Product Position Study
Proposal for more sustainable packaging for Annie’s Organic Ketchup

Mark Chamberlain
Packaging Sustainability
MCAD | Fall 2016
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**Product Position Study**

Proposal for new sustainable packaging for Annie’s Organic Ketchup

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Introduction

This analysis will propose options for Annie’s Homegrown to reposition its organic ketchup through a new and more sustainable packaging system and to take advantage of the company’s ethos — “organic for everybunny.”

This analysis will discuss the competitive environment, market, packaging structure options, supply chain issues, and a final summary of the repositioning proposal.
Organic and “natural” products are the keys to growth in not only the ketchup industry but in many food sectors globally. Retail sales of organics have gone from $3.6 billion in 1997 to $21.1 billion in 2008.\(^1\) Industry leading brands and producers have seen this growth and have positioned themselves to capitalize on this continued shift in the market.

**U.S. KETCHUP MARKET SHARE BREAKDOWN**  
(Households who say they buy brand, 2014-15) \(^2\)

- 58.71% - Heinz (Kraft Heinz Company)  
- 30.3% - Hunt’s (ConAgra Foods)  
- 11.47% - Store brands  
- 7.59% - Del Monte  
- 3.51% - Other brands

Heinz, seeing its future growth in organics, naturals, and specialty products, has worked to expand its lead in the ketchup market by creating sauces catering to growing niches. In 2015, the company increased its organic offering by providing a 14 oz and 32 oz bottle of Heinz Organic. The Simply Heinz recipe that offers a high fructose corn syrup free product has expanded as well and now offers 20 oz and 34 oz bottles. These two Heinz products join a line of specialty recipes that include Reduced Sugar (13oz), No Salt (14oz) and a variety of flavored ketchup products, all of which are available nationwide.\(^3\)

ConAgra Foods has left the door open on creating an organic version of Hunt’s Ketchup to this date.

Kraft Heinz Company and ConAgra are not alone in looking for ways to capture the organic and natural foods market. Minneapolis-based General Mills has been making strategic acquisitions in this area for many years. In 2000, General Mills bought Small Planet Foods, which included organic and natural food brands such as Cascadia Farms and Muir Glen.\(^5\) The latter makes organic ketchup and is part of this analysis.

In 2014, General Mills acquired Annie’s Homegrown for $820 million. Annie’s has gone from a small player in the food industry to having sales of more than $204 million on 145 products across 35,000 retail locations. Its growth has echoed the consumer demand for organic and products free from artificial flavors, synthetic colors, or preservatives.\(^6\)

There is significant opportunity in Annie’s Homegrown not just because they sell natural and organic products that people like, but because of a genuine kind of ethos and brand story that attracts customers across the product line.
Annie’s Organic Ketchup

COMPANY BACKGROUND

Annie’s Homegrown is a Berkeley, California-based food producer focusing on natural and organic pastas, meals, and snacks. Known for its bright packaging and bunny insignia, the company had $204 million in sales in 2014. Annie Withey co-founded Annie’s Homegrown, Inc. with Andrew Martin in 1989 with the goal of giving families healthy and delicious macaroni and cheese and to show by example that a successful business also can be socially responsible.

ANNIE’S MISSION

“Our mission is to cultivate a healthier and happier world by spreading goodness through nourishing foods, honest words, and conduct that is considerate and forever kind to the planet.”

ORGANIC KETCHUP PRODUCT DESCRIPTION

“Combining ripe organic tomatoes and a blend of spices, Annie’s ketchup is sure to please ketchup lovers everywhere with hints of clove spice and a full-bodied flavor. Rich and robust and miles ahead of conventional ketchup in taste and texture!”

DISTRIBUTION

Annie’s products enjoy a wide distribution network at quality grocery outlets. Annie’s partners include: CVS Pharmacy, Walgreens, Lunds & Byerly’s, Hy-Vee, Cub Foods, Target, Whole Foods Market, and Sam’s Club.

The next step is to look closer at how Annie’s compares to other ketchups on the shelf.
Competitive Environment Analysis

The following section brings together information to gain a better understanding of the competition facing Annie’s Homegrown ketchup.
Competitive Environment Analysis

**Annie’s Organic**
20 & 24 oz plastic bottle
Avg. cost: $3.19 / $4.02
Annie’s Homegrown (GENERAL MILLS) annies.com

**INGREDIENTS:**
Organic tomato paste, organic distilled white vinegar, water, organic cane sugar, sea salt, organic onion, organic allspice, organic clove.

- Vegan
- Gluten free
- Non-GMO Project Verified
- No High Fructose Corn Syrup

**Full Circle**
20 + 24 oz plastic bottle
Avg. cost: $2.79 / $3.09
Topco Associates LLC fullcirclefoods.com

**INGREDIENTS:**
Organic tomato concentrate (water and organic tomato paste), organic sugar, organic vinegar, salt, organic onion powder, organic spice.

- No High Fructose Corn Syrup

**Heinz Organic**
14 + 32 oz plastic bottle
Avg. cost: $2.84 / $5.07
Kraft Heinz Company heinzketchup.com

**INGREDIENTS:**
Organic tomato concentrate from red ripe organic tomatoes, organic distilled vinegar, organic sugar, salt, organic onion powder, organic spice, natural flavoring.

- Gluten free
- No GMOs
- No High Fructose Corn Syrup

**365 Everyday Value**
24 oz plastic bottle
Average cost: $2.39
Whole Foods Market wholefoodsmarket.com

**INGREDIENTS:**
Organic tomato puree, organic evaporated cane juice, organic white vinegar, salt, organic onion powder, organic spices

