
- One year Graduate Diploma in Packaging Technology ( Distance learning)
- Industry oriented short term courses



## Packaging Schools Abroad

- Countries with institutes recognised by the World Packaging Organization for packaging courses are:
  - Argentina
  - Australia
  - Ireland
  - Netherlands
  - Saudi Arabia
  - South Africa
  - Spain
  - United Kingdom
  - United States of America



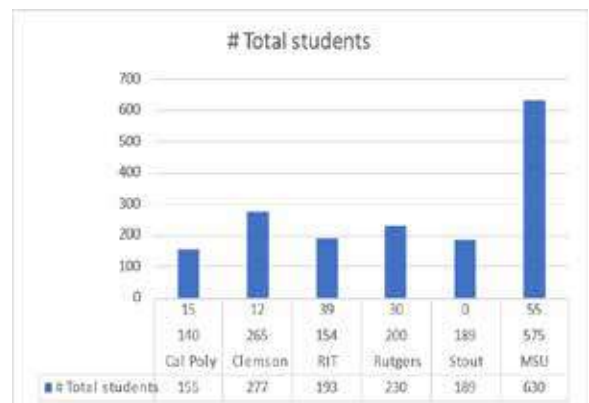
Argentina	Argentina Packaging Institute
Australia	Australian Institute of Packaging
Ireland	The Irish Packaging Society
Netherlands	NVC Netherlands Packaging Centre
Saudi Arabia	Riyadh Polytechnic Institute
South Africa	The Institute of Packaging (South Africa)
Spain	Asociación para la Investigación de la Industria Alimentaria (AINIA)
United Kingdom	Institute of Materials, Minerals & Mining

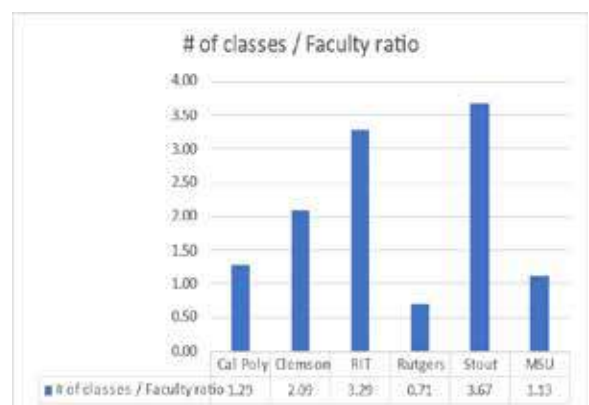
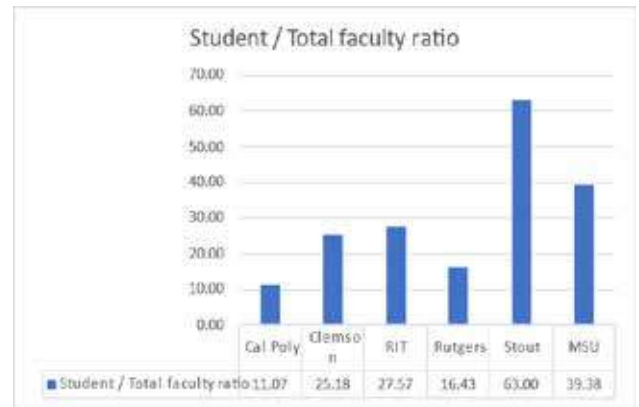
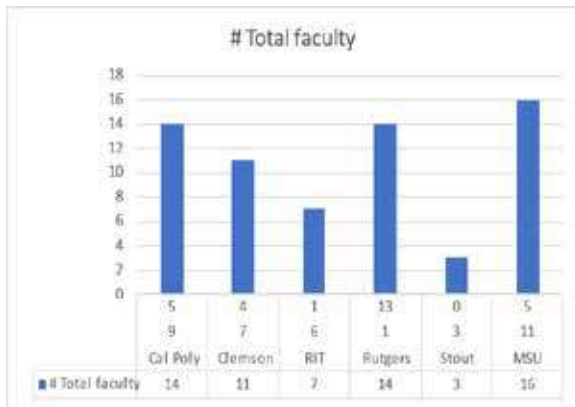
## PACKAGING SCHOOLS IN USA



University	Department	College	BS	MS	PhD
Cal Poly	Industrial Technology	Business	✓	✓	
Clemson University	Food, Nutrition, and Packaging Sciences	Agriculture, Forestry and Life Sciences	✓	✓	
Fashion Institute of Technology	Packaging Design		✓		
Indiana State University	Applied Engineering & Technology Management	Technology	✓		
Michigan State University	School of Packaging	Agriculture and Natural resources	✓	✓	✓
Rochester Institute of Technology	Packaging Science	Applied Science and Technology	✓	✓	
Rutgers	Packaging Engineering	Engineering	✓	✓	

San Jose State University	Nutrition, Food Science, and Packaging	College of Applied Sciences and Arts	✓		
University of Florida	Agriculture & Biological Eng.	Engineering	✓		
University of Wisconsin-Stout	Engineering and Technology	Science, Technology, Engineering and Mathematics	✓		
Virginia Polytechnic and State Institute	Sustainable Biomaterials	Natural Resources and Environment	✓		





### My Education Experience:

- The entire experience was very wholesome.
- There were many cultural and lifestyle differences at the start but over time it was easy to adapt.
- In relation to the education system and the teaching style, there is a lot of similarity.
- The education system has major courses, support courses, concentration courses and general education courses.
- There are approximately 45-60 classes you need to complete over the course of 4 years, depending on the college you choose.



- It is project intensive, with a lot of practical knowledge and just not theory.
- The education infrastructure adds a lot of value to the education system.
- I had access to ASTM (American Society for Testing and Material) and ISTA (International Safe Transit Association) Certified labs to conduct testing on Packaging Material.
- It covered in depth knowledge about the four main packaging materials - Paper, Plastic, Glass and Metal.
- The course enabled me to learn material analysis, designing, manufacturing and product package testing.
- Some of the highlight courses which I loved were Packaging Machinery and Process, Packaging Dynamics, Packaging Design Fundamentals and Paper and Paperboard Packaging.



**THANK YOU!**  
**ANY QUESTIONS?**



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FCBM CONFERENCE  
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DECEMBER 17 - 19, 2021  
ITC ROYAL BENGAL, KOLKATA

## TECHNICAL SESSION IV



### Technical Session IV (18th December 2021)

- |                     |  |
|---------------------|--|
| 02:30 pm - 03:00 pm | Packaging Inks – changing regulatory landscape<br><b>Mr. Jatin Takkar</b>                                    |
| 03:00 pm - 03:30 pm | Environmentally sustainable Vegetable Inks for Flexo printing of corrugated boxes<br><b>Mr. Bodi Kampani</b> |
| 03:30 pm - 04:00 pm | New concept in FG storage<br><b>Mr. P. V. Ashwin</b>   |

## PACKAGING INKS CHANGING REGULATORY LANDSCAPE



**Mr. Jatin Takkar**

Head - Product Safety and Regulatory - Siegwerk India

### About Speaker:

Jatin Takkar is a seasoned professional with over a decade of experience in the food and packaging industries. He has worked across different verticals like Operations, Quality & Food safety as well as regulatory with strong market players like Nestle, Kraft Heinz and Siegwerk. He is working with Siegwerk as Head- Product Safety and Regulatory. With his expertise in food safety and his passion for ensuring packaging safety, he is heading an awareness campaign across different stakeholders in the packaging supply chain with the goal of ensuring food safety aspects of the packaging materials. Jatin have been deeply involved with several brand owners and regulatory bodies like FSSAI and BIS for raising the bar on packaging safety in India. He has registered himself as a empanelled trainer for FSSAI on the subject – “Packaging and Labelling” and is an active member of “Alert Panel on Printing Inks” at Bureau of Indian Standards. Jatin has published over 25 authored articles on the subject of packaging safety. He has even represented as a Food Contact Material Expert in various national and International forums presenting his views on subject of Food safety and Packaging Safety.

Jatin lives with the motto – “Ensure safe food for everyone and ensure safe packaging for every food”.

### Session Brief:

Packaging is an essential tool utilized by the food business operators to make their products stand out from the mass. Beyond the shelf appeal, packaging also provides protection to the content from physical, chemical and microbiological hazards. However, a lesser known fact is that the same packaging material could also be a source of chemical contaminants and hence may impact food safety as well as food quality.

Among the different components of packaging material, packaging inks play a critical role as they might hamper product and consumer safety. Each packaging ink is a mixture of different chemicals and some of these chemicals might be harmful while holding the potential to migrate to the foodstuff when getting in contact.

