EUROPEAN CARTON PROSPECTS 2021 EDITION

Prepared by NOA-PRISM for the European Carton Makers Association (ECMA)

EUROPEAN CARTON MAKERS ASSOCIATION

NOA GROW YOUR BUSINESS

PRISM Packaging Research Intelligence Strategies & Marketing

EUROPEAN CARTON MAKERS ASSOCIATION

European Carton Prospects Report 2021

A summary of the European Folding Carton Market 2021

Produced by NOA-Prism for and on behalf of ECMA

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FOREWORD

We are delighted to bring you the latest edition of the European Carton Prospects Report 2021. As the most in-depth consolidated study of its kind for our industry, the aim is to give our members a deeper understanding of the elements that have been influencing our industry over the last 2 years.

Since our last European Carton Prospects report in 2019, our industry has been challenged by some historically momentous events such as Brexit and Covid-19, as well as the accelerating transition from plastic to fibre packaging - this report highlights the current sentiments on the market and a forecast of what the future may look like. The results are a combination of primary interviews from ECMA members, associated industry influencers, market trend reports and data from other sources.

We hope you see the value in this report, which is supplied free of charge to all fee-paying members and associate national members. In the interest of continuous improvement, we would welcome your feedback. The results of the study clearly show that our sector has a bright future.

Jean-Francois Roche

President of the European Carton Makers Association

EXECUTIVE SUMMARY –

KEY TRENDS AFFECTING CARTON GROWTH

- European Folding Carton companies are experiencing unprecedented demand throughout the supply chain.

- Retail sales are recovering but internet sales are motoring.

- Luxury & duty free goods may come back but not for some years and maybe not as strongly as before.

- Convenience has shifted from “Food-On-The-Go” towards “Takeaway” and “Home delivery”; popularity of “Working From Home” means this change remains (“FOTG” may recover a little over the next 18 months as we return to a new “normal”).

- The “GREEN wave” is starting to show benefits with rising demand for folding cartons.

OBJECTIVES

A new, succinct report format, aimed at:

- Helping members gain a swift understanding of how the industry is managing and developing.
- Observing current conditions prevailing in the European folding carton market.
- Provision of a European folding carton statistical summary.
- Being a source of reliable market data for members to gain a clear overview of the industry to plan and resource their business.
- Providing data during this COVID period and during a period of general uncertainty.
- Highlighting key trends within our sector.
- Forecasting how prospects for folding cartons may develop over the next 5 years.

KEY DELIVERABLES

- An Executive Summary
- Statistical tables:
  - Sales revenues (in euros)
  - Purchasing details (in tonnes)
  - Forecast of carton prospects by specified European countries and regions
  - An updated forecast for European End Use Markets
  - Consolidated forecast for total European carton prospects
  - A new set of Industrial data that we believe may be of interest for subscribers
- A summary of the qualitative interviews

EUROPEAN FOLDING CARTON MARKET – VOLUME & VALUE

Summary Estimates & Forecasts of European Carton Production – 2015, 2020 & 2025 – 000 Tonnes & € Million

	2015	2020	2025	15 to 20	20 to 25
				% p.a.	% p.a.
Cartonboard Purchases: 000 Tonnes	5910	6784	8316	2.8	4.2
Carton Output: 000 Tonnes	5540	**6312**	7598	2.6	3.8
Sales by European Carton Converters: €m	11231	**12177**	14725	1.6	3.9

- The European folding carton market is **6,312m tonnes** by volume and **€12,177m** by sales value.
- Grew over last 5 years at +2.6% YOY by volume and +1.6% by sales value.
- Due to grow over next 5 years at **+3.8%** by volume and **+3.9%** by sales value.

EUROPEAN FOLDING CARTON MARKET – CIGARETTES & TOBACCO

Estimates & Forecasts of Carton Sales Analysed by Market – Total Europe – 2015, 2020 & 2025 – € Million

