State of the Industry 2018
Flexible Packaging

2018 R2R USA Conference
FlexPackCon
Alison Keane
President & CEO
State of the Association

Flexible Packaging Association

- Voice of “value-added” U.S. flexible packaging industry
- Mission: facilitate industry growth & advancement
  - Promoting the benefits, contributions and advantages of flexible packaging
    - Sustainability – light-weighting & source reduction, cost savings, reducing food waste, extended product shelf life
  - Protecting/Representing association members
    - Federal trade actions
  - Advocating for the industry before stakeholders, including government, retailers & consumers
    - State & Federal legislative and regulatory processes
State of the Association

Flexible Packaging Association

- Researching, collecting, analyzing & providing members with industry, market & benchmarking data
  - FPA State of the Industry Report
  - PTIS – A Holistic View of the Role of Flexible Packaging in a Sustainable World
  - Brand Owner and Consumer Surveys

- Providing a forum for educational & networking opportunities for industry leaders
  - Annual Meeting
  - Fall Executive Conference
  - Other programs & events
State of the Industry

• Strong & Growing!

• 400+ companies / 79,000 employees / ~950 mfg. plants

• Fastest growing segment of the packaging industry in the US and globally

• $30.9 billion/2.4% growth rate (‘16 – ’17)

• Growth projected in almost all end-use segments of industry
U.S. Packaging Industry

Total U.S. Packaging: $167 Billion

- Flexible (19%)
- Paperboard (14%)
- Corrugated (24%)
- Others (15%)
- Glass (3%)
- Misc. Rigid Plastics & Bottles (15%)
- Metal Cans (10%)

Source: U.S. Census Bureau 2016 ASM Census and FPA estimates for 2017 total revenue
U.S. Packaging Industry

Total U.S. Flexible Packaging: $31.0 Billion

"Value-Added" Flexible Packaging, $24.2 Billion (78%)

Retail Poly Bags, $2.2 Billion (7%)

Consumer Products, $3.1 Billion (10%)

Other Poly Bags and Wraps, $1.5 Billion (5%)

Source: U.S. Census Bureau 2016 ASM Census and FPA estimate for 2017 total revenue
U.S. Packaging End-Use Markets

Flexible Packaging Sales by End-Use Market: $31.0 Billion

- Food, $15.9 Billion (51%)
- Consumer Products, $2.5 Billion (8%)
- Medical & Pharma, $2.8 Billion (9%)
- Industrial Applications, $1.9 Billion (6%)
- Other Non-Food, $1.5 Billion (5%)
- Personal Care, $1.9 Billion (6%)
- Tobacco, $0.8 Billion (3%)
- Pet Food Food, $1.2 Billion (4%)
- Beverage, $2.5 Billion (8%)

Source: FPA 2017 State of the Industry Survey data
Converters’ Material Purchases

Total Industry Material Purchases Estimated Value is $16.4 Billion

- Film (45%)
- Foil (8%)
- Other (9%)
- Coatings & Adhesives (4%)
- Paper (7%)
- Resins (19%)
- Inks (8%)

Source: FPA 2017 State of the Industry Survey data

Film
- Polyethylene: 42%
- Polypropylene: 25%
- Polystyrene: 1%
- Polyester: 16%
- Nylon: 4%

Resin
- Polyethylene: 82%
- Polypropylene: 6%
- Polystyrene: 5%
- Polyester: 1%
- Nylon: 1%
# U.S. Flexible Packaging Overview

<table>
<thead>
<tr>
<th>Metric</th>
<th>2000</th>
<th>2009</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Companies</td>
<td>665</td>
<td>410</td>
<td>411</td>
</tr>
<tr>
<td>Manufacturing Facilities</td>
<td>1010</td>
<td>970</td>
<td>949</td>
</tr>
<tr>
<td>Employees</td>
<td>89 Thousand</td>
<td>&lt;80 Thousand</td>
<td>79 Thousand</td>
</tr>
<tr>
<td>Sales per Employee</td>
<td>$221K</td>
<td>$290K</td>
<td>$391K</td>
</tr>
</tbody>
</table>

## U.S. Flexible Packaging Industry Growth

<table>
<thead>
<tr>
<th>Growth</th>
<th>2000</th>
<th>2009</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Flexible Packaging Industry</td>
<td>$19.0 B</td>
<td>$23.2 B</td>
<td>$31.0 B</td>
</tr>
<tr>
<td>Compound Annual Growth Rate (CAGR) last 10 years</td>
<td>4.2%</td>
<td>2.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Profit over previous year</td>
<td>Up</td>
<td>Down</td>
<td>Flat</td>
</tr>
<tr>
<td>Volume</td>
<td>Down</td>
<td></td>
<td>Up Slightly</td>
</tr>
<tr>
<td>$ Growth</td>
<td>2.1%</td>
<td>-12.9%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Benchmark GDP</td>
<td>1.1%</td>
<td>-4.0%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

