

SEA MOVEMENT

DATA WORK: UNWANTED PACKAGING



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Background Research

Excess packaging is seen very often these days all across the world in multiple sectors for different products. We have become blind on how this excess packaging can have serious implications on the environment over time. For example, Gourmet foods which are considered luxury and made for premium customers have different levels of packaging to make it look luxurious. Currently, **less than 14 percent of the nearly 86 million tons of plastic packaging produced globally each year is recycled.** The vast majority is landfilled, incinerated, or left to pollute waterways and poison wildlife.

Below mentioned are some effects on the environment and on businesses due to unwanted packaging.

Adverse effect on environment:

1. *Litter*: Packaging is the third most generated litter after cigarettes and food. Excess cardboard packaging when accumulated have the risk of fire hazard, it can also clog drains and increase algal blooms which in turn imposes threat on aquatic wildlife. A lot of money is spent on clearing the litter which can instead be spent on developing recycling schemes.
2. *Air Pollution*: When packaging is burnt, it leads to emission of harmful gases which causes air pollution. Moreover, once packaging waste is decomposed, the decomposition process leads to emission of gases like Carbon dioxide and methane which makes the air polluted.
3. *Water*: Excess packaging requires more amount of water for their production. Also, when excess plastic used in packaging is released into water bodies release toxic chemicals. As per research, concentration of toxic chemicals in the pellets becomes a million times higher when in water.
4. *Landfill Space*: With more packaging, the more space is required for their decomposition. Landfills are running out of space in countries like UK; it is believed that only 50 landfill sites are left in the country.

Business Costs associated with excess packaging:

1. *Labor Cost*: Producing excess or unwanted packaging is a waste of manpower, time and effort. Handling excess waste also costs time, energy and manpower.
2. *Disposal Cost*: Reducing amount of waste can reduce the disposal cost of the excess packaging waste at landfills.
3. *Supply chain costs*: With the increase in levels of packaging, supply chain costs increase because of the production of excess packaging.

Purpose of having multiple levels of packaging:

When creating a packaging strategy, it's important to consider how all levels of packaging will impact the product's survival. Primary packaging is critical for branding and protection on the shelves. Secondary packaging is critical for protection and branding during transit. Packaging tells consumers a lot about the product and the business. Logo, size, shape everything is important in the packaging. It's an opportunity to personalize the product and help it stand out from the crowd. Packaging sends a strong message, so choose your packaging strategy carefully.

There are so many ways that a product can potentially be damaged—**during shipping, during stocking at the store, and even while the customer is taking the product home.** That's why it's critical to strike a **balance between the levels of packaging to keep your product looking great and properly protected.**

Primary Packaging

- The packaging that most closely touches a product, often referred to as “retail packaging.”
- Its main goals are to protect the product and inform or attract a customer.
- Example: A pop can is primary packaging (because it’s the primary way to carry around soda), while a corrugated box containing a camera and its accessories is also primary packaging (because it’s the primary way to purchase it).

Secondary Packing

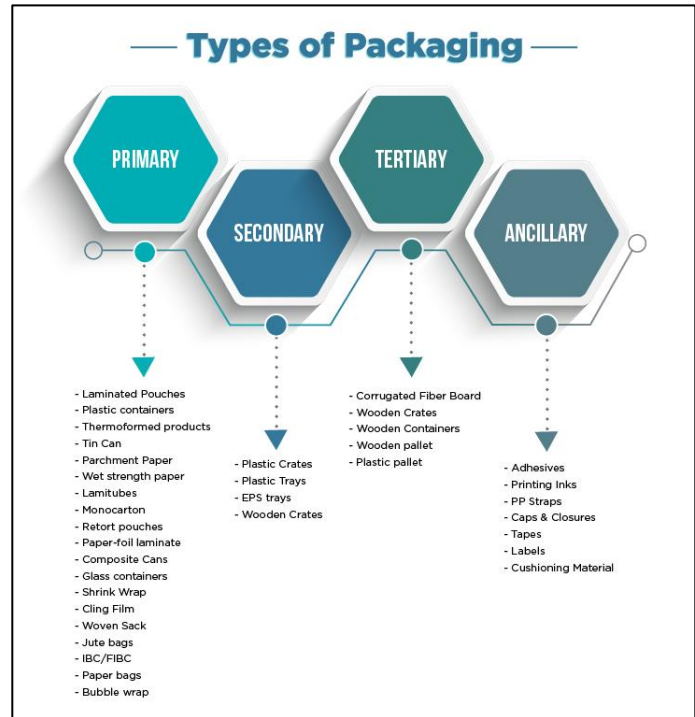
- The packaging used to ship products already in primary packaging.
- Its main goals are to protect products and provide branding during shipping.
- It’s also used as display packaging in retail locations such as grocery stores.
- Examples: 12-packs of soda cans, the corrugated box that a half-dozen camera boxes ship in

