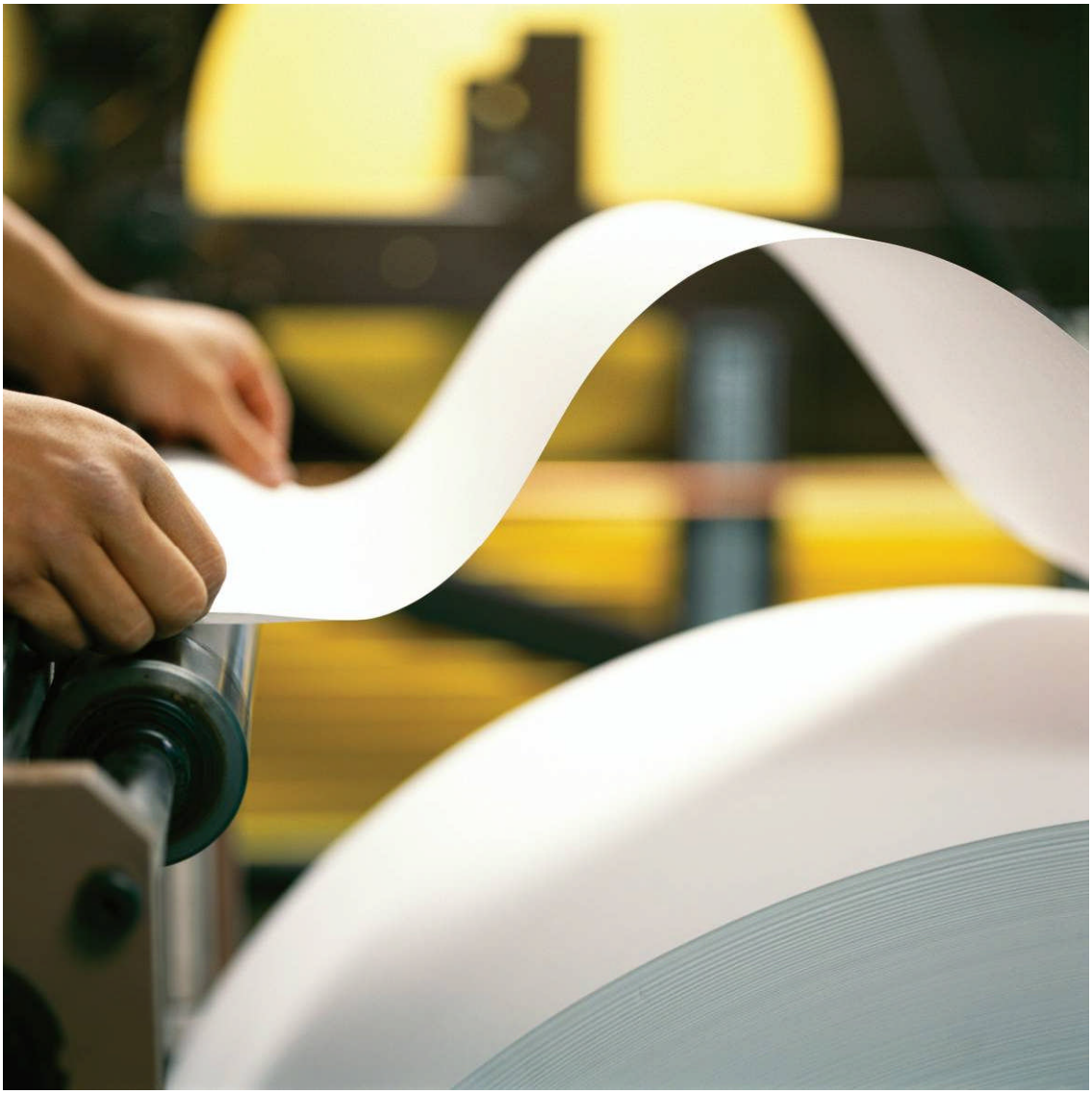
PRICEWATERHOUSECOOPERS

Food Standards Australia New Zealand

Cost Schedule for Food Labelling Changes

Final Report

7 March 2008



Contents

Executive Summary

This report, prepared by PricewaterhouseCoopers for Food Standards Australia New Zealand (FSANZ), presents a schedule of costs which estimates the costs incurred by food companies to changing food and beverage labelling as a result of regulatory changes.

The cost schedule has been developed as a tool for FSANZ to gain a general sense of the scale and types of impacts to companies when it is in the early stages of considering a regulatory change to food and beverage labelling. The findings of this assignment provide indicative generic estimates of the costs likely to be incurred by companies. The actual cost impact of a particular regulatory change should be investigated on a case by case basis.

Direct costs

Companies incur many costs, however for the purposes of developing the cost schedule, direct costs are defined as:

- *Label design* – the cost of engaging designers to make changes to or re-design the label (or package for direct print labels);
- *Label production* – the costs associated with the production of labels over and above printing, such as new printing plates;
- *Proofing* – the cost of viewing incorporated text, colour and/or graphics changes to the label, to ensure that the label is how it should be before printing. This may include testing of new plates;
- *Package redesign* – the costs associated with changing the shape, or size of packaging. The direct costs include packaging redesign costs and packaging proofing costs; and
- *Labour* – the labour inputs involved in responding to regulatory changes, such as marketing, management, administration, technical and regulatory expertise.

Labelling change scenarios

The scale and scope of changes to food labelling are also vast and varied, and for the purpose of this assignment, three generic scenarios of label changes were developed and are defined as:

- *Minor* – changes to text and one printing plate only;
- *Medium* – changes to text and/or label layout, changes to three printing plates and proofing required; and
- *Major* – changes to text and/or label layout, changes to six printing plates, proofing required and changes to packaging shape/size/design.

Industry participation

A survey was developed in conjunction with FSANZ and the Australian Food and Grocery Council (AFGC) and sent to select members of the AFGC and the New Zealand Food and Grocery Council. The cost schedule was developed using data received from 12 Australian and New Zealand companies whose product offerings include dairy, bakery, beverages, confectionary, condiments and sauces.

Cost schedule – high level results

The cost schedule is separated by different types of packaging. A summary of the total estimated cost per stock keeping unit (SKU) is provided in the tables below. Detailed cost schedules including estimates of each direct cost can be found in Chapter 4.

MINOR CHANGE

	Packaging sub-category	Non-labour costs	Labour costs	Total cost
Glass	Bottle	$1,065	$2,902	$3,967
	Jar	$1,851	$1,960	$3,811
Metal	Aluminium can	$1,081	$3,703	$4,784
	Steel can	$1,406	$2,093	$3,498
Plastic	Tub	$1,989	$952	$2,940
	Bottle	$1,447	$3,239	$4,686
	Jar	$1,150	$3,600	$4,750
Fibre	Folding carton	$1,402	$1,483	$2,885
	Corrugated carton	$2,588	$460	$3,048
	Liquid paperboard carton	$1,938	$1,600	$3,538
Flexible	Pouch / bag	$1,504	$1,692	$3,196

MEDIUM CHANGE

	Packaging sub-category	Non-labour costs	Labour costs	Total cost
Glass	Bottle	$4,579	$5,085	$9,664
	Jar	$4,768	$3,550	$8,318
Metal	Aluminium can	$2,597	$6,445	$9,042
	Steel can	$6,052	$3,638	$9,690
Plastic	Tub	$5,924	$2,983	$8,908
	Bottle	$5,092	$6,779	$11,871
	Jar	$3,500	$6,600	$10,100
Fibre	Folding carton	$4,218	$2,607	$6,825
	Corrugated carton	$5,763	$663	$6,425
	Liquid paperboard carton	$8,316	$3,817	$12,133
Flexible	Pouch / bag	$4,841	$2,963	$7,804

MAJOR CHANGE

	Packaging sub-category	Non-labour costs	Labour costs	Total cost
Glass	Bottle	$7,366	$5,420	$12,787
	Jar	$8,820	$10,600	$19,420
Metal	Aluminium can	$4,755	$4,191	$8,946
	Steel can	$15,548	$7,967	$23,515

Plastic	Tub	$18,773	$11,150	$29,923
	Bottle	$16,465	$9,964	$26,429
	Jar	$7,750	$10,600	$18,350
Fibre	Folding carton	$8,758	$5,203	$13,962
	Corrugated carton	$9,525	$1,425	$10,950
	Liquid paperboard carton	$21,823	$9,433	$31,256
Flexible	Pouch / bag	$13,276	$6,147	$19,424

Conclusions and recommendations

While the cost schedule serves as a useful starting point when considering the impacts to labelling from regulatory changes, it must be recognised that particular changes will need to be investigated on a case by case basis as impacts of regulatory changes will vary across companies, industry sectors and products.

