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**A SURVEY OF THE PACKAGING AND PAPER CONVERTING INDUSTRY.**

**SOMO**

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- Part 1: General trends
- Part 2: Country survey
- part 3: Some special sectors

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CIS, Finland, France, Germany, Poland, Sweden

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## PART 1: GENERAL TRENDS

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### 1. GLOBAL DEVELOPMENTS

1990 was a bad year. Large investments came on stream while demand only grew modestly. The share of pulp in the total requirements from the paper and board industry is falling: 70% 1989, 67% 1990. Pulp prices fell 40% due to many new investments projects coming on stream. High demand helped paper board rates to remain more stable. Overcapacity and a slowing down of demand rises will cause problems in this sector in the near future.

Paper output grew modestly in 1990 after a tremendous growth before. The global picture is very mixed. Production in Eastern Europe fell sharply.

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#### Growth P&B output

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1990

By region

Europe	3.1%
Eastern Europe	-13%
Far East	6%
Australasia	4%
Latin America	3%
North America	0.7%
(48.8% of world production!)	
Africa	1.1%
(mainly South Africa)	

By non-European country

USA	2.7%
Japan	4.8%
Canada	-0.7%
China	2.9%
USSR	-8.2%
Brazil	0.3%
Korea	12.6%

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Source: PPI july 1990



1991 was even worse. Production in Europe only grew 0.9%. Almost all the growth took place in the first halve of the year. Production fell in the last quarter.

There are some signs of an improving situation. But 'Coming out of a recession can often be more testing than going in', according to the EIU Paper and Packaging Analyst of May 1992. The first quarter of 1992 saw some improvement, except for Canada where the situation got worse. In Western Europe, Sanitary and Household papers grew strongly. Wrapping paper showed a small decrease.

Overcapacity and markets in recession are the main causes for the industries problems. Over capacity is caused by the wave of new investment at the end of the 1980s. In tissue manufacturing for instance 22 new machine came on stream world wide in 1990, 12 in 1991 and only 4 will come on stream in 1992.

In 1992 we can expect to see the major paper and board companies counting the cost of the over-expansion and effects of the recession. Corporate restructuring is likely to continue apace.

During the last quarter of 1991, paper companies have fallen markedly on the stock exchange, especially in Scandinavia, Holland and Italy. Whereas the overall share index fell 8%, some companies fell 40%. In 1991 SCA fell however only 7,1%, whereas for instance MoDo fell 28,4%. The last three months of 1991 Modo fell 25,7%, Stora 25,0% and SCA (B shares) only 1%.

It will take until 1994-5 possibly before the overcapacity in writing and printing paper, for instance in Light Weight Coated, eases off. For newsprint additional capacity will be required in 1993-4.

The value of production in paper converting will witness faster growth than Pulp and Paper (P&P). Estimates are 3.6% and 6.0% for 1990-1992. Pulp alone will grow only 2%.



## 2. MULTINATIONAL STRATEGIES, MAIN TRENDS

Paper companies have generally tried to enlarge themselves, because in a capital intensive industry like this, economics of scale are very important.

There is a worldwide urge to merge as the pulp and paper industry becomes increasingly global. This results in an increasing internationalization and concentration of the paper-converting industry.

The general strategy in this sector is marked by 4 characteristics:

- The EC has become a battleground for Nordic and American firms,
- European firms are still not operating on a global level but are concentrating on the European market,
- There is a decreasing importance of pulp production in Europe,
- Major companies are looking for forward integration, mostly by buying paper-converting companies.

### \* EC: Battleground for Nordic and American firms.

The European industry has been marked by restructuring and take-overs. Especially American firms, which account for 8 out of the ten biggest P&P companies in the world have sought expansion in Europe as their homemarket became saturated. Also Nordic companies seek a foothold in the EC.

The larger cross border transactions included the 1989 takeover of Aussedat Rey and Zanders by International Paper, and of UK Paper by Fletcher Challenge. 1990-92 also saw some 'mega deals', such as the acquisition of Feldmuhle by Stora, the purchase of Reedpack by SCA, the merger of United Paper Mills and Rauma Repola and the merger of Wiggins Teape Appleton with Arjomari, Scott Paper of the US setting up a Dollars 250m joint venture to take over Feldmühle's tissue paper interests, Kymmene of Finland's acquisition of Chappelle Darblay, worth



around FF1.3bn, the Dutch Bührmann-Tetterode's Pounds 154m takeover of Robert Horne (UK), the acquisition of French corrugated manufacturer Kaysersberg by David S Smith (UK) and Fletcher Challenge of New Zealand's successful Pounds 299m bid to acquire UK Paper.

Many groups have also made cross-border investments. For example, nearly all the new paper-making capacity built in the UK over the last few years, has been financed by Nordic interests.

But it is not only in Europe that deals are being done. Takeovers such as Stone Container buying Consolidated-Bathurst and Georgia-Pacific buying Great Northern Nekoosa were essentially North American deals.

Equally, it is assumed that South African companies like SAPPI (which bought Hannover Papier from NCB and several DRG Mills), Australian companies such as Amcor, and other North American corporations such as the Manville Corporation and Lawson Mardon would like to continue to expand their interests in Europe, as would Jefferson Smurfit.

It is remarkable how many French firms have been bought. In 1990 34% of the French Paper and Board industry was controlled by foreign firms, in 1991 this rose to 40%. Almost all larger companies are now part of foreign conglomerates.

Also in the UK, Southern Europe, and Germany, important companies have become daughter companies of foreign parents.

Sweden and Finland took over the European top positions. Only the Dutch Bührmann Tetterode still figures as a non-Scandinavian European paper company in the Fortune top-500. Other EC-producers with figured in the top in the mid 1980s have now disappeared.

Feldmühle was taken over, Bowater Industries (UK) has disappeared and PWA turned out to be just too small to appear in the Fortune list. The next biggest EC producers are Jefferson Smurfit from Ireland and Dutch KNP.

The Japanese firms are falling back in global top. The background to this development of the Japanese companies is not the issue of this paper.



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The biggest forestry and paper firms in 1990

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	Sales \$ mill.	Employees
1 International Paper (US)	12,960	69,000
2 Georgia Pacific (US)	12,665	63,000
3 Stora (Sweden)	11,070	69,700
4 Weyerhaeuser (US)	9,024	40,621
5 Noranda (Can)	8,121	56,000
6 Fletcher Challenge (Nw Zeal)	7,134	40,000
7 Kimberly-Clark (US)	6,448	39,954
8 Repola (Fin)	6,040	33,987
9 Stone Container (US)	5,770	32,300
10 James River (US)	5,423	33,100
11 Scott Paper (US)	5,391	30,800
12 SCA (Sweden)	5,334	30,139
13 Champion International (US)	5,159	28,500
14 Mead (US)	4,796	21,600
15 Oji Paper (Jap)	4,514	n.a.
16 Boise Cascade (US)	4,190	19,810
17 Jujo Paper (Jap)	3,901	7,151
18 Kymmene (Fin)	3,540	17,657
19 Sanyo-Kokusaka Pulp (Jap)	3,333	7,748
20 Mo Och Domsjo (Fin)	3,189	12,961
21 Honshu Paper (Jap)	3,158	6,261
22 Bührmann Tetterode (Neth)	3,052	12,954
23 Union Camp (US)	2,840	19,939
24 Daishowa paper Mfg (Jap)	2,810	7,690
25 Enso-Gutzeit (Finl)	2,778	15,180
26 Abitibi-Price (Can)	2,658	14,300

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Source: Fortune top 500, july 29, 1991.

\* European firms are still not operating on a global level.

Even Stora and SCA are concentrated on the European market. This concentration on the European market has an advantage and a disadvantage. The advantage being that in Europe, biggest growth is to be expected. The industrialised countries account for easily the largest proportion of global paper consumption but the greatest potential is probably to be found in central and eastern Europe, and the new republics of the former Soviet Union. The question is only how rapidly this demand will increase. The disadvantage being that the European market is very crowded. The European industry has been marked by restructuring, take-overs and the entrance of the American and Scandinavian giants.

But also firms outside Europe, like Georgia Pacific, have taken





The decreasing importance of pulp production corresponds with a forward integration into paper converting by the major paper manufacturers. Also, many main paper-companies have moved into distribution. The movement into higher refined paper products is general all over the sector.

It seems like all companies are moving upstream: pulp makers into papermaking, paper manufacturers into paper converting and packaging, paper converters and printers into publishers. This leaves space for new industries down at the paper chain, mainly pulp and forestry firms from third world countries like Brazil and Indonesia.

There are several reasons why paper companies are looking for forward integration:

- stable outlet for raw materials production
- more value added
- less competition from giant firms
- some expect also in fields like packaging more economics of scale with regards to research, logistics, marketing (others doubt it)
- less price fluctuations
- more growth expected in these sectors
- increasing difficulties for smaller firms:
  - to finance increasingly expensive investments for instance in lithographic printing
  - to satisfy international standards

Most of the time, forward integration was not pursued by starting greenfield activities, but by buying paper converting and distributing companies.

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### 3. INTEGRATION WITHIN THE PAPER INDUSTRY

#### 3.1 Background to the merger wave

The paper industry has come to the end of the longest upswing in its fortunes that anyone in the business can remember. As profits are beginning to fall, the motivation for mergers is rising. Size brings economies and makes production planning simpler. The international nature of the industry leads to multinational groupings. Size is also vital when it comes to investment. A new machine is very costly. This scale of investment can only be made by a large, financially strong group. All these motivating factors will become even more pressing in the future, ensuring that competition between the large, aggressive paper groups will grow as the number of likely targets dwindles.

Distribution and merchanting is becoming ever more important. Paper companies are buying up distributors. Three-quarters of this sector is already in the hands of the paper manufactures. Arjo Wiggins Appleton now is the biggest merchanting firm, holding 16% of the EC market. Stora-Feldmühle ranks second with a 10% market share. Other important players are SCA (Spicers), Bührman Tettersode and MoDo.

In the 1980s the trend of Nordic paper companies taking over other firms, was amplified by various factors. There are basically four reasons for the recent acquisitions:

- getting out of the volatile pulp market
- enlarging EC presence
- prepare for competition of US firms entering the European market
- paper companies had to find ways of investing the large sums they had earned in the long boom period of the 1980s.

The second reason became less important as the Swedish government applied for EC membership in 1991, but besides because of fear of EC-protectionism, Nordic firms also feel the need to be close to their customers. This even leads to some Swedish companies moving their head quarters out of Sweden.



First was Tetra Pak<sup>1</sup> and SCA is planning a similar move, according to Paper, 25 June 1991. SCA Packagings headquarters already moved to Brussels.

The merger mania shows the speed of consolidation in paper. The Nordic giants and New World challengers are based near their vast forest heartlands. New waste paper recycling technology means companies based nearer the markets have an advantage. As they began to work the new 'urban forest', fresh waves of cash-rich predators have emerged from the 'virgin forest' to buy them. This explains why there was creeping in an element of desperation to find target companies at the end of the 1980s.

The merger wave is speeding up the internationalization and concentration of the paper-converting industry.

It is remarkable to see what high prices the large paper companies are willing to pay for packaging companies. This indicates that the need for the big paper companies to get involved in packaging is much larger than the need of packaging firms to become part of larger conglomerates.

### 3.2 Economics of scale in paper converting

An area of interesting debate is the question whether the increasing scale resulting from the merger wave makes economic sense.

Some state that large scale is not only important for basic pulp and paper activities. Also in the paper-converting markets size is important, especially for hygiene products and corrugated packagings.

Although the corrugated packagings market is mainly local, companies like SCA sees economics of scale in areas of specialization, R&D, and because of ever more expensive machinery.

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1: Tetra Pak has recently moved its headquarters to Sweden again, for reasons including taxes, the appliance of EC membership by Sweden, and the Alfa Laval merger.



Although much talk is about market niches and customer-orientation, still investment projects almost always mean bigger machines and an increase of the scale of production. Computer integrated manufacturing is introduced in pulp and paper manufacturing but also in packaging.

Machinery becomes more expensive because more functions are integrated. Nowadays many packagers are also printers and designers.

Besides packaging companies increasing their printing capacities, also some packaging-printers have moved into corrugating<sup>2</sup>. This shows that the integration process is not only pushed by commodity producers, but also by commercial and technical prerequisites:

- commercial: Just in time production of their customers, mainly in the food business, means also stricter quality control in packaging. Also customers are demanding better printability, higher gloss, etc. (PPI april 1991).
- technical: The only way to make production more flexible and maintain quality standards is to integrate different stages into a kind of continuous flow process with computerized control.