The chemical contaminants from the packaging inks can get transferred to the foodstuff by a process called migration. There are different types of migration:

1. Set-off migration
2. Diffusion migration
3. Gas-phase migration



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## Packaging Inks – changing regulatory landscape

Mr. Jatin Takkar



### Packaging Inks – Changing Regulatory Landscape



### Agenda

1. **Siegwerk – Our Presence**
2. Packaging Safety – a must have
3. Legal Changes for Packaging Supply Chain
4. Siegwerk – Safe Ink Partner
5. Food for Thought

2



We support you with optimized ink technology and unparalleled know-how

#### Overview

Packaging ink leader	As the industry leader we support your growth and performance optimization
Integrated company	We combine a local partnership with a reliable supply chain & global know-how access
Deep application insight	The largest technology team in the industry supports you with outstanding know-how and experience
Customer support culture	Dedicated sales and technology teams work closely with you
Long-term orientation	We act as a family-owned business in the 6th generation



We are leading in packaging inks globally

#### Siegwerk Packaging Business Units



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## Global Siegwerk Footprint



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## Siegwerk India Footprint



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## Agenda

1. Siegwerk – Our Presence
2. **Packaging Safety – a must have**
3. Legal Changes for Packaging Supply Chain
4. Siegwerk – Safe Ink Partner
5. Food for Thought

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## Food packaging safety – a must have

## Producing compliant products is a must!

## I. Regulation following scandals

Food safety scandals in the past triggered increasingly tight regulation across regions



## II. Migration risk

Migration issues have been overseen several times – risks associated with ink and packaging to be evaluated



## III. Issues go public quickly

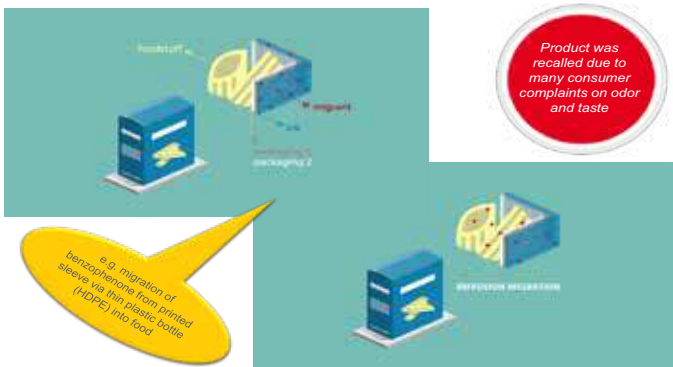
Authorities implemented rapid alert systems for food issues – any issue in the context gets public immediately



8



## Migration – diffusion scheme



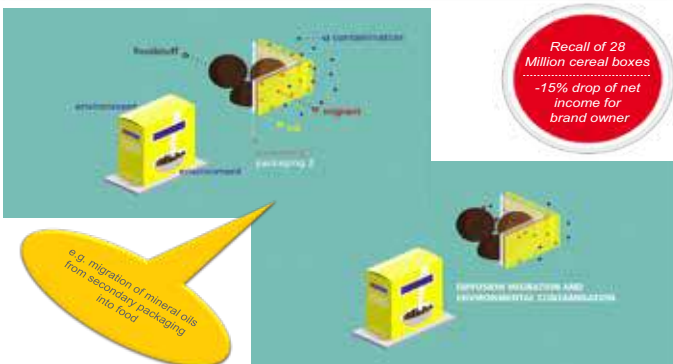
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## Migration – set-off scheme



10

## Migration – Gas phase transfer



11

## Agenda

1. Siegwerk – Our Presence
2. Packaging Safety – a must have
3. **Legal Changes for Packaging Supply Chain**
4. Siegwerk – Safe Ink Partner
5. Food for Thought

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Issued in Public domain :  
03<sup>rd</sup> January 2019

Enforcement :  
01<sup>st</sup> July 2019

#### FSSAI Notification (Key Highlights)

##### General Requirements.-

(1) Every **food business operator shall ensure that the packaging material used shall be in accordance with these regulations:**  
Provided where Indian Standards are not available, then relevant International Standards may be complied with.

(2) **Any material which comes in direct contact with food or likely to come in contact with food** used for packaging, preparation, storing, wrapping, **transportation** and sale or service of food shall be of **food grade quality**.

( "Food grade" means material made of substances which are safe and suitable for their intended use which shall not **endanger human health and change in the composition of the food or organoleptic characteristics**.)

(3) Packaging materials shall be suitable for the type of product, the conditions provided for storage and the equipment for filling, sealing and packaging of food as well as transportation conditions.

#### FSSAI Notification (Key Highlights)

(4) Packaging materials shall be able to withstand mechanical, chemical or thermal stresses encountered during normal transportation. In case of flexible or semi-rigid containers, an overwrap packaging may be necessary.

(5) Food products shall be packed in clean, hygienic and tamper-proof package or container.

(6) The sealing material shall be compatible with the product and the containers as well as the closure systems used for the containers.

(7) Tin containers once used, shall not be re-used for packaging of food.

(8) Plastic containers of capacity 5 litre and above and Glass bottles, which are reused for packaging of food, shall be suitably durable, easy to clean or disinfect.

(9) **Printing inks for use on food packages shall conform to IS: 15495.**

(10) **Printed surface of packaging material shall not come into direct contact with food products.**

#### FSSAI Notification (Key Highlights)

(11) **Newspaper or any such material shall not be used for storing and wrapping of food.**

(12) In case of multilayer packaging the layer which comes in direct contact with food or layers likely to come in contact with food shall meet the requirements of packaging materials specified in Schedule I, II and III of these regulations.

(13) The materials listed in Schedule I, II and III of these regulations shall be compatible with their intended use as a packaging material so as not to alter the quality and safety of the food product.

(14) **Every food business operator shall obtain the certificate of conformity issued by NABL accredited laboratory against these regulations for the packaging material which comes in direct contact with food or layers likely to come in contact with food to be used.**

#### FSSAI Notification (Additional Clauses related to us )

##### 4. Specific Requirements for Primary food packaging.-

(1) Paper and board materials intended to come in contact with food products-

(a) Paper and board material shall be of **uniform formation, thickness and substance**.

(b) It shall be **free from visible specks, grease marks, cuts, pinholes and other blemishes**.

(c) **The paper used for the manufacture of boxes, cartons, plates, cups and paper lids or paper which are meant to be direct in contact with food shall be of food grade and shall be free from contaminants.**



#### FSSAI Notification (Additional Clauses related to us )

(d) Paper and board materials used for the manufacturing of containers for packaging or storing the food products shall conform to either of the Indian Standards specifications as provided in **Schedule – I**.

**Schedule - I**  
Paper and board materials intended to come in contact with food products

Sl. No.	List of Standards
1.	General purpose paper - IS 6962
2.	Vegetable parchment or Glucose proof paper or Aluminium Foil Laminates - IS 7169
3.	Aluminium Foil Laminates for Packaging - IS 6976
4.	General purpose packing or wrapping Paper - IS 6615
5.	Folding Box Board, uncoated - IS 1756
6.	Corrugated Fibre Board, uncoated - Specification (Part I) - IS 1771

Note: The wax used for coating the paper or board shall be paraffin wax conforming to Type I of IS 4054.

#### FSSAI Notification (Key Highlights)

(2) **Glass containers intended to come in contact with food products**

(3) **Metal and Metal Alloys intended to come in contact with food products-**

**Schedule - II**  
Metal and Metal Alloys intended to come in contact with food products

Sl. No.	List of Standards
1.	Cold-reduced Electrolytic Tinplate - IS 1993/ISO 11919
2.	Cold-reduced Electrolytic Chromium or Chromium Oxide - Coated Steel - IS 17510/ISO 11950
3.	Wrought Aluminium and Aluminium Alloy Sheet and Strip for General Engineering - IS 737
4.	Aluminium and Aluminium Alloy Bare Foil for Food Packaging - IS 15392
5.	Specification for Crown Closures - IS 1984
6.	Specification for Round Open Top Sanitary Cans for Foods and Drinks - IS 9396 (Part I)
7.	Specification for Round Open Top Sanitary cans for Foods and Drinks - IS 9396 (Part 2)

**FSSAI Notification (Key Highlights)**

**(4) Plastic materials intended to come in contact with food products-**

(a) **All packaging materials of plastic origin shall pass the prescribed overall migration limit of 60mg/kg or 10mg/dm<sup>2</sup>** when tested as per IS 9845 with no visible colour migration.

(e) Products made of recycled plastics including carry bags shall not be used for packaging, storing, carrying or dispensing articles of food.

