INTRODUCTION

Harris Williams & Co. is pleased to present our packaging industry update for February 2018. This report provides commentary and analysis on current capital market trends and merger and acquisition dynamics within the global packaging industry.

We hope you find this edition helpful and encourage you to contact us directly if you would like to discuss our perspective on current industry trends or our relevant industry experience.

OUR PRACTICE

Harris Williams & Co. is a leading advisor to the packaging industry. Our significant experience covers a broad range of end markets, industries, and business models.

Packaging Types
- Bags
- Bottles & Cans
- Caps & Closures
- Flexible
- Labels
- Pouches
- Rigid

Materials
- Films
- Foil
- Glass
- Laminations
- Metal
- Paperboard
- Plastics
- Specialty Paper

Applications
- Cosmetics
- E-Commerce
- Food & Beverage
- Healthcare
- Industrial
- Other

UPCOMING INDUSTRY EVENTS

PACK EXPO East

Harris Williams & Co. will be attending the 2018 PACK EXPO East conference on April 16-18th at the Pennsylvania Convention Center in Philadelphia. We hope to see you in attendance.
STRONG MOMENTUM ACROSS THE PACKAGING INDUSTRY

Provider of innovative conveyor systems for packaging-related applications

Provider of injection-molded temporary waste storage solutions

Distributor of value-added rigid packaging solutions

Provider of flexible packaging solutions, injection-molded fitments, and related filling equipment

Manufacturer of coated and vacuum metallized paper products

Manufacturer of flexible paper-based packaging solutions

Manufacturer of paper-based protective packaging solutions

Global provider of guiding, winding, slitting and tension control systems for web fed converting applications

Producer of die cut merchandise bags and film substrates
**WHAT WE’RE READING**

**SMARTER, SMALLER, SIMPLER: WHAT’S AHEAD FOR ROBOTS IN PACKAGING?**

*Packaging Digest* 2/13/2018

Robots are a solution, not a problem. As our economy and manufacturing scream past top gear into overdrive, packagers at consumer packaged goods companies and everyone else have a problem finding enough people to staff their plants. Robots continue to provide the answer.

Read the full article [here](#).

**SATISFYING THE PET FOOD MARKET**

*Labels and Labeling* 2/8/2018

In Asia-Pacific, pet food and related products are predicted to be worth $17 billion in 2022, according to Euromonitor International, with dog and cat food representing 72% of the total pet care market in the region at that time. China will show the strongest CAGR value during the 2017-2022 period at 21%. Product launches in Asia are expected to prioritize quality and ingredients, with premiumization to be more prominent in 2022.

Read the full article [here](#).

**GROCERY SALES ARE HEAVILY IMPACTED BY E-COMMERCE, AND PACKAGERS NEED TO TAKE NOTE**

*Packaging World* 2/1/2018

It’s easy to get swept up in the recent reports about the astonishing growth of e-commerce. How grocery sales will be affected, and the ramifications for food and beverage CPGs as well as makers of packaging materials and machinery, are harder to pin down.

Read the full article [here](#).

**MATERIALS M&A DEALS CONTINUED TO GROW IN 2017**

*Packaging News* 1/19/2018

The market for mergers and acquisitions involving plastics materials firms remained a strong one in 2017, and a big compounding deal might be on the agenda for 2018. The number of global resin, color and compounding deals increased 12% in 2017, growing from 43 to 48, and this momentum is expected to continue in 2018.

Read the full article [here](#).

**THREE KEY ISSUES FACING THE PROTECTIVE AND TRANSIT PACKAGING MARKET**

*Packaging World* 1/7/2018

Three industry trends are providing incentives for innovation and are creating new opportunities and threats for players in the global protective transit packaging business. Protective transit packaging products and systems are vital components in the $32.2 trillion global market for manufactured goods.

Read the full article [here](#).
ENERGY PRICES (1)

- Monthly average Brent prices have increased for seven consecutive months, and in January spot prices moved higher than $70 per barrel for the first time since December 2014. This activity has been primarily driven by record demand.