The gigantic cost of these projects, is one reason why board producers are increasingly seeking to face the future by merging into broader conglomerates.

It may be doubted whether smaller firms can keep its investments at the level needed to meet the international competition. But this may also be the only aspect in which big companies really have an advantage.

There are also some disadvantages to the increasing scale. In contrast to the pulp and paper sector, paper converting is dominated by small and medium sized firms. In this sector a strong market orientation, and thus flexibility, is needed.

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<sup>2</sup>: See L'Imprimerie Rey, un imprimeur qui ondule, CEM juin 1992.



Also technology determines this smaller scale. A modern corrugator plant has an average capacity of 35,000t/y, compared with 200,000t/y for a paper machine. Cartonage industry has to come to terms with smaller average orders size from for instance in Germany 25 tons 10 years ago, to 14 tons nowadays.

In the packaging sector there is a great need for local supply combined with an understanding of the need for collaboration between individual units to service customers on a national level. Although some major customers are talking about organising corrugated supplies on a pan-European basis, their real need is to have a supplier who is sensitive to their country or regional requirements. The prospect of European brands, European standards and pan-European specifications, although very real, is some way off. There are too many national differences which relate to local market preferences. So, for example, it is not surprising to see one pan-European margarine manufacturer making slightly different formulations of the same product for each country, then packaging them in a wide range of containers, which also differ from country to country. Corrugated specifications for basically the same range of products all vary tremendously and it is going to take some time to sort out the differences.

The tension between advantages and disadvantages of large scale production in paper converting, may explain the specific structure of this industry.

Beneath the infrastructure of large companies facing restructuring and reorganisation lies a multitude of medium-sized and small non-integrated converters - particularly in sectors such as folding cartons and corrugated sheet plants.

There is a danger of medium sized companies being squeezed out of the reckoning. The threat comes from the large companies who serve the whole of Europe and small companies who have built up efficient local services. Many of these companies have been doubly hit by the effects of the recession and the corporate restructuring of their peers.

Life will undoubtedly remain tough, with carton converters in



particular continuing to achieve unacceptable returns. More closures and insolvencies seem to be the dire scenario for 1992. Technology developments continue to centre on the demand for more environmentally acceptable products, and the maximisation of productivity. Paper and board converters have much to look forward to in this respect. In manufacturing technology, the introduction of machines with automatic plate changing and direct digital imaging indicate how print continues to undergo significant change. Pre-press technology offers, perhaps, the greatest scope for evolution and revolution - the recent commercial agreement between Wace and Bowater (Packaging Week, November 13, 1991) illustrating how partnerships or alliances are likely to be the way forward. The challenges and opportunities facing the paper and board sector are likely to be even more numerous than in the last decade. At the moment, however, the industry continues to count the cost of the strategies of the 80s, and the prospect of lower growth in the 90s.

The larger companies, which increasingly dominate the sector, are experiencing heavy problems, resulting from the costly mergers and acquisition activities of the late 80s. Indeed the old adage 'marry in haste, repent at leisure' would be an apt description of the malaise affecting many of these corporations.

The corporate restructuring, such as that of Arjo Wiggins achieved by straight equity swaps, has appeared much more successful than the acquisitions funded by debt finance. The burden of higher financial costs has been exacerbated by the effects of the recession on turnover and profits. This has been amply demonstrated by the restructuring and manpower reductions by the likes of Stora and SCA. The consequence has been a sale of peripheral business by some of these giants - in the case of SCA the sale of the Reed Plastic Containers and Field businesses to their managers.

**To summarize:**

Whether the very big companies like SCA can be successful in the converting sector remains an open question. More important than sheer economics of scale will be flexibility and quality:



- There is a great need for tailor made solutions for customers. Just in time production of customers, mainly in the food business, means also stricter quality control. Also customers are demanding better printability, higher gloss, etc.
- In packaging, carton boxes etc. transport costs limit plant size. For corrugated case materials, it is estimated that 150 miles is the maximum distance over which transport costs still leave a reasonable margin for producers.
- There are still many differences between nation markets.

apart from the packaging sector, an important part of the paper converting industry is formed by the tissue industry. Here economics of scale are counter balanced by other factors. Wage costs in western Europe are only 3-4% of total costs, but transport costs are high. Therefore and because economies of scale and need for flexibility are machines with a capacity of 15.000-20.00 ton required, and plant capacities 50.000 ton are optimal. In Europe at the moment machines with capacity 5.000-40.000 ton and plants range from 15.000 to 100.000. But here marketing is very important, and at that level, companies can profit from large scale production, well-known brand names, etc.

For tissue production it seems the large companies have proved they can be successful. In packaging it remains a topic of discussion.



### 3. EUROPEAN COUNTRIES

Pulp production is relatively small in Europe compared to Paper and Board (P&B) manufacturing. Even the most important pulp producers produce more tons of P&B (except Portugal).

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Pulp and P&B production compared (1000 tons production 1991)

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	Pulp	P&B production
1. Sweden	6,768	8,343
2. Finland	4,821	8,760
3. Portugal	1,619	856
4. France	1,616	7,309
5. Spain	1,301	3,425
rest of Europe	3,137	
Total	19,062	62,097

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Source: PPI

Biggest P&B producer is Germany: 12,132 thousands tonnes, Italy ranks 4th, UK 5th.

In the EC, employment in P&B converting outweighs the P&P industry by 100%. This is partly due to its much higher labour-intensity. The next table shows how this is divided over the different sectors:

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EC- Employment compared

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	Production (mn. ECU)	Employment	Prod/Empl.
Pulp	2,293	12.000	19.1
Paper&board manufacture*	26,346	178.000	14.8
P&B converting	40,300	412,000	9.8
Printing	57,300	671,000	8.5
Newspapers/periodicals	21,500	211,000	10.2

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Source: Panorama of EC industry



EC-Employment in paper converting fell from 439,900 in 1981 tot 374,300 in 1986. After 1986 it rose again to 412,393 in 1989. West-Germany and the UK account for 55% of EC employment.

The next table shows employment figures for the EC countries:

Employment (1)											
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
EC	441 266	415 717	396 998	389 785	385 928	381 375	375 351	383 069	389 607	399 143	404 373
Belgique/België	10 536	9 808	9 454	9 456	9 438	9 740	10 405	10 619	11 212	12 233	13 250
Danmark	5 187	5 147	5 987	6 053	6 374	6 996	7 367	7 404	7 400	7 283	N/A
BR Deutschland	113 012	111 363	103 842	103 199	99 502	100 342	99 061	100 587	100 749	105 146	110 242
Hellas	4 420	4 927	3 369	3 275	3 555	3 441	N/A	3 950	3 585	N/A	N/A
España	32 066	29 110	25 177	25 511	24 377	22 432	23 715	24 023	23 970	24 633	25 298
France	73 478	69 999	69 635	67 011	66 853	67 158	65 972	68 883	71 908	72 593	71 589
Italia	30 212	29 030	33 802	34 250	36 418	36 109	33 311	34 002	34 496	34 079	33 481
Nederland	N/A	N/A	N/A	N/A	15 031	15 527	14 865	N/A	15 285	15 503	15 603
Portugal	5 633	5 987	5 883	5 920	5 942	5 817	5 747	5 980	5 971	6 133	6 228
United Kingdom	145 404	130 457	121 417	117 403	115 895	111 326	108 743	110 038	112 601	115 409	115 081

(1) Estimates are used if country data is not available, particularly in 1989 and 1990

Source: Eurostat (Inde)

Except for Italy, the UK, France and Denmark, employment in the EC countries is still rising.

The corrugated sector is contained by the FEFCO figures, which also contain non-EC European countries:

	1988			1989			1990		
	Production	Autres	Total	Production	Autres	Total	Production	Autres	Total
Allemagne	11 530	4 170	15 800	11 970	4 210	16 180	12 690	4 390	17 080
Autriche	1 331	541	1 872	1 419	550	1 969	1 529	598	2 127
Belgique	1 605	402	2 007	1 620	408	2 028	1 933	458	2 391
Danemark	1 661	518	2 179	1 699	610	2 309	1 752	576	2 328
Espagne	4 120	1 310	5 430	4 290	1 340	5 630	4 670	1 420	6 090
Finlande	1 190	280	1 470	1 184	297	1 481	1 175	340	1 515
France			11 377			11 500			11 400
Grande-Bretagne	10 964	4 323	15 287	12 389	5 232	17 621	12 900	5 367	18 267
Grèce	870	240	1 110	925	250	1 175	952	260	1 212
Irlande (1)	850	150	1 000	850	150	1 000	850	150	1 000
Italie (1)	5 650	950	6 600	6 300	1 100	7 400	6 300	1 100	7 400
Norvege	738	540	1 278	725	540	1 265	720	540	1 260
Pays-Bas	2 068	1 323	3 391	2 036	1 321	3 357	2 037	1 291	3 328
Portugal	975	323	1 298	1 219	454	1 673	1 194	433	1 627
Suède	1 927	742	2 669	2 378	660	3 038	2 320	655	2 975
Suisse (1)	850	150	1 000	850	150	1 000			1 500
Tchécoslovaquie							985	164	1 149
Turquie							3 087	944	4 031
Europe			78 768			83 626			26 680

(1) Estimation - Schätzung - Estimation.



There is a great variance in national developments in P&B production. 1991 witnessed 3 fast growing countries: Austria 5,4%, Portugal 9,7%, the Netherlands 4,4%, but also decreasing production in Belgium, Finland, Norway, Spain, Switzerland, UK (-12,9%!).



#### 4. EASTERN EUROPE

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##### Hugh market potential.....

The market potential of this area can only be gauged by comparing paper consumption per capita - 40 kilos per year - with the corresponding consumption in Sweden of 250 kilos. The question is only how rapidly this demand will increase.

In the long term most analysts are showing optimism for the prospects of the Polish P&P industry, because of: extensive forest resources; cheap energy costs; low labour costs; close proximity to Europe; growth prospects in the domestic market; and a relatively inexpensively entry cost.

##### .....but broken down economies....

In the former USSR, 1991 roughly 50% of the mills were adapting to a new business climate by setting up joint ventures etc. the other halve were waiting for government for a lead. Most investment projects are in the basic pulp and paper manufacturing sectors, sited near the border to serve exports (PPI aug. 1989, july 1991). PPI revised its estimates in sept 1991, downwards for P&B, upwards for pulp. This shows that when CIS will be integrated in a new international economy, it will be as producer of raw materials and simple commodities.

The official Polish statistics shows for NP a dramatic fall of production in 1988-1989, and some recovery in 1990. Printing paper rose until 1988 and fell less in 1989. Here 1990 showed a big decrease as with board.

Even in the former DDR, it is expected that the industry, employing 116,000 people will continue to decline. capacity utilization in 1991 fell below that of 1990. Production is only 50% of the former DDR.

Hungary is becoming a competitor especially for Austria, in the areas of both corrugated board sheeting and simple brown



folding cases. Hungary delivers these goods at prices close to its domestic rates, which results in a price differential of up to 50 percent. This is no wonder, with wage rates currently standing at the equivalent of Dollars 1/hour. Hungary and Bulgaria have the highest per capita corrugated board production of all COMECON countries. The dynamism of the Hungarian industry is virtually unique, ie, Hungary must be considered a special case.

...make Western firms very hesitant.

Despite Eastern Europe's great potential companies have, until now, shown little interest in carrying out direct investments, mainly due to the political uncertainty and financial risk. One of the characteristics of the sector is that investment costs for new capacity are extremely high. The current recession, with associated overcapacity, means that most companies are lying low. Stora is already in a favourable position, following the purchase of Feldmühle. Moreover, Stora and Feldmühle have had a joint sales organisation in eastern Europe for more than 20 years. Where hygiene products are concerned - an area with particular potential - the investment costs are not as large. This has led to SCA's subsidiary Mölnlycke starting production of hygiene products in both Hungary and Czechoslovakia.

In the eastern German Länder much attention is focused on the relatively successful packaging sector.

