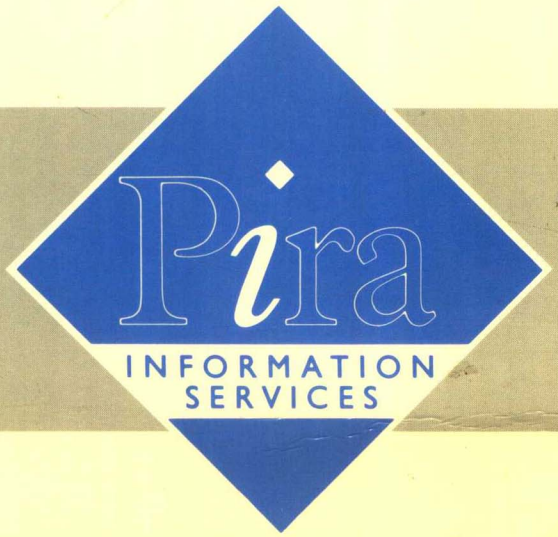
Pira reviews of

PACKAGING

Background and developments in key packaging areas

Multi PACKS

Ron Goddard



Multipacks

A Literature Review

Compiled and written by
Ron Goddard
in collaboration with the Pira Information Centre

Production and sales
Marie Rushton
Manager, Information Services
Pira

ISBN 0 902799 20 7

Printed in Great Britain by
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Author's Preface

The word 'multipack' is one which should be in the current edition of the *Oxford English Dictionary*, but did not even exist when the previous one appeared. It can in fact be considered as the modern day equivalent of the 'baker's dozen', and in that context, has a very long history as a commercial practice. Almost all areas of packaging technology and materials have been used in the production of these forms of packaging.

The concept has been adopted, mainly for its marketing benefits, across a wide range of products - from ladies' tights to canned beer. Some of the packs provide other benefits such as enhanced product protection or convenience, but the level of consumer acceptability is greater for some products than others.

The fact that Pira's database produced well over 400 references covering a twelve year period, testifies to the level of interest in, and acceptance of, the subject. (See Table 1.)

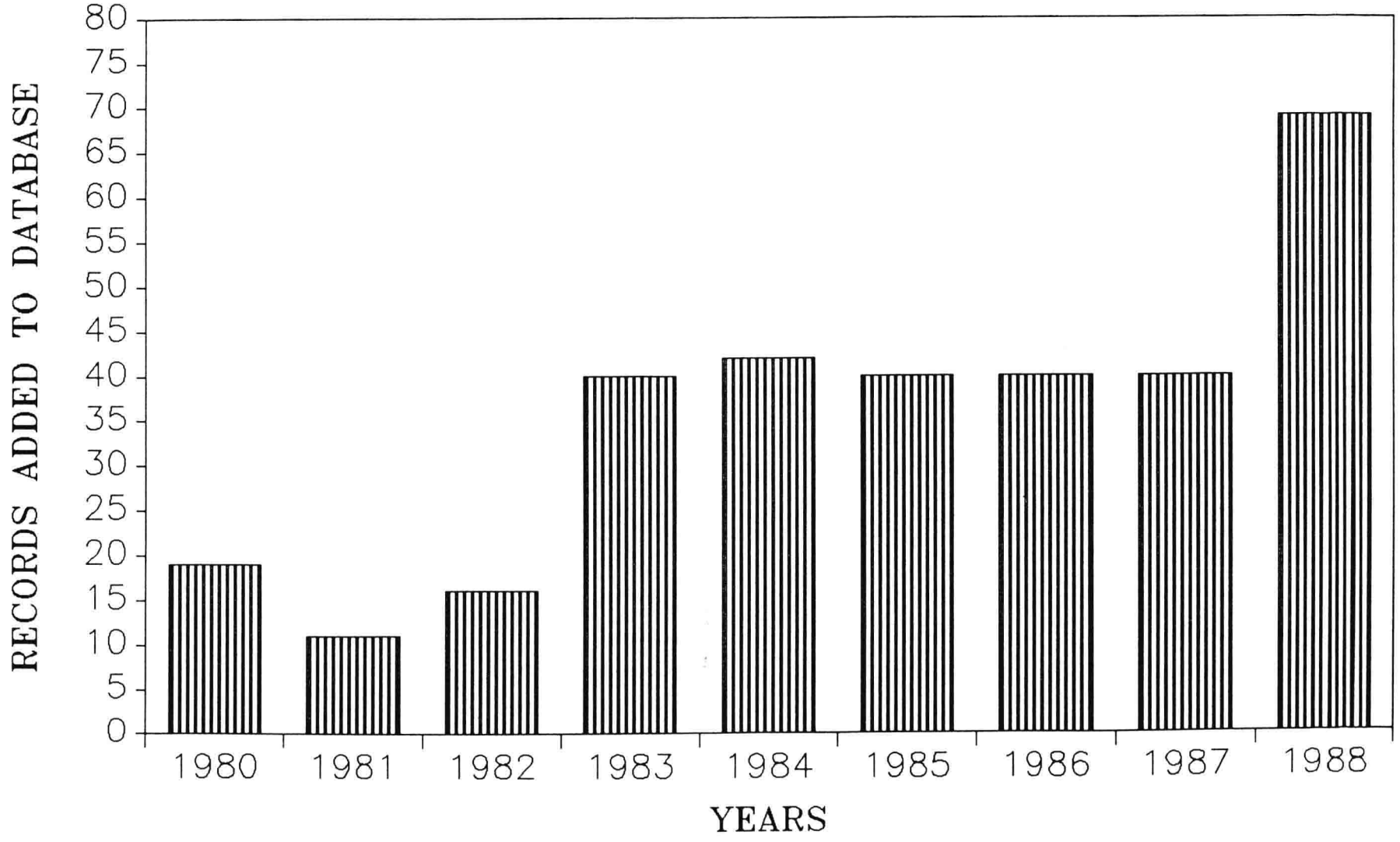
It is hoped that the introductory part of this review will provide a useful background to the topic, and the copied abstracts sufficient detailed information for those technologists and marketing executives wishing to be brought up to date on this increasingly significant form of packaging.