FPA Industry Revenue

Industry Revenue in $ Billions

Year on Year % Change

Source: U.S. Census Bureau and Flexible Packaging Association

* FPA Estimate

<table>
<thead>
<tr>
<th></th>
<th>% of NET SALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>58</td>
</tr>
<tr>
<td>Direct Labor</td>
<td>9</td>
</tr>
<tr>
<td>Sales, Marketing, Research &amp; Development and Administrative</td>
<td>11</td>
</tr>
<tr>
<td>All Other Manufacturing</td>
<td>16</td>
</tr>
<tr>
<td>Profit before Tax (EBIT)</td>
<td>6</td>
</tr>
</tbody>
</table>

# U.S. Converters’ Printing Comparison % of Shipments

<table>
<thead>
<tr>
<th>Print Type</th>
<th>2012</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexo</td>
<td>64%</td>
<td>67%</td>
<td>75%</td>
</tr>
<tr>
<td>Gravure</td>
<td>10%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Offset &amp; Other</td>
<td>2%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Digital</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Unprinted</td>
<td>24%</td>
<td>15%</td>
<td>14%</td>
</tr>
</tbody>
</table>

U.S. Flexible Packaging M&A Activity

2001 – 2017

U.S. Flexible Packaging M&A Activity Continued

U.S. Flexible Packaging Industry by Company Size 1997-2017

- Top 5 Converters account for 40%
- Top 10 Converters account for 54%
- Top 50 Converters account for 72%
- Top 100 Converters account for 79%

## U.S. Flexible Packaging (22) Mergers and Acquisitions 2017

<table>
<thead>
<tr>
<th>Purchasing Company</th>
<th>Company Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS Smith Plc</td>
<td>Parish Manufacturing, Inc.</td>
</tr>
<tr>
<td>Gateway Packaging Company</td>
<td>assets of Werthan Packaging, Inc.</td>
</tr>
<tr>
<td>Morgan Stanley Capital Partners</td>
<td>Fisher Containers</td>
</tr>
<tr>
<td>Mondi Group</td>
<td>Excelsior Technologies</td>
</tr>
<tr>
<td>Sonoco Products Company</td>
<td>Peninsula Packaging Company</td>
</tr>
<tr>
<td>Transcendia</td>
<td>Marshall Plastics</td>
</tr>
<tr>
<td>ProAmpac</td>
<td>Trinity Packaging Corporation</td>
</tr>
<tr>
<td>Pamplona Capital Management</td>
<td>Charter NEX Films, Inc.</td>
</tr>
<tr>
<td>Tekni-Plex, Inc.</td>
<td>BrunaSeals</td>
</tr>
<tr>
<td>Berry Global Group</td>
<td>Adchem Corporation</td>
</tr>
<tr>
<td>Multi-Color Corporation</td>
<td>Constantia Flexibles Label Division</td>
</tr>
</tbody>
</table>

Source: FPA accumulated M&A data for calendar year 2017
# Mergers and Acquisitions continued

<table>
<thead>
<tr>
<th>Purchasing Company</th>
<th>Company Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 Investment Partners</td>
<td>Packaging Specialists Inc.</td>
</tr>
<tr>
<td>Sonoco Products Company</td>
<td>Clear Lam Packaging, Inc.</td>
</tr>
<tr>
<td>Sealed Air Corporation</td>
<td>Deltaplam Embalagens Industria e Comerico Ltda</td>
</tr>
<tr>
<td>ProAmpac</td>
<td>Clondalkin Flexible Packaging Orlando</td>
</tr>
<tr>
<td>NAMAKOR Holdings, &amp; Quebec Manufacturing Fund</td>
<td>Gelpac</td>
</tr>
<tr>
<td>DowDupont Inc.</td>
<td>Dow Chemical and DuPont USA</td>
</tr>
<tr>
<td>Bain Capital Private Equity</td>
<td>Diversey Care division of Sealed Air Corporation</td>
</tr>
<tr>
<td>Bemis Corporation</td>
<td>Evadix (Romania)</td>
</tr>
<tr>
<td>TC Transcontinental</td>
<td>Flexpak Inc.</td>
</tr>
<tr>
<td>Berry Global Group</td>
<td>Clopay Plastic Products Company, Inc.</td>
</tr>
<tr>
<td>Novolex</td>
<td>Shields Bag &amp; Printing Company</td>
</tr>
</tbody>
</table>

Source: FPA accumulated M&A data for calendar year 2017
Flexible Packaging Imports and Exports

Billions of Dollars

Source: U.S. Census Bureau, Foreign Trade Division
Calculations by the Flexible Packaging Association
Flexible Packaging Imports and Exports Continued

