

# INDUSTRY REPORT ON AIRBAG INDUSTRY

## **AIRBAG MARKET GROWTH DRIVERS:**

### **Key drivers for airbags industry are:**

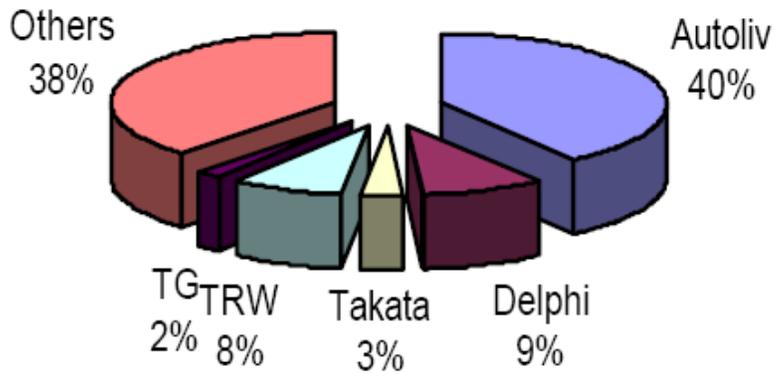
- Federal regulation-first and foremost
- Public awareness
- General increase in concerns for safety
- Development of rollover and side impact systems
- Increased sophistication of systems
- Competitive dynamics

### **Global airbag growth factors**

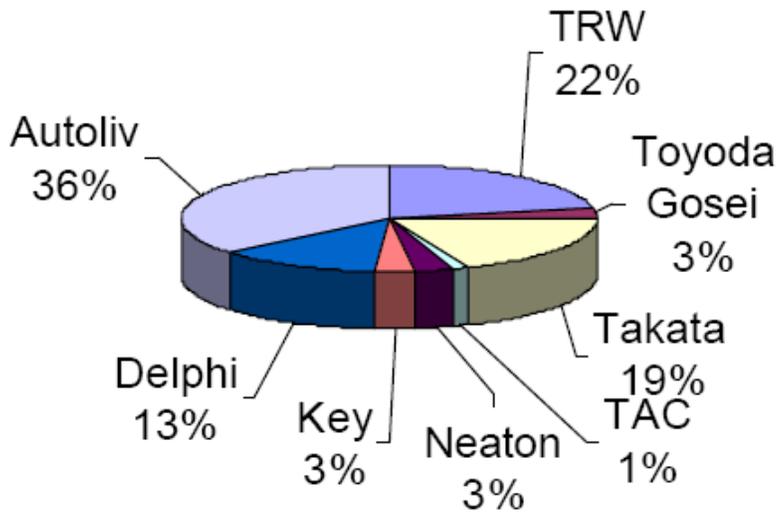
- Continued growth of side impact and curtain application in north America, Europe and Asia
- Developing airbag markets in South America, Eastern Europe, South East Asia, India and China.
- Conversion to global platforms by big 6m vehicles manufacturers promotes safety product usage-airbags, pretensioners, and occupant sensing systems and anticipatory crash technologies.
- Maturing supply base in development areas ready to produce airbag in mass quantities, often licensing technologies or partnering with large airbag suppliers
- Technology maturation, growing consumer acceptance and lower prices will push airbag utilization to near 100% in Japan and western Europe
- Improved fabric technologies are decreasing cushion weight and increasing "foldability"
- New coating applications are a major contributor to these trends

**Market Share Of Major Airbag Manufacturers**

**Market Share For Airbag**



**Market Share Of Airbag Electronics Manufacturers**



## SWOT ANALYSIS AIRBAG INDUSTRY

### Strength

- **High Growth Rate:**

Airbag industry is a high growth industry, where global demands for airbag modules are expected to increase by **91.9 million units by 2011**, resulting in an additional **\$2.9 billion in global airbag revenue**. While the growth will be highest in North America, Asia and Europe will close behind with an expected demand increase that will result in an **additional \$1 billion and \$763 million** in revenue potential for suppliers, respectively, by 2011. This is because of various measures taken by the government agency like National Highway Traffic Safety Administration's (NHTSA). According to NHTSA, by 2009 all vehicles sold in the United States are required to pass a side crash test that measures the impact to head, thorax and pelvis.

