

Packaging in the 3rd Millennium

Competitiveness Study for The Packaging Industry in the UK

Executive Summary

dti

the department for Enterprise



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FOREWORD AND ACKNOWLEDGEMENTS BY PIRA

The overall aim of the Department of Trade and Industry is:

“To increase competitiveness and scientific excellence in order to generate higher levels of sustainable growth and productivity in a modern economy.”

This new study prepared by Pira has been designed to assist the DTI in its overall aim, by focusing on the packaging manufacturing industry in the UK to analyse its performance and make recommendations for an Action Plan.

The work was carried out in partnership with the Packaging Federation. Acknowledgement goes to Ian Dent of the PF for authoring Section 3, International Benchmarking, as well as providing input to the rest of the report.

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An electronic version of the Executive Summary and Main Report can be found on the Pira and Packaging Federation web sites.

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Director, Pira International

1. UK Packaging industry overview

INTRODUCTION

Packaging is a large and important business both in the UK and globally. It is an unusual sector in that it cannot exist on its own. The nature of packaging is such that it is intertwined with many other industries, such as food & drink, personal care, pharmaceuticals and chemicals (to name just a few.)

The role of packaging is vital to the commercial success of both consumer and industrial products in that it offers product protection, information and, in some cases, plays a key marketing role.

Market size

The packaging industry plays a significant, though perhaps unheralded, role in the overall manufacturing sector of the UK economy. Below are a few key facts and figures about its size, growth and composition.

- Value is put at £9.2 billion in 2001. This equates to 3.3% of the global total and c.13% of the total for all EU countries
- In volume terms, UK packaging materials consumption amounts to some 9.6 million tonnes. This is equivalent to 161 kilos per person, and again equates to 13% of the EU regional total.
- Per capita usage and spend on packaging materials in the UK is one of the lowest in the EU and the developed world in general.

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Table E 1.1:

Value of the UK and world packaging manufacturing industry 1999–2001, £ billion

Country/Region	Year			% (2001)
	1999	2000	2001	
UK	9.05	9.13	9.23	3.3
W. Europe*	76.0	76.5	76.9	27
E. Europe	8.0	9.0	9.9	4
N. America	73.1	75.3	73.7	27
Japan	43.6	41.4	40.1	14
R.o.W.	71.8	74.9	79.2	28
Total	272.4	277.0	279.8	100

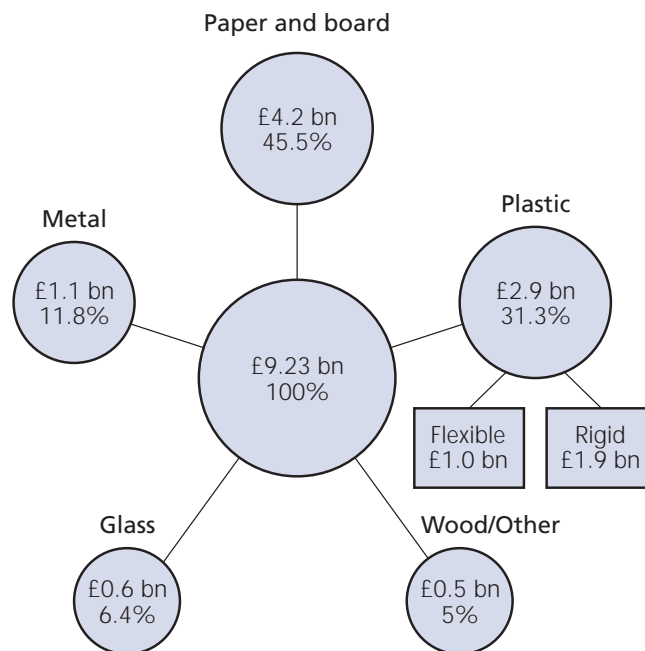
Source: The Packaging Federation

*Note: * includes the UK*

- Accounts for some 5% of the overall manufacturing sector of the UK economy.
- Paper & board is the largest individual segment comprising close to 46% of packaging industry value, followed by plastics (31%), metals (12%) and glass (6–7%).
- Steady growth of c.1% per annum has been recorded during each of the last three years. Paper & board has recorded above-average growth rates, whilst the wood and metals sectors have generally been in decline. However volume growth is higher than value in all cases.

Figure E 1.2:

Value of the UK packaging market in 2001



Source: The Packaging Federation/Pira International Ltd

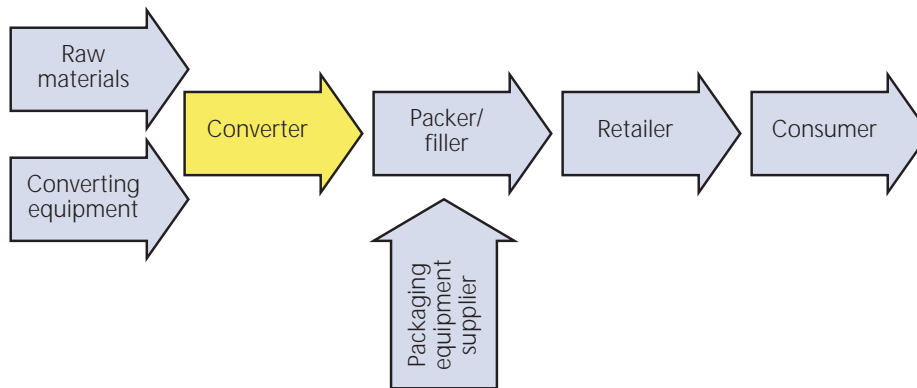
Supply chain issues and trends

This study focuses on the manufacturing part of the packaging industry, i.e. converters. The converters form the hub of the consumer packaging industry supply chain, positioned in between their suppliers – i.e. raw materials, converting equipment etc – and downstream players such as packer/fillers, retailers and, ultimately, the consumer. It should be noted that the packer/ filler may also be the brand owner, the main exception being for retailer own-branded products.

70–80% of all packaging is used in the consumer goods supply chain, with the remainder destined for industrial sectors such as bulk chemicals, engineering, agriculture and so on.

Figure E 1.3:

Supply chain in the consumer packaging industry



Source: Pira International Ltd

Supply chain relationships are complicated by varying degrees of vertical integration, examples of which include sheet feeding/converting operations in the paper & board industry and in-house film extrusion by converters in the flexible packaging sector.

Generally speaking, raw material suppliers and many brand owners tend to be large international conglomerates, whilst the packaging manufacturer supply base is far more highly fragmented. As a result, packaging converters often find themselves squeezed between large suppliers and large customers. This relatively weak position is compounded by the power of multiple retailers in the UK.