- Vegan
- No GMOs
- No High Fructose Corn Syrup
<table>
<thead>
<tr>
<th>Brand</th>
<th>Bottle Size</th>
<th>Average Cost</th>
<th>Company/Website</th>
<th>INGREDIENTS</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simply Balanced</td>
<td>20 oz</td>
<td>$2.29</td>
<td>Target Corp. corporate.target.com</td>
<td>Organic tomato concentrate (water, organic tomato paste), organic sugar,</td>
<td>No High Fructose Corn Syrup</td>
</tr>
<tr>
<td></td>
<td>plastic bottle</td>
<td></td>
<td></td>
<td>organic distilled vinegar, salt, less than 2% of: organic onion powder,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>organic spices</td>
<td></td>
</tr>
<tr>
<td>OrganicVille</td>
<td>24 oz</td>
<td>$5.29</td>
<td>Sky Valley Foods Inc. organicvillefoods.com</td>
<td>Organic tomato puree, organic agave nectar, organic white vinegar, salt,</td>
<td>Gluten free, Dairy free, Vegan</td>
</tr>
<tr>
<td></td>
<td>plastic bottle</td>
<td></td>
<td></td>
<td>organic onion powder and organic spices.</td>
<td></td>
</tr>
<tr>
<td>Wild Harvest</td>
<td>20 oz</td>
<td>$1.99</td>
<td>SuperValu Inc. wildharvestorganic.com</td>
<td>Organic tomato concentrate (water, organic tomato paste), organic sugar,</td>
<td>No GMOs, No High Fructose Corn Syrup</td>
</tr>
<tr>
<td></td>
<td>plastic bottle</td>
<td></td>
<td></td>
<td>organic distilled vinegar, salt, organic onion powder, organic spice</td>
<td></td>
</tr>
<tr>
<td>Muir Glen</td>
<td>24 oz</td>
<td>$3.39</td>
<td>Muir Glen Organic (General Mills) muirglen.com</td>
<td>Tomato puree (organic), (tomato paste (organic), water), naturally milled</td>
<td>No GMOs, No High Fructose Corn Syrup, Non-GMO Project</td>
</tr>
<tr>
<td></td>
<td>plastic bottle</td>
<td></td>
<td></td>
<td>sugar (organic), vinegar (organic), sea salt, onion powder (organic), garlic</td>
<td>Verified</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>powder (organic), cayenne pepper (organic), oils of cove, cassia and celery.</td>
<td></td>
</tr>
</tbody>
</table>
## Competitive Environment Analysis

<table>
<thead>
<tr>
<th>Brand</th>
<th>Bottle Size</th>
<th>Average Cost</th>
<th>Company</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sir Kensington's</td>
<td>14 oz glass bottle</td>
<td>$5.49</td>
<td>Kensington and Sons</td>
<td>sirkensingtons.com</td>
</tr>
<tr>
<td>Hunt's Natural</td>
<td>20 oz plastic bottle</td>
<td>$1.78</td>
<td>ConAgra Foods</td>
<td>hunts.com</td>
</tr>
<tr>
<td>Simply Heinz</td>
<td>20 + 30 oz plastic bottle</td>
<td>$3.25 / $3.78</td>
<td>Kraft Heinz Company</td>
<td>heinzketchup.com</td>
</tr>
<tr>
<td>365 Everyday Value</td>
<td>32 oz plastic bottle</td>
<td>$2.69</td>
<td>Whole Foods Market</td>
<td>wholefoodsmarket.com</td>
</tr>
</tbody>
</table>

**INGREDIENTS:**
- **Tomatoes,** tomato paste, organic sugar, onions, distilled vinegar, salt, lime juice concentrate, green bell peppers, allspice, citric acid
- **No High Fructose Corn Syrup**
- **50 percent less sugar**
- **Gluten free**
- **Non-GMO Project Verified**
- **No High Fructose Corn Syrup**
- **No GMOs**
- **No High Fructose Corn Syrup**
- **Vegan**
- **No GMOs**
- **No High Fructose Corn Syrup**

**Simply Heinz**
- **No GMOs**
- **No High Fructose Corn Syrup**
- **Gluten free**
Competitive Environment Analysis

IN-STORE PRODUCT LOCATION AND SHELF SPACE

While individual stores prioritize organic and natural (mostly defined as not using high fructose corn syrup) ketchup products, all of the stores visited in the Twin Cities had organic and natural options mixed in with other varieties. The in-store locations tended to be in the middle of the store. Whole Foods was the only retailer that exclusively had organic or natural options. Annie’s Homegrown organic ketchup was available at each food seller; this was matched only by Heinz Organic.

HY-VEE
New Hope, Minnesota

Hy-Vee was unique because it was the only retailer visited that had a health-foods section. The health food section was on one side of the store and the main shelf space was in the middle near the front.

TARGET
St. Louis Park, Minnesota

The ketchup was located near the front of the store in the first main food isle close to the meat section. The product was on the bottom four shelves. Most of the products at eye level were mustards. The ketchups were organized by brand mostly.

LUNDS & BYERLYS
Golden Valley, Minnesota

In Byerly’s, the ketchup was located at the back of the store perimeter by the meat section. The product was on the bottom two shelves. Most of the product at eye level was specialty seasoning products. Organic ketchup was mixed with natural and traditional options. If possible, options were grouped by brand, such as Heinz.

WHOLE FOODS
Minnetonka, Minnesota

Whole Foods had a small section of ketchup in the middle of the store. They carried only organic or natural ketchup options and had the 365 store brand in the middle row with both their natural ketchup and organic options together.

CUB FOODS
Minneapolis, Minnesota

In Cub Foods, there was a robust section of ketchup near the right-center of the store. The store brand was prominent and took up the middle of the bottom four shelves. The organics were at the top. Natural options were mixed in together with other products from that brand.

IN-STORE PRODUCT LOCATION AND SHELF SPACE

While individual stores prioritize organic and natural (mostly defined as not using high fructose corn syrup) ketchup products, all of the stores visited in the Twin Cities had organic and natural options mixed in with other varieties. The in-store locations tended to be in the middle of the store. Whole Foods was the only retailer that exclusively had organic or natural options. Annie’s Homegrown organic ketchup was available at each food seller; this was matched only be Heinz Organic.
## Competitive Environment Analysis

Direct competitors in organic and natural ketchup categories.

### Ketchup Costs by Brand and Location Availability

Data collected the week of September 11-17, 2016.