	2015		2020		2025		% p.a.	% p.a.
SECTOR	€M	%	€M	%	€M	%	15 to 20	20 to 25
Food								
Breakfast cereal products	487	4.3	536	4.4	532	3.6	1.9	-0.1
Cakes, biscuits, baked products	539	4.8	518	4.3	746	5.1	-0.8	7.6
Chocolate & sugar confectionery	881	7.8	1009	8.3	1109	7.5	2.8	1.9
Chilled foods	369	3.3	400	3.3	637	4.3	1.6	9.8
Dry beverages	217	1.9	247	2.0	301	2.0	2.6	4.0
Food to go	329	2.9	335	2.8	495	3.4	0.4	8.1
Frozen food	938	8.4	1214	10.0	1461	9.9	5.3	3.8
Soft drinks & beer	540	4.8	753	6.2	907	6.2	6.9	3.8
Wines & spirits	360	3.2	365	3.0	516	3.5	0.3	7.2
Other foods	820	7.3	1049	8.6	1223	8.3	5.1	3.1
Sub total Food	5480	48.8	6426	52.8	7927	53.8	3.2	4.3
Non-Food								
Cigarettes, tobacco, accessories	857	7.6	695	5.7	730	5.0	-4.1	1.0
Cleaning & laundry products	344	3.1	400	3.3	397	2.7	3.0	-0.1
Cosmetics & beauty	679	6.0	628	5.2	977	6.6	-1.6	9.3
Misc household products	404	3.6	476	3.9	438	3.0	3.3	-1.7
Paper, stationery & related goods	251	2.2	254	2.1	280	1.9	0.2	2.0
Personal care	356	3.2	494	4.1	501	3.4	6.8	0.3
Pharmaceuticals & medical prods.	1700	15.1	1707	14.0	2167	14.7	0.1	4.9
Other non foods	1159	10.3	1097	9.0	1308	8.9	-1.1	3.6
Sub total Non-food	5751	51.2	5750	47.2	6798	46.2	0.0	3.4
TOTAL	11231	100.0	12177	100.0	14725	100.0	1.6	3.9

- Feedback indicated that Cigarettes, Tobacco & Accessories had been underestimated in previous ECP projects.
- Co-operation with several ECMA members during ECP'21 has enabled a much more accurate figure to be gained now.
- Our estimates for this EUM in 2020 have risen from **€293m** to **€695m** as a result.
- A new European sales total of **€12,177m** has also resulted; with volume output uplifted too.
- Many thanks for the support in helping revise this estimate.

EUROPEAN FOLDING CARTON MARKET – VOLUME

Estimates & Forecasts of Cartonboard Purchases, Folding Carton Output & Sales Turnover – Total Europe – 2015 to 2025 - 000 Tonnes & € Million										
	Cartonboard Purchases			Carton Output			Composite Index	Carton Sales		
Year	000 Tonnes	% p.a.	Index 15=100	000 Tonnes	% p.a.	Index 15=100	Index 15=100	€M	% p.a.	Index 15=100
2015	5910	2.2	100.0	5540	2.7	100.0	100.0	11231	4.1	100.0
2016	5932	0.4	100.4	5560	0.4	100.4	102.1	11031	-1.8	98.2
2017	6167	4.0	104.4	5749	3.4	103.8	105.1	11342	2.8	101.0
2018	6268	1.6	106.1	5806	1.0	104.8	107.1	11390	0.4	101.4
2019	6555	4.6	110.9	6077	4.7	109.7	108.7	11914	4.6	106.1
2020	6784	3.5	114.8	6312	3.9	113.9	103.1	12177	2.2	108.4
2021	7524	10.9	127.3	6547	3.7	118.2	108.0	12538	3.0	111.6
2022	7611	1.2	128.8	6866	4.9	123.9	112.0	13330	6.3	118.7
2023	7853	3.2	132.9	7165	4.4	129.3	114.5	13918	4.4	123.9
2024	8086	3.0	136.8	7383	3.0	133.3	116.8	14324	2.9	127.5
2025	8316	2.9	140.7	7598	2.9	137.1	118.9	14725	2.8	131.1
Average % p.a. 15 to 20	2.8			2.6			0.6	1.6		
Average % p.a. 20 to 25	4.2			3.8			2.9	3.9		

- European folding carton output grew by **+4.7%** in 2019 (the Pre-Covid year).
- Notable growth during 2019 is partly due to the impact of the “GREEN wave”.
- Growth was sustained at **+3.9%** overall during the Covid year, despite significant changes within many End Use Markets.

EUROPEAN FOLDING CARTON MARKET – VALUE

Estimates & Forecasts of Cartonboard Purchases, Folding Carton Output & Sales Turnover – Total Europe – 2015 to 2025 - 000 Tonnes & € Million										
	Cartonboard Purchases			Carton Output			Compo site Index	Carton Sales		
Year	000 Tonnes	% p.a.	Index 15=100	000 Tonnes	% p.a.	Index 15=100	Index 15=100	€M	% p.a.	Index 15=100
2015	5910	2.2	100.0	5540	2.7	100.0	100.0	11231	4.1	100.0
2016	5932	0.4	100.4	5560	0.4	100.4	102.1	11031	-1.8	98.2
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2019	6555	4.6	110.9	6077	4.7	109.7	108.7	11914	4.6	106.1
2020	6784	3.5	114.8	6312	3.9	113.9	103.1	12177	2.2	108.4
2021	7524	10.9	127.3	6547	3.7	118.2	108.0	12538	3.0	111.6
2022	7611	1.2	128.8	6866	4.9	123.9	112.0	13330	6.3	118.7
2023	7853	3.2	132.9	7165	4.4	129.3	114.5	13918	4.4	123.9
2024	8086	3.0	136.8	7383	3.0	133.3	116.8	14324	2.9	127.5
2025	8316	2.9	140.7	7598	2.9	137.1	118.9	14725	2.8	131.1
Average % p.a. 15 to 20	2.8			2.6			0.6	1.6		
Average % p.a. 20 to 25	4.2			3.8			2.9	3.9		

- European folding carton sales value grew by **+4.6%** in 2019 (the Pre-Covid year).
- Sales value growth during the Covid year was **+2.2%**, significantly affected due to “mix change” (i.e. more food & drink, less luxury goods).
- Sales value growth in 2021 anticipated to be **+3.0%** due to a lag in recovery of cost increases.