R R Goddard
May 1989

FIGURE 1

LITERATURE COVERAGE OF

MULTIPACKAGING



Source: Pira Database

How to use the references, abstracts and where desired, obtain the original documentation

The reference numbers which appear in the text refer to the abstracts which are published in the second section of this review.

The abstracts provided aim to give an informative summary of the original document. In some cases, the original may only be a page or less in length, and the reader is alerted to this by the use of the phrase Short article at the end of the abstract.

In most cases, a copy of the original document can be obtained from the Pira Information Centre. Documents may be ordered by post, telex, fax or telephone. All orders are normally despatched within 48 hours of receipt, by first class post in the UK, or airmail overseas.

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Introduction

The practice of selling items in fixed units is very old indeed; eggs by the dozen, etc has always been the accepted way, and the tradition of what constitutes an indivisible minimum has varied from time to time and place to place. In Japan, for instance, it is still possible to buy white bread by specifying the number of slices required.

When pre-packaging became the norm - which in the UK has been in the last fifty years or so - the necessity to decide upon one, or a range of fixed sizes, became essential. In the early days, pre-packaged fixed quantities co-existed in general retailing stores with loose materials sold by weight or volume to order. With the coming of self-service in the 1950s the need for all goods to be sold in pre-determined quantities (and usually packed to ensure they remained so) became essential.

What distinguishes multipacks from the fixed quantity or unit of sale is that individual items, each of which is itself pre-packed, are assembled together as a unit of sale. References to multipacks go back as far as 1922 (Ref. 3). It began as a promotional ploy, manufacturers or retailers offering multiple items at a concessionary price as an inducement to purchase. Marketing managers soon realised that this led to increased overall sales, and the practice became very widespread (4, 17, 25, 29, 38, 47, 54, 76).

The product sector in which the sale of multipacks has seen the widest application is beverages, in particular beer. All forms of primary pack are capable of being combined into multipacks, but the most highly developed systems are those used for metal cans (23, 88, 106, 114) and glass (75). These are extensively used by the beer and soft drinks industries.

The scope of this report covers the widest possible range of products and describes the different ways in which multipacks can be produced. For completeness in discussing marketing implications, some non primary packed items, which are sold as multiples, are also mentioned.

An important point to make is that multipacks do not necessarily involve the combination of a number of identical products, indeed some of the best known examples consist of flavour or type variants of a company's products. A few special examples of different (but usually related) items, e.g. ground coffee (67) being combined into a unit are also briefly mentioned since they use similar techniques and have similar marketing interest.

Perceived Benefits of Multipacks

The most important of these is simply increased sales, which benefits both the manufacturer and the retailer. This is especially possible with products for which there is no fixed demand limit, e.g. beer, confectionery or snacks. Increased sales come about because consumers buying a multipack will use the contents immediately - or if held in store in their home, their immediate availability will encourage consumption over a short period of time.

In addition to this fundamental gain in sales, there are a number of other benefits which include:

The effective transfer of part of the 'stock holding' to the consumer's home;
Opportunities for promotional offers, and greatly enlarged print areas to display these (2, 22, 52, 62, 93, 110);
Higher value of the average checkout transaction (42);
Easier shelf-loading, reduced pilferage (especially important for count-lines of confectionery) (28, 29, 42, 111);
Enhanced mechanical and environmental protection (this may in some circumstances make possible savings in secondary packaging) (30, 31, 66).

These benefits accrue to the manufacturer and the retailer in about equal proportions; and to marketing managers who are constantly seeking to broaden the range of products offered in this way.

At one period certain of the brewers had mixed views on the benefits to them of multipacks, reasoning that when virtually all cans were sold in this way, no individual benefit would be gained by any of them - only an on-cost across the industry (42, 59). In recent years a more general acceptance of net benefits prevails.

Paradoxically, for the retailer who gained most initially, modern EPOS developments, in addition to reducing the time taken for each individual transaction, can now build in a discounting system for any multiple of single items bought. Thus the sales incentive benefit can now be achieved without any change to the retail pack, or the use of any secondary items of packaging (88).

