

# Packaging Trends

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The 15<sup>th</sup> Term ASEAN Federation of Plastic Industries Conference

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By Thiti Charudhanes  
SCG Plastics Co, Ltd.

# Situation of Our World



Aging population



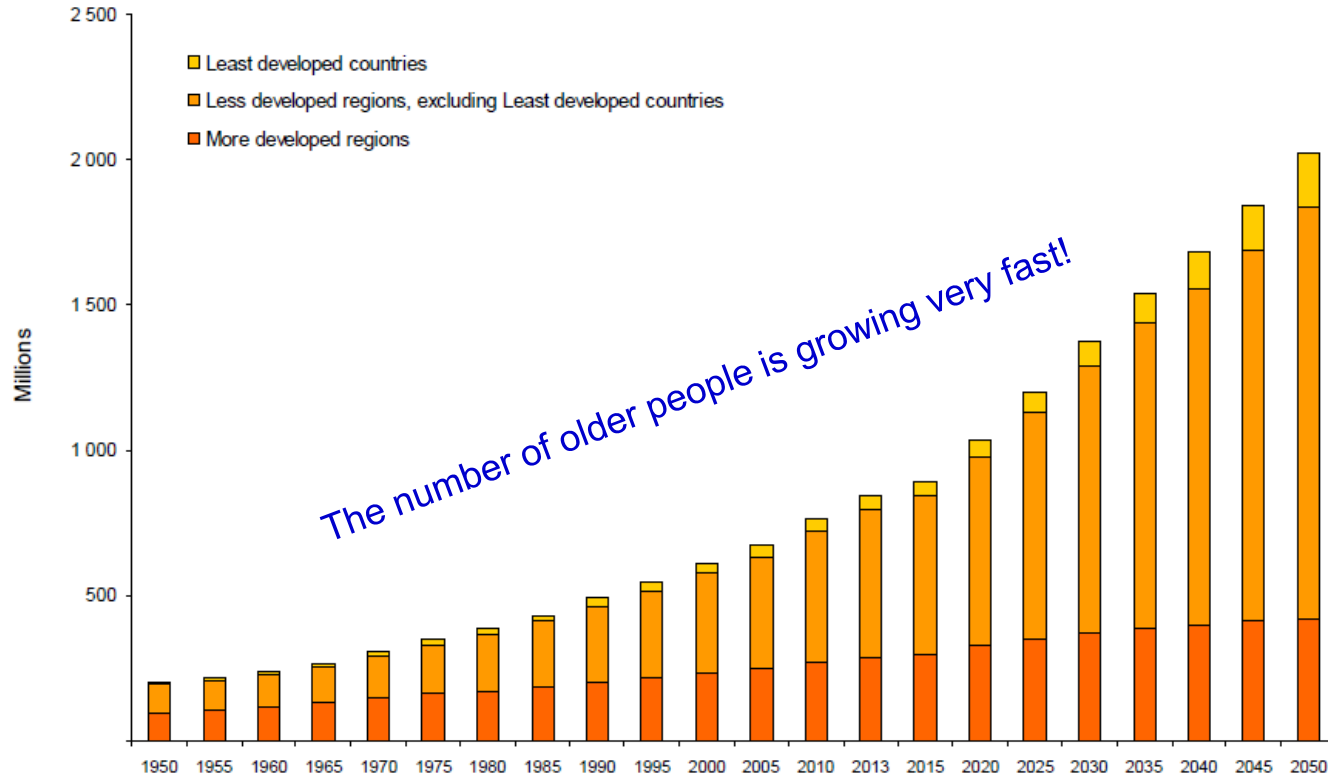
Urbanization



Eco-friendly

# Aging Population

## Population aged 60 years or over by development region, 1905-2050



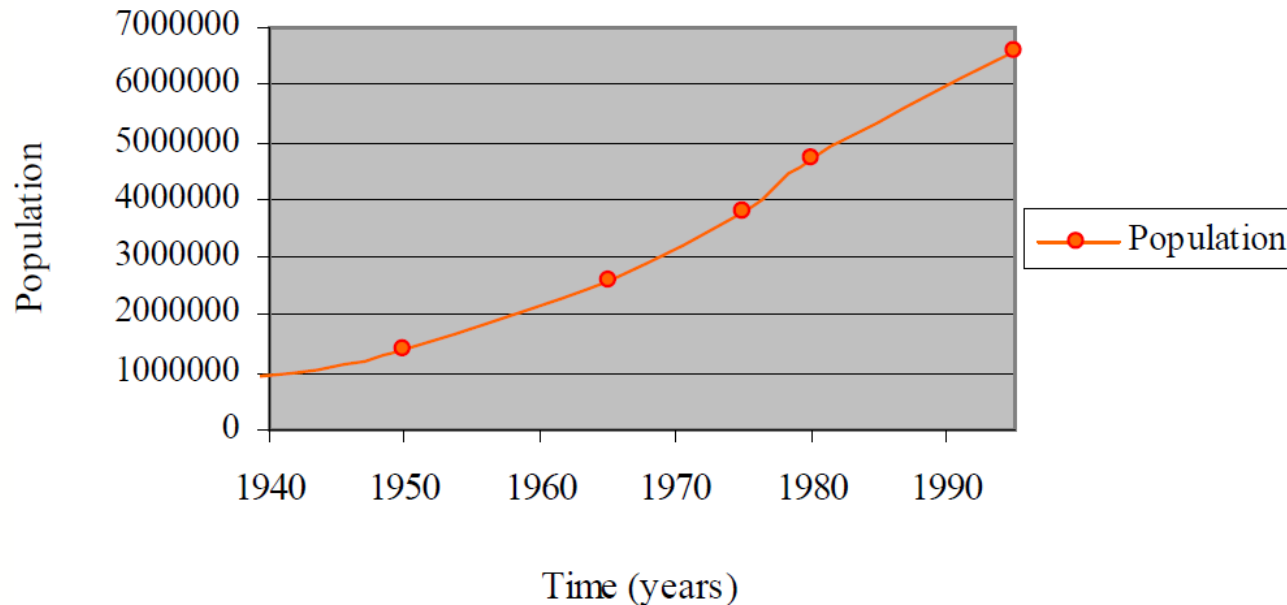
- Rapid increase in the number of older people
- Result of high birth rates in early and mid twentieth century