The perspectives for the local industry in Eastern Europe are mixed. Best chances are for Hungary and Czechoslovakia. In a country like Czechoslovakia the cartonning output in solid and corrugated board does not cover the constantly growing demand<sup>3</sup>. In other words, the COMECON countries must expand their capacity simply to cover internal demand. Is Eastern Europe in a position to supply western customers? Perhaps partially, for

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3: This paragraph is based on a summary of the speech made at the 1990 fecco congress by mr. Fred Havran from DWG mbH in Austria, published in Paperboard Packaging sept. 1991.



sheeting or half-finished goods, but as to whether they could supply western customers directly, the answer is NO. Don't forget, being close to customers is the slogan for this decade. Just-in-time is the motto. No customer is willing today to keep more than a week's worth of packaging in stock. Big customers are just barely willing to accept two days' stocks. It is an economic necessity to produce where the goods are used. Because the countries of Eastern Europe have only produced according to central plans until now, they are not yet in a position to implement a just-in-time philosophy with all it implies in terms of service. In addition, some types of infrastructure, like a communications infrastructure are simply not available there today. The question also arises as to whether a corrugated board plant with a yearly output of 160 million m<sup>2</sup> is really in a position to respond to western demands for small batch work.

Any sensational turning of the tables in the situation between Western Europe and COMECON countries can not be expected in the near future. The East will have to struggle with capacity and quality issues, and the West with issues of output and organization for just-in-time, as well as shipping problems. As levels of exchange between the blocs increase, which they will certainly do as the West takes advantage of the wage differential, it is also probable that exchanges of corrugated board packaging will intensify. This will involve primarily labour-intensive, high-quality products that can justify the corresponding transportation costs.



## 5. LABOUR

New developments like TQM and JIT have a large influence on working practices and labour relations. For example, JIT strategies of customers forces to maintain full stocks and respond swiftly.

An example of how new technology, new work organisation, tighter process control and new training needs are related is taken from Packaging Week (oct 1991).

UK Henry & Leigh Slater, of API, producing luxury packagings is training all operators to be their own Quality Control managers. In common with other API companies, Slater is introducing Company-Wide Continuous Improvement - CWCI - which is based on the just-in-time philosophy of eliminating waste and inefficiency. Besides working with its outside suppliers to ensure their deliveries conform to tighter specifications, Slater is concentrating within the plant on reducing makeready and downtime. Makeready is classed as internal, which is to do with the physical changes to the machine, and external, which concerns preparing all the materials for the next job. Most of the waste occurs in the external makeready, when one element cannot be found or the wrong one is brought. Most of the remaining action to be taken to improve quality is related to process control. To cut down-time and waste the scanner is to be brought on-line and linked at the coating head.

CWCI encompasses all aspects of the business: the suppliers, the machines and, perhaps most importantly, the people. According to general manager, Mr Booth: 'My attitude is that we pay for somebody's brain, and we get their hands as a bonus. Traditionally it has been the other way round: bring your hands but leave your brain at home.' Slater employs 98 people at present and is currently consulting with various parties about devising suitable training opportunities, starting with a 2-day induction course for new employees. Mr Booth would also like to bring in training for all operators on statistical process controls and analysis, to give them an understanding of what they are monitoring. Although none of these ideas is revolutionary in itself, they are radically different from the traditional management style at Slater.

Swedish ASSI claims to operate the most up-to-date corrugated plant in Britain. This plant is installing automatic materials handling systems. It provides another example of how labour is



made more flexible and control is tightening.

At the heart of the plant is a computer-based loading system which literally allows 'customers to schedule the plant'. The computer system facilitates the integration of sales, production planning and customer delivery. It provides an instant and accurate statement of the hours available on each production line. Furthermore, the system provides a mechanism for satisfying emergency orders, while 7-day-a-week operations, with no holiday shut-downs, gives maximum flexibility. The system is also linked to Assi Packaging plants nationwide, adding further adaptability to service customers' requirements. Corrugated board is produced on the principle that each customer order is manufactured as a single and complete unit and constraints are not imposed by deckling or grade run length considerations. Thus corrugator time is sacrificed for customer efficiency.

These processes are stimulated by international standardization like the ISO 9001 quality assurance standard. At SCA this resulted in all employees being required to undergo training in 'customer-orientation'.

In the packaging industry, Digital artwork & reproduction, or DAR, technology allows artwork and pictures to be electronically manipulated to suit different printing processes and products. DAR can reduce the time it takes to turn round a design; helps reduce costs; ensures any changes are made quickly; helps to increase accuracy and quality; and reduces confusion between client, repro house and printer. But perhaps the key to DAR is its flexibility. The technology is deskilling the pre-press process and making it attractive for the packaging producer - especially the bigger groups - to take on this role.

As in companies process-automatization and information systems are being put on-line, management control increases. Also workers must be trained in computer use. They are becoming more isolated at their job. Also in new jobs the skill level is often lower but from one employee more skills are required because of flexibility.

Besides these qualitative changes, also quantitative changes

appear. After the merger wave, now the paper converting industry is entering a period of consolidation and restructuring. For instance Stora decided at the end of 1991 to intensify a cost cutting programme of 4 points:

- a trimming and reshuffling of investment budgets,
- cutting its wide range of products and reallocating production, so as to concentrate production,
- stopping production lines and closing plants,
- cutting employment with an extra 2.500, which brings total employment losses for 1990-1992 to 6.000.

SCA has announced that it will cut a further 1,200 jobs in addition to the 3,500 job losses already announced for 1990-1993. Some 2,400 jobs went in 1990-91, with around 1,300 being cut in 1992 and 1,000 in 1993.

As can be seen for the following figures, employment in paper converting rose (except for 1991) sharply in all countries, especially Sweden. Pulp and paper manufacturing fell in most countries excl. Germany and specially in Sweden. This marks a transition in Swedish paper industries.

Adding productivity figures to the picture shows problems in Sweden and Finland. But part of Sweden's decline in productivity in tonnes per employee stems from higher value production.

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OECD figures Employment and production 1985=100

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Pulp, Paper and paperboard

	1988		1989		1990		1991(Q3)	
	Empl	Prod.	Empl	Prod.	Empl	Prod.	Empl	Prod.
France	96	118	97	124	98	128	98	126
Finland	91	114	91	115	94	116	96	107
Germany	99	117	101	122	103	132	103	
Sweden	101	111	98	114	91	112	92	116

Paper and paper products

	1988		1989		1990		1991(Q3)	
	Empl	Prod.	Empl	Prod.	Empl	Prod.	Empl	Prod.
France	103	119	110	125	111	126	108	133(Q2)
Finland	108	116	116	116	113	115	109	99
Germany	102	111	106	116	108	127	111	
Sweden	121	107	134	108	136	105	134	90

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Productivity. 1985=100

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Pulp, Paper and paperboard

	1988	1989	1990	1991(Q3)
France	122.9	127.8	130.6	128.6
Finland	125.3	126.4	123.4	111.5
Germany	118.2	120.8	129.4	
Sweden	109.9	116.3	123.1	126.1

Paper and paper products

	1988	1989	1990	1991(Q3)
France	105.8	113.6	113.5	123.1
Finland	107.4	100	101.8	
Germany	108.8	109.4	117.6	90.8
Sweden	88.4	80.6	77.2	67.2

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SOMO SURVEY ON THE PAPER CONVERSION INDUSTRY

Part two: country survey.

Finland, France, Germany, CIS, Sweden, Poland.

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**GENERAL**

**Sources of information.**

Important papers and magazines are:

**International:**

Pulp and Paper International (Annual surveys are published in July every year)

Economist Intelligence Unit: Paper and Packaging analyst

International Paper board Industry

**U.K.:**

Packaging Week

Paperboard Packaging

**France:**

Echos

Emballages

Papeterie

CEM

**German:**

Nachrichten für Aussenhandel

Das Papier

**Important sources are:**

FEFCO, annual reports (Federation of European Corrugated Board Manufacturers)

CITPA, International Confederation of Paper and board Converters in the EC

Panaroma of EC Industry

OECD

Eurostat

## Europe

### 1. Trends in production

Between 1979 and 1990 production rose fastest in Germany (45%) and slowest in Finland (0%), but 1991 showed Spain and Austria growing at very high speed and Finland actually falling:

1991	Total deliveries (square meters)	Index (1979=100)
Germany	5030	153
Austria	514	185
Danmark	463	-
Spain	2460	178
Finland	202	88
France	3919	140
Greece	223	149
Hungary	211	100
Italy	3796	147
Norway	181	150
Netherlands	847	132
Portugal	365	241
Sweden	510	123
Switzerland	317	115
CzechoSlovakia	268	101
Turkey	527	302

Source: CEM june 1992.

Only Finland showed a decline, whereas production in Hungary and CzechoSlovakia in 1991 was of the same level as in 1979. Turkey, Portugal and Spain showed largest growth. Austria and Germany, Norway, Greece and Italy also grew strongly.

Growth in Southern Europe is quite remarkable, but it must be remembered that, apart from Spain and Italy, production still is not very large in these countries.

Looking at sectors there is a great difference. Uncoated Woodfree, coated papers and tissue production are the fastest growing sectors:



P&B MANUFACTURING SECTORS

	Growth Europe	Main European production countries
Tissue	2.1	Germany UK
Wrap's	-3.4	Sweden Germany
Case Mat	2.1	France Germany
Folding BB	1.1	Sweden Finland
Total P&B	0.9	Germany Finland

Western Europe: Corrugating industry data & structure

	1991*	1992**	1993**
Shipments (mil sq m)	24371.3	25107.2	25868.7
Number of companies	388	393	394
Number of plants	574	579	580
Number of corrugators	728	729	731

\*estimate, \*\*forecast based on 1990 FEFCO Annual Report

Corrugating industry data, forecast\*

Sweden, Finland & Norway:

	Sweden		Finland		Norway	
	1992	1993	1992	1993	1992	1993
Shipments (mil sq m)	551.2	569.3	253.1	261.1	195.0	200.8
Companies	6	6	5	5	5	5
Plants	16	16	8	8	7	7
Corrugators	19	19	10	9	7	7

Germany, Austria, Switzerland:

	Germany		Austria		Switz	
	1992	1993	1992	1993	1992	1993
Shipments (mil sq m)	4945.1	5093.0	567.0	586.1	370.2	384.1
Companies	49	50	8	8	8	8
Plants	98	98	11	11	10	10
Corrugators	112	113	13	13	10	11

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Belgium, Denmark, Netherlands:  
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	Belgium		Denmark		Netherlds	
	1992	1993	1992	1993	1992	1993
Shipments (mil sq m)	766.5	789.3	508.3	523.2	874.2	900.2
Companies	12	12	5	5	8	8
Plants	14	14	8	8	15	15
Corrugators	17	17	12	12	18	18

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Greece & Italy:  
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	Greece		Italy	
	1992	1993	1992	1993
Shipments (mil sq m)	227.3	234.8	3901.3	4018.1
Number of companies	15	15	66	66
Number of plants	17	17	84	85
Number of corrugators	18	18	115	116

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UK & Ireland:  
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	UK		Ireland	
	1992	1993	1992	1993
Shipments (mil sq m)	3612.2	3720.0	230.4	237.9
Number of companies	57	57	6	6
Number of plants	101	100	6	6
Number of corrugators	146	145	6	6

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\*based on 1990 FEFCO Annual Report  
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The next tables show the development in Eastern Europe.

