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Indian scenario

Tinplate Packaging Industry – Challenges & way forward
Global Packaging Industry has been driven by developed nations and food & beverages consumption.

By end-use industries:
- Food USD 173 bn (38%)
- Beverage USD 82 bn (18%)
- Pharma USD 23 bn (5%)
- Cosmetic USD 14 bn (3%)
- Others USD 163 bn (36%)

By geographical consumption:
- Americas 34% (Source: Indian Institute of Packaging)
- Eu / Sov / ME / Africa 31% (Source: Indian Institute of Packaging)
- Oceania 8% (Source: Indian Institute of Packaging)
- Japan 13% (Source: PIRA / WPO Report)
- China 9% (Source: PIRA / WPO Report)
- India 3% (Source: PIRA / WPO Report)
- Rest of Asia 2% (Source: PIRA / WPO Report)

Source: PIRA / WPO Report
Global packaging demand co-relates strongly with GDP numbers.

**GDP growth rates**

<table>
<thead>
<tr>
<th>Year</th>
<th>World</th>
<th>Advanced Economies</th>
<th>Emerging/Developing</th>
<th>India</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>6.3</td>
<td>2.9</td>
<td>4.5</td>
<td>3.9</td>
<td>1.7</td>
</tr>
<tr>
<td>2012</td>
<td>6.2</td>
<td>3.6</td>
<td>4.9</td>
<td>3.2</td>
<td>1.5</td>
</tr>
<tr>
<td>2013</td>
<td>7.7</td>
<td>5.1</td>
<td>7.6</td>
<td>4.5</td>
<td>1.2</td>
</tr>
<tr>
<td>2014</td>
<td>7.3</td>
<td>7.3</td>
<td>7.3</td>
<td>5.1</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**Annual average growth rate – 2010-15**

<table>
<thead>
<tr>
<th>Region</th>
<th>Annual average growth rate – 2010-15, 2.9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>South &amp; Central America</td>
<td>5.5%</td>
</tr>
<tr>
<td>Asia, Oceania, Africa &amp; ME</td>
<td>5.0%</td>
</tr>
<tr>
<td>Europe</td>
<td>1.7%</td>
</tr>
<tr>
<td>North America</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source – Rexam Consumer Packaging Report 11-12

Developing nations offer tremendous opportunities for packaging industry growth.

<table>
<thead>
<tr>
<th>Region</th>
<th>Per capita packaging consumption (US$)</th>
<th>Population (% of the world)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>186</td>
<td>14%</td>
</tr>
<tr>
<td>Europe / Soviet / ME / Africa</td>
<td>76</td>
<td>30%</td>
</tr>
<tr>
<td>Oceania</td>
<td>1225</td>
<td>1%</td>
</tr>
<tr>
<td>Japan</td>
<td>459</td>
<td>2%</td>
</tr>
<tr>
<td>China</td>
<td>32</td>
<td>21%</td>
</tr>
<tr>
<td>India</td>
<td>16</td>
<td>17%</td>
</tr>
<tr>
<td>Rest of Asia</td>
<td>11</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source – Rexam Consumer Packaging Report 11-12
Globally, Sustainability, Food Safety & Cost will have maximum impact on packaging industry.

2011 report referred to Sustainability and Cost being key challenges, with efforts towards recyclablility and weight reduction.

2012 report refs Sustainability, Food Safety, Security assuming greater importance, with efforts towards lifecycle footprint and packaging re-cyclability.

Above survey also mentioned future expectations of consumers: Whilst, convenience and shelf appeal are important, perceived “greenness” of packaging materials and re-cyclablility will have greater consumer mindshare.
Global tinplate market ~15 million tons and developing nations will form the growing regions.
....and of course, Food & Beverages end use will continue to determine fortunes of tinplate.

- General Line: 17%
- Aerosol: 7%
- Closures: 6%
- Non Packaging: 3%

Food & Beverage: 67%
Key issues have not changed for the global tinplate industry

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>CONDUCT</th>
<th>PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand driven by food and beverage</td>
<td>Light-weighting</td>
<td>Synergy with value chain members</td>
</tr>
<tr>
<td>Research in steel</td>
<td>Consumer convenience</td>
<td>Cost competitiveness</td>
</tr>
<tr>
<td>Strong regulatory mechanism</td>
<td>Innovative solutions</td>
<td>Environmental focus</td>
</tr>
</tbody>
</table>

...and Threat of Substitutes !!
Whilst price movements has / will always remain an area of focus, but are we missing...........

