

Packaging Innovations for Food Industry

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Thailand Institute of Scientific
and Technological Research (TISTR)**

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THAI PACKAGING CENTRE (TPC)

THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

MINISTRY OF SCIENCE AND TECHNOLOGY (MOST)

Established on September 25th, 1984

**Located at 196 Phahonyothin Rd.,
Chatuchak, Bangkok, 10900 THAILAND**



Mission

To improve and maintain the quality of products, decrease losses, increase export and up-grade packaging standard of the country to serve the need of government and private sectors

Activities

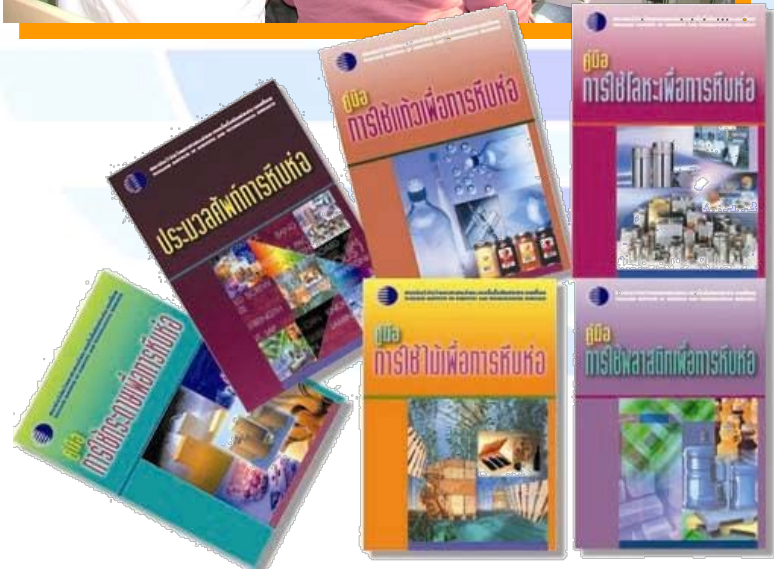
- Research and Development in packaging area
- Testing of packaging materials and containers with modern equipment and standard test methods
- Disseminating of packaging knowledge and conducting seminars and training programmes on packaging

Testing services

Testing packaging materials and containers using modern equipments and standard test methods



Disseminating of packaging knowledge and conducting seminars and training programmes



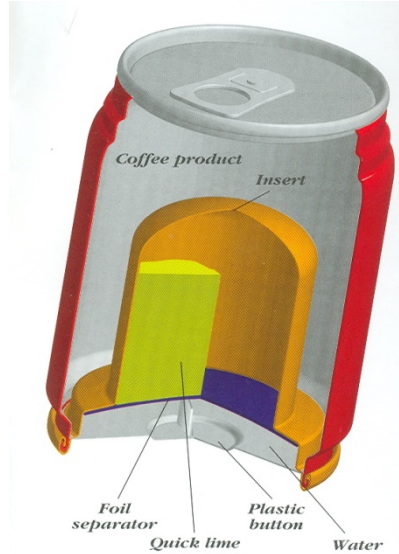
Driving Forces for Innovations in Food Packaging

- Improve living standard
 - Demand for fresh, minimally process products without preservatives and long shelf life
- Health concerns
- Safety awareness
- Aging population
- Change in shopping behavior and eating habits
- Convenience
- Environmental concerns