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CORRUGATED BOARD, EASTERN EUROPE  
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Country	Inhabitants	Estimated	Per Capita	Annual	
		Production in 1989 000 Tons	Production in Kg	No. Corrug	Output per Corrugator 000 Ton
Poland	37.1	250.0	6.7	8	31.2
CSFR	15.5	220	14.2	11	20.0
Hungary	10.7	10.0	19.4	4	52.0
Bulgaria	8.9	180.0	20.2	6	30.0
Rumania	22.6	250.0	11.1	6	41.7
USSR	287.6	1,700.0	6.0	40	42.5
Germany	16.7	200.0	11.9	6	33.3
Yugoslavia	22.7	340.0	14.9	23	14.8
TOTAL	422.7	3,348.0	7.9	104	32.2
Europe	352.4	11,982.0	34.0	693	16.0

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Source: paper packaging sept. 1990  
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## 2. Trends in trade

see first part of paper

## 3. Trends in investments

see first part of paper

## 4. Structure of the industry

### Main indicators (1)

(million ECU)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Apparent consumption	20 591	21 991	23 299	24 535	27 605	30 134	30 332	32 734	36 150	39 438	42 362
Net exports	213	242	376	545	636	756	637	469	432	501	399
Production	20 804	22 233	23 675	25 080	28 241	30 890	30 969	33 203	36 582	39 939	42 761
Employment (thousands)	441.3	415.7	397.0	389.8	385.9	381.4	375.4	383.1	389.6	399.1	404.4

(1) Excluding Luxembourg; except for net exports, estimates are used if country data is not available, particularly in 1989 and 1990

Source: Eurostat (Inde, Comext), CIPTA

Nombre total  
d'entreprises, d'usines et  
de machines à onduler  
par pays

Gesamtanzahl der Unternehmen,  
Fabriken und Wellpappenanlagen  
pro Land

Total number of companies,  
plants and corrugators by country

	Entreprises							Usines						
	1984	1985	1986	1987	1988	1989	1990	1984	1985	1986	1987	1988	1989	1990
Allemagne	49	46	46	46	46	46	47	99	97	95	95	94	95	97
Autriche	7	7	8	8	8	8	8	10	10	11	11	11	11	11
Belgique	9	9	9	8	10	10	12	11	11	10	10	12	12	14
Danemark	5	5	5	5	5	5	5	8	8	8	8	8	10	9
Espagne	45	45	45	83	84	92	90	50	50	50	88	90	98	97
Finlande	5	5	5	5	4	4	5	6	6	6	6	7	7	8
France	53	53	53	53	46	47	40	77	76	76	76	75	75	73
Gde-Bretagne	26	23	60	60	60	48	54	73	71	110	110	110	97	103
Grèce	26	38	40	36	37	38	15	13	14	42	38	39	40	17
Irlande	6	6	6	6	7	7	7	7	7	7	7	8	8	7
Italie	74	74	69	70	74	76	62	79	79	74	76	81	83	80
Norvege	5	5	5	5	5	5	5	7	7	7	7	7	7	7
Pays-Bas	9	9	9	9	9	9	9	17	17	16	16	16	16	16
Portugal	8	8	8	8	8	8	6	12	12	12	11	12	9	9
Suede	7	6	6	7	5	5	6	18	17	17	18	15	15	16
Suisse	7	5	5	6	6	6	6	9	9	9	8	8	8	8
Tchécoslovaquie							6							7
Turquie							54							55
<b>Europe</b>	<b>341</b>	<b>346</b>	<b>373</b>	<b>417</b>	<b>414</b>	<b>415</b>	<b>437</b>	<b>496</b>	<b>490</b>	<b>550</b>	<b>588</b>	<b>593</b>	<b>592</b>	<b>635</b>

(1) Estimation - Schätzung - Estimation

(2) Dont 2 non utilisés

(3) Dont 6 non utilisés

The number of corrugated enterprises in Europe has risen sharply from 341 in 1984 to 437 in 1990. Only in Italy, Greece and France there was a marked decline. France witnessed most plant closures. In Spain and the UK numbers doubled. The number of plants also grew, from 496 to 635. This shows the average company having 1.45 plants in 1984 and the same in 1990. In 1990 the number of plants shows a decrease in Spain and the UK, and an increase in Denmark, France and Italy.

In terms of machine capacity, Italy leads. But in terms of production, Germany still leads. The next table shows that there is a marked difference between countries, with France, Spain, Turkey, Hungary and Greece having relatively much machines with reels smaller than 2 meter.

Number of corrugators	Smaller than 2m	More than 2m.
Germany	8	94
Austria	1	12
Danmark	1	11
Spain	47	74
Finland	1	8
France	22	80
Greece	9	9
Hungary	1	4
Italy	16	101
Norway	0	5
Netherlands	0	18
Portugal	12 (estimate)	
Sweden	1	16
Switzerland	1	8
TsjechoSlovakia	1	7
Turkey	57	14

Source: CEM june 1992.

The European folding carton board industry operates on a smaller scale than corrugated, as is shown by the larger number of plants in 1991:

Europe: Number of folding carton plants, 1991

	plants
France	140
Spain	97
Portugal	10
Sweden	25
Finland	20
Norway	30
Iceland	2
Germany	160
Austria	50
Switzerland	53
Belgium	15
Denmark	50
Netherlands	30
Greece	1
Italy	65
Malta	2
UK	140
Ireland	10
Total*	900

\*incl converters with own carton plants

Source: 1990 FEFCO annual report



## 5. Employment

In the mid 1980s employment started to rise again and now it is above 1982 levels:

Employment (NACE 47 pulp, paper, paperconverting, printing, publishing (1,000s))

	1982	1987	1989
France	316.8	308.0	327
Germany	522.5	512.2	606

Source: Eurostat yearbook

Labour costs are highest in Denmark:

Total labour costs per employee, paper and board converting industry (ECU's)

	1981	1984	1987
Belgium	17,700	19,689	21,698
Denmark	16,825	21,258,	24,892
BRD	15,188	19,441	23,438
Hellas	7,936	N/A	N/A
Espana	9,986	11,564	13,196
France	16,059	19,087	21,231
Ireland	12,349	15,812	16,476
Italia	11,746	17,727	22,460
Nederland	18,389	21,582	23,471
Portugal	3,717	4,090	N/A
UK	12,147	15,499	13,358

Source: Panorama of EC industry

Average bruto pay man and women, blue collar workers (NACE 47: pulp, paper, paperconverting, printing, publishing compared with all industries)

	1982		1987		1989	
	NACE 47	All Ind.	NACE 47	All Ind.	NACE 47	All Ind.
France FF	32.45	28.99	46.00	40.55	ECU 6.93	6.21
Germany DM	14.86	14.83	18.20	17.83	ECU 9.59	9.42

% difference between nace 47 and all industries:

	1982	1987	1989
France	11.9	13.4	11.6
Germany	0.2	0.2	1.8

Eurostat yearbook

This table shows that the gap is much wider in France than in Germany.

Hours work usually by fulltime and part-time workers (NACE 47: pulp, paper, paperconverting, printing, publishing/all industries)

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	1982		1986		1989		
	NACE 47	All Ind.	NACE 47	All Ind.	NACE 47	All Ind.	
France	39.0	39.5			38.2	39.5	
Germany	41.7	40.8	41.1	40.7	36.7	38.4	

Eurostat yearbook

Employment (1)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
EC	441 266	415 717	396 998	389 785	385 928	381 375	375 351	383 069	389 607	399 143	404 373
Belgique/België	10 536	9 808	9 454	9 456	9 438	9 740	10 405	10 619	11 212	12 233	13 250
Danmark	5 187	5 147	5 987	6 053	6 374	6 996	7 367	7 404	7 400	7 283	N/A
BR Deutschland	113 012	111 363	103 842	103 199	99 502	100 342	99 061	100 587	100 749	105 146	110 242
Hellas	4 420	4 927	3 369	3 275	3 555	3 441	N/A	3 950	3 585	N/A	N/A
España	32 066	29 110	25 177	25 511	24 377	22 432	23 715	24 023	23 970	24 633	25 298
France	73 478	69 999	69 635	67 011	66 853	67 158	65 972	68 883	71 908	72 593	71 589
Italia	30 212	29 030	33 802	34 250	36 418	36 109	33 311	34 002	34 496	34 079	33 481
Nederland	N/A	N/A	N/A	N/A	15 031	15 527	14 865	N/A	15 285	15 503	15 603
Portugal	5 633	5 987	5 883	5 920	5 942	5 817	5 747	5 980	5 971	6 133	6 228
United Kingdom	145 404	130 457	121 417	117 403	115 895	111 326	108 743	110 038	112 601	115 409	115 081

(1) Estimates are used if country data is not available, particularly in 1989 and 1990

Source: Eurostat (Inde)



## FRANCE

### 1. Trends in production, numbers of employment.

Production showed a very marked increase in 1991, due to many new investments coming on stream. Consumption however only grew modestly. This lowered imports and boosted exports. With this year's German market becoming less of an outlet for French production, overcapacity will increase.

Packaging showed a differentiated picture, with packaging for the food industries increasing and the printing industry suffering from a recession.

incl. pulp.	1988	1989
P&B companies	114	114
P&B machines	256	251
Employment	28,200	25,450
P&B capacity	6,650,000 tons	6,860,000
Sales per empl.	1.33	1.57 Ffr mn.
Tons per empl.	300.9	325.7

Source: Taken from the Paper European Data Book 1991

#### FEFCO (corrugated board)

	1986	1987	1988	1989	1990
Number of plants	53	53	46	47	40
Number of machines	76	76	75	75	73
Employees			11,377	11,500	11,400
shipments (1,000 tons)	1761.4	1869.9	2011.0	2131.7	2212.9
productivity (ton p.p.)			176.7	185.3	194.1

In 1991 corrugated production (in tonnes) rose 2.1%, the lowest growthrate since 1985 (1990: 3.8, 1989: 6.0, 1988: 7.5, 1987: 6.2%). The first quarter of 1992 showed a 4% increase.

Packaging papers production declined 3.9% in 1991, cartons grew 2.2%.

Sanitary production grew (in tonnes) 11%.

In 1990 115 companies associated by Copacel (Employers org. in paper and board), produced 7.03 million ton paper and carton, worth 34.8 milliard francs in 153 factories employing 28,450 persons, 252 machines. (Emballages magazin avril 1991)

Packaging (P&B) sector consists of 800 firms, employing 50,000 persons producing 40 mrd. Francs worth. 575 firms produce cartonnage, 400 of them employing less than 50 and 66 employing between 51-100 people. (BFAI august 1991)

### 2. Trends in trade

France is the biggest European producer of corrugated materials, ahead of Germany. Foreign trade in corrugated fibre board is limited as production is mostly regional activity.

Exports grew very rapidly, in 1991 for instance the export of newsprint grew 72



% Imports fell drastically, for instance imports of tissues fell 10%.

### 3. Trends in investment

Three groups are looking to Eastern Europe for expansion: Sibille-Dalle, Pap. des Gascogne, Matussiere et Forest (Emballages Magazine Avril 1991 page 87. and CEM avril 191 page 51).

France has become a major receiver of foreign investment.

Major projects: 1990 PM: Corbehem (Feldmuhle/Behin), Stracel (newsprint), Gien (Kaysersberg), Orleans (Scott).  
1991: Alizay (Alipap), Condat, Toul (Kimberley Clark), Golbey (Norske Skog).

New tissue machines will be started in 1992 in Hondouville by Kaysersberg and Sept at Theil sur Heime. Only one new corrugator was installed in 1991, at Otor Dauphiné. One more will be installed in 1992, at Emin Leydier, Champblain.

### 4. Structure of the industry/multinationals

Although France is the 7th biggest market in the world in paper and the 9th producer, its firms play in the industry mainly the role of being taken over or foreign producers expanding (Scott, Kimberley Clark, SCA, David S. Smith). In 1970 29% of the industry was controlled by foreign capital, in 1990 36%<sup>1</sup> (but compare 54% in Germany and 56% in the UK).

According to Paper (6-11-1990, page 20) low wage agreements, supported by unions seeking stability and job-security) have encouraged foreign investment.

As may be expected, this foreign capital concentrates in the sector dominated by large sized plants and high capital costs: tissue, newsprint, etc. less in printing and specialized packaging. High natural resources, cheap (nuclear) energy and its central position in the EC makes France a good location for foreign investment in P&P.

However, according to Copacel (employer federation) medium sized firms will be in advantage because of their research, natural decentralisation and rapid decision making process in markets where customers are becoming more demanding (Paper 6-11-1991).

The high pace of technological development have caused many smaller firms to step out of the cellulose wadding business. Machines to make 'etuis compacts' for instance costs at least 10 millions francs.

#### The internationalization of some major French companies:

**Svenska Cellulose.** Bought leading producer of paper nappies Peaudouce in 1987.

**Feldmuhle** from Germany bought Papeterie Begin-Corbehem. Feldmuehle itself was bought by Stora from Sweden, which also acquired leading np manufacturer Chapelle Darblay.

**Wiggins Teape Appleton** (12,600 employees, itself a recent merger between U.S. Appleton and U.K. Wiggins Teape) merged in 1990 with fine paper producer Arjomari (7,000 employees) to become the highest value papermaking and merchanting company in the EC and 7th in the world: Arjo Wiggins Appleton. The mergers aims at

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<sup>1</sup> 38% in 1991 according to Economiste no 830 31/1/92 page 37



cooperation of the sales organizations and extending their distribution. AWA management planned an unfriendly take-over of Dutch KNP (30% owned by Canadian MacMillan Bloedel), but the board of AWA opposed further growth by large acquisitions.

**CMB Carton System (UK)**, folding carton company, has been sold by CMB Packaging to Compagnie generale des papiers (CGP), subsidiary of Novalliance and specialist in board packaging. CMB Carton System has two factories operating.

