

# **DEVELOPING DOWNSTREAM INDUSTRIES – OPPORTUNITIES & IMPEDEMENTS**

*By*

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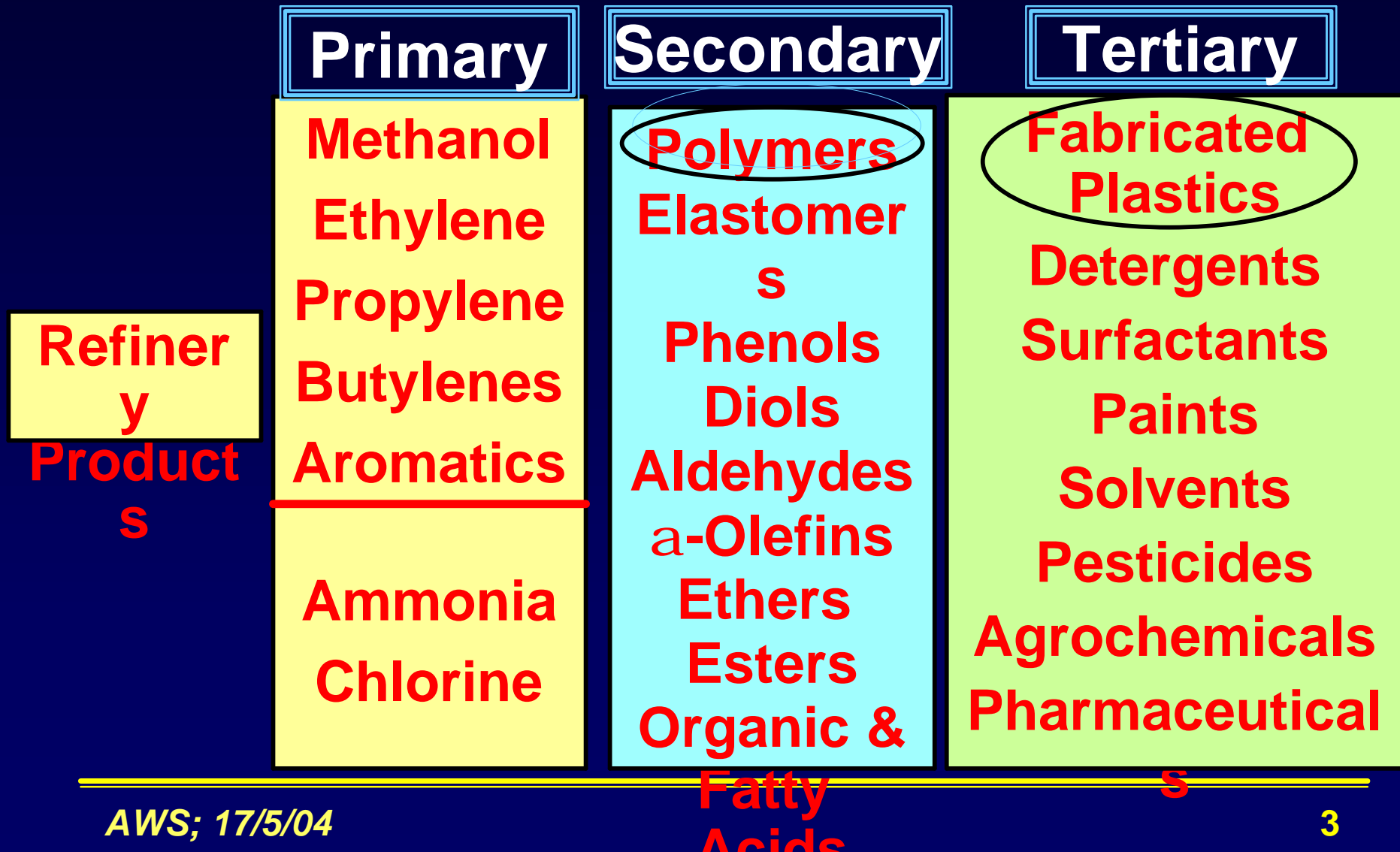
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1<sup>st</sup> Saudi Gas Conference  
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# Agenda

- **A Brief Overview of the Petchem Industry**
- **Downstream Petchem Industry**
  - **Plastic Conversion Industry as a Proxy**
    - **Salient Features**
    - **Resin Conversion**
    - **Market Profile**
- **Future Outlook**
  - **Opportunities**
  - **Challenges**
- **Concluding Remarks**

