

Green trends



THE FUTURE OF THE PAPER AND PACKAGING INDUSTRY

The paper and packaging industry is a market in flux, buffeted on all sides by the complex and often competing demands of an increasingly urban, digitally-driven, resource-limited world. This convergence of forces is pushing manufacturers to rethink long-accepted practices, as they race to replace petroleum-based plastics with more natural, renewable and recyclable options. Winners in this competitive marketplace will be those who meet these megatrends head-on with innovative sustainable solutions.

A Market in Transition



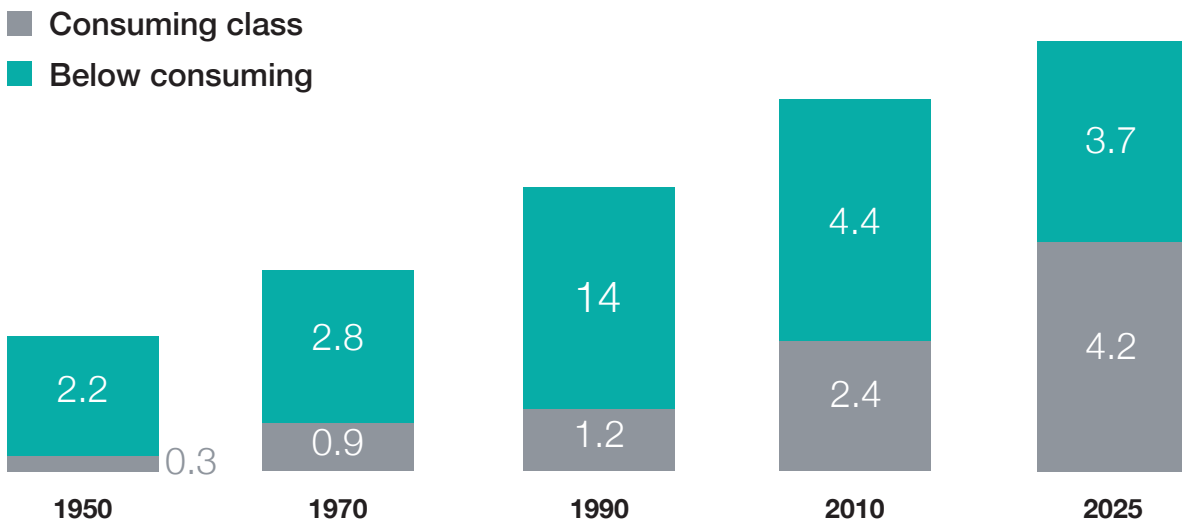
But before racing ahead to a more earth-friendly future, let's first reflect on current realities. In the span of a single year, the European paper and packaging industry weathered a 16% decline in overall consumption, dropping from 92.2 million tons in 2017 to 77.4 million tons in 2018. Sobering numbers to be sure, but a deeper look reveals the news wasn't all grim. On the packaging front, demand for paper and board case materials skyrocketed, up 28.6 million tons, overriding a 12.9 million ton decrease in other packaging paper applications.¹

Unfortunately, those gains in packaging were more than offset by losses in the graphic paper segment. As traditional newspaper and magazine readership continued its freefall, graphic paper demand witnessed a nearly 25 million ton drop in newsprint and other graphic paper applications. Still, even this space boasted a bright spot with sanitary and household paper demand up 7.3 million tons.²

Urban Growth Feeds Demand

As manufacturers look to navigate an industry clearly in transition, it helps to understand the factors disrupting traditional markets. Urbanization is chief among these, driving demand with a rapidly increasing consumer base. From 1990 to 2025, an additional three billion people will join the world's consuming class; more than half of these newly minted shoppers will reside in large cities.³ The combined effect of this rising middle class and a growing urban population will most certainly further strain already limited resources.