Considerations that would assist in the robustness of any future costing exercise include:

- *Consistency across industry regarding the definition of labour inputs* – labour is an important cost consideration in monitoring compliance and enacting change. However, as highlighted in Section 3.4 – Limitations, the amount of time devoted by staff in response to regulatory changes varies considerably. To gain a consistency in approach, FSANZ may wish to work collaboratively with industry to agree on the scope of activities and tasks undertaken by staff which are within or outside of scope.
- *Provision of detailed cost information* – it would be useful to provide cost information broken down by:
    - Label type – direct or pre-printed;
    - Packaging type – broadly, glass, metal, plastic, fibre and flexible. Where appropriate, differentiation of packaging subcategories should be included (e.g. aseptic versus gable top, the different types of flexible film);
    - Printing method – flexography, lithography or gravure;

- Printing plates – number of printing plates changed/replaced;
- Proofing – the type of proofing undertaken;
- Stock keeping units (SKUs) – number of SKUs impacted by the regulatory change;
- Other – such as travel, legal and marketing.

1 Introduction

Food Standards Australia New Zealand (FSANZ) is the statutory authority responsible for developing food standards under the *Australia New Zealand Food Standards Code* (the 'Code') for the composition, labelling and contaminants requirements that apply to all foods produced or imported for sale in Australia and New Zealand.

Prepared by PricewaterhouseCoopers (PwC) for FSANZ, this report presents the indicative findings of a study to identify a schedule of cost estimates of various labelling changes resulting from amendments to the Code.

The study identifies the direct cost impacts resulting from a series of labelling change scenarios affecting pre-packaged food and beverages available for retail sale for domestic consumption in the Australian and New Zealand markets. In doing so, it takes into account a range of constant and variable factors which impact on these costs.

It is intended that the cost schedule will be used by the FSANZ at various stages of the standards development process to provide data for risk assessment purposes and decision making, and will be of benefit to manufacturers required to demonstrate the cost impacts of regulatory change during application and proposal assessment processes.

1.1 Scope of the cost schedule

The cost schedule will only consider the *direct* costs associated with a change to labelling. For the purposes of this study, direct costs are defined narrowly, and only capture the immediate costs required to change the text, colour or scope of a label. Direct costs include:

- Label design – the cost of engaging designers to make changes to or re-design the label (or package for a direct print label);
- Label production – costs associated with the production of labels over and above printing. Generally this includes a new set of printing plates that encompass the changes, but may also include new software or new label printers;
- Proofing – Proofs allow companies to view incorporated changes (text, colour, graphics) to the label before printing. Proofing also allows companies to test the new plates to ensure that it meets quality standards before undertaking a full print run;
- Package redesign – A label change may also necessitate a change in the shape or size of packaging. The direct costs include packaging redesign costs and packaging proofing costs;

- Labour – The labour inputs involved in responding to regulatory changes, such as marketing, management, administration, technical and regulatory expertise.

Other features of the scope of the cost schedule are that it:

- should, as far as possible, include Australian and New Zealand product categories;
- be limited to the impact on labelling changes on prepacked foods and beverages for retail sale for domestic consumption;
- provide cost estimates for generic products (i.e. should not identify particular brands);
- be limited to a selection of food and beverage products within each of the product categories and based on a range of packaging and labelling types;
- investigate and weight costs to account for the frequency of labelling changes; and if possible
- examines any particular costs associated with small/medium companies associated with changes to labelling requirements.

1.2 Approach

The preparation of the cost schedule was based on a multi-faceted approach of review and development. Key steps included:

- a review of the existing literature, research and information pertaining to costs associated with food labelling to establish the context for labelling regulation in Australia and New Zealand (Appendix A contains a reference list);
- consultation with FSANZ and the Australian Food and Grocery Council (AFGC) to identify and verify key labelling change scenarios, identify packaging and develop the industry survey;
- survey to industry with participation from members of the AFGC and the New Zealand Food and Grocery Council to collect cost data and other inputs to quantify the scope of cost impact; and
- the construction and testing of a cost schedule.

1.3 Report structure

The Chapters of the report are as following:

- Chapter 2 provides the contextual background to food labelling in Australia and New Zealand.

- Chapter 3 provides indicative costs to changes to food and beverage labelling, and a discussion of the limitations of the cost schedule and other key findings.
- Chapter 4 identifies some of the indirect sots not quantified as part of the cost schedule.
- Chapter 5 outlines some of the conclusions from this study.

1.4 Disclaimer

This report was prepared by PricewaterhouseCoopers (PwC) for Food Standards Australia New Zealand for the sole purpose of providing indicative cost estimates for changes to food and beverage labelling as a result of regulatory changes. Given the generic nature of the cost schedule, it is intended to be used as an initial guide in the early consideration of regulatory changes. It does not attempt to cover the full range of potential costs or change scenarios.

This report is not intended to be utilised or relied upon by any organisation, or its employees, other than FSANZ, nor is it to be used for any purpose other than that articulated above. Accordingly, PwC accepts no responsibility in any way whatsoever for the use of this report by any other persons or for any other purpose.

This report has been prepared based on consultation with and information received from a variety of food manufacturers and packaging companies. PwC has not endeavoured to seek any independent confirmation of the reliability, accuracy or completeness of this information. While the statements made in this report are given in good faith, PwC accepts no responsibility for any errors in the information on which they are based, nor the effect of any such errors on our comments.

2 Background to Food Labelling and Packaging

2.1 The Food Standards Code

Food Standards Australia New Zealand (FSANZ) is an independent statutory agency established by the *Food Standards Australia New Zealand Act 1991*. It works within an integrated food regulatory system involving the governments of Australia and New Zealand.[1]

A core function of FSANZ is the development of food standards and joint codes of practice with industry. In Australia and New Zealand food companies and retailers are subject to the *Australia New Zealand Food Standards Code* (the 'Code') which prescribes a series of food standards which collectively aim to provide the minimum regulatory burden necessary to maintain a safe food supply and informed consumers.

The Code applies to food products sold or prepared for sale in Australia and/or New Zealand, and/or imported into Australia and/or New Zealand on or after 20 December 2002, and non-conformance can attract penalties enforceable by State and Territory Governments in Australia and the New Zealand Government. Because food standards are given legal affect, it is also important that the Code be read in conjunction with other applicable laws, such as the *Australian Trade Practices Act 1974* and the *New Zealand and State and Territory Fair Trading and Food Acts*.[2]

2.1.1 Food labelling and information requirements

Part 1.2 of the Code relates to the application of labelling of food sold in Australia and New Zealand. It establishes the requirements (and exceptions) for the labelling of food for retail sale, catering purposes and other uses, and prescribes legibility requirements and a range of conditions relating to the identification of food, its ingredients and nutrition content; the need for and uses of warning and advisory declarations; date marking; directions for product use and storage; and details regarding location or country of manufacture.

The objectives of the labelling provisions of the Code are to ensure food safety, the provision of adequate information relating to food to enable

[1] FSANZ; www.foodstandards.gov.au

[2] FSANZ; The Australia New Zealand Food Standards Code

consumers to make informed choices; and the prevention of misleading or deceptive conduct. [3]

In addition to the labelling provisions, regulatory changes in other parts of the Code could necessitate a change to food labelling.

The key labelling standards applicable to products packaged for retail sale are summarised in Table 2a (overleaf).

2.1.2 Amending the Food Standards Code – considering the impact and cost burden

The trigger for the development of, or amendment to, a food standard can be a proposal raised by FSANZ, policy advice issued by the Australia and New Zealand Food Regulation Ministerial Council or an application submitted by a body external to FSANZ (usually a food business).[4]

In accordance with its statutory objectives under Section 18 of the FSANZ Act and in consideration of any relevant New Zealand standards and any other matters pertinent to the particular standard in review, FSANZ undertakes a comprehensive assessment of the cost and risks associated within any regulatory change. Its overarching objective however, in considering any amendment or revision to a food standard is the protection of public health and safety, the provision of adequate information relating to food to enable consumers to make informed choices and the prevention of misleading or deceptive conduct.