- 75% of FPA members export
- 5.7% of U.S. flexible packaging production is exported
- 13.5% of U.S. flexible packaging consumption is imported
- U.S. flexible packaging trade deficit is about $2.8 billion

<table>
<thead>
<tr>
<th>$1.8 Billion Exports to:</th>
<th>$4.6 Billion Imports from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>China</td>
</tr>
<tr>
<td>35%</td>
<td>43%</td>
</tr>
<tr>
<td>Canada</td>
<td>Canada</td>
</tr>
<tr>
<td>35%</td>
<td>16%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Mexico</td>
</tr>
<tr>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Japan</td>
<td>Thailand</td>
</tr>
<tr>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>Germany</td>
</tr>
<tr>
<td>2%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Foreign Trade Division

Import | Export
---|---
Bags: Plastic, Laminated and Coated | 73% | 62%
Bags: Paper | 5% | 5%
Foil and Leaf: Flexible Packaging | 22% | 33%
## Percent of Total U.S. Packaging and Flexible Packaging by End-Use (Retail)

<table>
<thead>
<tr>
<th>Market</th>
<th>% of Total Packaging</th>
<th>% of Flexible Packaging</th>
<th>2017-2022 Flexible CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauty &amp; Personal Care</td>
<td>3%</td>
<td>1%</td>
<td>+0.3%</td>
</tr>
<tr>
<td>Beverages</td>
<td>42%</td>
<td>5%</td>
<td>+0.7%</td>
</tr>
<tr>
<td>Dog &amp; Cat Food</td>
<td>2%</td>
<td>2%</td>
<td>+3.1%</td>
</tr>
<tr>
<td>Food</td>
<td>41%</td>
<td>69%</td>
<td>+0.8%</td>
</tr>
<tr>
<td>Home Care</td>
<td>2%</td>
<td>1%</td>
<td>+1.6%</td>
</tr>
<tr>
<td>Tissue &amp; Hygiene</td>
<td>2%</td>
<td>5%</td>
<td>+0.9%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>8%</td>
<td>17%</td>
<td>-2.1%</td>
</tr>
<tr>
<td>Total Packaging</td>
<td>100%</td>
<td>100%</td>
<td>+0.3%</td>
</tr>
</tbody>
</table>

Source: Euromonitor International Passport Data - the number of packaging units sold to consumers through all retail channels.
## U.S. Flexible Packaging Unit Volume Growth Potential (Food)

<table>
<thead>
<tr>
<th>Market</th>
<th>2012-2017 CAGR</th>
<th>2017-2022 CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby Food</td>
<td>+11.6%</td>
<td>+1.4%</td>
</tr>
<tr>
<td>Biscuits &amp; Snack Bars</td>
<td>+1.6%</td>
<td>+1.3%</td>
</tr>
<tr>
<td>Dairy Packaging</td>
<td>0.7%</td>
<td>+0.7%</td>
</tr>
<tr>
<td>Processed Fruits &amp; Vegetables</td>
<td>+4.8%</td>
<td>+3.9%</td>
</tr>
<tr>
<td>Processed Meat &amp; Seafood</td>
<td>-0.6%</td>
<td>+1.0%</td>
</tr>
<tr>
<td>Ready Meals</td>
<td>+0.6%</td>
<td>+0.7%</td>
</tr>
<tr>
<td>Sweet &amp; Savory Snacks</td>
<td>+2.0%</td>
<td>+1.5%</td>
</tr>
<tr>
<td>Soup Packaging</td>
<td>+0.8%</td>
<td>+0.5%</td>
</tr>
</tbody>
</table>

Source: Euromonitor International Passport Data - based on the number of packaging units sold to consumers through all retail channels.
Global Overview: See Euromonitor Presentation Tuesday

**Executive Summary - takeaway**

- **Total Packaging will grow 12.7% by 2022**
- **Absolute Growth of 443 billion units**
- **Flexible Packaging: 193 billion**
- **Glass: 18 billion**
- **Liquid Cartons: 20 billion**
- **Metal: 24.5 billion**
- **Other Packaging: 871 million**
- **Paper-based Containers: 26.8 billion**
- **Rigid Plastic: 159.5 billion**

**Global Volume share of pack types, 2017**

- **3.49 T** total units sold in 2017
- **Flexible Packaging: 40%**
- **Rigid Plastic: 27%**
- **Paper-based Containers: 7%**
- **Metal: 11%**
- **Liquid Cartons: 6%**
- **Glass: 9%**

**Table: Total market size and growth**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 2017 market size</td>
<td>3.49 Tn</td>
</tr>
<tr>
<td>Total 2022 market size</td>
<td>3.93 Tn</td>
</tr>
<tr>
<td>Forecast Absolute Growth (2017-2022)</td>
<td>12.7%</td>
</tr>
</tbody>
</table>
Advocacy – Trade (Foil)

