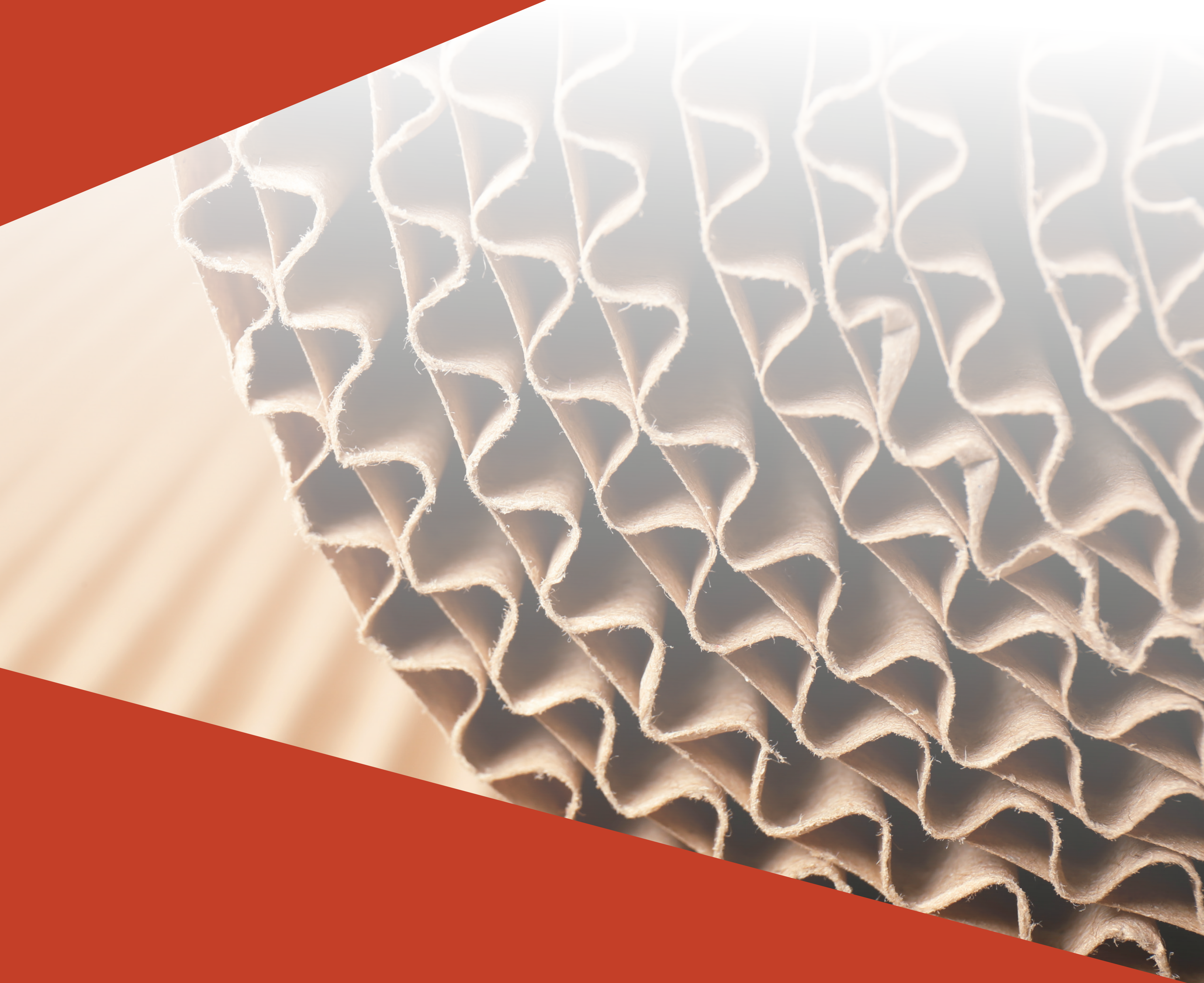
Corrugated Industry
Trend Report

SIGNODE



Corrugated Industry:

Innovating, Adapting, and Growing

Winter 2022

SIGNODE

Introduction

The corrugated industry is the cornerstone of the global supply chain. Its traditional visibility in the B2B space has now expanded to the general public through E-tailers as home delivery of goods continues to proliferate. Its ability to innovate and adapt to changing and challenging situations fuels its growth.