[3] Section 18 of the FSANZ Act

[4] FSANZ; www.foodstandards.gov.au

Table 2a: The Australia New Zealand Food Standards Code – Summary of Standards for the Application of Labelling and Other Information Requirements

Standard	Description	Summary of Requirements*
Standard 1.2.1 Application of Labelling and Other Information Requirements	Sets out the application of general labelling and other information requirements for foods for retail sale, foods for catering purposes and foods not for retail sale.	Food for retail sale must in general, bear a label setting out all requirements prescribed in the Code. There are exceptions where the food is unpackaged; is in inner packages not designed for sale without an outer package, other than individual portion packs; is made and packaged on the premises from which it is sold; is whole or cut fresh fruit and vegetables, is delivered packaged, and ready for consumption, at the express order of the purchaser; or is sold at a fund raising event. There are other requirements in the Code that may require labelling for food safety reasons such as for allergens.
Standard 1.2.2 Food Identification Requirements	Requires that certain information be included on the label of a food product for identification purposes.	Food packaged for retail sale must include the following information: the name of the food as prescribed or to indicate its true nature, lot identification and name and address of supplier.
Standard 1.2.3 Mandatory Warning and Advisory Statements and Declarations	Sets out the mandatory advisory statements and declarations which must be made in relation to certain foods or foods containing certain substances.	A number of foods, food ingredients and substances are required to be declared or invoke labelling statements when present in foods. The presence of the major food allergens, such as eggs, milk, fish, peanuts and other nuts, sesame seeds, soybeans, and cereals containing gluten (e.g. wheat) and their products must be declared.
Standard 1.2.4 Labelling of Ingredients	Sets out specific requirements for the labelling and naming of ingredients and compound ingredients.	Packaged food products must in general include a statement of all ingredients. Ingredients must be listed by common, descriptive or generic name and in descending order of ingoing weight. There are provisions for the declaration of compound ingredients, alternative ingredients, food additives and vitamin and minerals be de.
Standard 1.2.5 Date Marking of Packaged Food	Prescribes a date marking system for packaged food and the form in which those foods must be date marked	The standard requires packaged food, with some exceptions, to be date marked, and prohibits the sale of packaged food after the expiration of the use-by date, if required. A 'use-by' date is to be used where the food should not be sold or consumed after the date specified for health and safety reasons, and 'best-before' date is to be used when the date signifies the end of the period during which the food will maintain its quality.

Standard	Description	Summary of Requirements*
Standard 1.2.6 Directions for Use and Storage	Outlines the circumstances where food must be labelled or accompanied by directions for use or storage.	Direction for use and/or storage of food to be included on the label where for reasons of health and safety, the consumer should be informed of specific use or storage requirements.
Standard 1.2.7 Reserved (Representations about Food)	Reserved	
Standard 1.2.8 Nutrition Information Requirements	Sets out nutrition information requirements in relation to food that is required to be labelled prescribing when nutritional information must be provided and the manner in which it should be provided.	Nutrition information panels are required on nearly all packaged foods showing a range of information including serving size, average energy content, protein, fat, saturated fat, carbohydrates and sugars, sodium (salt), and substantiation of certain nutrition claims.
Standard 1.2.9 Legibility Requirements	Sets out general and specific legibility requirements for the labelling of packaged and unpackaged foods.	In general, labels must be in English, and for mandatory warning statements of a size of type not less than 3mm, or 1.5mm on small packages
Standard 1.2.10 Characterising Ingredients and Components of Food	Sets out specific requirements for the declaration of the percentage of characterising ingredients and components of certain food products.	The percentage of the main or 'characterising' components or ingredient must be listed in and generally determined as the proportion of ingoing weight of the characterising ingredient/component as a proportion of the total weight of ingredients. When declared in nutrition information panels the proportion must be declared as the average quantity per serve and per 100gm/ml of the final food.
Standard 1.2.11 Country of Origin Requirements Australia Only	Sets out the requirements for country of origin for packaged foods and certain unpackaged foods, including fish, pork and fruits and vegetables.	A statement must be included on the package that identifies where the food was made or produced; or the country where it was made, manufactured and packaged and to the effect that the food is constituted from imported ingredients or from local and imported ingredients.

*Note that there are further exceptions for some food products and food categories within the Standards.

2.2 Food and beverage packaging and labelling

Packaging is defined by industry as "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer".[5]

The Australian packaging industry plays a substantial national economic role. It contributes significantly to gross domestic product (GDP); employs, directly and indirectly, over 50,000 people; has a capital investment of approximately $7 billion; and achieves annual sales of over $5 billion.[6]

In Australia, over 65-70 per cent of packaging is used by the food and beverage industry.[7]

2.2.1 Food packaging types

There are several types of packaging that can be broadly categorised by the type of material used:

- *Glass* – glass packaging is typically made into jars or bottles and is used to store a cross spectrum of food and beverage products including sauces, spreads, instant coffee, oils, and fruit juices. Glass containers may be made into a variety of sizes – beverage bottles usually contain 375ml or 750ml, and contents in jars can range from 50g to 1kg.
- *Metal* – aluminium and steel are common metals used for metal packaging.
    - Aluminium is typically transformed into beverage cans to store beer, carbonated soft drinks and pre-mixed alcoholic drinks. These cans usually come in 250ml, 330ml, 355ml, 375ml, 440ml and 500ml sizes.
    - Steel is typically made into foods cans and aerosol cans. Food cans are assembled using two or three pieces (two-piece / three-piece can) that may have a variety of features, such as stackable, welded, easy open end (ring-pull). The range of products packaged in steel cans include: fish, fruit, vegetables, soups, condensed milk and whipped cream. Can sizes may range from containing contents of 100g to 1.25kg.

[5] Packaging Council of Australia Inc; www.packcoun.com.au

[6] Industry Commission (1996); *Packaging and Labelling Report No. 49*

[7] Packaging Council of Australia Inc; www.packcoun.com.au

- *Plastic* – plastic packaging can be moulded into various shapes and is a versatile packaging type. Plastic packaging is made from a variety of materials including:
    - Polyethylene – High density polyethylene (HDPE) is widely used for plastic bottles and provides good protection at below freezing temperatures. Examples of products packaged in HDPE include milk and water. Low density polyethylene (LDPE) is similar to HDPE in composition, but is less rigid. LDPE is primarily used for squeezable applications. A product example includes wasabi paste and tomato sauce.
    - Polyethylene terephthalate (PET) – PET is a strong, clear material suitable and is commonly used for beverages such as carbonated drinks, juices and water.
    - Polyvinyl chloride (PVC) – PVC has good resistance to oil and is a suitable packaging for salad dressings and vinegar.
    - Polypropylene (PP) – PP has rigid properties and has resistance to high temperatures. PP is usually made into jars, and can be used to store products such as spreads and pancake syrup.
    - Polystyrene (PS) – PS is an economical plastic that has rigid qualities. When mixed with another chemical to make high-impact polystyrene (HIPS), its rigid qualities are enhanced. HIPS is often used to package yoghurt, fruit and tomato paste.
- *Fibre* – fibre packaging typically comes in the form of cartons:
    - Folding cartons – Folding cartons are made from multi-layered paperboard (a paper-like material) that is quite thin in thickness. Folding cartons are typically used as secondary packaging for cereals and for grouping multiple items of like products (e.g. six-pack of beer, eight muesli bars, and two individual serves of powdered packet soups).
    - Corrugated cartons – corrugated cartons are formed by gluing one or more sheets of fluted (wave shapes) sheets to one or more flat linerboards which form the inner and outer facings of cartons. Flute serves as protective cushioning and helps strengthen a carton. These cartons are generally used as secondary packaging for products such as beer and soft drink beverages.
    - Liquid paperboard cartons – There are two types of liquid paperboard packaging, usually used to store products such as milk, juice, custard and liquid stock.

      Gable top cartons are made from a layer of board sandwiched between two layers of very thin plastic. Fresh milk is commonly stored within gable top cartons.

Aseptic packaging is made from five layers: three of plastic, one of foil and one of board. The products in the cartons are sterilised before being packaged and, as the cartons fully seal the contents, they need not be refrigerated during storage. These cartons are suitable for preserving products for a long shelf life.

- *Flexible* – flexible packaging covers a wide range of packaging that can be single and multi-layered and is supplied in reels or bags. It can be paper/poly/foil or nylon or a combination of materials which are supplied either plain/printed/coated and/or laminated to provide long shelf life properties. End products packaged include confectionery, snack foods, frozen foods, soups and pharmaceuticals.

2.2.2 Labelling and printing

There are two key types of labelling:

- *Pre-printed labelling* – this involves the printing of a label onto paper-based or plastic material and is transferred onto product packaging. Some paper-based labels are made with adhesive qualities, so that the label may be easily transferred onto the packaging. Pre-printed labels made from plastic are commonly known as shrink sleeves. Typical packaging that uses pre-printed labels include: glass bottles and jars, plastic bottles and jars, and steel food cans.
- *Direct print labelling* – the label information is printed directly onto the product packaging. Thus, these labels form part of the packaging manufacturing process. Typical packaging that uses direct print labelling include: aluminium beverage cans, cartons and flexibles.

2.2.3 Printing methods

There are three key printing processes used in the production of food and beverage packaging and labels.

- *Flexography* – flexography can be thought of as a sophisticated method of printing with plates made from rubber material. The required image is mirrored onto the rubber printing plate, which is then wrapped around a cylinder. The plate is dipped into ink and the cylinder rotates to make contact with the print material to transfer the ink and resulting image.

