

# Plastics : Opportunity and Growth in Thailand



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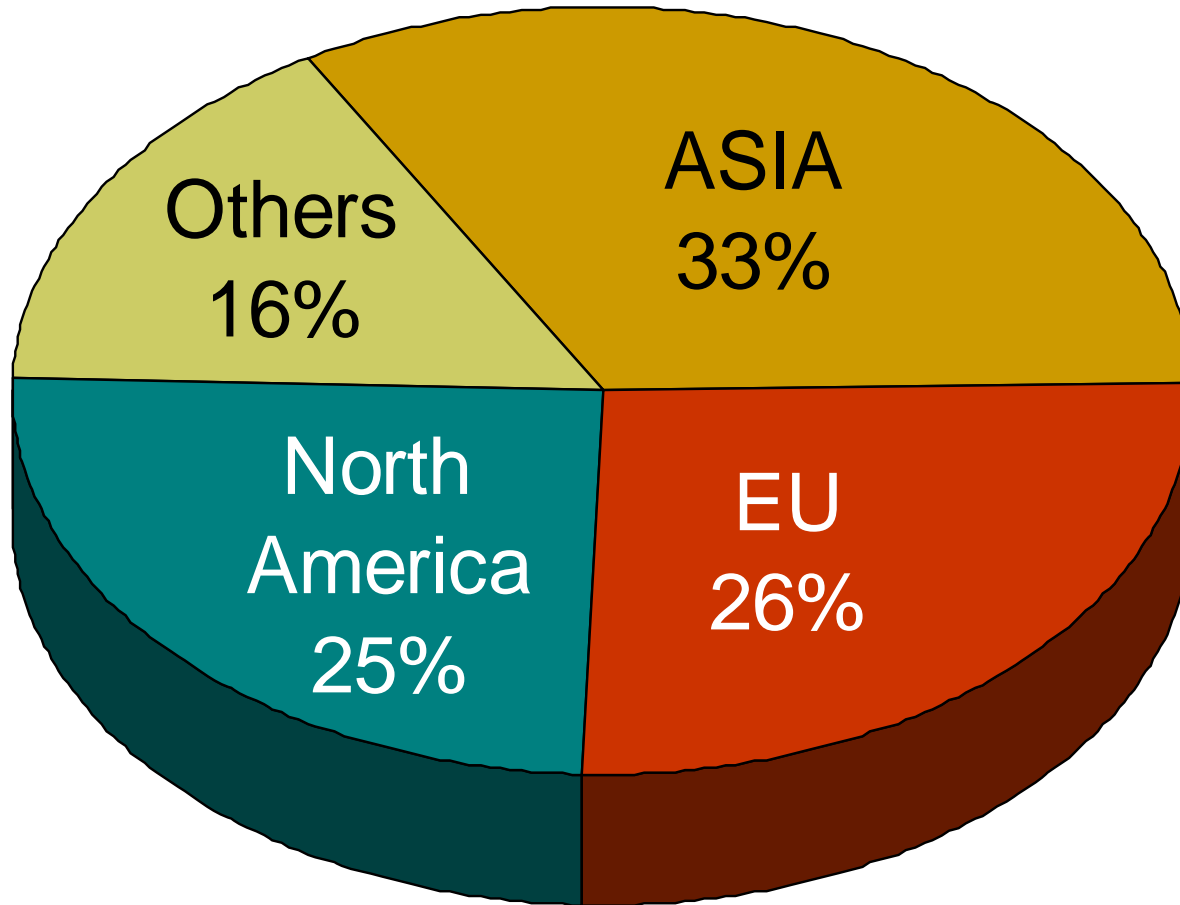
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# Presentation Outline

- **Overview of Plastics consumption in the World and Growth**
- **World Plastic consumption per head**
- **Plastic Industry in Thailand**
- **Plastic application in Automotive and in packaging**
- **Conclusions**

