

# Corrugation Trends



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**Abstract:** *Corrugated Paper boxes are extensively used in the packaging of industrial as well as consumer goods. Corrugated box is a container most extensively applied in goods packaging and transporting. Since 1903 when corrugated box was first accepted by legal freight classification organizations as the containers for freight transportation, the application history of corrugated box has been over more than 100 years. Because of its light weight, low cost, ease of assembly and disassembly, good sealing performance, certain cushioning and anti-vibration ability and easy recovery and waste treatment, corrugated box is widely applied in various fields.*

*Corrugated board provides packaging for most diverse industries with a share of over 50%, due to the numerous advantages they offer a good protection of the products. In other hand corrugated board fails in environmental conditions, indicating that relative humidity or temperature is higher. These effects directly damage the product packaged. To overcome on this problem recently corrugated boards produced with functional material, “functional corrugated boards,” have become more available in the current market. A number of commercialized forms of functional material are coated or composited products with inorganic materials, for example “Nano clay” as representative. However, although the use of functional materials is increasing in corrugated boards, the several concerns such as over cost, environmentally friendly materials, recycling, and toxicity affect consumer perceptions and acceptance. In the past, number of researchers focused on process of box compression and the utility of box compression testing etc., best of our knowledge there is no review paper which focus on the functional corrugated boards used in food packaging applications. This paper aims to review the availability of functional corrugated boards in the current market, past research studies on functional material and present the status of functional corrugated boards in leading countries.*

## Introduction

With the steady rise in the industrial production, the demand for corrugated paper boxes increasing every year. These boxes have got distinct advantages such as light in weight, easy to fabricate as per required specifications. The corrugated papers and boards may also find market in the rural areas for packing of fruits, vegetables & eggs.

In the dynamic competitive market, the needs and expectations are always changing. The process of an industry such as corrugated boxes production must focus on ways to make more efficient processes in order to deliver high quality product while at the same time reducing costs and be competitive in market. Process manufacturing is a very broad area both in terms of applications and

techniques. Its high time to invest on process automation to get a consistent output and quality.

## Global Corrugation market:



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The corrugated packaging market is growing rapidly due to huge spike in e-commerce segment, as a consequence the global corrugated market is growing faster @ the rate of 5.62% annually and it will achieve \$386 billion in 2026.

The corrugated packaging market is growing quickly, with one-time plastic bans in major part of the country and remaining areas to follow the trend soon.



The growth of Indian corrugated box market will be augmented by the e-commerce industry which has wider demand of safe and cushioned packaging of the product.

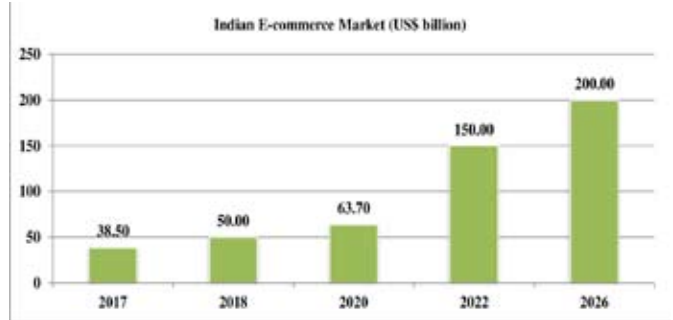
Four Trends influencing Global Packaging market:

- Economic growth/Demographic growth.
- Packaging Technology.
- Consumer Trends.
- Brand Owner Trends.
- Trends and Developments In India Corrugated Box Industry

E-commerce



E-commerce retail sales are continuing to surge, with estimates of around 20% annual growth in e-commerce trade in Europe. Global online sales are expected to be over \$5.5 trillion in 2023. This will have a profound impact on packaging demand, especially in the corrugated industry as it represents 80% of demand in e-commerce.



India has been witnessing a surge in its e-commerce sector over the last 5-6 years. The Indian e-commerce market is projected to grow to US\$ 200 billion by 2026 from US\$ 38.5 billion in 2017. This growth is likely to be propelled by an increase in internet and smartphone penetration and the ongoing digital transformation in the country. After India was locked down in March 2020, the e-commerce segment witnessed a momentary decline for a few weeks. however, re-opening of markets led to recovery and subsequently, an upsurge. Marketplaces as well as direct brand websites witnessed an overall 130% spike in online orders.



There is new demand for cost-effective secondary corrugated board packaging, because of the increasingly complex logistics chain for direct-to-consumer delivery – e-commerce packages are expected to be handled up to 20 times or more during standard distribution.

Demands from brand owners are also impacting the converting industry as many brands now require the secondary pack to carry their image into the home, not just the retail outlet and hence, it increases the need for converters to produce high-quality graphic designs on the shippers themselves.