**Tinplate**
- USA Domestic
- Lat. America Export
- Europe Export

**Tin**

Source: LME

Source: Coated Steel Monthly
Metal packaging needs to address substitution to gain share

Within metal packaging, for beverage cans aluminium appears to be moving ahead of tinplate for more share
Emerging issues in global packaging standards
ISO Packaging Standards (2013)

ISO 18601
Packaging – General Requirements for the use of ISO standards in the Field of packaging & the environment

ISO 18602
Packaging – Packaging and the Environment; optimization of the packaging systems
  Evaluation of the packaging for:
  – Heavy metals Annex C
  – Dangerous substances Annex D

ISO 18603
Packaging – to be classified as re-usable

ISO 18604
Packaging – Packaging Recoverable by material recycling

ISO 18605
Packaging – Packaging Recoverable by energy recovery

ISO 18606
Packaging – Packaging Recoverable by organic recovery

New ISO standards on Packaging and Environment, provide a set of procedures, aimed to decrease environmental impact, support innovation and prevent trade barriers. The standards can be applied to components of packaging, or to any combination of primary, secondary and tertiary packaging.
Emerging issues in global packaging standards
ISO Packaging Standards

• Demonstration of Source Reduction Efforts in any critical area
  ► Product Protection
  ► Packing / Filling Process
  ► Product Presentation / Marketing
  ► User & Consumer Acceptance
  ► Legislation
  ► Packaging Manufacturing Process
  ► Logistics (transport / warehouse / handling)
  ► Information
  ► Safety
  ► Other issues

• Absence or effort towards minimization of hazardous substances / mixtures caused due to incineration or landfill of packaging, residues of operations or packaging wastes

• Absence or efforts towards minimization of heavy metals in packaging:
  Lead, Mercury, Hexavalent Chromium, Cadmium
Example: sodium dichromate has Chromium in hexavalent form, its use for passivating will probably be banned once REACH is implemented (expected to be implemented in 2017) – global search on for Chrome Free Passivation thru a comprehensive assessment across tinplate makers and can makers and fillers

Packaging Industry will need to focus on minimization in usage of inputs across the Packaging value chain and pro-actively address environmental
Emerging issues in global packaging standards
Revision of International Tin Mill Product Standards

Three ISO Standards exist for Tin Mill Products

- Cold Reduced Blackplate for Tinplate / TFS (ISO 11951)
- Cold Reduced Electrolytic Tinplate (ISO 11949)
- Cold Reduced TFS (ISO 11950)

Key Changes Proposed

► Manufacturing features
  > Steel grades L, MR & D continuously cast & Al killed steel for food safety
  > 90 % of coil should be useable for producing Standard Grade ETP / TFS
  > Thickness: nominal thickness increased and tolerance tightened
  > Surface Roughness proposed to define different product finishes

► Flatness: Revised Tolerances for bow, EW & center buckle proposed

► Mechanical Properties: Grades proposed to be specified in terms of either hardness or tensile strength, not both

Draft revised ISO specifications expected to be circulated shortly for comments
Contents

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Tinplate Packaging Industry – Challenges & way forward
Packaging growth in India has kept pace with rising income and consumption levels.

At US$ 18.8 billion, Indian Packaging Industry is only 4% of world market; and is growing at ~15% p.a.