  Flexographic printing is able to use a wide range of ink and is suitable for printing on a variety of different materials. The inks used in the printing process are usually fast drying and therefore allows for faster production and reduces costs. Flexographic printing plates are relatively inexpensive compared to plates of other printing methods, and due to the low cost of label production, flexography is a popular printing mechanism.

Flexographic printing is typically use for corrugated cartons, flexible plastics, self adhesive labels, shrink sleeve labels, gable top liquid paperboard cartons

- *Offset Lithography* – offset lithography is a widely used technique, based on the principle of water and oil repulsion. Non-image areas of printing plates are coated with water receptive solution, whereas image areas are coated with ink-receptive solution. This ensures that only image areas pick up ink and other areas repel it by being washed away by water. The inked image is transferred (or offset) from a plate to a rubber blanket which is wrapped around a cylinder. The cylinder rotates so that the inked blanket transfers the image to the print material.

  Dry offset lithography is used to print aluminium cans and instead of using water receptive solutions for non-image areas, silicone rubber is used, as this material does not attract ink.

  Offset lithography produces high quality images and printing plates are relatively quick and easy to produce.

  The offset lithographic printing method is typically used for folding cartons, metal cans, paper labels, aseptic liquid paperboard cartons and shrink sleeves.

- *Rotogravure* – rotogravure (or gravure, for short) works having an engraved image on a copper cylinder, which rotates into an ink fountain. Ink fills the cavities of the engraved cylinder plate and excess ink is removed by a doctor blade (which acts like a squeegee). The print material is sandwiched between the impression roller and cylinder plate, and as the print material passes through, ink is transferred and the impression roller applies pressure to ensure maximum coverage of the ink.

  The gravure printing method is used for long print runs and is the most expensive printing method. The gravure printing process is able to produce high quality graphics and companies tend to use this method for its premium product range.

  The rotogravure printing method is typically used for aseptic liquid paperboard cartons, flexibles and shrink sleeves.

3 Food Labelling Cost Schedule

3.1 Direct labelling costs

A change to labelling regulations may result in the need to re-design an existing label to accommodate the required information or content change. The major costs associated with labelling changes include:

- *Label design* – the cost of engaging designers to make changes to or re-design the label (or package for direct print labels);
- *Label production* – costs associated with the production of labels over and above printing. Generally this includes a new set of printing plates that encompass the changes, but may also include new software or new label printers;
- *Proofing* – proofs allow companies to view incorporated changes (text, colour, graphics) to the label before printing. Proofing also allows companies to test the new plates to ensure that it meets quality standards before undertaking a full print run;
- *Package redesign* – a label change may also necessitate a change in the shape, or size of packaging. The direct costs include packaging redesign costs and packaging proofing costs; and
- *Labour* – the labour inputs involved in responding to regulatory changes, such as marketing, management, administration, technical and regulatory expertise.

3.2 Methodology

The cost schedule will take into account a number of factors such as:

- Type of label printing used;
- Type of packaging;
- Generic product categories; and
- The scale of the change to the label.

To account for differences in the scope of label changes, we initially developed 11 “scenarios” of potential changes to labels for use in discussions with companies. However, we found that companies were not, by and large, able to differentiate between the costs associated with each of the 11 “scenarios”. Instead, we have categorised changes as minor, medium and major. We have defined them as follows:

Scale of change	Scope of change	Examples of scenarios
Minor change	Label design – text changes only, no change to layout of label Label production – change to one colour (one printing plate) only Proofing – not required Package reddsign – no change to packaging shape / size	• Additions to ingredients list – no change to label layout • Change to mandatory warning statements – no change to label layout • Change to the contents of nutritional panel – no change to label layout • Amendments to country of origin information – no change to label layout • Additions to requirements of manufacturer's details – no change to label layout • Amendments to text regarding serving or preparation instructions – no change to label layout • Amendments to text regarding storage instructions – no change to label layout
Medium change	Label design – changes to text and label layout Label production – change to three colours (three printing plates) Proofing – required Package redesign – no change to packaging shape / size	• Additions to ingredients list – change to label layout • Change to health or product claim – change to label layout • Change to mandatory warning statements – change to label layout • Removal/addition/change of endorsements (e.g. "tick of approval") – minimal change to label layout • Change to the contents of nutritional panel – change to label layout • Amendments to country of origin information – change to label layout • Additions to requirements of manufacturer's details – change to label layout

		• Amendments to text regarding serving or preparation instructions – change to label layout • Amendments to text regarding storage instructions – change to label layout
Major change	Label design – changes to text and label layout Label production – change to six colours (six printing plates) Proofing – required Package redesign – change required to packaging shape / size	• Re-naming of product • Redesign or amendment of image/logo/graphic • Removal / addition / change of endorsements (e.g. "tick of approval") – redesign of label layout

The three change scenarios formed the basis upon which to collect data from packaging companies and food manufacturers. A survey was developed in conjunction with FSANZ and AFGC and was sent to over 40 companies from Australia and New Zealand. Companies contacted to participate in the survey were recommended by AFGC and the New Zealand Food and Grocery Council. The survey to food manufacturers is provided in Appendix B and to packaging companies in Appendix C.

Data from 14 companies were received, of which information from 12 companies was appropriate for use in the cost schedule. Some responding companies operate in both Australia and New Zealand; however some of the responses are specific for individual locations only. For commercial in confidence reasons, the cost schedule and this report does not identify individual companies whose information is used as part of this assignment. However, the product offerings of the participating companies include:

- Confectionary and snack food – chocolate, lollies and potato chips
- Beverages – alcoholic and non-alcoholic beverages, tea and coffee
- Dairy – cheese, butter, yoghurt and ice-cream
- Bakery – biscuits, cereals and bread
- Condiments – sauces, flavourings, salad dressings and spreads

The cost schedule is divided into five categories based on packaging type, and then divided into sub-categories shown in the table below:

Packaging type	Packaging sub-category
Glass	• Bottle • Jar
Metal	• Aluminium can • Steel can
Plastic	• Tub • Bottle • Jar
Fibre	• Folding carton • Corrugated carton • Liquid paperboard carton
Flexible	• Pouch / bag

Companies provided indicative cost information on design, labelling production, proofing, packaging redesign and labour, and rarely differentiated costs by the type of packaging, labelling or printing method.

In order to derive figures for the cost schedule, the different types of packaging used by individual companies were identified and cost information was matched to each of these packaging sub-categories. This process was completed for each company, so that each packaging sub-category had data from which to calculate the average cost for each cost category or direct cost. For some figures, the average cost is based on one data set, whilst others are based on up to eight data sets. The total cost was derived by summing the average cost of the different cost categories.

The figures presented in the cost schedule are based on a range of assumptions including:

- Cost estimates are provided in Australian dollars. If companies provided costs in New Zealand dollars the conversion rate of AU$1 = NZ$1.15 was used. This conversion rate is based on the average exchange rate from 1 July to 31 December 2007.
- In cases where companies provided aggregate data and did not differentiate costs based on packaging type, the same cost data were used for the different packaging types used by the company.

- In cases where companies did not specify the basis upon which costs were provided, it was assumed that these costs relate to one stock keeping unit (SKU).
- In circumstances where companies did not provide a cost estimate for a particular cost category, then it was assumed that there was no data available and thus does not impact upon the calculation of average cost.
- In circumstances where companies provided a range for costs, the mid-point average was used.
- The definition of 'minor' change assumes that there are no proofing costs. In circumstances where companies provided a cost for 'proofing' a minor change, these costs were omitted from the cost schedule.
- The definition of 'minor' and 'medium' change assumes that there are no package redesign costs – i.e. changes to size or shape. In circumstances where companies provided a cost for 'packaging redesign', these costs were omitted from the cost schedule.

3.3 Key findings

The following tables provide indicative data as to the cost burden resulting from minor, medium and major changes, by packaging type. The results are provided on a stock keeping unit (SKU) basis.