# Plastic Consumption in the World

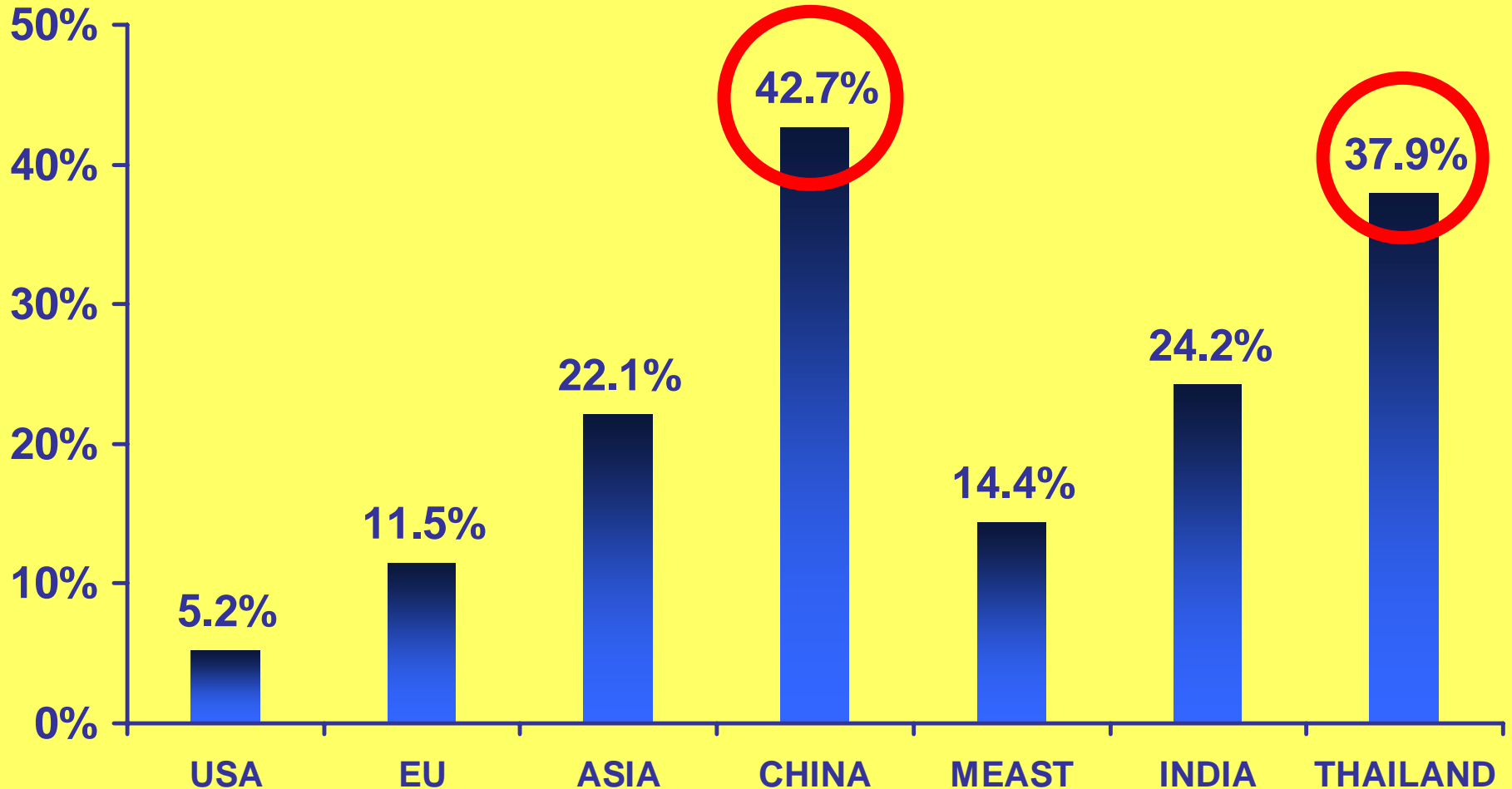


Source : TPIF

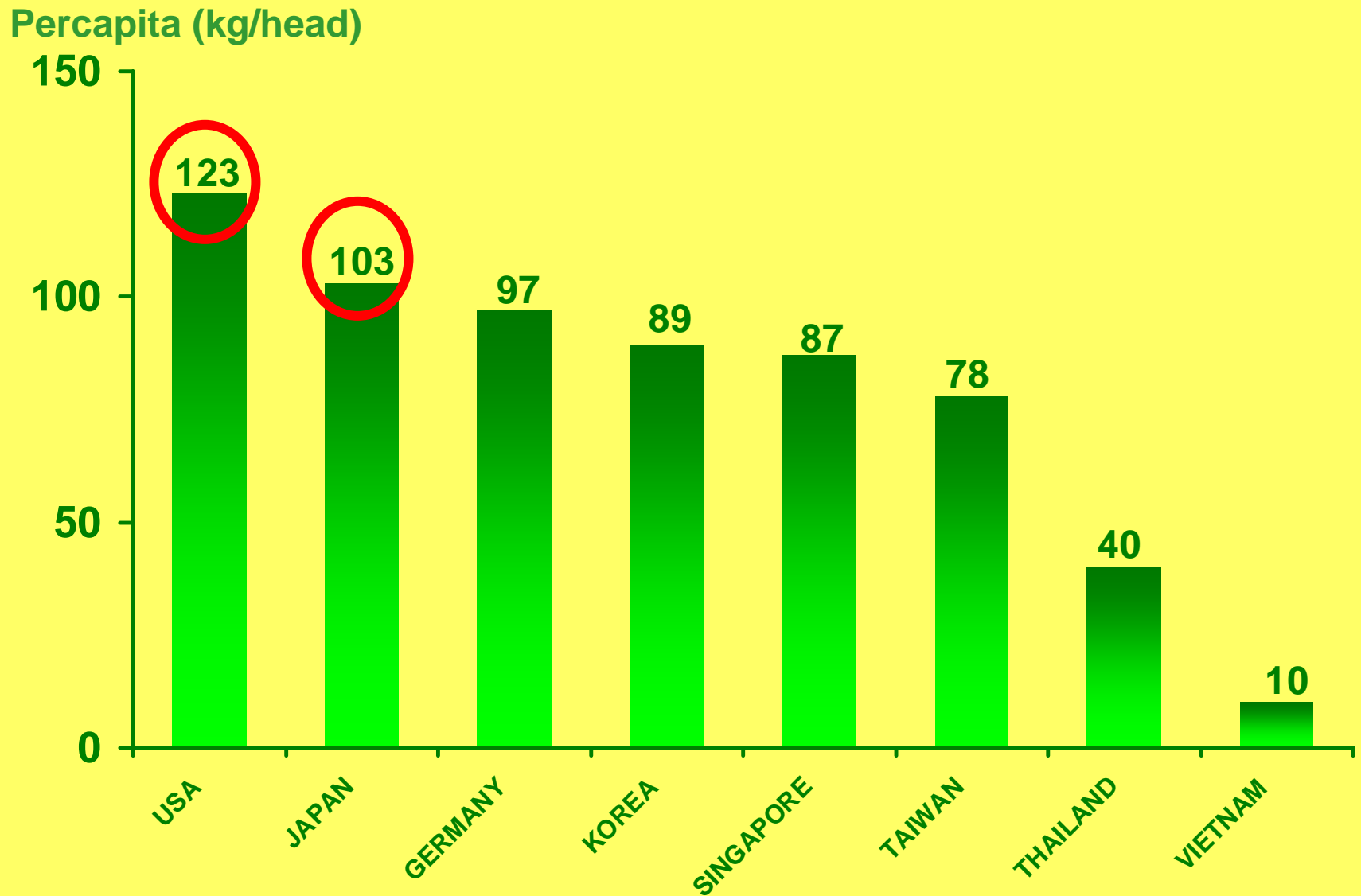