<table>
<thead>
<tr>
<th>Bottle</th>
<th>Size</th>
<th>Whole Foods</th>
<th>Byerlys</th>
<th>Hy-Vee</th>
<th>Hy-Vee Health</th>
<th>Cub Foods</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heinz Organic</td>
<td>Plastic Down</td>
<td>32 oz</td>
<td>$5.49</td>
<td>$5.49</td>
<td></td>
<td>$4.79</td>
<td>4.49</td>
</tr>
<tr>
<td>Heinz Organic</td>
<td>Plastic Down</td>
<td>14 oz</td>
<td>$2.99</td>
<td>$2.99</td>
<td>$2.49</td>
<td>$2.89</td>
<td></td>
</tr>
<tr>
<td>OrganicVille</td>
<td>Plastic Up</td>
<td>24 oz</td>
<td>$5.19</td>
<td></td>
<td></td>
<td>$5.39</td>
<td></td>
</tr>
<tr>
<td>Wild Harvest Organic</td>
<td>Plastic Down</td>
<td>20 oz</td>
<td></td>
<td></td>
<td>$1.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>365 Organic</td>
<td>Plastic Up</td>
<td>24 oz</td>
<td>$2.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Circle Organic</td>
<td>Plastic Up</td>
<td>24 oz</td>
<td>$2.79</td>
<td>$2.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Circle Organic</td>
<td>Plastic Down</td>
<td>20 oz</td>
<td>$3.29</td>
<td>$2.99</td>
<td>$2.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sir Kensington's</td>
<td>Glass</td>
<td>14 oz</td>
<td>$4.99</td>
<td>$5.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunt's Natural</td>
<td>Plastic Down</td>
<td>20 oz</td>
<td>$1.85</td>
<td>$1.79</td>
<td>$1.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simply Heinz</td>
<td>Plastic Down</td>
<td>31 oz</td>
<td>$3.49</td>
<td>$3.28</td>
<td>$2.89</td>
<td>$3.34</td>
<td></td>
</tr>
<tr>
<td>Simply Heinz</td>
<td>Plastic Down</td>
<td>20 oz</td>
<td></td>
<td></td>
<td>$2.59</td>
<td>$2.38</td>
<td></td>
</tr>
<tr>
<td>365 non-organic</td>
<td>Plastic Down</td>
<td>32 oz</td>
<td>$2.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stonewall Kitchen</td>
<td>Glass</td>
<td>16 oz</td>
<td>$6.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muir Glen Organic</td>
<td>Plastic Up</td>
<td>24 oz</td>
<td></td>
<td></td>
<td>$3.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucina Antica Organic</td>
<td>Plastic Up</td>
<td>24 oz</td>
<td>$3.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simply Balanced Org.</td>
<td>Plastic Down</td>
<td>20 oz</td>
<td></td>
<td></td>
<td></td>
<td>$2.29</td>
<td>2.29</td>
</tr>
</tbody>
</table>

**Average** | **Avg. per oz** | **Organic**

| Annie's Organic       | $4.02 | $.17 | X    |
| Annie's Organic       | $3.19 | $.16 | X    |
| Heinz Organic         | $5.07 | $.16 | X    |
| Heinz Organic         | $2.84 | $.20 | X    |
| OrganicVille          | $5.29 | $.22 | X    |
| Wild Harvest Organic  | $1.99 | $.10 | X    |
| 365 Organic           | $2.39 | $.10 | X    |
| Full Circle Organic   | $2.79 | $.12 | X    |
| Sir Kensington's      | $3.09 | $.15 | X    |
| Hunt's Natural        | $5.49 | $.39 |      |
| Simply Heinz          | $1.78 | $.27 |      |
| Simply Heinz          | $3.25 | $.10 |      |
| 365 non-organic       | $3.78 | $.18 |      |
| Stonewall Kitchen     | $2.69 | $.08 |      |
| Muir Glen Organic     | $6.99 | $.44 |      |
| Cucina Antica Organic | $3.39 | $.14 | X    |
| Simply Balanced Org.  | $3.99 | $.17 | X    |
| Simply Balanced Org.  | $2.29 | $.11 | X    |
Opportunities for Annie’s Organic Ketchup

Here is a brief SWOT analysis based on the observations and data from the competitive environment analysis.

**STRENGTHS**
- Behind Heinz Organic, Annie’s organic was available at all the key retailers in the area.
- Annie’s Homegrown has a strong company ethos. Their extensive span of products are family friendly and trusted.
- They have the backing of General Mills and access to their distribution network.
- Annie’s Organic Ketchup is currently using multiple bottle options — plastic up-facing and down-facing bottles.
- They already have a following that expects commitments to sustainable practices in food production, packaging, and distribution.

**WEAKNESSES**
- Annie’s Homegrown has to contend with the heavyweight in the market at every turn — Heinz.
- The current plastic bottle packaging is practical, but not a differentiator or more sustainable than competitors. The bottle provides necessary moisture and oxygen barriers through its multi-layer PP/EVOH blow-molded bottle.
- Annie’s Homegrown might not have the same autonomy as a company that they once did outside the umbrella of General Mills.

**OPPORTUNITIES**
- A redesign in packaging could help differentiate Annie’s as a leader in how food is manufactured and delivered to consumers. Since Annie’s has already stated its commitment to how products are made and delivered, it’s a logical move to embrace more sustainable packaging.
- Since about 70% of purchase decisions are made in front of a retail store shelf, having a physical differentiation could help attract consumers visually.

**THREATS**
- ConAgra could become more of a direct competitor if they decided to create an organic Hunt’s ketchup or an organic off-shoot product. Depending the on the strength of the new product it could displace Annie’s on the shelf because of their strong market position.
- Any increase in cost is always a threat. In considering a packaging redesign, the proposal should maintain or cut current costs.
Market Segment
Focus Group Analysis

Looking at the ketchup market through the lens of a focus group or individual perspectives allows for a clearer picture of consumer desires and demands on the packaging. It also provides unique insight into opportunities.

What about the current packaging attract customers? Would an alternative packaging material be considered? Could new packaging help to tell the sustainability story?
Beyond brand and cost

Based on my focus group and conversations with individuals, two ideas dominated the conversation in the beginning.

1. **Heinz is synonymous with ketchup for most.** With more than 60% of the market share. It was clear that people saw the brand and felt they knew what they were getting regarding experience and quality from the packaging and product.

2. **Price matters — to many, but not all.** Several respondents talked about their ketchup choice process as searching for the “store brand” or “whatever is cheapest.” People like this would get frustrated if they had to spend more than a few moments figuring out their choice. They considered it a staple food and often purchased in the largest affordable bottle size.

There were other insight that was perhaps less obvious.

**Premium glass**
A glass jar conveys the meaning “premium product” and respondents seemed to expect a higher price. In the focus group, Sir Kensington’s ketchup (right) was included and tops out at $6 per bottle. Respondents were favorable to the brand and whimsical label. One participant said they preferred a glass jar for its recyclability, but they chose plastic because of kids.

**Color matters**
It’s important to see the product clearly to verify the hue of the ketchup. In the focus group, one of the bottles had some cloudiness in the plastic, and it was noted as being a turn-off.

**The right recipe on the label**
Because there isn’t much diversity of packaging within the ketchup industry, little call-outs on the bottles make a difference with some of the respondents. The USDA organic logo, NON-GMO logo, or having the calories easy to see on the front were all noted.