- Cold temperatures east of the Rocky Mountains in early January contributed to high levels of natural gas consumption as well as a reduction in production because of well freeze-offs. This combination resulted in record-high natural gas inventory withdrawals in mid-January, which contributed to prices rising over 15% during the period.

GDP (2,3)

U.S.

- Current dollar gross domestic product (GDP) increased 1.2% from the third quarter of 2017 to the fourth quarter of 2017 compared to 2.6% for real GDP.

- The increase in real GDP in the fourth quarter reflected positive contributions from personal consumption expenditures, non-residential fixed investment, and exports.

EU-28

- Seasonally adjusted GDP in the EU-28 rose by 0.6% in the fourth quarter, with 2.6% year-over-year growth.

INDUSTRIAL PRODUCTION INDEX (3,4)

U.S.

- U.S. industrial production jumped 8.2% at an annual rate for the fourth quarter of 2017 after being held down in the third quarter by Hurricanes Harvey and Irma. At 107.5% of its 2012 average, the index has increased 3.6% since December 2016 for its largest calendar-year gain since 2010.

EU-28

- In December 2017 compared with November 2017, seasonally adjusted industrial production rose by 0.3% in the EU-28 due to increased production of intermediate goods and non-durable consumer goods.

CONSUMER SENTIMENT (5)

- Consumer sentiment has remained largely unchanged for more than a year at very favorable levels. The January 2018 Sentiment figure of 95.7 was just 0.2 index-points below December, and just 1.1 points below the 2017 average of 96.8, which was the highest yearly average since 2000.

- Stock price increases and the passage of tax reforms were referenced as favorable factors by all-time record numbers of consumers.
M&A ACTIVITY IN THE PACKAGING INDUSTRY

- M&A activity in the packaging space remains elevated.
  - On an LTM basis as of January 2018, $28.3 billion of deal value has been announced globally vs. $16.4 billion for the prior year LTM period.
- Packaging industry M&A remains robust globally, with the majority of LTM January 2018 targets located in Western Europe (37%), North America (35%), and the Asia Pacific region (17%).
- More than eight deals over $1 billion have been announced or closed in the last twelve months.

TAKING FLIGHT: COMMERCIAL DRONES IN THE PACKAGING INDUSTRY

- A majority of drones currently in the air have been developed as cheap toys or expensive weapons, but drones are rapidly gaining popularity for a range of commercial uses, including packaging.
- In 2016 roughly 110,000 drones were sold for commercial use versus roughly 174,000 in 2017, according to Gartner.
- Delivery and logistics companies are focused on using drones for packaging distribution of a variety of items including foods and consumer goods.
  - Amazon, Google, and tech start-ups have begun experimenting with drone package delivery onto targets in a recipient’s garden or back yard – approximately 75% of consumers expect widespread package delivery by drones in the next four years.

HEALTH, WELLNESS AND SUSTAINABILITY ARE SHAPING THE PACKAGING LANDSCAPE

- Today’s health-conscious and eco-friendly consumers are driving development and innovation in global packaging trends that align with their desire for healthy, premium, and sustainable products.
- As consumers shift to healthier lifestyles, packaging trends must follow, increasing the sales of packaging containers for healthy products, like water bottles, and that cater to busier lifestyles, such as small portable packaging products.
  - Bottled water and PET bottles are forecasted to grow 7.5% and 5.0%, respectively, over the 2015-2020 period.
  - Flexible packaging is forecasted to grow across geographies, with significant expected growth in Asia Pacific, due to its lightweight, recyclable, and affordable characteristics.
## PUBLIC COMPARABLES (6)

As of February 28, 2018 ($ in millions, except per share amounts)