EUROPEAN FOLDING CARTON MARKET – VOLUME CAVEAT

Comparison of Downside, Likely Outcome & Upside Folding Carton Output Forecasts - Total Europe – 2020 & 2021 - 000 Tonnes, % pa.

	2020	2021	2021
Forecast	000 Tonnes	000 Tonnes	% p.a.
Downside	6312	6421	1.7
Likely Outcome	6312	6547	3.7
Upside	6312	6642	5.2

- Our forecast for 2021 must come with a small caveat due to several factors!
- Both volume and value need to be adjusted for the reasons highlighted in the next section.

SUPPLY CHAIN ISSUES INFLUENCING OUR FORECASTS

- ❖ Demand for folding cartons has been unusually high over the last 2 years.
- ❖ Orders for cartonboard are VERY high with the Mills (most are “full” today).
- ❖ Experience of shortages of some FMCG goods (e.g. packaging containers, cans, etc.) may mean product cannot be packed.
- ❖ Lack of raw material (e.g. microchips, toys, chicken pieces, etc.) may mean that demand for goods cannot be satisfied (e.g. new cars, new PCs, Christmas gifts, chicken nuggets, etc.).
- ❖ Impact other factors on supply (e.g. labour, energy, transport, pallets. etc.).
- ❖ Our forecasts therefore come with a small caveat as a result.

WHAT ARE FOLDING CARTON MAKERS SAYING?

Impact of Covid-19 on work-mix, demand and stock:

"Promotions dropped away & new product launches stopped during Covid. Premiumisation stopped, complexity reduced and packs became simpler".

"Last year there was a shortage of plastics, this year the shortage is with cartonboard."

"Consumer tastes could mean a shift away from FMCG products and towards other products; manufacturers who don't spot this change in consumer behaviour could result in huge unwanted stock....."

OTHER KEY TOPICS AFFECTING FOLDING CARTONS

- Stocks (overstocking/no stock!)
- End Use Market forecasts
- Country forecasts
- Substitution
- Sustainability
- Changes in European retailing
- Global debt
- Consolidation in the industry
- What else have you been saying?
    - Life after Covid
    - Legislation
    - Impact on pack configuration and print
- What else will be available in the ECP'21 statistical tables?

STOCKS – BUILD UP, OVER STOCKING AND LACK OF!

"Panic buying – lockdown behaviour drove up demand for drink and food."

"Supply continuity - be severally challenged. We are in a bubble at the moment; will it become a strategic problem?"

"Suppliers breaking contracts - not seen this issue since 2007/8."

"Backed up stock – people panic bought, then didn't need it. Customers leaving supplies at suppliers and not calling off product."

"Lots of uncertainty – converters want to ensure their customers are supplied."

"Labour shortages – no body wants to work in the fields so cannot harvest the food. Soon will be no raw materials to make things."

"Spend on FMCG goods drops - what happens if demand switches away to other goods and services?"

EUROPEAN FOLDING CARTON MARKET –

END USE MARKETS

Estimates & Forecasts of Carton Sales Analysed by Market – Total Europe – 2015, 2020 & 2025 – € Million								
	2015		2020		2025		% p.a.	% p.a.
SECTOR	€M	%	€M	%	€M	%	15 to 20	20 to 25
Food								
Breakfast cereal products	487	4.3	536	4.4	532	3.6	1.9	-0.1
Cakes, biscuits, baked products	539	4.8	518	4.3	746	5.1	-0.8	7.6
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Chilled foods	369	3.3	400	3.3	637	4.3	1.6	9.8
Dry beverages	217	1.9	247	2.0	301	2.0	2.6	4.0
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Soft drinks & beer	540	4.8	753	6.2	907	6.2	6.9	3.8
Wines & spirits	360	3.2	365	3.0	516	3.5	0.3	7.2
Other foods	820	7.3	1049	8.6	1223	8.3	5.1	3.1
Sub total Food	5480	48.8	6426	52.8	7927	53.8	**3.2**	**4.3**
Non-Food								
Cigarettes, tobacco, accessories	857	7.6	695	5.7	730	5.0	-4.1	1.0
Cleaning & laundry products	344	3.1	400	3.3	397	2.7	3.0	-0.1
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Misc household products	404	3.6	476	3.9	438	3.0	3.3	-1.7
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Pharmaceuticals & medical prods.	1700	15.1	1707	14.0	2167	14.7	0.1	4.9
Other non foods	1159	10.3	1097	9.0	1308	8.9	-1.1	3.6
Sub total Non-food	5751	51.2	5750	47.2	6798	46.2	**0.0**	**3.4**
TOTAL	11231	100.0	12177	100.0	14725	100.0	1.6	3.9