The label’s graphics made an impression. Respondents reacted favorably to Annie’s barn and the tomato in a wheelbarrow because it suggested “farm to table, which is big right now.” It also was noted that the text-dominated Heinz bottle seemed “classic” and “not complicated.” And Simply Balanced (Target store brand), with its blue-green background and tomatoes was perceived as cheap and not high-quality.

**Performance is an expectation**
Even though we did not test packaging usability, most respondents had an expectation of packaging performance. Because of the typical shape of most package options, it wasn’t much of a discussed concern for the current ketchup bottles.
The best type of bottle

For the individual testing, respondents were provided five different bottle types — two of the upright plastic and three of the upside-down bottle configurations.

Then they were asked:

What package attracts you the most? Why?

Heinz upside-down bottle was the clear winner and the number of respondents correlated closely with their current actual market share. Simply Balanced from Target was the next highest in terms of numbers.

The number of bottle options were limited for the individuals to narrow information around packaging only.

Based on 26 respondents
The secret sauce

Organic and “natural” products are the keys to growth in not only the ketchup industry but in many food sectors globally. Retail sales of organics have gone from $3.6 billion in 1997 to $21.1 billion in 2008.

Industry Market Segment Focus Group Analysis

Respondents who noted who ketchup package was their favorite

Throw the mold away

With only a couple of glass exceptions, there are two main bottle types for ketchup consumers. This could be a significant opportunity to differentiate a brand that embraces an alternative packaging material.

Respondents were asked:

Which package could you imagine would be best for ketchup?

The Wiltons decorating icing packaging was the clear leader. Its shape was close to some current ketchup bottles, but the most dominant factor was the dispensing tip. Which fact was reinforced by the runner-up, Ella’s apples. Both products had a dispensing tip, which people felt was necessary for ketchup.

- Based on 26 respondents
Opportunities

As stated at the beginning of the Market Analysis section, Heinz has such a dominant foothold on the market. However, there are some real opportunities to explore based on information generated in the focus group and individual conversations.

1. Is there an entirely new way to do ketchup?
   Because there are only two main bottle types across the entire market, an opportunity exists for a non-traditional package option. Consumers that have come to expect a Heinz or Hunt’s experience might not embrace a new package. However, if there is a distinct advantage communicated — such as sustainability or easy recycling — there could be a segment of the market ready to embrace a “green” choice. It also would seize customer attention on the shelf because it would be so different than the other bottles. Success would be dependent on having a package similar enough, but still recognizable as ketchup.

2. The correct label recipe
   Finding the right mix of what is on the label is critical with ketchup. People read the label by looking at the color, the shape, the graphics, and the brand names to make their decisions.

3. Making a good choice for more “green.”
   While this wasn’t specifically asked, there seems to be some tolerance for a higher priced product that was clearly healthier and a better choice for the environment.

4. Clear path to recycling
   Respondents seemed eager to have clarity around how to recycle packages. Besides confusion around the plastic numbering system, respondents generally could only guess at a product’s recoverability. Having clarity around what to do with a package besides throwing it away helps to show authentic responsibility for the sustainability of a product.

5. Explore the option for a dispenser
   Respondents had a moderate interest in seeing a dispenser tip or pump. This could be for a box made out of a Tetra Pak or similar type of material. There are many challenges in developing this kind of product, but it could be an opportunity.

6. In-store matters
   It was clear from the focus group and individual respondents that most purchase decisions about ketchup happen in a grocery or retail store at the shelf. Making sure Annie’s story comes through in that environment is important. Consider the use of shelf talkers to get more information to the customer.

7. Online to meet ketchup needs
   One respondent said they purchase ketchup online from a local store that offers online ordering. Buying ketchup this way could be an opportunity to provide a subscription service, reusable or fillable pumps for staple items, such as ketchup.
Materials, Processes, Waste, and Energy

In this section, a closer examination of ketchup packaging materials currently used for Annie’s Homegrown Ketchup will start to reveal options and pathways to a more sustainable solution. In looking at alternatives, system options for a solution will receive particular focus that will consider wider systems perspective for the ideal packaging.

This section discusses a structure survey, user and product needs, some cross-product inspirations, and possible materials and structures for a redesigned solution.
Materials Survey

NARROW-TOP BOTTLE
Annie’s narrow top bottle design has six parts. The main part is a blown clear plastic bottle.

Plastic bottle
- Material: polyethylene terephthalate (PETE)
- Size: 9.125” (h) x 3.625” (w) x 1.875” (d)
- Weight: 1.3 oz
- Recyclable: Yes

Plastic flip-top lid
- Material: polypropylene
- Size: 1.375” (w) x .75” (d)
- Weight: .1 oz
- Recyclable: Yes

Printed Label (2x)
- Material: polypropylene label with adhesive backing
- Size: 3” (w) x 3” (h)
- Weight: < .1 oz
- Recyclable: Yes
- Printing: Offset

Heat Shrink Film Collar
- Material: PET-G or PVC
- Size: 5” (w) x 1.5” (h) spread flat
- Weight: < .1 oz
- Recyclable: If PET-G, then it is recyclable
- Printing: Flexographic

Plastic/foil seal
- Material: induction sealed foil laminate inner seal
- Weight: < .1 oz
- Recyclable: No

<table>
<thead>
<tr>
<th>Bottle</th>
<th>Product</th>
<th>Total</th>
<th>Cap</th>
<th>Seal</th>
<th>Label</th>
<th>Plastic</th>
<th>Sphincter</th>
<th>Packaging</th>
<th>% Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annie’s Organic</td>
<td>Narrow Top</td>
<td>24 oz</td>
<td>25.8 oz</td>
<td>.1 oz</td>
<td>&lt; .1 oz</td>
<td>1.3 oz</td>
<td>NA</td>
<td>1.8 oz</td>
<td>93%</td>
</tr>
</tbody>
</table>

There is no more than .5” of space left at top of bottle.
### Materials, Processes, Waste, and Energy

#### Plastic bottle
- **Material:** polyethylene terephthalate (PETE)
- **Size:** 6.5” (h) x 3.375” (w) x 2.125” (d)
- **Weight:** 1.4 oz
- **Recyclable:** Yes

#### Printed Label (2x)
- **Material:** polypropylene label with adhesive backing
- **Size:** 2.5” (w) x 4” (h)
- **Weight:** < .1 oz
- **Recyclable:** Yes
- **Printing:** Offset

#### Plastic/foil seal
- **Material:** induction sealed foil laminate inner seal
- **Weight:** < .1 oz
- **Recyclable:** No

#### Plastic flip-top lid
- **Material:** polypropylene
- **Size:** 2.25” (w) x .875” (d)
- **Weight:** .4 oz
- **Recyclable:** Yes

#### Product control (2x)
- **Material:** Two pieces of unknown plastics. A hard ring to hold the soft plastic sphincter in place.
- **Weight:** < .1 oz
- **Recyclable:** No

#### Materials Survey

**BOTTOM-DOWN BOTTLE**

Annie’s bottom-down bottle design has seven parts. The main part is a blown clear plastic bottle.