Corrugated's very ubiquity makes its presence overlooked. That shortchanges its critical role in enabling a complex network. OEMs, box plants, recycling facilities, manufacturers, CPGs, E-tailers and retailers are intertwined, seamlessly producing, packing, and delivering the world's goods. To borrow the motto from the industry's leading trade organization in North America: "Boxes. The Most Extraordinary Ordinary Thing in the World."

Currently, the corrugated industry is at an interesting confluence of trends: E-commerce should continue to drive the industry's growth momentum, but sustainability and brand and product protection can moderate, hamper, or accelerate that growth. Below we will discuss these three primary trends and their individual impacts on corrugated value chain players.

Trend 1

E-commerce

Driven in large part by strong E-commerce trends, corrugated packaging has enjoyed extraordinary growth for the past two decades. In 2020, COVID-19 lockdowns further fueled the demand for corrugated as online shopping raced from a preference to a necessity for many consumers.

All of this E-commerce-propelled activity has created capacity challenges, forcing box and corrugated manufacturers to reevaluate their production lines and associated capital equipment investments.

North American-based box-making plants that temporarily stalled investments in 2020 are now rebounding in 2021. Integrated and independent facilities alike are planning for expanded capacity and capabilities. In the EU, major box plants are pursuing upgrades. Australia and India are responding to increased OEM demand by continuing to look at further automation opportunities. The Asia-Pacific region, accounting for more than 50% of global production and shipment, sees corrugated box manufacturers in China, Indonesia, Thailand, and Vietnam setting up new plants near their end markets and investing in enhanced automation.

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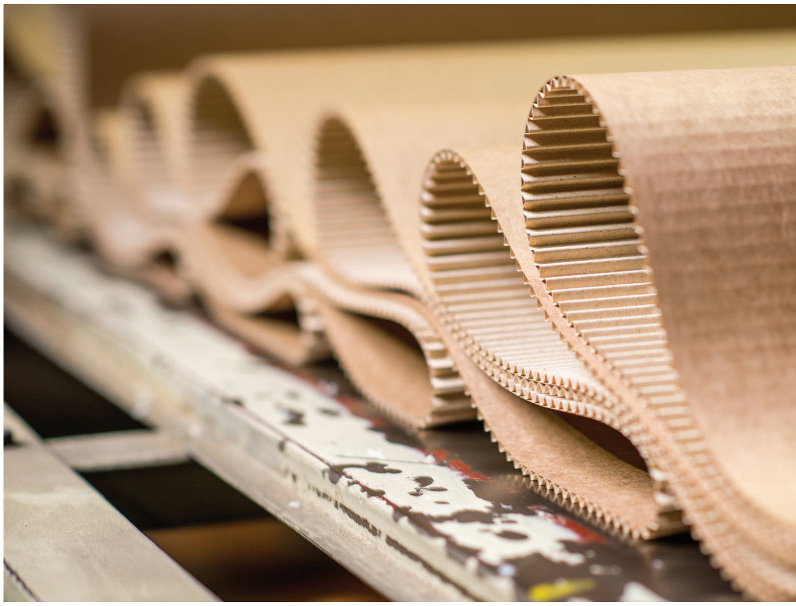

To meet the current production demand, manufacturers are responding with a range of options. Corrugated packaging producers are looking for new Flexo Folder Gluers as well as intelligent end-of-line bundling solutions and enhanced automation. OEMs are responding with a host of innovations that are easy to implement, ROI-friendly, and ensure continued productive operations on legacy equipment.

These solutions will prove ongoing value to box making facilities as they look to optimize legacy equipment—in addition to adding value to new Flexo Folder Gluer (FFG) investments. Box plants are continuing to lean more heavily on OEMs to provide service, maintenance, and training compared to using in-house resources. OEMs are responding by offering virtual support programs and increased in-plant service visits as corrugated facilities are moving from preventative maintenance to proactive maintenance models.

Not surprisingly, all of this growth and visibility have come with risk for the corrugated industry. According to McKinsey & Company, E-commerce, which uses seven times more corrugated per dollar of sales than in traditional retail, "will drive roughly half of the demand growth in transport packaging over the next several years. As packaging adapts to this particular channel, it will have to find new solutions to a variety of issues...the sustainability choice between fiber-based and lightweight plastic packaging, and the potential merging of transport (secondary) and consumer (primary) packaging, to name but a few."