**Kaysersberg Packaging** is being acquired by David S Smith (UK) for F1,506 mil (Dollars 279 mil). Kaysersberg has plants at Kaysersberg, Kunheim and St Just en Chausee where it produces board and heavy-duty corrugated packaging. The company had 1990 turnover of F1,427.3 mil. and employs 1,150 people. David S Smith is the 2nd largest paper maker in the UK. Kaysersberg, which is a wholly-owned subsidiary of JA/Mont, jointly owned by the James River Corporation and Cragnotti & Partners Special Investment, will significantly boost the size of David S Smith. Kaysersberg's operations mirror many of David S Smith's UK operations and offer the group a number of synergistic advantages. Kaysersberg Packaging has recently completed an extensive programme of capital investment at its three plants based at Kaysersberg and Kunheim in Alsace and St Just en Chaussee, near Paris. The plants produce conventional and specialist heavy duty corrugated packaging; recycled paper board; and corrugated plastics sheeting which it also converts. The company has strong sales in France and Germany. The marriage of the Tri-Wall business with Kaysersberg's heavy duty operations should create a European market leader, while the combined forces of Correx in the UK and the French activities will create a premier force in Europe for the production and conversion of plastics corrugated sheet. The latter is particularly important, given the growing demand for returnable and reusable packaging. Perhaps most importantly, the acquisition should produce a ready in-house customer base for the additional output from the Kemsley Mill development programme due on stream in 1993. David S Smith Packaging division has 2,300 employees.

**SACOC** (corrugated box manufacturer) is having a stake acquired by Amcor Packaging (Europe), which will boost its holding to 75%, vs 49%. Amcor Packaging is moving toward full ownership of the French company.

Amcor's corrugated materials capacity in Europe totals 180,000 tpy from the Willander stake plus its stake in SACOC. Willander Hldg, a leading supplier of corrugated sheet materials, has had a 49% stake acquired by Amcor (Australia).

**PME Normande** (40% owned by German PWA) took over the domestic papers activities of Molnlycke. Now it produces 60,000-85,000 tons a year (worth 850 millions)

Other examples: in 1990 US Sonoco took a major share in Lhomme, France leading tube maker, NCB raised its share in SF Charfa to secure an outlet for its heavy paper sack paper, SCA took over Norembal (after taking over Clergeaut, Gvray and Tallineau), International Paper took over the French activities of Georgia Pacific, Australian Amcor took acquired 49% of the converter Thierval Sacoc (PP july 1991 page 36-37).

Main companies in P&P (sales 1990 thousands)

1. Group Arjomari (ffr 11,061), 2. La Cellulose du Pin (part of Saint-Gobain) (9,236), 3 La Rochette (3,897), 4 Sibille-Daille (2,845), 5 Gascogne SA (2,167).

Other main French companies:

Aussédats Rey SA (International Paper), Papeterie de Condat SA, Papeterie de Couronne SA, Papeterie Begin-Corbehem, Société Nouvelle Chapelle-d'Arblay, Bollere Technologies, Griffine Maréchal SA, Papeteries Matussiere et Forest, Socar Continentale carton Ondulé, Societe Francaise Charfa (cement sacks recently 26% acquired by NCB from Sweden), Norembal, Abzac, La Cellulose du Rhone et D'Aquitaine (CDRA) (pulp division of La Rochette), UPM (Stracel), Alipap, Papeteries de Golbey (newsprint, joint venture of Norske Skog (49%), Holtzmann Papier and Papeteries Matussiere et Forest, Emin Leydier, Kaysersberg (JA/Mont group).



SOCAR and OTOR account for one third of French of corrugated board production. Tetrapak and Combibloc (PKL) control the aseptic carton production.

**Sectors:**

Conversion of carton board is fragmented over 500 firms with 23,400 employees (Packaging in Europe: France)

On the basis of the report by The Economist Intelligence Unit, Packaging in Europe: France, based on 1988 figures, and CEM march 1992, giving production figures for 1991, we will give an overview of the following sectors:

Corrugating papers, corrugated fibre board, cartonboard, folding carton, packaging papers, heavy duty paper sacks, and paper bags.

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**Corrugating materials**

	1988	1991
Number of firms	29	
Employment	3,000	
Output ('000 tons)	1,867	2,287 (+4.3%)

Most important producers and their market share (>100,000 tonnes)

La Cellulose du Pin, Emin Leydier, OTOR, Papeteries Etienne, Papeteries de la Seine, La Rochette-Venizel, Soc. Gen. des Pap. Limousines, SOCAR.

Trend: French industry is active worldwide and appears to be consolidating positions in Europe, notably Germany and the UK. France remains the biggest European producer in 1991.

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**Corrugated fibre board**

	1988	1991
Number of firms	47	
Employment	11,430	
Output ('000 tons)	1,875	2,262 (+2.2%)

Most important producers and their market share

SOCAR (20%), OTOR (13%), Glepac (7%), Rochette-CO (7%), Clergeau (5-6%), Laurent Espaly (5-6%), Kaysersberg (5-6%)

Trend A mature market, very dependent on the general level of economic activity. General packaging firms are specializing in certain sectors.

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**Cartonboard**

	1988	1991
Number of firms	?	
Employment	?	
Output ('000 tons)	605	653 (+2.2%)

Most important producers and their market share

Cascades, Beghin-Say (Stora), Pap. Lancey/Aussedat Rey (IPC)

Trend A mature market, very dependent on the general level of economic activity.

---

**Folding carton**

	1988	1991
Number of firms	554	
Employment	24,386	
Output ('000 tons)	374	

Most important producers and their market share

Cajofe, Nord Est, Saillard, Devoicelle, Mead, 4P

Trend 300 out of 374 thousand tons are produced by firms which are part of larger groups. Special subsectors are very highly concentrated. Growth prospects are good.

---

**Packaging papers**

	1988	1991
Number of firms	24	
Employment	2,500	
Output ('000 tons)	466	417 (-3,9%)

Most important producers and their market share

Pap. des Gascognes, La Cellulose du Pin, Pap. Sibille Stenay, Pap. Dalle et Lecomte, Pap. Matussiere et Forest, Pap. Com. Gen. des Pap.

Trend A very differentiated product, with good outlooks.

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**Heavy duty paper sacks**

	1988	1991
Number of firms	7	



Employment 1,422  
Output 689 mn. 652 (-5.0%)  
Most important producers and their market share  
Lembacel (La Cellulose du Pin), Pap. des Gascognes, Ciment Francaises,  
Ciment Vica, Blanc Omya, Charfa (NCB), Chupin.  
Trend Both integrated paper companies and end-users are active in this  
sector. Little growth to be expected, but decline has stopped.

---

#### Paper bags

	1988	1991
Number of firms	60	
Employment	2,000	
Output	50	

Most important producers and their market share  
Gault et Fremont, Lembacel (La Cellulose du Pin), Mingaud, Roland.  
Trend An extremely fragmented sector with strong growth.

---

#### 6. Impact of environmental considerations

Autumn 1991 the French government revised a draft decree on packaging, putting stress on useful exploitation of recovered materials and laying responsibility by the producers and importers. date of implementation will be 1-1-1992. The decree is less demanding then the German. (Packaging Week nov. 13, 1991 page 17)

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## SWEDEN

### 1. Trends in production

Liquid packaging and folding boxboard and woodfree printing and writing papers grew strongly, 6-15%, general sector output just grew 0.8% in 1990 (Paper 25-6-1991).

incl. pulp.	1988	1989
P&B companies	24	18
P&B machines	127	125
Employment	41,000	40,500
P&B capacity	8,630,000 tons	8,905,000
Sales per empl.	2,439 SEK mn	2,790 SEK mn
Tons per empl.	444	454

Taken from the European data Book.

### FEFCO (corrugated)

	1986	1987	1988	1989	1990
Number of plants	6	7	5	5	6
Number of machines	17	18	15	15	16
Employees			2,669	3,038	2,975
shipments (1,000 tons)	269.2	280.0	284.0	281.8	278.8
productivity			106.40	92.76	93.71

Decreasing labour productivity in tons per employee partly marks an upgrading of production.

Whereas total Swedish Paper and Board production fell 0.9%, due to a fall in domestic demand of 6%, tissue production still grew 2.6%. In 1990 production had fallen 0.3%.

### 2. Trends in trade

In the first half of 1991, the EC accounted for 65% of Swedish p&p exports. Exports to the EC grew 1% for the whole of 1991, while total exports remained the same. Deliveries to Germany rose sharply, but deliveries to France fell 7%. About 10% of the EC p&p production is owned by Swedish firms. The rise in exports is partly explained by internal trade between Stora and Stora/Feldmuhle.

### 3. Trends in investment

The larger Swedish firms have all been despartely trying to get a firm foothold in the EC. Investment in their home-country was far less. SCA, Stora, Assi, Munksjö and many other companies bought substantial numbers of EC companies.

Earnings of the big 3 were down 26.6%. Domestic investment fell 30% in 1990-91.

In 1991 new investments were postponed by Stora (in liquid packaging) and SCA (newsprint in Austria and the UK). SCA is engaged in a huge divestment programme aiming at selling Skr 5 bn of assets.

Companies are moving their head quarters out of Sweden. First was Tetrapak, now in Switzerland. SCA is planning a similar move, according to Paper, 25 june 1991. Tetra Pak has moved its headquarters back again in 1992.

### 4. Structure of the industry/multinationals

The Swedish paper industry is very concentrated with Stora holding 35% of mill capacity, MoDo 24% and SCA 16%.

Foreign ownership of Swedish companies may soon be allowed by law. Two main Swedish producers, Assi and NCB may be early victims.



Biggest is Stora Kopparbergs. Stora paid \$ 1 billion to take over Swedish Match, the world largest match maker also engaged in packaging. In 1983 pulp and sawn timber accounted for almost 50% of Stora's sales, in 1988 for 10%. Stora is investing heavily in liquid packaging. Stora bought Feldmühle for \$2.4 billion. Stora also owns Akerlund & Rausing (packaging).

Second is Svenska Cellulose SCA, now the biggest sanitary papers producer of Western Europe with Mölnlycke, Edet and Peaudouce. SCA bought Reedpack (\$1.7 billion) and a 26% share of MoDo. in 1990. In 1988 it bought Italian Italcarta (corrugated board), Laakirchen (austria, hygiene and printing paper).

Third is MoDo (Mo och Domsjö) paid \$ 1 billion to take over Hølem Bruk and Iggesund Bruk (which had recently taken over U.K. Thames Board) in 1988 thus becoming a leader in fine papers and the largest European manufacturer of paper and board. MoDo sold its MoDo-Holmen (tissue and hygiene products) to Metsa-Serla (Finland) in 1989.

## 5. Employment

Total pulp paper and board: 39.000 in 1990

As the industries cuts investment and grows very slowly, the big three report losses in 1990 and workers are faced with redundancies. Stora cell is making 400-500 people redundant on 1991. SCA reduced its workforce in Ortviken/Sundsvall, and plans a 5-6% overall reduction for a considerable part in white collar employment.

Pay: In general wages are under pressure. Business and labour agreed to limit wage increase.

Training: As in companies process-automatization and information systems are being put on-line, management control increases. Also workers must be trained in computer use. They are becoming more isolated at their job.

Training costs employers around 1.5% of labour costs. training happens on company level. A agreement exists to rise training expenditure in 1988-1991 and to improve facilities for women. A national office coordinates some of the activities. Young persons can get a contract for 50% learning, 50% working. (minutes ICEF paper conference 24-26 april 1989)

SCA signed a training agreement with Metsa-Serla for its new LWC mill worth Skr 60M.

## 6. Impact of environmental considerations

The unions decided in their 1988 congress that a joint approach is needed. An agreement has been made between unions, government and employers.

Industry is putting heavy pressure on government to depart from its stand that Sweden should be free of nuclear power in 2010.

Government is considering a cut in energy taxes to support industry. A tax on nitrogen oxide has been introduced in 1-1-92. Unlike taxes on sulphur and CO<sub>2</sub>, this tax will be redistributed to industry, on the basis of their environmental performance (ECN 24-2-92 page 4).



## SOVIET UNION/CIS/RUSSIA

### 1. Trends in production

The sector is in great problems. There is a huge shortage of paper in the former Soviet Union.