<table>
<thead>
<tr>
<th>Bottle</th>
<th>Product</th>
<th>Total</th>
<th>Cap</th>
<th>Seal</th>
<th>Label</th>
<th>Plastic</th>
<th>Sphincter</th>
<th>Packaging</th>
<th>% Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annie’s Organic</td>
<td>Top-Down</td>
<td>20 oz</td>
<td>22.2 oz</td>
<td>.4 oz</td>
<td>&lt; .1 oz</td>
<td>&lt; .1 oz</td>
<td>1.4 oz</td>
<td>&lt; .1 oz</td>
<td>2.2 oz</td>
</tr>
</tbody>
</table>

There is no more than .25” of space left at top of bottle.
Materials Survey Summary

As mentioned in previous sections, the ketchup industry doesn’t have much variation in packaging. Heinz has driven the most significant innovations to ketchup bottle design, with Hunt’s and other brands following with similar designs.

There are two main package designs for ketchup bottles on the market—a PET plastic bottle with a flip-cap on top and another with the flip-cap on the bottom. Smaller organic brands almost exclusively use the top-up design (see list on the right), and all appear to be made by Ball Corporation. The cap-on-bottom design has very slight design variations among brands. See list on the right for a breakdown of brands by bottle type.

Here are some materials survey summary points:

- The PET bottle and PP caps are recyclable. It’s important to note that the PET for the bottles is a multi-layered boundary with at least three identified membranes—an outermost thicker layer, thin film layer, and another thick interior layer.

- The heat-shrunk collar wrap on the cap-on-top design is recyclable with the bottle if made from PET-G material. However, PVC has been used for heat-shrunk product wraps.  

- Labels made from polypropylene (PP) or high-density polyethylene (HDPE) can be recycled along with the bottle and cap.

- The product seal, which would be disposed of at a different time as the bottle and cap does not appear to be recyclable.

- The inserts for the product control on the top-down bottle do not seem to be recyclable. However, the material type was unknown.

Competition by Bottle Type

Brands using cap-on-top design:

- Annie’s Homegrown Organic
- OrganicVille
- 365 Organic
- Full Circle Organic
- Muir Glen Organic
- Cucina Antica Organic

Brands using cap-on-bottom design:

- Annie’s Homegrown Organic *
- Heinz Organic †
- Wild Harvest Organic **
- Full Circle Organic *
- Simply Balanced Organic **

| * Annie’s Homegrown and Full Circle Organic use same PETE bottle design. However, Full Circle has a unique cap design. Labels also appear to be different. |
| ** Wild Harvest and Simply Balanced use the exact same bottle, cap, and label design. |
| † Heinz is the only brand to use a completely unique packaging design. |
**Product Needs**

The boundary between the environment and product must serve several needs. A survey of these requirements will help focus the demands of the packaging design.

**KETCHUP PACKAGING NEEDS TO ...**

1. **Support product weight**—Ketchup is a dense substance. Its weight needs to be supported on the retail shelf as well as in the fridge for extended periods of time. The package is used in many different environments. It could be exposed to outside elements if taken camping or used while grilling outside. It might sit on an uneven surface and, if it falls, the membrane needs to be resilient to impact damage.

2. **Be a barrier to outside elements**—Because of the long shelf life of ketchup, the packaging needs to be a durable barrier to keep impurities out, such as liquid and air. Having this seal allows the natural preservative functions of the acidic vinegar to maintain the product fresh for more than a year before opening. After opening, the product needs to be refrigerated because air has been allowed to interact with the product.²

3. **Control flow when dispensing**—Ketchup is a material between a solid and a liquid. Specifically, it is a non-Newtonian fluid. This means ketchup’s viscosity rate, or its ability to flow, varies based on external forces to gravity. So, the bottle might need to be hit to get the product out.² This property is a major reason for the invention of the squeeze bottle. However, it is also why the top-on-bottom design has a product control feature (sphincter) to allow for even product flow when squeezed.

4. **Be resistant to highly acidic product**—Even though the highly acidic nature of ketchup helps to keep it fresh by acting as a natural preservative, the acidity can interact with its container in negative ways.⁷

5. **Be aseptic**—Ketchup requires a sterile container.⁷

6. **Be an oxygen barrier**—Tomato ketchup spoils when exposed to oxygen. Because of the product’s long shelf life, oxygen can penetrate this membrane over time. To prevent this spoilage, the bottle includes two thin oxygen-barrier layers of ethyl vinyl alcohol.⁸ This was noted in the packaging deconstruction when a thin plastic membrane was found between two thicker structural layers of PET. All bottles had similar construction.
A package provides several functions to the consumer of a product. All of the product needs are relevant to a user because those conditions ensure a high-quality, fresh, and ideal product experience. Here are some consumer-centric needs to consider.

**CONSUMERS NEEDS ...**

1. **An easy flow control mechanism**—As discussed previously, ketchup is a material between a solid and a liquid. It requires some agitation to start the movement of the product for dispensing. The plastic bottle allows for a variable squeeze to push ketchup through the dispensing end. The addition of a sphincter control valve, adds additional control for a user.

2. **A reliable view of product**—As evident in the focus group data, product color is a factor when considering a purchase. Having this clear picture of the product is necessary for sale as well as consumer confidence in product quality. This view also addresses another issue with ketchup. When a watery layer develops after the product sits undisturbed for a while, being able to see the problem and shake the bottle to mix the product back to its desired consistency.

3. **Assurance of a fresh product**—Since ketchup tends to have a long shelf life and a long fridge life, it is necessary to feel confident about the package’s ability to protect and preserve.

4. **A durable container on the go**—As previously discussed, consumers want a container that also is a dispenser, and they want to be able to take that bottle with them. Having a container that preserves the product in multiple environments and still performs its function is essential.
Cross-Product Inspiration

**focus TETRA PAK® CARTON**

Tetra Pak cartons can address all product concerns. In combination with the correct spout, a packaging solution also could dispense ketchup in a controlled and pleasing way.