- Food sales grew faster than non-food sales, mainly due to a “Covid period mix change”.
- Food sales grew at **+3.2%** YOY while non-food stayed flat (**0.0%).**
- Future sales growth looks positive at **+4.3%** and **+3.4%** respectively over the next 5 years.

END USE MARKETS –

IMPACT OF COVID IN 2020

- Big changes in our homelife caused important adjustments in what we purchased:
  - Cereal eating went up during Covid as people at home
  - People baked much more (e.g. cakes)
  - More snacking during Covid
  - People cooked much more
  - Food sales overall increased
  - Beer & soft drink sales were buoyant
- Major drop away in some of what we purchased as our work and leisure habits changed:
  - Food-To-Go dropped away
  - Less luxury & duty free
  - BIB more bottles/less packaging
  - Demand for over the counter medicines reduced (less colds and flu)
- Some notable shifts in what we purchased as our work and leisure habits altered:
  - Sales of cleaning products went up
  - eCommerce sales of electrical goods went up
  - Demand for ladies hair dye products went up too
  - Smoking increased

END USE MARKETS –

FACTORS INFLUENCING ESTIMATES

- Major shift in the mix of products purchased during this Covid period:
    - More food & drink
    - Less “Food-on-the-Go”
    - Less Pharmaceutical products
    - Less luxury & duty free goods
- Brand owners experiencing shortages in raw materials:
    - Includes base food materials
    - Packaging materials and containers (e.g. cans)
    - Shortages of these other products may impact on FC demand
- Growth of chilled foods anticipated to leap upwards again:
    - Popularity for cooking at home temporarily slows growth during Covid; comes back roaring over next 5 years
    - “Hybrid” and “composite” packs have grown in popularity and anticipated to develop rapidly over coming years
- Adjustment to Cigarettes, Tobacco & Accessories in this project:
    - Size has been under valued in past projects
    - Market continues to reduce in Western Europe

WHAT ARE FOLDING CARTON MAKERS SAYING?

EUM TRENDS DURING COVID (AND BEYOND?):

"Consumers ate more cereals and chocolate last year when working from home."

"Vitamins and health supplements boomed during Covid".

"Pharma dropped away as people didn't get quite so ill in lockdown"

"Perfume sales collapsed, a drop in demand of -70%."

"Food-to-go disappeared in 2020 due to Covid, a big change in our eating habits. Not picked up in 2021; may not come back at all….."

"New habits are likely to continue with more eating in the home even after all the lockdowns."

EUROPEAN FOLDING CARTON MARKET – COUNTRIES

Summary Estimates & Forecasts of Carton Production, Cartonboard Purchases, & Carton Sales – Main European Regions - 2015, 2020 & 2025 - 000 Tonnes, € Million								
	2015		2020		2025		% p.a.	% p.a.
	Vol/Val	%	Vol/Val	%	Vol/Val	%	15 to 20	20 to 25
Cartonboard Purchases - 000 Tonnes								
Western Europe	4823	81.6	5321	78.4	6342	76.3	2.0	3.6
Nordic Region	171	2.9	182	2.7	217	2.6	1.3	3.6
Central Europe	916	15.5	1280	18.9	1757	21.1	6.9	6.5
TOTAL	5910	100.0	6784	100.0	8316	100.0	2.8	4.2
Carton Production - 000 Tonnes								
Western Europe	4598	83.0	5071	80.3	5945	78.2	2.0	3.2
Nordic Region	158	2.9	169	2.7	196	2.6	1.3	3.0
Central Europe	784	14.2	1072	17.0	1457	19.2	6.5	6.3
TOTAL	5540	100.0	6312	100.0	7598	100.0	2.6	3.8
Carton Sales - € Million								
Western Europe	9641	85.8	10176	83.6	12024	81.7	1.1	3.4
Nordic Region	327	2.9	299	2.5	356	2.4	-1.8	3.6
Central Europe	1262	11.2	1702	14.0	2345	15.9	6.2	6.6
TOTAL	11231	100.0	12177	100.0	14725	100.0	1.6	3.9

- Western European output growth has been “modest” at **+2.0%** to-date while central Europe “motors on” at **+6.5%**.
- Future output growth continues at an above average level for central Europe at +**6.3%** over the next 5 years, while western Europe fares better at **+3.2%**.
- Sales in both these 2 large regions grow at a higher rate than output due to PI recovery and the “GREEN wave” premium.