SHARE OF POPULATION IN CONSUMING CLASS (%)



Source: Economist / UN World Population Prospects, ourworldindata.org and Mckinsey

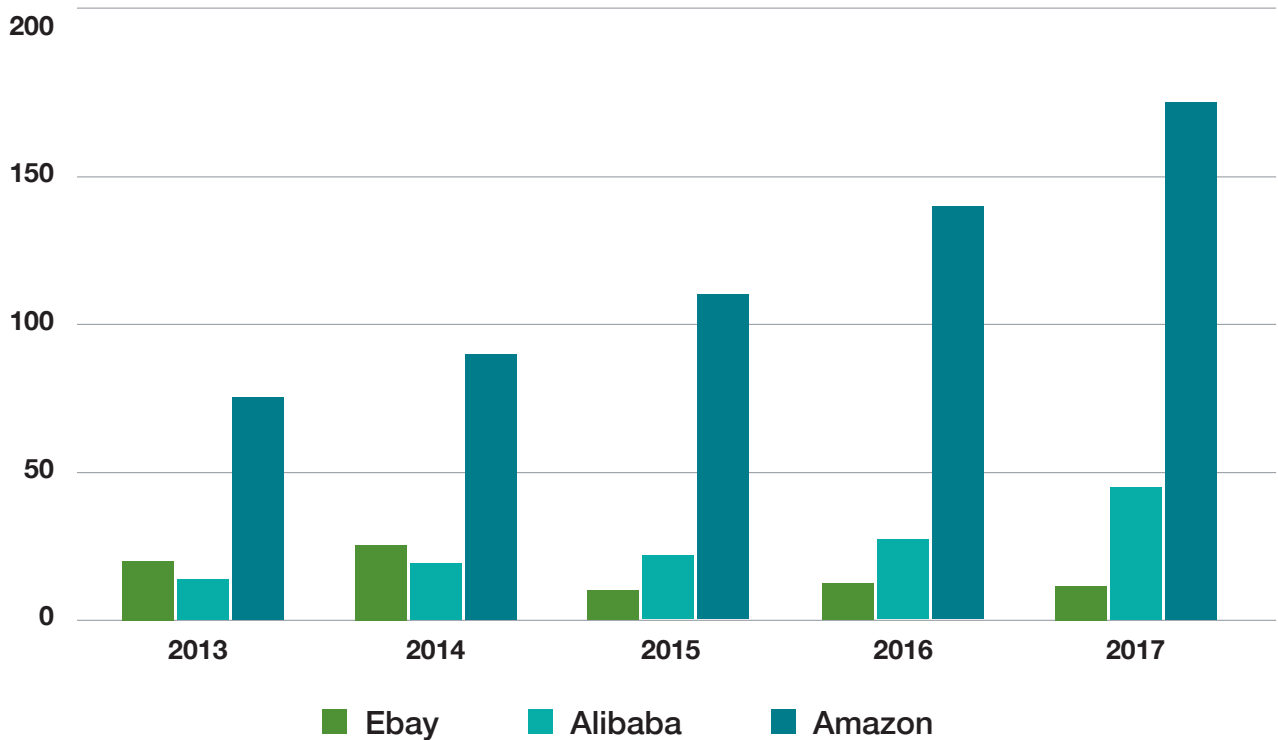
Digital Disruption

While expanding cities promise growth to some segments of the paper and packaging market, digitalization and e-commerce are having the opposite effect on the graphic paper market. But there are two sides to this coin, as changes in shopping habits spark new packaging needs.

As the e-commerce industry continues its meteoric rise, it's increasingly clear that packaging designed specifically for this market will only grow in importance. Industry behemoth Amazon posted a 24.3% CAGR from 2013-2017, while China's upstart Alibaba recorded a staggering 44.8% CAGR in the same period.⁴ This online shopping bonanza creates opportunities for manufacturers of protective packaging materials, with many creating specific business units, service lines and products to capitalize on the explosion in demand.