# Demand Growth from 2002 to 2005

Thailand have high growth from economic recovery and export

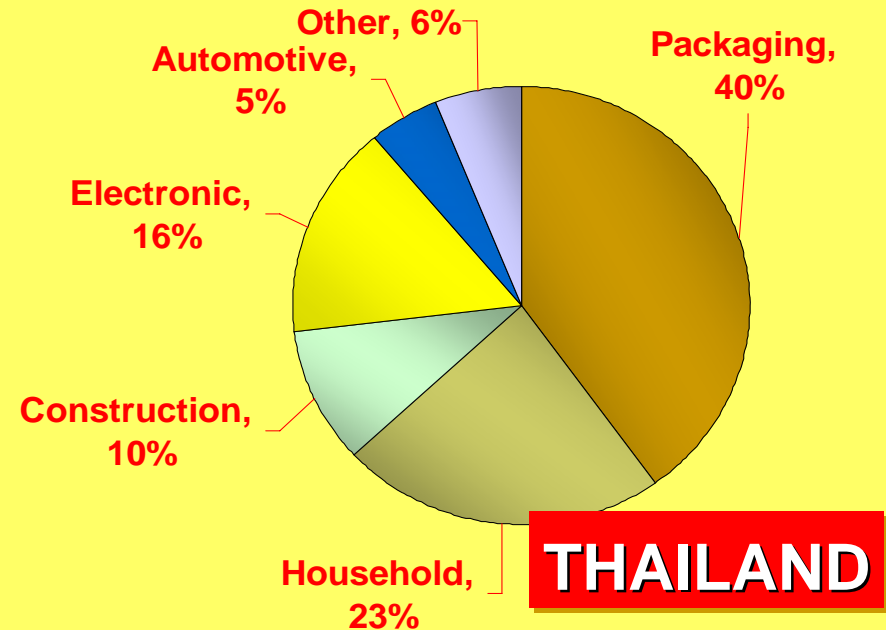
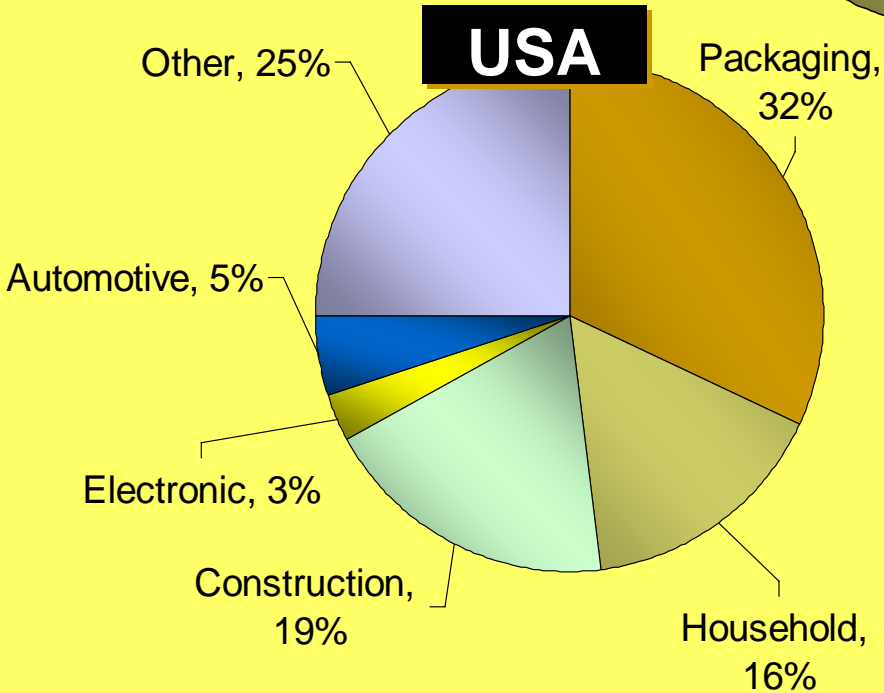
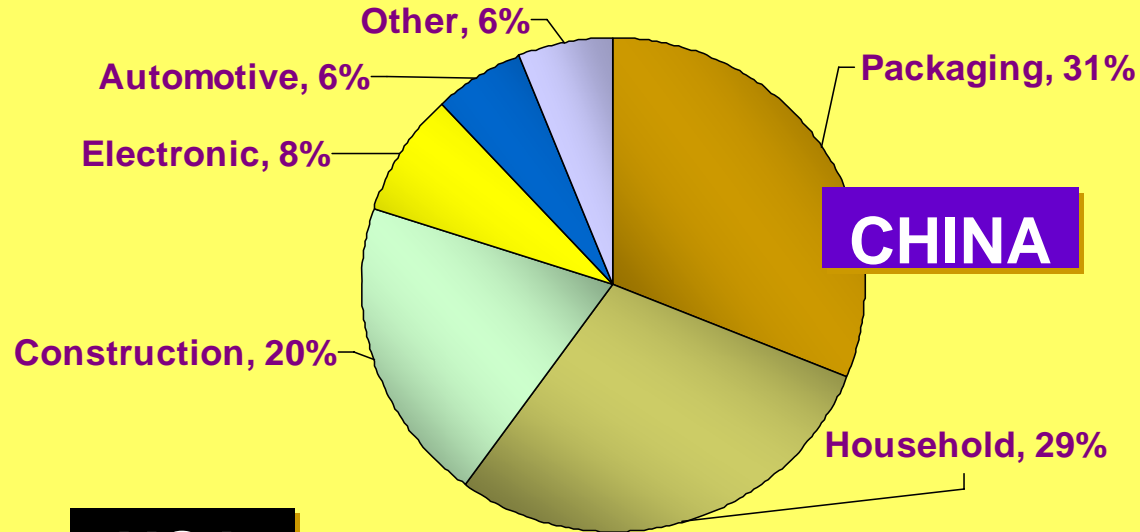
Growth %



