Consumer Fresh Produce Demand Trends

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for

UCD Postharvest Technology Short Course

June 17, 2016
Factors affecting demand for fresh produce

• Commodity price, consumer income, ethnicity, age, pop. growth, price and convenience of substitutes and complements, culture/lifestyle/values

• Quality: appearance, flavor, texture, color, shape, size

• Info on produce selection, ripening, recipes

• Convenience in prep, usage; packaging role

• Consistent availability, year-round v. seasonal supply

• Distribution - # stores and shelf-space

• Promotion and advertising: trade v. consumer, generic v. brand; free riders; private label
Underlying Themes

• How can fresh produce capture a bigger share of “better for you” food products?

• Moving from traditional to modern eating culture.

• Role of food “sophisticates.” (Hartman term.)

• Trading up prevalent but consumer price consciousness as high as ever.

• Growing demand for: convenience, transparency, bold often international flavors, high protein foods, health and wellness, products with stories.

• Consumer expectation of mass customization.
In-Home Consumption of Fresh Fruits/Veg Purchased in Stores, Annual Eatings per Capita, 2004-2014

- Vegetables*
- Fruit

* Excludes commercially prepared items such as vegetable soup, Asian dishes, chili, etc.

Source: Produce for Better Health Foundation, State of the Plate - 2015 Study on America's Consumption of Fruits and Vegetables.
Produce items are 5 of the Top 10 Fastest Dollar Velocity ($ per MM ACV) Growth Categories across the Store, USA, 2014

Source: Combined Nielsen Perishables Group FreshFacts® and Nielsen ScanTrack point-of-sale data sets – ranked by dollars per MM ACV for 52 weeks ending August 2014.
Average Retail Basket Size Per US Household, 2015

Shoppers spend more money in the store when produce is included in the transaction!

With Produce $62 vs. With Any Item $41

However, 58% of trips to the grocery store do not include produce.

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen, March 2016.
## Conventional, Organic and Value-Added Fresh Fruit/Veg Sales in Key US Food Retailers, % Change 2015 vs 2014

<table>
<thead>
<tr>
<th></th>
<th>Organic Fruit</th>
<th>Organic Veg</th>
<th>Value-Add Fruit</th>
<th>Value-Add Veg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td>3</td>
<td>10</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Veg</td>
<td>4</td>
<td>14</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Value-Add Fruit</td>
<td>3</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Value-Add Veg</td>
<td></td>
<td>0.5</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

*Excludes overwrap.

Consumer Behavior

- Higher income and socially conscious foodies are driving demand; their preferences lean to organic, convenience (fresh-cut), flavor, local.
- For mainstream consumers, positive attitudes about wellness benefits of fresh produce not translating into purchases. Improved flavor might help.
- Perception that produce costs more and may be wasted. Better shelf-life might help.
- 46.5 million people on food stamps (SNAP) in FY2014 (vs 17.3 in 2000) for cost of $73.9B.
- Economic growth will stimulate demand.
- Produce consumption is positively correlated with income.
### US Consumer Purchases of Organics: Frequency and Age Distribution, 2014

How often have you used organic foods or beverages in the past three months?

<table>
<thead>
<tr>
<th>At least occasional usage*</th>
<th>Daily usage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL USERS</strong></td>
<td><strong>9%</strong></td>
</tr>
<tr>
<td><strong>MILLENNIALS</strong> (18-35)</td>
<td><strong>12%</strong></td>
</tr>
<tr>
<td><strong>GEN X</strong> (36-49)</td>
<td><strong>8%</strong></td>
</tr>
<tr>
<td><strong>BOOMERS</strong> (50+)</td>
<td><strong>7%</strong></td>
</tr>
</tbody>
</table>

*Includes occasional, monthly, weekly and daily


## Attitudes/Opinions of US Bag Salad Consumers, 2013

<table>
<thead>
<tr>
<th>Statement</th>
<th>% of Total US Households</th>
<th>Salad Consumers</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to try out new food products</td>
<td>51</td>
<td>61</td>
<td>119</td>
</tr>
<tr>
<td>I enjoy eating foreign foods</td>
<td>43</td>
<td>49</td>
<td>114</td>
</tr>
<tr>
<td>Friends often ask my advice about health / nutrition</td>
<td>19</td>
<td>24</td>
<td>126</td>
</tr>
<tr>
<td>I try to eat gourmet food whenever I can</td>
<td>18</td>
<td>24</td>
<td>127</td>
</tr>
<tr>
<td>I try to eat healthier foods these days</td>
<td>62</td>
<td>70</td>
<td>112</td>
</tr>
</tbody>
</table>