- **Increasing Public Awareness:**

With better information flow and globalization consumers are becoming more demanding and aware of the technological changes related to safety and want better safety equipment in automobiles.

- **Innovation:**

Competitive and demanding customers will drive innovation for the companies in airbag industry

- **High entry and exit barriers:** Due to high capital investment in plant and machinery coupled with technical know-how entry and exit barriers are high in the industry.

### Weakness

- **Dependency:** Airbag industry is dependent upon OEM (automobile manufacturers) which makes it prone to automobile market fluctuations.

- **High Exit Barriers:** High capital investment in plants, machinery and R&D creates high exit barrier which makes firms difficult to come out of the industry.

- **Intense rivalry:** Airbag module industry is characterized by intense rivalry among manufacturers. Autoliv is the leader with 40% of market share but others, apart from established players like TRW, Takata, Delphi, has market share of 38% which results in lower bargaining power of airbag module manufacturers.

- **Replacement cost:** Once the airbag is deployed it has to be replaced by the consumer, which costs about \$500-\$2000.

- **Increasing cost of vehicles:** Cost of airbags led to the increases in prices of vehicle in developed market like US, Europe. This badly affects the margins of OEMs which in turn pushes the supplier for cost containment making value chain very competitive.

### Opportunities

- **Low cost of production in developing nations:** Maturing supply bases in developed nations provide opportunity for production facility for airbag manufacturers for e.g. Autoliv has 9 plants in china. These countries are showing double digit cumulative growth in passenger vehicles.

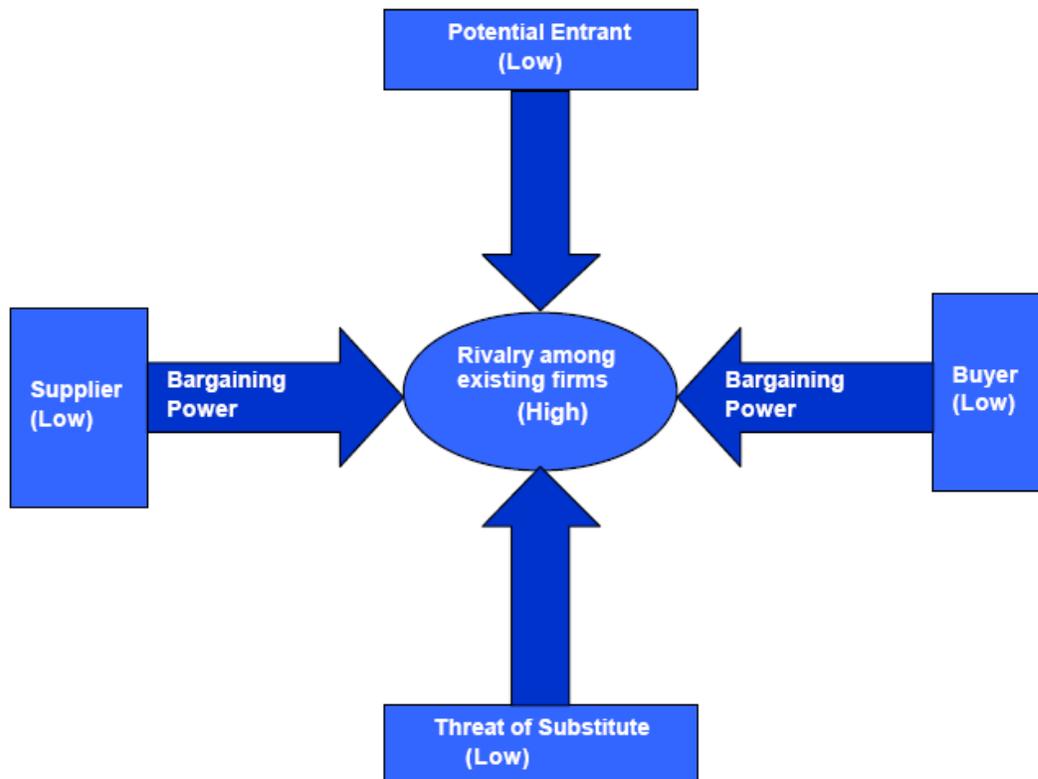
- **Opportunity for the new segment (Two wheelers):** Airbags on two wheelers provides tremendous opportunity for this industry. Recently Honda announced the production of first motorcycle airbag system. This new system, which can help lessen the severity of injuries caused by frontal collisions, is to be made available on the new Gold Wing motorcycle scheduled for release in late spring of 2006 in the US.