- The number of older population increases from 202 million in 1950 to 841 million in 2013 and expected to be 2 billion in 2050

Ref. United Nations Department of Economic and Social Affairs, Population Division

# Urbanization

## Bangkok population in the past

### Population in Bangkok



## More and more people move to the city

- In 2000, Bangkok owned 7 million people
- In 2014, Bangkok population is significantly up to 8.5 million people
- The city is a home to over 13% of the country's total population
- Area of Bangkok only accounts for 0.3% of Thailand

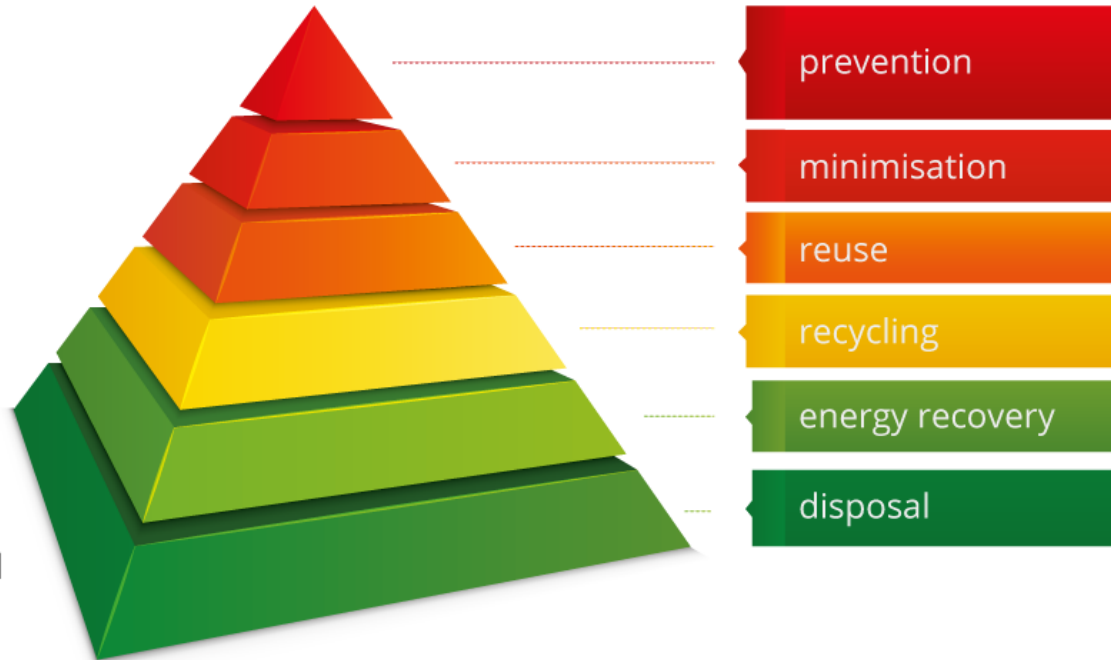
Ref. Cummings (1999); World Population Review (2014)

