



Polyolefins Conference

Polyolefins Conference Flexible Packaging

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L.E.K. Consulting is a leading global strategy consulting firm



Established - 1983



20 Offices



~100 Partners



~1000 Staff

We work with clients across a variety of strategic issues



Value Creation & Growth Planning

- Growth Acceleration
 - Strategic Market Positioning (SMP)
 - Edge Strategy™
- Geographic Expansion
- Opportunity Screening & Evaluation
- Strategic Customer Segmentation



Activating Strategies

- Commercial Excellence
 - Go-to-Market Strategy and Organization
 - Pricing Strategy
 - Sales Force Effectiveness
- Operations
 - Operations Strategy
 - Cost Management
 - Supply Chain Management



Transaction Support

- M&A Strategy
- Commercial Due Diligence
- Merger Integration
- Value Creation Planning
- Vendor Due Diligence

Our packaging experience spans multiple sub-markets, products, materials, and value chain participants, for example:

Flexible Packaging

- Stand-up pouches
- Bag-in-box
- Blister packaging
- Flexible intermediate bulk containers
- Films, liners and pressure sensitive tapes
- Labels
- Protective packaging
- Strapping

Rigid Packaging

- Aerosol containers
- Cans
- Bottles and jars
- Caps and closures
- Crates and pallets
- Drums
- Trays and pails
- In-mold labeling (IML)

Paper & Secondary Packaging

- Air pillows
- Cartons
- Converted paper
- Cover materials
- Corrugated paper
- Honeycomb products
- “In the box” fill
- Paperboard containers & boxes
- Plastic foam (engineered foam, foam-in-place)

Packaging Materials

- PET, HDPE, LDPE, PP, PS
- Glass
- Steel
- Aluminum
- Paper
- Sustainable
- EPS foam
- Cork