**Threat**

- **Counterfeit airbags:** Counterfeit airbags is a growing problem in US and Canada. Police estimated that one in 25 cars have fake airbags. A recent survey in Los Angeles found that out of 1,200 vehicles that had replaced airbags, 66 of them were fake. Due to high replacement cost of airbags, fake airbag industry is mushrooming all over North America.

- **Technological innovations:** Active safety systems will overtake passive protection, such as airbags. These advanced systems will utilize *radar and cameras to detect potential dangers*. Anti-crash sensors, driver less vehicles (Robotics) and vehicles using GPS (Global Positioning system) can impose serious threats to airbag industry. It has been estimated by industry experts that within the next five years, the car will use algorithms to anticipate hazards and intervene or warn the driver.

**PORTER'S FIVE FORCES MODEL FOR AIRBAG INDUSTRY:**



### **Threat of New Entrant- LOW**

Threat of new entrant is low because of

- **Intense rivalry among existing firms:** Intense rivalry among airbag module Manufacturers refutes the entry of other player.

- **High capital investment:** High capital investment is required in terms of plant setup and to achieve economies of scale.

### **Bargaining Power of Buyer- High**

Buyers are automobile manufacturers and has better bargaining power due to

- **High capacity purchase by buyers**

As government regulations require manufacturers to implement airbags in 100% of vehicles these manufacturers buy in large volumes which increases their bargaining power with respect to price and other services.

- **Little or less product differentiation**

Airbags are very little or less differentiated among airbag module manufacturer for example, airbags from Delphi and Autoliv are mostly same; the only difference is in the length of product line.

### **Intensity of Rivalry Among Existing Firms- HIGH**

Among airbag module manufacturing firms, intensity of competition is increasing due to high growth rate in airbag market. Competition in airbag module segment is very intense with Autoliv 40%, Delphi 9%, TRW 8%, Takata 3% and others 38% market share.