# Eco-friendly

most favoured  
option



least favoured  
option



## We are using up the earth's limited resources

- **Minimization/Reduce:** produce less waste, longer lasting products
- **Reuse:** reusable packaging
- **Recycling:** use plastic waste as feedstock to manufacture a product
- **Energy recovery:** transform waste into energy through incineration

Ref. Ecoplast

# Packaging Trend

Aging population

Urbanization

Eco-friendly

## Convenience:

- Individual packaging
- Easy peel
- Re-closable packaging
- Ready to eat/ ready meal
- Design and beauty

## Better for value chain:

- Easy to storage
- Easy to transport
- Light weight
- Longer shelf life

## Go green:

- Less is more
- Reduce waste, energy
- Green plastics



# Change of Consumer Needs

Conventional grocery store



Supermarket



- Convenience
- Cleanliness
- Attractiveness

# Change of Consumer Needs

## Fresh market



## Supermarket



- Convenience
- Protection
- Attractiveness



# Change of Packaging



# Change of Packaging

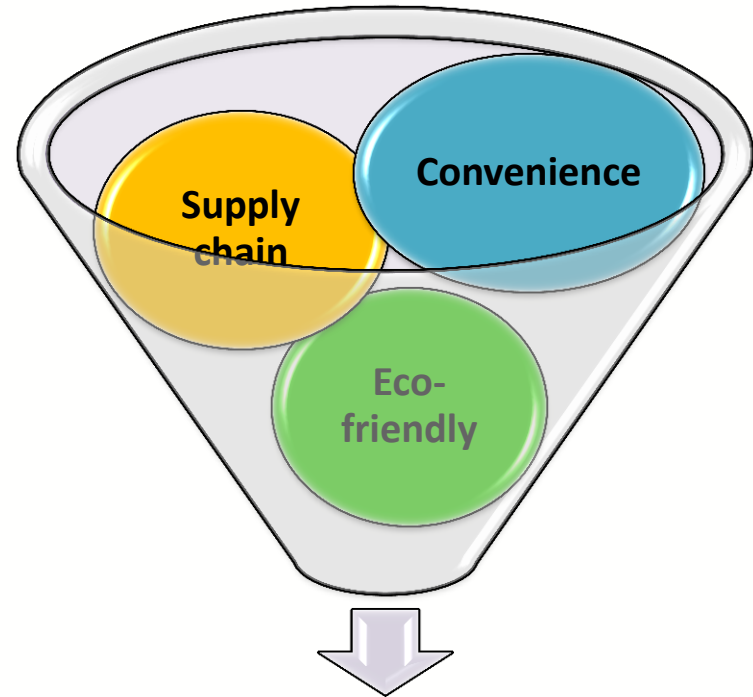


# Change of Packaging (Indonesia)



Stand-up pouch

# Rigid to Flexible Packaging



Flexible packaging



# Convenience

# Convenience

## Individual pack/ Single serve

Can keep the rest of the product fresh and clean



# Convenience

## Individual pack/ Single serve



**Thailand**



**Vietnam**

# Convenience

## Individual pack/ Single serve

- Clean
- Preserve the rest of product



Vietnam



# Convenience

## Easy peel



The diagram illustrates the structure of a peelable sealant layer. It consists of three main layers:

- Printing Layer**  
PET/PA  
Structural layer, stiffness, printable.
- Adhesive Layer**
- Sealant Layer**
  - **Peel Polymer:**  
**Developmental Peel Polymer**  
Fully formulated, peel seal to PP and PE-based cup, good optics.
- Structural Layer**  
PET  
Structural layer, stiffness.

Accompanying images show hands peeling a sealant layer from a tray of fruit, and three Dole 'jelly' cups (orange, red, and yellow) and a BIGGY milk pudding cup.