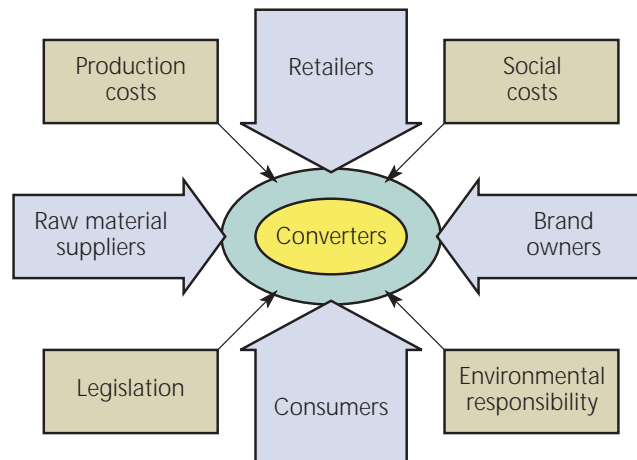
In recent years brand owner participation in the production process has been diluted due to the increased use of external contractors. Even where brand owners do manufacture their product in-house, the packing operation may be sub-contracted. Other elements of production that are increasingly outsourced include short runs for promotions, test marketing, new product launches etc. Decisions of this nature are based on lowering supply chain costs, improving efficiency and focusing on perceived core competence.

Industry structure

The Packaging Federation estimates that there are currently just over 2,000 companies which manufacture packaging materials in the UK. This figure excludes all other supply chain participants such as contract packers, machinery manufacturers etc. As some large manufacturers have multiple sites, the number of production units in the UK is estimated at just under 2,600.

It should be noted however that some 60% of the above companies/production units have less than 20 employees and therefore may not be considered companies operating on an industrial scale. The table below also includes wood packaging and certain other activities such as the production of hollow tubes which are not strictly packaging.

Figure E 1.4:
Supply chain squeeze



Source: Pira International Ltd

Table E 1.5:
Number of local units in the UK packaging industry by employee size band, 1999–2001

Size Band (no. of employees)	Number of local units		
	1999	2000	2001
1–19	1,605	1,540	1,505
20–49	550	515	515
50–99	240	235	255
100–499	305	285	290
500–999	10	5	5
1000 +	0	0	0
Total	2,710	2,580	2,570

Source: The Packaging Federation

The workforce employed in the packaging sector amounts to some 100,000 people, equivalent to only 3% of the workforce in UK manufacturing overall. The largest concentration of packaging manufacturers is in North West England, the East Midlands and Yorkshire/Humberside, with these regions collectively accounting for 40% of all packaging sector employees. Packaging manufacturers seek proximity to their customers (i.e. the packer/filler), as transporting empty packaging materials is highly uneconomic.

For the last decade or more, the levels of concentration and foreign ownership in the UK packaging manufacturing sector have both increased substantially across the board. Foreign ownership is now dominant in industry segments such as corrugated board, folding cartons and metal packaging. In industry segments such as metal and glass a high level of industrial consolidation has now been achieved. Conversely however, despite some consolidation at the top end of industry, there is still a long way to go in sectors such as plastic and paper & board.

2. Key drivers and forces of change

INTRODUCTION

A number of key market drivers and forces of change have been identified by Pira as part of its Strategic Futures Research Programme:

Consumer trends

- Key consumer trends include demographic trends towards more single person households and an ageing population.
- Social trends include more working women, fewer family meals and increased snacking and 'eating on the run'.
- Consumer products are increasingly customised for different market sectors
- Implications for packaging include increasing use of convenience formats and continuing high levels of customisation with more print variants.

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Retailer and brand owner trends

Key strategic packaging issues for retailers and brand owners have been identified as follows:

- **Retailer** – reduce in-store costs; optimise transit packaging; manage packaging waste;
- **Brand Owner** – consistent international branding and brand protection; manage supply chain complexity;
- **Both:** own-brand differentiation; added value innovation; improved supply chain efficiency; faster NPD; strategic use of outsourcing; damage reduction

(Note – in some instances the retailer is also the brand owner)

Supply chain efficiency

Efficient Consumer Response is a Europe-wide retailer and brand owner initiative which aims to improve the efficiency of the consumer packaged goods supply chain. For example, CPFR (collaborative planning, forecasting and replenishment) which involves supply chain partners working together from a single transparent demand forecast, enables Tesco to work to an

8 hour lead time on certain key items. A great deal of supply chain re-engineering has still to take place, with lowest overall logistics cost driving decisions on issues such as outsourcing and rationalisation. Packaging manufacturers are under increasing pressure to respond through providing improved levels of service.

Globalisation

The trend towards globalisation continues, both through the opening of world markets as sources of supply, and through the development of emerging markets as potential customers. E-procurement makes it easy to buy from any country in the world, hence there is likely to be an increased requirement for transport packaging formats. At the same time, developing countries will need packaging solutions for their own domestic markets. Opportunities exist in partnership with international brands that need consistent supply of quality packaging.

Information technology and e-commerce

Recent research by PricewaterhouseCoopers on behalf of DTI found that two thirds of packaging producers have e-mail and a website, but defined a fully functioning 'e' business as one which uses e-commerce for ordering, payment and progress tracking of orders. A number of opportunities, threats and challenges for packaging manufacturers have been identified and it is important that organisations understand and address the implications of e-commerce. In the short term, online e-auctions are causing a great deal of concern in the packaging industry. In the longer term the real value of e-commerce is to be found through using the technology to reduce transaction costs and improve supply chain efficiency through initiatives such as CPFR (see above).

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Sustainable development

Sustainable development is an all-embracing term which recognises the inter-relationships between economic success, environmental protection and social well-being. The push for sustainability is predicted to be one of the key influences of the next five to ten years and will require a step change in performance, which cannot be achieved using current technologies and products. Innovation to improve environmental performance provides a key opportunity for competitive advantage, including innovations which enable further minimisation, increased use of renewables, increased recycling and use of biodegradable materials.

Legislation

There are three main areas of legislation which have direct impact on the UK packaging industry:

- environmental
- health and safety
- employment

Some of this legislation is UK specific, while some is in response to EU directives. The financial burden placed on the packaging industry as a result of this high level of legislation is significant and at times damaging to competitiveness in comparison with other countries.

Research

Key areas of future research have been identified as:

- Pack minimisation
- Shelf-life prolongation
- Tracking and traceability
- Active and intelligent concepts
- Improved functionality
- New printing technologies
- Biodegradables

The packaging industry carries out only a limited amount of R&D in the UK. However, the Faraday Packaging Partnership is a government sponsored initiative which conducts university-based research aligned to the needs of the packaging supply chain.

3. Industry performance – international benchmarking

ECONOMIC ENVIRONMENT

The mood in private business in both Britain and mainland Europe has deteriorated sharply over the last six months as the US economy continues to struggle and the threat of a Gulf war intensifies. The index of business confidence has dropped most sharply in the UK vis-à-vis our European partners, with a sizeable majority of British companies supporting the view that the economic and political climate is now less favourable to expanding business activity or starting up a new business. Data from the ONS tends to underpin these views, with the manufacturing sector generally in decline since the beginning of 2001.