EUROPEAN FOLDING CARTON MARKET – COUNTRIES (CONTINUED)

Estimates & Forecasts of Carton Output – Total Europe Analysed by Country – 2015, 2020 & 2025 – 000 Tonnes

SECTOR	2015		2020		2025		% p.a.	% p.a.
	000 Tonnes	%	000 Tonnes	%	000 Tonnes	%	15 to 20	20 to 25
Austria	122	2.2	147	2.3	163	2.2	3.8	2.1
Belgium	115	2.1	122	1.9	136	1.8	1.1	2.2
France	574	10.4	593	9.4	668	8.8	0.7	2.4
Germany	1118	20.2	1251	19.8	1388	18.3	2.3	2.1
Italy	646	11.7	692	11.0	809	10.7	1.4	3.2
Netherlands	325	5.9	319	5.1	362	4.8	-0.3	2.5
Spain	336	6.1	368	5.8	428	5.6	1.8	3.0
Switzerland	100	1.8	84	1.3	85	1.1	-3.4	0.2
Turkey	473	8.5	626	9.9	904	11.9	5.8	7.6
U.K.	593	10.7	655	10.4	761	10.0	2.0	3.0
Other Western Europe	196	3.5	212	3.4	241	3.2	1.6	2.5
Sub total West Europe	4598	83.0	5071	80.3	5945	78.2	**2.0**	3.2
Nordic	158	2.9	169	2.7	196	2.6	1.3	3.0
Poland	460	8.3	658	10.4	929	12.2	7.4	**7.2**
Other Central Europe	324	5.9	415	6.6	528	6.9	5.0	4.9
Sub total Central Europe	784	14.2	1072	17.0	1457	19.2	6.5	6.3
Total Europe	5540	100.0	6312	100.0	7598	100.0	2.6	3.8

- Most individual western European countries show “modest” output growth while Turkey, Poland and other central Europe “motor on”.
- Poland continues it’s consistent output growth at **+7.2%** while German output slows to **+2.1%**.
- Turkey growth slowed in 2019 and 2020, while future output growth looks much better at **+7.6%** over the next 5 years.

SUBSTITUTION

- Pre-Covid – many new designs were raised to replace plastic specifications.
- Many of these designs have become commercially available since ECP'19.
- Demand for new folding carton formats remains buoyant.
- Significant substitution of plastics with fibre is predicted for the next 5 years.
- Concern that fibre could be in short supply as this GREEN wave gathers pace (1 tonne of plastic "out" means approx. 4 tonnes of fibre needed to replace).

BARRIERS TO SUBSTITUTION

- Imminent legislation from the EU for single use plastic (and single use packaging) likely to encourage anti-packaging wave.
- EU legislation could add confusion, complexity & delays for brand owners who wish to make substitution decisions or changes.
- Announcement by McDonald's may have a significant impact on the "Food-to-Go" End Use Market.

This becomes this

And could remove 270k tonnes of fibre

FC STORIES - SOME SUSTAINABILITY TRENDS?

- **Mars Wrigley** - announced that it will be removing the black PE liner from its Maltesers boxes. The result: 82 tonnes less plastic in the UK's residual waste every year. The Maltesers box is now fully recyclable.

- **Zespri** (the world's largest kiwi producer) - the company considers sustainability to be of paramount importance. The kiwis were previously packed in a composite pack; Zespri wants to stop using plastic.

- **Tomatoes** – in just under 5 years we now see folding cartons replacing most plastic punnets across Europe. Seen as the retailing packaging medium of choice for this produce product.

- **Henkel** – dishwasher capsules will be packaged in a hybrid” solution that contains fibre + material made from recycled polypropylene collected from end consumer households.

- **ALDI** – initiative to reduce easter egg plastic packaging content, wrapped up in a smaller folding carton. This removes approx. 30 tonnes from ALDI’s annual easter egg purchases.

OTHER SUSTAINABILITY TRENDS

- **H&M Netherlands** - now ships online orders only in FSC-certified paper packaging. By replacing the plastic bag with recyclable paper, H&M is taking a step towards reducing plastic waste in line with the retailer's goal of making all packaging re-usable, recyclable or compostable by 2025.

- **Carrefour** – have launched a “challenge” or competition to all packaging suppliers to achieve ZERO plastic in their packaging. The retailer is making use of this initiative in all their marketing.

- **Amazon** – shipping much more of its products using large paper bags as well as the traditional envelopes. The company started to use more recyclable bags in Q4, 2020 as demand sky rocketed, packaging was in short supply and they had a huge uplift in goods to ship.