GLASS

packaging type sub-category	label type	generic product examples	scenario	cost category									
				label design	label production	proofing	package redesign	*subtotal*	labour - technical & regulatory	labour - admin	labour - executive	*labour Subtotal*	total cost
Glass Bottle	pre-printed	Beer, beverages	minor	$1,065	See note (a)	n/a	n/a	*$1,065*	$800	$450	$300	*$2,902*	**$3,967**
			medium	$4,579	See note (a)	See note (a)	n/a	*$4,579*	$1,167	$1,042	$550	*$5,085*	**$9,664**
			major	$7,366	See note (a)	See note (a)		*$7,366*	$1,667	$1,992	$1,250	*$5,420*	**$12,787**
Glass jar	pre-printed	Spreads, condiments	minor	$1,217	$634	n/a	n/a	*$1,851*	$360	$1,600	$0	*$1,960*	**$3,811**
			medium	$2,867	$1,902	See note (b)	n/a	*$4,768*	$420	$2,350	$780	*$3,550*	**$8,318**
			major	$5,017	$3,803	See note (b)		*$8,820*	$600	$6,000	$4,000	*$10,600*	**$19,420**

Notes:

(a) Design costs are inclusive of label production and proofing costs

(b) Design costs are inclusive of proofing costs

n/a – not applicable, given the definition of 'minor' or 'medium'

blank cell – denotes that there no data points from which to populate the cost schedule

Costs relate to one stock keeping unit

Comments on cost schedule:

- The cost estimates for *glass bottle* are based on between one and four data sets.
- The cost estimates for *glass jar* are based on between one and three data sets.
- The 'major' labour costs for glass jar are based on one set of data, and therefore may skew results. Also see *section 3.4 – Limitations* for explanation.

METAL

packaging type sub-category	label type	generic product examples	scenario	cost category									
				label design	label production	proofing	package redesign	*subtotal*	labour - technical & regulatory	labour - admin	labour - executive	*labour – subtotal*	total cost
Aluminium beverage can	direct	carbonated soft drink, beer, pre-mixed alcoholic drinks , beer	minimal	$1,081	See note (a)	n/a	n/a	*$1,081*	$1,705	$1,705	$292	*$3,703*	**$4,784**
			medium	$2,597	See note (a)	See note (a)	n/a	*$2,597*	$3,411	$2,558	$476	*$6,445*	**$9,042**
			major	$4,755	See note (a)	See note (a)		*$4,755*	$1,930	$1,743	$517	*$4,191*	**$8,946**
Steel can	direct and pre-printed	Fish, vegetables, fruit	minimal	$850	$556	n/a	n/a	*$1,406*	$743	$1,100	$250	*$2,093*	**$3,498**
			medium	$4,043	$2,009	See note (b)	n/a	*$6,052*	$1,010	$1,900	$728	*$3,638*	**$9,690**
			major	$6,010	$3,538	See note (b)	$6,000	*$15,548*	$1,667	$3,917	$2,383	*$7,967*	**$23,515**

Notes:

(a) Design costs are inclusive of label production and proofing costs

(b) Design costs are inclusive of proofing costs

n/a – not applicable, given the definition of 'minor' or 'medium'

blank cell – denotes that there no data points from which to populate the cost schedule

Costs relate to one stock keeping unit

Comments on cost schedule:

- All cost estimates for *aluminium beverage can* are based on two data sets, and thus may not provide a true representation of costs incurred by industry as a whole.
- In contrast, cost estimates for *steel can* are based on between one and six data sets. There is large variability in the costs provided by individual companies, and the figures shown represent 'average' costs based on data provided. Cost variability may be due to the type of label – direct or pre-printed.

PLASTIC

packaging type sub-category	label type	generic product examples	scenario	cost category									
				label design	label production	proofing	package redesign	*subtotal*	labour - technical & regulatory	labour - admin	labour - executive	*labour – subtotal*	total cost
Plastic tub / cup	Direct and Pre-printed	Yoghurt, margarine	minimal	$1,550	$439	n/a	n/a	*$1,989*	$417	$400	$135	*$952*	**$2,940**
			medium	$4,558	$1,366	See note (b)	n/a	*$5,924*	$1,013	$1,500	$470	*$2,983*	**$8,908**
			major	$9,258	$3,015	See note (b)	$6,500	*$18,773*	$3,300	$6,275	$1,575	*$11,150*	**$29,923**
Plastic bottle	Pre-printed	beverages	minimal	$1,141	$306	n/a	n/a	*$1,447*	$1,248	$1,815	$176	*$3,239*	**$4,686**
			medium	$3,266	$1,446	$380	n/a	*$5,092*	$2,480	$3,423	$876	*$6,779*	**$11,871**
			major	$7,132	$2,987	$346	$6,000	*$16,465*	$2,615	$5,453	$1,896	*$9,964*	**$26,429**
Plastic jar	Pre-printed	spreads	minimal	$150	$1,000	n/a	n/a	*$1,150*	$600	$3,000	$0	*$3,600*	**$4,750**
			medium	$500	$3,000	See note (b)	n/a	*$3,500*	$600	$4,500	$1,500	*$6,600*	**$10,100**
			major	$1,750	$6,000	See note (b)		*$7,750*	$600	$6,000	$4,000	*$10,600*	**$18,350**

Notes:

(b) Design costs are inclusive of proofing costs

n/a – not applicable, given the definition of ‘minor’ or ‘medium’

blank cell – denotes that there no data points from which to populate the cost schedule

Costs relate to one stock keeping unit

Comments on cost schedule:

- All cost estimates for *plastic jar* can are based on one set of data, and thus may not provide a true representation of costs incurred by industry as a whole.
- In contrast, cost estimates for *plastic tub* and *plastic bottle* are based on between one and six data sets. There is large variability in the costs provided by individual companies, and the figures shown represent ‘average’ costs based on data provided. Variability in labour costs (particularly from minimal to medium to major) may be due to the extent to which companies involve senior executives as part of the labelling change process. Also see *section 3.4 – Limitations* for explanation.

FIBRE

packaging type sub-category	label type	generic product examples	scenario	cost category									
				label design	label production	proofing	package redesign	*subtotal*	labour - technical & regulatory	labour - admin	labour - executive	*labour – subtotal*	total cost
folding carton	direct	Cereal, muesli bars, biscuits	minimal	$1,402	See note (a)	n/a	n/a	*$1,402*	$528	$762	$193	*$1,483*	**$2,885**
			medium	$4,218	See note (a)	See note (a)	n/a	*$4,218*	$731	$1,322	$553	*$2,607*	**$6,825**
			major	$7,258	See note (a)	See note (a)	$1,500	*$8,758*	$1,130	$2,443	$1,631	*$5,203*	**$13,962**
corrugated carton	direct	Beer, soft drink (tertiary packaging)	minimal	$2,588	See note (a)	n/a	n/a	*$2,588*	$135	$175	$150	*$460*	**$3,048**
			medium	$5,763	See note (a)	See note (a)	n/a	*$5,763*	$270	$213	$180	*$663*	**$6,425**
			major	$9,525	See note (a)	See note (a)		*$9,525*	$600	$225	$600	*$1,425*	**$10,950**
liquid paperboard carton	direct	Milk, juice, stock	minimal	$1,339	$599	n/a	n/a	*$1,938*	$777	$533	$290	*$1,600*	**$3,538**
			medium	$4,699	$3,075	$542	n/a	*$8,316*	$1,333	$1,633	$850	*$3,817*	**$12,133**
			major	$9,692	$5,684	$447	$6,000	*$21,823*	$2,800	$4,583	$2,050	*$9,433*	**$31,256**

Notes:

(a) Design costs are inclusive of label production and proofing costs

n/a – not applicable, given the definition of 'minor' or 'medium'

blank cell – denotes that there no data points from which to populate the cost schedule

Costs relate to one stock keeping unit

Comments on cost schedule:

- Cost estimates for *folding carton* are based on between one and nine data sets.
- Cost estimates for *corrugated cartons* are based on between one and two data sets, and thus may not provide a true representation of costs incurred by industry as a whole.
- Cost estimates for *liquid paperboard cartons* are based on between one and six data sets. There is large variability in the costs provided by individual companies, and the figures shown represent 'average' costs based on data provided. Variability in labour costs (particularly from minimal to medium to major) may be due to the extent to which companies involve senior executives as part of the labelling change process. Variability in design, label production and label proofing may be due to the different printing processes used and the type of carton (i.e. gable top or aseptic). Also see *section 3.4 – Limitations* for explanation.

FLEXIBLE

packaging type sub-category	label type	generic product examples	scenario	cost category									
				label design	**label production**	**proofing**	**package redesign**	***subtotal***	**labour - technical & regulatory**	**labour - admin**	**labour - executive**	***labour – subtotal***	**total cost**
Plastic pouch / bag (generic)	direct	frozen food, snack food, cheese, confectionery, potato chips	minimal	$783	$722	n/a	n/a	*$1,504*	$604	$884	$204	*$1,692*	**$3,196**
			medium	$2,534	$2,307	See note (b)	n/a	*$4,841*	$818	$1,542	$604	*$2,963*	**$7,804**
			major	$4,376	$4,401	See note (b)	$4,500	*$13,276*	$1,262	$2,997	$1,888	*$6,147*	**$19,424**

Notes:

(b) Design costs are inclusive of proofing costs

n/a – not applicable, given the definition of 'minor' or 'medium'

blank cell – denotes that there no data points from which to populate the cost schedule

Costs relate to one stock keeping unit

Comments on cost schedule:

- Cost estimates for *flexible pouch/bag* are based on between one and nine data sets. There is large variability in the costs provided by individual companies, and the figures shown represent 'average' costs based on data provided. There are also many different variants of flexible packaging, however for the purposes of developing the cost schedule, these variants were treated as one. Also see *section 3.4 – Limitations* for explanation.