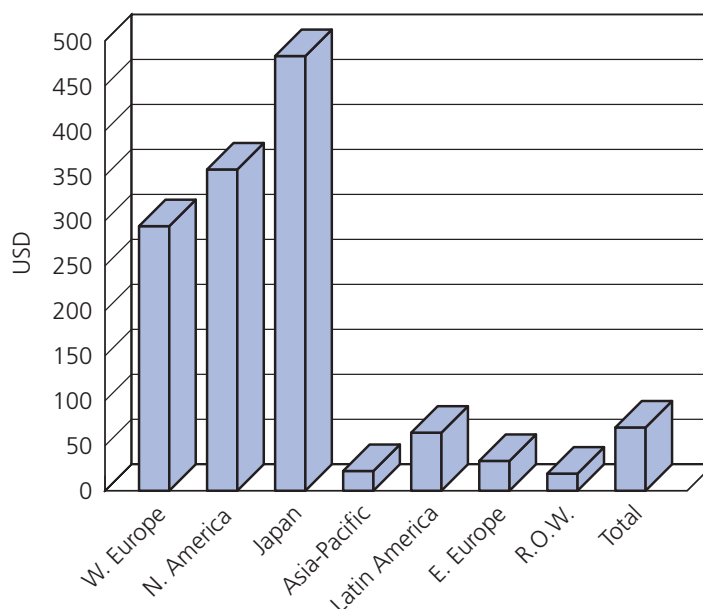
Consumer confidence in the UK however appears to be holding up much better, bolstered by the buoyant housing market.

Packaging industry development

Packaging is generally seen as a good barometer of economic development and performance. Packaging spend per capita is far higher in developed markets such as Western Europe, North America and Japan compared to the rest of the world. Conversely, growth rates – albeit from a much lower base – are typically higher in emerging regions such as Eastern Europe, Latin America and Asia Pacific.

Figure E 3.1:

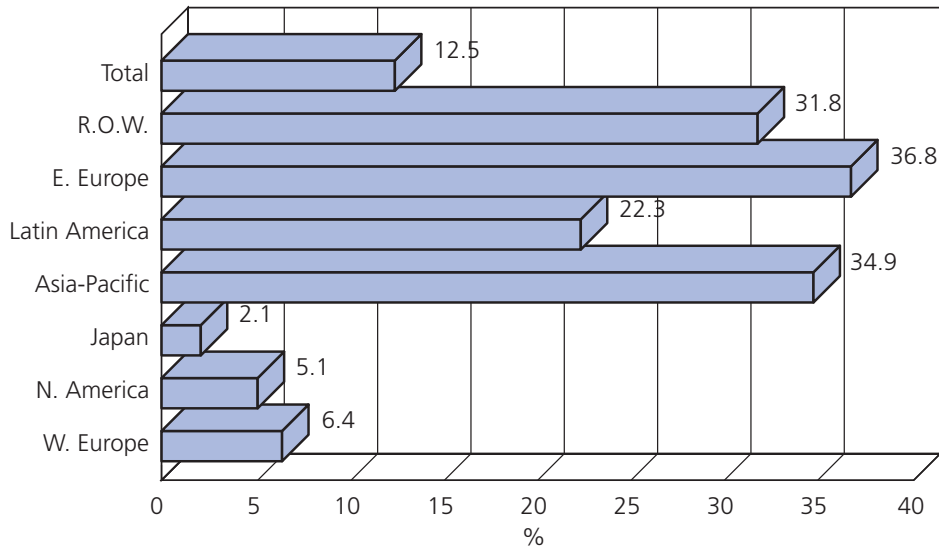
Global packaging spend per capita, 1997



Source: *The Packaging Federation*

Figure E 3.2:

Global packaging industry growth rates, 1997–2001



Source: The Packaging Federation

The UK has a markedly different profile in comparison to the global average in terms of usage of different packaging materials. These variances reflect a range of factors including consumer preference etc.

Growth in the UK packaging market has slowed in the last five years. This can be attributable to both efficiency in light-weighting of all materials and cost pressures to reduce the amount of packaging used, as well as an increase in imported packaged goods. UK packaging converters have a reduced share of this UK market due to an increase in imported empty packaging.

The evolution of modern packaging is most closely identified with developments in plastic packaging. The plastic industry has been the main beneficiary from the global increase in packaging use, not only benefiting from substitution from other traditional materials, but also acting as a catalyst for technological changes. This has in turn spurred the other materials sectors into technological advances.

Demographic and technological changes are significant in terms of productivity and benchmarking since their impact has not always been uniform. The USA has been at the forefront of these changes and operated on a much larger market scale than its European competitors, who have adopted social changes at a different pace and until recently operated on a national scale. These factors have shaped the size and productivity of the UK and European sector.

As with many industries, the commodity elements of the market are becoming increasingly susceptible to global pressures, especially from the developing countries in Asia, which usually have access to cheaper raw materials and labour rates.

Corporate activity

The packaging manufacturing industry is in a constant state of flux, with the sector constantly realigning itself in order to either survive or perform better.

The UK converters are the most vulnerable participants of the packaging supply chain. During the period 1998–2000 there were 20 major plant closures. These trends are still very much in evidence with a further 13 closures recorded in 2002 to date incurring over 1,000 job losses, the bulk of which are concentrated in the packaging manufacturing (including label) sector.

There have been 7 management buy-outs this year amongst packaging and label manufacturers, indicating that this industry sector is under-valued on the stock market. British investment in the UK has not been very pronounced with a total of only 315 new jobs created in the packaging manufacturing sector. Meanwhile in terms of ownership, there has been a steady buying up of indigenous packaging companies by foreign investors, whilst only two UK-based organisations have made a significant investment in new plants outside this country.

Whilst there are growing number of global players in the packaging industry, it is still dominated in the UK by SMEs, particularly in the plastics and paperboard sectors. The profile of the industry is continuing to change with larger entities becoming more global and market-focussed to achieve greater synergies with their customer base, whilst many of the smaller players are concentrating on niche sectors in their national markets.

The financial performance of UK packaging manufacturers has considerable room for improvement. In a recent survey by Plimsoll Publishing which ranked the financial performance of c.1000 companies, over half of the sample were operating at a loss or on wafer-thin retained profit levels. In certain market sectors profitability has halved in the last decade due to over-capacity and increased pressure from customers, especially multi-national brand owners and retailers.

Table E 3.3:

Packaging manufacturers financial performance in the UK, 2000/2001

Rating	Companies	Pre-tax margin	Debt as % of Sales	Retained Profit
Strong	261	5.6%	4.0%	2.1%
Good	90	2.8%	9.4%	0.9%
Mediocre	100	2.5%	13.0%	1.0%
Caution	153	1.7%	20.0%	0.3%
Danger	396	-1.5%	37.9%	-1.6%