- Low peeling force required (5-7 N/ 15 mm)
- Easy peel sealant resin for NOT wasting foods
- High packaging integrity for reduced leakage

Milk pudding  
**Indonesia**

# Convenience

## Easy peel: Film to film



- Easy opening
- No equipment needed



# Convenience

## Individual pack & easy peel



Product wt. : 420 g



Product wt. : 200 g

# Convenience

## Reclosable packaging

Stand-up pouch with re-closable zipper



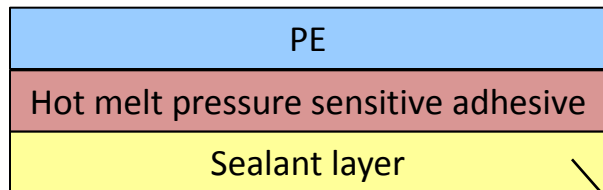
**Vietnam**



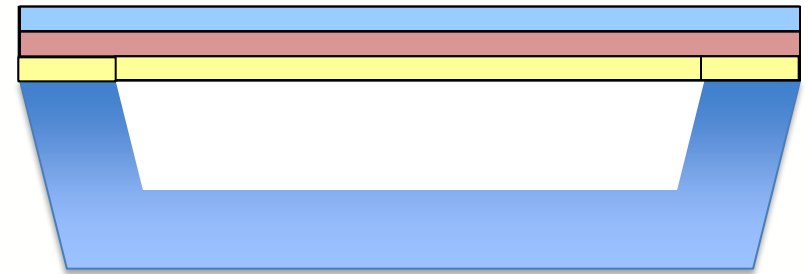
**Indonesia**

# Convenience

## Reclosable packaging



Sealable layer to seal on packaging



Upon opening, the sealant layer will stay on tray and the adhesive layer is exposed

With sticky adhesive, the lid can be opened and re-closed many times

# Convenience

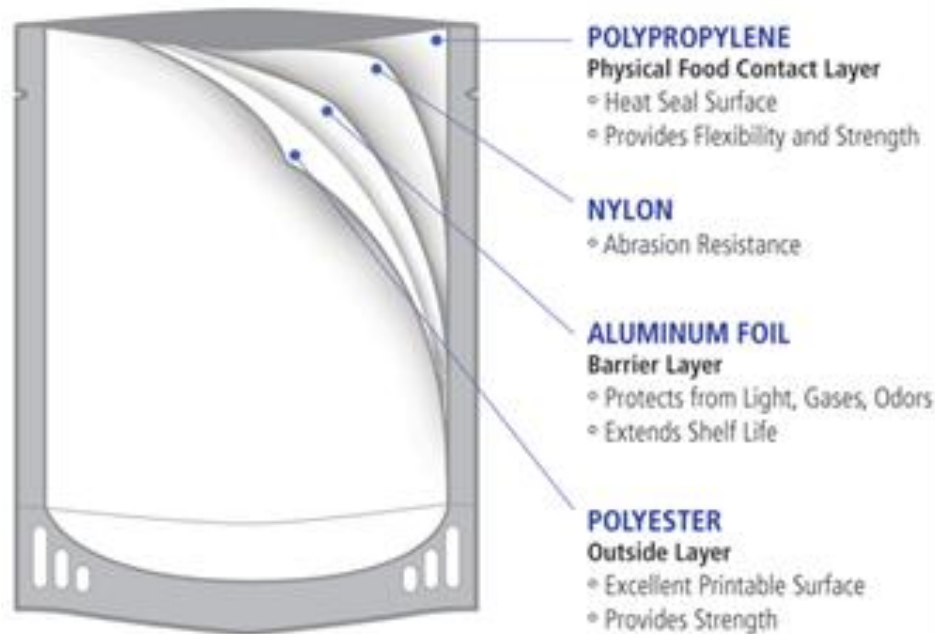
## On-the-go lifestyle

### Retort pouch:

Allow the sterile packaging and is used as an alternative to metal can

Save your cooking time

Shelf-life 1 year



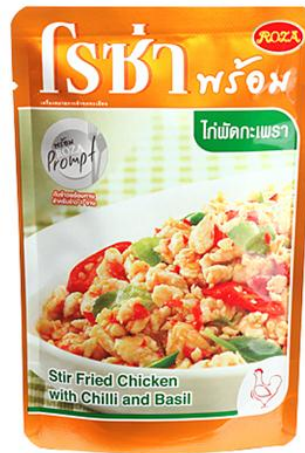
# Convenience

## Ready to eat

### Retort pouch:

Keep your food at room temperature

Can be enjoyed anytime you want



Indonesia

# Convenience

## Ready meal

Apart from instant noodle, we have INSTANT RICE  
Your meal is just 90 seconds away to “microwave”