Global Online Sales in Billion USD



CAGR 2013-2017

Amazon24.3%
 Ebay -12.1%
 Alibaba44.8%

- **Amazon** sales have been boosted by a range of premium subscription services and digital products.
- **Ebay** sales have been declining in part due to customers switching to alternative trade platform providers including Amazon.
- **Alibaba's** main market remains in China, with strong sales in physical goods.

Source: SUEZ Trading Europe data

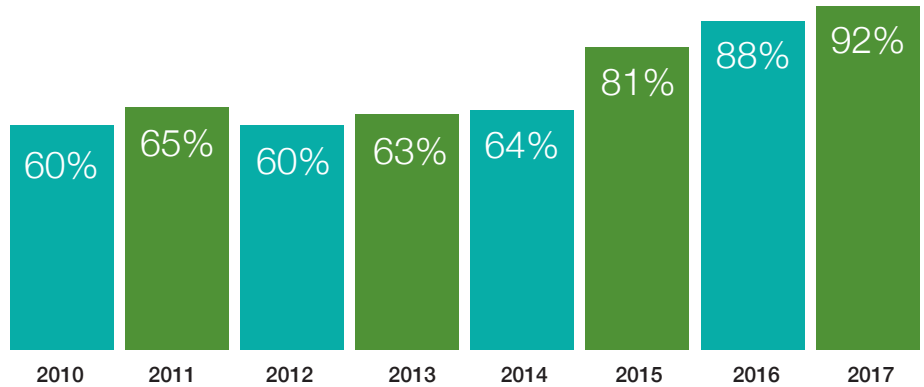
The Future is Green

Yet against this burgeoning growth, limited resources, combined with a consumer audience more attuned to environmental concerns, are spurring companies to find a new, more sustainable way forward. After all, today's consumers are more mindful of global warming and its causes, and increasingly want to know the origin of what they are consuming, how it is produced and how its consumption affects the environment through its waste.

Consider a recent study by Packaging Digest, which found 92% of packaging professionals consumers report that sustainability was very or moderately relevant to their purchasing decision, a 32-point increase from the publication's 2010 survey.⁵

Relevance of packaging sustainability on purchasing decisions

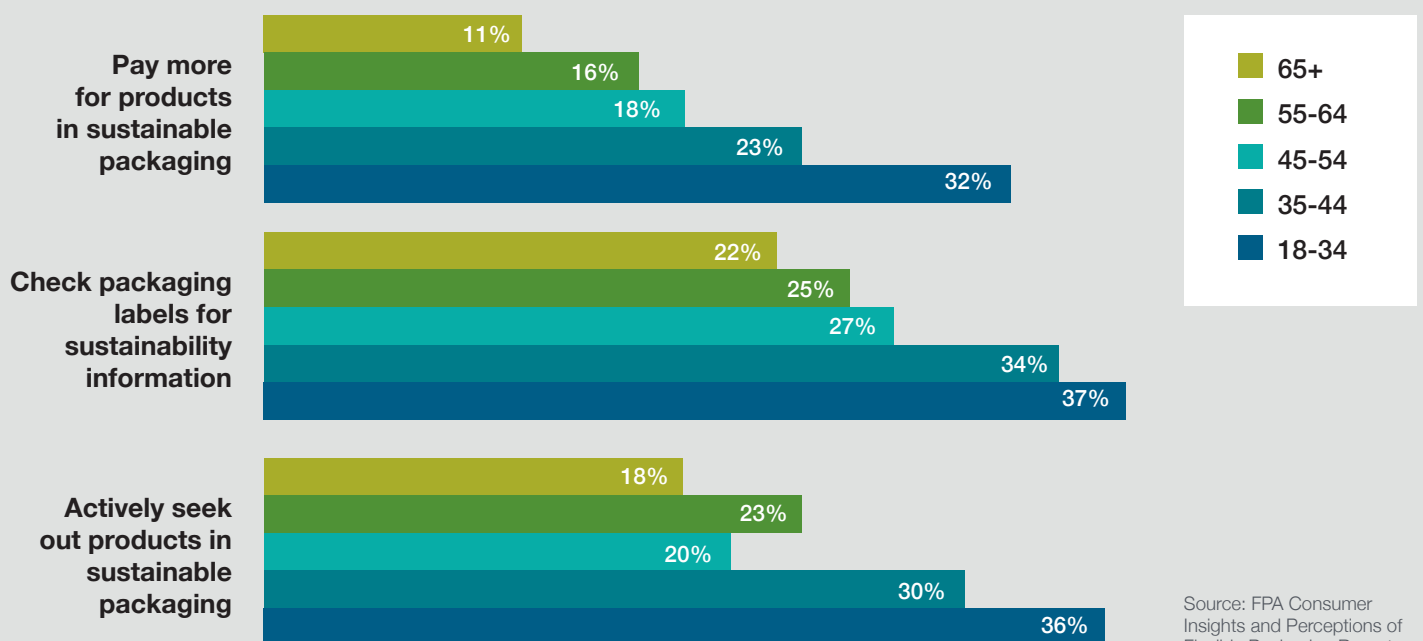
Percentage of respondents answering Top 2 – "very" or "moderately"