- Indian middle class population is > 50 million (expect ~583 million by 2025)
- Average per capita packaging consumption is USD 16 p.a. as against worldwide average of USD 75 p.a.
- Food sector, is the single largest user of packaging in types, forms and varieties

**India- Packaging industry growth (%)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014E</td>
<td>27.8</td>
</tr>
<tr>
<td>2011E</td>
<td>17.3</td>
</tr>
<tr>
<td>2009</td>
<td>13.3</td>
</tr>
<tr>
<td>2004</td>
<td>6.9</td>
</tr>
</tbody>
</table>

CAGR: 14.9%

**India- Packaging material demand (%)**

- Tinplate – 50% of Metal
- Metal - Global Avg. is ~15%

- Flexibles: 22%
- Rigid Plastics: 18%
- Metal: 10%
- Printed Carton: 17%
- Glass: 10%
- Caps & Closures: 6%
- Labels: 3%
- Others: 14%

Source – Indian Institute of Packaging, India Brand Equity Foundation, ICRA Management Consulting Services Ltd, Team analysis
Despite current hiccups, emerging markets continue with relatively better GDP growth

<table>
<thead>
<tr>
<th>Real GDP (% change)</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>2.2</td>
<td>2.7</td>
<td>2.6</td>
</tr>
<tr>
<td>High income</td>
<td>2.2</td>
<td>2.7</td>
<td>2.6</td>
</tr>
<tr>
<td>Euro Zone</td>
<td>1.7</td>
<td>1.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Developing</td>
<td>6.3</td>
<td>6.2</td>
<td>6.3</td>
</tr>
<tr>
<td>East Asia &amp; Pacific</td>
<td>8.5</td>
<td>8.1</td>
<td>8.2</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>4.5</td>
<td>4.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Middle east &amp; North Africa</td>
<td>1.9</td>
<td>3.5</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: World Bank

Continuing efforts to reduce inflation
For over a decade, Indian govt. is striving to make Food Processing as a sunrise industry

- Vision 2015 for Food Processing Industries
- Food Safety and Standards Bill implemented
- Advertising for processed foods consumption
- Country wide workshops for promotion

Processed foods market has potential to triple to INR 13,500 bn (USD 300 billion) by 2015 growing at CAGR of 10.6%

Government is targeting:
- Increase processing of perishables from 6% to 20%, value addition from 20% to 35% and raise share in global trade from 1.2% to 3%
- Investment of about USD 20 billion envisaged in coming 5 years.

Food processing critical for:
- Higher remuneration to farmers
- Reduce wastages
- Provide choices to consumers
- Enhance export potential
- Generate employment

Policy initiatives by Govt and changing consumer preferences to drive growth in packaging, including metal packaging as well
India – potential to be Food Factory to the World

- India – 3rd largest producer of agri commodities after China (usd 195 bn), USA (150) India (105)
- India well endowed with Fruits, Vegetables, Marine, Animal Products

India is a long way from global processing levels: Level of Food processing in India is <10 % of production, for developed countries up to 100%

Percentage of food processed category wise

- Large potential for processing and packaging

- Processing could grow to a USD 95 billion by 2030.

- A 12-Point program to realize potential includes scaling up food processing thru **emphasis on branding**.

Packaging substrates have tremendous role to play in the form of protection of contents and also branding of food items.
Prospects of foreign direct investment (FDI) in multi-brand retail and expansion of organized retail in India will drive up the packaging industry’s growth by an impressive 25% a year from the current 18%.

- India – 5th largest retail destination globally (2nd most attractive to invest)
- Key driving segments – packaging of essential products like food, beverage, milk, vegetable, food grains and pharma.
- Huge packaging substrate demand potential
- Increasing role of own brands wherein processed foods is a large category
- “Own” brands of retailers will compete on shelves with established brands

- Source: The Financial Express (26th Oct'2012)

Bringing change from traditional to organized retail
Changing demographics and urbanization will spur packaging demand in India

- **Demographics** - Young population - 54% under 25 years

- **Urban Consumer**: Health conscious; increasing mobility: experience of world class packaging; increasingly environment conscious, more working women

- **Changing consumer attitude / lifestyle changes**: Working couples – demand for processed / packaged food; higher disposable income – more choices; high brand consciousness; value driven – affordability vs convenience

*Source - [www.investindia.gov.in](http://www.investindia.gov.in)*

*Source - McKinsey Global Institute report – India’s Urban Awakening*
• Develop food / food processing parks
• Shortages in cold chain capacity
• “Eco-friendliness” – improving awareness
• Education, training and development
• Every nation is synonymous with a particular processed food, there are opportunities in India
• Packaging options in Ready-to eat; street food; sweets

Brand consciousness
Tinplate consumption in India is growing

Demand (in ‘000 MT)

