

# Design Development of Food & Beverage Product Packaging for SMES co in Java and West Nusa Tenggara, Economic Corridor

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*Abstract— Population of Food & Beverage SME's Co in Indonesia reached 38 % of total 52 million SMEs, equivalent to 19.76 million SMEs. Indonesian Consumption reached Rp997 trillion in 2012 and its 27 % is in the form of processed foods that packed (Rp296, 19 trillion). Expenditure of industrial packaging products for SME are big, worth 5 % of whole packaging product price that equivalent to Rp13, 46 trillion. SMEs Contribution (21 % worth of 19.76 million) is still relatively considered small competitive to Indonesian market from those of medium and large industrial supply both for local and abroad (79 %). The main issue is Food & Beverage SMEs Competitiveness products relatively low, lack of promotion, weak brand, packaging design not meet good standards and food quality below safety standards. The purpose of this research is to improve the competitiveness of food and beverage SMEs Co through capacity building, took places on some "brands and packaging design center" in Java, Bali and Nusa Tenggara. Developing branding design and planogram for consumer pack and transport pack packaging through research MP3EI 2012-2014. Participatory design research methods are preceded by informal discussions with SMEs to explore the problems, goals, and defining development strategies. This method expand further more by training programs in cooperate with IPF, East Java Industry and Trade Ministry of Commerce, Indonesian Ministry of Trade. SME Product Packaging Design Competition between universities in East Java in 2011-2013 preceded by a workshop for students to produce a design that meets the standards and can be well used by SMEs. Other programs conducted in form of producing brand and packaging design SMEs in East Java and West Nusa Tenggara. The result of this research are increasing awareness of SMEs for good brand and packaging design, increasing student capacity -proven by winning in Asian Star 2011 and 2012 competition, obtaining 11 gold medals. Formulation of Product packaging coaching role models. Formulation of Standard Operating Procedure for branding and packaging and achieving efficiency for SME food product packaging supply through production sharing.*

*Keywords—*Packaging and Branding Design, Food & Beverage SMEs Co competitiveness.

## I. INTRODUCTION

One of the cultural results of the iconic National SME is the food and beverage industry. Food and beverage industry has become part of the creative economy that can support the economy of the area and can make it as an icon of the local specialty. However, there are many brands and packaging are not standard in many SME products. Moreover, SMEs are frequently encountered obstacle is the issue of capital. The development of design methods SME food and beverage packaging products is expected to help SMEs to develop their businesses and to compete with other similar products.

Product packaging is very important because it determines the success in marketing, serves as protective products; facilitate distribution, as well as a marketing medium that demanded active and attractive packaging fulfilling the technical requirements. The packaging used to wrap the product called consumer pack. While the packaging used to wrap consumer pack to make it easier to carry, displayed, and protect the delivery process is called transport pack.

Synergy is a major development of this methodology in the field of brand and packaging between Universities, Provincial Government and the support of Indonesian Packaging Federation (IPF) in the MP3EI program.

The main problems of SME are:

- Lack of innovation capability of SMEs.
- Low ability brand design, labeling, packaging, and technology.
- Not to be conscious SME food safety issues.
- The difficulty of SMEs in accessing finance and marketing.

The main aims in this research are:

- Improve the competitiveness of SMEs innovation.
- Improve the ability of SMEs in brand design, labeling, packaging, and technology.
- Improve knowledge of the importance of food safety SMEs.
- Provide solutions for SMEs in financing and marketing strategies.

## II. METHODOLOGY

Participatory design research methods begin with informal discussions with SMEs to explore the issues, objectives, and determine strategy development. This method is further developed by training programs in collaboration with IPF, and the Ministry of Industry and Trade. SME product packaging design competition for universities in East Java in 2011-2013 begins with a workshop for students to produce a standard design and can also be used by SMEs. Other programs are conducted in the form of producing brand and packaging design SMEs in East Java and West Nusa Tenggara.

## III. RESULT AND DISCUSSION

On product packaging design food and beverages, many components that need to be considered, include the

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use of the brand, packaging labels, the material used in the packaging. Packaging is the material used to contain and wrap foods, either in direct contact with food or not.

The packaging is considered based on several aspects, as seen in the following figure.

Packaging functions are considered based on several considerations as follows.

- a. Content Protection Products
- b. Fill container products
- c. Warehouse / Distribution
- d. Marketing Communication

The packaging is constructed according several types.

#### A. Consumer Pack/Primary Pack

Consumer pack is a package that is used directly by consumers. The pack itself contains of several items as follows.

