Understanding the Economics of Pouches and Global Trends

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Polymer Packaging, Inc.
Global Demand of Containers in 2014

- PET Bottles: 520 billion Units
- Beverage Cans: 310 Billion Units
- Liquid Containers: 380 billion Units
- Stand-Up Pouches: 165 billion Units

Source: Schonwald Consulting
Total Global Packaging Market by Value, 2008-2018

- 2008: $706.88 billion
- 2009: $639.13 billion
- 2010: $698.93 billion
- 2011: $767.93 billion
- 2012: $772.28 billion
- 2013: $797.11 billion
- 2018: $974.54 billion

Global packaging market expected to exceed $1 trillion by 2019

Source: Smither Pira
Global Flexible Packaging Market by Value, 2010 -2020

• Global flexible packaging market (industrial & consumer) worth $210 billion in 2015 rising to $248 billion by 2020
• Total packaging market share is rising steadily at 25% at the expense of rigid packaging
• Flexible plastics represents two-thirds of total and is gradually gaining share from foil and paper

Source: Smithers Pira
Global Flexible Packaging Market by Sector, 2010-2015

- Industrial Sector remains the larger part of the global flexible packaging market (56% in 2015)
- However, it’s share has fallen by 2 percentage points since 2015 as consumer demand is expanding faster

Source: Smithers Pira
Consumer Flexible Packaging Market by Region, 2010-2015

Source: Smithers Pira
Impact of Global Economic Downturn

- Tighter consumer purse-strings
- Flat or falling consumption
- Less frequent shopping
- Discounting and bulk purchasing
- Growth in discounter retailing
- Switching & down-trading between categories
- Widening product ranges especially at the economic end

- Emphasis on cost reduction
- Intense pressure on margins
- Strong light-weight trend across all packaging types
- “More for less” – same or better functionality at a lower cost
- Intensified pressure on R&D
- More efficient packaging systems
- Sustainability issues increase

> Ultimately leading to a leaner and more efficient global packaging market

Source: Smithers Pira
So Why Are Pouches Taking Share Away From Rigid Packaging?

- Intrinsically lightweight, resource/energy efficient, and low cost
- Minimizes pack to product weight, reduces transport & storage costs
- Can be transported cost efficiently long distances
- Extremely versatile in product applications, shapes, sizes and finishes
- Huge range of formats, functions & decoration options
- Usually direct printed & decorated before pouch forming and filling, eliminating the need for labels reducing scrap and cost
- Barrier properties can be tailored to the product – not “one size fits all”
- Growth lead by pouches that specifically meet current consumer needs for convenient, healthy, on-the-go, lightweight, sustainable & single serve packaging
Technical Trends in Flexible Packaging

• Convenience – Wide range of opening, dispensing & sealing options
• Barrier materials – New technologies & polymer combinations to replace foils
• Sustainability – less raw materials, less fuel to transport, lower carbon footprint
• Personalization - via digital printing
• Smart packaging & labels – QR Codes, temperature indicators, gas and UV light exposure indicators, tamper evident and anti-counterfeiting technologies
• Filling Equipment Developments – Higher output, lower scrap and ultra clean
• New product categories – enabled by new shapes & functionalities
Why Pouches?

• Shelf Impact / Differentiation
  • Sustainability
  • Consumer Convenience
  • Reduce Carbon Foot Print
    • Cost Reduction
    • Speed to Innovation
• A Fresh Look in Mature Markets
Why Pouches?

• Shelf Impact / Differentiation
Why Pouches?

Sustainability

Empty Pouch Weight 12.7g
Empty Bottle Weight 50.9g
It’s About the Environment!

In a WSJ interview with P&G’s VP of Global Sustainability Len Sauers...

WSJ: What is P&G doing to minimize the environmental effects of its products after they’re used by consumers?

“The best way to impact the disposal piece is to have less waste to dispose of to begin with.”

-Len Sauers
Why Pouches?

Consumer Convenience “Easier to Use”
Why Pouches?

Reduce Carbon Foot Print

4,000 Bottles
Vs.
96,000 Pouches
On 1 Pallet
Why Pouches?

