



# NextGen PACKAGING CONCLAVE

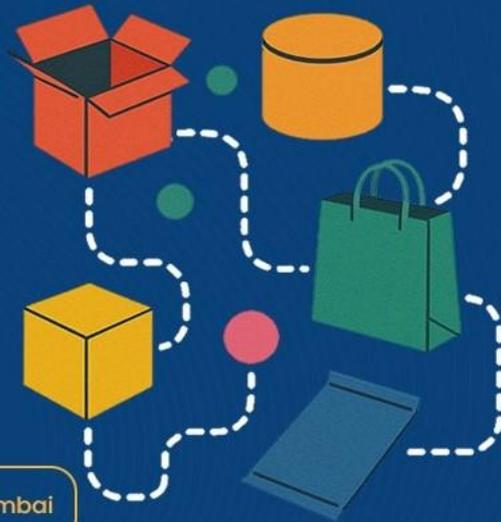
CONNECTED PACKAGING – At the confluence of consumer, sustainability and supply-chains



1st August, 2025



Jio World Centre, Mumbai



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## **Executive Summary:**

Next Gen Packaging Conclave held on 1st August 2025 in Jio World Centre, Mumbai was a high-impact conclave that served as a dynamic platform for thought leadership and innovation, bringing together a cross-section of stakeholders from the packaging ecosystem—including packagers, packaging equipment manufacturers, technology innovators, printers, designers, ink producers, end users, regulators, and branding experts.

Covering trends across both consumer and industrial packaging, the event promised insightful discussions, breakthrough solutions, and unparalleled networking opportunities.

With packaging now, the fifth largest sector in the Indian economy and growing at a rate of 22–25% annually, the discussions reflected its increasing significance not only in economic terms but also in shaping consumer experience, enabling sustainable practices, and driving supply chain efficiency.

The Conclave brought forward a powerful narrative—technology, sustainability, and consumer experience are no longer optional—they are foundational pillars of the next-gen packaging ecosystem. India, with its vast market, agricultural base, digital prowess, and innovative spirit, is well-positioned to lead this transformation globally.

Connected Packaging is not merely a trend—it is a paradigm shift. At the intersection of technology, sustainability, and consumer engagement, it holds the power to elevate India's packaging industry onto the global stage. By embedding purpose into packaging, India can reduce waste, empower rural communities, enhance food security, and unlock economic opportunities—fulfilling the vision of a Viksit Bharat.

# Objective of the NextGen Packaging Conclave

To bring together industry leaders, innovators, researchers, and policymakers in the packaging ecosystem to:

1. Showcase advancements in next-generation packaging technologies, materials, and sustainable practices.
2. Facilitate knowledge exchange on trends such as smart packaging, eco-friendly materials, digital printing, and automation.
3. Promote collaboration between packaging manufacturers, FMCG/retail brands, logistics providers, and technology enablers.
4. Address key challenges like sustainability, circular economy integration, regulatory compliance, and consumer safety.
5. Encourage innovation and investment in scalable, future-ready packaging solutions.
6. Highlight the role of packaging in enhancing customer experience, product safety, and brand value in a rapidly evolving market.

## Set of Recommendation:

### 1. Policy, Regulation & Governance

- Standardize packaging regulations across states via MoEFCC/BIS to ease compliance.
- Streamline and strengthen EPR with clear stakeholder roles, centralized digital registries, and robust enforcement.
- Offer tax rebates, lower GST slabs, and PLI benefits for sustainable packaging, circular economy startups, and MSMEs.
- Advocate strong policy alignment with global best practices (Europe, Japan, Korea), while adapting to Indian needs.
- Mandate brand-driven consumer awareness initiatives; strengthen IP protection and counterfeit laws with faster enforcement.

## 2. Technology & Infrastructure

- Invest in R&D of bio-based, biodegradable, recyclable, and smart materials (e.g., starch films, hemp, bagasse, mycelium, functional coatings).
- Build PPPs and industry–academia collaborations (CSIR, IITs, NIIST) with grants, incubation, and accelerators.
- Integrate connected technologies across lifecycle: QR, NFC, RFID, AR/VR, functional inks, spoilage indicators, tamper-evidence, serialization.
- Develop low-cost durable smart tags for Indian logistics; address QR degradation through protective coatings.
- Expand Material Recovery Facilities, waste segregation, reverse logistics, and testing/certification labs.
- Support automation, IoT, AI, and robotics in packaging production, warehousing, and quality checks.

## 3. Consumer Awareness & Engagement

- Launch national campaigns like **“Packaging Sahi Hai”** or extend **“Jago Grahak Jago”** to packaging—focusing on sustainability, safety, and authenticity.
- Educate consumers on responsible disposal, recyclability, and authentication, especially in food, pharma, cosmetics.
- Drive consumer interaction through QR-linked loyalty programs, AR-based campaigns, product origin stories, and gamified experiences.
- Ensure vernacular language support for inclusivity in Tier II/III and rural markets.

## 4. Business & Industrial Strategy

- Foster MSMEs and startups via a **Green Packaging Innovation Fund/Accelerator** for scalable solutions (eco-B2B, AI-driven design, coatings).

- Promote monolayer, recyclable, and circular systems with industry training programs.
- Encourage short-run and customizable digital printing to reduce waste and support brand campaigns.
- Shift focus from upfront cost to **Total Cost of Ownership (TCO)** including damage reduction, logistics efficiency, and sustainability gains.
- Build decentralized manufacturing units to mitigate supply chain risks.

## 5. Supply Chain, Safety & Trust

- Treat connected packaging as a **strategic enabler** for traceability, ESG compliance, consumer engagement, and brand protection.
- Use unique identifiers (QR, RFID, serialized/non-cloneable codes) and blockchain to combat counterfeiting and ensure authenticity.
- Leverage packaging for real-time tracking, automation, predictive restocking, and subscription models.
- Align packaging strategies with brand positioning, especially for premium/export markets.

## 6. Sustainability & Circular Economy

- Embed sustainability into business KPIs across all levels.
- Commit to ambitious climate goals (e.g., 25% GHG reduction by 2030) and renewable energy adoption.
- Scale use of recycled content, mono-material recyclability, and design-for-recycling standards by 2030; aim for full recyclability by 2035.
- Encourage refill and reuse systems inspired by traditional Indian practices.
- Strengthen waste management with separation/sorting tech and dignified integration of informal workers.
- Promote awareness of recyclable materials (e.g., aluminium recovery campaigns).

## 7. Social Inclusion & Rural Integration

- Empower women-led cooperatives and rural groups in sustainable packaging for food, spices, and handicrafts.
- Provide training, low-cost technology, and market linkages to grassroots producers.