**The inspiration:**
- More than three-quarters of a Tetra Pak carton’s weight is made up of paperboard. All wood fiber in the paperboard comes from forests independently certified as being managed by the principles of sustainable forest management through the Forest Stewardship Council (FSC).
- Wood fibers also can be traced at every stage of the supply chain through independent certification by the Rainforest Alliance.
- The plastics used to laminate the paperboard and the caps/spouts attached to the Tetra Pak are made from bio-based polymers. Most of these plastics are made from sugarcane ethanol. This results in a reduction of 25 percent of the fossil-based plastic material used.
- Using a Tetra Pak solution could allow for a top-on-bottom design.

**Drawbacks:**
- The material is opaque and consumers cannot see the product. This would be negative because the consumer would not be able to see the quality of the product, the product level, or any separation.
- The resistance of the paperboard isn’t as springy as the plastic, and it might not behave as well as the plastic versions.

This 365 Organic Tomato Basil shows a similar product as ketchup using the Tetra Pak Brik Aseptic product. It meets the needs of the product.

The Tetra Pak Wedge could allow for squeezing through a regulated tip applied at the top. Adding a fold at the bottom would allow for almost all the product to be used.
> **Cross-Product Inspiration**

**focus: CHEER PACK PRODUCT POUCH**

Cheer Pack is a producer of aseptic pouches.

**The inspiration:**

- Through work with TerraCycle the company has been able to reduce production waste. Cheer Pack saves about 1.75 million pounds of waste each year through this work. ¹³
- Cheer Pack uses solar to supplement their energy consumption. ¹³
- Cheer Pack examines the life cycle of all its products to find improvements in various stages of a product life. ¹³
- All of the ketchup product could be consumed.
- A custom cap could be created to provide significant product control.
- Based on Ella’s Kitchen baby food, a food product pouch would have a low package to product ratio. This could contribute to lower transportation energy consumption and also fewer resources needed per product.

**Drawbacks:**

- The material is opaque and consumers cannot see the product. The customer would be able to feel the product and mix it as well.
- The experience using a food product pouch would be more like using a toothpaste tube. This might be a challenge getting ketchup customers to adopt the new format.

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**Materials, Processes, Waste, and Energy**

Based on measurement the total weight of this package is 3.6 oz with 3.5 oz of that being product. This would suggest a lower package to product ratio.

5Rs

- REUSE
- RESTORE
- RESPECT
- REDUCE

This icing food product pouch shows a tip that could be used to control a product like ketchup.
Cross-Product Inspiration

focus REUSABLE PUMP

After looking at the ketchup dispensers at McDonalds, the question that came to mind was, “How could a reusable pump be designed for consumers?”

The inspiration:
- The main canister could be created from aluminum, which is durable and would meet all of the product needs.
- Aluminum is recyclable and is a technical nutrient that does not degrade.
- Creating a system that uses a reusable dispenser would, over time, reduce the amount of packaging needed.
- A pump solution could provide a superior experience for the consumer regarding dispensing.

Drawbacks:
- The dispenser would likely be more expensive than purchasing lower-cost disposable packaging options.
- There would still need to be plastic parts for the seal and pump parts.
- If the pump is disposed of instead of recycled at the end of its lifecycle, the benefits might be negated.
- The refills will still need packaging.
Opportunities

After looking at current packaging materials, product needs, consumer needs, and some cross-product inspiration; it is clear that opportunities exist to improve sustainability for Annie’s Homegrown ketchup. Customer expectations remain the biggest hurdle for Annie’s going forward. Here are a few thoughts about the possibilities and challenges.

1. **Stand out in a crowd**
   Because there are only two main bottle types across the entire ketchup market, an opportunity exists for a non-traditional packaging option. Annie’s is already moving away from the cap-on-top design. It could make a bold move and differentiate itself even more from other organic options.

2. **Cradle to cradle**
   It is important not just to focus on the recyclability of material. Working with manufacturing partners, such as Tetra Pak or Cheer Pack, would allow for responsible sourcing, the chain of custody verification, reduction of materials needed, offsetting of production with renewable resources and better reuse or recycling of used packaging.

   Use of the 5Rs in the cross-product inspiration was meant to help show ties to a larger sustainability framework.\(^\text{12}\)

3. **Durability matters**
   Considering a more durable packaging option for Annie’s could access a market segment that wants an option for little waste by using a refillable pump. It supports the product and consumer needs and reduces the amount of packaging used over the course of its lifetime. It also could be recycled if mostly made from aluminum.

4. **Positioning Annie’s to be different in an authentic way**
   Making Annie’s ketchup packaging more sustainable in an authentic way would make a statement about the company’s commitment to not only producing quality, “homegrown” products; it would show how the company takes responsibility for all the impact of its products. It could do this by using materials that are FSC certified and Chain of Custody verified.
Supply Chain Analysis

In this section, various supply chain options will be explored to help uncover a deeper understanding of Annie's packaging options. This process looks at the entire life cycle of the product to get a complete look at how each solution provides a sustainable packaging option. In addition to the big picture supply chain process, suppliers and vendors will be assessed and evaluated using The Sustainable Packaging Coalition (SPC) guidelines as a guide.
Where does it all come from?

Building a supply chain to assess true sustainability

It is difficult to see the depth of a supply chain until you break down each piece of the packaging puzzle. This section starts to do that for each of the three design options. Efficiencies should start to become apparent as threads start to be pulled out.

Before starting, here are a few assumptions in the supply chain mapping process.

1. Actual suppliers for Tetra Pak and Cheer Pack are not available. Best assumptions are applied to each of the packaging components. For the establishment of an actual supply chain, a supply chain resource would be used — such as Sedex, the Supplier Ethical Data Exchange. This would help with ensuring that a supply chain is ethically sourced.

2. A shipping box converter would be sourced near the production facility to package the ketchup for retail distribution. Ideally, a 100% PCC box would be sourced.

3. Raw materials—such as petroleum and aluminum—were not included on the maps. These resources do add a layer of complexity and environmental impact.
The graph below outlines the major components needed in the supply chain for the paperboard carton package. Each break in the process requires transportation. Several of the raw materials would likely come from via ship routes. Manufacturing can occur closer to retail outlets. 

1 Indicates that a recycled material may not be used for same product again.

2 Besides the wood pulp, it maybe possible to recycle the polyethylene and aluminum.
Supply Chain Map

Food Carton Container

Key partner: Tetra Pak
The map below, created using SourceMap, outlines a potential supply chain from initial suppliers through to a retail destination in the Twin Cities, Minnesota, USA.