Cost Reduction

• Lower Pouch Cost
• Lower Transportation Cost
  • Lower Labor Cost
  • Lower Storage Cost
  • Lower Design Cost
• Less Waist = Less Trash
Why Pouches?

Speed to Innovation
Get on the Shelf Fast

Lead time for Custom Pouch 8 to 9 Weeks
Vs.

Lead time for Custom Bottle
Why Pouches?

Innovation in Mature markets A “Fresh Look”
Why Pouches?

Pouches are more Contemporary “Stand Out”
Improved Dispensing for Viscous
“Removes the Glug”
Why Pouches?

Refills for Bottles

- Need Photo Method
Why Pouches?

Convenient / cost effective for Single Use
Market Segments Successfully Transitioning into Pouches

- Automotive
- Beverage
- Chemical
- Food
- Health Care
- Home Care
- Personal
Market Segments Successfully Transitioning into Pouches

Automotive
Market Segments Successfully Transitioning into Pouches

Beverage
Market Segments Successfully Transitioning into Pouches

Chemical
Market Segments Successfully Transitioning into Pouches
Market Segments Successfully Transitioning into Pouches

Health Care
Market Segments Successfully Transitioning into Pouches

Home Care
Market Segments Successfully Transitioning into Pouches

Personal Care
Economics of Pouches

Do they really reduce cost?
Focus on Total Savings

1. POUCH VS BOTTLE, CAP & LABEL
2. INBOUND FREIGHT COST
3. FREIGHT RELATED LABOR
4. WAREHOUSE LABOR
5. WAREHOUSE STORAGE COSTS
Focus on Total Savings

6. PRODUCTION LABOR
7. PRODUCTION THROUGHPUT
8. PRODUCTION WAIST
9. CHANGE OVER COSTS
Pouch vs. Bottle Savings

Pouch savings have been demonstrated and continue to increase as pouch manufacturing / competition heats up.

Pouch production scrap is considerably lower than bottles with less parts discarded on set up and during production (caps, labels + bottles).

In cases where the costs are equal or even a little higher all aspects of pouch production needs to be understood.
StandUp Pouches have a much smaller “environmental footprint” than the rigid bottles they replace.

| 1 | truckload of quart size StandUp Pouches, 364,000 pcs on 26 wood pallets |
| 9 | truckload of quart size bottles, 364,000 pcs on 234 wood pallets |
| 1 | truck getting 4 mpg on an average 1,000 mile inbound freight trip uses 250 gallons of fuel |
| 9 | trucks getting 4 mpg on the same 1,000 mile inbound trip use 2,250 gallons of fuel, and emit 9x the amount of greenhouse gasses |
| $1,400 | freight cost for the 1,000 mile inbound trip @ 1.40/mile |
| $12,600 | freight charge for 9 of the same 1,000 mile trips |
| 2 | man hours to load and unload 1 trailer of StandUp Pouches |
| 18 | man hours to load and unload 9 trailers of bottles |
| 52 | forklift trips to load and unload 1 trailer of StandUp Pouches |
| 468 | forklift trips to load and unload 9 trailers of bottles |

StandUp Pouches have significantly less impact on the Earth’s resources and environment compared to plastic bottles:

- 88% less warehouse space required
- 88% less landfill space consumed
- 88% less consumption of wood for pallets and paper for corrugate
- Pouches use 60% less plastic compared to the same size rigid bottle
- Pouches provide a much larger decorative area to get your message across
- Pouches prove to the consumer that your company is concerned with the earth, its resources and health of its inhabitants

Source: Specialty Lubrication Corp.