## 8. Global Collaboration & Benchmarking

- Align with WPO's Pack4Planet/Connect the Chain and other international standards.
- Develop an India-centric Sustainability Index (like EcoVadis) for ESG benchmarking.
- Build geo-traceable export-ready packaging systems to unlock global markets.
- Adapt global best practices (Japan/Korea tech, Europe's sustainability, China's PCR incentives) to India's cost-sensitive context.

## 9. National Missions & Roadmaps

- Launch a **National Mission on Packaging Innovation** under CSIR/NITI Aayog focusing on material science, circularity, and competitiveness.
- Adopt a **"Connected India, Packaged Right – Roadmap 2030"** with targets:
  - 30% post-consumer recycled content
  - 50% consumer engagement through connected packaging
  - 25% reduction in food loss via smart packaging

# Opening Session

## Theme: Connected Packaging – At the confluence of consumer, sustainability, and supply-chains

**Mr. Navanit Narayan, Vice President, BCC&I and Whole Time Director & CEO, Haldia Petrochemicals Limited**

**Mr. Adhip Nath Palchaudhuri, Chairman & MD, Balmer Lawrie & Co. Ltd.**

**Mr. Chakravarthi AVPS, Global Ambassador, World Packaging Organization and MD, Ecobliss India**

**Ms. Pritee Chaudhary, IRS, Regional Director, Food Safety and Standards Authority of India**

**Guest of Honour, Mr. Navanit Narayan, Vice President, BCC&I and Whole Time Director & CEO, Haldia Petrochemicals Limited**



Mr. Navanit Narayan, Vice President, BCC&I and Whole Time Director & CEO, Haldia Petrochemicals Limited delivering the Opening Address

Mr. Navanit Narayan welcoming all present on the stage and in the hall introduced the Next Gen Packaging Committee of the Bengal Chamber and the dignitaries on the stage.

Haldia Petrochemicals Ltd is a part of the packaging Value chain and that's why Mr. Narayan find its appropriate to address the Conclave. Packaging currently stands as the fifth largest sector in the Indian economy, reflecting its pivotal role in driving industrial growth and innovation. With an annual growth rate of 22-25% annually, the industry has become a preferred hub for packaging solutions, bolstered by advancements in technology and infrastructure. The flexible packaging is a business of around 20 – 25 billion which is pretty large. And is

expected to grow up to 35 billion by 2030 with a CAGR of 11.5 % which shows to be a very healthy growth. Sustainable Packaging or Green Packaging which is the Mantra of the Conclave means how we can be responsible as citizens and as Industry. 10 – 15 % of the sector is biobased. Which is a transition from the earlier era. He also mentioned that Government policies are very progressive encouraging and permitting 100 % FDI in this sector which has resulted many multinationals coming into the country. The FDI flows into the paper & pulp industry has been close to 2 bn dollars. The CSIR (Council for scientific & Industrial Research) has launched the National Mission on sustainable Packaging Solutions aiming for a net zero future through sustainable innovation. Led by CSIR & NIIST the initiative focuses on developing sustainable material, recycling methods & advanced testing facilities to enhance India's Packaging Sector and address India's environmental challenges.

At this crossroad it is important to analyze key drivers of the growth of Packaging. Rising demand of the food beverages and e-commerce has been leading to the growth of this sector with Food pharmaceuticals & personal care dominate the flexible packaging. The huge shift to the e-commerce is also one of the reasons of the growth.

Speaking about Government regulations in the industry he said there is a regulatory push from the Government which is much required. The Plastic Waste Management (Amendment) Rules got stricter in 2023, which mandates biodegradable and compostable materials in many applications expanding the scope of responsibilities for various stakeholders. PLI Scheme also supports Packaging players stimulating expansion & capacity upgrades.

Innovations is another key driver of the industry – Materials from cornstarch and sugarcane based packaging materials that bio degrades on its own within 90 days. Another example is orange peel waste to make bio polymer films. Innovation & technology is thus a key driver of growth of this industry

However, the higher cost of bio based recyclable materials makes sustainability expensive where again technology is required to match the cost with the virgin material which is much lesser in cost. Limited recycling infrastructure particularly for multilayer flexible films hampers closed loop circularity.

Fragmented regulation among states is another area to be looked into as it puts a burden back on the industry. There needs to be alignment across states.

As a part of the industry, it is important to lead the growth of the packaging industry and identify the major growth opportunities. According to Mr. Narayan the

opportunities lie in scaling bio-based films like starch, sugarcane and agriculture waste more so being in an agriculture-based country. There is a huge opportunity to use the waste from agriculture into creating films which can be used for packaging. Expanding monolayer recyclable film systems. Integrating smart and active packaging for FMCG & Pharma industry. There is a need to partner with the institutions doing research and bring in new technology like edible cups, mycelium trays, seaweed-based liners to name a few.

With these recommendations Mr. Narayan concluded his address

**Guest of Honour, Mr. Adhip Nath Palchaudhuri, Chairman & MD, Balmer Lawrie & Co. Ltd.**



Guest of Honour, Mr. Adhip Nath Palchaudhuri, Chairman & MD, Balmer Lawrie & Co. Ltd. addressing the Conclave at the Opening Session.

Welcoming all participants and the dignitaries on the dais, Mr. Palchaudhuri started delivering his address appreciating the very concept of *Connected Packaging* – positioned at the cusp of sustainability and consumer engagement.

He highlighted that the Indian packaging market contributes roughly 7% of the global market. In comparison, China's market is nearly five times larger, while the USA's is almost ten times bigger. This clearly indicates that India has significant headroom for growth. As the nation moves forward in its journey from a developing to a developed country, in alignment with our Hon'ble Prime Minister's vision of *Viksit*

*Bharat 2047*, the packaging industry is bound to expand. However, he stressed that it is incumbent upon all stakeholders to ensure that this growth remains sustainable.

To explain the role of packaging in simple terms, he drew an analogy: *“Packaging is like the clothes we wear – it gives an outer form, while the content is the body.”* For instance, in products like lubricants or grease, the utility of packaging materials such as barrels, jerrycans, or buckets is to prevent leakage, avoid contamination and ensure safe transportation from manufacturer to end-user. Beyond this functional role, packaging also serves as a powerful branding medium, differentiating one product from another. This dual role underscores the importance of embedding sustainability into packaging practices.

To build awareness, he drew a parallel with the financial sector. Over the last 15–20 years, mutual funds have grown phenomenally, aided by the successful campaign *“Mutual Funds Sahi Hai.”* Two decades ago, fixed deposits dominated Indian savings, but today, mutual funds attract a much larger share. Similarly, he suggested the need for a collective campaign in the packaging industry – *“Packaging Sahi Hai”* – to drive awareness and acceptance of sustainable packaging across rigid, flexible, plastic and consumer segments.