**Schedule - III**  
Plastic Materials intended to come in contact with food products

Sl. No.	Part of Material	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545
1.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
2.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
3.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
4.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
5.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
6.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
7.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
8.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
9.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
10.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
11.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
12.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
13.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
14.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
15.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
16.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
17.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
18.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
19.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
20.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	
21.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 15545	

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**Safe Packaging Inks – New Norms**

**भारतीय मानक  
Indian Standard**

**IS 15495 : 2020**

**खाद्य पैकेजिंग के लिए मुद्रण स्याही —  
रिति संहिता  
(पहला पुनरीक्षण)**

**Printing Ink for Food Packaging —  
Code of Practice  
(First Revision)**

**Issued in Public domain :  
30<sup>th</sup> June 2020**

**Enforcement :  
01<sup>st</sup> July 2021**

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**IS 15495 – Ink Standard**

**Immediate Food Wrappings**

- No toxic substances
- Compliance to Exclusion list
- Avoid set-off
- No Bleeding dyes and pigments
- Heavy Metals compliance
- Manufactured to limit migration :**
  - Not endanger human health
  - No deterioration in quality
  - No organoleptic changes

**External Packaging**

- No toxic substances
- Compliance to Exclusion list
- No Bleeding dyes and pigments
- Heavy Metals compliance

**Disposables**

- No toxic substances
- Compliance to Exclusion list
- No Bleeding dyes and pigments
- Heavy Metals compliance
- Biodegradability\*

**Direct Food Contact**

- No toxic substances
- Compliance to Exclusion list
- Use of Food additives as per GOI.
- No Bleeding dyes and pigments
- Manufactured to limit migration :
  - Not endanger human health
  - No deterioration in quality
  - No organoleptic changes

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**IS 15495 – Customized Info**

**Ink Manufacturer :**

- Ink manufacturers are responsible to formulate packaging inks by using only raw materials other than those known to be toxic, carcinogenic, sensitizing or mutagenic, primarily governed by the exclusion list as per Annex A. (Clause 6.2)
- Ink manufacturers are expected to take all necessary precautions to meet the guidelines of the standard. (Clause 5.6)

**Printer / Converters**

- For immediate food wrappings and direct contact applications the final intended articles needs to be manufactured in such a way, that under normal or foreseeable condition of use, they shall not transfer their constituents to the food in quantities, which may endanger the human health, cause a deterioration in the organoleptic characteristics or an unacceptable change in the nature, substance and/or quality of the food. (Clause 4.3.5)
- The printer / converter is finally responsible for manufacturing and storage of the food packages in such a manner by which all preventable transfer of material from the ink or coating to the food content is avoided, even if such transfer is objectionable on the grounds of health, odor and flavor. (Clause 6.3)
- The printer needs to ensure that the storage environment should be free from potential volatile contaminants, which could adversely affect the organoleptic characteristics of the food. (Clause 6.2)

**Print Buyer**

- Print Buyer / Printer needs to design the packaging with restriction of printing in mind. (Clause 6.1)
- Taint and odour tests should be conducted to ensure that a particular substrate is suitable for use. (Clause 6.1)

<https://ink-safety-portal.siegwerk.com/>

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**Changing Regulatory Scope In India**

**fssai**

**Compliance to Packaging Inks Safety norms is a legal obligation and IS 15495 is mandated .**

**Compliance to Paper and Paper board specification is a legal obligation.**

**Food Grade Inks :**  
Not to endanger Human Health  
No deterioration to product quality  
No organoleptic changes

**Clear expectations outlined for all packaging manufacturer and replicates Food Grade concept**

**India banned the use of Toluene as solvent in Food Packaging inks w.e.f July 2021**

**Packaging Inks Heavy Metals to be confined within 100ppm.**

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**Agenda**

- Siegwerk – Our Presence
- Packaging Safety – a must have
- Legal Changes for Packaging Supply Chain
- Siegwerk – Safe Ink Partner**
- Food for Thought

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**SIEGWERK STRONGEST POSITION**

**Raw Material Screening** → **Formulation Guideline** → **Toluene Free Manufacturing + GMP**

**Collaborative Approach** → **Legally Validated Documentation** → **Authorities Association** → **Intact Consumer Safety**

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**Product Offerings :**

**Unicolor** - Corrugated Boxes (Outer Packaging) , Paper cups

**Unipaper (High Graphix , Multicolour)** – High End Customers , Paper cups ,Pizza boxes , Wrap Paper and Food applications.

**WB Primers & Coatings** - High end customers , Food Grade

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## Agenda

1. Siegwark – Our Presence
2. Packaging Safety – a must have
3. Legal Changes for Packaging Supply Chain
4. Siegwark – Safe Ink Partner
5. **Food for Thought**

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Ask Questions ????

Food Grade Inks

Safe Inks

Environment Friendly inks

Biodegradable Inks

Toluene Free Safe Inks

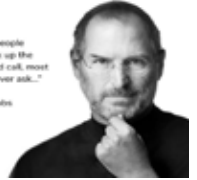
BP Free Inks Safe Inks

Mineral oil free safe Inks

Eco - Friendly inks

Water Based Safe Inks

"... Most people never pick up the phone and call, most people never ask..."  
- Steve Jobs



Final Message

Cost of compliance

is much smaller than  
**Cost of non-compliance**



Thank you!



Jatin Takkar  
Head - Product Safety & Regulatory  
Jatin.takkar@siegwerk.com  
Phone: +91- 9997601758.



The problems that exist in the world cannot  
be solved by the level of thinking that creat-  
ed them.

— Albert Einstein

# ENVIRONMENTALLY SUSTAINABLE VEGETABLE INKS FOR FLEXO PRINTING OF CORRUGATED BOXES



**Mr. Bodi Kampani**

Managing Director, Chairman Young Concepts India Inc.

## About Speaker:

Mr. Kampani graduated with Honours from St. Xavier's College affiliated to Kolkata university followed by MBA from XLRI Jamshedpur.

Worked for 43 years' experience in printing inks manufacturing and marketing.

Held prestigious positions as President and Managing Director of Toyo Ink India.

Prior to his decade long stint with Toyo Ink India, he served for 34 years in various capacities – rising to a Whole Time Director Commercial--Managing Marketing and Technology transfer for the largest Printing and coating industry in the world namely Coates Lorrileux (Total France subsidiary) and which later came to Known as DIC – Japan (100% owner of Sun Chemical USA).

INDIAN INSTITUTE OF PACKAGING\* - Past Chairman and Member of the board of Governors. \*Indian Institute of Packaging is an Autonomous body of the Ministry of Commerce and Industries, of the Government of India, affiliated to the Asian Institute of Packaging & World Packaging Organization. Besides it is an Association formed by The Industry, For the Industry & Of the Industry with Govt. Of India as an Equal Partner all India

## Session Brief:

### What is Vegetable Ink?

Vegetable ink is ink made from linseed (flax), castor, canola, safflower, soybeans, corn oil, or other vegetable-based oil. Soybean and linseed are the most commonly used oils, but it is not

uncommon to use a variety of different oils. This is in contrast to traditional ink, made from petroleum. Because it comes from vegetables, vegetable ink is better for the environment than petroleum-based ink.

### Renewable & Sustainable

Petroleum ink comes from crude oil, a harmful, finite, non-renewable resource and fossil fuel. Yet vegetable and soy inks are made from vegetables – a natural resource that is renewable, sustainable, and fast and easy to grow.

Petroleum also requires a lot of energy to produce, whereas it takes just a small amount of energy to cultivate vegetables. Vegetable ink can even come from a by-product of existing vegetable crops, so there is no need to grow new crops.

Petroleum is also known to be toxic to the planet. As they are plants, vegetables reduce air pollution in their production by absorbing harmful CO<sub>2</sub>.

### Easy to Recycle

When recycling paper, all paper goes through a de-inking process to remove ink from the paper. It is much easier and quicker to remove vegetable ink than standard petroleum-based ink. In fact, some petroleum-based ink cannot be recycled, meaning lots of the paper it's printed on goes to waste. Because vegetable ink is easy to recycle, there is less energy required to recycle the paper.

Due to all these factors large multinational are slowly switching over to vegetable inks for flexo printing of corrugated boxes. Let us learn about them and be prepared in advance for new technology inks which will invade us.