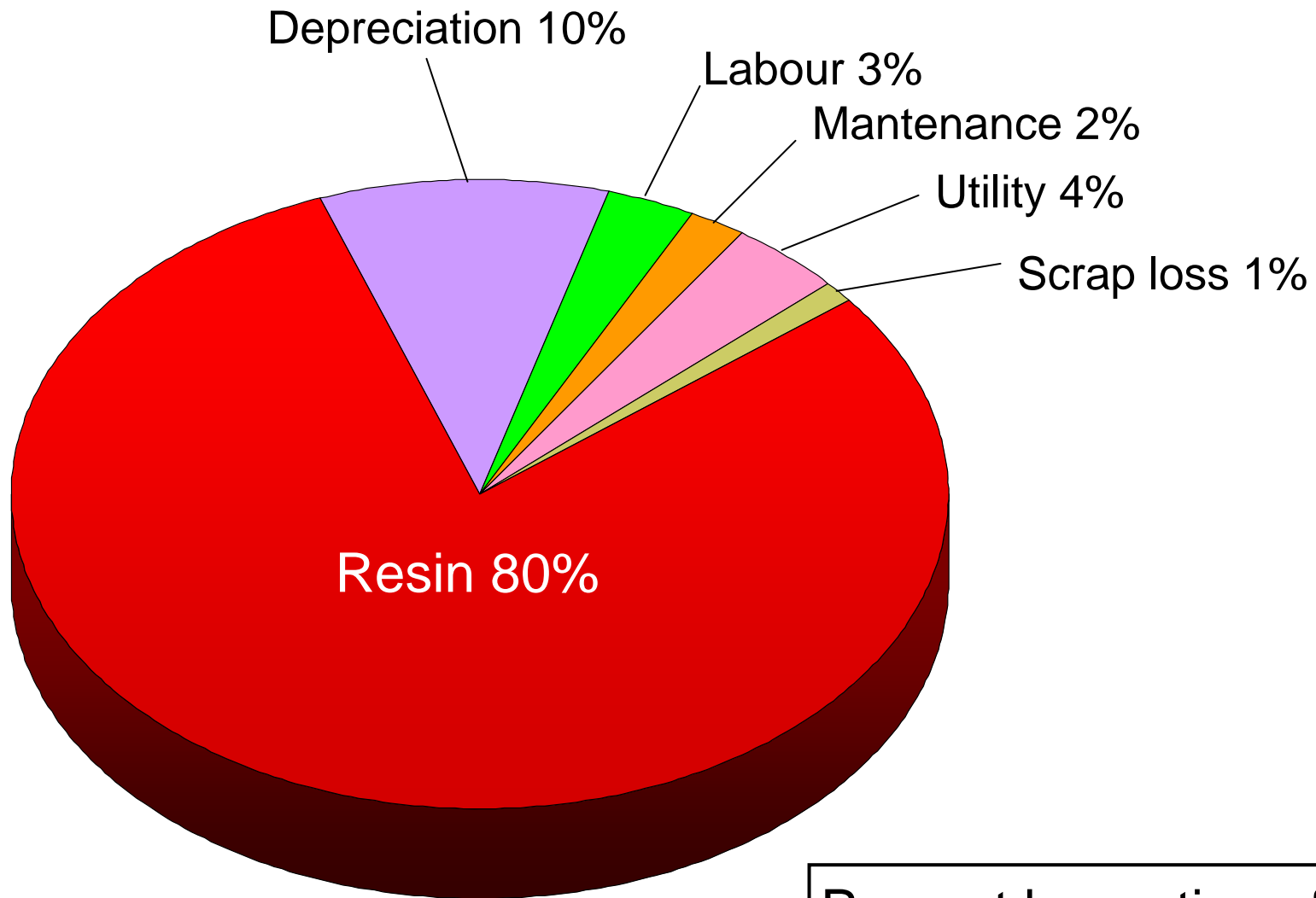
# Plastic Consumption per capita in 2005