<table>
<thead>
<tr>
<th>Overvalued / Specialty</th>
<th>Current % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amcor</td>
<td>83.2%</td>
<td>11.0x</td>
<td>74.3% 3.1x</td>
</tr>
<tr>
<td>Berry Global</td>
<td>88.2%</td>
<td>17.7x</td>
<td>77.3% 4.1x</td>
</tr>
<tr>
<td>Sealed Air Corporation</td>
<td>84.8%</td>
<td>17.0x</td>
<td>75.2% 3.6x</td>
</tr>
<tr>
<td>Sonoco Products Company</td>
<td>84.0%</td>
<td>17.0x</td>
<td>69.6% 1.7x</td>
</tr>
<tr>
<td>Apligraf</td>
<td>96.9%</td>
<td>19.0x</td>
<td>67.2% 1.3x</td>
</tr>
<tr>
<td>Bemis Company</td>
<td>87.4%</td>
<td>14.6x</td>
<td>64.5% 2.8x</td>
</tr>
<tr>
<td>Hultzamaki Oy</td>
<td>93.5%</td>
<td>14.0x</td>
<td>44.4% 1.9x</td>
</tr>
<tr>
<td>Grail</td>
<td>87.8%</td>
<td>14.0x</td>
<td>75.5% 2.1x</td>
</tr>
<tr>
<td>Winpak</td>
<td>82.3%</td>
<td>14.0x</td>
<td>74.2% (1.5x)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Median % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
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<tbody>
<tr>
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<td>74.3% 2.3x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labels</th>
<th>Current % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avery Dennison Corporation</td>
<td>95.5%</td>
<td>11.9x</td>
<td>75.2% 1.5x</td>
</tr>
<tr>
<td>CCL Industries</td>
<td>93.9%</td>
<td>10.9x</td>
<td>69.7% 1.9x</td>
</tr>
<tr>
<td>Multi-Color Corporation</td>
<td>70.6%</td>
<td>11.9x</td>
<td>68.0% 8.7x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Median % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
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<tr>
<td>93.9%</td>
<td>10.9x</td>
<td>69.7% 1.9x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paper and Paperboard</th>
<th>Current % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Paper Company</td>
<td>91.0%</td>
<td>11.8x</td>
<td>61.5% 2.9x</td>
</tr>
<tr>
<td>WestRock</td>
<td>91.9%</td>
<td>11.7x</td>
<td>62.7% 2.9x</td>
</tr>
<tr>
<td>Mondi</td>
<td>92.6%</td>
<td>11.8x</td>
<td>72.6% 6.9x</td>
</tr>
<tr>
<td>Packaging Corporation of America</td>
<td>90.9%</td>
<td>11.8x</td>
<td>73.6% 1.8x</td>
</tr>
<tr>
<td>Smurfit Kappa Group</td>
<td>93.7%</td>
<td>11.8x</td>
<td>64.3% 2.5x</td>
</tr>
<tr>
<td>DS Smith</td>
<td>87.2%</td>
<td>11.8x</td>
<td>53.3% 2.4x</td>
</tr>
<tr>
<td>Graphic Packaging Holding Company</td>
<td>91.5%</td>
<td>11.8x</td>
<td>63.1% 3.1x</td>
</tr>
<tr>
<td>KapStone Paper and Packaging Corporation</td>
<td>99.7%</td>
<td>11.8x</td>
<td>65.6% 3.6x</td>
</tr>
<tr>
<td>P. H. Glatfelter Company</td>
<td>85.6%</td>
<td>11.8x</td>
<td>66.8% 2.7x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Median % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
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<tr>
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<td>63.1% 2.7x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rigid</th>
<th>Current % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball Corporation</td>
<td>92.4%</td>
<td>10.9x</td>
<td>72.4% 3.2x</td>
</tr>
<tr>
<td>Owens-Illinois</td>
<td>83.2%</td>
<td>11.6x</td>
<td>62.3% 4.1x</td>
</tr>
<tr>
<td>RPC Group</td>
<td>80.1%</td>
<td>10.8x</td>
<td>56.9% 2.4x</td>
</tr>
<tr>
<td>SIGG Holdings</td>
<td>87.5%</td>
<td>11.6x</td>
<td>69.1% 4.4x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Median % of Revenue</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
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<tbody>
<tr>
<td>88.4%</td>
<td>10.7x</td>
<td>66.5% 3.5x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Median</th>
<th>TEV / EBITDA</th>
<th>Free Cash Flow Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>88.0%</td>
<td>10.8x</td>
<td>66.5% 3.5x</td>
</tr>
</tbody>
</table>