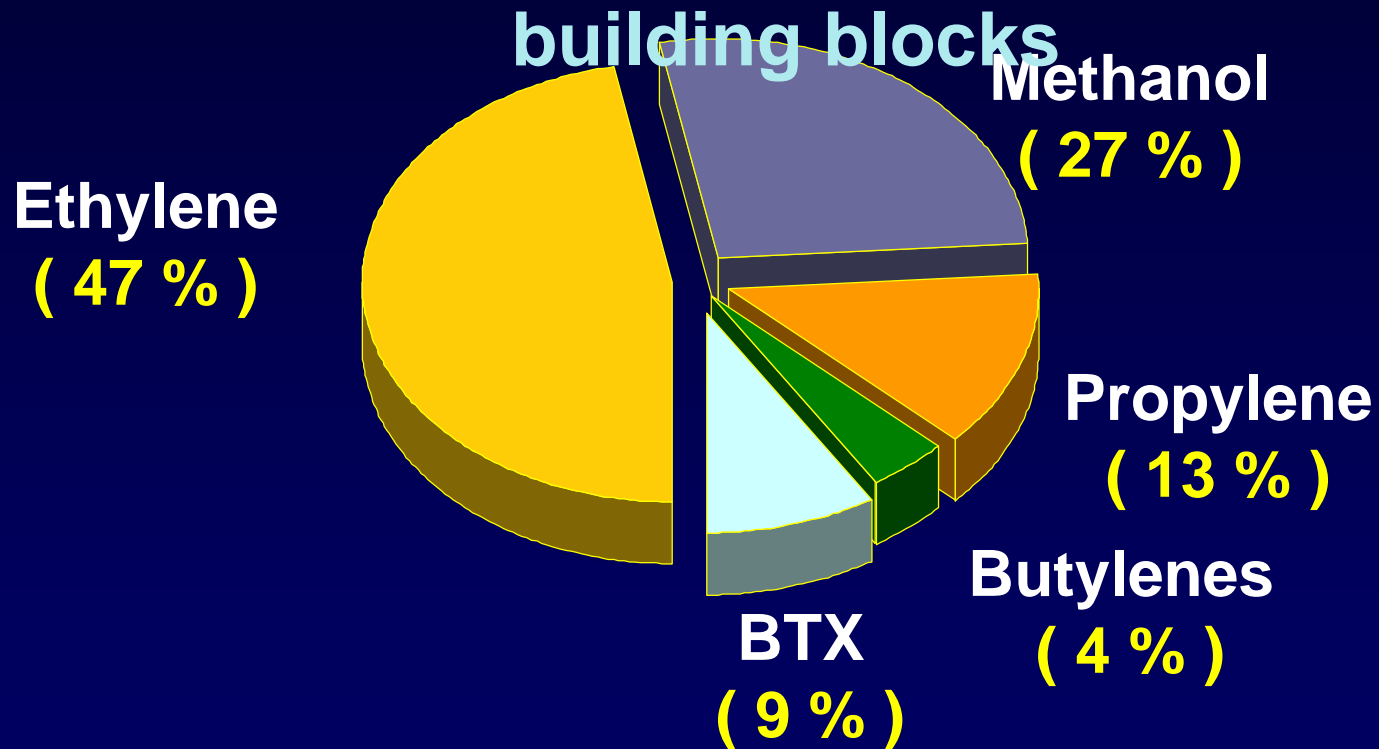
# Overview of the Petrochem Industry

## Petrochemical Industry Chain



# Overview of Petrochemical Industry

Being Gas-based led to Unbalanced  
Products Mix of Basic Petrochemicals

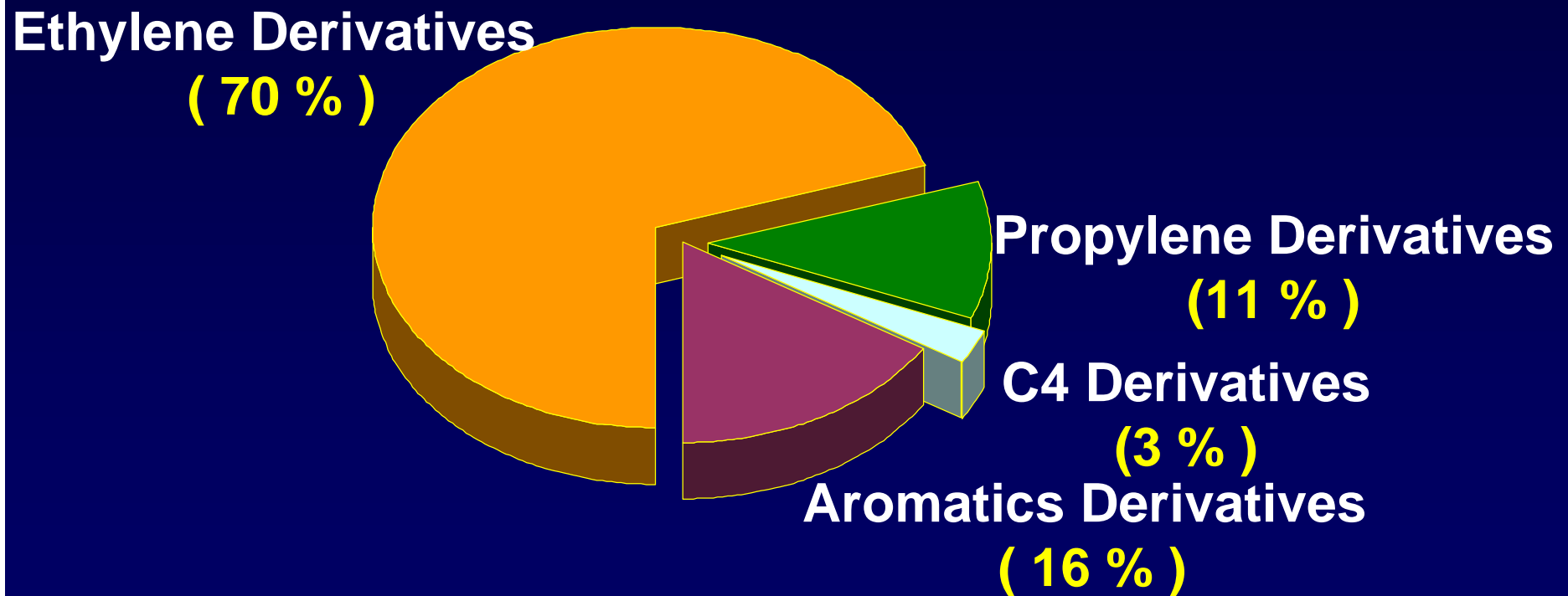


*Heavy reliance on Ethylene has partly limited  
the type of downstream industries developed*

*to date*

# Overview of Petrochemical Industry

*Petrochemical Industry In the Middle East :  
Type of Feedstocks determine the  
downstream derivative projects*



Source : Nexant ChemSystems

# Overview of Petrochemical Industry

## Polyolefins Capacities Addition (2003-2010)

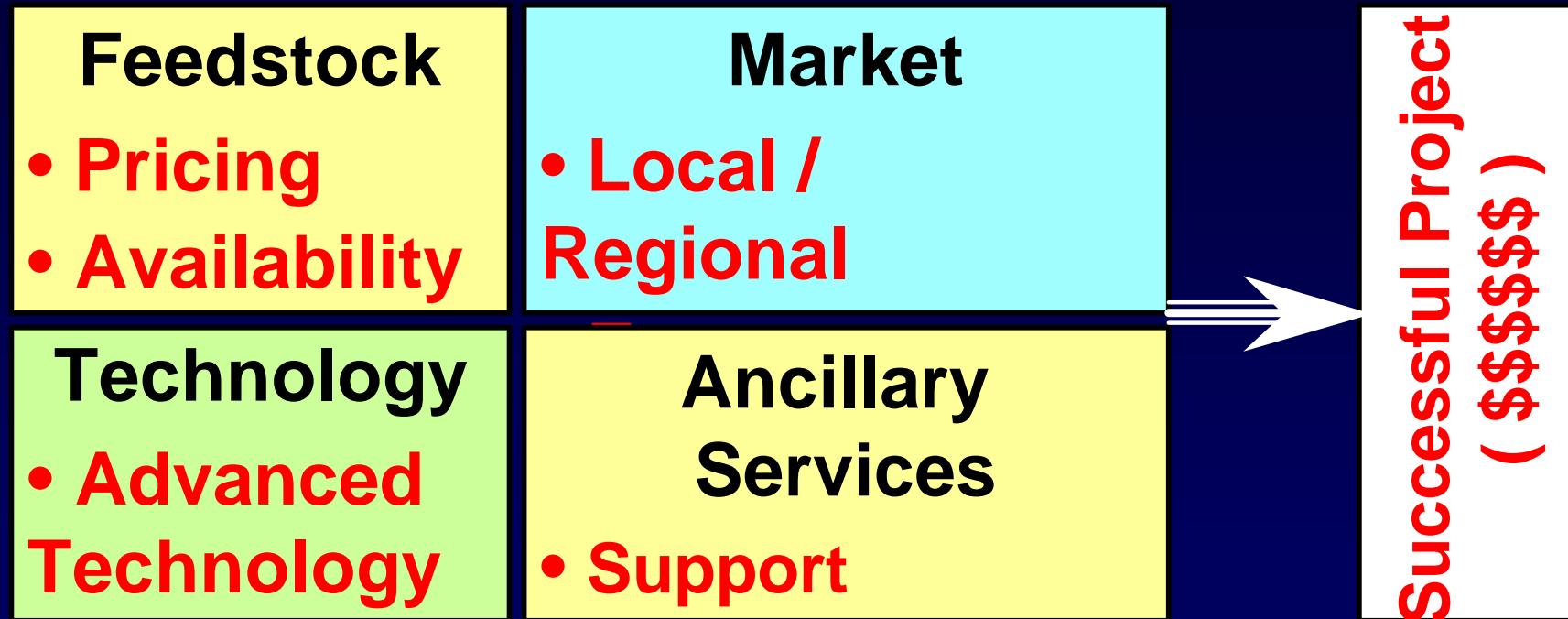
Polymer	Capacity (million tons/yr)		CAGR (%)
	2003	2010	
Polyethylene	2.35	6.25	15.0
▪ Linear Low	1.05	3.0	
▪ High Density	1.35	3.25	
Polypropylene	1.86	3.51	9.3
<b>TOTAL</b>	<b>4.2</b>	<b>10.46</b>	<b>13.7</b>

➤ *Focus of these expansions will be largely to meet growth in Asian demand . China's Net Polyolefins Import in 2007 is projected to be :*

- POLYETHYLENE : 6.5 MILLION TONS
- POLYPROPYLENE : 2.6 MILLION TONS

# Downstream Petrochemical Industry

## Success Matrix



*A Combination of these Factors is Essential to Develop the Downstream Industry in KSA*