“For a number of years companies have talked a lot about sustainability but not really done much; cost has been the important factor.

However sustainability has remained an important factor and it is the first thing discussed at customer meetings.”

SD Major European carton converter

CHANGES IN EUROPEAN RETAILING

- Economic and Social trends:
  - Significant lifestyle changes by being forced to stay & work from home.
  - Shopping habits changed –
    - Covid encouraged more "Silver Surfers", an increase in home cooking in 2020, plus increased demand for home deliveries.
    - Popularity of home deliveries likely to continue post-Covid (from supermarkets).
    - Interest in home cooking has reduced as we "unlock" but "recipe boxes" will continue to be popular (e.g. Frichti, Marley Spoon, Gousto, HelloFresh, etc.).
  - Impact on entertainment, leisure and luxury goods markets has been devastating; could take years to recover.

- Trends in overall Retail market:
  - Popularity of online ordering will continue (both food as well as non-food items).
  - Supermarkets have adapted their supply chain to customers new needs (e.g. more food deliveries to our homes) .
  - Impact of Covid leading to major shift in our shopping habits.
  - Potential for spend to be directed into services (e.g. travel, restaurants, entertainment, etc.) instead of FMCG goods.

- Trends with Convenience:
  - More "Working From Home" so less "Food-on-the-Go" but more "Takeaways".
  - Increase in home delivery services (e.g. Uber Eats, Deliveroo, JustEat, etc.) as WFH becomes the "norm" for many.

WHAT WE HEAR ABOUT BRAND OWNERS AND RETAILERS

"TESCO announced it wants suppliers to stop sending them fresh air. Costs money to ship, takes up shelf space & costs more in packaging."

"Big multi-nationals are talking about reducing plastic but we don't yet see the impact. Multi-nationals switch to cartons where cost or availability is the driving factor."

"Mars and Nestle are looking at developing more products for eCommerce channels. Amazon are entering into the OTC market, so we will see more packaging for online application."

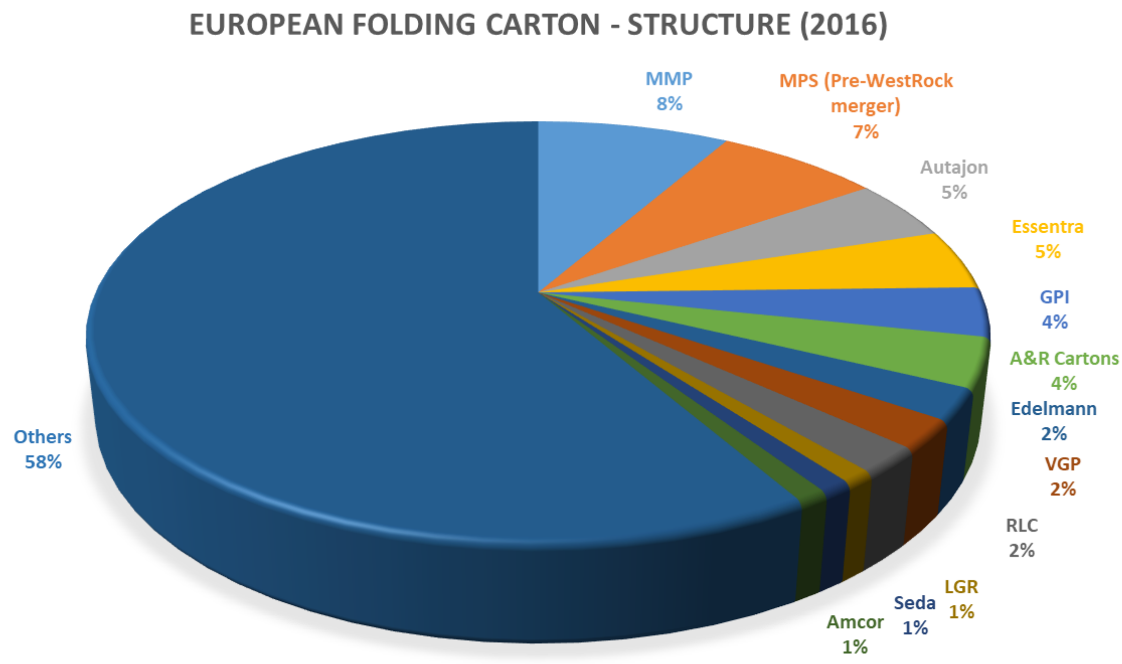
"Not much innovation or new products in 2020. There has been a general view by all retailers and brand owners to focus on the core business."

GLOBAL DEBT

"European recession threatened - following the settling down after Covid, we are still likely to have a recession as a result of European spending during Covid and the knock-on effect for inflation."

