APPENDIX A1: Customer Survey Form Format

Country : MALAYSIA

Prepared By :

Exchange Rate (£) RM6.20

Date :

PACKAGING SALES BY CUSTOMER

CUSTOMER NAME

(RANK BY VALUE)

			1999 ACTUAL					
MATRIX CODE	GLOBAL PRODUCT REFERENCE	LOCAL PRODUCT REFERENCE	PRICE (£ /LT)	VOL (LT)	VAL (£)	GM (£)	GM (%)	RMC (£ / LT)

NOTE: FOR CONFIDENTIALITY, ACTUAL DATA HAS BEEN ERASED

APPENDIX A2: Customer Survey Form Format

SUPPLIER LIST IN (CUSTOMER'S NAME)

	1999 ACTUAL			SEGMENT ANALYSIS								
SUPPLIER	PRICE (£ / LT)	VOL (LT)	MARKET SHARE	2 P B & B INTERNAL	2 P B & B EXTERNAL	3 P BEV' INTERNAL	3 P BEV' EXTERNAL	BEV' ENDS	FOOD ENDS	FOOD CANS	GENERAL LINE	CAPS & CLOSURES

NOTE: FOR CONFIDENTIALITY, ACTUAL DATA HAS BEEN ERASED

APPENDIX B: Data Compilation Format

MARKET SEGMENT ANALYSIS - VOLUME

Country : MALAYSIA
Exchange Rate (£) RM6.20
Prepared By :
Date :

		2 PIECE B&B CANS	3 PIECE BEVERAGE CAN	BEVERAGE ENDS	FOOD ENDS	FOOD CANS	GENERAL LINE	CAPS CLOSURES	TOTAL
		NUMBER OF CANS & CAPS PRODUCED (MILLION)							
1999 ACTUAL	TOTAL								
2000 FORECAST	TOTAL								
		AVAILABLE MARKET FOR COATINGS ('000 LITRES)							
1999 ACTUAL	INTERNAL								
	EXTERNAL								
	TOTAL								
2000 FORECAST	INTERNAL								
	EXTERNAL								
	TOTAL	0	0	0	0	0	0	0	0
		ICI SALES ('000 LITRES)							
1999 ACTUAL	INTERNAL								
	EXTERNAL								
	TOTAL								
2000 BUDGET	INTERNAL								
	EXTERNAL								
	TOTAL								
		ICI MARKET SHARE (%)							
1999 ACTUAL	INTERNAL								
	EXTERNAL								
	TOTAL								
2000 BUDGET	INTERNAL								
	EXTERNAL								
	TOTAL								

NOTE: FOR CONFIDENTIALITY, ACTUAL DATA HAS BEEN ERASED

APPENDIX C

Types of Metal Packaging Market Segment:

1) 2-Pc DWI Cans

The 2-pc DWI cans comprise of two components; the body and can end. Its manufacturing process begins with the stamping of a circular disc from the starting material (base metal). A shallow cup is drawn from the base metal and is then progressively re-drawn (technically termed as "iron") in a bodymaker to produce the can body. The can body is then decorated externally and protected internally with suitable coatings. The coatings are usually water-base lacquer, with the external coating being acrylic or polyester type, and epoxy-acrylated type for the internal coating. These cans are used to pack carbonated drinks and beverages which come in sizes of 250ml and 330ml.

2) 3-Pc Beverage Cans

The 3-pc beverage cans are made from tinplate and are made up of 3 parts, which consist of a can body and two ends – top and bottom ends. The can body and bottom end are usually coated with epoxy-phenolic or epoxy amino type of lacquer as the basecoat, followed by a vinyl or another epoxy type of lacquer as the topcoat. The top end is normally coated with another coating system, which will be discussed in the following section. The end use of these cans are found in packs for soya milk, herbal tea, coffee and many others. However, such cans are fast being replaced by the 2-pc DWI cans.

3) Beverage Ends

These ends are made of aluminium and are widely used as ends for the 2-pc DWI and 3-pc Beverage cans. The coating system for a beverage end consists of an organosol layer for the internal and an epoxy amino layer for the external. Its convenient 'easy-to-open' feature is fast gaining popularity among consumers.

4) 3-Pc Food Cans

The only difference between the 3-pc Food cans with the 3-pc beverage can is in the top end, which is made from tinplate instead of aluminium. It is widely used for a variety food packages such as sardine, curries, seafood, vegetable pickles, fruits, sauces, cream soups etc.

Various types of coating are recommended for these cans, depending on the aggressiveness of the food packs. For acidic food such as pickles and fruits, the organosol is used as the internal can protective coating. In general, epoxy phenolic lacquer is deemed as the "universal" protective coating for the internal cans of most food pack.

5) General Line Cans

The difference between these cans with the 3-pc food cans mentioned above is the type of food packed in them. The 3-pc food cans are used for food that requires heating process called sterilisation, to preserve it longer. On the contrary, the type of food packed in the general line cans does not need sterilisation.

As the general line cans are used for less stringent packs, the internal can is sometimes not coated with lacquer. If a coating layer is required, the epoxy amino

lacquer is most widely used. However, the external part of the can is always coated for both decorative and protective purposes. The alkyd and acrylic type of coatings are usually used for the external.

6) Caps and Closures

Both the internal and external parts of these caps are protected with coatings. Again, a variety of coating systems can be used, depending on the aggressiveness of the pack. In general, a combination of epoxy phenolic and organosol lacquers are used for the internal. For the external, the polyester or acrylic type is used.

APPENDIX D

The Technological Threat: Bisphenol A - Endocrine Issue

What is Bisphenol A and where is it used? Bisphenol A is a material made by combining acetone and phenol. It is a building block for epoxy resins, which are widely used as the raw materials for can coatings, adhesives and polycarbonates (Utusan Konsumer, Aug 1999). Laboratory tests have shown that Bisphenol A interferes with actions of hormones that regulate key body functions, such as behavior, growth, reproduction and development. The alleged effects of such interference, include breast cancer, prostate cancer, decreased sperm counts and environmental effect which leads to declining reproductive success and sexual abnormalities in some wildlife species, including sex changes in fish (Sayad, Nov 1996)

The issue was first highlighted in Switzerland where high Bisphenol-A-Diglycidyl Ether (BADGE) levels were detected in the oil of canned fish products. BADGE is an intermediary product of Bisphenol A, which is further reacted to form epoxy resins. Subsequent tests following this discovery failed to support these allegations. In fact, studies found no evidence that Bisphenol A selectively affects reproduction or development. It is neither proven to be carcinogenic (Bisphenol A Sector Group, Oct 1998).

However, the occurrence of such issue has resulted in negative public perceptions of the canned food industry on the whole. If not handled properly, the issue has the potential to lead to product deselections, bans or phase-outs. Product litigation would have a huge impact on the industry. Therefore, extensive testing and development are required to defend such allegations.

In the meantime, industries which are involved in this issue, including ICI has to quickly remove themselves from such destructive mess. Therefore, coatings

consisting of Bisphenol A and BADGE replacements, must be promptly formulated to revive the can coatings industry, which has been badly tarnished by such issue.

APPENDIX E

ICI Packaging Malaysia: Business Unit Organisation Structure