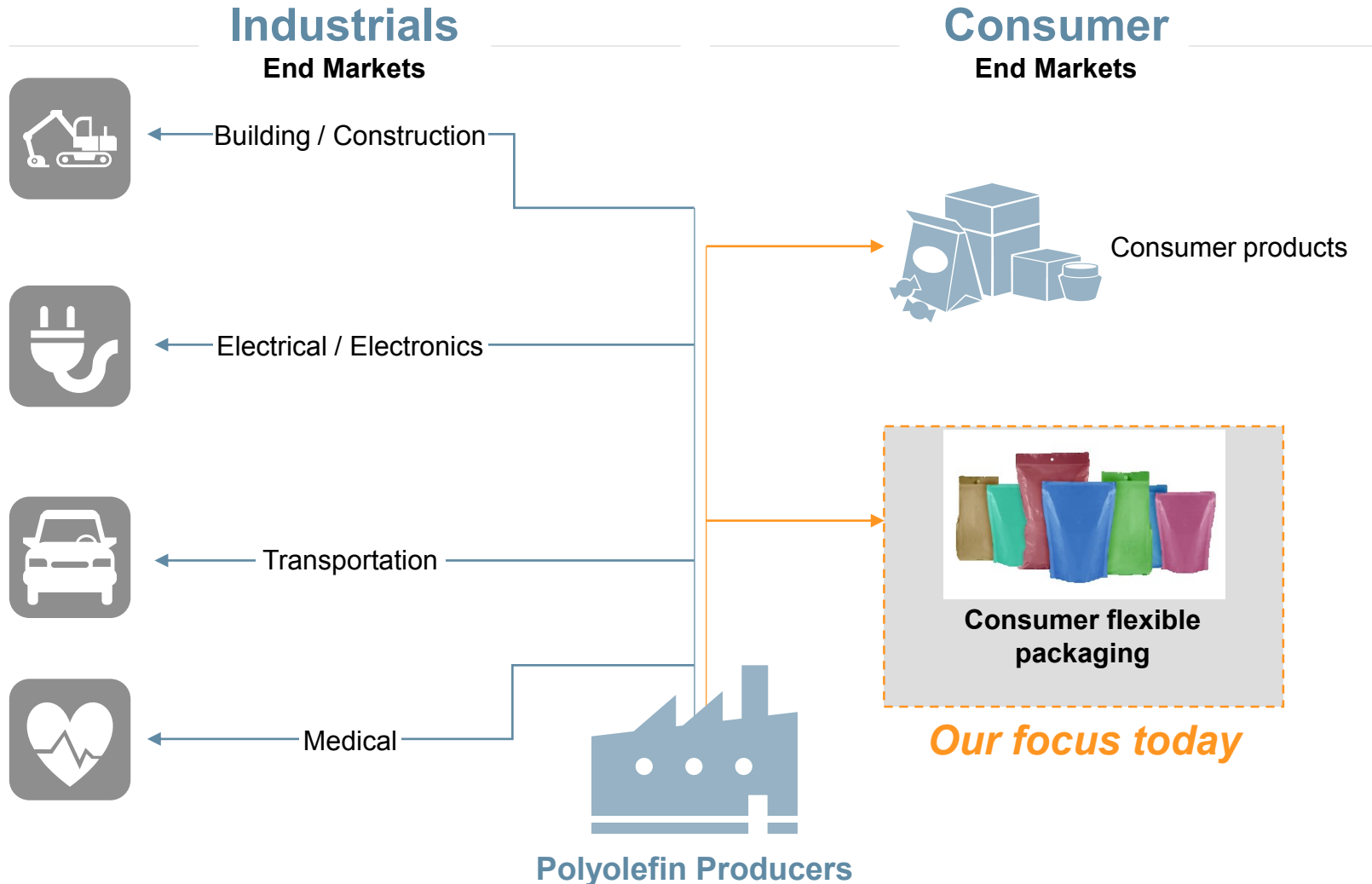
Equipment Manufacturers

- Injection molding machines
- Extrusion machines
- Dies / molds
- Hot runners / cold runners
- Machinery processing components (e.g., barrels, screws, hoppers, gear pumps, etc.)

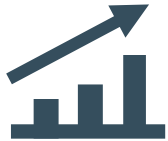
Value Chain Participants

- Brands & Retailers
- Distributors
- Graphic designers
- Industry associations
- Pallet logistics providers
- Printers
- Compounders & Chemicals Suppliers

Consumer flexible packaging is a strategically sound end market opportunity for polyolefin producers and their converter customers



We think there are 3 key things you should know about the flexible packaging market opportunity today and in the years ahead



Underlying demand

- 1 Activity in the packaging market is growing for up stream suppliers and participants



Material shifts

- 2 Plastic flexible packaging is the fastest growing material segment in part due to innovation



Attractive market cycle

- 3 Packaging demand performs well through market cycles

Why packaging?



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There are attractive market tailwinds for packaging that are expected to drive continued growth and profitability in the industry and for upstream suppliers

Increasing product fragmentation

- Consumer package good firms are segmenting their customers and developing new, more targeted products... and packaging
- New packaging formats are increasing innovative differentiation and driving margins

Increasing promotional activity

- Brands are increasing promotional activity, which shortens the life-cycle of packaging in areas such as labels and encourages innovation in the sector

Increasing private label penetration

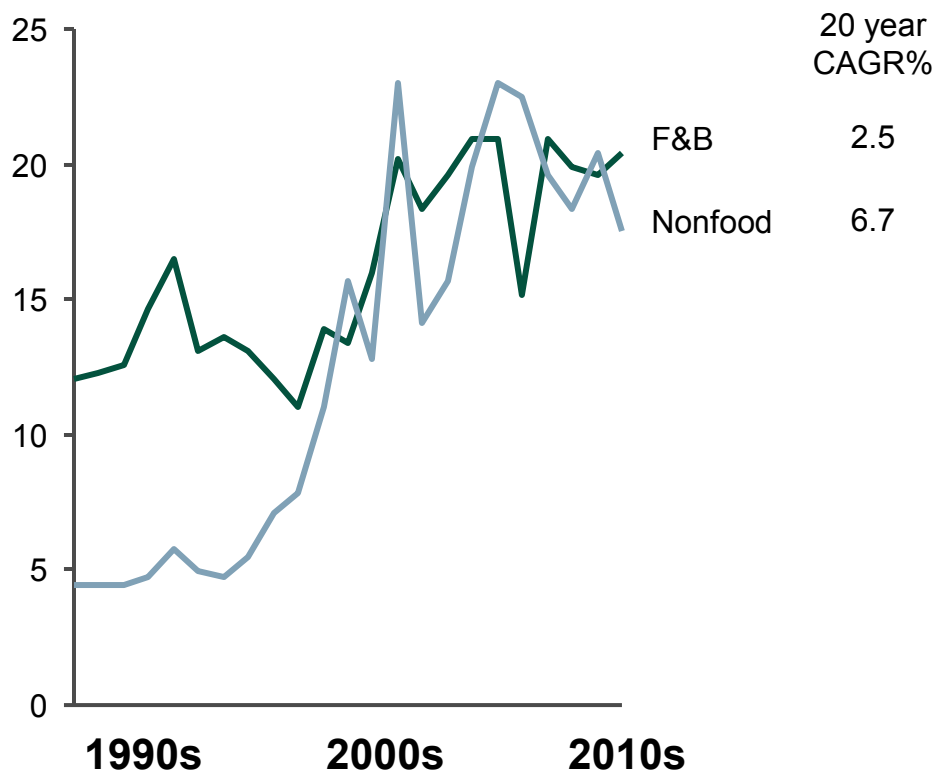
- Private label penetration is lower in the U.S. than for Europe and we see increasing penetration in the U.S.
- Private label brands are improving their packaging to compete with branded products