• ITC Case
  – Final Decision March 15th was for petitioners; anti-dumping and countervailing duties finalized
  – FPA aluminum foil workgroup decided against appeal
    ➢ ProAmpac appealing individually
    ➢ Could take up to 2 years

• Section 232
  – Announced March 1st a 10% tariff on aluminum, finalized through proclamation March 8th
    ➢ Canada and Mexico NOT exempted
    ➢ Petition Process for exclusions formalized
    ➢ FPA assisted members with petitions using information from ITC case
Trade – Aluminum Foil

- Hill activities with regard to Section 232 have remained constant
  - FPA Statement on the Record submitted for all hearings with regard to the tariffs and exclusion process
  - Continued Hill visits with staff and members:
    - Johnson (R-WI)
    - McCaskill (D-MO)
    - Blunt (R-MO)
    - Durbin (D-IL)
    - Duckworth (D-IL)
  - Many letters from members in support of our efforts
Trade – Aluminum Foil

• Site visits:
  – Bemis, w/Congressman Billy Long, Joplin, MO
  – Sonoco, w/Congressman Phil Roe, Morristown, TN

• Regional Committee Meetings:
  – Senator Ron Johnson, Milwaukee, WI (American Packaging Corporation)
  – Congressman Phil Roe, Morristown, TN (Sonoco)
Trade – Aluminum Foil

• Legislation still pending in the House and Senate to curtail the unfettered powers of the President with respect to Section 232 as well as other trade powers
  – President would have to sign – so what vehicles are available?

• Question still remain with respect to Mexico and Canada should the new NAFTA be affirmed
  – Mexico portion concluded successfully (?)
  – Canadian portion concluded successfully
  – Must still go through Congress for ratification
    ➢ Quotas instead? Retaliatory Tariffs?

• FPA joined Alliance for Competitive Steel and Aluminum Trade
Trade - China

• Trade war with China based on theft of intellectual property (Section 301)
• Has escalated well past primary purpose – 3 lists totaling some $250 billion in goods
  – List 4 is on the horizon
  – Exclusionary process for Lists 1 and 2, but none for list 3
• Retaliatory tariffs by China totaling over $60 billion, with more to come?
• FPA has expanded the Aluminum foil Committee to include all members affected by the trade war
  – Email updates
Other Federal Advocacy

• Infrastructure
  – FPA joined coalition led by Plastics Association to advocate for dollars for material recovery facilities
    ➢ In Infrastructure bill or as a stand-alone bill
  – Met w/Senate Offices
    ➢ Toomey (R-PA)
    ➢ Booker (D-NJ)
    ➢ Brown (D-OH)
    ➢ Menendez (D-NJ)
    ➢ Gillibrand (D-NY)
    ➢ Tillis (R-NC)
    ➢ Portman (R-OH)
  – Good reception on both sides of aisle
State Advocacy

• California
  – Current reprieve from CalRecycle Packaging Reform Workshop’s proposed legislation and regulation of packaging due to China National Sword program
    ➢ Requesting a total reset instead of just a delay

• Rhode Island
  – New Task Force to “Tackle Plastics” set up by Executive Order by the Governor
  – Report due February 2019, including possible legislation and regulation to eliminate sources of plastic pollution

• 2018 Elections
  – Could turn some purple states into blue: CO, MN, MA, CT, ME, NY
State Advocacy

• Facility Tours continue
  – Printpack, w/Representative Michelle Presnell, Marshall, NC (March 18)
  – Printpack, w/Representative Chuck McGrady, Hendersonville, NC (March 18)
  – IsoFlex, w/Senator Annette Cleveland, Vancouver, WA (May 18)
State Advocacy

• Facility Tours continue
  – Novolex, w/Senator Sharon Wylie, Vancouver, WA (May 18)
  – FlintGroup, w/Representative Tina Kotek, Portland, OR (June 18)
  – Admiral w/Representative Handy, Providence, RI (Oct 18)
“Holistic View” of Flexible Packaging – See PTIS presentation Wednesday

- Sustainability Report materials now available
  - Factsheet
  - Case Studies
  - Infographics
Consumer and Brand Owner Insights on Sustainability – See G&S presentation Wednesday

• There is an opportunity to elevate the visibility of specific sustainable manufacturing processes and supply chain concepts in the conversation with consumers
  – Especially among millennials

• There is an opportunity to further inform brand owners about the specific operational and performance sustainability benefits of flexible packaging as well as the consumer interest in these sustainability attributes
FPA Outreach

- Perfectpackaging.org is now live!
- Specific pages on:
  - Why Flexibles
  - Reducing Waste
  - Environmental Footprint
  - Recycling
  - Global View
  - About Us (FPA)
- Will promote the rest of the year