# Convenience

## Ready meal

Just microwave and it is ready

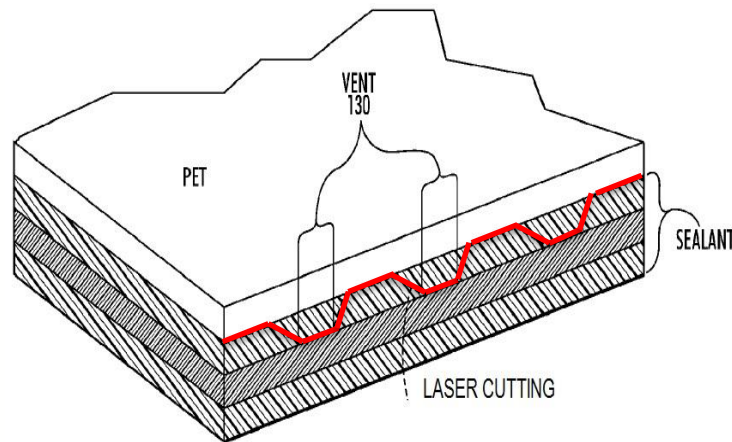
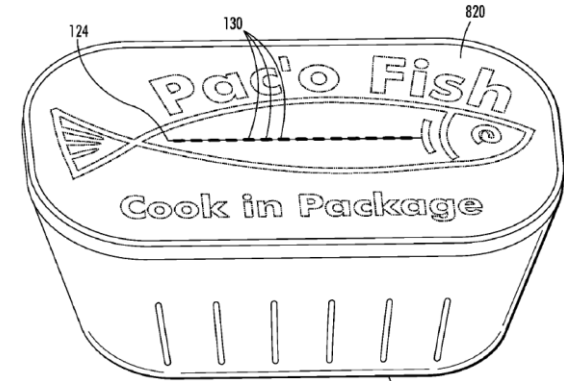
Lidding: PET//Nylon//CPP



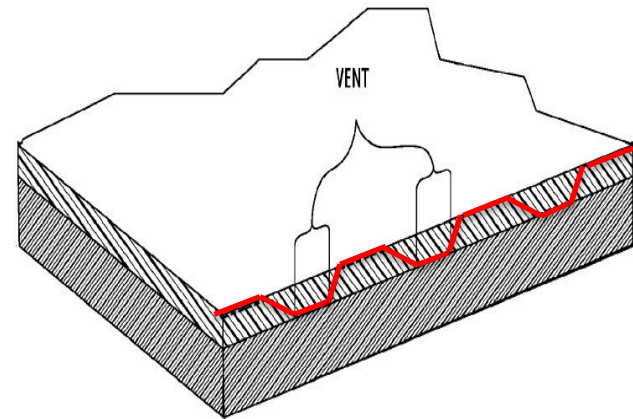
# Convenience

## Microwavable pack

- Scoring the material
- Internal pressure built-up during cooking
- Expansion of the package (film)
- Create vent point