Demand for new packaging in consumer products is growing

Increasing product fragmentation

New U.S. CPG product introductions (Past 20+ years)

Thousands of products



Why is this happening?

- CPG companies are introducing additional products and SKUs to cater to customers that increasingly demand specialized products to fit their specific need
- Trends that have accelerated this customer demand and product proliferation include:
 - Increase in ethnic diversity
 - Aging population
 - Increasingly “on-the-go” lifestyle
 - Online retail reducing shelf space constraints for specific products (e.g., all natural / organic foods)

CPG companies are increasingly using packaging to differentiate their products for specific customers

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CPG brands, like Cheez-It®, have developed different size ranges, product line extensions and packaging formats to serve specific consumer groups

Illustrative

Increasing product fragmentation

Traditional

Box with fill bag size range



Product line extensions



Promotional packs



Flexible Packaging formats



Snack bags 1.5 oz



“Grab n’ Go” snack bags 3 oz

100 cal. pack
.77 oz



Re-sealable grab bags 7 oz



Other



Fragmentation evolution

1

SKU proliferation has increased demand for innovative packaging and therefore, for small converters to satisfy short production runs

Increasing product fragmentation

Trend

- Big brands are diversifying product line packaging with shorter runs
- Smaller brand owners are acquiring tier 2 brands dropped by larger firms
- Different product sizes enable value for the consumer and the brand



So what?

“... You’re going to have a few SKUs that represent 80% of the volume, then hundreds if not thousands of SKUs for smaller volume ones ...”

Former Package Design and Development, P&G

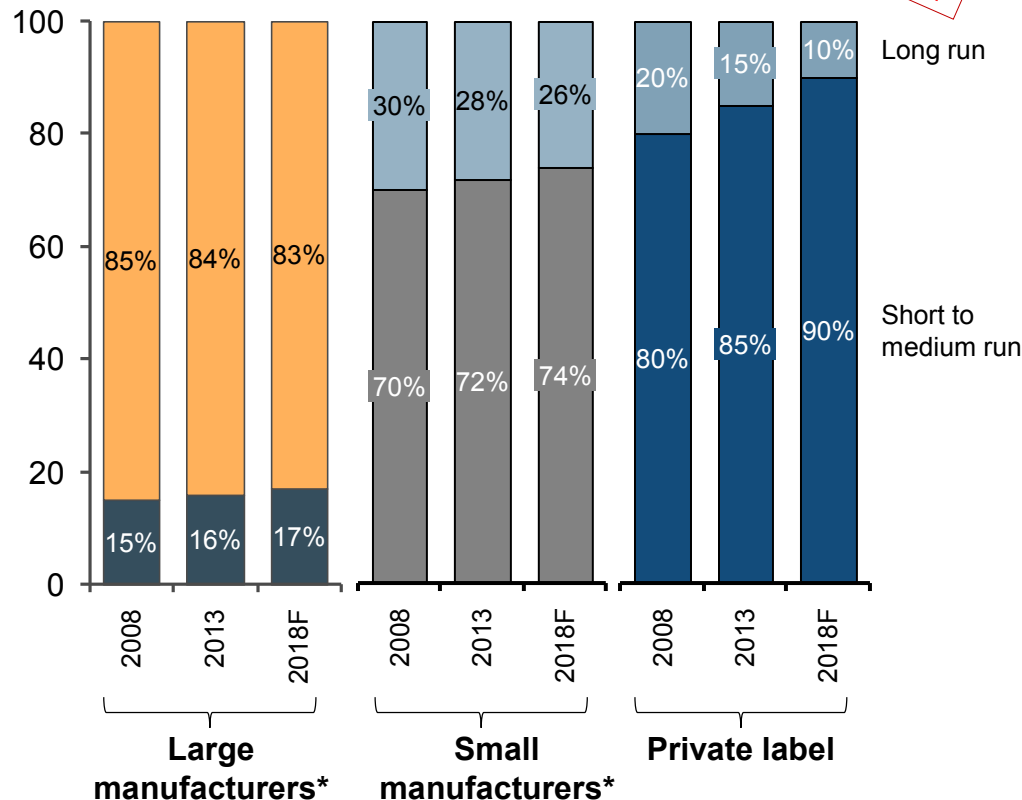
More polyolefin customers, converters, are in demand to satisfy short production runs