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Trend 2 Sustainability

As anticipated by McKinsey & Company, in the face of rising sustainability concerns, retailers and E-tailers are asking: should we use less corrugated? Sustainability trends are increasing, largely driven by rising consumer sentiment for sustainable products and packaging. The options to address sustainability concerns can be summarized by the old mantra, "reduce, reuse, recycle."

Amazon's approach has initially focused on reduce, as it embarked on a well-publicized effort to reduce its total amount of corrugated packaging in two ways. The first is through merging primary and secondary packaging and the second is by moving toward more use of polybags and padded mailers. *The Washington Post* reports that Amazon now relies on proprietary artificial intelligence to calculate the best fit for orders, which sometimes means using an envelope instead of a box. As a result, Amazon says it has reduced outbound packaging by 33% in the past five years.

While reducing corrugated packaging as a way to address sustainability remains a caution, the ability to recycle and reuse corrugated may offset that risk and drive *increased* adoption.

According to a report by Asia Pulp and Paper's (APP) *2017 Paper & Packaging Consumer Trends*, compared to five years ago, the sustainability of paper-based packaging today is much more important to almost half of consumers (50%). Sustainability is built into the corrugated system. As compared to competitive packaging options, the corrugated industry relies on a robust recycle and reuse network to keep itself supplied. More than 96% of corrugated packaging is recovered and recycled, with containers being recycled an average of six to seven times. At the end of its lifespan, corrugated can be downcycled into paperboard or chipboard.

Consider what happened when Amazon began replacing sustainably-friendly corrugated with non-recyclable options. Fierce consumer pushback was underscored with a Change.org petition drive to "Get Amazon to Offer Plastic-Free Packaging Options." The petition received more than 800,000 signatures. Australia went a step further, implementing outright plastics bans. The role of sustainable packaging and the use of environmentally-friendly packaging products may, in fact, drive further growth of the corrugated board packaging market.

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Outside of the box itself, nearly the entire range of protective packaging for transit should likewise be sustainably advantaged, either in terms of recycled source material or ability to be recycled. This includes wrapping and strapping material, dunnage bags, and a host of protective packaging consumables. Material and equipment manufacturers will be challenged with innovating the next generation of solutions that will reduce energy consumption and enhance the efficient use and reuse of materials.

Trend 3

Brand and Product Protection

Maintaining brand and product integrity is directly impacted by E-commerce as home delivery expands.

In surveys prior to the pandemic, 58% of U.S. consumers said that receiving a damaged package would negatively impact their relationship with an E-tailer. A total of 41% of consumers blame bad packaging for damaged products. Another study showed that 77% of its respondents felt that an E-commerce package was reflective of a company's overall environmental awareness.

As E-commerce matures, retailers and CPGs are actively searching for more intuitive and smart packaging. These innovations feature inner-structural support and cushioning to ensure undamaged and attractively packaged products—without resorting to plastic bags, peanuts, and other unnecessary materials. Internal and external packaging changes will require advanced testing to ensure it works.

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Amazon notes on its website:

> *We listen to our customers to identify new ways to reduce waste, improve manufacturer packaging on items we sell, and innovate on the packaging we use in our fulfillment centers. We gather packaging insights via customer service, online returns, and social media to help us deliver the best possible experience while minimizing waste.*

According to Smithers' *Future of Corrugated Industry to 2023* report, "additional demands from brand owners are now being felt by the converting industry, as many brands now require the secondary pack to carry their image into the home, not just the retail outlet. This increases the need for converters to produce high-quality graphic designs on the shippers themselves."

This demand for high-end graphics is leading to additional investments and innovations in traditional and digital printing, particularly on shorter-run projects. Recent advancements in the quality of high-speed digital printing on corrugated has made these upgrades particularly attractive to box plants looking to serve the needs of more attractive packaging.

While accounting for a very small amount of the overall corrugated market, the recent rise of fanfold corrugated for both automated and manual box-making provides a useful window into the industry's continuing evolution. The Smithers report notes that "with an increasingly complex logistics chain, E-commerce packages are expected to be handled up to 20 times or more during a standard delivery. Added to the scale of the necessary warehousing and delivery systems for E-commerce, there is therefore considerable demand for robust, cost-effective packaging solutions in this sector."