Source: Packaging, Third Edition 2002, Plimsoll Publishing Ltd

Sustainability

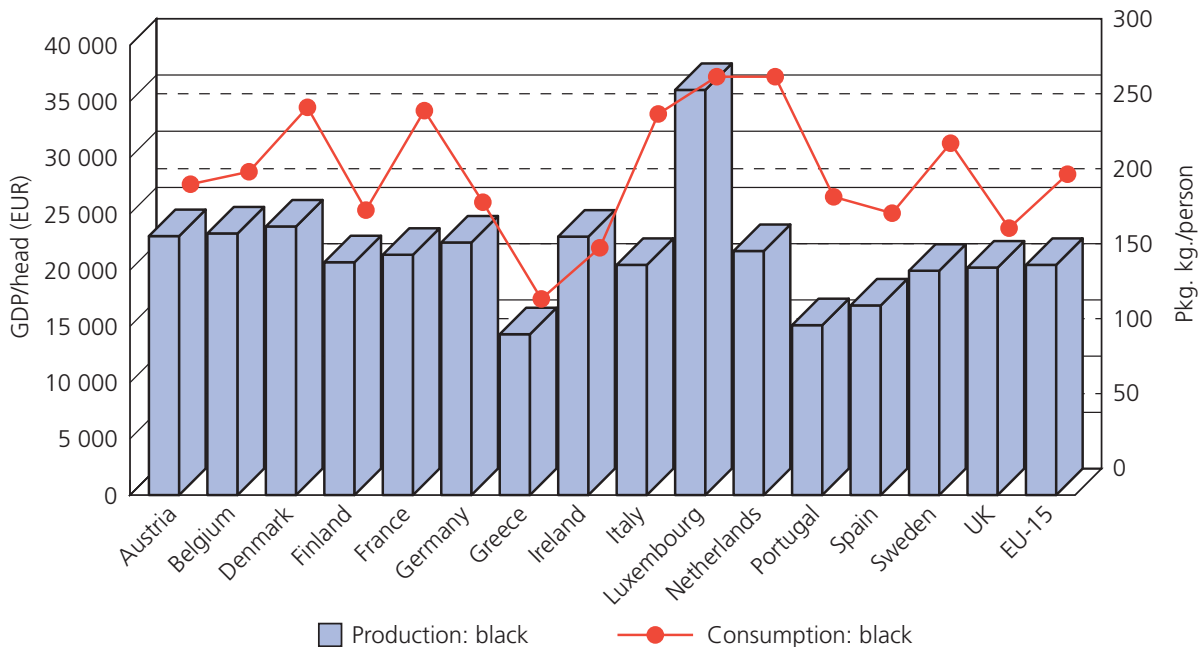
There is a general public perception that packaging is a major contributor to waste and that many consumer products are over-packaged. The ever-greater use of packaging can largely be attributed to consumer lifestyle demands.

There is a fair degree of correlation between GDP and packaging usage within the EU countries at least. Other factors that need to be taken into account include demographics, size of household units, appliance ownership levels and national shopping/eating habits.

Environmental considerations do not appear to play a significant role in terms of the overall volume of packaging used. Countries such as Denmark, Sweden and the Netherlands, for example, which are seen as having strong 'green' credentials, exhibit a higher-than-average usage of packaging compared to GDP.

Figure E 3.4:

Per capita GDP versus per capita packaging consumption in the EU, 1999



Sources: *A Community of Fifteen: Key Figures (European Commission & Eurostat)*

A similarly uneven picture emerges when one considers the volume and type of packaging waste. Waste recycling also varies according to the different national waste management infrastructures, especially the household waste collection systems.

The EU enlargement process can only make this picture more uneven. It is important that investments made by UK manufacturers in environmental improvements are not jeopardised by its customer base moving to the Accession States where environmental expenditure and investment is much lower than the UK.

Competitiveness

Competitiveness is often confused with productivity. The distinction drawn here is that productivity is a component – albeit a key one – of competitiveness, with the former being under the control of the business whilst the latter is subject to external forces not always within their control.

According to a recent DTI report, many aspects of the business environment have improved in recent years providing UK firms with a supportive framework in which to operate. A long period of low and managed inflation has undoubtedly been of real benefit to industry in terms of planning and investment, but there is often a considerable time lag between such investment taking place and a manifestation of positive results.

Using the World Economic Forum competitiveness index as a measure, UK has slightly improved its performance in 2002 and is ranked comfortably ahead of most its EU partners with the exception of the Nordic countries. It stills lags however way behind the USA, the main yardstick often used by the DTI and HM Treasury in such assessments.

In spite of this incremental improvement in macro-economic terms, the packaging industry in the UK has been critical of government in other areas such as the implementation and enforcement of legislation. The CCL system and IPPC implementation are two particular pieces of legislation which are highlighted for review and concern over cost-effectiveness, as well as the lack of ‘joined up’ thinking. More attention is required to ensure that implementations of EU directives are harmonised, both in the way in which they are enforced and measured. There is sufficient evidence to show that that is not the case at present to the disadvantage of UK manufacturing.

Economic performance has been held back by poor skills and a shortage of intermediate-level vocational skills. The UK’s productivity record has also been adversely affected by decades of under-investment. The science base is strong, but there are weaknesses in R&D. The packaging manufacturing industry believes that the UK does perform more strongly than many EU competitors in developing ideas and providing better control techniques. The UK is at the forefront of innovation and does exploit process technique improvements.

In summary and in its final analysis however, the DTI ascertains that there is still a substantial gap in productivity and living standards relative to the USA and some parts of Western Europe.

Productivity

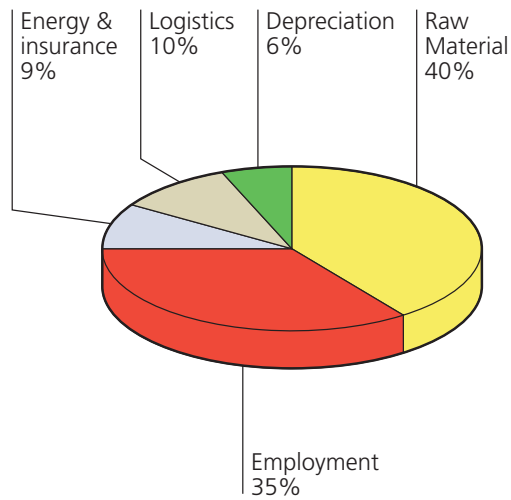
It is increasingly relevant to benchmark productivity and other performance measures on an international scale. One driver behind this is the increased level of foreign ownership in the UK packaging industry. It is felt that these ownership trends may benefit UK industry by the transfer of technology and management techniques from countries such as Australia and the US.

In a recent Proudfoot Consulting survey, it would appear to indicate that the UK suffers from poor management and an inappropriately qualified workforce as well as IT-related problems vis-à-vis our key trading partners.

The key areas which affect the productivity of the packaging sector and in turn competitiveness are – in descending order of importance – raw materials, employment issues, logistics and energy costs.

Figure E 3.5:

Average cost ratio for packaging producer in the EU, 2001



Source: The Packaging Federation

Raw materials supply is not uniform across industry sectors and does depend upon the level of vertical integration. The heavy reliance on imported raw materials (except for glass) leaves industry vulnerable to both exchange rate variations, especially with the Euro, and the ability of competitors to source raw materials more cheaply, especially from the Far East. This is particularly the case with plastics.

It is difficult to measure employment costs as it depends upon the inclusion/exclusion of various factors. Taking into account hours worked, gross pay and social costs however, it appears that the UK is ranked roughly in the middle of all EU countries. It fares somewhat better than, for example, Denmark, Germany and France, but is on the other hand a markedly higher-cost location than the Mediterranean countries.