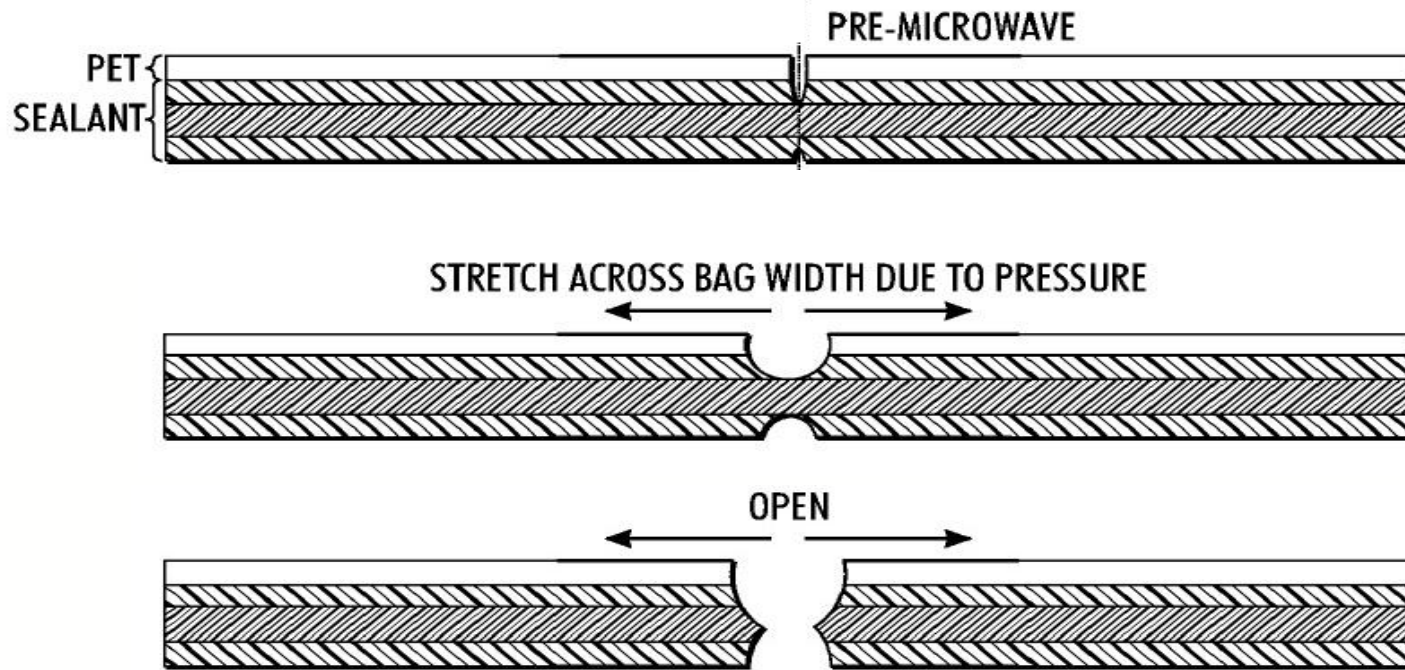
Laminated Film



Co-extruded Film

Ref: Patent title "Microwavable film package having steam venting feature" (US 2012/0308690 A1)

# Convenience



Ref: Patent title "Microwavable film package having steam venting feature" (US 2012/0308690 A1)

# Convenience

**Flexible** Packaging provides you an **opportunity to design** your packaging



Bonfire Wines Stand-Up Pouch

Gold Award for Packaging Excellence and Silver for Sustainability and Environmental Achievement.