He also touched upon the importance of consumer responsibility. In the era of e-commerce, every online grocery order involves multiple layers of packaging. This has a significant sustainability impact, and consumer choices can make a meaningful difference in shaping a more responsible packaging ecosystem.

Moving to the other core theme of the conclave i.e. supply chain – Mr. Palchaudhuri emphasized the role of sustainability cascading down supplier networks. In public sector undertakings, for instance, procurement policies mandate that a certain percentage of sourcing is done from MSMEs, women entrepreneurs, or SC/ST enterprises, thereby embedding social impact in the supply chain. He cited Balmer Lawrie’s own experience as a B2B manufacturer of steel drums. The company participates in global ESG certification such as EcoVadis, which rates organizations on parameters like labor standards, environment and governance, awarding certifications like platinum, gold or silver. This gives an edge to cater to Multinational customers especially chemical industry who expects their suppliers to achieve higher sustainability ratings.

He further referred to the *“Together for Sustainability”* initiative in Germany, where chemical companies collectively agreed that suppliers meeting sustainability benchmarks would be eligible to supply not just one company but multiple companies – not because of pricing or product, but because of their ESG practices

(Environment, Social, Governance). This illustrates how sustainability has become a license to operate in global supply chains.

Concluding his address, Mr. Palchaudhuri tied the themes of the conclave – Consumer, Sustainability and Supply Chain – and emphasized that there is much to learn from such dialogues. He expressed confidence that these insights will not only enrich the corporate business world but also inspire individuals in their personal lives. With these thoughts, he extended his best wishes for the success of the Conclave.

**Guest of Honour Mr. AVPS Chakravarthy, Global Ambassador, World Packaging Organization and MD, Ecobliss India**



Guest of Honour Mr. Chakravarthy AVPS, Global Ambassador, World Packaging Organization and MD, Ecobliss India speaking at the Opening Session

Mr. Chakravarthy greeted the dignitaries on the dais and the audiences, acknowledged people from the industry who contributed and participated at the Conclave, congratulated the Bengal Chamber and team for successfully organising the Conclave in Mumbai and started addressing the Opening the session.

Mr. Chakravarthy said “It’s a profound honor to address you here as the Global Ambassador of World Packaging Organization, the apex body in the world, with around 68 countries on its board, India being one of the important country

member. And I represent WPO as its Global Ambassador. And my company, I am the Chairman and Managing Director of Eco Bliss India, an innovative packaging in the pharmaceutical and other sectors worldwide”.

On the theme of connected packaging, the compliance of the consumers, sustainability, and supply chains he said, this conclave unites visionaries to redefine packaging's role in India's ascent. In his speech he said he will try to weave some kind of a narrative, blending cutting edge, global innovations bringing up some examples and some thoughts, some futuristic thoughts, with India's potential, igniting a transformative vision.

He started with a story that stirs our soul, imagining a farmer in Punjab, harvesting golden wheat. His grain cradled in a smart and whatever, eco-friendly, eco-friendly pouch or something like that, that really tracks its journey to a Delhi bakery, for example, with IOT sensors, ensuring every kernel feeds a family.

Moving on, he gave a picture of a Mumbai consumer, scanning a Halyak petrochemicals product, packaged a snack, uncovering its journey to zero waste. He said these are not just futuristic examples, these are going to be realistic examples very soon.

This is connected packaging, where technology, sustainability and supply chains unite to uplift humanity. It's not a dream, it's India's dawn acknowledging that the challenge is colossal.

The United Nations reveals 1.3 billion tons of food are wasted globally which is equal to around 200 Eiffel Towers of potential lost. In India too, the Ministry of Food Processing estimate around 90 to 1000 crore, 1 lakh crore rupees worth in annual post-harvest losses. Yet, hope shines through connected packaging as it is, the packaging is really safe towards the entire supply chain, the entire gamut of supply chain, otherwise the losses would have been much, much more.

Globally, PepsiCo 2024, launch of biodegradable crisp packets, made from potato starch, cuts plastic use by 30% across Europe. Locally, Amul, our own brand, QR-coded milk pouches in Gujarat empower almost 3.6 million farmers with real-time traceability, a beacon of progress. Well, India's vision soars.

With the Atmanirbhar Bharat goal of 535 billion food processing industry in the next couple of years, packaging is the catalyst, undoubtedly. The Pradhan Mantri Kisan Sampada Yosana has ignited a lot many food parks, around 40 in number, processing almost 9 to 10 million tons annually. In a region like Hyderabad, our own people, the CFTRI research also, (12:17) breakthrough in edible coatings from local tapioca for sweets hints a national-wide ripple effect as well.

Talking about latest technologies he cited example of Amazon's 2024, AI-driven packaging using machine learning to craft custom boxes has saved 2 million tons (as claimed by Amazon) material worldwide. In India, Zomato's 2025 pilot of drone-delivered meals in reusable solar-charged smart containers reduced emissions by around 15% as estimated by Zomato.

He visioned, India's spice exporters, Turmeric from Andhra, tea from Assam, using 2025's graphene-based nano sensors detecting spoilage with 99% accuracy. Ensuring freshness from farm to global tables -this is the power of connected packaging.

Talking of Sustainability, he gave some more examples.

8 million tons of plastic choked oceans annually for the Alan MacArthur Foundation. Globally, Adidas' 2024 Future Craft shoes use mycelium packaging, decomposing in 30 days, inspiring awe (Mycelium packaging is a sustainable and eco-friendly alternative to traditional packaging materials like Styrofoam and plastic. It utilizes the root structure of fungi, known as mycelium, grown on agricultural waste, creating a biodegradable and compostable foam-like material. This innovative material can be molded into various shapes, offering protective packaging for electronics, bottles, and more.) In India too, the Hindustan Unilever's Puriate bottles (Puriate, a brand of beverage bottles) now blend 60% of recycled plastic, a 2025 milestone for them.

Nationally, India can pioneer hemp-based films abundant in Uttarakhand for packaging exports aligning with our Green Pledge. Data empowers the revolution. Walmart's 2024 blockchain tracks produce in under two seconds. The concept of leveraging blockchain for supply chain efficiency and transparency is also relevant to India's agricultural landscape

Reliance Retail's AR-enabled packs in Mumbai let consumers virtually tour farms, forging trust. Consumers get to know where from the material comes as they virtually see actually from where the product is coming up.