In 1991 roughly 50% of the mills were adapting to a new business climate by setting up joint ventures etc. the other half were waiting for government for a lead. 1992 will see only one new PM startup making 200,000 t/y newsprint. (PPI april 1991)

#### Production CIS (1000s tons)

	1986	1987	1988	1989	1990	1990 in % of	
						1985	1989
Zellulose	8242	8232	8249	8111	7525	95	96
Holzmasse	1989	1999	2067	2037	1888	96	93
Papier	5206	5243	5334	5334	5240	104	96
Karton	3206	3148	3249	3140	3065	107	98

Source: government statistics

### 2. Trends in trade

A severe decrease of exports in both paper and cartonnage has occurred ever since 1987:

Exports USSR	1987		1988	
	mn. tons	1000 Rb	mn. tons	1000 R
Papereports	762,907	258,567	695,247	242,936
Cartonnage	488,646	131,247	404,100	115,591
	1989		1990	
	mn. tons	1000 Rb	mn. tons	1000 R
Papereports	667,865	237,220	568,000	191,873
Cartonnage	352,521	105,120	284,410	82,836

Source: government statistics

Exports of writing paper even halved in 1989-1996

Due to contracts, made during the Brezjnev period, the USSR is forced to export newsprint mainly to the former Comecon countries.

### 3. Trends in investment

Investment: Most investment projects are in the basic pulp and paper manufacturing sectors, sited near the border to serve exports. (PPI aug. 1989, page 38-40, and july 1991 page 73). Western firms are still very hesitant. Most projects are joint-ventures, where they don't take the majority.

In 1991 only one new PM started in the former Soviet Union, in Balekna, making 200.000 t/y of newsprint.

US Rolling Meadows-based Redex Packaging Inc., a maker of food-packaging equipment, inked a deal to build a food-packaging plant in the Ukrainian city of Zaporizhia.

Although it is generally agreed that to improve the distribution of food, packaging has to be improved strongly, not much activities in these field are reported. There is only one important producer of liquid packaging board, Syktyvkar Combine.

TetraPak has started 3 joint-ventures in the former Soviet Union. Kuban (District Krasnodar/N Caucasus), agricultural combine, and Tetra Pak have agreed to set up a JV for the production of wrapping and packing for the food industry products: milk, butter, margarine, meat, meat products, fruit, fruit juices, vegetables and frozen foods. The project also foresees the production of asptic materials for the long-term storage of liquid foods. Tetra Pak will hold a share of 50% or \$45 mil in the new company.

Tetra Pak-Luch (Podolsk, USSR), a new milk and juice containers plant, has been set up as a joint venture in a partial conversion of the Luch Experimental Works



plant, a classified operation that formerly produced sophisticated military components. The new Tetra Pak-Luch plant will produce cardboard containers for milk and for orange, apple and guava juices. The plant is 15 miles from Moscow and had, as part of a secret military industrial complex, produced parts for nuclear reactors, lasers and metal optics that are used in advanced weapons systems. Only a portion of the plant has been taken over by the Tetra Pak joint venture.

James River is planning a tissue mill in Estonia, in cooperation with Metsa Serla and former-Soviet partners holding 60%.

The private paper company Wolga formed a joint venture in which a US firm should take a part of 30%.

In Latvia, plans call for an integrated greenfield mill, including both a pulp mill, NP machines and a wrapping line. Total costs are estimated \$229 million. This projects are part of a cooperation scheme with Estonia.

#### 4. Structure of the industry/multinationals

5 plants produced NP in 1989, total capacity 1,842,500 ton. 8 are more then 50 year old, 12 20-30 year. Only 2 were started in the 1980s.

A hugh problem is the conversion of the former ministry for the forestry industry in a private concern Bumaga, which still dominates the sector. About 30% of the plants representing 40% of the sector, are part of Bumaga. Plants outside Bumaga have been confronted with a stoppage of deliveries (NfA 21-1-92).

#### 5. Employment

##### Employees (1000s)

	1980	1985	1986	1987	1988	1989	1990
Chemical-wood	2782	2753	2752	2710	2648	2549	2456
of which wood/paper	1759	1719	1726	1698	1663	1596	1539
Industrial workers (1000s) cellulose/paper							
industrial productive workers	221	226	225	220	206	194	189
of which workers	192	194	194	189	177	165	161
leiters/angestellte	30	31	31	31	29	28	28

Source: Industriestatistics RSFSR Moskou 1991

According to PPI in the pulp and paper industry of the USSR 335,000 people were employed in 1987.

##### Firms according to empl. size (%)

	number of firms	production (wholesale prices)	number of industrial empl.	averag ind.prod. 'Grundfonds'
wood/wood-processing/ cellulose/paper				
<201	49.0	7.3	8.7	5.2
201-500	23.6	14.4	17.0	11.8
>501	27.3	78.2	74.3	83.0

Investments	1985		1988		1989		1990	
	mn. Rb	%	mn. Rb	%	mn. Rb	%	mn. Rb	%
Total industry	41992	100	52599	100	58136	100	52850	100
Cellulose/paper	500	1.2	573	1.1	414	0.7	552	1.0

  

Investments in 5-year plan	1976-1980		1981-1985		1986-1990	
	tot.	average	tot.	average	tot.	average
Total industry (mrd. Rb)	161.9	32.4	192.1	38.4	259.6	51.9
Cellulose/paper(mn. Rb)	3289	658	2786	557	2620	524



## FINLAND

### 1. Trends in production

The economic crisis in Finland leads to heavy restructurings, strengthened by the fact that Finnish paper industry is still heavily dependent on raw materials and commodity production.

1991 saw the disappearance of two paper sacks producers leaving only Enso-Gutzeit and Wisa Forest.

#### FEFCO-figures (corrugated board)

	1986	1987	1988	1989	1990
Number of plants	5	5	4	4	5
Number of machines	6	6	7	7	8
Employees			1470	1481	1515
shipments (1,000 tons)	119.7	120.0*	124.9	125.7	125.8
productivity (ton p.p.)			84.96	84.87	83.04

\*: estimated

### 2. Trends in trade

92% of production is being exported. Because of the problems in the USSR, exports fell drastically. 70% of exports goes to Western Europe (1989).

### 3. Trends in investment

In corrugated both UPM (in a post printing machine and new unit) and Metsa (new production line) invested heavily.

Valmet took over Tampella Papertech Oy.

### 4. Structure of the industry/multinationals.

In contrast to the P&P industry, paperconverting industry is rather small and small scaled, aimed at the domestic market.

Most important companies are, besides Kymmene, Enso-Gutzeit Oy, UPM and Metsä-Serla, 17,915, 14,500 and 13,500 employees resp. Metsa bought a 33.1 stake in UPM in 1990. Metsa was the only company of the big 4 to report a loss over 1990. In 1989 it sold all its paper tissue activities to German PWA. In 1990 it acquired full ownership of UK merchanting company Alliance Paper and also took over leading UK paper converting and merchanting company Hedsor.

Most of the companies in Finland are owned by Finns and are fairly modern, although not very big in international standards.

Liquids packaging is only produced by Enso-Gutzeit Oy. Four companies are producing corrugated: Enso-Gutzeit Oy, UPM:Walki Pakkaus (UPM is part of Repola), Lahti Mills, Tampella. Tampella was the biggest in 1989, but its biggest owner the Skop bank went bankrupt and now future is uncertain. Tissues are produced by 3 companies, Metsa, UPM and Nokia Paperi. Nokia sold its tissue activities to J/Mont (US).

Printing for cigarette packaging is done in one small firm, owned by Ahlstrom, employing 40 people (40% women) with 2 rotographic printers and a turnover of 27 mn. FIM

Envelopes and other office papers are produced by one firm (UPM). In papersacks 4 plants were active in 1990, but two of them merged (Wisaforest, part of KYMMENE, and Enso), one of them stopped. UPM stopped papersack production in Valkeakoski, concentrating in Pori.

In corrugated industry, some companies, like Metsä Serla are planning to start the ISO 9000 project. Nokia recently got a ISO 9000 certificate at its tissue plant.

### 5. Employment

The second half of the 1990s saw a dramatic decline of employment in forest industry 6,500 out of 70,-75,000 workers has been laid off and another 6,500 are working a shortened week. This may rise to 10,-15,000 workers being laid off and the same amount working short weeks (FT 24-5-1991). However this is not equally

distributed over all sectors. For instance Repola/UPM cut employment in 1989 in paper, board and pulp from 8,158 to 8,112 in 1990. But in paper conversion employment increased from 2,955 to 2,805 in 1990.

1990	employment	wages (1000 FMK)	social expenditures (1000 FMK)
Forest industry	13,210		
Paper products	4,720		
Paper sacks and bags	767	79,296	20,873
corrugated and other packaging	2,820	298,644	78,885

Finland has a very high trade union rate.

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## GERMANY

Sources of information: mostly statistics from the Statistisches Bundesamt. for the new Bundeslander, separate statistics are provided.

### 1. Trends in production

German industry is concentrating on high value products. Basic products like linerboard, semi-chemical pulp and fluting are not produced anymore in Germany.

#### Paper converting production (tonnes)

	1988	1989	1990
Envelopes	115,837	129,879	131,211
Paper sacks/bags	104,374	110,370	119,073
Corrugated	2,654,125	2,798,012	3,074,646
Packaging	1,113,260	1,227,049	1,411,285
Hygiene	1,115,054	1,239,920	1,411,203

source: STBA FS 4, R3.1

New mills at PWA Aschaffenburg and Europa Carton came fully onstream in 1991.

The corrugating industry grew with 10% in the first half of 1991, but growth fell to 5% in the second half of 1991.

#### FEFCO figures (corrugated board)

	1986	1987	1988	1989	1990
Number of plants	46	46	46	46	47
Number of machines	95	95	94	95	97
Employees			15800	16180	17080
shipments (1,000 tons)	2129.1	2198.2	2320.5	2417.1	2661.9
productivity (ton p.p.)			146.87	149.39	155.84

In Western Germany 48.000 thousands people employed in the paperindustry, produced 11,3 mn ton, in Eastern Germany productivity was 4 times lower, 38.000 people producing 1,4 mn ton. (1989 figures)

### 2. Trends in trade

The former USSR used to take 40% of the german decorated and other special grades production, but this export has broken down (Paper, May 1992:29).

### 3. Trends in investment

In september 1990 the first new cartonboard machine in 10 years came on stream in Europe. This happened in Germany. For testliner two new machines were installed in the early 1990s, also both in Germany.

It may be interesting to look at investemtns projects in the eastern counties:

Hartmann-Schwedt (Schwedt, Germany), JV operation 85%-held by Brodrene Hartmann (Denmark) and 15% by Schwedt Papier & Karton (Schwedt, Germany), paper and board concern, began producing egg packaging on 09 December 1991, following investment of DM30 mil in its creation. The company will produce up to 140 mil/y egg packs from waste paper, and is one of the first JVs between Denmark and the former E Germany. Hartmann has made available latest machinery for production of food packaging from 100% waste paper, while Schwedt Papier supplied qualified staff and regional infrastructure.

Mivepa, mitteldeutsches Verpackungsmittelwerk (Arenshausen, Germany) and 51% of Bretschneider Verpackungen (Wolfsgruen, Germany), packaging material concerns, have been purchased by Zewawell PWA-Verpackungswerke (Mannheim, Germany), which claims to be the largest Germany manufacturer of corrugated board packaging.



Mivepa produces and convert corrugated board into packaging, mainly printed folding cartons. Bretschneider has capacity of around 2,000 t/y, producing and trading corrugated board packaging. Mivepa has a 20,000 tpy capacity and is located near the corrugating paper and board plant of PWA.

Some other investments projects include:

- PWA Dekor is cooperating with Penig Paper. PWA's Sewawell is acquiring control of two converters.
- Melitta taking over the specialty papermaker Neu Kaliss Feinpapier (vacuum bags).
- Haindl Paper building a 750 DM cartonboard mill in Schwedt
- Franconia Verpackung and Bischof & Klein will produce paper sacks in a joint venture.
- Leinfelder is leading a consortium to take over Schwedt Papier und Karton.
- Enso-Gutzeit building a 850 DM NP mill near Leipzig
- Holzmann building a NP mill in Bitterfeld.
- Dresden Papier (15 mills) is engaged in an investment program. French Matussière et Forest is negotiating a take-over.

#### 4. Structure of the industry/multinationals

Of the different sectors in this industry, highest concentration is to be found in the paper and pulp manufacturing sector where 6 companies account for 44.3% of turnover, 41.0% of employees and 52.2% of investment, and even more at "hersteller sonst. papierwaren" where the largest 6 companies account for 52.6%, 44.4% and 57.8% resp. In this sector concentration was very rapid in 1987-88 resulting in employment losses as in 1987 the big 6 accounted for just 50.9% of turnover but a higher share of employment (44.4%).