Increasing brand fragmentation and SKU proliferation has led to shorter runs for upstream suppliers and thus, increased opportunity

Increasing product fragmentation

U.S. rigid plastic packaging for food and beverage products by run size (2008–18F)

Percent of total units



Why does this matter for you?

- Benefits of shorter runs for upstream suppliers and participants
 - More converter fragmentation to serve short run demands
 - Diversity in polyolefin product needs
 - Increased orders for resin shifting towards short / medical runs

Note: * Large manufacturers are defined as the Top 10 packaged food and Top 10 packaged beverage companies by market share; Small manufacturers are other branded manufacturers of food and beverage products

Source: L.E.K. analysis

1 Promotional, seasonal, and other design changes for a product can occur several times per year

Increasing frequency in promotional cycles



- Refreshes to packaging are commonplace to emphasize product features or positioning

Valentine's Day



Easter



Halloween



Christmas



- M&M's packaging changes several times every year for seasonal promotions

1

The increasing number of promotional products and frequency with which promotions are held is also multiplying the need for packaging updates

Increasing promotional activity

Trend

- Consumer packaging increasingly serves as a communication tool at the shelf-edge to engage consumers with the brand
- Retail promotional activity is related to annual events (e.g., Super Bowl, World Series) or consumer fads (e.g., South Beach, environmentally friendly) that increase the rate of packaging re-design, and thus more shorter runs



So what?

"... The packaging changes much quicker now because there are so many more promotional activities tied to events or movies ..."

*Former Manufacturing Engineer,
Procter & Gamble*

Increase change in demand for packaging specs, process and opportunity for innovation

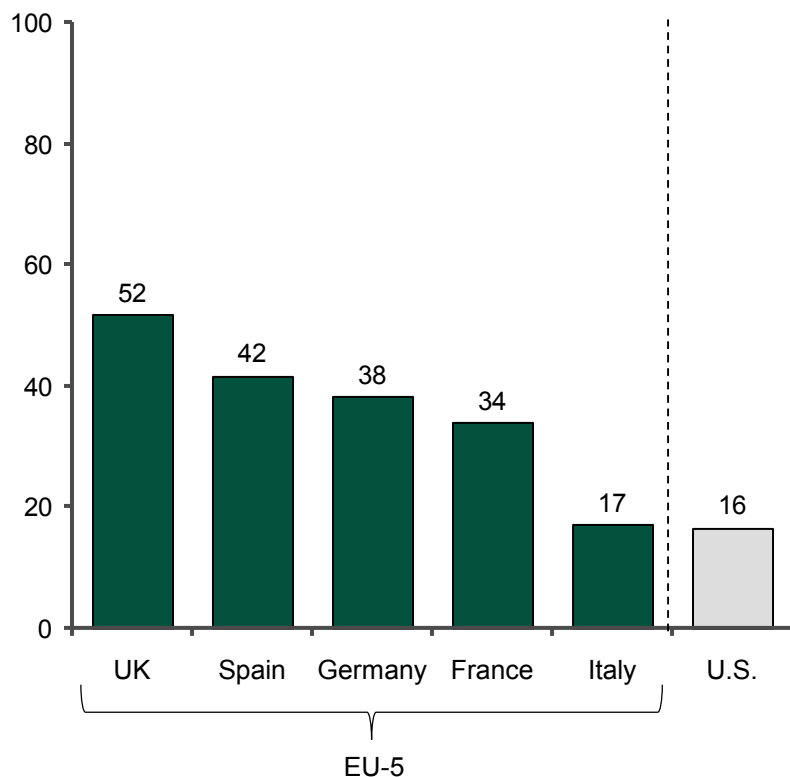
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Across most European countries, private label products have much higher penetration rates