- Skilled Workforce

# **Downstream Industry - Plastic Conversion Industry as a Proxy**

- **Salient Features of the Industry**
- **Polymer Conversion Profile**
- **Market Profile**



# Salient Features of the Industry

## ① INDUSTRY STRUCTURE

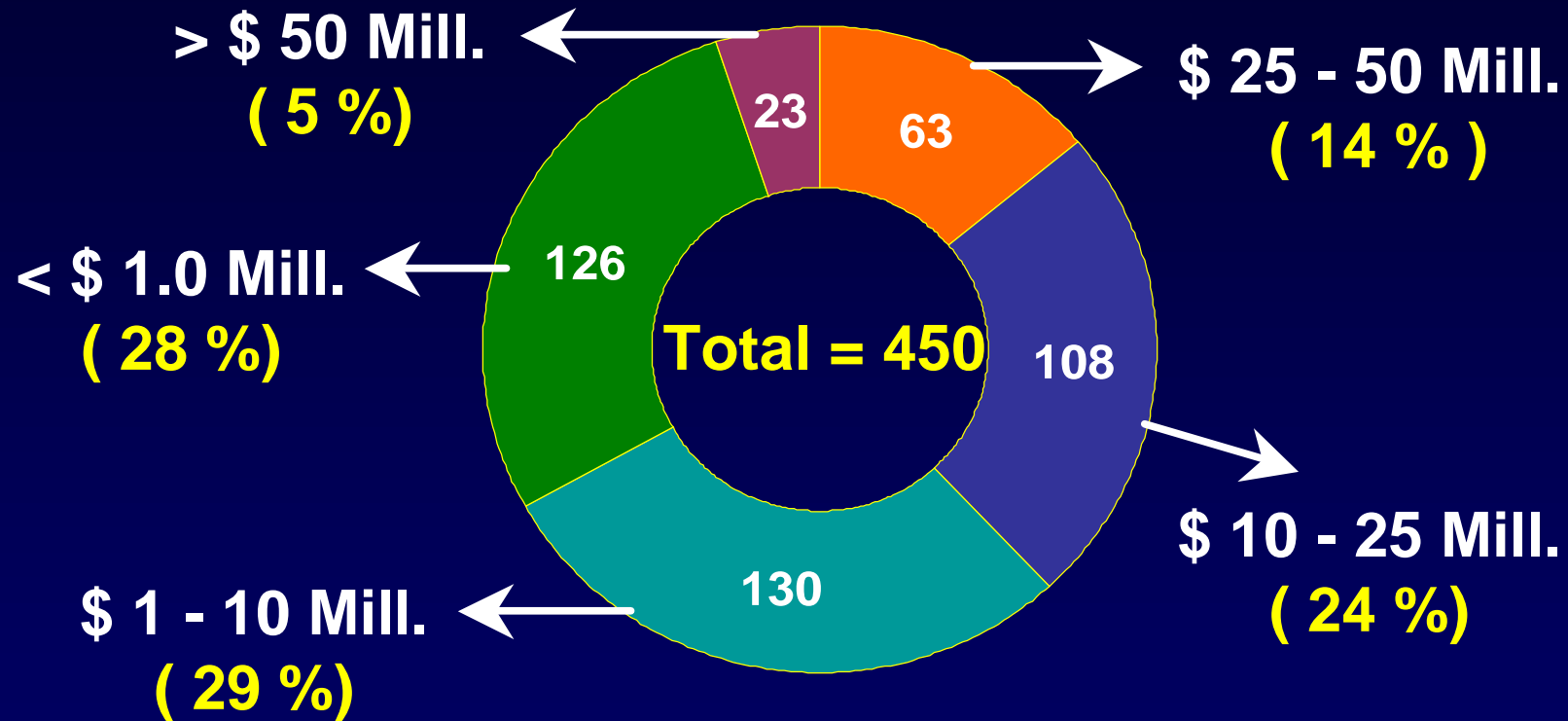
- First Conversion Plant Commissioned in 1959.
- Private Ownership,
- Modest Foreign Partnership ( # of JVs = 7 % )
- Fragmented Industry Composed of Large Number

of Small Plants

Region	Plants #	Share of Total Plants ( % )	Share of Total Capacity ( % )
Western	200	44	40
Central	120	27	35
Eastern	130	29	25
<b>KSA Total</b>	<b>450</b>	<b>100 %</b>	<b>100 %</b>

# Salient Features of the Industry

## Plant Distribution per Capital Investment - 2002



- *Over ¼ of the Plants are Very Small,*
- *Large plants represent 5 % of total, but account for over 50% of Polymer Conversion*

# Salient Features of the Industry

## ② MAJOR MACROECONOMIC INDICATORS A Small Contributor to Non-oil Sector

	<b>Plastic Conversion Sector</b>	<b>Share of Manufacturing Sector ( % )</b>
<b>Establishments</b>	450	14.4
<b>Capital Investments (Billion US\$)</b>	4.75	8.5
<b>Manpower</b>	24,750	8