# Comparison of Plastic application



# Plastic Production cost Composition



Percent by portion of cost

# Electricity cost Comparison

Cost (Bath per MW)



# Plastic Industry in Thailand

- Production of plastic products about 45 years ago
- Petrochemical industry began only about 25 years ago
- Various manufacturing processes for different products (injection, extrusion, compression, blowmolding, roto molding, thermoforming etc.)
- Wide variety of resins for different markets
- Low per capita consumption (40 vs. 123 in USA)
- Large growth potential to replace paper, metal, glass and wood due to cost and environmental factors

# Thai Plastic Industries

## Strengths

- Competitive labor cost
- Low utility cost
- Good workmanship
- Local resin supplies
- Government encourages automotive industry
- Strategic location
- Political stability
- Natural resource
  - Energy
  - Resins

## Weaknesses

- Lack middle-level management
- Low productivity
- Lack R&D
- Family-type management
- Rely on import molds & equipments

# Thai Plastic Industries

## Opportunities

- Strong growth in many markets (automotives, packaging and construction etc.)
- Strong potential to replace paper, metal, glass and wood
- AFTA & FTA Treaties
- Foreign investment and joint venture

## Threats

- High resin cost
- Competition from surrounding regions

# Key Factors of Plastic Production (5M'S)

<b>Man</b>	<b>Skill &amp; knowledge</b>	<b>Quality focused</b>	<b>Commitment</b>
<b>Machine</b>	<b>New technology</b>	<b>High productivity</b>	<b>Energy efficient</b>
<b>Mold</b>	<b>Reliability</b>	<b>High productivity</b>	<b>Good design, R&amp;D</b>
<b>Material</b>	<b>Availability</b>	<b>Technical support</b>	<b>R&amp;D</b>
<b>Method</b>	<b>Standard Operation Procedure</b>	<b>Quality focused</b>	<b>Leadership</b>