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**FCBM CONFERENCE 2020**  
17-19 December, ITC Royal Bengal, Kolkata



# Environmentally sustainable Vegetable Inks for Flexo printing of corrugated boxes

Mr. Bodi Kampani

- Environmentally sustainable Vegetable Inks for Flexo Printing of Corrugated Boxes

BY  
**B. S. KAMPANI**  
Chairman & Managing Director  
**YOUNG CONCEPTS™**

## Global Packaging Printing Ink Market



anticipated to reach **\$8.7 billion by 2023** and **\$13.45 billion by 2026** inclusive of materials such as paper, plastics, metal, rubber, and others

Asia Pacific dominates the market @ **35.39%** China, Japan, and India are the major contributing nations

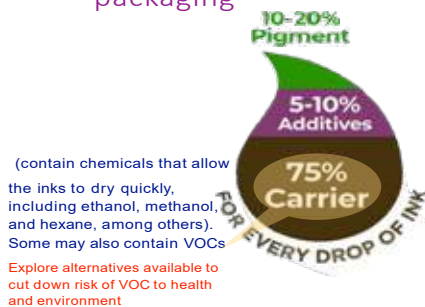
Corrugated boxes, folding cartons, tag & labels, and narrow web have lent growth of the flexographic process; causing higher growth for the flexible packaging segment.

Gravure is mainly used for paper and flexible film laminate packaging materials.

Smith's Pira  
Study published by Pira's Market Research

**makemyink.in**  
YOUNG CONCEPTS

## Inks - infuse life and colours into packaging



- Offset lithography (litho)
- Screen printing)
- Digital printing
- Flexographic (Flexo)
- Gravure

Flexo inks is one of the great success stories of the printing ink industry

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## Challenges - of printing on Cardboard

- Cartons, made of only cardboard or a paper/plastic composite.
  - If material is of porous substrate— ink will seep into the material when applied to the surface and poor rub or scuff resistance unless spot or otherwise varnished.
- blurred and inconsistent markings - due to ink bleeding
- quality of printed material - Poor marking
  - can make printed codes unreadable to the human eye.
  - can also impact the scannability of codes
- The color of the corrugated cardboard can also affect the scannability of printed codes if there is insufficient contrast between the printing ink and the surface color.

### SUBSTRATES -

**Uncoated** - ideal for prints that have a lot of text or reading materials

**Coated** - **Matt** (good for subdued design layouts) & **Glossy** (point-of-purchase displays, signage, and prints that want to show off the color.)

Industry manufactures 7.5 million tonnes of corrugated boxes

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## Inks for printing On Corrugated Cardboard

Cardboard Type	Bar Codes & Tracking Information	Branding or Visual Appeal
	<b>INK TYPE</b>	
Glossy / Glazed Cardboard	Solvent Based Inks	UV Inks LED Inks
Coated Cardboard	Water-based inks Oil-based inks Bio-based Mineral Oil Free (MOF)	UV Inks and LED Inks Water-based inks Oil-based inks Bio-based Mineral Oil Free (MOF)
UnCoated Cardboard	Oil-based inks Bio-based Mineral Oil Free (MOF) Water-based inks	Oil-based inks Bio-based Mineral Oil Free (MOF) Water-based inks

**Electron Beam (EB)** curable inks offer safe, cost-efficient, durable, and reliable alternative to UV-curable and LED-curable inks. **No odors. No substrate damage.**

Used for printing on food & beverage packaging (milk, cigarettes, etc.) consumer goods, foils, label & Thin Films

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## Different Inks Application

Ink Type	Key Attributes
UV / LED Curable Inks - High-performance, eco-friendly alternative	Don't Release VOCs LED Bulbs convert more electricity instead of heat LED Bulbs consume 30-50% less electricity LED Bulbs do not contain mercury, a toxic heavy metal Resist Peeling and cracking No pretreatment or coating required Higher resistance to wet environmental conditions Dry faster compared to water based inks Versatile for printing on a range of substrates, including plastic corrugate
Solvent Based Inks	Used for marking, coding, and wide-format applications, our solvent-based inks print on difficult and rugged substrates with high durability.
Water-based inks	emit low VOCs - reduced costs for capturing and disposing of VOCs Energy efficient and reduced overall compliance costs Increased workplace safety Meeting customer demands for environmental responsibility Offers High-speed printing

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## Different Inks' Application

Ink Type	Key Attributes
Oil-based inks made of linseed (flax), castor, canola, safflower, soybeans, corn oil, or other vegetable-based oil	Sustainable Environment friendly Less VOC emission Works superbly on coated and porous cardboard
Bio-based Mineral Oil Free (MOF)	Replacement for petroleum-based inks, reducing the carbon footprint No hazardous pollutants (HAP) Near-zero VOCs Rich, deep colors for single-pass applications



### Algae Inks

Safe and free of petroleum and sequesters carbon. **Every ton of algae removes 2 tonnes of carbon dioxide.** It can be integrated into most applications as well as printed on nearly every packaging substrate.



**All it takes water, sunlight and CO2 to produce.**  
NO fertiliser, NO herbicides, and/or NOT genetically modified seeds.



## Vegetable Oil based Inks

Made of linseed (flax), castor, canola, safflower, soybeans, corn oil, and other vegetable-based oil



Vegetables oil based inks are use of easy, practical, and economic machinery, easy equipment cleaning and operation, being environment and health friendly...



American Soybean Association certifies inks (upon passing the test) once soybean oil %age content presence is confirmed as per specified limits.

Soybean oil % age varies from 6 to 40

### WORD of CAUTION

Soy Ink seal can be Misleading

**Soybean and linseed are the most commonly used oils for inks**



## Reality beyond the label Vegetable Oil based Inks



Everything in Soybean oil based inks comes from Soy



Oil is just one component of the Ink. Substantial amounts of petroleum is present in other components of inks



Soy means environment Friendly ink



Not if Soy is grown out of genetically modified seeds with the help of fertilisers & herbicides Again petroleum based products are used to extract oil of soybeans & in its processing



Soy emits fewer VOCs



Won't see much change, unless business owner / manufacturer opts for cleaner options & solvents to decrease Petroleum content over all

## Reality beyond the label Vegetable Oil based Inks

### Caveat

A single acre of soybeans, which produces 70 gallons of soy oil, requires

- 385 pounds of lime
  - 43 pounds of pesticides and fertilizers
  - 700,000 gallons of water
  - and 5 gallons of fuel.
- More chemicals and petrol-based materials are needed to process soy and other vegetable oils.



**NO commercial printer ink is fully biodegradable unless its is living Ink**



## Environmental Impacts Analysis of Life Cycle of Corrugated Box

### Resource Inventory - Emission to Environment\* per 1 Corrugated box 938 g

Substance	Amount
Paper Reel	750 g
Land Use	352 g
Adhesive	70 g
Lubricating Oil	10.22 ml
Steel Wire	10 g
Electricity	6.14 Kwh
Ink	1 g

The electricity for one piece corrugated box is 22.13 mj

**Major impact to environment comes from land filling** of the corrugated product.

Land filling is liable for around 1/3rd part to acidification and global warming around 1/4th of the liable to smog creation.

\* Industrial Engineering and Operational Management (IEM Society International) 2019

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## What makes INKS Eco Efficient?

The printing industry is about creating a sustainable, green printing process that considers inks, materials, production efficiency, waste, and recycling.

Three key regulatory terms commonly used in the packaging industry are biodegradable, bio-renewable, and eco-friendly.

Inks that improve productivity on press or reduce waste could be seen as green in a converter's eyes.

**Faster**

- **Supply Chain** – quick response to changing demands to avoid loss of sales
- **Cost** – Shorten supply chains
- **Reduce inventories & write downs**

Any combination of two is easy. Combining all three is a breakthrough.

**Better**

- **Shelf Appeal** – attractive, eye catching graphics, etc.
- **Shelf Life** - through varied temperatures, yet lengthen the shelf life, etc.
- **Substrate Compatibility** – Consistent appearance across substrates

**Cheaper**

- **Cost reduction** – Lower cost without sacrificing quality and service

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## Long way to go...

Pigments are nonrenewable unless made with Algae cells

Inks labeled as "eco-friendly" can have a varying amount of VOCs and petroleum-based (as part of the vehicle and/or as additives), depending on the ink formulation.

While, most printed paper materials can be deinked today

- dyes require bleaching
- water-based inks are difficult and may require chemical additions to the deinking process
- solvent based inks on glossy surfaces may be difficult to recycle and deink.

This is why recycle packaging before composting it is recommend practice



Industry manufactures 7.5 million tonnes of corrugated boxes  
**OPPORTUNITIES ahead...**



\* In India eCommerce market is projected to be worth \$65 billion by 2023 from \$ 29 billion in 2018; making it the 8th largest e-commerce market

\*\* In India Consuming class may be close to 825 million by 2030, up from around 340 million today.