Source : GOIC Data Bank

# Salient Features of the Industry

## ③ PRODUCTS

- **Focused on Low Value-added End Products**
- **Products Market Value = US \$ 1.25 Billion / yr**
- **Significant volume of Finished products are Imported ( ca. 24 % of total consumption)**
- **Focused on 3 Main Locally Produced Resins :**
  - **Polyolefins, PS, and PVC, collectively represent 88 % of Polymer Converted**
  - **Imported Resins represent 14% of total demand**

# Salient Features of the Industry

## ④ MARKETS

### ➤ Local Market Focus

- Domestic Market Share = 91.5 %
- Export Market Share = 8.5 %

### ➤ Most of Current Local Plastic Market Segments are becoming “*Mature*”.

### ➤ Expansion & Growth is driven by “*Me Too Approach*”

# Salient Features of the Industry

## ⑤ SUPPORTING INDUSTRIES

### ➤ **Polymeric Resins Suppliers**

- 1 Local & 4 Regional Suppliers with Combined Polymers Production Capacity of 8.5 Mill. Tons ( Year 2002 ).

### ➤ **Molds & Die Makers**

- 4 Local Suppliers

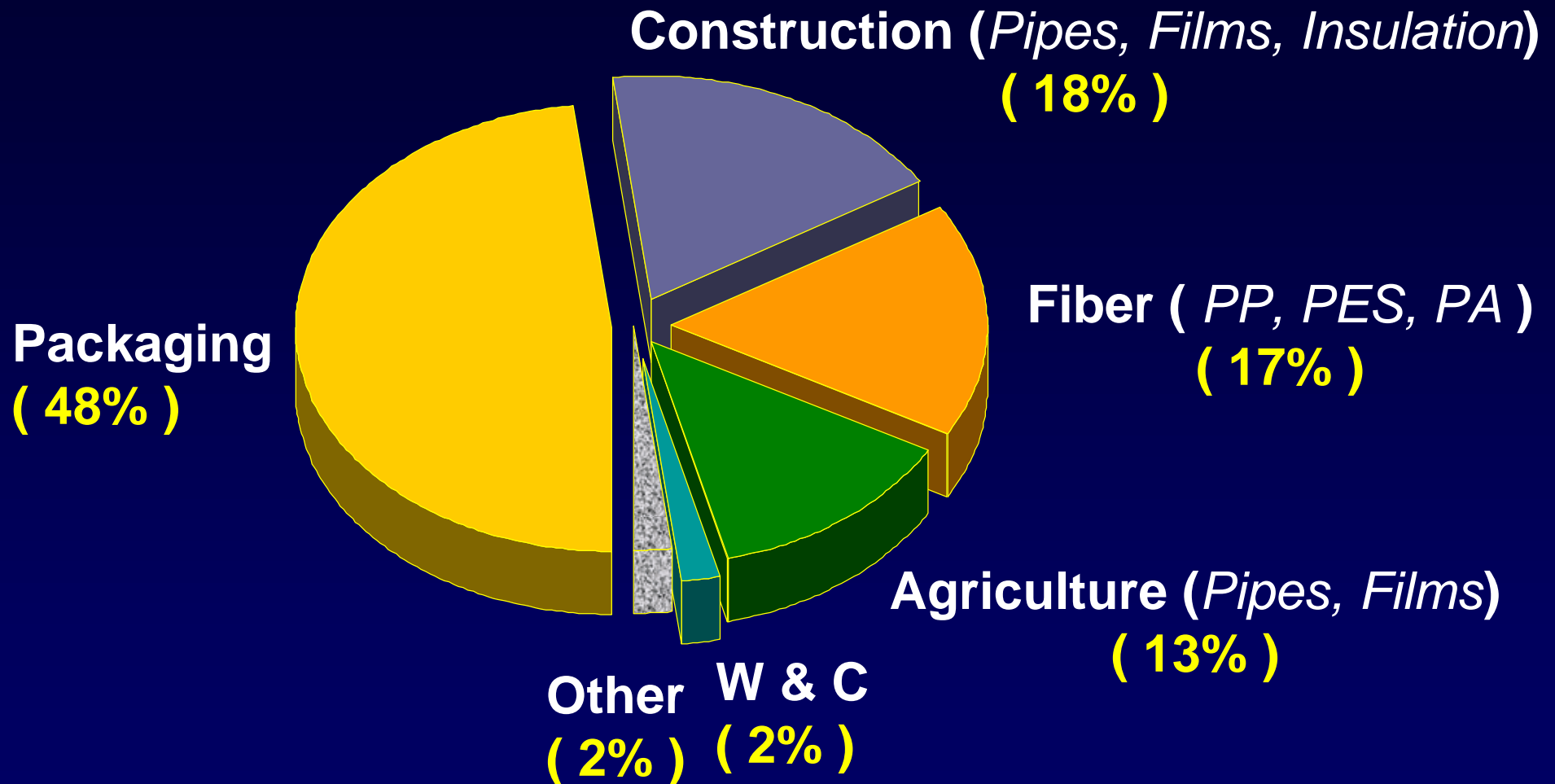
### ➤ **Master Batch/Additives Suppliers**