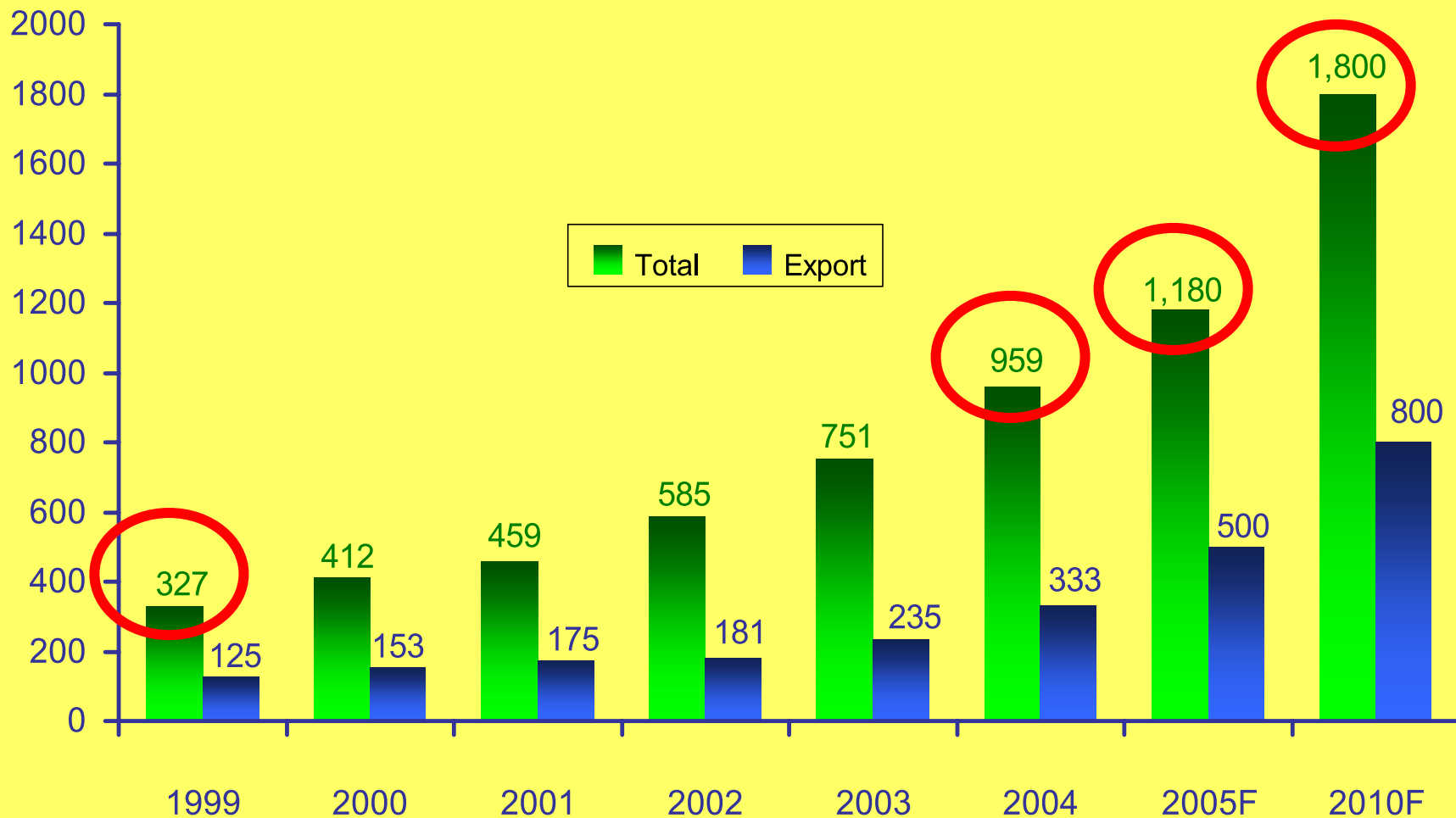


# Plastic in Automotive

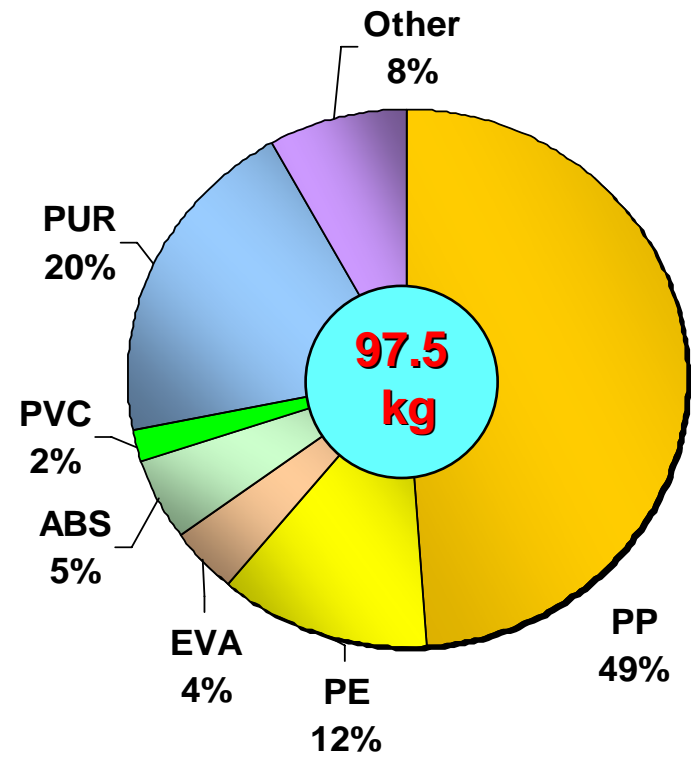
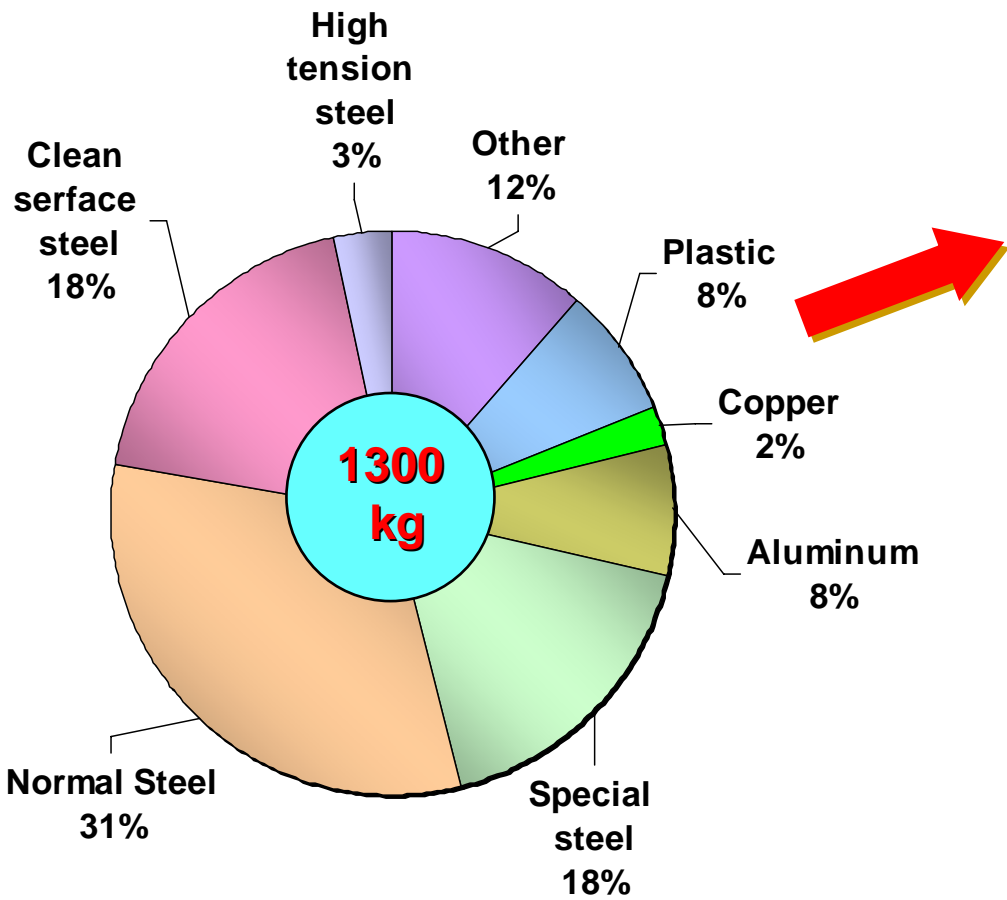
# Thailand : Total automotive production and exports