\* Media Reports, Press releases, Business Standard, Economic Times, LiveMint, Times Now, Times of India

\*\* McKinsey Global Institute (MGI)



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## Rise of E-Commerce lead to transformation

from simple packaging box for transportation  
to  
advertising and an important communication tool

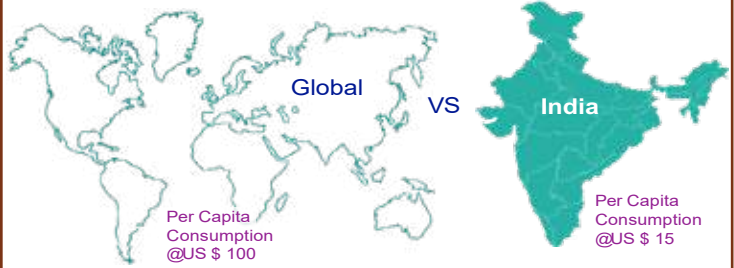


\* 72% of consumers feel that packaging design can influence their purchasing decision.



\* Paper and Packaging Board 2018

## Packaging World's 3<sup>rd</sup> Largest Industry



\* Global Packaging industry is worth over US \$ 917 billion (in 2019), growing at CAGR 2.8% to reach to \$ 1.05 trillion by 2024.

Indian Packaging Market size is worth US \$ 72 billions\*\* expected to reach US \$ 204\*\*\* grow at 26.7% CAGR by 2025

\* World Packaging Organisation (WPO)

\*\* Associated Chambers of Commerce and Industry of India

\*\*\* IPI



**Packaging** is the world's third largest industry following the food industry (1st) and energy (2nd) and the only industry that has to do with every single product produced in an economy. It offers huge employment potential.

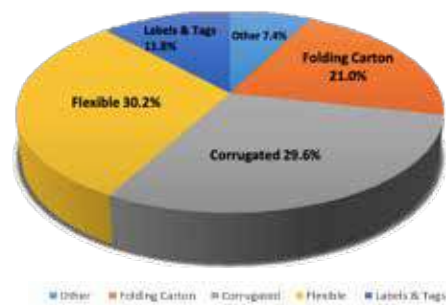
**Pre-Covid** China was the leader in the packaging sector globally, being the largest consumer, manufacturer and exporter of packaged materials and goods.

The pandemic-led lockdown and controversy have impacted China's packaging sector exponentially.

In order to eliminate their supply chain vulnerabilities, countries and companies to look for replacements, India's rising packaging industry may benefit in the near future.

**PRINTING is NOT exclusive of packaging. Both Industries are Interdependent**

## India's Packaging Market Share 2020



India is ranked 15th in the world for its paper and paperboard consumption

Paper currently is estimated to be around 6 mn tones, of which about 40% is consumed by the packaging industry.



\* Media Reports, Press releases, Business Standard, Economic Times, LiveMint, Times Now, Times of India

## Corrugated Boxes Market



Global Corrugated Boxes Market size was valued at US\$ 180 Bn. in 2020 and the total revenue is expected to grow at 4.6% CAGR through 2021 to 2027, reaching nearly US\$ 246.6 - 300 Bn.

Indian Corrugated Boxes Market size is expected to reach appx. INR 63000 Cr. registering 21.8% CAGR by 2023, up from INR 30000 Cr.



The Future of Corrugated Packaging 2023 - Smith's Pira

India Corrugated Box Market Outlook to 2023 - Ken Research

Increasingly, people are receiving their orders directly from sellers (as in case of e-commerce); consumers have very little knowledge what is recyclable and how to go about it..

Most of these boxes end up in waste bin; going into land fill rather than recycling...

E-commerce companies will have to up their game and educate and guide consumers on how to go about it...

As the need for innovation in packaging and printing increases, motivating investment in R&D for betterment of existing and development of new technologies and solutions; opening new doors for opportunities – both for products, technology and markets.



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## NEW CONCEPT IN FG STORAGE



**Mr. P. V. Ashwin**

Director

Mohan Boards Pvt. Ltd., Kolkata

### About Speaker:

Qualifications: B.E. (Mechanical) - Anna University, PGDM from MDI, Gurgaon

Work Experience: WABCO TVS - 1 year, Tata Steel - 5 years, Corrugation - 7 years

Expertise: Improvement in operational efficiencies, Scaling of box making operations and De-bottlenecking, Optimizing resource utilizations.

### Session Brief:

Space shortage is the biggest issue in box unit.

With customers insisting on just in time supply and increasing SKU's every other day, space to store finished goods is becoming a big issue.

Our own member has found a unique way to solve this problem.



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## New concept in FG storage

Mr. P. V. Ashwin

### New Concepts in FG Storage

**Ashwin PV,**

Director, Mohan Boards Pvt Ltd

FCBM Conference Dec'21

### The Need

- Vendor Managed Inventory
- Large Variety and Short Runs
  - Produce as per MOQ and deliver as per Callup
- Space Utilization
- Loading Time
- Palletized Delivery

### Types of Racking System

- Selective Racks
  - Conventional
- Advantages
  - Systematic
  - Vertical Utilization
- Disadvantages
  - Large Aisles



### Types of Racking System

- Selective Racks
  - Conventional
  - Double-Deep
- Advantages
  - Improved utilization
- Disadvantages
  - Needs Skill



### Types of Racking System

- Selective Racks
  - Conventional
  - Double-Deep
  - Very-Narrow Aisle

### Types of Racking System

Very Narrow Aisle Racks



## Types of Racking System

- Selective Racks
  - Conventional
  - Double-Deep
  - Very-Narrow Aisle
- Compact Racks
  - Drive In
  - Drive Through

## Types of Racking System

### Drive In Racks



## Types of Racking System

- Selective Racks
  - Conventional
  - Double-Deep
  - Very-Narrow Aisle
- Compact Racks
  - Drive In
  - Drive Through

## Types of Racking System

- Live Racking System
  - Roller based

## Types of Racking System

### Roller Based Live Racks



## Types of Racking System

- Live Racking System
  - Roller based
  - Push-Back

## Types of Racking System

### Push Back Live Racks



## Types of Racking System

- Live Racking System
  - Roller based
  - Push-Back
- Mobile Racking System



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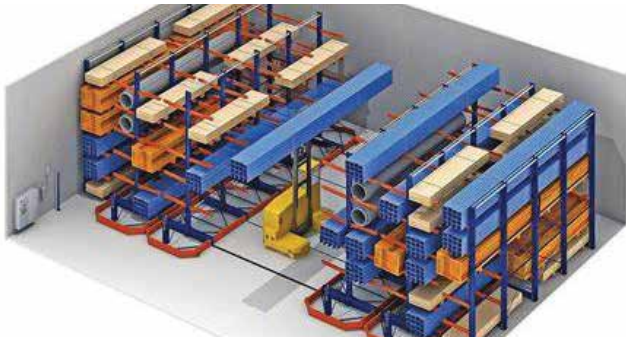
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## Types of Racking System

### Mobile Racks



## Types of Racking System

- Live Racking System
  - Roller based
  - Push-Back
- Mobile Racking System
- Shuttle

## Types of Racking System

### Radio Shuttle Racks



## Types of Racking System

### Radio Shuttle Racks



## Pro's n Con's

	Conventional Selective	Double Deep	Very Narrow Aisle	Drive In	Drive Through	Roller Live Racks	Push Back	Mobile Racking	Shuttle
Utilization	2	3	5	4	4	4	4	5	5
Cost	1	2	5	2	2	5	5	5	4
Skill Needed	2	3	5	5	5	5	5	3	2
Movement	Selective	Selective	Selective	LIFO	FIFO	FIFO	LIFO	Selective	LIFO FIFO Option
			Prohibitively Expensive	Operational Utilization Low		Flow through Layout	Skill Dependent	Cumbersome	

## Commercial Reasoning

(in lacs INR)	No Racks	Mezzanine	Shuttle Racks
Land	35	35	35
Civil + PEB	80	150	90
Racks			100
Shuttle			30
Material Handling			26
Total	115	185	281
No. of Pallets	610	1100	2100
Rs. Per Pallet Loc	18,900	16,800	14,050

*There is nothing so useless as doing efficiently that which should not be done at all.*

— Peter Drucker



FCBM CONFERENCE  
**2020NE**  
MAN · MACHINE · MATERIAL  
DECEMBER 17 - 19, 2021  
ITC ROYAL BENGAL, KOLKATA

## TECHNICAL SESSION V



### Technical Session V (18th December 2021)

- |                     |   |
|---------------------|---|
| 04:30 pm - 05:00 pm | Effluent treatment of Starch wash in box plant<br><b>Mr. Bhaskar Reddy</b>                  |
| 05:30 pm - 06:00 pm | Corrugated Board Manufacturing Cluster<br>– Is it a Reality?<br><b>Mr. M. S. Rajesh</b>     |
| 06:00 pm - 06:30 pm | Corporate Social Responsibility (CSR) and Indian companies act<br><b>Mr. Gobind Gurbani</b> |



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# EFFLUENT TREATMENT OF STARCH WASH IN BOX PLANT



**Mr. Bhaskar Reddy**

Director,  
Amylodex Pvt. Ltd., Hyderabad

## About Speaker:

Mr. Bhaskar Reddy is Science Graduate with post-graduation in Economics, Diploma in Business Management and ICWAI (Int)

He has more than two decades experience in formulating and application of Starch Adhesives.