- 7 Local Suppliers with Combined Production Capacity of 50 Kta

# Polymer Conversion Profile - 2003

<b>Polymers Utiliz.Rate</b>	<b>Capacity ( Kt<sub>a</sub> )</b>	<b>Demand ( Kt<sub>a</sub> )</b>	<b>(%)</b>
<b>Polyethylene LL, LD, HD</b>	<b>525</b>	<b>375</b>	<b>71</b>
<b>Polypropylene</b>	<b>370</b>	<b>270</b>	<b>73</b>
<b>Vinylics (PVC)</b>	<b>380</b>	<b>225</b>	<b>59</b>
<b>Styrenics (PS)</b>	<b>120</b>	<b>90</b>	<b>75</b>
<b>Terephthalics (PET, PES)</b>	<b>160</b>	<b>100</b>	<b>62</b>
<b>Total</b>	<b>1,555</b>	<b>1060</b>	<b>68</b>

# Market Profile

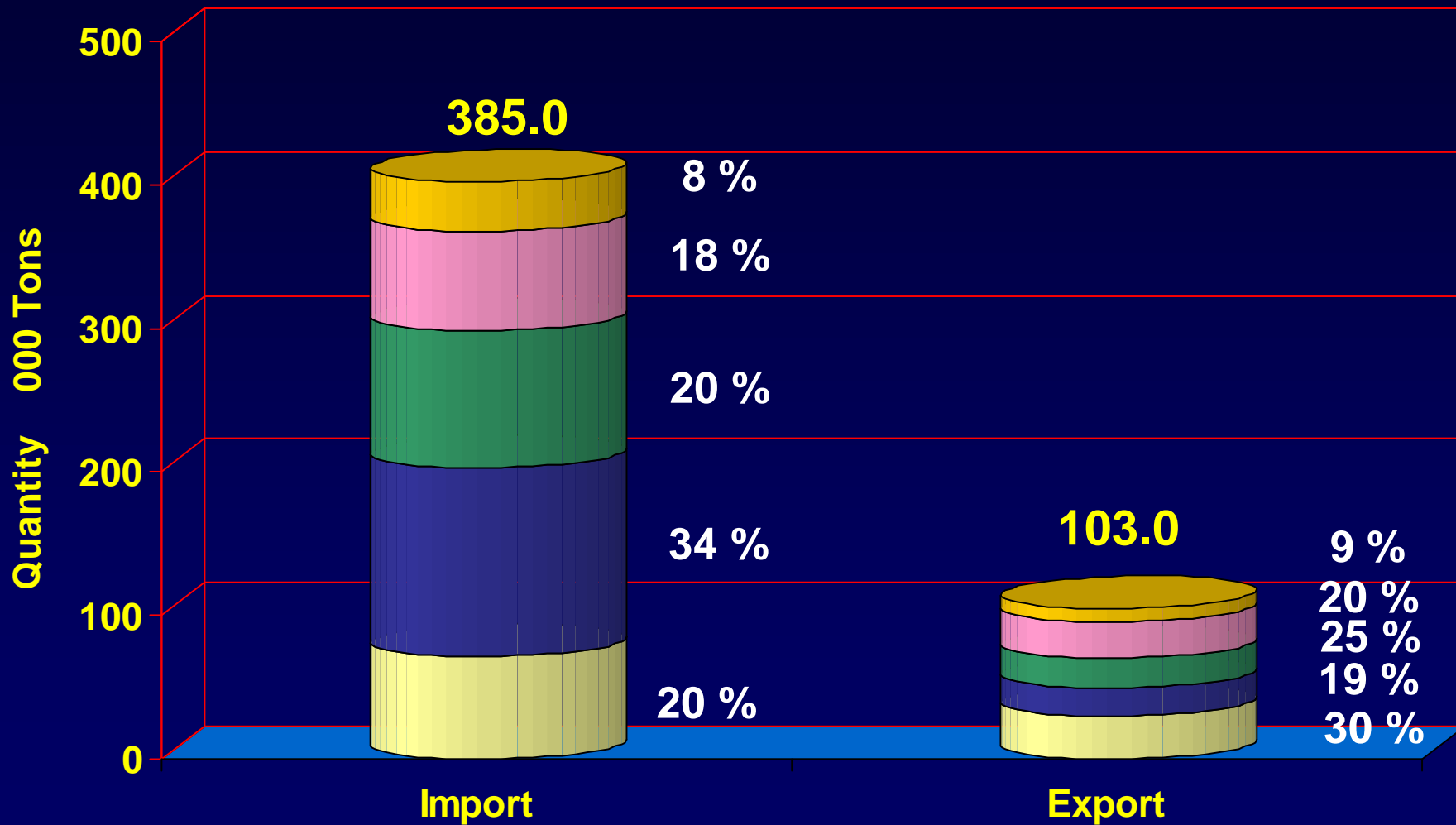


**Packaging** : Films, Raffia Bags, Bottles, Injection Moulding



# Market Profile

## FOREGIN TRADE ( Year 2002 )



■ Film & Sheet ■ Household Products ■ Bags & Sacks ■ Pipes ■ Others

# Future Outlook : Opportunities

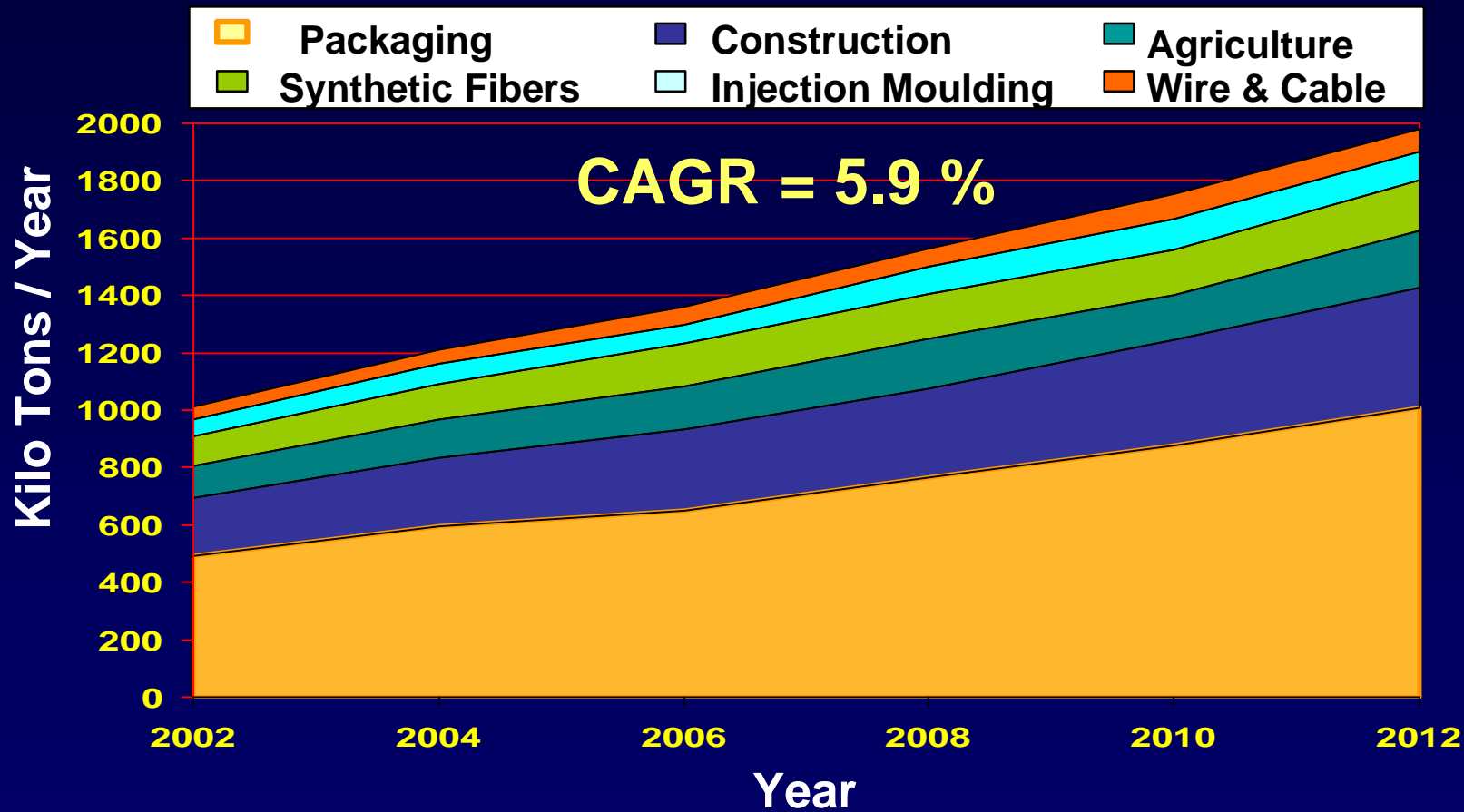
## ① Opportunities in Domestic Markets

- **More Local Resin Producers; resulting in :**
  - More Competitive Resins Prices
  - Wider Range of Resin's Grades
  - Better Technical Services
  
- **Strong Growth in Demand for Plastic Pipes (Growth Rate = 8 % p.a. ) as a result of :**
  - The Upstream Gas Plan
  - Desalination Projects (36 Drinking Water Projects)
  - Wastewater Treatment Projects (186 Sewage Projects)

# Future Outlook : Opportunities

## ① Opportunities in Domestic Market

### Trend of Plastics Demand by End-use (2002–2012)



# Future Outlook : Opportunities

## ② Opportunities in Export Markets

### ➤ **Export to the US Market**

- US enjoyed a Net Trade Surplus in Fabricated Plastic Products till 2001;
- Became a substantial Net Importer of Plastic Products in 2002 (mainly bags & injection molded items).