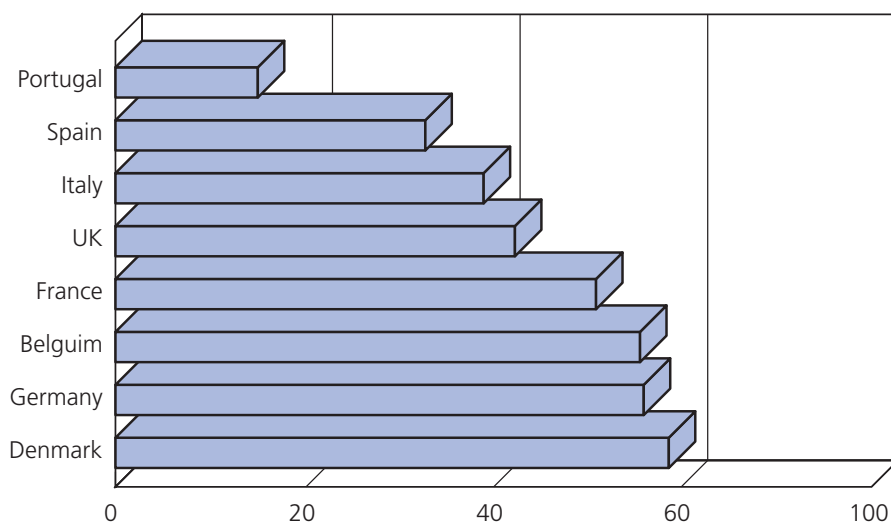
The increase in National Insurance Contributions to come into effect in 2003 will add significant cost to the packaging industry. Additionally, the packaging industry feels that the EU Directive on Working Time will impact negatively on profitability and productivity.

Energy is of prime importance to all packaging conversion operations and efforts to reduce this by better utilisation of primary energy or use of recycled materials is an on-going activity. Whilst the UK may enjoy relatively low electricity prices, gas prices are a cause of concern. UK converters also suffer from a larger energy bill due to the UK's CCL arrangements. Overall, UK manufacturing industry suffers from a high taxation burden after taking into account all exceptions and rebates, and thus requires further attention.

Lean manufacturing is being adopted by some in the industry, especially the major players, but it is felt that considerable productivity gains can be made by employing such techniques more widely.

Figure E 3.6:

Indicative worker costs in selected EU countries Euro/hour, June 2001



Source: Eurostat and IDS Employment Europe

Exchange rates

There is a general assumption in the packaging industry that the UK government will join the Euro sooner or later. There is considerable concern however that the current exchange rates overvalue sterling by up to 15% thereby damaging UK competitiveness. An exchange rate of £1 = Euro 1.40–1.45 is seen as the optimum level for entry at this point in time.

The exchange rate has had a significant bearing on the trade balance in the UK packaging sector in recent years. Imports of packaging materials have been growing annually at c.5% per annum in the last 2 years, whilst exports have been in decline, thereby widening the negative trade balance to over £500 million.

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Table E 3.7:

Trade balance in the UK packaging manufacturing industry 1999–2001, £ million

Trading activity	1999	2000	2001
Imports	1,353.3	1,423.8	1,491.2
Exports	1,039.9	997.5	967.1
Trade Balance	(313.4)	(426.3)	(524.1)

Source: The Packaging Federation

4. Packaging manufacturing industry – SWOT analysis

STRENGTHS

- Receptive to change: performing continual assessment of its performance and rationalisation requirements
- Innovative and employing most recent technological developments to improve consumer satisfaction
- Increasingly customer-oriented – strong customer relationships and supply chain partnerships
- Local: long distance transport is uneconomical for many packaging materials
- Serving primarily consumer goods sector makes it virtually recession-proof
- Dynamic due to materials substitution and search for pack optimisation
- Good industry representation

WEAKNESSES

- Relatively mature industry growing at only 2–3% p.a.
- Packaging companies not considered a dynamic investment by the City
- Low barriers to entry in sectors such as corrugated and plastics create excessive competition
- Suppliers and customers very powerful and margins are squeezed
- R&D activity is limited to few, large converters or suppliers
- Poor image (packaging = litter) which attracts environmental lobby
- Quality of recruits an issue – packaging not seen as an attractive career prospect for graduates
- Raw material price fluctuation makes forward planning and investment decisions more difficult
- Major equipment and raw materials suppliers are foreign
- Many major UK packaging manufacturers are foreign owned, less obligated to UK as a home base
- The industry includes many SMEs who have funding constraints and may not be able to invest in required technologies
- Need for better quality data, especially downstream. Confusion caused by inappropriate SIC codes.
- Excessive legislation and high levels of bureaucracy in UK implementation of EU directives
- Over-capacity

Source: Pira International Ltd

OPPORTUNITIES

- Added-value activities such as pack/brand design as well as new material/product development could be in the converters' exclusive domain
- Consumer desire for added convenience will stimulate growth
- Home shopping may stimulate more sophisticated packaging
- Continue to develop high levels of customer focus and provide packaging solutions which address needs of downstream supply chain
- Capitalise on supply chain expertise gained through working in very demanding UK retail environment
- Further switch to hole-in-the-wall operations, VMI or other service initiatives will create additional value
- Increased usage of recycled materials can improve environmental performance
- To be a world leader in development of a sustainable packaging industry
- Exploit opportunities in developing parts of the world as they mature sufficiently to require more packaging
- Use IT to its best advantage: e-commerce, CAD, production control, MIS
- Convince the public of the environmental benefits of packaging
- Packaging should be sold on the basis of its supply chain cost, not on price

THREATS

- Profit margins reduced further through brand owner regional or global purchasing strategies
- Reduced competitiveness in Europe due to the strong pound
- Threat of increased packaging imports
- Productivity affected by difficulty in recruiting high calibre graduates
- High imported raw material prices affect profitability and investment
- Increasing environmental taxation and social costs will reduce further the UK converters' competitiveness
- Lobbying by environmental extremists results in inappropriate legislation
- As UK costs become uncompetitive, brand owners move packing and filling activities to lower cost locations overseas
- Organisations without sufficient European presence risk losing customers who want pan-European suppliers
- Industry representation too fragmented thus reducing effectiveness
- Overall industry growth constrained by more use of returnable packaging
- Lack of IT capability may damage ability to serve market effectively
- Packaging manufacturers lose added value activities to other parts of the supply chain