Health concern



Convenience



Self-heating can

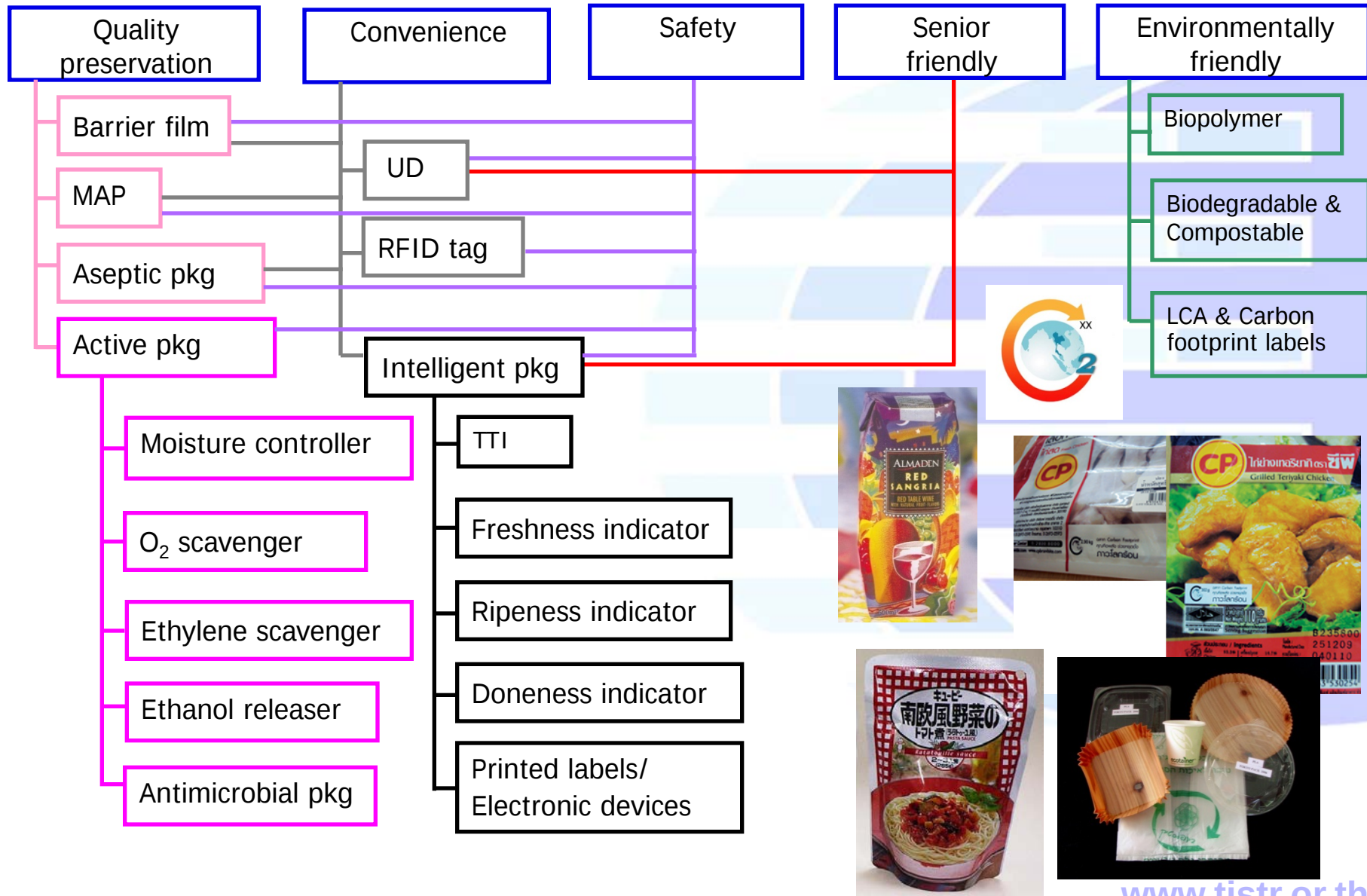


Aging Population

- Smaller size packs
- User convenience and handle ability
- Communication/readability issues
- Ready made and semi finished
- Health foods e.g. functional and Nutraceutical

Source: Sonneveld, K. 2005

Trend and Innovations in Food Packaging



Modified Atmosphere Packaging (MAP)

The enclosure of food in a package in which the atmosphere inside the package is modified or altered to provide an optimum atmosphere for extending shelf life or maintaining quality of the food products.

Active MAP suddenly obtain a desired gas concentration by gas flushing machines.

Passive MAP gas mixture obtained by produces' respiration, metabolism of microorganisms, or other activities associated with the foods and package permeability.