### **Bargaining Power of Supplier- High**

Supplier has better bargaining power than airbag module manufacturer due to

- **Vertical integration**

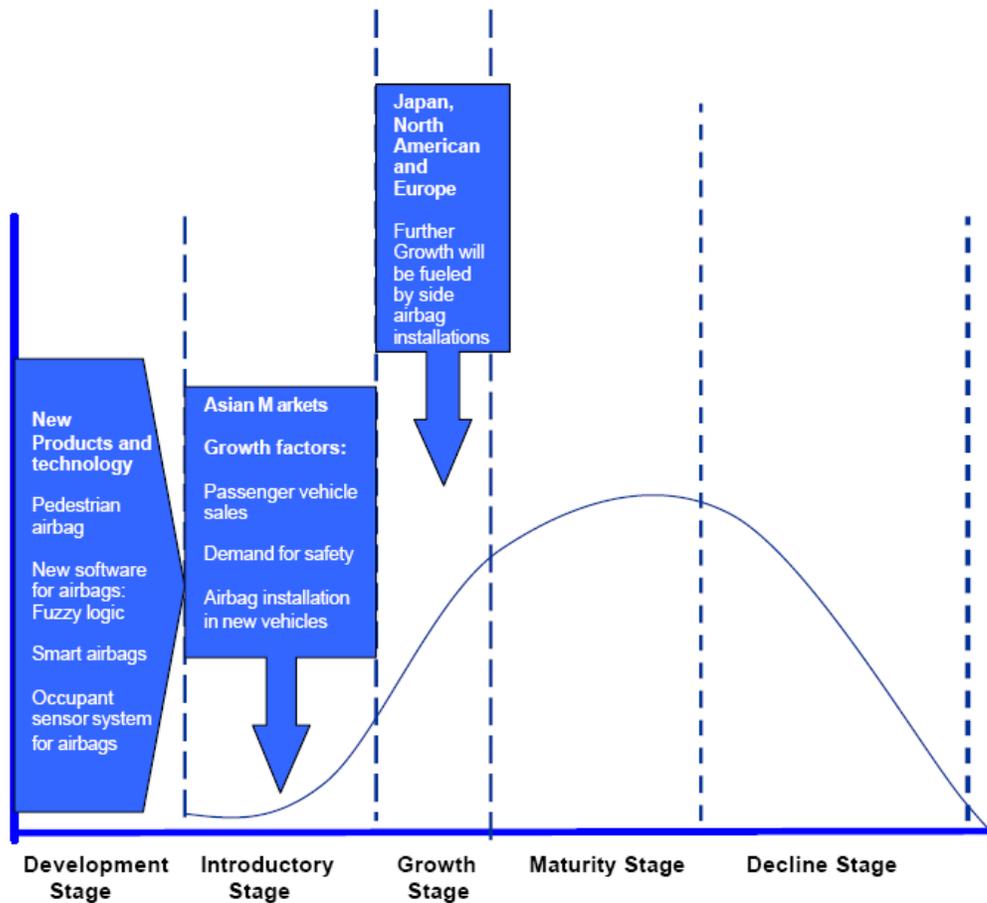
The trend within the airbag component industry is toward higher levels of vertical Integration and directed at moving up the "food chain". Airbag inflator suppliers have expanded to include module assembly, steering wheel manufacturing, plastic cover molding, seatbelts, sensors, and electronics. North American initiator supplier OEA has moved upstream to produce inflators, putting itself in competition with its former customer base.

- Suppliers' products such as sensors, inflator and airbag fabric are important component for the airbag module manufacturer.

### **Threat of Substitutes-Low**

As such there is no substitute available for airbag. Some Firms are trying to install **GPS** (Global positioning system) in automobiles which would prevent crashes but this might not be the perfect substitute of airbag.

## PRODUCT LIFE CYCLE OF AIRBAG INDUSTRY:



Product Life Cycle for Airbag Industry

### Product Life Cycle for Airbag Industry

The above figure shows the airbag industry in different markets in different stages of product life cycle.

#### New products and technologies

Many new products and technologies such as *pedestrian air bag*, *smart airbag*, *fizzy logic software for airbag*, *occupant sensor system* are in developing stage to meet the growing demand for smarter and safer airbags. These products will eventually be introduced into the market.