Source: Pira International Ltd

5. Key issues – packaging manufacturing industry

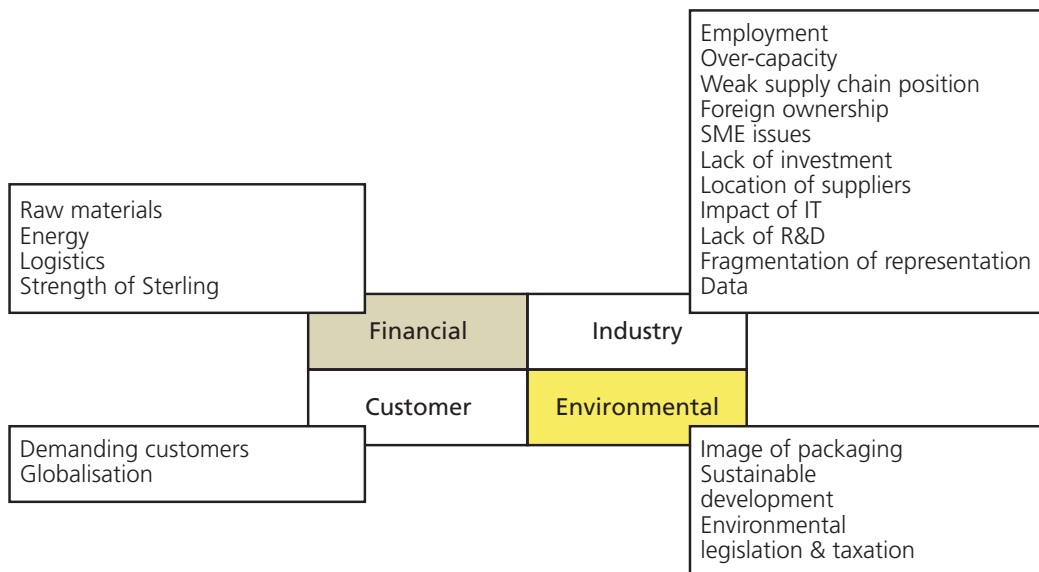
INTRODUCTION

In order to summarise key issues for the UK packaging industry, the issues raised by the different materials organisations were considered and those common to most sectors were selected.

These issues have been aggregated under 4 broad headings and a series of sub-headings as indicated in the diagram below.

Figure E 5.1:

Key issues for the packaging industry in the UK



Source: Pira International Ltd

Financial Issues

Raw materials

The cost of raw materials is a major problem for most converters, as in the current competitive climate, and in their relative weak position in the supply chain, it is extremely difficult to pass on increases. Raw materials usually form a high percentage of the final packaging price, thus inability to pass on increases puts a significant strain on converters' profitability. Fluctuating raw materials costs cause ongoing problems, particularly in the paper and plastics based sectors, where cyclical trends cause instability and make ongoing investment decisions difficult. The trend towards non-UK supply also exacerbates this situation.

Energy

The cost of energy is a particular issue in all sectors, but especially glass, paper and metals where energy usage is higher than plastics. The overall costs of energy and fuel, taking into account taxation issues such as CCL, provides an uneven playing field both within the UK packaging sector and with EU competitors.

Managing energy efficiency has always been a key criterion for most packaging manufacturers. Further efforts to reduce energy and seek environmental gain through use of small-scale CHP and mines gas have been diluted due to the current NETA arrangements, and the overriding Government principle to address fuel poverty.

Logistics

Transport costs in the UK are considerably higher than in other European countries due to fuel taxation. Many types of packaging are high volume, low value, thus the packaging industry is particularly vulnerable to high transport costs. Those converters involved in recycling also have to contend with transport of waste back to their sites.

The Working Time Directive will also have an impact on the transport movements, especially when responding to increasing calls for just in time by major retailers.

Better supply chain logistics and closer partnerships with customers could potentially reduce the overall inventory levels, thus reducing the need for stock to be held by the converter.

Strength of Sterling

The current high value of the pound is making it difficult for UK packaging converters to export packaging products. At the same time, the amount of imported empty packaging is increasing – estimated to be nearly 17% of the total in 2000, a growth of over 5% from 1999 (amounting to £1.5bn). While products such as glass or rigid plastic containers are not usually economical to transport long distances, products such as flexible packaging and closures can be imported cost effectively. As a result the UK industry is suffering increased competition from imports, some from Europe and some from Asia and the Far East. There is also a danger that European packaging manufacturers switch production capacity from UK-based plants to other, more cost effective, locations in Europe.

However the real issue is that high manufacturing costs in the UK might persuade brand owners to move their product packing and filling operations outside the UK (Heinz has already moved some of its baby food operations abroad.) This will result in a serious loss of added value to the UK economy.

Industry Issues

Employment

Recruitment came up as an issue for many packaging sectors, the key exception being the glass industry. Recruitment seems to be a problem at all levels; there is competition from service-based industries such as retailing for unskilled labour, and graduate recruitment is an ongoing problem, particularly as there are fewer graduates in disciplines such as engineering and chemistry. This problem is not necessarily Europe-wide – for example, in Ireland the Jefferson Smurfit graduate training programme is considered a highly desirable career opportunity.

Skill levels are a cause for concern as, in some sectors, such as printing, there is an ageing employee base and skills are being lost through the retirement process. Further information on industry skill levels is available from the DTI sponsored Institute of Packaging study, which Pira has not been able to access for this report.

The new EU proposal on temporary and agency staff may also impact negatively on some packaging manufacturers.

Over-capacity

Parts of the packaging industry such as plastics and corrugated conversion suffer from relatively low barriers to entry. As a result, new entrants move into the industry on a regular basis, often pushing prices down in an effort to gain volume. The industry generally suffers from over-capacity which creates intense competition and drives down prices. This situation is worsening as the volume of imports increases in certain product sectors.

The advent of additional capacity at low labour costs from the Accession States, especially if Turkey is included, may exacerbate this situation considerably.

Weak supply chain position

As previously discussed, the packaging industry finds itself wedged between powerful suppliers and powerful brand owners. The result of this weak supply chain position is that raw material price increases may be extremely difficult to pass on, yet impossible to avoid, thus affecting the converters' profitability. Pira's discussions with brand owners on the future of procurement have more than once uncovered a proposed model whereby brand owners buy raw materials direct from the manufacturer and issue these to converters to make into packaging. A brand owner producing products such as detergent would already be buying in significant quantities from the major polymer producers, so this scenario is quite feasible but would have worrying implications for converters in terms of loss of added value opportunity.

The UK retailer rebate system, whereby retailers negotiate packaging prices on behalf of their contractors then take a cut themselves, is still highly controversial and also impacts negatively on converter margins.

Foreign ownership

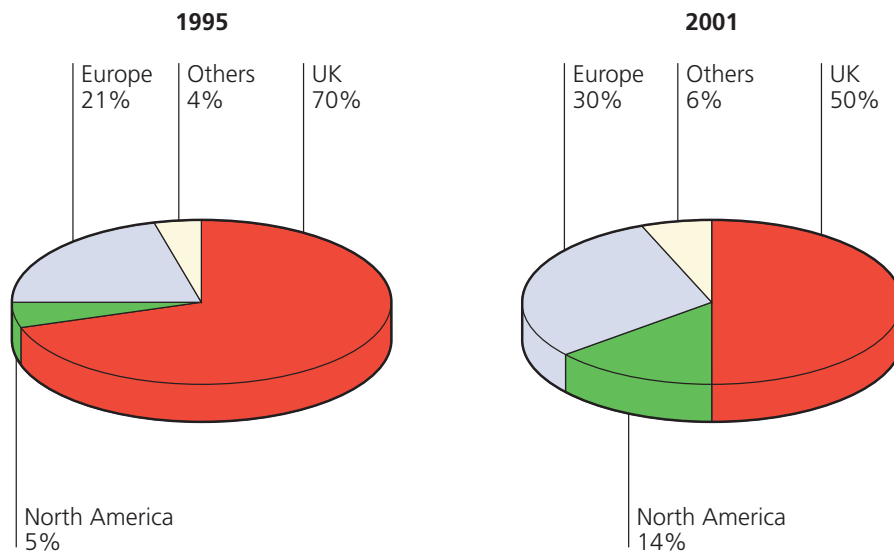
Many of the major packaging converters in the UK are ultimately owned by organisations outside the UK. Most of these companies consider themselves to be pan-European or global organisations and manage their businesses accordingly as a necessity to meet their customer expectations. The result is that if conditions in the UK become unfavourable or require supply at a location closer to the customer, the opportunity exists for them to switch production to a more cost effective location and supply their pan-European customers from there. Major brand owners negotiate packaging contracts on a Europe-wide basis and where the packaging is produced is not necessarily an issue for them, provided the price, quality and availability are right.