3.4 Limitations

While the cost schedule provides indicative data as to the costs associated with labelling changes, the results should be interpreted with care. Some of the limitations of the cost schedule are explained below.

- *Lack and variability of data*

The key limitation to the cost schedule is that limited data were available to populate the cost schedule. Data in the cost schedule is based on data from twelve food and packaging companies. While some companies completed the survey in full, others were unable to provide data related to labour. Some companies presented costs as a whole, while others were able to identify costs by individual packaging type. To overcome this challenge, data were grouped by packaging sub-category to help gain a critical mass of data sources. Even so, some results are based on one set of data, whereas others are based on up to nine data sets.

Categories that do not have substantial amounts of data include aluminium beverage cans, plastic jar (although costs for plastic bottle may be a useful proxy) and corrugated cartons.

Additionally, in some cases, there was a large variability in data (some of the reasons for the variability are discussed below), and as such, some results may be skewed.

- *Variability in labour inputs*

The staff time required to respond to regulatory changes varied significantly across companies. The table below highlights the variability across change scenarios and staff category.

Category	Minor			Medium			Major		
	Low	High	Ave	Low	High	Ave	Low	High	Ave
Technical and regulatory	1 hr	75 hrs	20 hrs	2 hrs	150 hrs	39 hrs	4 hrs	100 hrs	51 hrs
Administration and management	2 hrs	50 hrs	14 hrs	3 hrs	75 hrs	31 hrs	3 hrs	200 hrs	72 hrs
Executive	0 hr	8 hrs	3 hrs	1 hr	20 hrs	8 hrs	2 hrs	50 hrs	20 hrs

This variability may be attributable to the interpretation of labour inputs by individual companies, as well as the different policies and procedures within individual companies. For example, regulatory changes may cause companies to revise their strategies, or company policy may require proofing to be undertaken to all changes no matter how minor. The extent to which

companies outsource and have in-house resources for certain functions may also impact upon the variability in staff time.

- *The implications for each company is different*

The effect of a label change in each company will differ and thus the costs implications will vary depending on the type of change. Three different change scenarios – minor, medium, major – were developed in an attempt to capture consistent data across different companies. While the scenarios attempted to be representative of the impacts to companies as a result of changes to labelling, they do not cover the full breadth of possible labelling changes.

A regulatory amendment may affect different companies in different ways. For example, one company considered a major change to involve the production of back labels to contain compulsory information onto a product range that currently does not have a back label. This company estimates that this change would cost at least $20,000 per SKU in design and label production costs.

For another company, an example of a major change may involve the reformulation of products where the legislative change requires products to contain a minimum nutritional standard.

- *Package redesign is generally not a cost consideration*

The majority of responding companies did not provide costs associated with package redesign. One company noted that package redesign was not usually driven by regulatory changes and another company noted that this may contradict the company's environment commitment to reduce the amount of packaging used. More significantly, one company highlighted that due to constraints of machinery and costs of retooling, package size and shape would not be modified to accommodate additional information on labels. To do so would require at least a minimum investment of $150,000 and this cost may run into the hundreds of thousands of dollars.

There may be instances, however, where regulatory changes may necessitate a package redesign. For example, packages with a small surface area.

- *Label printing*

The three printing methods used for food and beverage packaging and labelling vary in cost. Rotogravure is the most expensive method, as the plates (copper cylinders) are costly to replace, and flexography is generally the most cost effective method. Given the limited data collected, the cost schedule does not reflect differences in printing methods (unless comprehensive data were available).

The change scenarios assumed that a maximum of six printing plates would be affected if a change were to occur. Lithographic printing methods

generally affect up to six plates. The flexographic printing methods however may use only four plates. In these instances, the replacement of one printing plate was considered to be a minor change, three plates a medium change and four plates a major change.

Printing methods in themselves do not fully explain cost differentials. For example, consultation with packaging companies found that there were large differences in the cost of printing plates for lithographic printing methods. The cost to change one printing plate in the production of aluminium beverage cans is $46 (although three sets are required - 3 x $46 = $138), but $2000 in the production of liquid paperboard cartons and $480 in the production of decorated steel cans.

- *Proofing*

There are generally three types of proofing that can be undertaken and the cost schedule does not differentiate between proofing variants. Printing proofs are used for checking that all text and graphics and colours come out as expected before going to press. A prepress proof uses ink jets, dyes, overlays or other methods to simulate the final printed piece. A press proof uses the printing plates and inks specified for the job.[8] Cost variations for proofing may be due to the type of proofing used.

For example, consultation with a packaging company found that a proof run using lithographic printing for metal packaging costs $8,000 - $10,000. In comparison, a proof using the flexographic method for liquid paperboard cartons costs approximately $350.

- *Variables impacting cost of labels*

The cost schedule has captured indicative costs and do not account for other variables affecting the cost of packaging or labelling such as: shape, size, finish (matt, gloss, metallic, laminate and adhesive), the number of colours and order quantity (economies of scale).

[8] About.com website: http://desktoppub.about.com/cs/basic/g/proofs.htm

4 Indirect Costs Not Quantified in the Cost Schedule

In the course of this assignment, a number of indirect costs associated with labelling changes have been identified. While these were outside the scope of the study and have not been quantified, we have nevertheless documented some of the key indirect costs. These include:

- *Write off costs and stock on hand*

After a regulatory change, companies are often left with labels, packaging and products that do not meet regulatory standards and the write off costs of these items can be quite significant. Companies generally hold anywhere between three to nine months worth of stock at hand at any point in time. The variability may be due to the demand for the product or the location from which labels/packaging are sourced. If sourced from overseas, companies need to allow six to twelve weeks for delivery.

The cost schedule underestimates the full extent of costs borne by companies when regulatory amendments are introduced. By way of example, to provide an indication of the cost of write offs, if a company holds 200,000 units of stock on hand for one SKU and the average cost of a pre-printed paper label is 2 cents per unit, this equates to $4,000 in write-off costs for the pre-printed paper labels alone. Direct print labels are usually more expensive and the costs are variable depending upon the type of packaging. At the lower end of the spectrum, direct print labels may cost 15 cents per unit, thus the write off cost for this type of label is $30,000 per SKU. At the higher end of the spectrum, direct print labels may cost 88 cents (or more) per unit, which equates to $176,000 in write off costs per SKU.

The above example assumes that a company holds 200,000 units of labels/packaging on hand. But the reality is that, depending on the nature of the business, some companies will hold significantly much larger quantities on hand at any one time.

- *Labelling lifecycle*

The lifecycle of a package or label varies considerably depending on the product. For dynamic products, the packaging/label lifecycle may be every 12 months, however for other products, the packaging/label may change once every two to five years (sometimes even longer particularly for well established brands). FSANZ generally allows two years for implementation of packaged goods. If the implementation of regulatory changes were able to coincide with a packaging/label lifecycle change, the cost burden would be substantially reduced.

The majority of products considered as part of the cost schedule had a packaging/labelling life cycle of two to five years. Unfortunately, the data

collected does not allow us to estimate reductions in the cost burden if regulatory changes were to coincide with a routine label change or to understand the extend to which lifecycle and regulatory amendments coincide.

One company commented that nutrition and regulatory changes seem to occur every one to two years and these changes would therefore occur outside the lifecycle of typical brands/products.

- *Product testing or related investigation*

This can include the testing of food and beverage products in the event of a changing nutritional or other requirement which needs to be reflected in labelling. It may also include costs such as gathering information about product supply chains (e.g. country of origin rules for ingredients).

- *Marketing costs*

A significant label change (e.g. a change of logo or product claim) may also require a change to a product marketing and/or branding strategy. It may also require companies to update and/or reproduce marketing material and websites.

- *Legal costs*

Some label changes (e.g. logo) may require design patents etc to protect the integrity of the brand or require the expertise of legal professionals.

- *Travel costs*

Many companies source their packaging and labelling from interstate or overseas. When changes to packaging or labelling occur, some companies send their product managers overseas/interstate to ensure the new package or label meets quality standards. The cost schedule does not include costs related to travel limits and thus may underestimate the costs incurred by companies.

- *Additional design costs*

Some companies may incur additional design costs such as photography. New photography may cost in the order of $15,000 per product range. These costs are not included in the cost schedule and may underestimate the costs incurred by companies.