Increasing private label penetration

Private label share by region (2015)

Percent of dollar sales



- EU-5 countries comprise the most developed private label markets and consumers there are more likely to purchase private label products over their branded counterparts
- Across geographies, private label products are expected to see continued growth
 - However the pace of growth is expected to be slower in the more mature Western European markets

Across geographic regions, private label is a sizeable and growing market

1

Private labels are increasingly upgrading their packaging to compete more directly with branded product

Increasing private label penetration

Trend

- Private labels are moving upmarket by communicating value through unique and high quality packaging on par with branded products
- Many private label brands are seeking to create premium products that are similar in quality and price point to traditional CPG products (e.g., Kirkland from Costco, Great Value from Walmart)



So what?

"... After three big redesigns within four years, with another coming out this summer, Walmart finally understood the value that private label packaging can drive ..."

Senior Brand Manager, Webster Industries

Private label penetration leads to higher demand for packaging innovation

Why flexible packaging?



**Underlying
demand**

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**Material
shifts**

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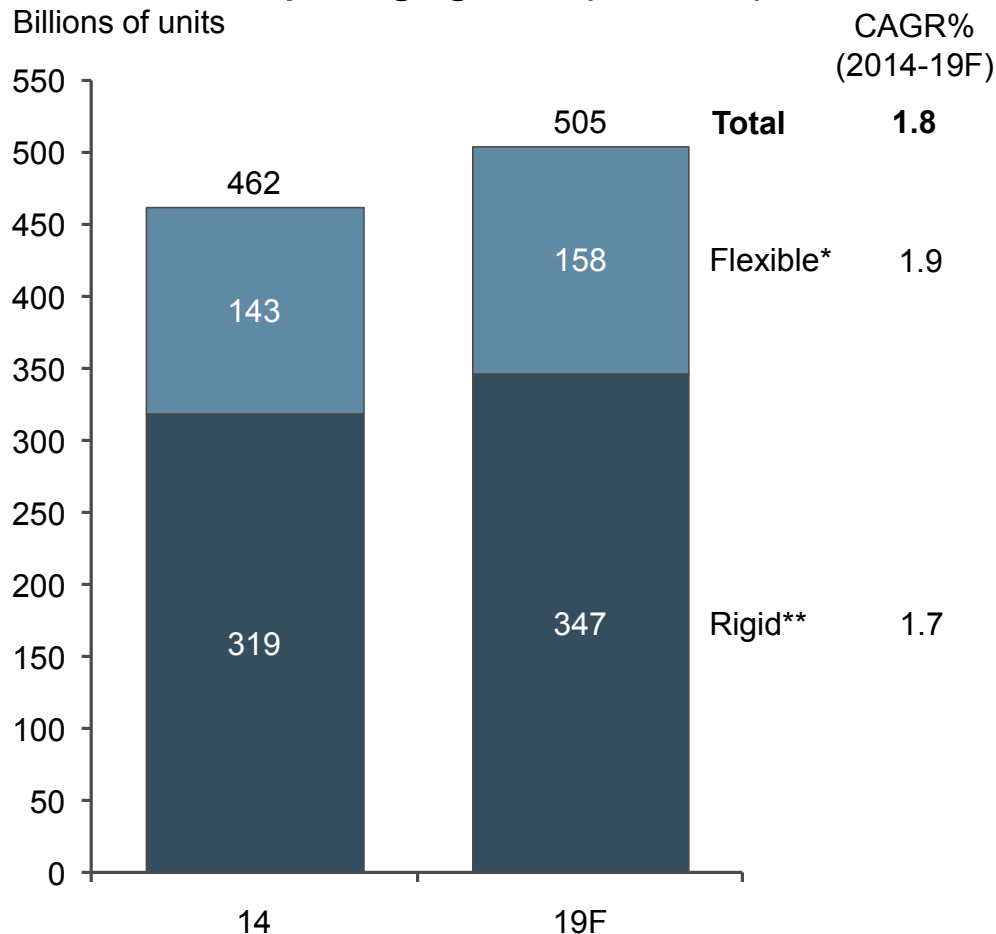
**Attractive
market
cycle**

- 3 Packaging demand performs well through market cycles

In particular, flexible packaging is taking share from rigid packaging

U.S. consumer packaging sales (2014-19F)