For industries such as glass, where the packaging manufacture is traditionally located near to the packing plant, this is not such a threat as it is for more transportable products such as flexible packaging or preforms.

Figure E 5.2 shows changes in ownership:

Figure E 5.2:

Changing ownership of the UK packaging manufacturing industry based on turnover, 1995 and 2001



Source: Pira International Ltd

SME issues

With the exception of the glass and metals sectors, which are usually highly capital intensive, there are a large number of small and medium-sized organisations in the packaging industry. If wood packaging is included, then VAT registered enterprises employing less than 50 people amount to 80% of the total packaging companies. These organisations face particular issues in terms of resources. They may not have high levels of technical expertise in-house and thus

need to rely on suppliers for assistance. They may find it difficult to raise funding to make ongoing investment in the business. They are also vulnerable to rationalisation programmes by brand owners who are looking for pan-European supply, as they very often do not have capacity outside the UK

In many ways this is the segment that the UK government most needs to interact with, since they are inextricably linked with UK competitiveness issues. However they are very difficult to access since these smaller organisations do not always have the resources to get involved with government and trade association initiatives.

Lack of investment

Like many mature stocks, the packaging industry has suffered in recent times as shares in the industry have not generally been seen as attractive and investment has gone into 'high tech' companies. However the loss of companies from the FTSE due to non-UK ownership has meant the transfer of most Packaging Sector stocks to the Supply Services Sector, which has a higher gearing and thus is attracting more favourable attention. In the meantime difficulties in raising funding as well as a general lack of confidence have held back investment. If the industry is to keep up-to-date in areas such as digital pre-press systems, funding will need to be found to invest in appropriate equipment. Without this, organisations will not be able to offer the required levels of customer service.

However an exception would seem to be the glass packaging industry which is undergoing a number of major investments at present.

Future inward investment has also been affected in the UK by a drop in US investment since September 11 and may also be affected by EU Enlargement, where a marked increase in favour of the ex-Soviet bloc countries, especially Poland and Czech Republic has been seen this year.

Location of suppliers

Many raw material and equipment suppliers to the packaging industry are located outside the UK. This can in some ways disadvantage UK industry as it is more removed from research and development activities and regarded as an export market.

Impact of IT

The UK packaging industry needs to develop the necessary IT skills and infrastructure in order to be able to respond to initiatives such as CPFR, develop appropriate website and online ordering systems, and manage other aspects of e-business as required by customers. This may require significant investment in hardware and software, as well as the ability to recruit suitably qualified personnel. Inadequate IT systems will seriously damage competitiveness and a lack of common industry platforms may also hinder ability to respond to customer demands in the fmcg area.

Lack of R&D

As previously discussed, a great proportion of supplier research and development takes place outside the UK. Those packaging manufacturers who do conduct their own R&D tend to be the major multi-nationals, who may also have their facilities outside the UK. As a result there is perhaps a lack of focus on creation and exploitation of scientific knowledge and technology in the UK packaging industry.

This lack of ability to develop and exploit R&D potential would seem to be a direct consequence of the issues on weak supply position and inadequate returns.

Fragmentation of representation

While the UK is very well represented in terms of packaging trade associations, most of which are extremely effective, there is an issue whereby the sheer number of associations makes representation seem fragmented. There is a need for a unified 'voice' representing packaging rather than a particular material sector of packaging. Whilst the Packaging Federation was formed to fulfil this role, the proliferation of other, influential, associations could cause confusion to governments both in the UK and Europe. There is also an issue as to whether industry can afford to fund so many associations; the forming of the CPI (Confederation of Paper Industries) is a move towards some kind of consolidation through bringing together a number of paper related associations.

This "silo" mentality is reflected in the current DTI structure, whereby packaging is not recognised as a single industry but is dealt with through a number of different materials-based departments.

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Data

The authors of this report feel there is a lack of consistent and reliable data for the UK packaging industry, especially downstream (customer) statistics. One of the reasons for this is the fragmented nature of its representation, as mentioned above, whereby data may be collected on a materials specific rather than industry basis and not always in a consistent way. Data is often collected from a raw material perspective as an input to the converting process rather than by output, which can vary by up to 18%. Some of the data requires expert interpretation as the ONS categories based in current SIC codes often includes non-packaging activities. Good data is essential if industry is to be able to measure and benchmark its performance.

Customer Issues

Demanding customers

As described in Section 2, brand owners and retailers are becoming more and more demanding as they strive to achieve supply chain excellence. The results are shorter lead times, faster new product development, smaller quantities and shorter print runs. Packaging converters need to be innovative, flexible, fast-moving and constantly looking for innovation.

opportunities. Many brand owners are undertaking supplier rationalisation programmes, significantly reducing the number of suppliers they deal with. While converters are working with customers to build strong supply chain partnerships, use of on-line auctions to push down prices is seriously damaging these relationships. As a result, some packaging converters are refusing to participate in e-auctions.

At the same time the final customer, the consumer, is changing and so are their requirements. There is an ongoing need for industry to understand these changes and respond to them with appropriate innovation.

Globalisation

More brand owners are moving from local or regional purchasing strategies to pan-European or global contracts. As a result, smaller packaging converters who do not have the right geographical coverage are vulnerable to losing business. Those majors who successfully win business may gain additional volume but at reduced margin. Nestlé is a good example of a major purchaser of packaging who is in the process of moving from local to pan-European supply contracts. The brewing industry has moved from being primarily UK controlled to a global structure.

The UK packaging manufacturing sector needs to be able to match its geographical and production capabilities with that of the major customer base if it is to maximise its economies of scale.

Environmental Issues

Image of packaging

The public – and many politicians – are considered to have a negative perception of packaging, often confusing it with a litter problem and seeing packaging as a wasteful use of resources. In reality, however, consumers react well to initiatives which use packaging to add value through improved functionality or convenience. Retailers and brand owners specify the packaging to be used, and know from their research what consumers want. Thus there seems to be no real move towards simpler, more minimal packaging, more a move towards added value features.

Research shows that consumers usually understand the benefits of packaging once they are encouraged to think rationally about it. Despite this, a danger exists that small minority action groups campaign loudly against packaging with the result that inappropriate legislation is introduced.