Production 1,180,000 units and export 500,000 units in 2005

X 1000 Unit



# Material composition in automotive



**The ratio of plastics in automotive about 7.5%**

# Products (Automotive)

## Interior Parts

A Pillar trim



B Pillar trim



C Pillar trim



Scuff-plate



Floor Mat



Door Module Plate



Door Trim



Rear Package



Rear Package



Lift Gate Trim



Trunk Side Trim



Trunk Board



Trunk End Trim



# Products (Automotive)

## Under-the-Hood Parts

Shroud Panel



Intake Manifold



Engine Cover



Piping System



P/S Tank



Oil Pick Up Tube



Air Cleaner



Oil Separator



Cylinder Head Cover



Timing Belt Cover



Air Duct



Cool Zone Assembly



# Products (Automotive)

## Major Body Parts

### ROOF MODULE

Jumbo Taxi



Fixed Type



Movable Type

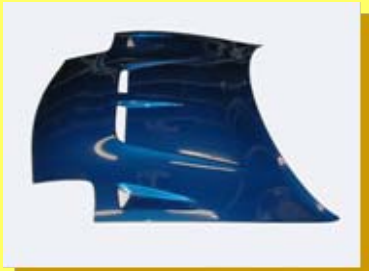


Detachable Type

### LIFTGATE MODULE PANEL



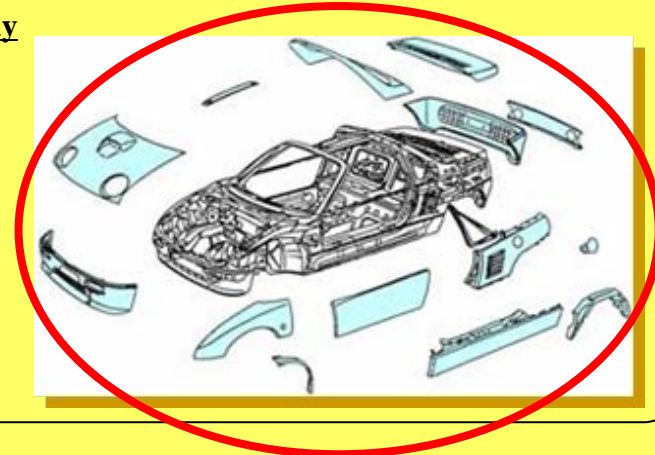
### Complete Carbon Hood



### SMC Hood



### Complete Plastic Vehicle Body



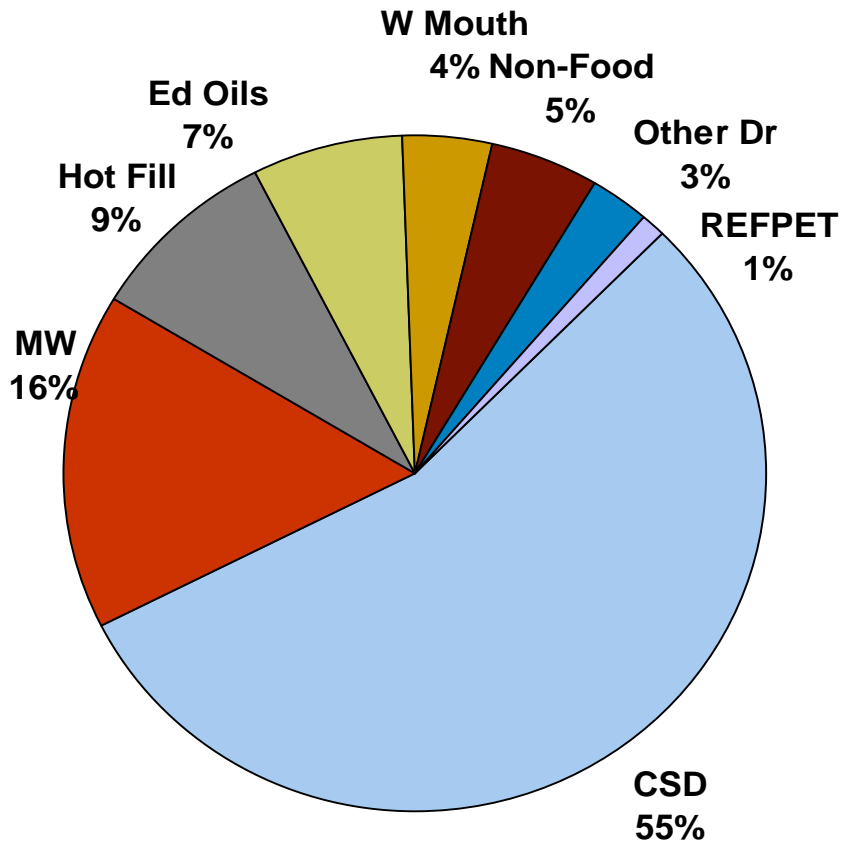
# PET bottle



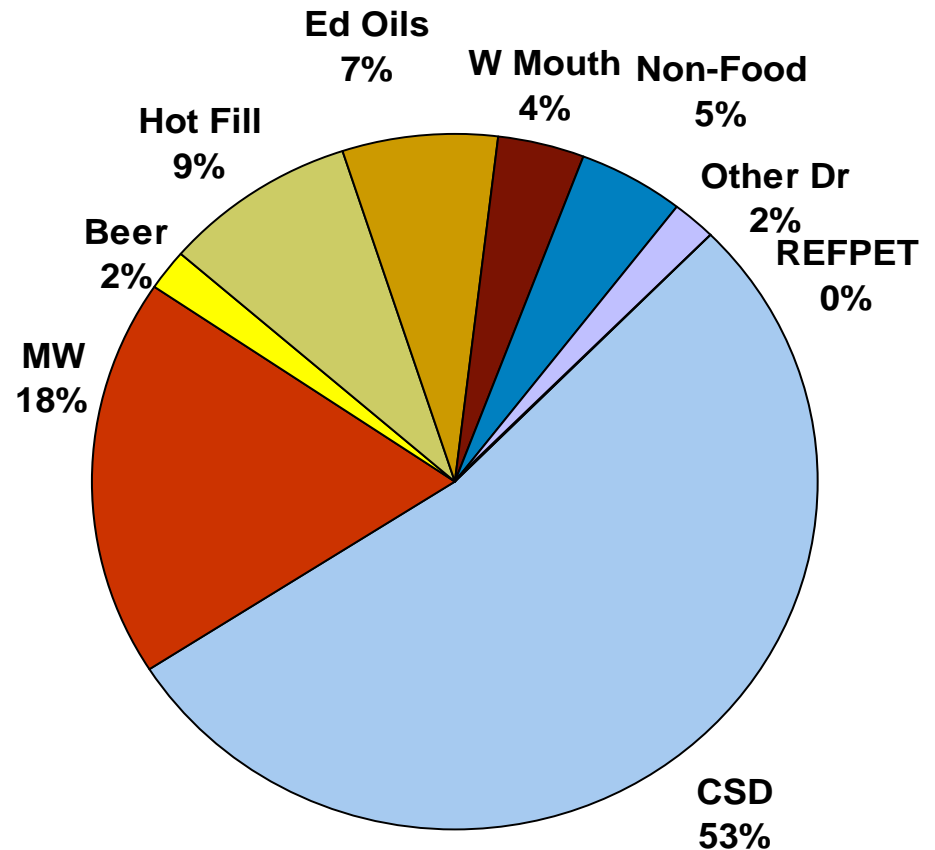
# GLOBAL PET APPLICATIONS

16% Compound Annual Growth

**1998**  
**4.0 Million Tons**



**2003**  
**8.5 Million Tons**



# Juice in PET



# PET bottle for CSD



# PET Hot filled bottle for tea



# Conclusions

- **Thai Plastic Industries continue to embrace new technology and to increase efficiency**
  - **energy efficient and highly productive equipment automation**
  - **increase product performance (barrier, lightweight)**
  - **new resins (high flow, high impact strength)**
- **Strong growth in existing markets (automotive, packaging)**
- **New markets to replace paper, metal, glass, and wood due to cost**

**Plastics is everywhere in our  
everyday lives.**

**Opportunities everywhere!!**