AI blockchain securing free trade status for Europe is a digital triumph for all of us. Consumers crave inspiration and create demand every time they are talked about new things and new technology,

Coca-Cola's 2024 Infinite Bottle recycles 100% of its plastics into new packs, rallying millions. Even our own Patanjali 2025 put AR labels, unveiled herbal sourcing, connecting cities to villages.

India's mango growers could use holographic tags, to narrate their organic saga, turning fruit into a global anthem.

Smart packaging also costs money, but sure all this technology will be available to the masses in a big way.

A basic 2D RFID tag, was more than \$1 about 25 years ago. And today, even a product worth maybe a few pennies, not even a single dollar can have a latest advanced tag. Because that is the power of the volume, the way the mobile phone charges have reduced to nothing. That encourages the farmers also in a big way.

Partnerships with great companies like Haldia Petrochemical, Balmer Lawrie, Hindalco, light the path. Unilever's 2025 2 billion eco-packaging pledge globally is a clarion call on India's giant scale. In world packaging organization, it is said better quality of life through better packaging for more people.

This is our mission statement WPO follows with sincerity. The WPO, a global alliance in 1968, champions this revolution with unwavering commitment. WPO's 2024 Global Packaging Sustainability Initiative promotes biodegradable materials also.

The more recycling, the total recycling of the plastics, encouraging use of more plastics at the same time use of total recyclability Initiative promotes biodegradable materials parallelly, collaborating with more than 65 nations to cut plastic use by 2030, maybe around 20-25%. Smart Packaging Forum in Tokyo 2025, showcased the artificial intelligence-driven designs, while our Asian and Indian chapters also.

Pack4Planet campaign trained 5,000 SMEs in eco-friendly practices. The talk of the town is global food wastes, how packaging can help reducing the food wastes. Mr. Chakravarthi mentioned about a high-level roundtable, in which he participated in Bangkok, was conducted with the association of UNIDO, a UNO arm. WPO 2025 Connect the Chain project will pilot IoT-enabled supply chains, reducing food wastes by 15% across Asia and inspiring India to lead as well.

Giving a quick update on the pharmaceutical side, Mr. Chakravarthi said that Connected packaging in the pharma sector is rapidly evolving. Integrating smart features is enhancing the patient safety. Adherence and traceability was seen during Covid times.

Examples include smart bleacher packaging that really remind patients to take their medication in time via Bluetooth connectivity as well. And also, near-field NFC enabled labels that really allow the patients to verify authenticity and access

detailed usage instructions with a smartphone with a simple tap on the smartphone. Many companies are already introducing this.

Recently, the smart inhalers actually controls the output needed to inhale as per health condition with the digital sensors to track uses and share the data also the physician with the health care providers. Pfizer and Novartis have piloted QR-coded packaging for real-time supply chain monitoring. Such innovations really help combat counterfeiting, improve compliance and strengthens trust across all the pharmaceutical ecosystem. That is the power of the connected packaging. RFID tags also the recent advancement in the holograph anti-counterfeiting things are innovations that boost transparency, safety and sustainability.

AI optimizes supply chains and drone logistics could deliver smart packaged goods. For example Punjab to Paris cutting emissions by more than 20-25 percent while really lifting the rural women into the leadership roles.

This uplifts the communities. Needless to (1:23) talk in Gujarat alone women cooperatives earned respectfully annually packaging a lot of things.

Nationally almost six hundred million rural Indians could thrive with reduced waste feeding the midday meal. The midday meals are sometimes supplied loose and sometimes in different packets. It can be served in totally recyclable packaging. This would be a huge opportunity for the business also.

Mr. Chakravarthi's call to action –

- Policymakers invest in 2025's bio-based R&D and the total recyclable material.
- Entrepreneurs adopt AI and drones.
- Farmers embrace digital traceability.

Thanking all he concluded with a vision of a future where every package lifts India to the global, India's grains and spices inspire the world and also various other products packaged and sustainably tracked

**Guest of Honour, Ms. Pritee Chaudhary, IRS, Regional Director, Food Safety and Standards Authority of India**



Guest of Honour Ms. Pritee Chaudhary, IRS, Regional Director, Food Safety and Standards Authority of India speaking at the Opening Session

Greeting and wishing all dignitaries on dais and the participants present, Ms. Pritee Chaudhary, started delivering her address. She expressed that this platform was ideal to speak as there would be new idea, fresh idea flowing from other dimensions from other corner of the world also other corner of our country and that ideas must be exchanged

Mapping herself in the conference. She wanted to know how many people amongst the audience are there from the food industry or connected. She was satisfied with the number present.

Coming from the background of Indian Revenue Service, she shared her experience in Central Excise

when she had to visit manufacturing factories. One of the very first earlier exposure to manufacturing segment was one of the packaging unit, a carton manufacturing unit. On asking the profit on 1 carton box, she was told that it was something around 50 paisa or 1 rupee minimum. She asked, "How do you make the money then". He said, "out of the scale". The same thing she had witnessed for the bottling plant also. These experiences made her realise that in this industry, the profit is built on the margin on the scale.

Margin is small but scale is huge and so undoubtedly this is the fifth biggest industry in India. She mentioned that packaging is one single important thing which gives lot of value addition to any product.

Referring to Mr. Chakravarthi's speech on food waste in the world and her experience as a TEDx speaker on the same subject of food waste and the food lost; one astonishing fact is that 14% of the food in the world is lost during the processing from the farm to the packaging. 17% food is wasted by our act of ignorance and carelessness.

Putting together the 31% of food in the world is either lost or wasted. So, if it is considered that there is no packaging ; this amount will definitely go up much more. This is inspite of knowing that in reality a bigger population of the world is either under nourished or starving, living under the poverty line and there are so many other problems then the packaging is the solution for many thing not only branding the product but upholding the flag of distributing food to everyone in the world. That is how a lot of value addition packaging is doing. However the conference is about what further value addition can be done in the packaging or the labelling industry.

Labeling is the first thing in FSSAI that is talked a lot about. Packaging should be such which can support labeling and one of FSSAI's very fundamental regulation is labeling and display. Packaging solutions must have advance thinking of disseminating advance information to the consumer.

FSSAI takes care in seeing that a packaging provides detail information on the nutrition value of the food and the ingredients of the food.

It can simply say it is veg or it is non-veg. With the use of QR code one can immediately scan and see through the blockchain that where the produce was picked from or what kind of pesticides were used. Every single detail can be imbibed in a single QR code on a packaging.

Referring to her previous speakers who have already said that internet of things are used to know the instant status of that food product or augmented reality which enhances the consumer experience of what the consumer is eating or buying, where it is coming from or being manufactured or having such a value or such significance which shows that it is not just packing the product but selling features and that is the importance of packaging.