Sustainable development

The UK Government has defined four key objectives for the delivery of sustainable development:

- Social progress which recognises the needs of everyone
- Effective protection of the environment

- Prudent use of natural resources
- Maintenance of high and stable levels of economic growth and employment

Creating the right balance for all of the above is a challenge for any sector, but the packaging manufacturing industry is well-placed to develop its existing parameters as it naturally fulfils the first two criteria, and achieves the third but often does not receive due recognition. The challenge is ensuring that the industry can demonstrate more effectively the decoupling of material use and wastage v. GDP growth as measured by purchasing power.

**Environmental Sustainability =
Reducing resource use + Reducing waste generation/emissions**

The concept of environmental sustainability is rising up the agenda of many organisations. Recent research by Pira on future purchasing strategies of major brand owners identified sustainable environmental policies as becoming of increasing importance in supplier selection. This push towards sustainable practices is predicted to become one of the key influences on business over the next 5–10 years. There is an opportunity for the UK packaging industry to gain competitive advantage through developing an environmentally sustainable strategy through developing more eco-efficient packaging solutions. There is also a need for these achievements to be recognised through raising the profile of the industry's activities in this field.

Environmental legislation and taxation

While the Packaging and Packaging Waste Directive affects all EU countries, it has not been translated into law in a consistent manner which causes problems for organisations working on a Europe-wide basis. Anomalies such as the Aggregates Levy unfairly disadvantage the UK glass industry. The Climate Change Levy threatens to damage further the sector's competitiveness as their counterparts in Europe do not have to bear this energy tax. In addition, the UK lacks appropriate incineration with energy recovery capacity which puts particular pressure on the plastics industry compared with other countries such as Denmark, which are much better placed to achieve recovery targets.

6. Action plan

■ **Regulatory**

Government, in consultation with industry, should review the current legislation to ensure that competitiveness of the industry is not adversely affected. 'Joined up' thinking is required, rather than piece-meal initiatives which can benefit one sector at the expense of another. In particular, the CCL system and IPPC implementation need urgent review.

Action – Govt in consultation with industry/TA's

■ **Employment**

Following the 'Print 21' study, the printing industry is currently conducting a DTI sponsored campaign to improve their recruitment process. The success of this should be monitored with a view to conducting a similar campaign for the packaging industry.

Action – industry supported by Govt

(It is considered inappropriate to recommend specific actions regarding skills and training needs without access to the recent IOP industry skills mapping project.)

■ **Image**

Packaging generally suffers from being an easy target for minority groups and improving its image is not an easy task. An image survey could be conducted to evaluate the extent of the problem and to recommend 'best practice' for tackling this. For example, industry could publish literature demonstrating achievements in light-weighting, design for minimisation and in overall packaging reduction. This has been undertaken successfully by the French Packaging Council. Packforsk in Sweden communicates directly with consumers on the benefits of packaging. 'Best practice' recommendations should include suggestions for the most effective means of communication. The assistance of the product manufacturers and retailers, preferably with Government endorsement and assistance, would be essential to achieve the necessary objectivity and credibility.

Action – industry supported by Govt

■ **SME's**

Many of the factors affecting UK industry competitiveness are not necessarily major issues for the large multi-national converters who produce throughout Europe. There is, therefore, a need for specific help to be given to SME packaging converters in terms of technical assistance, access to funding, assistance with IT strategies, etc in order to ensure that these organisations remain viable.

Action – Govt funded programme directed towards SME's

■ **E-auctions**

There is a need for a code of practice to be developed and implemented for e-auctions.
Action – industry and TA's (but needs to be pan-European)

■ **R&D**

It is known that relatively little UK based R&D is carried out for the packaging industry. However the Faraday Packaging Partnership is now well placed to address this issue, for both collaborative and confidential R&D projects. The profile of FPP needs to be further raised and the benefits to be gained from such research programmes need to be communicated to industry.
Action – Engage co-operation of TA's; Govt to continue to fund this initiative

■ **Representation**

The DTI needs to make it easier for packaging to represent itself as an industry, rather than by materials sector, perhaps through offering a 'packaging champion' as a single point of contact. This would form a channel through which issues common across the industry could be communicated.

Closer relationships between the various associations and institutes should be encouraged. The paper industry initiative of consolidating into CPI should be monitored to determine its impact.
Action – TA's; DTI to make interface easier

■ **IT and e-commerce**

The PwC study highlighted the need for industry to appreciate the importance of e-commerce and to have appropriate IT infrastructure in place. There is a need to make sure this is communicated to industry and that assistance is available for those organisations which need it, especially SME's.
Action – Govt/ TA's

■ **Data**

There is a need for better industry data to be available. A study should be commissioned to filling gaps identified in this report, thus gaining an understanding of where industry is today against which to benchmark future developments. There is also a need for better definitions within the existing SIC codes.
Action – TA's & Govt

■ **Customer service opportunities**

There is a continued need for the packaging industry to understand its downstream supply chain, from brand owners through retailers to the final consumer. Such understanding will provide opportunities for competitive advantage through targeted product and service innovation
Action – industry

■ **Supply Chain improvement and exploitation**

There is still scope for further supply chain improvement, particularly upstream between packaging manufacturers and their suppliers. More effective communication has been identified as one key area for attention. A current DTI/CPA/Pira project is in place to evaluate ways of improving the corrugated supply chain and there is potential for this work to be extended to other packaging supply chains.

Adoption of lean manufacturing techniques may also offer a means of improving supply chain performance. This is one key area of follow-on-work to be carried out in the printing industry, following the Print 21 study.

While there is room to improve supply chain performance, it should be recognised that the UK has one of the most efficient retail supply chains in the world. UK packaging manufacturers have developed innovation and supply chain management skills which have potential for exploitation in other areas, whether other geographical regions or industry sectors.

Industry must keep abreast of new technologies which have potential to improve supply chain performance and be prepared to adopt these for competitive advantage (RFID; active and intelligent formats; print on demand).

Finally, there is a real need for industry to sell packaging on the basis of its true supply chain cost, and not on price.

Action – industry

■ **Sustainable Development**

The packaging supply chain should consider development of a sustainability strategy as a key competitiveness opportunity. Research and development into environmentally sustainable packaging solutions should be considered of high importance.

Action: Industry; Govt to continue to fund sectoral sustainability through Pioneers Group

■ **Benchmarking**

Relatively little data exists from which to carry out effective benchmarking. Further work should be undertaken to benchmark UK industry over a range of key performance indicators against overseas competitors

Action: TAs, Industry

■ **Industry Forum**

All of these actions could be consolidated into an Industry Forum, co-ordinated initially by the Packaging Federation. This could be used to develop an on-going implementation and improvement programme to address the findings of this study.

The forum would focus on those actions which are common to all packaging materials sectors and which would be of benefit to industry as a whole. There is a need to avoid duplicating the activities of the plastics industry forum or the printing industry forum.

It is recognised that there are some issues which are materials specific. The role of the forum would not be one of political lobbying as such activities would remain with the relevant trade associations.

Action: Industry, TA's and Govt.

(Note – TA means any industry member association or institute)