Source: FPA Consumer Insights and Perceptions of Flexible Packaging Report

No surprise, it's consumers who are driving the industry toward a more sustainable future. Age plays a role in these attitudes, with younger consumers (13 to 34 years old) consistently registering the greatest interest in sustainable packaging. These younger consumers were more likely to seek out products in sustainable packaging (36%) and were willing to pay more for them (32%).⁶

CONSUMER BEHAVIOR, BY AGE, DRIVING SUSTAINABLE PACKAGING GROWTH



Source: FPA Consumer Insights and Perceptions of Flexible Packaging Report

Creating Sustainable Solutions

Ultimately, these trends spell opportunity for savvy manufacturers. The winners in the paper and packaging market of tomorrow will be those who push the boundaries of recyclable packaging design and technology. They'll demonstrate sustainability and deliver innovative, environmentally friendly solutions that replace plastic, while still fulfilling on the market's real need for packaging that protects products from damage and extends shelf life, all the while keeping costs in line. Four clear factors will drive future use:



100% Recyclable

First and foremost, this means embracing efforts to increase the recycled content and use of sustainably sourced ingredients. Many major food companies have already made public commitments to transform their packages to 100% recyclable options by 2025. To deliver on these promises, they'll need products that boast increased fiber retention and enable an increased use of recycled fiber without quality losses. Top performance native starches, produced from sustainably grown sources, will be key ingredients making this transition possible.

Carlsberg, the Danish brewing giant, is a great example. The company is testing two prototypes for its Green Fibre Bottle, paper bottles made from sustainably sourced wood fibers and fully recyclable. Both prototypes have an inner polymer film barrier, enabling the bottles to contain beer.

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Source: CNBC
<https://www.cnbc.com/2019/10/11/carlsberg-wants-to-produce-a-paper-bottle-for-its-beer.html>



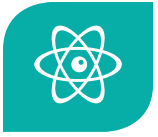
Plastic-Free

Plastic, once the darling of the packaging industry, has clearly fallen out of favor. Plastic regulation is growing globally and many consumers strive to avoid plastic as much as possible. However, replacing petroleum-based ingredients – without losing quality – won't be easy. Innovators will need to find alternatives to both plastics and synthetic binders, pioneering new packaging options that are chlorine- and AOX-free.

Still, solutions exist. Consider Nestlé, which is launching its Nesquik™ All-Natural drink in a plastic-free, fully recyclable paper pouch. Personal care giant P&G redesigned its Tide® Eco-Box to ship more efficiently and use 60% less plastic than its traditional Tide jug. Other companies are taking an even broader approach to the plastic problem, as UK retailer Iceland has pledged to remove plastic packaging from its own-label products by 2023.