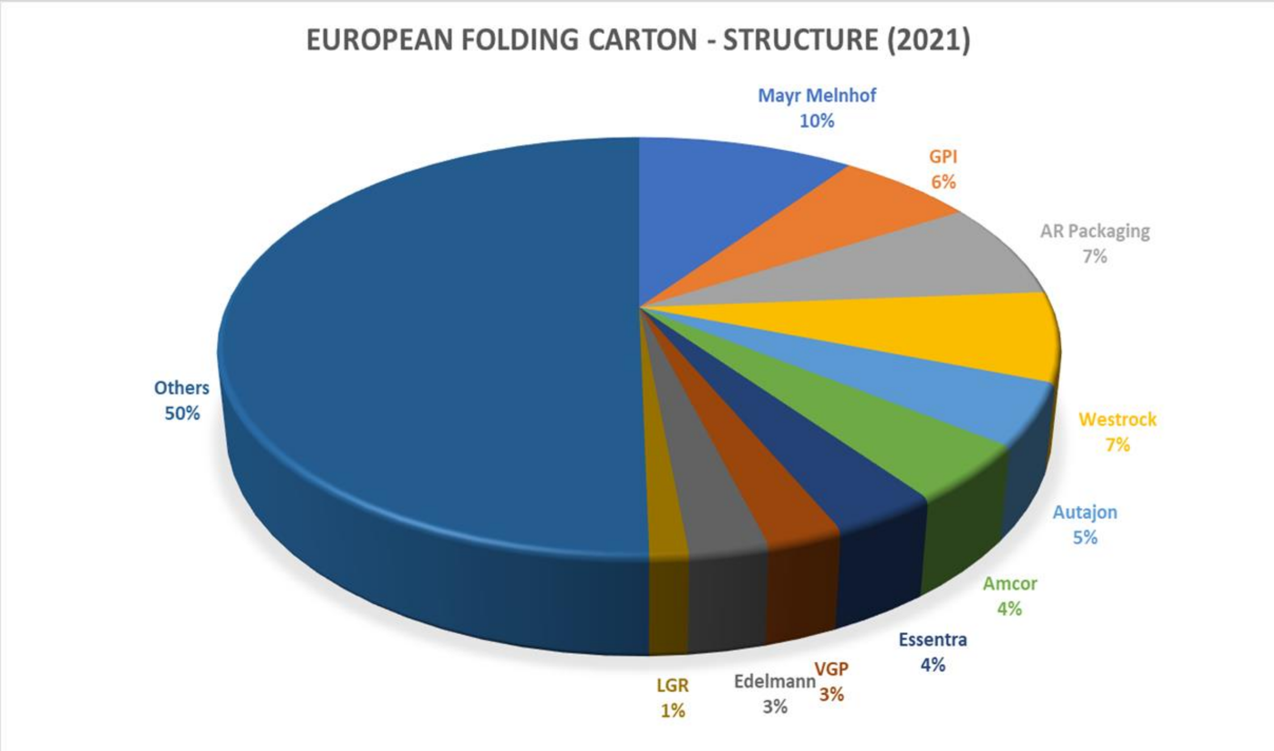
"Rising costs – China, which has been the driver of low cost goods, is now becoming an exporter of another trend, inflation!

EUROPEAN FOLDING CARTON STRUCTURE – 2016



- European Folding Carton converter structure is highly fragmented (especially when compared to corrugated).
- At least 1,000 converter companies were active throughout Europe in 2016.
- Likely to be subject to more consolidation (in addition to recent acquisitions made by MPS, AR Packaging and GPI).
- Industry structure for Plastics is more consolidated than either Folding Cartons or Corrugated.

EUROPEAN FOLDING CARTON STRUCTURE – 2021



- The Top 10 folding carton converters only represent 50% of the market.
- Recent takeover talks between GPI and AR Packaging will make this group the largest FC converter in Europe.
- Mayr-Melnhof is the only vertically integrated company within the Top 10 carton converters.
- European FC converters continue to experience a highly competitive environment - squeezed between Brand Owners on the one hand and Paper Mills on the other.

WHAT ELSE ARE FOLDING CARTON MAKERS SAYING?

Life after Covid:

"Assuming the vaccines are effective, then there will be a new norm beginning in 2022".

"Looking to 2022 to 2025, can see similar growth trends in end use markets as there were in 2019."

Legislation & substitution

"Note the Evergreen programme - an alliance of key companies working together through the supply chain to improve recycling and collection."

"Change drivers will come through government regulations - taxes, etc. AND raising the costs of plastics so change has to happen".

"European rules are inconsistent – one being implemented says even if only 5% plastic, still makes the fibre carton NOT a carton!"

"Pressure from plastics industry is high - they have a very big wallet!"

"Everyone is trying to change packs to make them more sustainable."