Beautiful and  
*Customizable*



# Convenience

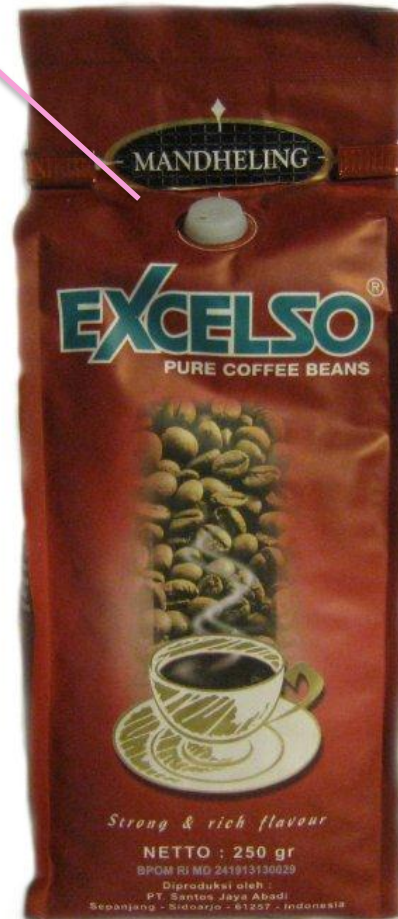
## Packaging design in Indonesia



# Convenience

## Coffee pouch design

Feel the aroma



Indonesia

# Convenience

## Design and beauty



**Pouch:** PET//Nylon//Alu//CPP  
Spout for easy to eat  
Alu for excellent barrier

# Convenience

## Evolution of flexible packaging design





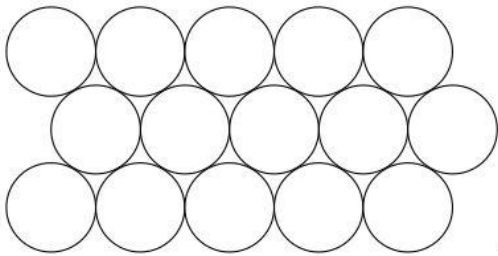


**Better value chain**

# Better Value Chain

## Easy storage

Minimize empty space



# Better Value Chain

## Easy to transport & light weight

Less breakage and easy handling



Product wt. : 85 g  
Total wt. : 230 g



Product wt. : 195 g  
Total wt. : 200 g

Pkg wt. per unit product  
↓ 98%

# Better Value Chain

## Easy to transport

- Flexible pouch uses less space in shipping
- More than 12 trucks of rigid containers for rotisserie chicken are needed to ship the same amount of pouches contained in 1 truck



Battelle Memorial Institute  
Packaging & Technology Integrated Solutions

# Better Value Chain

## Longer shelf life



### Packaging Features

- Co-extruded PE with barrier layer (Nylon or EVOH)
- Peelable Lid
- Good clarity
- Used for sausage, ham, cheese, meat, etc.
- Shelf life 35 days in refrigerator



# Better Value Chain

## Value added product with longer shelf life



- **Price:** 15 Baht/piece
- **Shelf-life:** 2-3 days

Better barrier opens up new markets



- **Price:** 40-60 Baht/piece
- **Shelf-life:** 1 year

**Go Green**



# Eco-friendly – Reduce waste, energy, CO<sub>2</sub>

Beverage Packaging	Product Weight (g)	Packaging Weight (g)	Packaging Wt. per 100 g product (g)	Energy consumption (MJ/236 g)	Emission (kg CO <sub>2</sub> / 236 g)
Glass Bottle & Metal Cap	236	198.4	83.9	3.36	0.29
Plastic PET Bottle & Cap	236	22.7	9.6	3.00	0.18
Aluminum Can	236	11.3	4.7	0.99	0.08
Stand-up Flexible Pouch	199	5.7	2.8	0.45	0.02

↓ 50%

↓ 75%



Reduces waste, energy used, and CO<sub>2</sub> emission



Battelle Memorial Institute  
Packaging & Technology Integrated Solutions



# Eco-Friendly – Smart bottle

## Smart bottle

- ✓ Manufactured from flexible films
- ✓ Can be shipped flat before fulfillment
- ✓ Allow all contents to be used: no waste
- ✓ Variety of sizes: 0.5 to 5.28 gallons (20 L)
- ✓ Storage space saving compared to rigid packaging



Ref.: <http://www.smartbottleinc.com/>

# Eco-Friendly – Smart bottle

## Smart bottle

Handles at top and bottom of the bottle to provide a secure grip for easy pouring



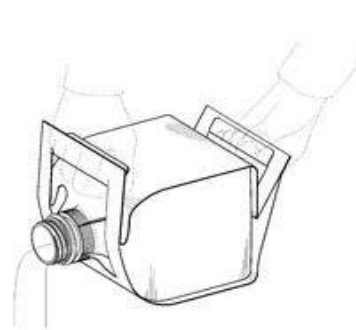
Ships and stores flat



Sturdy, stable construction



Easy transport



Ergonomic design



Empties completely

Ref.: <http://www.smartbottleinc.com/>

# PerfoamPack – Less is more is true



- Co-extruded PE film with a micron-cellular expanded middle layer
- Reduce the use of raw materials by up to 20%