Tertiary Packaging

- The packaging used most often by warehouses to ship secondary packaging.
- Its main goal is to properly protect shipments during their time in transit and typically not seen by consumers.
- Examples: Pallets that bulk shipments are placed on, corrugated pads used to separate layers of boxes and stretch wrap used to secure stacks of cartons.

Ancillary Packaging:

- Adhesives, Tapes, Labels, Cushioning Materials, Caps, Closures



Primary sectors generating unwanted packaging

E-Commerce Sector:

- With millions of people turning to online shopping for everything from groceries to toilet paper to sweatsuits, the pandemic has fundamentally altered the way people shop. Digital sales increased 71 percent in the second quarter of 2020 and 55 percent in the third, according to Salesforce, increasing the packaging as well that is ultimately destined for the landfill, incinerator, or the larger environment.
- With the increase of online shopping, environmentalists are worried about **the increasing packaging materials like padded mailers, corrugated fiberboard, shrink wrap, and bouncy air pillows**. Corrugated box shipments have climbed since March, when they jumped 9 percent year over year, according to the Fiber Box Association. Technavio, a market research firm, estimates that demand for filled-air products is poised to swell by \$1.16 billion between 2020 and 2024 because of the spike in online sales.

- Moreover, **online return rates are three to four times higher than offline stores, resulting in increasing of unwanted packaging.** Return rates are higher for online shopping, because of a practice called “bracketing” where customers essentially buy to try. Because people who buy clothes or shoes online aren’t able to try them on, they might buy multiple sizes and then return the ones that don’t fit.
- A recent study by Oceana found that **Amazon** generated 465 million pounds of plastic packaging waste in 2019. The environmental group further estimated that up to 22.44 million pounds of Amazon’s plastic packaging ended up in the world’s freshwater and marine ecosystems as pollution in the same year. Amazon’s plastic footprint in 2020 was much higher than that of 2019; the pandemic created boom times for the company.

Multiple layers of packaging in food industry:

- **Grocery store food** is typically sold in glass, metal, plastic or paperboard containers, and often comes **encased in multiple layers.** Those containers are then placed into plastic or paper grocery bags.
- **Takeout food** is often wrapped in plastic or aluminum foil, then placed into paper, plastic or Styrofoam containers, and (often) is put into paper bags and finally into plastic grocery bags.
- **Processed food** often has multiple layers of packaging. For example, a food item might be placed in a tray, covered in paper or plastic wrap, placed into a paperboard box and then, often, covered again in plastic wrap.
- Many food items that were traditionally found in glass, metal or plastic bottles or cans are now found in multilayer plastic-coated pouches or cartons.

FMCG Industry:

Packaging guidelines for FMCG products

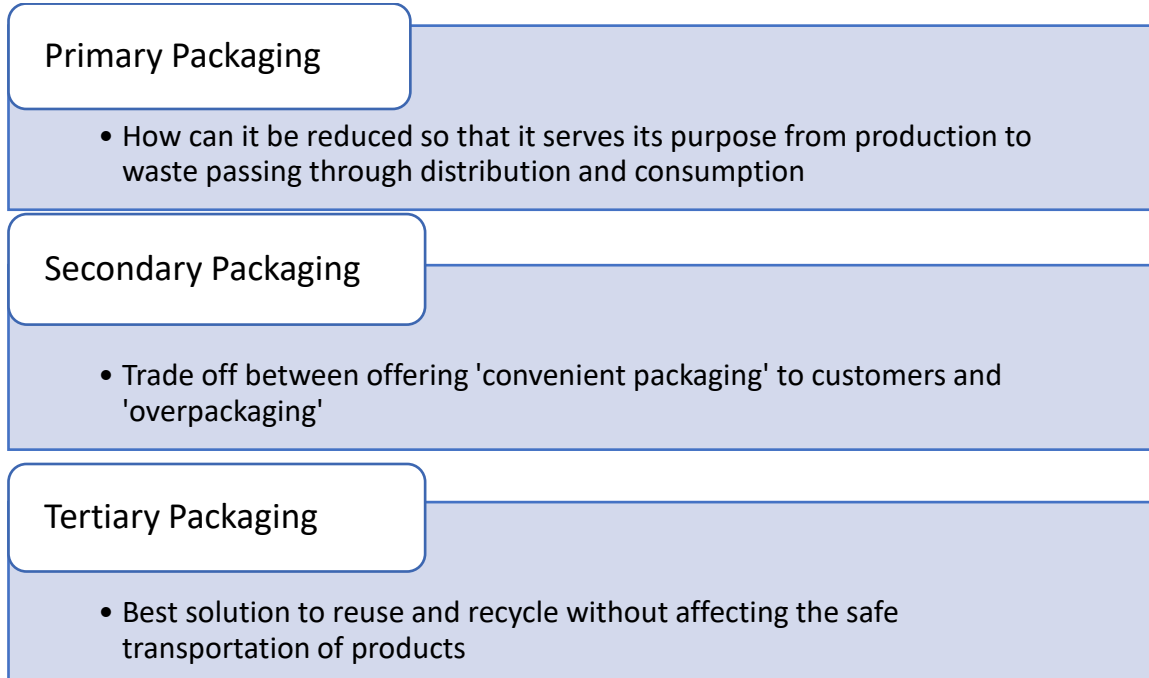
	<p>1. There is no need to double seal the products which have already been shrink wrapped</p> <p>All other products should be individually sealed on the lid with Tape</p>
	<p>2. All products should be shrink wrapped</p>
	<p>3. The products should be wrapped by bubble wrap. You have to choose the bubble wrapper according to the given table:</p>

([Source](#))

- Packaging plays a key role for all the actors in the **consumer goods supply chain** because optimum packaging reduces waste, protects against damage and theft, makes logistics more efficient, makes products shelf-ready, preserves their quality, and serves as a communication medium for consumer information.
- Some other benefits of package optimization on environment is **less transport** and **less waste**, and also reduced operational costs.
- FMCG companies consider **transit and display packaging as well as consumer-facing product packaging.**

- Today this often involves using more disposable packaging and creates more plastic waste. Also due to Covid-19, the use of plastic packaging has increased due to **greater consumer concerns around food hygiene and safety**.
- The companies that represent 20% of the total plastic packaging produced globally include **L’Oreal, Nestlé, PepsiCo, The Coca-Cola Company, MARS, and Unilever**. ([Source](#))

FMCG Companies should focus on:



- Existing Problem of **“No Solution on multi-layered packaging”**:
 - In 2016, the government had announced that manufacture and use of multi-layered plastic, if any, should be phased out in two years' time. Despite the deadline, the industry was not been able to find alternate materials for packing FMCG products. Multi-layered plastic is commonly used in packaging most of the FMCG products including, snacks, biscuits, candy, tea powder, coffee powder, edible oil etc. This packaging material is used by the industry so as to increase the shelf-life of food products.
 - "Indian plastic packaging industry has grown around 20 per cent CAGR in last five years and is estimated to achieve \$32 billion annual turnover by 2025. Around three-fourth of this market is meant for **packaging FMCG** and this is a concern for government," said Varun Gupta, Director, Calco Poly Technik.