Lowest concentration is to be found in the printing sector, where the biggest 6 companies account for 13.0% of turnover, 9.8% of employees and 12.9% of investment, and in paper converting (16.6, 11.8 and 12.4 resp.). In this sector the biggest 6, and also the biggest 10 lost some of their share in turnover, so a tendency to deconcentration existed here in 1987-88 (STBA Fachserie 4/4.2.3). It is remarkable that in this sector however, the biggest companies enjoy the biggest difference in productivity, as can be seen from the difference between share in turnover and share in employees.

#### 5. Employment

The German Institut für angewandte Wirtschaftsforschung (IAW) estimates that in Eastern Germany, employment in the paper-converting industry was 20,000 and now has fallen to 8,000 (including 'Kurzarbeit'). It expects a further decrease to 4,000 people.



Employment in Western Germany (per 30-9)						
employees	of which women	angestellte	of which women	arbeiter	of which women	home-workers
<b>Zellstoff/papier/pappe-erzeugung</b>						
1987						
1988						
1989 52,824	6,737	13,082	3,388	39,841	2,849	
1990 50,701		12,568		38,133		
<b>Papier und pappeverarbeitung</b>						
1987 100,044	36,440	26,910	9,897	73,134	26,534	3,399
1988 100,301	35,290	27,226	10,239	73,075	25,051	3,850
1989 105,645	37,590	28,630	10,813	76,725	26,778	3,804
1990 117,543		29,253		83,290		
<b>Tapeten/spez. papieren/verpackung</b>						
1987 56,134	17,661	13,845	4,976	42,289	12,685	532
1988 57,754	17,215	14,970	5,325	42,624	11,629	958
1989 59,843	18,136	15,503	5,824	44,360	12,512	851
1990 62,643		15,620		47,023		
<b>Schreibwaren/buchbinderei</b>						
1987 22,579	10,641	6,253	2,369	16,326	8,272	1,774
1988 21,915	10,829	5,835	2,330	17,080	8,499	1,458
1989 24,466	11,984	6,234	2,510	18,232	9,474	1,444
1990 25,773		6,666		19,107		
<b>Sonst. waren aus papier und pappe</b>						
1987 21,331	8,138	6,812	2,552	14,518	5,586	1,094
1988 19,732	7,247	6,421	2,524	13,311	4,723	1,433
1989 21,037	7,470	6,893	2,678	14,144	4,791	1,508
1990 24,127		6,967		17,160		
<b>Druckerei</b>						
1987 141,690	42,284	48,329	18,316	93,361	23,968	27,340
1988 143,733	42,133	48,563	16,324	100,170	25,799	18,727
1989 152,681	47,464	47,015	18,202	105,666	27,262	20,882
1990 180,380		54,671		125,709		

source: Fachserie 4, reihe 4.3.3 Stat. Bundesamt 1989/ FS 4 R 4.1.1 1990.

In the former DDR, 20,000 employees were working in the paperconverting industry. In 1992 it is estimated at 8,000, incl. Kurzarbeit. According to the IAW this will drop to 4,000.



## POLAND

### 1. Trends in production

P&B production rose 5% in 1988. In 1990 production fell. For an overview see Branchenbild nov. 1990 and PPI april 1989 page 70.

In the long term most analysts are showing optimism for the prospects of the Polish P&P industry, because of: extensive forest resources; cheap energy costs; low labour costs; close proximity to Europe; growth prospects in the domestic market; a favorable and stable political climate; and a relatively inexpensively entry cost.

The government has recognised the importance of this industry and set up a large sector and investment programme. 12 major mills and 2 converting plants will be privatised on the short term.

The official Polish statistics shows for NP a dramatic fall of production in 1988-1989, and some recovery in 1990. Printing paper rose until 1988 and fell less in 1989. Here 1990 showed a big decrease as with board:

#### Polish production figures

Production	1985	1986	1987	1988	1989	1990
Newspaper (1.000 tons)	81.7	58.6	69.1	21.9	8.4	25.0
Printing paper (1.000 tons)	151	180	215	276	266	195
Board (1.000 tons)	221	226	221	227	241	141
Exercise-books (number)	11.0	12.3	11.8	11.7	9.8	6.4

Source: government statistics

### 2. Trends in trade

Polish share in world paper production fell from 0.8% in 1980 to 0.6% in 1987.

### 3. Trends in investment

The P&P industry attracted more investment during the last years. After a fall in 1987 investment also rose in absolute figures.

#### Investment figures, Mrd Zloty, constant prices

	1985	1989	1990
Investment in wood and paper ind.	7.7	9.5	11.7
% of total investment	1.5		2.0

source: government statistics

In Kwidzyn, PM3 was completed, producing 40,500 t/y fine paper.

### 4. Structure of the industry/multinationals

The industry will be privatised. The sector is in poor shape. Only 21 out of 119 are less than 20 years old, while 60 are more than 50 years old. For the moment no multinationals are active in Poland. The Polish government wants to take a sectoral approach in privatising, not putting every single for sale independently. 1992 will witness the first firms being sold to western companies. International Paper is the first, buying the second biggest paper manufacturer Kwidzyn, which produces pulp, NP and coated folding carton board.

There are 41 pulp, paper and paper converting mills. The biggest 20 take account of 90% of production, the biggest 4 45%. 63% of the output is in packaging materials, 25% in NP, 7% in tissues. One important converter is Kielce, which received large investments in 1989. Another important converter is Swiecie, integrated plant.

### 5. Employment

In 1988, 45.423 people were employed by the P&P industry according to PPI. Paper converting accounts for 11,000 persons and 34 economic units.



In 1990 employment in the paper industry has fallen to 30.000.

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Employment paper industry: (1000s)

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1985	1986	1987	1988	1989	1990
47.7	48.2	47.6	46.8	45.8	41.9

More detailed:

	tot. employment	workers
1986	48212	40226
1987	47634	39655

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Source: Statistical Yearbook from Poland

Wages are 5-10% of those in the Swedish paper industry. Productivity is much lower. The average mill worker's wage is only \$130 a month, a top manager's yearly wage is \$3,000. The number of working days is between 270-290 a year, compared with 310-330 in European mills. (Paper 7-4-1992). In the biggest plant (Swiece) 4,000 employees produce 388,000 tons of paper and 282,000 tons of pulp. Of these 4,000, 1,300 are however maintenance personnel.

somo survey

**PART 3: SUBSECTORS**



## 1. PACKAGING

### Structure and important companies

The packaging market is very complicated, as glass, metal and carton based systems exists along side each other, sometimes as substitutes.

The biggest European packaging companies, mainly paper and carton based are shown in the next table:

Paper and carton based packaging; Leading European companies

	European Packaging Sales			European Sales	Packaging Sales
1	2,030	Tetra Pak*	Sweden	2,538	3,760
2	1,587	Stora	Sweden	10,997	1,692
3	1,321	SCA	Sweden	5,121	1,321
4	1,056	ASSI	Sweden	1,273	1,077
5	758	Modo	Sweden	2,928	808
6	727	Enso Gutzeit	Finland	1,895	908
7	683	Buhrmann- Tetterode	Netherlands	2,486	842
8	675	Lin Pac	UK	688	852
9	625	Bowater	UK	1,244	691

Vertical integration has existed in the packaging industry for many years, although its extend has fluctuated.

There are two reasons for the increasing scale of packaging firms. First, there is a continuous integration happening between food processing, food packaging and food distribution. This was the reason for Tetra Pak to buy Alfa Laval.

Secondly, the European food multinationals, which are the main customers, are planning to concentrate their production, to develop European brands, and to standardize packaging and distribution. They find themselves confronted by retail chains



which are becoming bigger and more powerful, and who are able to press their interests. In between them, the packaging industry is too small to influence developments and has to adapt to the wishes of the food processing industry. It may be expected that, in the context of "Just-in-time" production, the food processing industry wants the packagers to work "wall-to-wall". In the longer run it may even be the case that the food industry decides that filling and packaging is no core activity, and go looking for partners to do contract-packaging. They then will prefer firms which are big enough to do the necessary investments in large quantity systems, to satisfy high international standards, and to be able to operate in all countries where the food-processing industry is operating. Therefore, the larger companies are expanding all over Europe and taking over other companies (Missets Pakblad 1990/8). For other companies only local niche markets will remain. But this all depends on the ability of the food-industry to promote European brands.

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#### **Main trends**

A slowdown of growth, increased demands by the food-industry and tougher environmental laws; these are the main characteristics of the packaging market in the 1990s.

The packaging market is under strong influences from the emerging European market:

- markets in Southern and Eastern Europe are growing stronger
- widening intra-European trade for many bulk products, such as timber, newsprint, paperboard materials
- rapid growth of intra-European overland transport
- development of pan-European brands and products
- possible migration of labour intensive production to Eastern Europe
- increasing European legislation and standardization
- increasing environmentalist pressure to bring back waste and reduce consumption of packaging materials.

#### **Environmental pressure**



There is a tendency in reducing the weight of packaging and development of returnable and recyclable packaging.

The environmental issue is becoming ever more important. Companies in countries with tough environmental laws, may have an competitive advantage because they will be the first to introduce more environmental friendly products.

Bringing back the weight of packaging is an important task of the packaging industry. This both means lower costs for the manufacturer which uses the packaging, as less waste.

#### **Increasing sophistication**

There is a tendency to more sophisticated packagings which are at the same time a display aid to selling, since goods have to sell themselves. Today's shopper expects a much wider selection of goods, including exotic fruits and vegetables out of the season. Transporting these has required more protection and better display.

Elsewhere in the paper & board sector, there is an increasing demand for attractive point-of-sale packs which combine transit protection with shelf-display possibilities. But does the German Ordinance regard it as secondary or transit? Much work is being done in this area, and high standards of design and manufacture are being demanded. No matter what the recession brings, research and development into new markets holds the clue to success in this, as in other markets.

#### **Increasing internationalization**

In general, the increasing internationalization have already been noted. But it has also begun to affect special segments of the packaging market like luxury products, which have long been shielded from much changes. Recently, some companies have been looking at reducing their reliance on the luxury end of the market, which can be very unstable, and increasing its activity in the more functional market sectors.

Internationalization is gradually becoming important in a market which was always characterized by local production: the Belgian chocolate industry; French champagne, cognac and perfumery industries; Scottish whisky producers, etc.

The same can be said from the lower end of the packaging market. The market for paper sacks has been declining gradually



over the past decade in the face of competition from lower-cost plastics sacks. Whereas for example the UK market was traditionally served by UK products, there is now significant competition from Germany, Italy and Turkey. In addition, a number of UK users have sack plants in Europe from where they draw supplies under group arrangements (Scandinavian companies are said to own over two-thirds of UK production).

#### **The rise of pre-printed corrugated**

In the paper-converting packaging business, an increasing integration with printing can be observed. In Western Europe, preprint output totals about 940 mil m<sup>2</sup>, while corrugated board consumption totals about 20 bil m<sup>2</sup>/yr. Preprinted board may achieve a market share of 30% of the corrugated board market, vs about a 5% market share currently.

The use of improved graphics combined with economic printing costs has opened up opportunities for adding advertising value to the functional efficiency of the corrugated container. The printing process responsible is flexography which combines printing from rubber plates or stereotypes with the use of fast drying inks.

Digital artwork & reproduction, or DAR technology is making it attractive for the packaging producer - especially the bigger groups - to take on this role. Ultimately, the major retailers may decide to bring all production in-house; or perhaps a design, repro, printing and carton production operation could be formed to serve an electronic hole-in-the-wall operation. Such propositions may be fanciful - but DAR, and the associated technology, make it all realistic.

The use of flexo pre-print is allowing carton quality printing standards to be achieved. Large companies like ASSI and SCA are now equipped to produce the whole corrugated product range in multicolour, flexo post-printed and lithoprinted packs, and also have the latest CAD and CAG systems. They all tend to locate these production units very near to their markets. In between corrugated packaging and folding cartons, there is an area of overlap which corrugated is proving to fill effectively.



Besides ASSI and SCA, a lot of other packaging firms have been investing in flexo-print, mainly in the UK.

#### **Decline of in-house packaging**

As packaging becomes ever more specialized and sophisticated, investments are becoming more expensive and in-house production by major user companies units are being sold.