This Conference talks about sustainability and consumer connect of that sustainability and the challenge is not the scale today. The scale will grow with the growth of economy. However, the challenges are something very different.

First challenge is how to value add to a single pack through technologies like IOT, QR code or blockchain integration. The other challenges is sustainability.

She referred to the United Nation's talks on sustainability development goal which aims to reduce the burden on the earth which is why the companies with the green points are preferred on many of the stock exchanges and in the transactions globally. This does not mean stop producing packages or reduce business but with the same business volume thinking about something innovative which can protect to mother earth. According to a circular economy the packages that have gone outside should be brought back.

It may not be brought back through the same channel it could be collected back through various channels. The biggest challenge of sustainability is that everything which is being produced comes back to the factory for recycling. Also, there is a need of such materials which are actually sustainable and degradable which can support to the ecological health of this planet.

She has high hopes on BCC&I to come with fresh ideas on Sustainable Packaging through its conferences like the present one, just like the Industrial Revolution that had once happened in Bengal.

Even for food sustainability, Packaging plays a vital role and new dimensions would be opened by churning ideas and brainstorming.

With this message and thanking all and BCC&I for inviting her, she concluded her speech.



Group Photo of the Dignitaries at the Opening Session and the organisers

## Presentation of WPO Book

Mr. AVPS Chakravarthi further spoke to make everyone aware about WPO's mission to initiate design for recycling every packaging product be it paper or flexible packaging or rigid container or a tin container or a glass, by which each of the materials can be thought of recycling even before it is designed.

He also said that WPO brought a comprehensive position paper and also a book with the help of a cooperation of UNIDO and ECR community the Wayne University of Applied Sciences Austria. He presented the book to the distinguished guests at the Opening Session.



Presenting WPO Book to the Dignitaries at the Opening Session

As the opening session ended with a note that how important sustainability is for the packaging industry and how important connecting to consumers is, the Conclave moved on to the next session which is "Connecting to consumers: Role of technology."

# Discussion on “Connecting to Consumers: Role of Technology”

**Moderated by: Mr. Arnab Chakraborty, Director, BCC&I**

**Discussants:**

**Ms. Manjusha Singh, CEO, Siegwirk India**

**Mr. Rajesh Bhogavalli, President, Supply Chain and Sustainability (Global), EPL Ltd.**

**Mr. Indranil Saha, Head-Packaging Development, Marico Ltd.**



Discussion on “Connecting to Consumers: Role of Technology” between

Ms. Manjusha Singh, CEO, Siegwirk India

Mr. Rajesh Bhogavalli, President, Supply Chain and Sustainability (Global), EPL Ltd. and

Mr. Indranil Saha, Head-Packaging Development, Marico Ltd.

Moderated by: Mr. Arnab Chakraborty, Director, BCC&I

Ms. Manjusha Singh, introduced herself and said that Siegwirk is one of the largest ink and coatings manufacturer for the packaging industry in the world. As she very humbly said that almost everything, that any packaging or a packaging substrate manufacturer or an ink manufacturer would want to say has been covered in the previous session, she would like to lay stress upon just four things – Cost, Quality, Innovation and Sustainability. One specific thing when it comes to packaging of course is also Safety. So, her expectation or contribution in this Conclave is a discussion on how technology can address all those five areas and not just specifically on. Although the Conclave’s discussion should have focused, on innovation; in the Indian context, cost and competitiveness is more talked about which perhaps would change in the future.

is Rajesh Bogavalli, representing EPL, introduced himself and said that EPL is a laminated tube manufacturing company present across the globe with 22 manufacturing locations spread across 10 countries across (5:18) the globe.

Talking about technology, he said that he realized there is a lot of science & technology that is driving the usage patterns, that is giving the functional requirements to packaging that is creating a good marketing campaign to the brands and in a way responsible for making the world a better place to live. Sustainability is one most important factor in packaging today and he expects the discussion to talk about how technology and sustainability together will change the face of the packaging in the world.

Mr. Indranil Saha introduced himself saying he has spent around 25 years in packaging development across different FMCG and pharmaceutical industries. Working closely with the entire supply chain from end to end he understands well how the e-commerce industry works, how the FMCG industry works or how the pharmaceutical industry works, so there is a different need for the packaging across the different industry. How the AI is helping us to take over the things is what he would be speaking about. He would also like to talk about FMCG as a company, as a brand and how they emotionally connect to the consumers and how the consumer becomes loyal to the brands.

As SIEGWERK is known particularly for innovation in functional inks Mr, Chakraborty requested Ms. Manjusha Singh to highlight how do technologies enable smart packaging or consumer engagement.

Ms. Manjusha Singh, in response said that Packaging has evolved from to becoming a critical communication tool for brands. Traditionally, packaging focused on aesthetics and preserving the product, but today, smart packaging is transforming how brands engage with consumers.

Citing example of Coca-Cola's regional customization campaigns from 15–20 years ago—these were early examples of using packaging for consumer engagement. Today, it's almost expected. Whether it's product details, manufacturing information, or interactive elements like, QR codes, NFC tags and RFID labels, consumers want to know more about the product without opening the package.

As Mr. Chakravarthi mentioned, digital tools are now integral. And as Rajesh pointed out, social media can amplify even a single packaging failure. One compromised pack—say, a juice box with a defect—can snowball into a brand crisis online.

Besides engagement, packaging now plays a critical role in product safety in Authentication, Traceability, and Counterfeit Prevention

- Traceability is increasingly important, especially in industries like pharmaceuticals, alcohol, tobacco, and food.

- Counterfeiting is a significant issue in India, and smart packaging is being used to combat this.

Siegwerk, actively collaborates with brands to enable features like:

- Authentication markers
- Tamper-evident printing
- Unique identification codes

Another frontier is functional coatings and intelligent inks—some capable of indicating spoilage. While we've mostly seen these technologies in countries like Japan (e.g., meat packaging that visually signals if a product has gone bad), it's an area of growing interest in India.

For example, temperature-sensitive inks or chemical-responsive coatings can potentially signal quality deterioration due to imperfect supply chains. In the Pharma sector Ms. Singh worked with Cipla and Dr. Reddy's on connected packaging solutions that involve QR codes for authentication and consumer information. In the FMCG sector Siegwerk works with beverage brands (like Coca-Cola) on campaign-driven QR packaging for regional consumer engagement.

One challenge that is faced in the Indian market is QR code degradation—by the time products reach retail shelves, codes may be unreadable due to logistics conditions. In response, Siegwerk is developing robust functional coatings to preserve printed data throughout the supply chain.

Mr. Rajesh Bhogavalli was also asked how EPL sees technology transforming the way brands connect with consumer today and how do consumers connect right.