Notes: LTM as of most recent reporting; free cash flow conversion defined as EBITDA less capital expenditures divided by EBITDA.
PUBLIC MARKETS OVERVIEW (6)

### 3-YEAR REVENUE CAGR (2015 – 2018E)
- Diversified / Specialty: 3.1%
- Labels: 16.9%
- Paper and Paperboard: 7.5%
- Rigid: 12.9%

### AVERAGE EBITDA MARGIN (2018E)
- Diversified / Specialty: 16.4%
- Labels: 17.1%
- Paper and Paperboard: 16.3%
- Rigid: 16.7%

### TOTAL ENTERPRISE VALUE / 2018E EBITDA
- Diversified / Specialty: 10.3x
- Labels: 11.5x
- Paper and Paperboard: 8.0x
- Rigid: 8.3x

### FREE CASH FLOW CONVERSION (2018E)
- Diversified / Specialty: 69.1%
- Labels: 71.0%
- Paper and Paperboard: 56.8%
- Rigid: 65.2%

### NET DEBT / LTM EBITDA
- Diversified / Specialty: 2.1x
- Labels: 4.0x
- Paper and Paperboard: 2.5x
- Rigid: 3.5x

### PUBLIC COMPARABLES (30-DAY ROLLING AVERAGE OF MEDIAN TEV / LTM EBITDA)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Median TEV / LTM EBITDA</th>
<th>Current</th>
<th>3-Year</th>
<th>5-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversified / Specialty</td>
<td>11.0x 10.9x 9.9x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labels</td>
<td>14.2x 9.9x 7.6x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper and Paperboard</td>
<td>9.9x 8.6x 8.1x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigid</td>
<td>10.0x 8.4x 7.6x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Packaging</td>
<td>10.3x 9.3x 8.7x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SELECT M&A ACTIVITY (6,9)