This chain depicts a possible supply chain for the food carton option. Raw materials such as aluminum and plastic film would come from Asia be turned into the packaging in the food carton plant in Texas. Carton printing also happens here. Product filling and distribution happens near the General Mills distribution facility in Georgia. The final stop is a retail store in Minnesota.
Food Pouch Package

Key Partner: Cheer Pack NA  cheerpack.com

The graph below outlines the major components needed in the supply chain for the flexible food pouch. Each break in the process requires transportation. Several of the raw materials would likely come from via ship routes, but trucks would mostly be used.  

World map does not denote actual location of supply chain partners.

Indicates that a recycled material may not be used for same product again
Food Pouch Package

Key partner: Cheer Pack

The map below, created using SourceMap, outlines a supply chain from initial suppliers through to a retail destination in the Twin Cities, Minnesota, USA.

This chain depicts a possible supply chain for the food pouch option. Raw materials such as aluminum and plastic film would come from Asia and be used to create the package in a Cheer Pack plant. Pouch printing also happens here. Product filling and distribution occurs at the General Mills condiment manufacturing facility in Georgia. The final stop is a retail store in Minnesota.

Raw materials and producers:

- Aluminum Foil - CHINA
- Plastic Film - CHINA
- Adhesives - CHINA
- PET Plastic Caps - CHINA
- Printing Inks - INDIA
Supply Chain Analysis

Reusable Pump System

Key Partners: WestRock  westrock.com  //  San Jamar  sanjamar.com

The graph below outlines the major partners needed in the supply chain for the reusable aluminum pump. Each break in the process requires transportation. Several of the raw materials would likely come from via ship routes, but trucks would mostly be used. ³

World map does not denote actual location of supply chain partners.

Indicates that a recycled material may not be used for same product again.
Supply Chain Map

Reusable Pump System

The map below, created using SourceMap, outlines a supply chain from initial suppliers through to a retail destination in the Twin Cities, Minnesota, USA.

This chain depicts a possible supply chain for the aluminum refillable pump. Raw materials such as aluminum and plastic film would come from Asia. Product filling and distribution occurs at the General Mills condiment manufacturing facility in Georgia. The final stop is a retail store in Minnesota.

Raw materials and producers

- Aluminum Foil - CHINA
- Aluminum Pump - CHINA
- Plastic Film - CHINA
- Adhesives - CHINA
- PET Plastic Caps - CHINA
Opportunities

Annie’s Homegrown ketchup has a few challenging, but achievable options for a new, more sustainable packaging design. Here are a few thoughts about the options after looking at supply chains and manufacturing processes.

1. **PAPERBOARD BOX - Great mix of recyclability**
   The Tetra Pak option gets most of its structure from the thick paperboard. The thin laminates create the necessary barriers to keep food fresh and ready for consumption. This mix of minimizing necessary non-recyclable materials (plastics and metals) and maximizing the easily recyclable wood pulp offers a great option for Annie’s ketchup. In the end, consumers feel good about recycling this package.
   However, what it lacks in recycling options, the package makes up in size — a very small size. It has a small package to product ratio. It can be printed and manufactured in a facility close to the product plant. It’s very efficient to ship. This size advantage reduces transportation energy along the chain.
   When you add this to the other initiatives of the company to offset emissions (like solar), it nets a sustainable option.

2. **FOOD POUCH - Go small or go home**
   The Cheer Pack food pouch option offers a mostly unrecoverable packaging option. Because of the many layers of plastic film, foil, and printing, it has created a hybrid that is almost certainly destined for the landfill.
   The use of wood pulp increases the carbon footprint because of increased energy needs for manufacturing. The packaging also requires virgin pulp because of sanitary requirements. Also, FSC certification is very important.

3. **REUSABLE - Some distinct challenges**
   The supply chain examination has shown a hurdle for the reusable aluminum pump option. The question is, “How do you provide refills for a reusable pump package?” If you create a refill package similar to the Cheer Pack option, you are creating almost the same amount of waste. Unless the refill package could avoid the multi-layered bag package, this option doesn’t have a good future.
Repositioning Proposal

“Annie’s, at its core, is a company built on an ever-deepening commitment to bettering the world. Our commitment began day one with natural ingredients; today we continue to advance that commitment by supporting organic and sustainable farming.”

Annie’s Homegrown is built on a commitment to sustainability.

Here is the next step in the journey ...
After reviewing the all three possible packaging scenarios included in this report, the conclusion is that both a food pouch and carton container would not only result in a more sustainable packaging system, Annie’s Homegrown customers would recognize the continued leadership and respond favorably by an increased market share and a more durable sales base.

After a supply chain analysis, the refillable pump option was determined to not yield a significant benefit over the food pouch or container options because the refillable option required a complex process of primary and secondary packages within a similarly complex delivery system.

To help envision next steps and what a new kind of ketchup packaging might look like, the following section dives into concepts and opportunities for the food pouch and cardboard container options. Because the success and failure of a package is largely dependent on customer usability, the concepts are both set against usability and customer needs identified in the focus group and ethnography section.
Food Pouch

As previously explored, there is an opportunity for finding a distinct packaging option to set Annie’s Homegrown ketchup apart from the rest of the ketchup pack. Beyond the distinction on the shelf, there is a real opportunity to better align the packaging sustainability with the ethos of how Annie’s Homegrown makes its ketchup.

REVIEW OF IMPORTANT CUSTOMER CONSIDERATIONS:

1. **Customers want to see the product.**
   We propose an option for a clear banded window to allow for a view of the product to see color and texture.

2. **Packaging needs to offer a way to deal with product separation.**
   The flexible packaging allows customers the option to agitate the product to achieve an even mix.

3. **Customers want a clear way to know how to deal with recycling options — even if it’s not recyclable.**
   The use of the How2Recycle system of labeling is recommended even if it is not possible to recycle the food pouch option. Clarity in how to recycle packaging speaks to the authentic and transparent ethos of Annie’s Homegrown.

4. **Packaging needs to offer a durable solution for on-the-go needs.**
   The flexible food pouch option offers a resilient packaging choice for camping, sporting events, backyard barbecues or just for use on the kitchen table.

5. **Customers want a controlled dispenser tip.**
   The tapered tip allows for reasonable control. If testing show additional need for control, a sphincter could be added to the tip in order to add additional control.
Food Pouch

The food pouch option meets the greatest number of customer expectation and needs. It also provides a distinct visual presentation to set itself apart from the competition on retail shelf space.