Mr. Bhogavalli explained that any product on a shelf or online has only 5–6 seconds to grab consumer attention. Packaging plays a key role in achieving this. At EPL, a lot of focus is placed on embellishments—bright or pastel colors, varnish effects, matte finishes, spot varnishes, and foiling—to help the product stand out and connect with the brand.

As EPL expands into the beauty and cosmetics segment, there is also a focus on dispensing solutions for products like lip gloss and lipsticks to enhance user experience. Behind the scenes, a lot of effort goes into ensuring consistent quality and functionality of the packaging.

In terms of printing technologies, EPL is moving away from solvent-based methods and adopting newer solutions that are safer and add functional properties to help consumers connect better with the brand.

Mr. Bhogavalli, was further requested to explain to the audience how EPL leveraged digital technologies across the supply chain and particularly how EPL explores technologies like IOT, blockchain or AI and packaging.

Mr. Bhogavalli explained that EPL focuses on three key areas when leveraging digital technologies: processes, people, and the environment. In process technologies, machines are equipped with IoT sensors to automatically capture key parameters like temperature and pressure, minimizing manual errors. Operators use smart devices to input essential data, while machine performance is continuously monitored, with detailed shift reports highlighting downtime and areas for improvement.

EPL is also working towards zero defect production by identifying and removing defects early in the process. To support small-volume brand campaigns, EPL has invested in digital printing technologies, enabling economical production of short runs (e.g., 5,000–10,000 units) without high wastage. Overall, technology is being used to enhance productivity, quality, and flexibility in packaging.

Packaging has significantly evolved over the years, with technology playing a key role in its transformation. Around 20–25 years ago, packaging primarily focused on protection and aesthetics to attract consumers on shelves. Today, with the rise of the internet and technologies like QR codes, RFIDs, and NFCs, packaging has become more interactive and engaging.

However, challenges remain, particularly in India. While smartphone penetration is high (around 86%), the usage of advanced smartphone features is limited. As a result, consumer interaction with smart packaging elements like QR codes remains low—only about 2–5% engagement. Although efforts are being made to use these technologies to share product origins, benefits, or even recipes, consumer participation is still limited, especially in India's predominantly mass-market landscape.

The session highlighted the challenges of integrating technology into packaging in cost-sensitive markets like India, where even a minor cost increase can significantly impact brands. While QR codes may seem inexpensive, the backend infrastructure to support them is costly. There is growing consumer involvement and interest in technology-driven packaging, though challenges remain.

SIEGWERK discussed its approach in helping brands achieve sustainable packaging through innovations in inks and coatings. Initial efforts focused on reducing GSM and thickness. Now, the focus has shifted to reducing carbon

footprint through improved plant operations, automation, and digital tools like "My Ink Rooms" to reduce losses. SIEGWERK is also working on water-based and biodegradable inks, though scaling remains a challenge in India. Another focus is enabling recyclability through CE coatings and primers that support mono-material packaging and improved delamination for better material recovery.

A global perspective on packaging trends was shared:

- Japan and Korea demand extreme quality and use elaborate packaging to elevate branding.
- China values product differentiation with complex and varied packaging requirements.
- India and South Asia are highly price-sensitive, requiring innovation at minimal cost.
- Europe leads in sustainability with high adoption of post-consumer recycled materials (PCR), supported by government incentives.
- The US prefers standardization with limited variety in packaging.

Consumer communication around sustainability is becoming part of packaging design. However, integrating consumer-facing tech at scale is costly and not yet feasible for mass-market products. Bright colors, QR codes, and consistent brand hues are being used to build recognition. Consumers are now more informed and demand transparency, influenced by social media. Minimalistic and sustainable packaging is gaining popularity, especially through startups.

In a hypothetical roleplay:

- As CEO of NITI Aayog, one speaker emphasized the need to address digital privacy concerns in connected packaging.
- As Environment Minister, the progress made under EPR was acknowledged, with a need to advance into increased PCR usage.
- As Commerce Minister, concern was raised about inadequate government support for meeting PCR targets. Cost of PCR remains high, and support similar to China's model is needed.

In concluding remarks, industry representatives recommended that the government:

- Help brand owners meet sustainability targets.
- Improve waste segregation and processing infrastructure to reduce negative perceptions around packaging.
- Support scalability through public-private partnerships, particularly for PCR material adoption.



Discussion on "Connecting to Consumers: Role of Technology" in progress.

# Discussion on: “Connected Packaging: Transforming Packaging to digital Experience and its impact on entire Supply Chain”

Moderated by: Prof. Prasad Balan Iyer, Director, SIES School of Packaging

Discussants:

Mr. Manoj Kochar, Director, Holoflex

Ms. Raichel Thomas, Manager, New Business Development and Digital Strategy, ITC Ltd.



Mr. Manoj Kochar, Director, Holoflex and Ms. Raichel Thomas, Manager, New Business Development and Digital Strategy, ITC Ltd. discussing Connected Packaging and Transforming Packaging to digital Experience and its impact on entire Supply Chain with Prof. Prasad Balan Iyer, Director, SIES School of Packaging

The session focused on connected packaging and its role in digital transformation, enhancing consumer experience and integration across the supply chain. Connected packaging is considered a subset of smart packaging, evolving from traditional functions like protection and information to enabling interaction and traceability through digital features.

Ms. Raichel Thomas from ITC shared her experience in implementing connected packaging through their initiative "PackConnect." ITC uses technologies like QR codes, RFIDs, barcodes, and variable data codes to make each package unique. These can be used for anti-counterfeit, consumer loyalty, traceability, and engagement. By assigning unique identifiers to each pack, companies can trace the product's journey and interact with consumers more directly.

Mr. Manoj Kochar from Holoflex, with a background in anti-counterfeiting, discussed the importance of incorporating authentication features in packaging due to the prevalence of counterfeiting. He traced its history back to 200–300 BC. Traditional tools like holograms are still in use, but the focus is now shifting to digital tools such as non-clonable codes. While QR codes are widely adopted, they can be cloned, and scan rates remain low, less than 1%, even after government mandates. Incentivizing consumers through loyalty rewards could increase engagement.

Real-time tracking and connected features in products like pet food and oil bottles were discussed. These use sensors to monitor usage and trigger automatic reorders, offering opportunities for new revenue streams and better consumer insights. Smart appliances like refrigerators can automate restocking based on connected packaging.

Connected packaging also enables brands to gather consumer data and target promotions. Subscription models and cross-selling are becoming possible through digital interaction with packaging. Examples like the Johnny Walker Blue bottle, which changes its digital output based on whether it has been opened, show how real-time data enhances customer engagement.