- a. Brand Name/Logo/Trademark (trade name of the Company)
- b. Product names (trademarks, product names instead of generic)
- c. Product Type
- d. Halal logo (the certificate)
- e. Weight net
- f. PIRT (Licensing)
- g. Product Description
- h. Expired Date
- i. Barcode
- j. Composition
- k. Nutrition
- l. Address of the manufacturer

#### 1) Study Process - Consumer Pack

##### a. Pre-Planning Print

The capability of making Interesting label became one of common obstacles for SMEs, constraints experienced course related to the cost of printing the label. One way to reduce printing costs by printing multiple labels simultaneously SMEs.

The basic knowledge of making interesting packaging and label are packaging .material and process. The common material used in packaging material is paper sheet. Knowing characteristic of material lead to optimization of design and production processing. Plano sheet utilization strategies in one print for some brands SMEs. With this method, SMEs coordinate to print labels. For a Plano sheet can be used for 4 (four) or adapted to the needs of SMEs.

##### b. Dimensions and Weight

Stand up Pouch, packaging which consists of aluminum foil and plastic laminate type of PET and PE with a thickness of 0.8 micron.

#### B. Transport Pack/ Secondary Pack

Transport pack is packaging used to wrap the consumer package to be more easily carried, displayed, and protect the delivery process. Risk Distribution: In transporting many risks that could cause damage.

#### 1) Study Process - Transport Pack

##### a. Stacking

As we know that the most important requirement of a Cardboard Box Wave as are the packaging capacity (contain ability) and the

ability to be stacked (stacking strength). But along with the development of technological capacity directly related to the crack resistance (bursting strength) had a lot left. This is due to rough handling of the packaging is rare. Nowadays encountered many problems related to stacked packaging durability, which are collapsed or dented during storage in warehouses or in the container.

There are 5 factors that affect the resistances of piles are:

1. Edge Crush Test
2. The amount of water content
3. Retention time
4. How buildup / preparation
5. Pallets are used

##### b. Material

Based on the number of walls, Carton waves can be classified into:

#### 1. Corrugated Single Face

Single Face Corrugated sheets of corrugated board which is composed of a single sheet of liner and a layer of wave (Fluting). Single Face is usually used as protective items such as furniture or timber industry results are not packed in boxes so that at the time of the delivery of goods in containers and the goods are no abrasions to the hands of the customer is in good condition.

In addition to the use, now has developed a type of corrugated carton boxes using offset printing paper coating. Box offset printing using a single face in laminating the coated duplex paper / boxboard / ivory board or art board.

#### 2. Corrugated Single Wall

Corrugated Single Wall is the corrugated board sheet consisting of 2 sheets and 1 layer of linear waves (Fluting).

Single Wall corrugated sheets are the most widely used for packaging products that do not need protection too big like instant noodles, mineral water, snacks etc.

#### 3. Corrugated Double Wall

Corrugated Double Wall is the sheet of corrugated board consisting of 3 sheets and 2 layers of liner wave (Fluting). Double Wall usually widely used as Cardboard Box Wave for goods that need protection such as cooking oil in plastic packaging (pouch), margarine, and the items are quite large like television, refrigerator etc.

#### 4. Corrugated Triple Wall

Corrugated Triple Wall is the corrugated board sheet consisting of 4 sheet liner and layer 3 waves (Fluting). Triple Wall is not widely used because besides the price is also not expensive stuff that requires packaging as strong as a triple wall. Even if there is a triple wall typically used as the base pallet of goods stored that is not broken.

In general there is no Corrugator machine that has 3 units in one line fluting production, therefore making triple wall usually by combining two sheets are single wall with double face.

Differences of each type of flute can be seen by the height and the number of waves per meter (see picture below).

The characteristics of each type of flute:

a. Flute A

A flute was originally used as a means of packaging for items of glass. This type of flute has a bearing properties (cushioning) is very good, because its thickness can reduce power compression occurs when stacked packaging.

b. Flute B

For products that are packaged in cans, or products that do not require bearings that are too high as notebooks, continuous form, photocopy paper, etc., is more appropriate to use the flute B. Besides a little cheaper, has a flute type robustness press flat (flat crush) higher than the flute A.

c. Flute C

Flute C made as an approach to obtain high power pads like a flute, but has good power press flat like flute B, in addition to the use of paper savings medium.

d. Flute E

Flute E made in lieu Solid fiberboard, with a relatively equal strength but lighter and cheaper.

5. Honeycomb

The results of this research is to increase the awareness of SMEs to brand and packaging design is good, increase student capacity - proven with wins in 2011 and

2012 Asian Star competition, obtaining 11 gold medals. Formulation of Standard Operating Procedures for branding and packaging as well as the achievement of efficiency for SMEs food products through revenue sharing.