WHAT ELSE ARE FOLDING CARTON MAKERS SAYING? – CONTINUED

Pack configuration & print

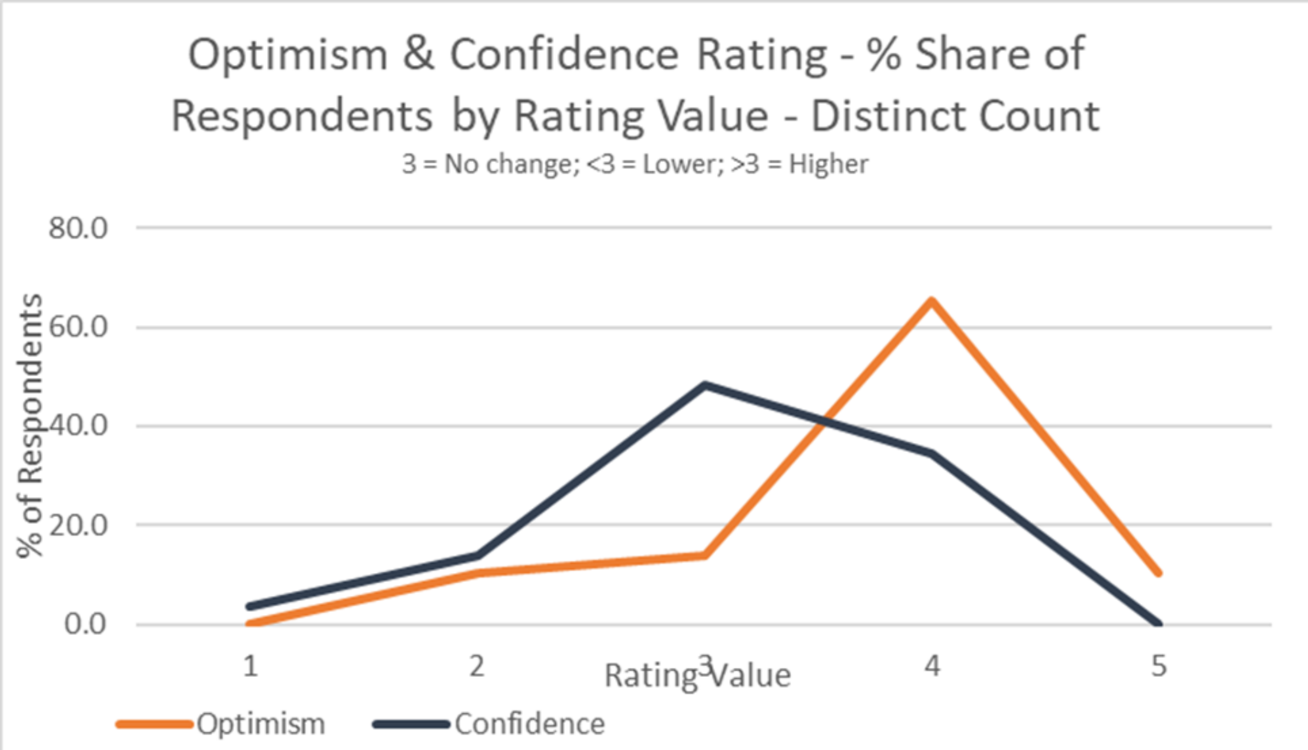
"Hybrid board/plastic combination – expecting growth for these pack types with trays and cartons being developed for many applications."

"Microflute – being squeezed between improved flexo print in corrugated and less developments in litho. However, it is a growth market for eCommerce packs."

"Digital print – technical quality & throughput is not there yet; inks are still not commercially viable. However, see it finding its place over the next 5 years."

WHAT NEW TABLES ARE IN THE ECP'21?

A new, succinct series of charts and tables showing opinions on several key indicators…



- Respondents said they felt more optimistic in 2021 versus how they felt in 2020 in the light of the recovery from Covid and getting back to more normal trading.

- They were relatively less confident in comparison, this due to the uncertainty being seen in the folding carton supply chain due to shortages of raw materials.

CONCLUSIONS

- Covid has delivered major changes to the way that we purchase products.

- In turn this has delivered significant work-mix changes for the folding carton industry.
    - Shifted EUM demand.
    - Major supply chain disruption.

- FC companies remain squeezed between demands by International Brand Owners and pressure from the major Paper Mill groups.

- The demand for FCs will remain high due to the "GREEN wave" (especially for beer, soft drinks, produce & chilled foods).

- For as long as the supply chain remains unclear, forecasting demand could be an imprecise science.

- Profitability, while we are so busy, will be a key focus for folding carton converters.

- More consolidation is likely over the coming years.

- To keep an eye on the short term (e.g. Mill capacity, supply chain changes, etc.) while watching out for the longer term (e.g. new "GREEN" demand, upcoming legislation, impact of retail changes, etc.) will be a difficult balancing act.

EUROPEAN CARTON MAKERS ASSOCIATION

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