### ➤ **Export to Europe**

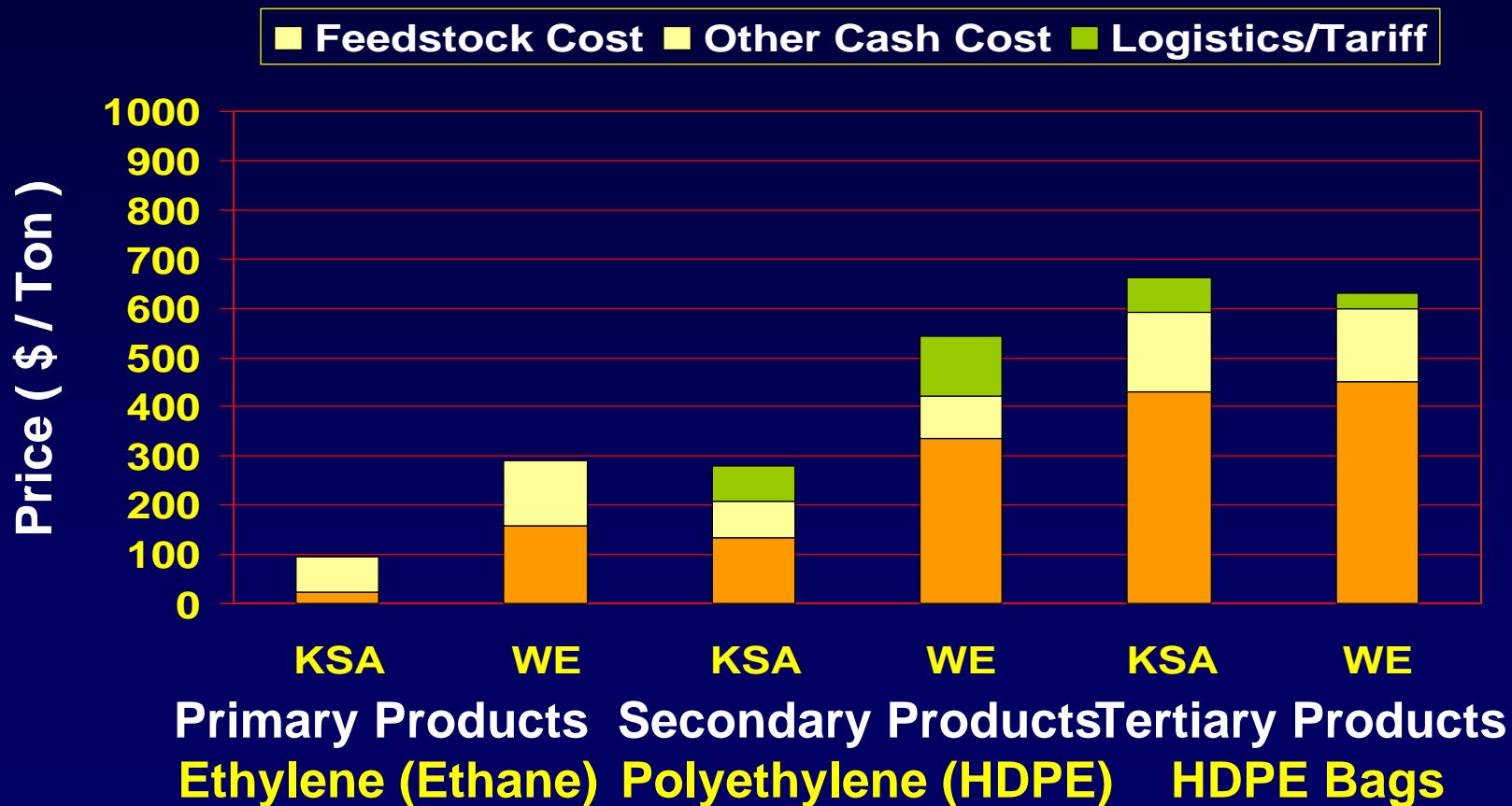
- Europe is a Net Importer of Plastic Products
- China is the largest supplier of polyethylene bags to the EU, followed by Malaysia and Thailand.
- The obvious question is :

*Why haven't Saudi Converters Captured this Market ?*

# Future Outlook : Opportunities

## ② Opportunities in Export Markets

Dilution of Feedstock Cost Advantage along the Production Chain



# Future Outlook : Opportunities

## ② Opportunities in Export Markets

- **Capturing Opportunities in Export Markets will heavily depend on : Raw Material Prices .**
- **Penetrating Export Markets require :**
  - Marketing Alliances between Converters
  - Special Resins Prices for Export-oriented Fabricated Plastics
- **Plastic Converters should consider utilizing their Free Capacities for Export Sales at : Cash Cost Prices .**

# Future Outlook : Challenges

- **The Advent of Trade Barrier Removal, and the**
- **Increasing Competition from Low-cost Imports from China leading to :**
  - **Pricing Ramification**
  - **Lower Margins**
- **Volatility of Resins Prices ( which account for 40% to 70 % of total manufacturing cost)**

# Concluding Remarks

- **Plastic Converters Missing out Opportunities on :**
  - Specialities,
  - Efficiency;
- **Significant Capacity Under-utilization.**
  - Spare Capacity = 31 % Plus
  - Represent a High Fixed Cost
- **Free Capacity could be reduced through :**
  - Brand Management
  - Improved Project Management
  - Better Marketing



# Concluding Remarks

- **To fully utilize their potential, Plastic Converters must become a “*Cost Leader* “ by adopting :**
  - **Advanced Technology;**
  - **Economies-of-Scale;**  
Consolidation and production JVs are one way to expand capacity and reduce costs.
  - **R & D;**  
Focusing on process improvements rather than on product development.
  - **Focus on High Value-added Products (Secondary Conversion)**

**Thank You For Your  
Attention**