Mr. Kochar elaborated on digital authentication trends using invisible, machine-readable codes and physical features like high-security printing. These tools help identify genuine products and allow brands to connect with consumers even without digital access. Machine-readable devices can offer instant verification through audio or visual cues.

Finally, the discussion touched on ITC's "PackConnect" campaign and how connected packaging supports ESG compliance and sustainability. The next part was set to cover ITC's offerings under PackConnect and the role of connected packaging in data privacy and sustainability.

The discussion covered global rules, regulations, and practical examples of connected packaging. A case was presented where a dhoti brand faced major counterfeit issues in northeast India. The brand's original products were being undercut by counterfeiters due to distributor-level fraud. ITC addressed this by

implementing a non-cloneable QR code on the packaging. To incentivize consumer scanning, an instant cashback feature was introduced. This significantly reduced the brand's legal disputes and proved successful over two and a half years.

ITC emphasized that each campaign is customized based on the brand's specific pain points, rather than being a standard solution. Another example shared was with Mad Over Donuts, where an augmented reality (AR) campaign was launched to promote consumer engagement. Consumers could scan a QR code, play an AR game to customize donuts, and receive a discount coupon redeemable in-store—driving return visits and sales.

Industries with high counterfeit risks include apparel, mechanical, plumbing, electrical, pharma, and seeds. Consumer engagement campaigns span across many sectors. ITC ensures all data collected is end-to-end encrypted and, where possible, campaigns are designed to avoid collecting personal information unless required (e.g., for cashback or WhatsApp targeting). Data is brand-owned and securely managed.

Cost is a key concern for brands adopting authentication or traceability technologies. However, these costs should be seen as investments, as they protect market share and build brand loyalty. Counterfeiters often shift focus to brands without such features. As technology matures, costs may reduce. Creating consumer awareness is crucial—if consumers demand authentication, counterfeiters are deterred. Brands must educate consumers and promote scanning behavior.

The Authentication Solution Providers Association (ASPA) is working with pharma brands and government bodies to address counterfeit issues. There's a strong need for public awareness, similar to past campaigns like "Jago Grahak Jago," to educate consumers on their rights and risks, especially in sectors like pharma and agriculture where counterfeit products pose serious health threats.

# Discussion with Mr. Jagdish Mohan, Vice President, Sales & Marketing, Aditya Birla-Hindalco on

## “Packaging with a Purpose: Transfer sustainability into Strategy”

Moderated by: Mr. Sumit Gupta, Managing Director and Senior Partner, Boston Consulting Group.



Mr. Jagdish Mohan, Vice President, Sales & Marketing, Aditya Birla in discussion with Mr. Sumit Gupta, Managing Director and Senior Partner, Boston Consulting Group on Transferring sustainability into Strategy and Packaging with a Purpose

Mr. Sumit Gupta, started by introducing himself as the Managing Director and senior partner with BCG, leading the climate and sustainability practice for BCG in Asia. He is joined by Jagdish, Jagdish Mohan who is the joint president at Hindalco Industries leading the aluminium foils and packaging business at

Hindalco, with several years of experience across marketing, sales & manufacturing. Saying this Mr. Gupta wanted to know Mr. Mohan’s vision which is

to establish Hindalco as a future forward sustainability driven aluminium packaging business and solution provider, not just in India but globally as well.

Sustainability is deeply embedded in Hindalco's business strategy and culture. It is treated as a core value and integrated into the annual targets of every employee, not limited to any one department. Beyond reducing carbon emissions, Hindalco views sustainability holistically – including decarbonization, circularity, and energy efficiency.

The company aims for a 25% GHG reduction by 2030, with significant investments in renewable energy, such as 190 MW of installed renewable power and pioneering pumped hydro storage. These efforts began over a decade ago, driven by global cues and a desire to stay competitive in an industry with limited differentiation.

Sustainability at Hindalco influences investment decisions, strategy, and innovation. Despite India's market not fully supporting green premiums, Hindalco has continued its sustainability journey proactively, earning global recognition – including being ranked the most sustainable aluminum company by S&P Dow Jones for five consecutive years.

Through Novelis, its global subsidiary, Hindalco has led in aluminum recycling, especially in beverage cans, achieving up to 60% recycled content while maintaining alloy integrity – a significant metallurgical innovation. This approach is expanding in India, and Hindalco is open to partnerships with Indian companies to promote circular packaging.

Globally, Hindalco observes that Extended Producer Responsibility (EPR) is a common regulatory framework, with Europe, Japan, Korea, and China leading in sustainable practices. Hindalco encourages India to consider adopting similar regulations to advance sustainability.

By 2030, all packaging must be designed for recyclability, and by 2035, all packaging must be recyclable with demonstrated large-scale recycling. The food service industry is required to promote refill and reuse, a practice rooted in Indian tradition but now being revived globally.

India should revisit its cultural habits of reuse and incorporate them into policy. Regulations are evolving, but industry execution and investment readiness take time. The government is actively engaging with industry, which is positive. However, challenges remain in execution, formalizing the waste ecosystem, and including informal workers with dignity.

NGOs alone cannot handle waste management; large players need to participate seriously, but operating formally comes with costs. Thus, government support is essential. There is also a need for investment in separation technologies to address issues like multi-layered materials, especially in sectors like pharma where mono-materials are not viable.

While PET recycling in India is strong due to favorable economics, aluminum recycling already performs well—over 85% informal recycling is estimated. Even kitchen foil has significant value and returns to the system. The challenge lies in collecting small, used household aluminum pieces and bringing them back into the recycling stream. Behaviour change, reuse encouragement, and industry effort are key.

In closing, the emphasis was on innovation, staying ahead of trends, and working with the ecosystem to make sustainability viable and scalable.

## **Discussion on: “Industrial Packaging: Ensuring efficient and effective supply chain”**

**Moderated by: Mr. R M Uthayaraja, Director – Manufacturing Business, Balmer Lawrie & Co. Ltd. & Member, NextGen Packaging NextGen Packaging**

**Discussants:**

**Mr. Sanjay Datta, MD, Balmer Lawrie – Van Leer Ltd.**

**Mr. Piyush Mangal, Whole time director and Vice President Operations & Commercial, Signode India Limited**



Special Session on “Industrial Packaging: Ensuring efficient and effective supply chain” in progress

Session Moderator :

Mr. R M Uthayaraja, Director – Manufacturing Business, Balmer Lawrie & Co. Ltd.  
& Member, NextGen Packaging

Pannelists:

Mr. Sanjay Datta, MD, Balmer Lawrie – Van Leer Ltd.