Billions of units



- There is an ongoing shift to plastic flexible packaging materials, rather than heavier, more rigid materials, because of material cost efficiencies and reduced transportation costs
- Consumer plastic flexibles are gaining traction in new sectors such as perishable foods, and convenience foods

Note: *Flexible packaging includes bags/sachets, film, paper/foil, pouches, tubes; ** Rigid packaging includes glass, rigid paper, metal, and rigid plastic

Source: L.E.K. analysis of various sources; L.E.K. interviews and analysis

Flexible packaging solutions are attractive because of their lower packaging weight and increased innovations to address consumer needs

Representative examples



- Flexible packaging is rapidly gaining traction, in part due to technical advances (e.g., active packaging, modified atmosphere packaging)

Flexible packaging has become popular across a wide variety of consumer products, increasingly replacing metal cans, glass and rigid plastic bottles, and cartons

Drivers of this shift

- A Reduced packaging weight
 - Increase in number of units shipped
 - Improved shipping / transportation economics
- B Increased innovations and consumer needs
 - Consumer demand for aseptic packaging
 - New formats enable opportunities for aseptic packaging

Reduction in package weight improves shipping and handing economics upstream

Reduced packaging weight

- Reduced transportation and shipping costs / lower inventory requirements



- Ships in rolls vs. rigid containers where you need to ship air



Consumer convenience and brand competition have driven many product categories to adopt flexible packaging format innovations

Increased innovations and consumer



Baby Food: Parents want babies to be able to hold and access the food safely



Beverages: Consumers want to be able to both drink the beverage and set it down for later consumption (including aseptic, natural foods)



Medical: Consumers require medical products to be wrapped in aseptic packaging and sometimes to stand-up for ease of access



Cleaning products: Brand requires cleaning products to be air tight and sometimes re-sealable to be difficult to access by young children

Flexible Packaging Benefits

- Lightweight and re-sealable
- Accessibility of food through a simple pouch squeeze
- Pouch standing ability
- Accessibility of food through a simple pouch squeeze
- Aseptically packaged products do not use preservatives
- Aseptic packaging technology allows for such innovations
- Aseptic barrier overwrap
- Ability to add tightly seal via 'zipper'
- Lightweight

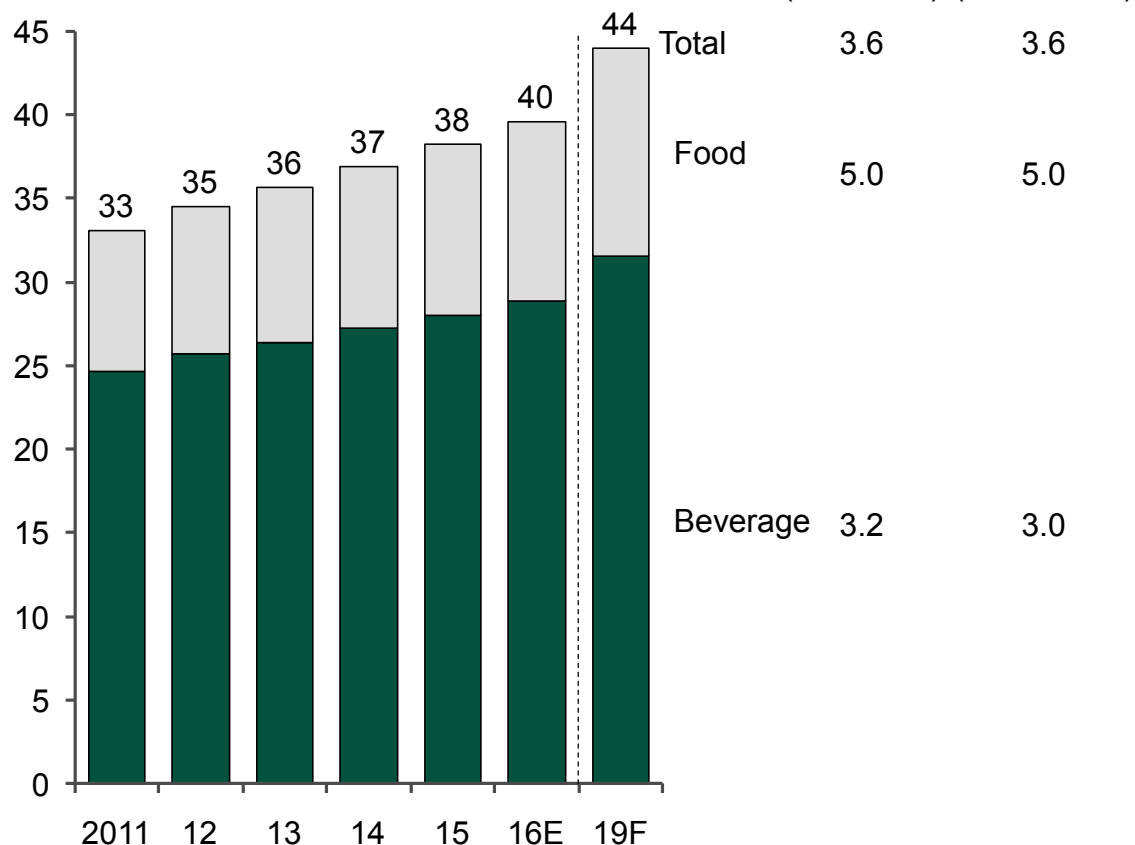
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Demand for aseptic packaging is growing more than three times as fast as the overall consumer packaging market