<table>
<thead>
<tr>
<th>Date</th>
<th>Target</th>
<th>Target Business Description</th>
<th>Acquirer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>Albéa</td>
<td>Albéa provides tubes, dispensing systems, and rigid packaging solutions for a variety of end markets across the world.</td>
<td>PAI Partners</td>
</tr>
<tr>
<td>Mar-18</td>
<td>EcoPack</td>
<td>EcoPack produces integrated packaging and paper products primarily for the food sector.</td>
<td>DS Smith</td>
</tr>
<tr>
<td>Feb-18</td>
<td>H. Erben</td>
<td>H. Erben supplies packaging and machinery to the wine, beer, and spirits markets.</td>
<td>Berlin Packaging</td>
</tr>
<tr>
<td>Feb-18</td>
<td>SupplyOne</td>
<td>SupplyOne manufactures custom corrugated products, plastic thermoforming trays and clamshells, and custom pressure-sensitive labels.</td>
<td>Wellspring Capital</td>
</tr>
<tr>
<td>Feb-18</td>
<td>Scholle IPN Equipment</td>
<td>Scholle IPN offers specialized equipment and support for filling, sealing, and testing of flexible packaging.</td>
<td>Airopack Technology</td>
</tr>
<tr>
<td>Feb-18</td>
<td>WS Packaging</td>
<td>WS Packaging provides labels and packaging solutions for the food and beverage, consumer packaged goods, and pharmaceutical markets.</td>
<td>Platinum Equity</td>
</tr>
<tr>
<td>Jan-18</td>
<td>Foam Fabricators</td>
<td>Foam Fabricators designs and manufactures custom molded protective foam solutions and OEM components.</td>
<td>Compass Diversified Holdings</td>
</tr>
<tr>
<td>Dec-17</td>
<td>Tray-Pak Corp.</td>
<td>Tray-Pak offers thermoformed packaging supplies.</td>
<td>Graham Partners</td>
</tr>
<tr>
<td>Dec-17</td>
<td>IntraPac</td>
<td>IntraPac designs and manufactures specialty rigid packaging solutions.</td>
<td>ONCAP</td>
</tr>
<tr>
<td>Nov-17</td>
<td>Shore Plastic Technologies</td>
<td>Shore Plastic Technologies offers injection mold design, project engineering, and mold and process validation services.</td>
<td>Comar</td>
</tr>
<tr>
<td>Oct-17</td>
<td>Brook &amp; Whittle</td>
<td>Brooke &amp; Whittle manufactures premium prime label solutions.</td>
<td>Snow Phipps</td>
</tr>
<tr>
<td>Oct-17</td>
<td>Tekni-Plex</td>
<td>Tekni-Plex develops and manufactures packaging materials, medical compounds and precision-crafted medical tubing solutions.</td>
<td>Genstar</td>
</tr>
<tr>
<td>Sep-17</td>
<td>Ring Container</td>
<td>Ring Container manufactures PET and HDPE plastic packaging and containers.</td>
<td>MSD Partners</td>
</tr>
<tr>
<td>Aug-17</td>
<td>PAX Corrugated Products</td>
<td>PAX Corrugated designs and manufactures corrugated boxes, specialty boxes, corrugated display containers, and other corrugated packaging.</td>
<td>Georgia-Pacific</td>
</tr>
<tr>
<td>Aug-17</td>
<td>Hanna Group Pty Ltd.</td>
<td>Hanna manufactures folding cartons for the beverage, food, confectionary, and healthcare sectors.</td>
<td>WestRock Co.</td>
</tr>
<tr>
<td>Jul-17</td>
<td>Constantia Labels GmbH</td>
<td>Constantia produces plastic labels for leading drink manufacturers.</td>
<td>Multi-Color Corp.</td>
</tr>
<tr>
<td>Jul-17</td>
<td>Boxmore Packaging (Pty) Ltd.</td>
<td>Boxmore provides plastic packaging products such as bottles, plastic containers, jars, closures, and lids.</td>
<td>ALPLA Werke Alwin Lehner GmbH &amp; Co. KG</td>
</tr>
<tr>
<td>Jun-17</td>
<td>Salbro Bottle, Inc.</td>
<td>Salbro manufactures and distributes plastic and glass bottles and lids.</td>
<td>AEA / TricorBraun, Inc.</td>
</tr>
</tbody>
</table>
HARRIS WILLIAMS & CO. OFFICE LOCATIONS

**UNITED STATES**

**Boston**
One International Place
Suite 2620
Boston, Massachusetts 02110
Phone: +1 (617) 482-7501

**Cleveland**
1900 East 9th Street
20th Floor
Cleveland, Ohio 44114
Phone: +1 (216) 689-2400

**Minneapolis**
222 South 9th Street
Suite 3350
Minneapolis, Minnesota 55402
Phone: +1 (612) 359-2700

**Richmond (Headquarters)**
1001 Haxall Point
9th Floor
Richmond, Virginia 23219
Phone: +1 (804) 648-0072

**San Francisco**
575 Market Street
31st Floor
San Francisco, California 94105
Phone: +1 (415) 288-4260

**Washington, D.C.**
800 17th St. NW
2nd Floor
Washington, D.C. 20006
Phone: +1 202-207-2300

**EUROPE**

**Frankfurt**
Bockenheimer Landstrasse 33-35
60325 Frankfurt
Germany
Phone: +49 069 3650638 00

**London**
63 Brook Street
London W1K 4HS, England
Phone: +44 (0) 20 7518 8900

**NETWORK OFFICES**

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New Delhi
Shanghai

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HARRIS WILLIAMS & CO.

1. US Energy Information Administration
2. Bureau of Economic Analysis
3. Eurostat
4. Federal Reserve Economic Data
5. University of Michigan
6. Factset
7. The Economist
8. Pro Food World
9. Mergermarket

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