Mr. Piyush Mangal, Whole time director and Vice President Operations  
& Commercial, Signode India Limited

Mr. Arnab Chakraborty, Director, BCC&I, invited all the panellistes to the dais and handed over to the moderator Mr. R.M. Uthayaraja, Director – Manufacturing Business, Balmer Lawrie & Co. Ltd. & Member, NextGen Packaging to take the session forward.

Moderator, Mr. R M Uthayaraja opens the session, emphasizing the strategic role of packaging in modern supply chains, including cost, integrity, sustainability, and logistics. He mentions his company manufactures steel drums and is considering aluminum drums after an earlier discussion. He introduces Mr. Sanjay Datta, Balmer Lawrie – Van Leer Ltd., and Mr. Piyush Mangal, Whole time director and Vice President Operations & Commercial, Signode India Limited. Mr. Sanjay Datta explains that packaging ensures safe, timely, and cost-effective transportation. He highlights its evolution, role in reducing transportation and inventory costs, and brand visibility (e.g., their product Valrex). He mentions innovations like AI in packaging for leak detection.

Mr. Piyush Mangal discusses how Signode aligns packaging with customer logistics. He calls packaging a "science," explaining it must account for product type, transport stresses, shipment month, and route. He emphasizes designing custom solutions and ensuring the product reaches customers in its original condition.

On technological advancements, Mr. Mangal mentions Signode has 1400+ patents. With land scarcity and vertical storage needs, they are investing in ASRS systems,

automation like robotic palletizers, and sustainable packaging solutions like paper straps and water-based adhesives.

Mr. Datta states a major challenge is retrieving used rigid plastic packaging due to alternate uses, unlike materials like aluminum that are returned more easily.

On global supply chain disruptions, Mr. Mangal says secondary packaging was less impacted due to local sourcing. However, equipment faced issues. Signode diversified manufacturing across India (8 plants), which helped during COVID-19. This decentralization ensured uninterrupted supply to customers.

On cost pressures, Mr. Mangal notes packaging often faces cuts first. They promote total cost of ownership, showing that optimized designs reduce waste and cost over time. Sanjay agrees, noting Indian customers are very cost-conscious. For high-value or export products, customers opt for better packaging despite costs. Over time, thickness in drums has decreased, but this raises structural concerns.

Mr. Mangal adds that some customers over-pack after bad experiences, then cut costs excessively, creating a cycle. They aim for optimized packaging based on evolving technology and material strength.

Mr. Datta confirms they're starting multilayer plastic drum production in Chennai. These include recycled middle layers and meet regulatory EPR mandates.

On sustainability, Mr. Piyush Mangal shares a 15-year-old project replacing wood with PU for steel coil transport. The reused material model proved profitable and eco-friendly. He mentions partnerships like with Vedanta to retrieve used packaging. Signode focuses on the 4Rs—reduce, replace, reuse, recycle—and recycles PET straps from market waste.

An audience member, Manoj Kochar, asks about Signode's paper strap. Piyush confirms it's produced in Europe, works with existing machines, and meets functional requirements, though it's currently 4–5 times costlier than poly straps. Multinational companies are beginning to adopt it.



Discussion on: "Industrial Packaging: Ensuring efficient and effective supply chain" in progress

# Way Forward: NextGen Packaging Ecosystem

## 1. Policy & Regulatory Action

- National Standardization: Establish a unified national framework for packaging, recycling, and EPR implementation to avoid fragmented state-level compliance.
- Incentivization: Offer GST rebates, tax credits, and PLI support to startups/MSMEs working in sustainable packaging and circular economy models.
- Enforceability: Strengthen IP protection laws, mandate anti-counterfeit features in high-risk sectors (pharma, food, agriculture) and integrate consumer authentication into regulatory norms.

## 2. Technology Integration

- Smart Packaging Scale-Up: Encourage adoption of QR, NFC, RFID, blockchain, and AR/VR across industries, starting with food, pharma, FMCG, and exports.
- Cost Localization: Invest in R&D for robust inks, coatings and low-cost smart tags designed for Indian logistics and retail environments.
- Digital Infrastructure: Develop blockchain-based national registries for packaging traceability, recycling credits, and consumer engagement.

### **3. Sustainability & Circular Economy**

- Green Materials: Accelerate R&D and commercialization of bio-based films, biodegradable coatings, and recycled aluminium/mono-material systems.
- Circular Packaging Models: Promote closed-loop recovery, decentralized recycling hubs, and industrial symbiosis partnerships (e.g., waste from one sector as input for another).
- 2030 Targets: Operationalize “Connected India, Packaged Right” roadmap:
  - 30% PCR usage in packaging
  - 25% reduction in food loss via smart packaging
  - 50% consumer participation in connected packaging

### **4. Consumer Awareness & Behavioural Change**

- Mass Campaigns: build consumer literacy on sustainability, safe disposal and authentication.
- Incentivized Engagement: Link QR scans to loyalty rewards, gamified campaigns and cashback to encourage active consumer participation.
- Vernacular Communication: Ensure digital packaging info is multilingual to reach rural and semi-urban populations.

### **5. Industrial & Business Transformation**

- MSME & Startup Ecosystem: Set up a Green Packaging Accelerator fund and incubators for scalable, affordable solutions.
- Innovation in Manufacturing: Deploy IoT, AI, and robotics to enable zero-defect, low-waste, and short-run customized production.
- TCO Mindset: Train customers and procurement teams to focus on total cost of ownership (TCO) rather than upfront costs, factoring in sustainability and damage reduction.

### **6. Global Collaboration & Export Readiness**

- Adopt Global Best Practices: Align Indian packaging with WPO
- Geo-Traceable Exports: Implement blockchain-enabled traceability for tea, spices, pharma, and agri-exports to meet global buyer requirements.
- India Sustainability Index: Create a transparent benchmarking system for packaging companies to build credibility in global supply chains.

## 7. Social Inclusion & Rural Integration

- Empower Cooperatives: Train women-led cooperatives and SHGs to participate in eco-friendly packaging for local products, mid-day meals, and agri-value chains.
- Grassroots Innovation: Provide access to affordable technology and design training for rural packaging units.
- Inclusive Transition: Formalize informal sector workers in recycling/waste management with dignity and fair wages.

## 8. Institutional & National Missions

- National Mission on Packaging Innovation: Led by CSIR, NITI Aayog, and industry alliances, focusing on material innovation, circularity, and export competitiveness.
- Public-Private Partnerships: Build advanced testing, recycling, and collection infrastructure jointly funded by government and industry.
- Long-Term Vision: Position India as a global leader in sustainable packaging by 2040, integrating technology, circular economy, and consumer empowerment.

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Audience during the Conclave