Increased innovations and consumer needs

U.S. aseptic packaging product market* by end-use (2011-19F)

Volume (Billions of packaging units)



By comparison, overall U.S. packaging market is estimated to grow at **~1% p.a.** during this time period

- The U.S. aseptic packaging market is expected to grow by ~9% p.a in value terms., which means a potential price premium
- Improved tastes, preference towards natural drinks, increased shelf life duration and the eco-friendly nature of aseptic packaging are driving adoption in the U.S.
- Aseptic packaging technology improvements have further driven uptake

Note: * Excludes pharmaceuticals

Source: MarketsandMarkets, PCI, Smithers Pira, TechNavio, L.E.K. analysis

Why does packaging make sense?



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**Attractive
market
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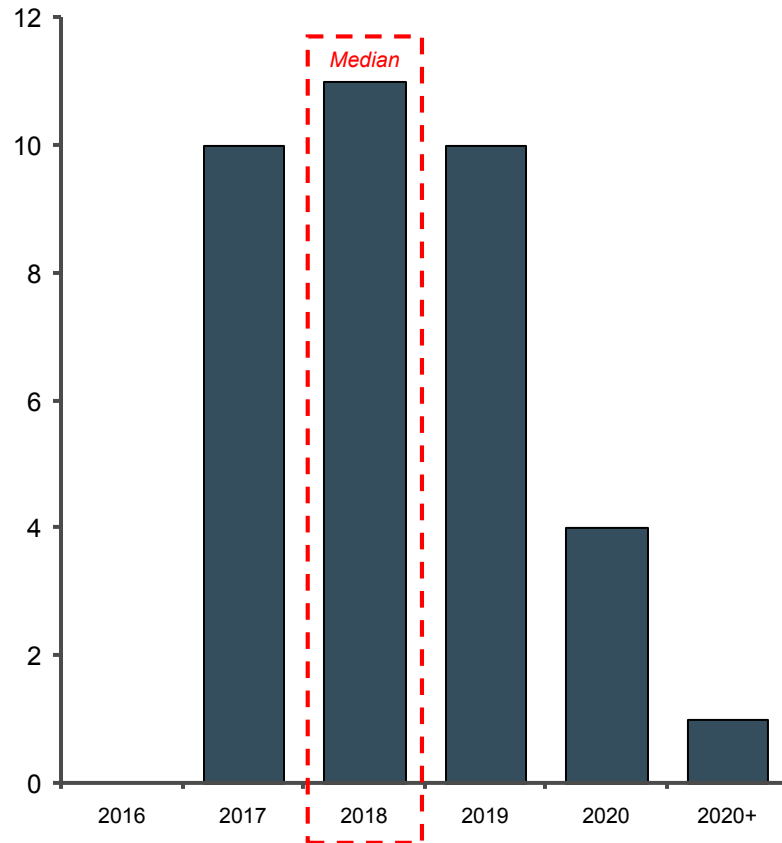
- 3 Packaging demand performs well through market cycles

Packaging offers a reduced business cycle risk, which is an important consideration over the coming years

Bloomberg U.S. economic survey (n = 36) - Expected year of next recession

(June 2016)

Number of respondents



- ~58% of economists surveyed in Bloomberg expect the next recession to occur by 2018, with ~28% expecting the next recession in 2017
- Construction outlooks remain positive through 2018, but begin to soften or even pull back in the some sectors of residential