5 Conclusions and Recommendations

The cost schedule developed as part of this study provides some generic indicative costs of the impacts of food labelling changes. Its development was intended to assist FSANZ in the preliminary stages of considering amendments to regulatory requirements. While the cost schedule serves as a useful starting point when considering the impacts to labelling from regulatory changes, it must be recognised that particular changes will need to be investigated on a case by case basis as impacts of regulatory changes will vary across companies, industry sectors and products.

Considerations that would assist in the robustness of any future costing exercise include:

- *Consistency across industry regarding the definition of labour inputs*

Labour is an important cost consideration in monitoring compliance and enacting change. However, as highlighted in Section 3.4 – Limitations, the amount of time devoted by staff in response to regulatory changes varies considerably. To gain a consistency in approach, FSANZ may wish to work collaboratively with industry to agree on the scope of activities and tasks undertaken by staff which are within or outside of scope.

- *Provision of detailed cost information*

It would be useful to provide cost information broken down by:

  - Label type – direct or pre-printed;
  - Packaging type – broadly, glass, metal, plastic, fibre and flexible. Where appropriate, differentiation of packaging subcategories should be included (e.g. aseptic versus gable top, the different types of flexible film);
  - Printing method – flexography, lithography or gravure;
  - Printing plates – number of printing plates changed/replaced;
  - Proofing – the type of proofing undertaken;
  - Stock keeping units (SKUs) – number of SKUs impacted by the regulatory change; and
  - Other – such as travel, legal and marketing

Appendix A Reference List

About.com; www.about.com

Australian Food and Grocery Council; www.afgc.org.au

Amcor; www.amcor.com

European Advisory Services; *The Introduction of Mandatory Nutrition Labelling in the European Union*; 30 November 2004

Food Standards Australia and New Zealand; *Australia New Zealand Food Standards Code Incorporating Amendments up to and including Amendment 91*; 2007

Food Standards Australia and New Zealand; www.foodstandards.gov.au

Industry Commission; *Packaging and Labelling; Report No. 49*, 14 February 1996

Muth, Mary K., Gledhill, Erica C., and Karns, Shawn A; *FDA Labelling Cost Model, Final Report*; January 2003

New Zealand Food Safety Authority; www.nzfsa.govt.nz

Packaging Council of Australia Inc; www.packcoun.com.au

Visy; www.visy.com.au

Wikipedia; www.wiki.org.au

Appendix B Survey to Food Manufacturers

Label cost schedule for *food and beverage processors*

Survey questions

PricewaterhouseCoopers (PwC) is developing a labelling cost schedule for Food Standards Australia New Zealand (FSANZ). The schedule will provide **reference baseline data** that is representative of costs generic to the majority of Applications received by FSANZ.

The cost schedule is **not intended** to incorporate costs such as opportunity costs, transaction costs or adjustment costs, as these costs vary significantly and will require investigation on a case-by-case basis.

The cost schedule will capture defined and specific *direct* costs for companies that may be imposed by amendments to regulatory requirements necessitating a change to the label of a prepacked food or beverage for domestic retail sale.

For the purposes of this project, direct costs have been defined as:

(a) The cost of packaging (for direct print labels);

(b) The cost of the label material (for pre-printed adhesive labels);

(c) Where applicable, the actual cost of printing the label (both direct and pre-printed);

(d) Design costs of a change to the layout and/or content of a label;

(e) The cost of changes in production of the label either from plate changes or the purchase of new software and label printers;

(f) Any label proofing costs;

(g) The cost of changing the shape/size/design of packaging if necessary to accommodate label changes – design costs and proofing only;

(h) Direct labour costs associated with a label change; and

(i) Any inventory costs associated with a change which does not coincide with the packaging or label life cycle.

Any information gathered for this study will be treated confidentially. Individual company names and/or brands will not be identified in the cost schedule.

Questions

1. Company information

- What are your company's key products for domestic retail sale?
- How many employees does your company have?
- Where applicable, does it produce its own packaging?
- Where applicable, does it produce its own labels?

2. For each of these products, please describe:

- What type of labelling is used (pre-printed, direct print) (including technical/industry name)?
- Type of packaging used (including technical/industry name)?
- Is the label a part of the packaging or applied separately?
- What are the storage requirements for each product (i.e. frozen)?

3. The following section relates to cost estimates of a label change. For each type of packaging and labelling, please estimate the costs associated with a change in the text, content or layout of the label (where appropriate).

Please note, in doing this, we have defined a "minor", "medium" and "major" change to a label as follows:

- Minor change
    - Design – no change to layout of label
    - Printing – change to one colour (one printing plate) only
    - No label proofing
    - Packaging – no change to packaging shape/size/design
- Medium change
    - Design – change to label layout
    - Printing – change to three colours (three printing plates)
    - Label proofing required
    - Packaging – no change to packaging shape/size/design
- Major change
    - Design – change to label layout

- Design – change to name of product or product logo
- Printing – change to six colours (six printing plates)
- Label proofing required
- Packaging – change to packaging shape/size/design

(a) The cost of packaging (for direct print labels)

For product packaging that has direct print label, please provide:

- The cost per unit of packaging; and
- The actual cost of printing per package.

(b) The cost of the label material (for pre-printed adhesive labels)

For products which have pre-printed labels, please provide:

- The unit cost for each label; and
- The actual printing cost per pre-printed label.

(c) Where applicable, the actual cost of printing the label (both direct and pre-printed)

- How much does printing cost per label?;
- Is there a premium associated with the production of labels (i.e at short notice or in small print runs);
- Similarly, is there a discount on cost for pre-ordering 6 months in advance or large print runs.

(d) Design costs

Changes to text or graphic elements that require changes to the content or layout of the label. It may include graphic design/artistic costs where a logo/product name is required (eg. where a small change can have a major label impact is to reformulate a product from “added fruit” to “added fruit flavour”, requiring all graphic images of fruit to be removed and changed to the characterising ingredient).

Minor label change $	**Medium label change $**	**Major label change $**

(e) Label production costs either from plate changes, or new software and label printers;

This will generally refer to the costs of printing new labels either from developing new printing plates, or from requiring new software and reprogramming printers, and purchase of new printers.

Minor label change $	**Medium label change $**	**Major label change $**

(f) Label proofing costs

Where proofing is required for a change of label, please indicate the type of proofing undertaken.

For each type of proofing, please indicate the cost:

Minor label change $	**Medium label change $**	**Major label change $**
n/a		

(g) The cost of changing the shape/size/design of packaging if necessary to accommodate label changes – design costs and proofing only

This will generally refer to the direct costs of changing the shape/size/design of packaging to accommodate a modified label. The direct costs will be:

- Packaging design costs
- Packaging proofing costs

Minor label change $	**Medium label change $**	**Major label change $**

(h) Direct labour costs associated with a change of label

What are the direct costs associated with a minor, medium and major labelling change?

Direct costs can be:

- Time spent in technical or regulatory planning or coordination;
- Time spent in training technical, marketing and graphic staff on requirements;
- Any direct administration or management time in organising or coordinating the labelling change; and
- Any executive time in approving the labelling change.

Category	Cost per hour ($)	Hours in task
Minor labelling change		
Technical and regulatory		
Administrative/management		
Executive		
Medium labelling change		
Technical and regulatory		
Administrative/management		
Executive		
Major labelling change		
Technical and regulatory		
Administrative/management		
Executive		

(i) Packaging and labelling life cycle

- For each for your products, please indicate how frequently (years or months) you would amend product labelling for non-regulatory reasons (eg. marketing)?

- For products with a packaging/labelling life cycle of longer than 12 months:
    - What would be the standard units of packaging and/or labelling in stock?
    - Can you estimate the unit cost per package and/or label?
- For products with a packaging/labelling life cycle of longer than 2 years:
    - What would be the standard units of packaging and/or labelling in stock?
    - Can you estimate the unit cost per package and/or label?
- Are there any seasonal or other issues which will affect the packaging life cycle for a product (e.g. Christmas?). Please describe.

4. What other sort of costs does your company incur in changing food and beverage labelling for regulatory change? Please list them.

Thank you for your assistance

Appendix C Survey to Packaging and Labelling Companies

Label cost schedule for *packaging and labelling manufacturers*

Survey questions

PricewaterhouseCoopers (PwC) is developing a labelling cost schedule for Food Standards Australia New Zealand (FSANZ). The schedule will provide **reference baseline data** that is representative of costs generic to the majority of Applications received by FSANZ.

The cost schedule is **not intended** to incorporate costs such as opportunity costs, transaction costs or adjustment costs, as these costs vary significantly and will require investigation on a case-by-case basis.

The cost schedule will capture defined and specific *direct* costs for companies that may be imposed by amendments to regulatory requirements necessitating a change to the label of a prepacked food or beverage for domestic retail sale.