PPC Meeting August 18, 2015
“It’s All in The Package”
In-Bound Freight Costs

- 9 TRUCKLOADS OF QUART SIZE BOTTLES, 364m ON 234 PALLETS
- 1 TRUCKLOAD OF QUART SIZE POUCHES, 364m ON 26 PALLETS
- 9 TRUCKS ON 500 MILE TRIP = 1,125 GALLONS OF FUEL
- 1 TRUCK ON 500 MILE TRIP = 120 GALLONS OF FUEL
- BOTTLE FREIGHT COST $6,300 VS POUCH COST OF $700

- **POUCH SAVINGS PER M = $15.38/m**

Source: Specialty Lubrication, Corp.
In-Bound Freight Related Labor

• 18 MAN HOURS TO LOAD AND UNLOAD 9 TRAILERS OF BOTTLES (COST = 18 X $25 = $450)
• 2 MAN HOURS TO LOAD AND UNLOAD 1 TRAILER OF POUCHES (COST = 2 X $25 = $50)
• POUCH SAVINGS PER M = $1.10/M

Source: Specialty Lubrication, Corp.
Warehouse Costs

• BOTTLE PALLET WAREHOUSE COST AT $7.50/PALLET/MONTH (234 PALLETS) = $1,755.00
• POUCH PALLET WAREHOUSE COST AT $7.50/PALLET/MONTH (26 PALLETS) = $195.00
• POUCH SAVINGS PER M/MONTH = $4.29/M

Source: Specialty Lubrication, Corp.
Warehouse Costs

BOTTLE PRODUCTION 6 EMPLOYEES/LINE/SHIFT

SET UP COST 2 X $17/HR X 8 HOURS = $272
6 X 30.3 SHIFTS X $17/HR/EMP = $3162
TOTAL PRODUCTION LABOR = $3,434

POUCH PRODUCTION 3 EMPLOYEES/LINE/SHIFT

SET UP COST – 2 X $17/HR X 2 HOURS = $68
3 X 16.2 SHIFTS X $17/HR/EMP = $862
TOTAL POUCH PRODUCTION LABOR = $894

POUCH LABOR SAVINGS = $6.98/M

Source: Specialty Lubrication, Corp.
Summary of Pouch savings

DOLLARS/M

- INBOUND FREIGHT $15.38
- FREIGHT LABOR $  1.10
- WAREHOUSE COST (2 MONTHS) $  8.58
- PRODUCTION LABOR $  6.98
- ADDITIONAL LINE TIME $??????
- TOTAL POUCH SAVINGS $32.04/m

- $11,964 + OVER 364M POUCHES

Source: Specialty Lubrication, Corp.
Various Pouch Styles
Various Spouts/Fitments

PPC Meeting August 18, 2015
“It’s All in The Package”
Understand the Process

1. Film Selection & Printing
2. Pouch Converting
3. Fitment Insertion
4. Filling
Current Filling Methods

1. Form Pouch / Install Fitment / Fill
2. Premade Pouch / Install Fitment / Fill
3. Premade Pouch / Preinstalled Fitment / Fill
Filling Location Options

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“It’s All in The Package”
Form Pouch / Install Fitment / Fill

Advantages
• Lowest cost solution for large volumes
• Choose your own film & fitment suppliers
• Lower shipping and storage costs

Disadvantages
• Requires expertise in all three steps
• Complicated solution for shaped pouch and unique fitments
• Can only run as fast as the slowest step
• 100% of liability for leakers
• Highest equipment cost and change part
• Longer changeover time
Premade Pouch / Install Fitment / Fill

Advantages
- Lowest cost solution for small to medium volumes
- Easier solution for shaped pouches
- Cost effective solution from a warehouse and logistics standpoint
- Shared liability for leakers with pouch converter

Disadvantages
- Less economical when compared to form, fill and seal systems.
- Fitment installation increases machine complexity and reduces production speed
Premade Pouch / Preinstalled Fitment / Fill

Advantages
• Lowest level of machine complexity
• Lowest equipment cost
• Simple solution for shaped pouches
• Liability for leakers falls mostly on the pouch converter and fitment installer

Disadvantages
• Overall higher pouch cost
• Higher warehouse and logistics costs
• Have to return rails to pouch converter
Exciting Pouch Designs
Next Easy to Use Pouch

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FAQ’s

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Thank You!
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DAVID VOGELGESANG
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PRESIDENT'S RECEPTION & DINNER TONIGHT

DESSERT FIRE!