MAP of Fresh-cut produces using breathable film



Active vs Intelligent Packaging

Active packaging

- Packaging in which subsidiary constituents have been deliberately included in or on either the packaging material or the package headspace to enhance the performance of the package system.
- Aims to extend the shelf-life or maintain or improve the quality of packaged products, particularly foods.

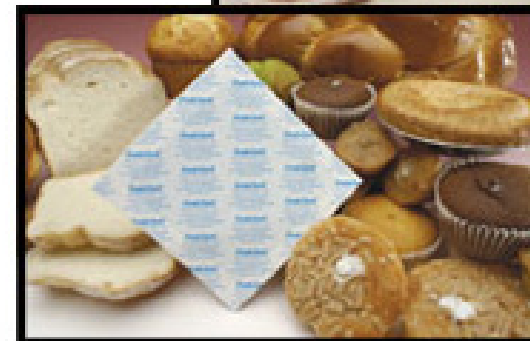
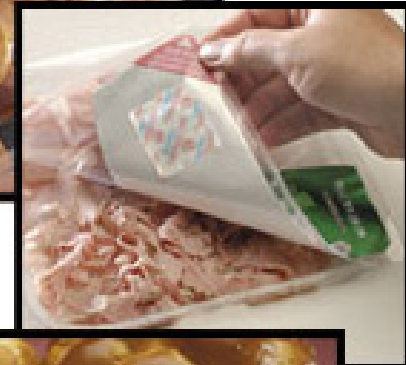
Intelligent packaging

- Packaging that contains an external or internal indicator to provide information about aspects of the history of the package and/or the quality of the food.
- Monitors the condition of its contents. It also stores, transmits, and communicates data on packaged products.

Improving SL of foods by Active Pkg

- Moisture controllers
- O₂ scavengers
- Ethylene absorber
- Other active packaging e.g. Ethanol releaser

Moisture controller / absorber



Oxygen scavenger



Oxygen scavenger

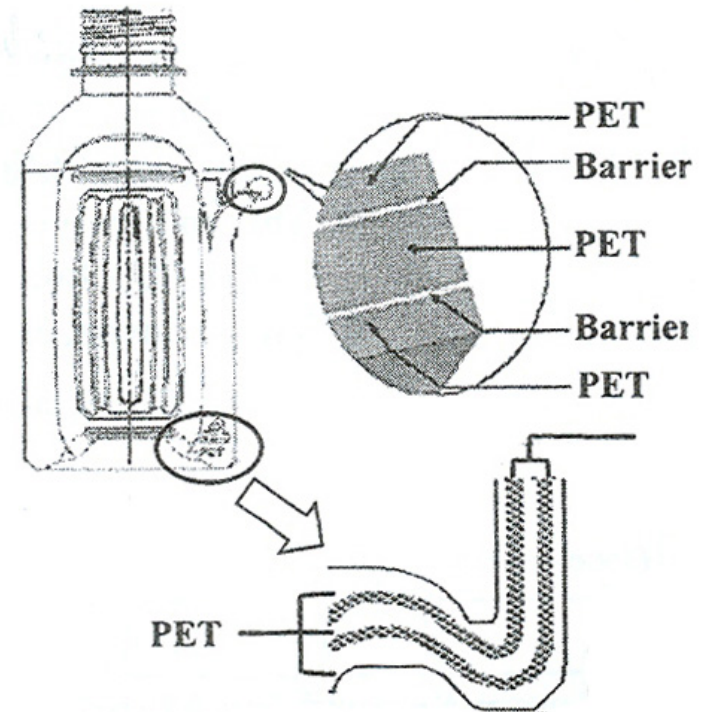


O₂- absorbing thermoformed multilayer tray

Oxygen scavenger



OXYBLOCK bottle



High O₂ barrier using Toyo Seikan's
Proprietary O₂ scavenging resin (Fe) in barrier layer

Source: Toyo Seikan Technical & Service Administration (Asia) Co. Ltd.