He is a member of the German Research Association on starch and has been accredited with B.K. Doshi award for innovation and Excellence.

## Session Brief:

Corrugation process generates wastewater when leftover starch is washed for shut down at the end of the day or the adhesive circulation system is periodically cleaned.

This wash water (effluent) cannot be discharged into the Municipal sewage or open land as it will violate environmental norms and municipal laws.

Using wash water in preparation of Adhesives, treating wash wastewater and minimizing wash water generation are some of the options available.

Effluent Treatment Plant (ETP) is an important part of a comprehensive wash water handling system.

Learn from industry expert how to do it and protecting the environment.



## Effluent treatment of Starch wash in box plant

Mr. Bhaskar Reddy

### Effluent Treatment of Starch Wash in Corrugation Plant



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Bhaskar BV Reddy

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### Topics

- Effluent Generation in Corrugated Board Plant
- Effluent analysis and regulatory perspective
- Effluent treatment technologies
- Practical Solutions
- Future wastewater discharge norms

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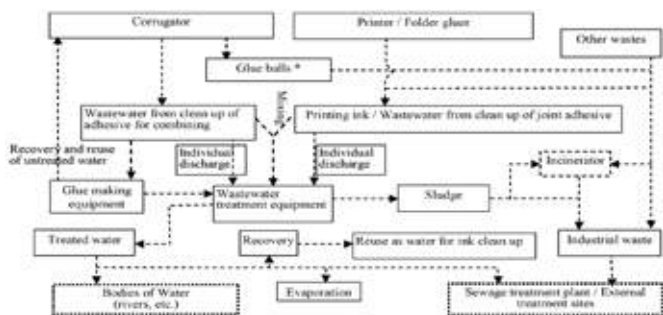
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### Effluent Generation in Corrugation Plant

#### Process of Generation



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### Constituents of wastewater

- The wastewaters contain a high concentration of soluble organics with accompanying high BOD and COD values.
- Significant concentrations of metals, namely Aluminum, Calcium, Chromium, Iron, Sodium, Magnesium, Lead and Zinc are present in the wastewater due to the ink.
- These contaminants result in a discharge stream not meeting the regulatory requirements.
- The volume of wastewaters generated by boxboard and box manufacture is small and contain high level of solids, batch process is more appropriate than continuous process.

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## Pollution Control Board Norms of wastewater Discharge

Parameter Standards	Inland surface water	Public Sewers	Land for Irrigation	Typical untreated wastewater from Corrugation Plant
Suspended solids Mg/l	100	600	200	4040
pH value	5.5 - 9	5.5 - 9	5.5 - 9.0	12.6
BOD 1[3days at 27°C] mg/l Mx	30	350	100	1000
COD mg/l Max	250			18800
Chromium (as Cr+6) , mg/l max.	2	2		250
Copper (as Cu) Cr+6) , mg/l max.	3		3	90
Zinc (As Zn.) mg/l, Mx	5		15	80
Iron ( as Fe) mg/l max	3	3		135

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## Effluent Treatment Process

- This is batch Process
- During the production day process water is collected in holding tank. When minimum volume is reached it would be transferred for Treatment.
- Effluent Treatment starts with separation of solids. In this process Coagulants , pH adjustment chemicals and Flocculating agents are added.
- Separated Solids are pumped to filter press for dewatering.
- Typical treatment plant  
[https://www.youtube.com/watch?v=cpvstmX\\_TeY](https://www.youtube.com/watch?v=cpvstmX_TeY)

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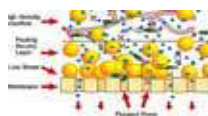
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## Effluent treatment Chemicals & Technologies

- Coagulating agent - Aluminium Sulphate
- Flocculation - Polyacrylamide.
- Sedimentation , filtering , post treatment by oxidation by Hydrogen peroxide.
- Nanofiltration membrane technology is used for separation. Reverse osmosis filtration can also be used if dissolved solids or color is an issue. Traditionally cross-flow membrane technologies has substantial membrane fouling problems.



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## Coagulation & Flocculation

- Coagulation: It is a chemical process, whereby the chemical properties of the solution are altered to promote agglomeration.
- Flocculation, on the other hand, is a physical process that causes particles to floc together, first forming a cloud and then a precipitate.



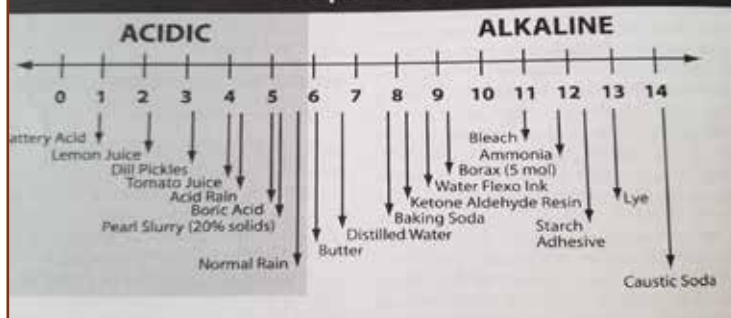
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## The pH Scale



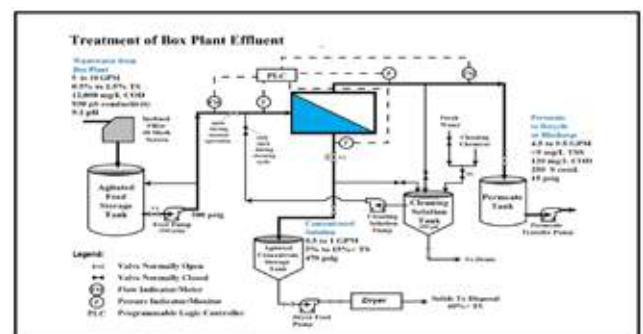
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## Box Plant Effluent Treatment-Flow Chart



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## Treatment Plant Model



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## Practical Solutions & Conclusion

- Reuse of wash water
  1. Collect Wash water in a tank. Install agitator in the tank to ensure all heavy components are suspended till pumping.
  2. Separate and burn any gelled lumps formed in try or on rollers in the boiler after dewatering.
  3. Use biocides. Test all parameters of wastewater.
  4. Use wash water only in secondary water.
- Reduce glue flowing in to wash water
  1. Maintain little slope in pipeline where by glue will flow back to circulation or other tanks after pumping is suspended.
  2. Operators can be mindful of unnecessary glue flow in to wash water. Proper overflow provisions needed in glue tray.
- Install a small ,workable & rugged but economical wastewater processing plant encompassing technologies available today.

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## Future - Wastewater Discharge

- Past practice of settling tanks and discharge topwater is no longer acceptable to Pollution Control Boards.
- Metal contents will come under greater scrutiny. Ink companies have reduced metal content but will have to improve. These new inks will cost more
- Reuse of ink wash in preparation.
- It is almost certain that companies like IKEA , Amazon etc will seek tougher compliance as regards effluent discharge.
- Existing notion that "effluent discharge can be managed through liaison with department" may not work.
- A dedicated person ( qualified / unqualified) handling all Environmental issues may be inevitable.

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## THANK YOU



**Bhaskar BV Reddy**  
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**www.amylodex.com**

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*Design must reflect the practical and aesthetics in business but above all... good design must primarily serve people.*

— Thomas Watson



*Complexity is your enemy. Any fool can make something complicated. It is hard to make something simple.*

— Richard Branson



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# CORRUGATED BOARD MANUFACTURING CLUSTER – IS IT A REALITY?



**Mr. M. S. Rajesh**

Managing Director,  
Tirupur Corrugators Private Limited

## About Speaker:

He is graduate in Business Management from PSG college of Arts & Science, Coimbatore.

Has 15 years of experience running corrugation box manufacturing unit under name Krishna Packages.

Is Managing committee member of SICBMA Coimbatore chapter for last 12 years.