<table>
<thead>
<tr>
<th>Year</th>
<th>Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>389</td>
</tr>
<tr>
<td>2009</td>
<td>395</td>
</tr>
<tr>
<td>2010</td>
<td>438</td>
</tr>
<tr>
<td>2011</td>
<td>472</td>
</tr>
<tr>
<td>2012</td>
<td>510</td>
</tr>
</tbody>
</table>

Demand Drivers

- Growth in economy and growing per capita income
- Conducive government policies
- Growth in organized retail
- Increase in consumer awareness and changing lifestyles
- Implementation of food safety standards
- Large availability of raw materials

Food & Beverages end use will continue to determine the fortunes of tinplate

End-use wise demand in %

- Edible Oil: 38%
- Processed Food: 22%
- Paints + Pesticides: 19%
- Others: 6%
- Crown: 9%
- Aerosol + Battery + Lugs: 6%
- Other: 10%
- Tinplate: 10%
Agenda

- Global trends
- Indian scenario
- Tinplate Packaging Industry – Challenges & way forward
Tinplate has strong fundamentals and enjoys niche position in food packaging over last 200 years

- Ultra violet protection
- Barrier properties / Inertness
- High shelf life
- Eco-friendly / WTO compliant
- Tamper proof
- Excellent printability
Need for a better promotion of tinplate

- Perception of convenience as an attribute needs working on:
  Need to increase acceptance by making it increasingly consumer friendly (easy to open, flip top, peel offs, etc).

- Tinplate, as a packaging material has never been promoted:
  - need to communicate benefits of tin packaging
  - concentrate on safety and environment friendliness
  - benchmark other media for communication
  - Consumers need to be communicated that tin packaging does not necessarily increase the price of the product;

Source: XLRI Maxi Research
Source: AC Nielsen’s focus group research

- Metal - old fashioned to consumers / marketers
- Some substrates:
  - media promotions
  - consumers / retailers’ choice due to lightweight, easy to handle, formability, easy to close
In India, started in a small way..... other efforts are there as well.... but?
Challenges for Tinplate packaging industry (1)

- Cleaner steels to facilitate light weighting – **Usage reduction**
- Steels free of heavy metals (Pb, Hg, Cd & Cr+6) – **Food safety**
- Softer steels suitable for enhancing Shape-ability - **Consumer convenience**
- Environment friendly electrolyte chemistry - **Promoting ‘Greenness’**
- Tin plating anode technology to reduce tin usage – **Resource conservation**

- Light weighting cans (40% in last 25 years) – **Usage reduction**
- From 3- to 2- piece, and may be monobloc cans – **Waste Reduction**
- Environment friendly coating to reduce emissions - **Promoting ‘Greenness’**
- Develop coatings to permit lower tin coatings - **Resource conservation**
- Increasing (over 70% in some countries) rates of **recyclability**

Compatibility to Smart Packaging (Active & Intelligent Packaging processes) -

**Increasing Consumer Value & Food Safety**

Carbon footprints, packaging wastes and packaging scorecards

.....driving Sustainability across the value chain.......members may need to re invent for future growth
There are no standard answers:

**Price and Currency:** Volatility even monthly, let alone half yearly

**Cost containment** –

should not lead to value erosion, but....

create sustainable value - joint development across tinplate maker, can fabricator and brand owner

**Industry consolidation:** mergers / closures?

**Social license and community activism:** Corporate Social Responsibility towards managing packaging wastes gradually intensifying

**Climate change concerns** – measuring, minimizing and publicizing carbon footprints becoming an issue of reputation

**Increased regulation** – exposed to greater / diversity of regulation and hence need to understand increasing instances of regulatory compliance.
Understanding needs of the packaging chain is vital... but real competition is alternate packaging materials !!!!

Innovation / improvement may need to shift:

Today:
- Supply chain efficiency
- Processing efficiency
- Production efficiency

Tomorrow:
- Metallurgy and coatings
- Sustainability credentials
- Enforce development partnerships

....but real competition is alternate packaging materials !!!!

The issue to manage: keeping tinplate a competitive product stream for the steel industry, whilst not compromising attractiveness for the packaging supply chain
Thank You

visit us @ www.tatatinplate.com