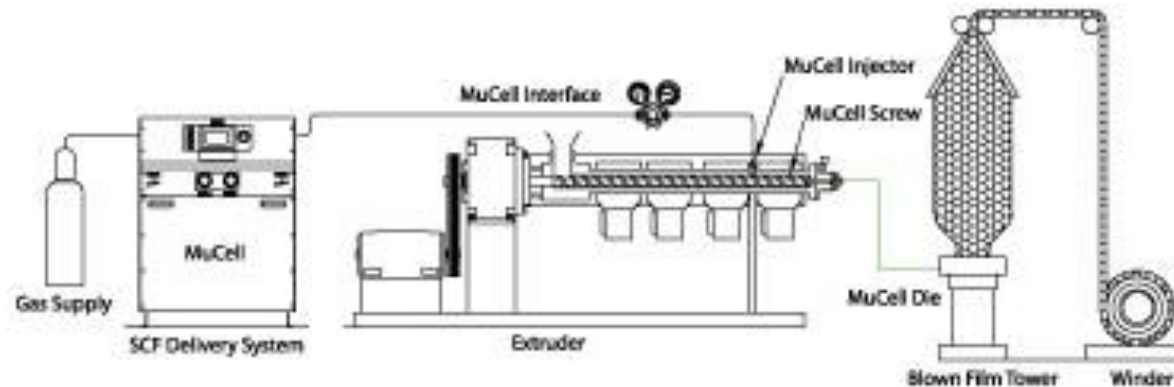
## 2013 WorldStar Packaging Award

Mondi's innovative PerfoamPack film earned an award in the 'Food' category at the WorldStar Awards 2013, one of the most renowned and most important international packaging awards. PerfoamPack is a unique co-extruded polyethylene film with a micro-cellular expanded middle layer, which lowers weight without reducing thickness. Its advanced manufacturing technology achieves a superb yield in packaging. It significantly reduces the use of raw materials, by up to 20%, which translates into a lighter film with a direct cost reduction and a much improved carbon footprint.

<http://www.mondigroup.com>

# MuCell® Foamed Technology

- Direct injection of atmospheric gas ( $N_2$ ,  $CO_2$ ) in its supercritical state allowing for a single phase gas/polymer solution
- Microcellular structure and controlled product density is achieved by the accurate control of gas concentration in combination with the proper release of extrusion pressure

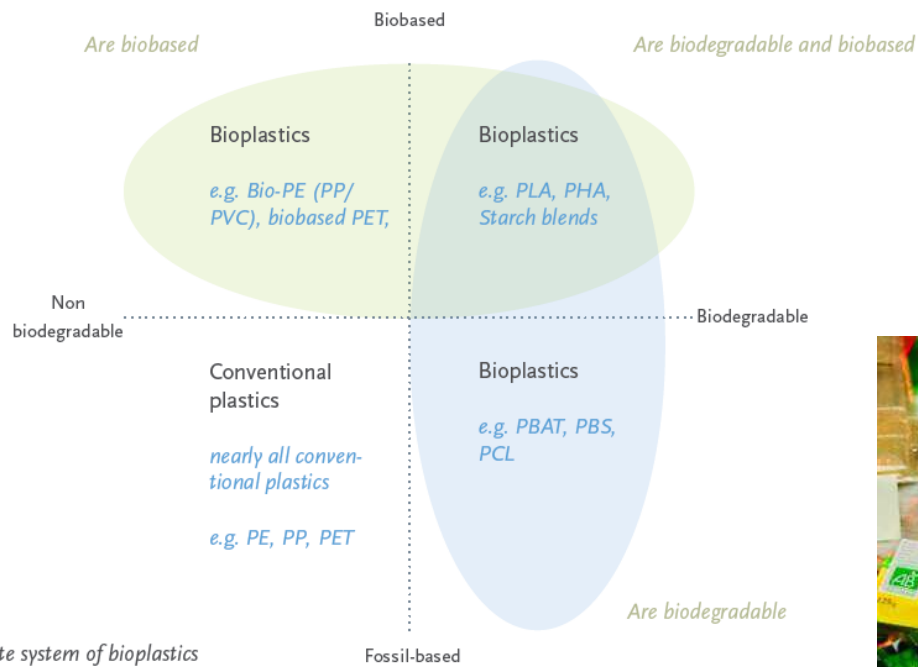


# Eco-friendly – The Rise of Green Plastics

## Green Plastics

Bio-plastics are bio-based, biodegradable, or both

- **Bio-based:** Material is derived from biomass (plant). Fossil-based not included.
  - E.g. corn, sugarcane, ethanol, or cellulose
  - Same polymer structure as fossil-based
- **Biodegradable/ Compostable:** A chemical process that micro-organisms convert materials into natural substances such as water, carbon dioxide, and compost
  - Can be made from both renewable/ bio-based sources or non-renewable or petro-based sources



Graph:  
Material coordinate system of bioplastics  
Prof. Dr. Ing. H.-J. Endres, IfBB  
University of Applied Sciences and Arts

# Conclusion

Packaging trend is here to serve:

**Consumer needs:**

Convenience and design

Better value chain

**Eco-friendly:**

Less material consumption and green plastics

**Flexible Packaging**  
**“Easing Modern Life”**