For the purposes of this project, direct costs have been defined as:

(a) The cost of packaging (for direct print labels);

(b) The cost of the label material (for pre-printed adhesive labels);

(c) The actual cost of printing the label or packaging (both direct and pre-printed);

(d) Design costs of a change to the layout and/or content of a label;

(e) The cost of changes in production of the label either from plate changes or the purchase of new software and label printers;

(f) Any label proofing costs;

(g) The cost of changing the shape/size/design of packaging if necessary to accommodate label changes – design costs and proofing only; and

(h) Labour costs associated with label design, plate production and proofing or packaging re-design and print runs.

Any information gathered for this study will be treated confidentially. Individual company names and/or brands will not be identified in the cost schedule.

Questions

1. Company information

- What are your company's key products?
- How many employees does your company have?
- Does it produce its own labels?

2. For each of these products, please describe:

- What type of labelling is used (pre-printed, direct print) (including technical/industry name)?
- Type of packaging used/manufactured (including technical/industry name)?
- Is the label a part of the packaging or applied separately?

3. The following section relates to cost estimates of a label change. For each type of packaging and labelling, please estimate the costs associated with a change in the text, content or layout of the label (where appropriate).

Please note, in doing this, we have defined a "minor", "medium" and "major" change to a label as follows:

- Minor change
    - Design – no change to layout of label
    - Printing – change to one colour (one printing plate) only
    - No label proofing
    - Packaging – no change to packaging shape/size/design
- Medium change
    - Design – change to label layout
    - Printing – change to three colours (three printing plates)
    - Label proofing required
    - Packaging – no change to packaging shape/size/design
- Major change
    - Design – change to label layout
    - Design – change to name of product or product logo
    - Printing – change to six colours (six printing plates)

- Label proofing required
- Packaging – change to packaging shape/size/design

(a) The cost of packaging (for direct print labels)

For product packaging that has direct print label, please provide:

- The cost per unit of packaging; and
- The actual cost of printing per package.

(b) The cost of the label material (for pre-printed adhesive labels)

For products which have pre-printed labels, please provide:

- The unit cost for each label; and
- The actual printing cost per pre-printed label.

(c) *Where applicable, the actual cost of printing the label (both direct and pre-printed)*

- How much does printing cost per label?;
- Is there a premium associated with the production of labels (i.e at short notice or in small print runs);
- Similarly, is there a discount on cost for pre-ordering 6 months in advance or large print runs.

(d) Design costs

Changes to text or graphic elements that require changes to the content or layout of the label. It may include graphic design/artistic costs where a logo/product name is required (eg. where a small change can have a major label impact is to reformulate a product from "added fruit" to "added fruit flavour", requiring all graphic images of fruit to be removed and changed to the characterising ingredient).

Minor label change $	**Medium label change $**	**Major label change $**

(e) Label production costs either from plate changes, or new software and label printers;

This will generally refer to the costs of printing new labels either from developing new printing plates, or from requiring new software and reprogramming printers, and purchase of new printers.

Minor label change $	**Medium label change $**	**Major label change $**

(f) Label proofing costs

Where proofing is required for a change of label, please indicate the type of proofing undertaken.

For each type of proofing, please indicate the cost:

Minor label change $	**Medium label change $**	**Major label change $**
n/a		

(g) The cost of changing the shape/size/design of packaging if necessary to accommodate label changes – design costs and proofing only

This will generally refer to the direct costs of changing the shape/size/design of packaging to accommodate a modified label. The direct costs will be:

- Packaging design costs
- Packaging proofing costs

Minor label change $	**Medium label change $**	**Major label change $**

(h) Labour costs directly associated with the direct costs

This includes the labour costs associated with label design, plate production and proofing or packaging re-design.

Type of direct cost	Hours of labour required	Hourly rate ($), including on-costs
Label design (if relevant)		
Plate production		
Proofing		
Package redesign		
Package proofing/testing		

Thank you for your cooperation

Appendix D Generic product categories

GLOBAL PRODUCT CATEGORIES FOR THE FOOD, BEVERAGE AND TOBACCO SEGMENT

The Global Product Categories (GPC) is based on a hierarchy system:

- **Segment:** There are 36 segments, of which Food, Beverage and Tobacco is one segment. Segments are grouped by industry sector.
- **Family:** A family is a broad division of a segment. There are 13 families in the Food, Beverage and Tobacco segment and they are indicated in **bold**.
- **Class:** A class is a group of like categories. Classes are indicated by the "➢" symbol.
- **Brick:** Bricks are categories of like products and due to the level of detail are not provided below.

F1: 50100000 - Fruits/Vegetables/Nuts/Seeds

50101500 - Vegetables - Unprepared/Unprocessed

50101600 - Fruit - Unprepared/Unprocessed

50101700 - Nuts/Seeds - Unprepared/Unprocessed

50101800 - Nuts/Seeds - Prepared/Processed

50101900 - Fruit/Nuts/Seeds Combination

50102000 - Fruit - Prepared/Processed

50102100 - Vegetables - Prepared/Processed

50102200 - Fruits/Vegetables/Nuts/Seeds Variety Packs

F2: 50110000 - Meat/Poultry/Game/Batrachian

50111500 - Meat/Poultry/Game/Batrachian - Unprepared/Unprocessed

50112000 - Meat/Poultry/Game/Batrachian - Prepared/Processed

50112100 - Meat/Poultry/Game/Batrachian Variety Packs

F3: 50120000 - Seafood

50121500 - Fish - Unprepared/Unprocessed

50121700 - Shellfish Unprepared/Unprocessed

50121800 - Aquatic Plants Unprepared/Unprocessed

50121900 - Fish - Prepared/Processed

50122000 - Aquatic Invertebrates - Prepared/Processed

50122100 - Shellfish Prepared/Processed

50122200 - Aquatic Plants Prepared/Processed

50122300 - Aquatic Invertebrates - Unprepared/Unprocessed

50122400 - Seafood Variety Packs

50122500 - Aquatic Invertebrates/Fish/Shellfish/Seafood Combination

F4: 50130000 - Milk/ Butter/ Cream/ Yogurts/ Cheese/ Eggs/ Substitutes

50131600 - Eggs/Egg Substitutes

50131700 - Milk/Milk Substitutes

50131800 - Cheese/Cheese Substitutes

50131900 - Butter/Butter Substitutes

50132000 - Cream/Cream Substitutes

50132100 - Yogurt/Yogurt Substitutes

50132200 - Milk/Butter/Cream/Yogurts/Cheese/Eggs/Substitutes Variety Packs

F5: 50150000 - Oils/Fats Edible

50151500 - Oils Edible

50151600 - Fats Edible

50151700 - Oils/Fats Edible Variety Packs

F6: 50160000 - Confectionery/Sugar Sweetening Products

50161500 - Sugars/Sugar Substitute Products

50161800 - Confectionery Products

50161900 - Confectionery/Sugar Sweetening Products Variety Packs

F7: 50170000 - Seasonings/Preservatives/Extracts

50171500 - Herbs/Spices/Extracts

50171700 - Vinegars/Cooking Wines

50171800 - Sauces/Spreads/Dips/Condiments

50171900 - Pickles/Relishes/Chutneys/Olives

50172000 - Seasonings/Preservatives/Extracts Variety Packs

F8: 50180000 - Bread/Bakery Products

50181700 - Baking/Cooking Mixes/Supplies

50181900 - Bread

50182000 - Sweet Bakery Products

50182100 - Biscuits/Cookies

50182200 - Savoury Bakery Products

50182300 - Bread/Bakery Products Variety Packs

F9: 50190000 - Prepared/Preserved Foods

50191500 - Prepared Soups

50192100 - Snacks

50192300 - Desserts/Dessert Sauces/Toppings

50192400 - Sweet Spreads

50192500 - Sandwiches/Filled Rolls/Wraps

50192900 - Pasta/Noodles

50193000 - Baby/Infant - Foods/Beverages

50193100 - Vegetable Based Products

50193200 - Grain Based Products

50193300 - Dough Based Products

50193400 - Prepared/Preserved Foods Variety Packs

50193500 - Dairy/Egg Based Products

F10: 50200000 - Beverages

50201700 - Coffee/Tea/Substitutes

50202200 - Alcoholic Beverages

50202300 - Non Alcoholic Beverages - Ready to Drink

50202400 - Non Alcoholic Beverages - Not Ready to Drink

50202500 - Beverages Variety Packs

F11: 50210000 - Tobacco/Smoking Accessories

50211500 - Tobacco Products/Smoking Accessories

F12: 50220000 - Cereal/Grain/Pulse Products

50221000 - Grains/Flour

50221200 - Processed Cereal Products

50221300 - Cereal/Grain/Pulse Products Variety Packs

F13: 50230000 - Food/Beverage/Tobacco Variety Packs

50230100 - Food/Beverage/Tobacco Variety Packs