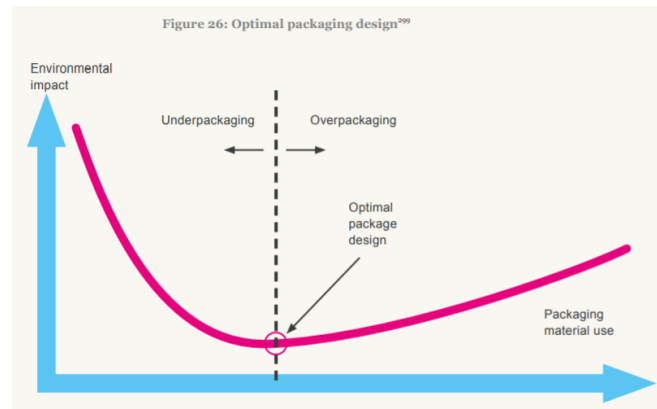
Methods of reducing unwanted packaging

Optimize material weight and volume to reduce package impacts without reducing package performance or product protection

FMCG companies can consider how to optimize their use of materials through systems thinking. There can be benefits to using less materials where this **does not compromise packaging performance**. Less materials **reduces input costs as well as waste, and reduces pressure on the planet**. It can also lower the weight and/or volume of packaging and hence reduce distribution and handling costs.

However, there could be negative impacts. For example, some **extremely lightweight materials are too thin to go through existing recycling lines**. Organizations have to find opportunities to lower material input and potentially distribution costs through changing the mix of the material or packaging design.

Packaging material used in either extreme (increased or decreased materials) can contribute to additional environmental impacts as illustrated on the chart below. This strategy has to be considered in order to minimize the environmental footprint in terms of resources used as well as emissions to air and water.



Sustainable Materials in Secondary Packaging

- Outer packaging is primarily considered a commodity which simply needs to protect its content during transport. However, in the face of growing demands from the e-commerce market, which is estimated to reach 4.88 trillion U.S. dollars by 2021, food producers need to develop an understanding of sustainability that goes beyond energy use and product waste.
- **Cost of Materials: Greener packaging materials**, like paper and paperboard, are generally **cheaper** compared to conventional plastics, partly due to raw material prices, but also processing, finishing, printing, and waste management. For example, using paper can help minimize harmful waste products and toxic by-products.
- **Designed To Fit:**
 - Transport costs are another element to consider. They can be reduced by using sustainable secondary packaging material to help decrease package size and enable to ship more products.
 - This is especially important for e-commerce applications. Offering intelligent solutions that optimize the use of corrugated material means using the correct box size for each individual delivery.
 - According to Olivier Cottard, **DS Smith Packaging's** head of industries business units, "By shaving 5 millimetres off a standard secondary pack in one year we took twenty trucks off the road, reduced our carbon emissions by 100 tonnes and generated huge cost savings. Our emission reductions are equal to the amount of carbon absorbed by 2,500 coniferous tree seedlings in 10 years."
- **Customer Loyalty:**
 - Using sustainable packaging materials can increase your sales and customer loyalty.
 - Modern consumers, especially millennials or Generation Y, are focused on buying organic, locally produced products, packed in environmentally-friendly packaging.
 - According to a global retail analysis conducted by Nielsen, 55 percent of online consumers from 60 countries are willing to pay more for brands that are committed to positive social and environmental change.

Examples of companies trying to reduce the packaging

1. Hindustan Unilever:

- Hindustan Unilever committed to reducing the weight of packaging through **using lightweight materials, optimizing structural and material design, developing concentrated versions of its products and eliminating unnecessary packaging.**
- In India, a number of projects with a focus on design and material optimization implemented across categories have resulted in significant reduction of over 700 tonnes of plastic and around 4,900 tonnes of paper in 2014.
- Over the last decade they've cut the **weight of packaging by a fifth** through better and lighter designs. They believe that modifying the design and packaging is the best way to reduce excess plastic.
- **Ultra-concentrated products help them give consumers the same products but with much less plastic and smaller packaging.** Example: Comfort's ultra-concentrated laundry formulas offer a smaller dosage than any other product on the market. Their Love Beauty & Planet concentrated shampoos and conditioners provide the same number of uses with half the plastic.