Methods of Producing Multipacks

There are three basic ways of producing multipacks for retail sale. One is to produce them as variants of the existing single unit pack; the second is to combine them by using a standard form of pack as the 'second tier'; and the third is to develop a purpose-designed system to unitise existing packs. Some of the methods described below do, to some extent, cross these boundaries but the subdivision is a useful way of considering the concept of multipacks in a wider context than is often described.

Integral Systems

The simplest way of producing a multipack is never to separate it into individual items at the time of manufacture. The best known product for which this is extensively used is yoghurt, where packs used are of the thermoform-fill-seal type; by simply changing the final punching tool they can be left in pairs, fours or sixes. The non-cut lines are usually heavily scored to facilitate separation (27, 44).

Other products where this is done are pouched goods which are left in multiple units from two up to a whole string, rather like a bandolier.

Another example, mainly employed for pharmaceuticals but also to some extent for liquid foods, is the production of multiple bottles of product on the mould-fill-seal principle. Not normally considered as a multipack (hence the lack of references), the best known, and certainly most widely used of these systems is Bottelpack from Swiss company Rommelag. Unit doses offer a number of advantages in the medical field, and the system is also inherently sterile making aseptic packaging of food an option, but it has mainly been adopted for medical uses so far. One reason for its limited adoption is that capital costs are high and it is a less flexible system than a traditional filling line using preformed vials or bottles.

Utilisation of Conventional Packs

Virtually any form of secondary packaging can be used to produce multipacks, and indeed the traditional transit units (fibreboard cases, shrink wraps, etc) are in fact multipacks, especially if purchased from semi-retail outlets such as cash-and-carry.

Those which have been adapted (or adopted) for the more correctly described multipacks, as being reviewed here, include:

Form-fill-seal and thermoform-fill-seal which have very extensive applications here including mixed varieties of potato crisps combined into a larger pouch or pre-made bag, and confectionery count-lines in pouches produced on form-fill-seal machines (63, 93). The first of these is a new marketing concept which has helped to develop new variants and expanded the whole market sector. It can also contribute to an improvement in the quality of the product by providing a second barrier layer to retard moisture uptake or oxygen ingress, and if the large bag is well sealed an air cushion effect can provide mechanical protection to this highly vulnerable product (30, 31, 66).

The second form is especially popular with large multiple retailers and is used by all the major UK confectionery manufacturers. Flat items (chocolate bars or biscuits) are usually sold in units of two to six, often supported on a board fitment or tray and tightly overwrapped on horizontal form-fill seal machines. Other items like "fun size" bars, mini-tubes, etc are jumble packed into bags produced on vertical form-fill-seal machines (92, 105).

Within this category are some of the products which may or may not be individually packed, previously mentioned. 6- or 9-packs of toilet rolls are a good example, and purpose-designed form-fill-seal machines are now available for these types of product (81).

Film overwrapping is another technique which can be readily employed - especially if the individual items are very firm and of regular geometry. Blocks of cigarette cartons for duty-free sales are one good example. Others range from biscuit packs to electric light bulbs and recording tapes. A tear-strip may be incorporated. An early example of this was the variety pack of breakfast cereals (42).

Shrink wrapping is employed for the unitising of cans and cartons which may not require to be located on trays. For other types of pack such as bottles and thermoforms, trays, platforms, or flat boards are normally included. The use of fully printed film has been tried a number of times, most recently for multipack shrink-wraps of soft drinks. This offers improved graphics and gives a distinctive identity to the multipack, as opposed to being merely a secondary pack (46, 53, 72, 87, 103, 108).

An important functional reason for the use of opaque film is to cover the bar code of the individual packs which would otherwise confuse the checkout scanners now extensively used in large retail outlets. An alternative to the opaque films, achieving the same effect, is to incorporate a pack-orienting machine into the shrink wrapping line which ensures that the bar coded sections of the pack designs are all faced to the inside of the block. The same device can be used to ensure that the main graphics panels are oriented to the outside of the block for most effective presentation on the shelves. Metalbox introduced this in 1988.

Stretch wrapping is a related unitising technique but one which does not involve the use of a heat shrink tunnel. It can be used for a very similar range of primary packs to that for shrink wrapping (5, 6, 12, 124). One particularly novel approach is the use of the DuoTube "Power Packing" continuous spiral wrapping equipment developed by Hagemann in Germany. One application of this system is the combining of two, three or four detergent cartons into a multipack. The system is claimed to be particularly economic in use of film, saving as much as 70% over a comparable shrink wrap. For square block cartons no base tray is required, and the equipment allows the incorporation of a tear-strip in the top to facilitate opening.

Cylindrical sleeve labels can be used to combine a number of items together. Its principle is identical to the shrink wrapping in that a loose sleeve is applied around a number of items and heat used to contract it, thus gripping them tightly together. It is not extensively used for orthodox multipacks but can be employed for special promotional offers when, for instance, two hemispherical moulded bottles may be formed and combined together using a shrink sleeve label; promotional offers may be made by linking together two related items. (See page 15, para 6.) (35, 49, 90)

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