#### Asian Market

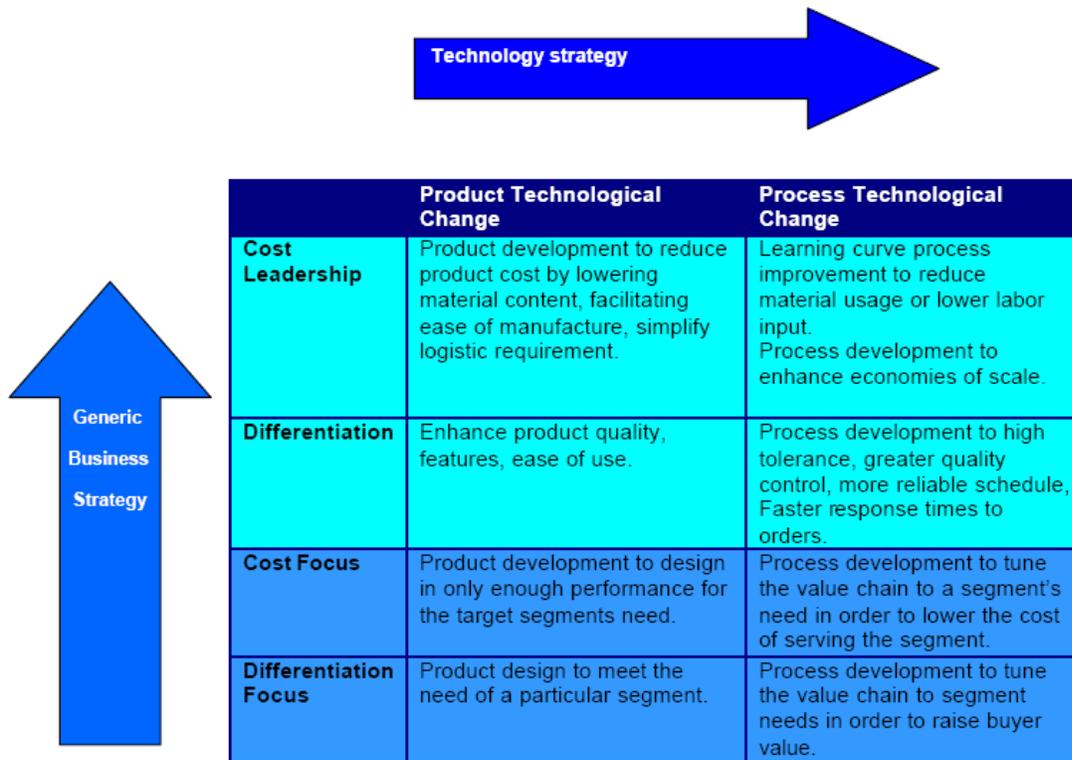
Asian market is still into introductory phase of the product life cycle. The growth factors associated with this market are

- As compared to their counterparts US and Europe, passenger vehicle sales in Asia is showing double digit growth
- Demands for safer vehicles are increasing in Asia

### North America, Japan and Europe

These developed markets falls into growth phase of Product Life Cycle. As the market of frontal airbag is now saturated coupled with low sale of passenger vehicles, growth of these markets will be fuelled by installation new airbag systems, like side impact airbag.

### TECHNOLOGY STRATEGY VS BUSINESS STRATEGY



Technology (R&D) being the most important component of the airbag industry value chain future of airbag industry will depend upon innovative airbags and product development,so,it is necessary that firms' technology strategy must be aligned with firms' generic business strategy. The table below explains how technology strategy can be aligned with firms' generic business strategy.

**Technology strategy is ideal for small airbag and component manufacturers which has generic business strategy of either *cost focus* or *differentiation* focus because of following factors**

- Financial constraint to fight with larger competitor
- Absence of technical know-how to compete in all the segments
- Absence of economies of scale in R&D function
- Less R&D investment needed to serve few but profitable segments.

**Also Technology Strategy is suitable for big airbag and component manufactures Such as Bosch, Autoliv because of following factors which has generic business strategy of either *cost leadership or differentiation*.**

- High financial strengths to develop technologies for all the segments
- Availability of technical know-how( proprietary technology)
- Economies of scale in R& D process
- High process engineering and product development skills
- Ability to retain talent pool

## **MARKET TRENDS OF AUTOMOTIVE AIRBAGS:**

### **World Airbag Trends 2005:**

- Front airbags will Fluctuate with the car production rates in West Europe, the USA, and Japan still grow in fueling growth
- Side airbag fueling growth
- Head protection and roll over protection will be fast growing application
- New systems are under development for such areas as knee, foot, and headrest, even an external pedestrian system

### **Future Trends:**

- Composites? Combinations of material-nonovens and film? Use specific
- Lighter fabrics for pack ability and use with" cold inflator" technology and special areas
- New coating polymers
- Consolidation/Integration of supply chain
- New application for airbags – but selective: side curtain, rollover protection