From a sustainability perspective the main advantage is its low package to product ratio. When comparing the food pouch to the original PET plastic bottle and the paper board container, the food pouch had the lightest packaging by far at about 6 grams.

The food pouch option also offers flexibility to Annie’s to locate packaging manufacturers near production and distribution plants. This offers an additional benefit by reducing the distance product needs to be shipped to enter the retail distribution stream.

One challenge with the food pouch option is that the package is not recyclable. We still encourage using the SPC How 2 Recycle label system, but this could result in customers thinking the packaging is not “green” or more sustainable. The recommendation would be to build out a narrative on the Annie’s website.
**Carton Pack - Alternative**

The paperboard carton package is an alternative to the food pouch. It offers different opportunities.

**REVIEW OF IMPORTANT CUSTOMER CONSIDERATIONS:**

1. **Customers want to see the product.**
   The carton pack doesn’t allow for a transparent package to accommodate this stated need by customers.

2. **Packaging needs to offer a way to deal with product separation.**
   The carton pack allows customers to shake the container much like they do now in plastic PET bottles.

3. **Customers want a clear way to know how to deal with recycling options — even if it’s not recyclable.**
   The use of the How2Recycle system of labeling is recommended. In comparison to the food pouch, the carton is recyclable at certain facilities.

4. **Packaging needs to offer a durable solution for on-the-go needs.**
   The carton pack is durable and would resist breakage if dropped. The packaging would work great in a dining room, backyard, camping, or most scenarios that the current plastic bottle is used.

5. **Customers want a controlled dispenser tip.**
   The unique wedge design allows for the controlled dispensing of the ketchup product. Customers depress the sides of the carton and the desired amount of product is pushed through the tip. If testing showed additional need for control, a sphincter could be added to the tip in order to add additional control.

**Ketchup Carton Pack Concepts**

- wedge shaped carton
- Offers efficient secondary packaging option.
Carton Pack

The paperboard carton package has some challenges and opportunities.

First, about 73% of the carton is made of paperboard. This material is recyclable at many facilities across the country and makes this a great option. Customers will perceive this to be a more sustainable option because it will be clearly recyclable with the How 2 Recycle label system.

Second, the development of a squeezable wedge will help customers have control over the product flow.

There are, however, some challenges:

- The package is opaque and could frustrate some users as they want to see the product (check color and texture).
- According to the focus group, participants had a more negative perception to the carton packs and how well they would perform and meet their needs.
- Finally, the increased weight of the packaging makes an impact on transportation costs and carbon emissions.
Life Cycle Analysis

Both the food pouch and paperboard carton package options offer some benefit over the traditional plastic bottle. However, the food pouch option provides benefits in most categories. This is why it is the primary recommendation for this proposal. The carton option has challenges as well, such as water usage. However, overall it can have some real benefits to increase the packages sustainability.
Next Steps

Annie’s Homegrown Ketchup

Making a well placed next step is important. There are risks involved in producing a more sustainable packaging system that ends up failing because it doesn’t meet customers needs. Design and testing of these new options are critical to ensuring usability and satisfaction. A poorly designed and executed package will only frustrate and make adoption of a new concept harder for the future.

However, more companies are using paperboard cartons and food pouches. Negative experiences with past versions of these options are becoming a thing of the past. The technology is getting better, and design is more innovative and visually appealing.

Supply chains also are critical. Both options offer flexibility to plug and play into General Mill’s current manufacturing and distribution networks. This flexibility might mean having a seasonal plant in Texas to take advantage of sourcing tomatoes from Mexico.

There is also some low-hanging fruit to achieve regardless of a design moving forward. One of those steps is the use of the SPC How2Recycle label system. It was clear from the focus group that participants wanted to know how to recycle their packages correctly. This is an easy win for Annie’s as they continue to move forward with transparency and authenticity.
Citations - Introduction


10 “Mobile retailing and purchase decisions at the store shelf,” CTIA International Wireless IT and Entertainment Expo, Mobile Retail Experience, October 2009, https://www.youtube.com/watch?v=E2RuOZFEUhA
Citations - Market Analysis


Citations - Structure Analysis

Citations - Supply Chain Analysis

   https://endpoint895270.azureedge.net/static/us/publishingimages/how-cartons-are-recycled.png

   https://www.youtube.com/watch?v=5IlrOxRPy0U

   https://www.youtube.com/watch?v=nQg1WzHVx8


Citations - Structure Analysis (continued)

   http://www.tetrapak.com/packaging/tetra-wedge-aseptic

   Kindle Edition.


APPENDIX – Focus Group Questions

Engagement questions
What is your favorite ketchup?
Where do you buy your favorite ketchup?

Exploration
Is having a squeezable bottle important to your purchase decision?
Is seeing the ketchup product through a clear bottle essential to your purchase choice?
Would you consider not buying your usual ketchup if it meant that you were making a better choice for the environment?
What does non-GMO mean to you when you see it on a label?
Look at the ketchups.
Bring in different packages examples.

Exit
Is there anything else you would like to add about how you use and buy ketchup?
**Environmental values and commitments**

How do you take into account social, environmental, and ethical considerations while also considering cost, quality, and delivery time?

Do you have an environmental management system?

What tools do you use to track progress?

Who is accountable for environmental performance?

Do you have community engagement programs?

What policies and practices ensure you have diverse workforce?

How do you support awareness around recycling options downstream?

**Materials**

Where do your materials come from?

When possible how are local sources utilized?

What processes do you use to ensure raw materials and finished products adhere to quality standards?

Is there a program to reclaim products or packaging at the end of their useful lives, or encourage customers to recycle or reuse products?

**Certification and responsible sourcing**

What third-party certifications have your company achieved related to supply chain? (FSC, ISO, OSHA)

What third-party entities do you work with for your certifications?

**Process, waste, and efficiency**

Are CO2 emissions tracked? If so, is there a reduction program?

How is energy consumption offset with renewable sources? (i.e., solar or wind)

How is energy efficiency optimized? (i.e., LED lighting or upgraded fleet)

How is waste produced during production recycled or upcycled?

How is product transport efficiency ensured? Shape? Efficient packaging?

What processes help to conserve water use and ensure water quality as it enters environment?

**Labor and social responsibility**

How are safe labor practices ensured? Training? Certification?

How are labor issues resolved with management?

What policies ensure local communities aren’t disproportionately burdened by operations?

How are environmental values communicated to employees, customers, and others?

Are all applicable federal, state, and local environmental laws? If no, what recent violations are there?

How do you support a culture of learning and engagement as you strive for continuous quality improvement?