Is Managing committee member of SICBMA and FCBM at national level for last 4 years.

He is also Managing committee member of Tirupur Chamber of Commerce & Industries.

## Session Brief:

Today there is need to upgrade the technology of manufacturing corrugated boxes. There is more and more demand from customers for

corrugated boxes manufactured from automatic plants. However, small plants cannot think of investing in large scale automatic plants.

Central as well as state governments have announced Common Production Infrastructure Scheme, which aims to address the needs of the industries, through formation of well-defined clusters in specified geographical areas to enable the Micro and Small Enterprises to have better access to resources, linkages to credit and enhance their marketing competitiveness.

M/s. Tirupur Corrugators Private Limited, the Special Purpose Vehicle (SPV) of Corrugated Box Micro Cluster, established a Common Facility Centre (CFC) with the financial assistance from Government of Tamil Nadu under Common Production Infrastructure Scheme.

Learn from Mr. M. S. Rajesh how along with fellow corrugators established this cluster and use this information to create your own cluster.



# Corrugated Board Manufacturing Cluster – Is it a Reality?

Mr. M. S. Rajesh

## CORRUGATED BOARD MANUFACTURING CLUSTER – is it a Reality ?

### Today's Market Scenario

- A lot of MNC's have setup manufacturing facility in India
- Packing quality expectation is at par with international standards.
- Increasing demand for boxes manufactured from auto plant.
- Upgrade In Technology Is The Need Of The Hour



### Challenge in starting up the Automatic board plant

- Massive Investment
- Capacity utilization



**Cluster Development program**  
Is a tool to make dreams into reality



### What is Cluster

A Cluster Is A Group Of Enterprises Engaged In Similar Manufacturing Activity Within A Specific Geographical Area. { City / District }.

They Share Industry Characteristics And Benefit From Collective Growth.

### MSME Cluster Development Program



MSE-CDP scheme grants **upto 80% of the cost** of the Common facility center [CFC] project of a **maximum of Rs. 10 crore** that includes.

- Cost of land & building
- Pre-operative expenses
- Preliminary expenses
- Machinery and equipment
- support infrastructure

\*CDP - Cluster Development program



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Based on the MSME Cluster Development Program,  
Government of Tamil Nadu had introduced **Micro Cluster program**



Financial Assistance : **Maximum grant of 2.5 Cr**

## **TIRUPUR CORRUGATORS PRIVATE LIMITED** [SPV]



- M/s Tirupur Corrugators Private Limited is the SPV formed by Cluster members
- Constitution – Private Limited Company
- Incorporated on 16.12.2017
- Number of Directors – 5  
[Holding 50% of company shares, no single unite holding more than 10%, as per government guidelines]
- Number of members joining the SPV - 24  
[Minimum 20 members required as per government guidelines]

## **FACILITIES AT TCPL - CFC**

- 5-ply – 1800 mm width Corrugated Board making Production Line
- Testing Lab – for Raw Materials, Consumables and finished Boards
  - Compression Test
  - Bursting Strength Test
  - Crush test
  - COBB Test
  - GSM Test
  - Moisture Test

## **FINANCIAL DATA TCPL - CFC**

### **PROJECT COST**

Particulars	Total Cost (Rs. in Lakh)
Rent Advance	4.60
Plant & Machinery (including electrification)	351.90
Misc. fixed assets	3.00
Preliminary & Pre-operative expenses	7.70
Contingency (5% on plant and machinery)	17.60
Margin money for Working Capital	5.00
<b>Total Project Cost</b>	<b>389.80</b>

### **MEANS OF FINANCE**

Particulars	Amount (Rs. in lakh)	% Share
Grant-in-aid from Govt. of TN	250.00	64.14%
SPV contribution	89.80	23.03%
Term Loan	50.00	12.83%
<b>Total</b>	<b>389.80</b>	<b>100.00%</b>

## **Timelines for implementing project**



- DPR submitted to Gov: **Mar 2018**
- Steering Committee Approval: **Jun 2018.**
- Final Gov Order released : **Jul 2019**
- Machineries tender: **Oct 2020\***
- Received machinery: **Jan 2021**
- Official production: **Mar 2021**

\*Time delay due to central government election, Election code conduct & Covid 19

## **TIRUPUR CORRUGATORS PRIVATE LIMITED** [SPV]



**Thank You**

For Quires, Contact : **Rajesh M.S**  
9843140497  
[md@thetcp.com](mailto:md@thetcp.com)



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# CORPORATE SOCIAL RESPONSIBILITY (CSR) AND INDIAN COMPANIES ACT.



**Mr. Gobind Gurbani**

CEO,

Pinkcity Chemicals (Corrugated Box Division)

## About Speaker:

He is Post Graduate in Economics from University of Rajasthan, Jaipur.

Certificate Course in CSR from Centre for the promotion of imports from Developing Countries (CBI), The Netherlands.  
Certificate Course on Managing Training Programme from IHK Academy / GIZ Germany.  
Past President of RCBMA  
Member of TAPPI  
Member of American Economic Association  
Representing a NGO at EcoSco Council United Nations - New York.

Has 35 years of experience running Corrugation box manufacturing unit.

## Session Brief:

Corporate Social Responsibility (CSR) means that companies integrate social and environmental concerns in their business operations and in

their interaction with business relevant groups on a voluntary basis.

Section 135 of the Companies Act, 2013 (the Act), w.e.f 1.4.2014 requires the Board of Directors of every company having a net worth of Rupees 500 crore or more, or turnover of Rupees 1,000 crore or more or a net profit of Rupees 5 crore or more, during any financial year, to ensure that the company spends in every financial year at least 2% of the average net profits of the company made during the three immediately preceding financial years on Corporate Social Responsibility (CSR) in pursuance of its policy in this regard.

We may not fall under the categories of Rs. 500 crores net worth or Rs. 1000 crores turnover. Many of us fall in the category of Rs. 5 crore net profit. Hence learn how we can implement CSR in our industry.



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## Corporate Social Responsibility (CSR) and Indian companies act

Mr. Gobind Gurbani

### Corporate Social Responsibility

- Speaker- Gobind Gurbani

#### Member :-

- American Economic Association
- Indian Economic Association
- Member TAPPI
- Contact: [gbgurbani@gmail.com](mailto:gbgurbani@gmail.com)
- Mobile: +91 9414050748



What is CSR ?

- **Corporate Social Responsibility (CSR) means that companies integrate social and environmental concerns in their business operations and in their interaction with business relevant groups on a voluntary basis.**

Social Responsibility is about Triple P



**CSR – 7 CORE SUBJECTS**  
Holistic Approach

**PEOPLE :**

Community Development – Human Rights -Labour

**PROFITS:**

Fair operating practices–Consumer Issues – Complain – Profits

**PLANET :**

The Environment Issues – Water - Wastages



- 1.Accountability
- 2.Transparency
- 3.Ethical behavior
- 4.Respect for Stakeholder Interests
- 5.Respect for the Rule of Law
- 6.Respect for International Norms of Behavior
- 7.Respect for Human Rights

**Fair operating practices**

Issues :

- Prevent corruption and bribery
- Responsible political involvement
- Fair competition
- Fair supplier relations
- Promoting social responsibility in the sphere of influence
- Respect for property rights

**Reputation management**

Environment



**Managing environmental issues**

Environment



Waste



Water use



Dangerous substances



Energy use

Pollution

**Managing social / labour issues**

Social

Forced labour

Non discrimination

Minimum wages

Equal remuneration

Occupational health and safety

Right to union membership



Minimum age



Working hours



**Sometimes to the extreme...**

Consumer Health & Safety

Remove the child before folding



Warning: This product moves when in use



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## How to implement CSR in you company/supply chain?

OK, but what to do?