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Source: Nestle website
<https://www.nestle.com/media/news/nesquik-launches-all-natural-cocoa-powder-in-recyclable-paper-packaging>



Less Packaging, Less Waste

Related to this move away from plastic is interest in “naked product” packaging, as a growing number of companies work to re-design packages and trade structures with the goal of using substantially less or eliminating packaging altogether.

For its part, online shopping giant Amazon reported in 2017 that 305 million shipping boxes had been eliminated through its Frustration-Free Packaging program, which aims to reduce waste and lower cost by eliminating unnecessary protective material and using 100% recyclable packaging.⁷ Others adopting the less packaging mantra include GoPro, which adopted new carboard packaging to protect its cameras, while using far less resources and materials.

Source: Amazon website
<https://www.aboutamazon.com/sustainability/packaging/frustration-free-packaging>

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Innovation at Work

Finally, the industry is clearly ripe for innovation, both in the actual production processes and ingredients used in paper and board production, and in how it thinks about packaging more broadly. IKEA devised a way to transform the double-corrugated carboard packaging that protects its HILVER™ table during shipping into a functional, sleek-looking folded stool. L’Oreal reimaged the possibilities of paper, packaging its Seed Phytonutrients products in shower-friendly paper that’s both recyclable and compostable. Others are embracing connective packaging technologies, using Near-Field communication, QR codes, barcode scans and more to communicate with their customers in more engaging and proactive ways.

Source: Trend Hunter
<https://www.trendhunter.com/trends/the-fold>

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Accelerating Toward an Eco-Friendly Future



The trends disrupting the paper and packaging industry – urbanization, digitization and sustainability – show no signs of abating. Demand for water and other natural resources will mount alongside a growing and more affluent population. As a result, societal pressure to devise more sustainable solutions will only increase. In recent years, major consumer packaged goods and retail companies like Unilever, LEGO Group, P&G, PepsiCo, Walmart, Nestlé, Kraft Heinz, Mondelēz International and Danone have all made ambitious commitments to eco-friendly packaging.

If the industry is to make good on these pledges, it will need to embrace a recyclable world that relies less on plastic and more on renewable materials. Packaging professionals must learn to do more with less, and pioneer new applications with more sustainable materials.

To survive in this rapidly evolving marketplace, brands will need to adopt new approaches, replacing petroleum-based products with sustainably sourced ingredients, and embrace improved paper and packaging material, produced in a cost-effective and environmentally conscious ways.

To learn more about Cargill's capabilities for sustainable paper and packaging production, please visit:

[Cargill.com/bioindustrial/paper-and-packaging](https://www.cargill.com/bioindustrial/paper-and-packaging)

PLANT STARCHES OFFER ANSWERS

Starches, derived from Europe's abundant cereal and potato crops, offer paper and packaging makers a sustainable solution to creating high-performing products.

Options include cationic starches, which are used for wet-end production during the papermaking process. These positively charged starches give manufacturers greater control over the paper-making process, improving the formation, drainage, retention and strength of the final sheet. Native starches can also be used in spraying and surface-sizing applications, serving the needs of traditional paper production processes.

Coating starches offer paper and board manufacturers a way to easily replace petroleum-based binders, eliminating chlorine and AOX, to support environmentally friendly papermaking processes. These starches are excellent binders and offer a natural, reliable and cost-effective replacement choice.

Sustainable starch options are also available for the corrugated market, where they can be used as plant-based adhesives and rheology modifiers, improving corrugated board quality and printability.

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- ² Ibid.
- ³ "Urban World: Cities and the Rise of the Consuming Class." McKinsey Global Institute. 2012. https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Urbanization/Urban%20world%20Cities%20and%20the%20rise%20of%20the%20consuming%20class/MGI_Urban_world_Rise_of_the_consuming_class_Full_report.ashx
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