For example Unilever sold all of its packaging operations. Assi Packaging UK now operates the Thames Case corrugators, acquired from Unilever in 1987. 4-P, the German packaging subsidiary of Unilever was sold to Koninklijke Emballage Industrie Van Leer (Amstelveen, Netherlands). The operation covered four production units in Germany and one in Beauvais, France, producing folding cartons, plastic film and related items. Turnover in Germany and France is around DM1 bil/y.

Rowntree Mackintosh's on-site plant at York, was taken over by LMG Cartons in 1990. In-house carton production is also an established pattern in pharmaceuticals, but this industry has seen no such trends.

Becoming an independent producer may improve the economical performance of these companies, but at the same time there is a risk of being highly dependent. This may be demonstrated by the example of Vernon Packaging, a subsidiary of Copenhagen company Danapak, which axed around 45 jobs in its Northampton food packaging factory. Some of these cuts are related to a lost contract from Cereal Partners UK, for cereals cartons. A source estimated this contract was worth GBP1.5m and represented 15 per cent of the company's turnover.

Another example is Lincrusta (France), producer of detergent containers, which cut 53 jobs out of a total of 90 from 15 September 1991. This follows the loss of its contract with soap concern Lever.



## 2. FOLDING CARTONS

### Structure of the industry and main companies

Foods represented 53.7% of the end uses of folding cartons in 1990, in the EC. The market can be sub-divided into four main sectors, with food (by far the largest) accounting for nearly half the total.

Each segment has its own business and technical parameters, and individual companies have successfully targeted specific market sectors<sup>4</sup>. Thus, in the frozen foods market, where above-average growth is expected, CMB tops the half dozen companies which today supply almost 70 per cent of the market demand in the frozen food sector.

In this sector a few large companies dominate the market, but also a lot of very small companies still exist. For example in the UK more than 230 companies produced folding cartons with a combined value of GBP820m in 1990. More than 550,000 tonnes of cartonboard were converted, putting the UK into second place in Europe (behind Germany which used nearly 700,000 tonnes). Sixteen companies, each with a turnover exceeding GBP10m, account for sales worth GBP482m, or 59 per cent of the whole (non-captive) market. A further 63 firms make turnovers ranged from GBP1m to GBP10m. These accounted for GBP279m of the market (a further 34 per cent), leaving the remaining 150 smaller companies to fight for the last 7 per cent, worth GBP57.4m. Field Group with a turnover of GBP98m, is just ahead of Lawson Mardon Group's GBP93m.

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#### UK: top 5 1990 rankings (by turnover)

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	GBPm	%(*)
Field Group	98	12
LMG	93	11
Manville	37	5
Waddington	30	4
CMB	28	3
(*) % of UK market		

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4: This paragraph is based on Packaging Week, 13 november 1991.



### **Future trends**

Future trends, and the factors which will bring them about include: Overcapacity (about 15 per cent). Rationalisation (ergo reduction) of suppliers. Pan-European branding and production. These result in lower margins of profitability, exacerbated by recent steep rises in the price of folding boxboard grades.

Despite this gloomy messages there are also grounds for optimism. Promising trends are management buyouts; more innovative management; better industrial relations; technical developments, such as CAD/CAM; and a number of profitable niche markets like frozen or chilled foods.



### 3. CORRUGATED CASE MATERIALS

#### Structure of the industry and main companies

This the largest segment of European paper production, 21% of production. Between 1983 and 1990 consumption grew rapidly with 40%.

In the low-value business of kraftliner production, a very international market, SCA is the biggest producer in Europe, with some 24% of production:

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#### Production capacity kraftliner (1000s tons)

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1 SCA	650
2 Assi	540
3 Cellulose du Pin	310
4 Enzo Gutzeit	280
5 Portucel	230
6 NCB	190
7 Nettingsdorfer	160
Total European production	2,746

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Source: EIU august 1991

In the much smaller market of semi-chemical, concentration is less:

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#### Semi-chemical (1000s tons)

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1 Stora Billerud	240
2 Metsa-Serla	220
3 Tampella	200
4 La Rochette	142
5 David S Smith	120
6 Norske Skog	80
7 Austria	80

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The concentration in corrugated packaging might be shown by SCA market positions which are quite impressive:

1st in Sweden (32%) Great Britain (15%), Belgium (28%), Italy (16%), 2nd in the Netherlands (30%), 6th in France (5%).

In France, 2 companies SOCAR and OTOR account for 34% of total



output, 5 other companies take another 16%. There are 800 firms with 45.000 employees (1988). (see also country survey).

This sector witnesses some very aggressive competition, especially by Scandinavian producers in their EC production units. ASSI aggressive approach to European expansion is witnessed by its intention of doubling its corrugated packaging operations by 1993.

#### **Trends**

Levels of demand were quite different across Europe in 1991, with nearly every mainland country experiencing growth in corrugated demand, with the exceptions of the UK and Sweden.

Like many other sectors, it is bedeviled by the environmental debate, but in this context, corrugated transit packaging interests have a special advantage given their ability to close the collection and recycling loop. Even in a sector where there is a long and successful recycling history, dangers of over supply and the consequent economic muddle threaten to unbalance the European market.



#### 4. LIQUIDS PACKAGING

This is the most concentrated sector in packaging. One firm, Tetra Pak dominates the market, especially when a distinction is made between aseptic cartons (including a aluminium layer, and other carton liquid packagings. For instance in France, Tetra Pak holds 80% of the liquid carton market, but its share of the aseptic segment is 90%.

This situation has led to Tetra Pak coming under EC scrutiny. First, through its merger with Alfa-Laval (Packaging Week, June 5); then the European Commission's condemnation of the group for 'abusing its dominant position, in breach of Article 86 of the EEC Treaty, in the market for liquid and semi-liquid packaging machinery and cartons', (Packaging Week, August 7).

Tetra Pak operates in 112 countries, with a turnover of SWfr 5.3bn. 64% of this turnover comes from Europe. It operates 28 packaging plants, a great many filling points and produces assembling machines in 6 plants. It has 12,300 employees, of which 2,700 are employed in Sweden. About 90 percent of the turnover in 1990 was in packages while 10 percent was in packaging machines.

Some more details about Tetra Paks sheer monopolistic power in the EC:

Dividing the German market for liquid packaging into Fresh and Aseptic packaging, estimates of markets shares run:

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	Fresh	Aseptic
Tetra Pak	40-50	75-80
PKL	35-45	20-25
Elopak	10-15	

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Source: Packaging Europe: Germany (EIU 1990)

In Italy, two companies control 95% of the market in laminated rigid packaging: Tetra Pak controls 87% of Italian production. It holds 82% of the market. Elopak holds a 12%



market share. Elopak export from Norway, tetra Pak has manufacturing facilities in Italy employing 1,500, turnover L350 bn. Two minor suppliers are Techofood, a subsidiary of Saffa, and German PKL.

These two companies also dominate the Belgium market, where Tetra Pak operates with a sales subsidiary, whereas Elopak licensed Van Mierlo Proost.

In the U.K. also Bowater PKL and Field Packaging are suppliers of liquid and aseptic cartons. In France Tetra Pak and Combibloc, subsidiary of PKL (Germany), one of the leading companies worldwide for cartonboard packs, account for 90 and 10% of the market. Tetra Pak has 500 french employees and a turn over of 2.2bn.

The liquid packaging sector is facing saturization of its traditional market. So, companies like Tetra Pak are looking for three ways out of this threat. First, one is looking for new markets for carton board, particularly for liquid detergents, mineral water and wine. There are, however, those who are sceptical about the green marketing claims attached to the advertising slogans of the detergent sectors. Does 'less plastics - less waste', for example, really ring true?

Additionally, the liquid packaging firms are trying to expand in other parts of the production chain, especially into the filling process. Tetra Pak took over the Swedish producer of filling machinery Alfa Laval. This was followed by the US-based International Paper Company acquiring the filling machinery division of the Cherry-Burell-Group. Also, IPC has obtained the world distribution rights to aseptic filling machines from two Japanese companies: Jujo paper and Shikoku kakoki, feeding brick shaped cartons at high speed and short changeover times. This demonstrates a clear 'follow-the-leader' kind of behaviour in this sector. Another example can be found in TetraPaks move into recycling.<sup>5</sup>

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5: Nesa (Spain), manufacturer of recycled paper, and Tetra Pak, have signed an agreement whereby Nesa will recycle tetra brik cartons. The two companies have developed a process to (Wordt vervolgd...)



The unification of process and packaging technology as shown by the take-over of AlfaLaval is, from a general point of view, an obvious idea. The purchase has an industrial logic and a long term perspective. It has a dimension which will cause competitors to rethink. Especially in dairy products, Tetra Pak now controls the process from cow to customer. The IPC acquisition of Cherry-Burrell mirrors the Tetra Pak/Alfa-Laval deal. Cherry Burrell accounts for an 80 per cent market share of all new US installations within the dairy and food processing sectors, while IPC is the market leader for packaging in the two sectors. Like Tetra Pak, International Paper will be leasing the machinery; however, it will not necessarily be tied to materials supply (something which got Tetra Pak into trouble with the EC last year).

A third way out of the saturation of the traditional markets is expansion in new regions. It will be interesting to see whether Tetra Pak challenges the IPC/Juho-Shikoku agreement outside Japan since the system is very similar to its own. But, whatever happens, competition will increase.

It is not to be expected that IPC/Burrell will start attacking the European market, because it would almost immediately lose its biggest European customer; Elopak, which sources as much as one third of its carton board from IPC.

It would appear that Elopak has no plans to follow in the footsteps of Tetra Pak and IPC and expand through the acquisition of process technology companies. The policy will remain one of cooperation. Instead, Elopak will concentrate on product development.

Outside the US, Europe and Japan, Eastern Europe will be the main field in which the big companies are trying to expand.

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5:(...vervolg)

recover the raw materials used in these containers, producing paper bags for Consist from the recycled material.

PWA has set up a pilot unit in Raubling, Germany, which can recycle more than 98% of the raw materials components of liquid carton packaging. The company will over 1992 also set up a larger facility. A total of four such facilities would be required to handle all the liquid board packaging waste produced in Germany.



TetraPak has already started 3 joint-ventures in the former Soviet Union and in Hungary and Poland.

**Summary**

**Outlook:**

- Great opportunities in Eastern Europe
- Search for new products to be packed in Western Europe (mineral water)

**Main Problems:**

- EC against Tetra Pak
- Environmentalist pressure for glass bottles
- Increasing competition



## 5. HYGIENE

Four companies are dominating the European tissue market:

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Disposable products market Western-Europe 1991

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1 Scott: 18%

2 J/A Mont Group (Feruzzi, James River, Nokia): 14%

3 PWA: 11%

4 Kimberly-Clark: 5%

Total big four: 48%

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Source: PPI november 1991

The J/A Mont Group is dominated by James River, a US company which only started its European expansion in 1987. The group operates in 11 countries with 13 plants. Scott has 9 plants, including the former Feldmühle plants and 6,500 employees in Europe. It started recently to restructure and concentrate production.

Some national markets are very concentrated. For instance in Italy, Scott claims a 35% market share. Germany's and France's markets are far less concentrated.

Some companies, like Metsä-Serla and Stora-Feldmühle, have decided not to seek expansion in the EC tissue market as costs are too high and too many others are looking for the same opportunities.

By selling the Laakirchen tissue operations, SCA has made a further step out of the general tissue market. Instead SCA has decided, like other tissue producers in Europe have been concentrating to get out of the squeeze between the large-sized producers of their inputs and the big retail chains which are their main customers. They are targeting 'institutional markets' like hospitals and schools because of higher margins and more stable sales.

In baby nappies, the entrance of Procter and Gamble on the European market has caused a fierce price war between the few



big companies which are important in this segment. Procter and Gamble was able to boost its market share in the EC to 50% in the last 3 years. Therefore the European commission opposed the merger between P&G and Italy's Finaf.

The next table shows the significant differences between national markets in Europe.

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Sanitary and Household papers

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	Production 1991	Apparent consumption rise first quarter 1992 (%)
Germany	837	9.0
Austria	95	-8.3
Belgium	104	-7.4
Denmark	17	0
Spain	244	25.4
Finland	147	-21.4
France	366	0.8
Italy	388	4.5
Norway	24	7.1
Netherlands	164	9.3
Portugal	49	20.0
Sweden	290	10.8
Switzerland	97	-7.7
UK	455	7.0

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Source: CEPI