IV. CONCLUSION

On a wider scope, packaging of food products and beverages SMEs is the need to support local branding as an attempt to improve the imaging area, as well as the commodity competitiveness in the tourism sector. Recommendations and implementation will be applied to the flagship product of each area.

Expected product packaging design methodology SME food and beverages SMEs can make quality food and beverages increased competitive with similar products.

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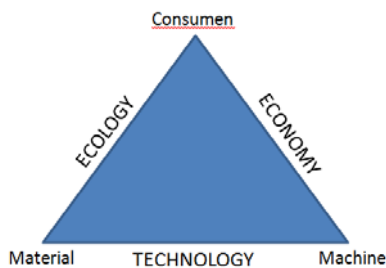


Figure 1. Packaging Aspect  
Packaging Function is Content Protection Products, Fill container products, Warehouse / Distribution, Marketing Communication



Figure 2. Food and Beverage Packaging Information Standards (BPOM)

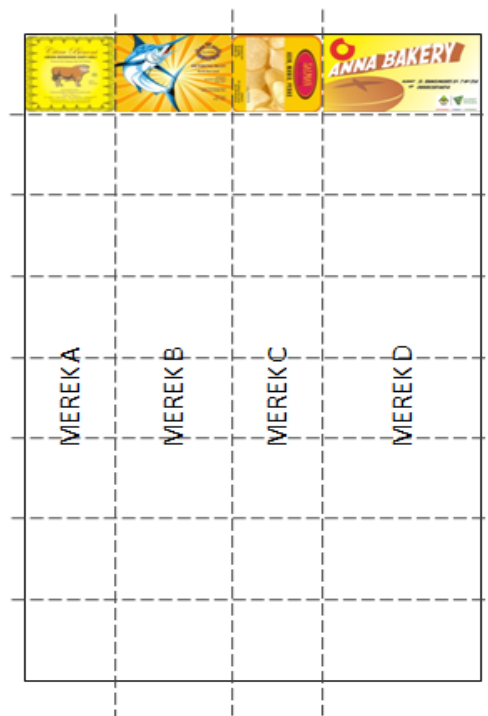
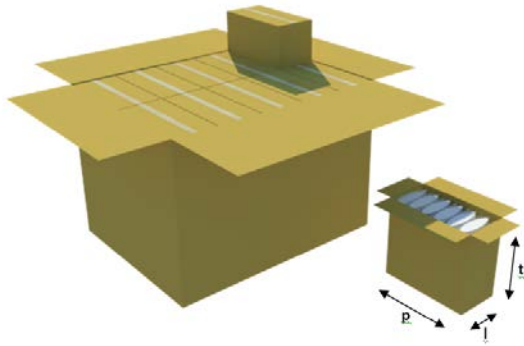


Figure 3. SMEs coordinate to print labels



Figure 4. Packaging Size



1 box = 12 stand up pouch (size 10x16 cm)  
1 bale = 20 Boxes  
Box size = 20x11x18 cm  
Bale size = 40x55x37 cm

Figure 5. Transport Pack



Figure 5. Material Corrugated



Figure 6. Single Face Corrugated



Figure 7. Corrugated Single Wall

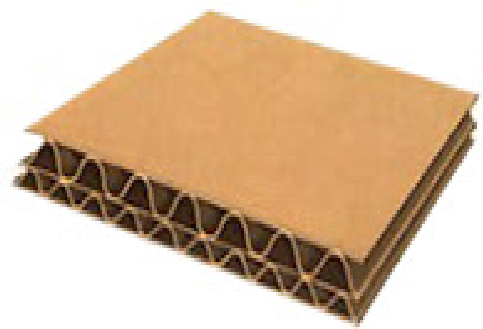


Figure 8. Corrugated Double Wall



Figure 9. Corrugated Triple Wall



Figure 10. characteristics of each type of flute



Figure 11. Honeycomb material

TABLE 1.  
DIMENSIONS AND WEIGHT

Packaging Size	Sticker Size
10x16 cm (70gr)	6x8,5 cm
12x20 cm (100gr)	7x10 cm
14x24 cm (250gr)	8x11 cm
16x25 cm (500gr)	9,5x13 cm
20x30 cm (1000gr)	10x14 cm

TABLE 2.  
FLUTE TYPE CARTON

Flute	Wave height (mm)	The number of waves per meter	Thickness sheet (mm)
<b>A</b>	4.8	118	+/- 5
<b>B</b>	2.7	168	+/- 3
<b>C</b>	3.7	128	+/- 4
<b>E</b>	1.2	316	+/-1.5