2. Dabur:

- They have been collecting, processing and recycling millions of kilograms of waste.
- The first challenge was to take sustainable measures that did not disrupt their production and sale cycle — such as cutting down on the use of packaging materials without affecting customer convenience.
- To overcome this, Dabur recently launched an initiative. They chose to do away with the cartons in which the products are sold. **Dabur India has decided to go carton-free for one of their main products — Dabur Red toothpaste.** Dabur has tied up with Reliance Retail to ensure the sale of this essential product without the carton packaging in self-service stores or trade outlets.
- The paper saved by removing the outer cartons will be **repurposed to create notebooks** for underprivileged children with the support of a New Delhi-based NGO, Child Rights and You (CRY). Through such initiatives, the company aims to collect 100 per cent of the waste that it generates through its product packaging.

3. Mars:

For years, they've been focused on light-weighting packaging materials of all types, including plastics. They are **looking for ways to eliminate unnecessary layers of plastics and other materials in secondary and tertiary packaging.** For example, in China they removed 40% of the weight from their gum bottles between 2015 and 2018.

4. Nestle Malaysia:

- Nestlé Group committed to a target of 2017 to analyze and optimize its packaging portfolio, avoiding the use of at least 100,000 tonnes of packaging material.
- It challenged itself during the innovation and renovation design process to find optimal packaging design that allows savings of packaging material and avoids food wastage. It **uses the analytical life cycle assessment (LCA) tool to select the optimal packaging solution.** The LCA

covers the environmental impact of packaging throughout the supply chain from material extraction and manufacturing process to disposal after consumption of the product.

- In 2014, Nestlé Group avoided the use of 45,805 tonnes of packaging material (2013: 66,594 tonnes), equivalent to a saving of CHF77.4 million.
- Nestlé Malaysia reduced the weight of its MAGGI chilli sauce glass bottles for both the 470g and 300g sizes by 14 per cent and 7 per cent respectively, which translates into a 900 tonnes reduction in glass usage.
- In 2014, packaging optimization projects in Malaysia enabled the reduction of material usage by 1,382 tonnes.

5. Kirin Holdings Co Ltd:

- This brewing company worked with manufacturers, distributors and retailers to **standardize the secondary corrugated packaging** of PET bottled drinks, **reducing the amount of packaging and improving supply chain efficiency**.
- This led to a 10 per cent reduction in CO2 emissions, and also improved the operational efficiency of retailers, making it easier for workers to open and unpack bottles

6. Amazon:

- Amazon India launched **Packaging-Free Shipments (PFS)** last year and has expanded to 13 cities in less than a year.
- With packaging-free shipments, the company **minimizes secondary packaging** required for individual shipments by securing multiple shipments together in a reusable crate or a corrugate box.

7. Other Examples:

By choosing the right secondary packaging system, manufacturer can benefit from the flexibility to produce the most convenient packaging solutions in terms of material use, pack format and style, as well as logistics.

- Bosch is continuously optimizing its secondary packaging machines to handle different cartons and carton boards, including both raw and recycled materials.
- Ready meal producers are using 'wraparound' style carton board sleeves, some with shaped designs and viewing panels. This not only enables the consumer to view the product itself, but also represents a growing commitment to reducing packaging material – now regarded as key requirements both by the supermarkets and aware customers.

Conclusion

Challenges Faced:

- Innovation and a more consistent single market approach for packed goods.
- To combine all the purposes of packaging (eg. safety, protection, conservation, information, marketing, shelf-readiness, use and disposal of products) in innovative and sustainable solutions, taking into account the whole life cycle (including the choice of materials); hence, balancing the trade-offs
- Educate consumers in opting for less packed products

Overall Approach that can be taken by retailers:

- Along with suppliers, adapt the packaging design in order to reduce the use of material and enhance recovery and recyclability for primary, secondary and tertiary packaging.
- Explore the possibility of using refill systems in stores, depending on the product as well as the consumer acceptance.
- Implement material and space saving measures/design in transport, in order to place more products on the pallets.
- Check the opportunity to use re-usable tertiary packaging, reduce secondary packaging, optimise discarding options. Use an LCA (life cycle assessment) approach to reduce the environmental impact of primary packaging.

Reference Links:

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