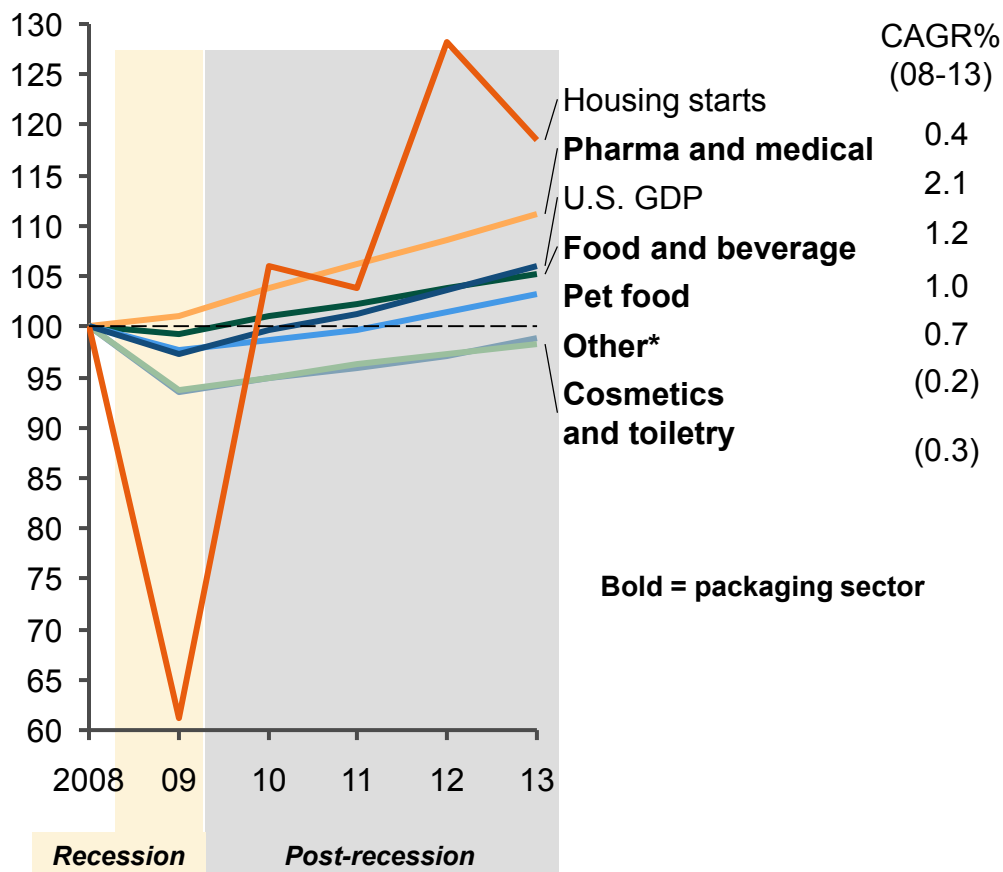
Note: *Consensus of economists

Source: Bloomberg; L.E.K. research and analysis

The packaging industry is insulated from broad, macroeconomic cycles

U.S. plastic rigid & flexible packaging volume by end-market vs. relevant indices (2008-13)

Index of 100, base year = 2008



- The Pharma / medical sector was virtually immune to the recession, with a slight impact on growth in 2009
- The Food & Beverage and Pet food segments saw a small decline (~2-3%) in 2009, though resumed growth quickly afterward
- More discretionary sectors, such as Cosmetics and toiletries, were affected more deeply and are taking considerably longer to recover
- The housing sector in construction is more volatile

Note: Bold indicates packaging sector for specific end market; * Includes industrial, tobacco, other nonfood and consumer

Source: Bureau of Economic Analysis, Smithers Pira, L.E.K. analysis

The packaging sector provides great opportunities for focus for polyolefins

Strong Consumer
Trends Drive
Backdrop of Growth



- As competition increases, CPGs are using promotions to differentiate themselves and cater to new consumer needs, which supports packaging innovation growth

Ample Opportunities
for Above Market
Growth



- The various sectors within the packaging industry are facing different shifts in consumer preferences, leading to substantial opportunity for differentiated growth rates

Resiliency through
Market Cycles



- Many CPGs and private label brands used market downturns as an opportunity to gain shelf space, highlighting the resiliency of packaging demand through the market cycles

Favorable
Profitability Trends



- Trends towards declining input costs and more expensive packaging innovation will provide favorable profitability trends