Fit-to-product

Born out of e-commerce has been the advent of fit-to-product (FtP) or box-on-demand systems, driven



by the needs of dedicated e-commerce sellers such as Myntra, Ajo, Amazon and Flipkart. This technology enables the production of customized secondary packaging based on the exact size of the product being packed, including irregular shapes. For the end-user this eliminates the need for large inventories of standard-sized boxes which often require copious amounts of filler material.

As FtP platforms become more popular, there will be more demand for boards sold as fanfold, as well as finishing equipment, such as printers, that can operate with them.

## Sustainability



Corrugated board is gaining popularity in packaging as sustainability becomes a more important issue across the value chain – it is easy to recycle, and the pulp and paper industry is already adapted at converting these into new generations of container board. Consumers are preferring corrugated protective formats over polymer-based alternatives, such as expanded polystyrene (EPS) foams.

## Lightweight / Heavyweight Package Demand

Brand owners are continually striving to reduce overall packaging weight and transport costs, which is increasing the demand for lightweight corrugated boxes. Today's lightweight container boards can handle surprising capacities and weights.

Demand for heavyweight corrugated products as a substitute for wooden packs also continues to grow. Benefits include significant weight reduction, improved cushioning for products, an improved printing surface, and headaches regarding pest and insect damage in wooden packs are eliminated.

While light weighting of board has long been affecting the corrugated industry, right weighting, and rightsizing are playing an increasingly important role in this market, not only in response to consumer demand for efficient packaging, but also in response to the logistics chain's adoption of dimensional weight (DIM) pricing. In some instances, substituting to a heavier board grade can have a beneficial impact overall as it allows for the elimination of additional protective elements.

The desire to minimize the volume of air being shipped within all delivery channels means that in some instances there have been significant cost increases.

The importance of light weighting will continue to be felt over the coming years as retailers look to save costs as well as appealing to end users.

## Digital printing advancements



As the digital print market matures, the corrugated sector, while still in its infancy, has developed a growing appetite for adoption of the process, and systems are now being developed to address the demands of the high-volume liner and post-print markets.

Brand owners are recognizing the opportunities to grow dwindling brand loyalty through greater engagement with their customer base provided by these technological developments, and industry leaders see packaging as an important component in the creation of a memorable shopping experience that users will want to share via social media, which can drive marketing, encourage repeat business, and attract new customers.

## Eco-Friendly

The present businesses have learned that plastic is damaging not only the environment but also their brands. As customers become more conscious of environmental changes, they began to expect businesses to adapt as well.

In a way, corrugated boxes are certainly one of the best solutions for packaging several things. Industry experts

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also say corrugated boxes are there to stay and will eventually continue to play a critical role both for business and the environment. Due to the fact that they can be reused and recycled.

In normal or simple words now, the businesses can thrive not just depending on their profits and earnings but also by contributing towards the cleaner environment. Corrugated boxes are one such solution which assists the environment to thrive and live.

If someone is an e-commerce entrepreneur, a marketer in a multi-national company or a small business owner the customers will judge the business right from the moment they get to see the packaging of the brand. In short, the above trends will keep the market of corrugated boxes alive and kicking.

### Trends and Developments in India Corrugated Box Industry

- Adopting Evolving Technologies
- Corrugated Box for Display, Promotional Packs, beds, and Dispensers Becoming Popular
- Alliances and mergers with Manufacturer
- Growing Demand of Efficient Corrugators

### Issues and Challenges in India Corrugated Box Market

- Rise in Price of Raw Material
- Rapid Change in Technology
- Costly Skilled Manpower
- Quality Check

### Key Challenges

- The trajectory of the corrugated automotive packaging market is expected to be largely positive between the years of assessment from 2020 to 2030. However, market players are likely to face several challenges during this period.
- For instance, development of customizable corrugated packaging solutions is capital-intensive, with a high cost of setup in terms of manufacturing facilities. In addition, frequent innovations and upgrades are also cost-prohibitive, limiting market developments to players with larger capital facilities.
- Furthermore, this issue of cost will limit entry to small and medium scale enterprises with higher cost per unit holding back initial investments, limiting return on investment in the long term.

## Increasing Greenfield Investments Will Accelerate Indian Market



- Rabobank expects that both the container board and corrugated converter segments will be consolidating in the next five years. However, this will be largely done through greenfield projects and not through acquisitions, especially in the container board segment.
- M&A activity has remained limited to the acquisition of a few stressed assets in the past. The limited availability of attractive, efficient assets does not encourage M&A activity. At the same time, domestic and large international players are increasingly looking for market opportunities in the growing Indian market. Some global companies, like Oji Holdings, have already set up base in India and would like to grow further with a new converting plant. A few others, like Asia Pulp & Paper and Nine Dragons Paper, have outlined their plans to enter the Indian market by means of greenfield container board.

### Conclusion

Corrugated board industry has grown significantly from the long history of research performed on corrugated paperboard.

Now a day there is increasing market trend of functional corrugated boards. Also, packaging manufacturer concerns over possible increase in cost of corrugated boards and environmental factor regarding recycling of corrugated boards.

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