1. Identify where you want/need to be (in 3 years time)
2. Identify where you are right now
3. Identify the steps you need to take to get there



## How to implement CSR in you company/supply chain?

The steps you need to take to get there

- Commitment / Cooperation / strategy / Swot Analysis



- Use the tools

- Join forces/programs/projects



## CSR & INDIAN COMPANIES ACT



## CSR: Companies Act 2013- Section 135 w.e.f 1.4.2014

- ▶ Companies Mandated to constitute a CSR Committee
  - Networth of Rs 500 Crore or more
  - Turnover of Rs 1000 Crore or more
  - Net profit of Rs 5 Crore or more
- ▶ CSR Committee to have
  - Three or more directors
  - At least one is to be an independent director
- ▶ Board's Report shall disclose the constitution of CSR Committee
- ▶ CSR Committee will
  - Formulate CSR policy and recommend to board indicating the activities to be undertaken as specified in schedule vii
  - Recommend the amount of expenditure to be incurred
  - Monitor CSR Policy from time to time

## CSR: Companies Act, 2013

- Board of Directors will
  - Approve CSR Policy
  - Ensure implementation of CSR policy
  - Disclose the contents of CSR policy in the Board report
  - Place the same on company's website, if any
  - Ensure CSR spending amounting to at least 2% of the average net profit of the preceding three financial years
- Board's Report shall specify the reasons for not spending the specified amount
- There is no penalty for failure to spend 2% of net profit on CSR



## Schedule VII Activities

- Eradicating extreme hunger & poverty
- Promotion of education
- Promoting gender equality and empowering women
- Reducing child mortality and improving maternal health
- Combating human immunodeficiency virus, acquired immune deficiency syndrome, malaria and other diseases
- Ensuring environment sustainability
- Employment enhancing vocational skills
- Social business projects
- Contributions to Prime Minister Fund PM Care Fund or any other fund set up by the Central Government or the State Governments for socio-economic development and relief and funds for the welfare of the Scheduled Caste and Schedule Tribe
- such other matters as may be prescribed

## Mandatory Registration of NGO with MCA for getting CSR FUNDING

- Now, as per **Notification issued by Ministry of Corporate Affairs dated 22<sup>nd</sup> January 2021**, it is mandatory for all NGO's which wants to raise CSR Funding to enroll with MCA w.e.f 01/04/2021 to get CSR Funding
- 
- As per this notification from 01 April 2021 onwards, every entity, covered under sub-rule (1), who intends to undertake any CSR activity, shall register itself with the Central Government by filing the **Form CSR-1** electronically with the Registrar. On successful submission of Form CSR-1, a unique CSR Registration Number shall be generated by system automatically.

Browse these website links for overviews of practical CSR info!

<http://www.cbi.eu/marketinfo/cbi/>

<http://www.csr-supplychain.org/>

<http://www.etiskhandel.no/Guide/Resources/index.html>

<http://www.sedexglobal.com/>

[http://www.unglobalcompact.org/AboutTheGC/tools\\_resources/index.html/](http://www.unglobalcompact.org/AboutTheGC/tools_resources/index.html/)

## WHAT FCBM CAN DO

My Recommendation:

1. FCBM should form a Foundation (NGO)
2. FCBM members can join Foundation as per rules formed.
3. FCBM can fix joining fee and yearly contribution.
4. FCBM can allocate funds to Regional Association to do social activities under the banner of Foundation.



- a. What is a Social Stock Exchange and Why is it Important?
- a. The concept of a Social Stock Exchange (SSE) is rather new.
- a. It is a mechanism that allows companies engaging in work for the betterment of the society to raise finance in an environment.
- b. that is quite similar to that of a stock market.
- c. The NPOs that are eligible for participation in the Social Stock Exchange (SSE) and are registered with SSE shall be allowed to raise funds through equity, zero coupon zero principal bonds, social impact funds, development impact bonds as well as Mutual Funds.

- “A good business in a community with a Purpose”
- “Business sense is making Profit”
- “Sensible Business is CSR”
- “CSR is more than Charity”

*The more we retain our people, the less time we need to commit to recruiting new people.*

— Christine Thatcher



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## TOKEN OF GRATITUDE

### FROM THE EDITOR'S DESK



Chetan Shah  
Chairman



Yuvraj Shah  
Co-Chairman

*We are humbled by your presence and participation for the FCBM 2021 Conference, at Kolkata.*

*While every possible effort has been made to publish the factual details, we regret, if any incorrect information may have crept in.*

*To extend our gratitude to all dignitaries for their good wishes, authors for their articles and our respectable sponsors and advertisers, we are pleased to present this souvenir as a token of remembrance. It entails a collation of all important resources and is an ode to our fraternity of 50 years strong.*

*To put together this extensive publication, I humbly thank Mr Abhishek Saraf and his team from Aspiration, Bangalore - who have proved that distance is not a barrier by providing prompt support to collate this remotely.*

*Mr Hemant Saraogi, Bharath Kedia and Milan Dey, the key pillars of EICMA, for their timely inputs and recommendations to shape this souvenir.*

*Finally, the brand promotion committee - Sourav Jhawar, Alok Agarwal and Mohit Bajaj for extending their networks to support the conference and thereby, adding great value to the souvenir.*

*Needless to say, this would have not been possible without the collective support from the entire EICMA team and I am grateful for the opportunity that I received to contribute towards the success of the conference.*

*Last but not the least, I have enjoyed working on this in the company and support of my son, Yuvraj Shah, who has worked diligently to drive this towards its outcome.*

*'Moments come and go but memories last forever'- Keeping this in mind, we sincerely hope we have been successful in creating an everlasting memory for everyone!*

*Wishing 49th FCBM Conference a Grand Success...*



# Jagdamba Enterprises

Dealers of Kraft Paper & Duplex Board

Associate Concerns:

**SHREE DURGA TRADING CO.  
SHREE GANPATI TRADERS**

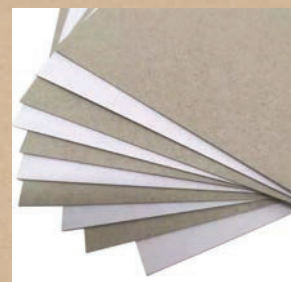
**Authorised Dealer**

## **INTRA STATE MILLS**

- Ballavpur Paper Manufacturing Limited
- Krishna Tissues Private Limited (Duplex Board)
- Madhubati Paper Mills Private Limited
- Natraj Electro Casting Private Limited
- Pinax Paper Mills Private Limited
- S. R. International Paper Mills Private Limited
- Supreme Paper Mills Private Limited

## **INTER STATE MILLS:**

- Bagmati Pulp & Papers
- Bhagwati Kripa Paper Mills Private Limited
- K. R. Pulp & Papers Limited
- Maa Kali Papers Limited
- Navdurga Pulp & Paper Mills Private Limited
- Sidharth Papers Limited
- Siddheshwari Paper Udyog Private Limited
- Stark Ridge Paper Private Limited
- Tehri Pulp & Paper Limited
- Vishal Papertech India Limited (Duplex Board)
- Vishwanath Paper & Board Limited



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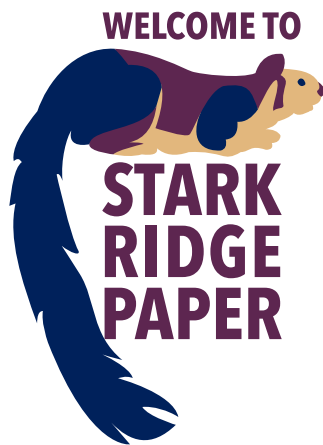
**Ram Gopal Rungta**

+91 97481 50370

**Alok Agarwal**

+91 98313 24219

One stop solution for all your Paper and Board requirements!!



### 1. Raw Material

100% Recycling Based Manufacturing. We divert about 60,000 tons of waste cardboard away from landfills every year!



### 2. Pulp Section

Our pulp is made with 100% recycled cardboard & 100% recycled water from our ETP



### 3. Paper Machine

Waste water from the manufacturing process is diverted back into the ETP to be recycled



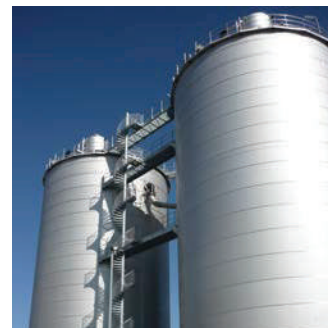
### 4. Finishing House

Our rewinder is powered by biogas produced in our ETP reactor



In keeping with global safety standards, all Stark Ridge Paper employees get a set of safety equipment when they join, and undergo bi-annual safety trainings.

So grab your hard hat, and start the tour here!



### Effluent Treatment Plant

We're a Zero Liquid Discharge unit! 100% of our waste water is recycled in our ETP in a closed-loop system. The ETP also generates biogas to power our plant, saving 3-5 tons of coal per day!



### By-products Converted Into Core Pipes & Edge Protectors.

We've provided the local community with machinery & training to make core pipes & edge protectors out of our waste material, which we buy back to package our products. This is how we generate livelihoods locally, and reduce overall wastage from our plant.



### 5. Packed Rolls

The core pipes & edge protectors we use to package our rolls are locally produced out of waste from our own factory.



## STARK RIDGE PAPER

Creating a greener future with #MindfulManufacturing

[www.StarkRidgePaper.com](http://www.StarkRidgePaper.com)

[/company/StarkRidgePaper](https://www.linkedin.com/company/StarkRidgePaper)

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