Beyond E-commerce, in the traditional brick and mortar retail space, "self-stocking" corrugated packaging is increasingly placed directly in front of consumers, requiring their appearance and brand appeal to be pristine. This necessitates a host of dunnage and structural support solutions in their shipping and transport.

Additionally, retail-ready shelved goods join traditional endcaps where corrugated display units require myriad shipping technologies and materials, including the importance of stretch wrapping to ensure that these corrugated displays arrive dust and damage free. This is a small but trending development in North America with the growth of new European-style grocery chains such as Aldi and Lidl.

Conclusion

Across the world, OEMs and corrugated facilities are innovating, adapting, and growing. COVID-19 proved these virtues as the remarkably resilient corrugated value chain met the demands of the moment.

This is hardly surprising given the industry's long history at the center of the global supply chain. It's been meeting "moment after moment" for decades and continues to do so. The trends of growing E-commerce, the need to protect both brands and products, and the ability to meet increased sustainability concerns leave it poised to thrive in the future.

With increased innovation and collaboration across its wide arc—ranging from materials, processes, and automation enhancements—the corrugated industry is well positioned to meet the growth demands of today, and tomorrow.

For Further Reading

Berg, M. and Lingqvist, O. (August 2019). Pulp, Paper, and Packaging in the Next Decade: Transformational Change.
https://www.mckinsey.com/~/media/McKinsey/Industries/Paper%20and%20Forest%20Products/Our%20Insights/Pulp%20paper%20and%20packaging%20in%20the%20next%20decade%20Transformational%20change/Pulp-paper-and-packaging-in-the-next-decade-Transformational-change-2019-vF.pdf

Crunden, E. (July 29, 2020). Corrugated Box Industry Bolstered by Pandemic Trends, Including E-commerce.
https://www.wastedive.com/news/pandemic-cardboard-boxes-recycling-ecommerce-coronavirus/581914/

Harrod, S. (2019). The Future of Corrugated Packaging to 2023.
https://www.smithers.com/Services/market-reports/packaging/The-Future-of-Corrugated-Packaging-to-2023

IMARC Group. (February 2021). Corrugated Boxes Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026
https://www.globenewswire.com/news-release/2019/05/14/1823476 /0/en/Global-Corrugated-Boxes-Market-Report-2019-Industry-Trends-Share-Size-Growth-Opportunity-and-Forecasts-2011-2018-2019-2024.html

Mordor Intelligence. (2019). Corrugated Board Packaging Market - Size, Growth, Trends, and Forecast (2019 - 2024)
https://www.reportlinker.com/p05865708/Corrugated-Board-Packaging-Market-Size-Growth-Trends-and-Forecast.html?utm_source=GNW

Oceana, Inc. (July 14, 2020). Survey: Amazon Customers Overwhelmingly Concerned About Plastic Pollution, Want Plastic-Free Choices
https://www.globenewswire.com/news-release/2020/07/14/2061696 /0/en/Survey-Amazon-Customers-Overwhelmingly-Concerned-About-Plastic-Pollution-Want-Plastic-Free-Choices.html

RisiInfo. (July 15, 2019). E-commerce is Powering Paper Packaging Demand.
https://www.risiinfo.com/press-release/e-commerce-is-powering-paper-packaging-demand-but-its-impact-will-weaken-over-next-5-years/

Smithers. (2018). The Future of Protective and Transit Packaging to 2022.
https://www.smithers.com/services/market-reports/packaging/protective-and-transit-packaging-to-2022

Tamebay. (2019). Amazon September Deadline for Brands to Improve Product Packaging.
https://tamebay.com/2019/02/amazon-september-deadline-for-brands-to-improve-product-packaging.html

Technavio. (April 2020). Global Pulp Market 2020-2024
https://www.globenewswire.com/news-release/2020/08/26/2084217 /0/en/Pulp-Industry-Expected-to-Grow-by-38-82-Million-Tonnes-2020-2024-Rising-Demand-for-Corrugated-Packaging-is-a-Prime-Growth-Driver.html

VentureBeat. (2020). How Amazon is Using Machine Learning to Eliminate 915,000 Tons of Packaging https://venturebeat.com/2020/09/14/how-amazon-is-using-machine-learning-to-eliminate-915000-tons-of-packaging/

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