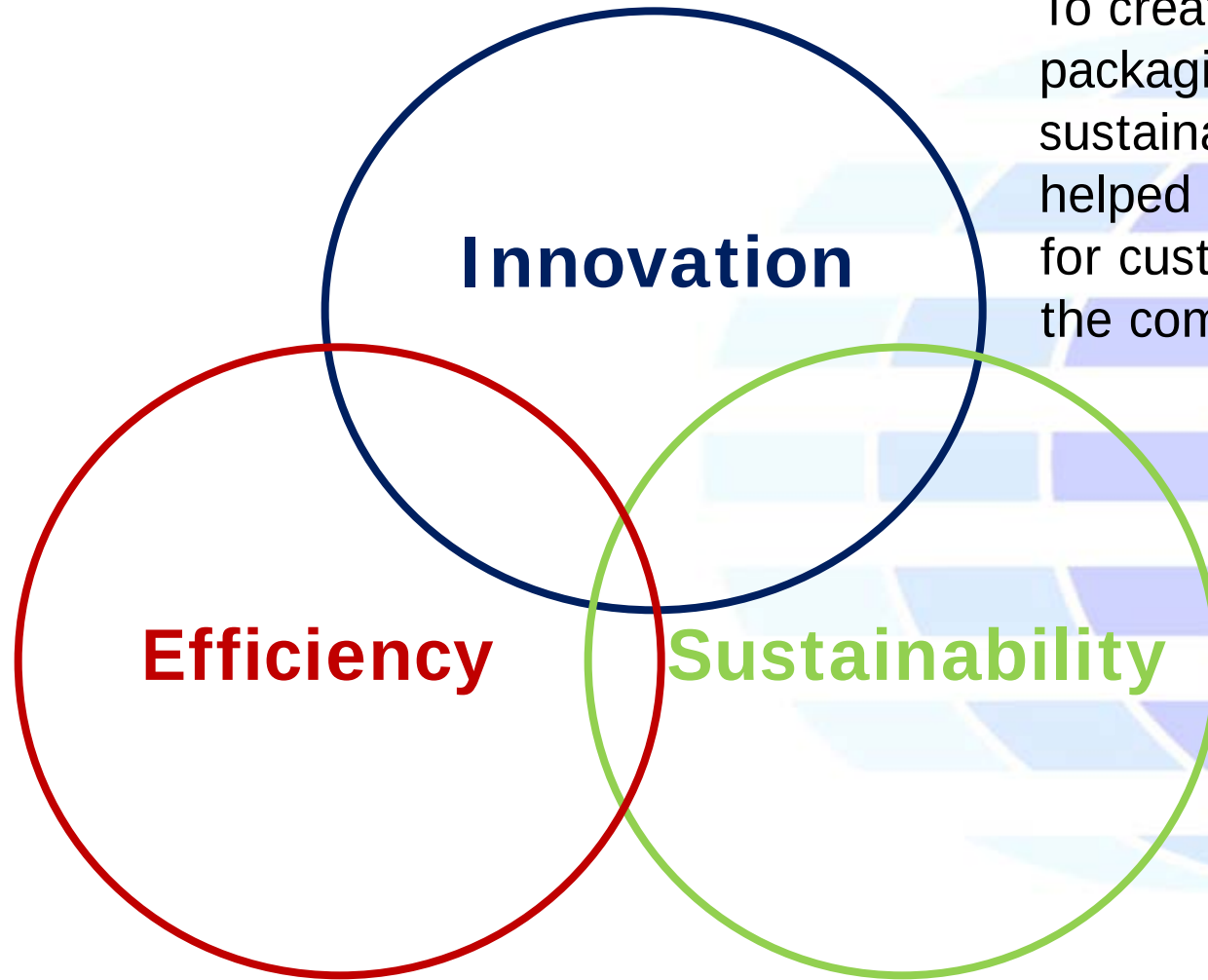
Ethylene absorber



Ethanol releaser



Food Packaging Trend



To create truly innovative packaging using minimal & sustainable resources that helped reduce complexity for customers and cost for the company.



Thank you for your attention!

Thai Packaging Centre

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