### Shopping Habits of Most and Least Affluent US Supermarket Shoppers: Fresh Produce

<table>
<thead>
<tr>
<th></th>
<th>Annual Trip Frequency</th>
<th>Annual Household Spending on Fresh Produce</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Shopper</strong></td>
<td>47</td>
<td>$338</td>
</tr>
<tr>
<td><strong>Most Affluent</strong></td>
<td>51</td>
<td>$454</td>
</tr>
<tr>
<td><strong>Least Affluent</strong></td>
<td>40</td>
<td>$221</td>
</tr>
</tbody>
</table>

Top 3 Factors That Influence US Consumers' Selection and Purchase of Fresh Vegetables, 2016

Appearance: 63%
Price: 62%
Habit: 33%
Spoilage: 28%
Seasonality: 22%
Nutrition: 21%
Prep time: 19%
Organic/Local/Brand: 15%

Top 3 Factors That Influence US Consumers’ Selection and Purchase of Fresh Fruit, 2016

69% Appearance
64% Ripeness
58% Price
35% Habit
30% Seasonality
26% Nutritional content
19% Organic/local/brand

Demand for Convenience: Shares of Freshcut, Value-add Produce (VAP) $Sales in Key Retailers, by Subcategory, 2015, Nielsen FCA dataset. Total $7.6B

- Bag salads: 49% - $3.7 billion
- Value-add fruit: 29% - $2.2 billion
- Value-add veg: 22% - $1.7 billion

Source: Compilations of various sources of Nielsen FCA scanner data, 2015.

Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. Includes UPC, random weight, and retailer assigned codes.
Understanding Retail Scanner Data

• Scanner data excludes foodservice operators.
• Nielsen Fresh Coverage Area (FCA) dataset is a sample and represents > 60% of grocery food sales via all formats, and retail channels.
• Since FCA is not the complete universe, total national sales are always higher. National sales can be projected assuming that the FCA sample is around 60-62% of total grocery sales.
• For example, based on the data in the prior slide, projected (from FCA) total US VAP retail sales may surpass $12.6 billion.

Sources: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Ass’n and Nielsen, March 2016; and unpublished Nielsen data.

Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. Includes UPC, random weight, and retailer assigned codes.
New VAV Items Addressing Demand for Convenience, Health and Customization
US Retail French Green Bean $Sales — Fixed (Value-added) vs. Random Weight Sales, 2014

## Top 10 Fruit Sales and Pricing in Key US Food Retailers, 2015 vs. 2014

<table>
<thead>
<tr>
<th>Product</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2014</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2014</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berries</td>
<td>$4,250</td>
<td>6.1%</td>
<td>1,415</td>
<td>5.6%</td>
<td>$3.00</td>
<td>0.4%</td>
</tr>
<tr>
<td>Citrus</td>
<td>$3,016</td>
<td>8.2%</td>
<td>2,401</td>
<td>8.9%</td>
<td>$1.26</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Apples</td>
<td>$2,961</td>
<td>-3.7%</td>
<td>1,903</td>
<td>-2.3%</td>
<td>$1.56</td>
<td>-1.4%</td>
</tr>
<tr>
<td>Grapes</td>
<td>$2,881</td>
<td>4.1%</td>
<td>1,317</td>
<td>7.5%</td>
<td>$2.19</td>
<td>-3.2%</td>
</tr>
<tr>
<td>Bananas</td>
<td>$2,690</td>
<td>-1.0%</td>
<td>4,714</td>
<td>-0.8%</td>
<td>$0.57</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Value-Add Fruit</td>
<td>$2,302</td>
<td>7.8%</td>
<td>719</td>
<td>1.4%</td>
<td>$3.20</td>
<td>6.3%</td>
</tr>
<tr>
<td>Avocados</td>
<td>$1,347</td>
<td>13.0%</td>
<td>1,300</td>
<td>20.0%</td>
<td>$1.04</td>
<td>-5.8%</td>
</tr>
<tr>
<td>Melons</td>
<td>$1,230</td>
<td>1.4%</td>
<td>2,340</td>
<td>7.1%</td>
<td>$0.53</td>
<td>-5.4%</td>
</tr>
<tr>
<td>Stone Fruits</td>
<td>$938</td>
<td>-4.7%</td>
<td>507</td>
<td>-1.4%</td>
<td>$1.85</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Cherries</td>
<td>$636</td>
<td>2.2%</td>
<td>204</td>
<td>3.3%</td>
<td>$3.12</td>
<td>-1.0%</td>
</tr>
</tbody>
</table>

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen FCA dataset, March 2016.
<table>
<thead>
<tr>
<th>Product</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2014</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2014</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bag Salad</td>
<td>$3,877</td>
<td>9.2%</td>
<td>1,378</td>
<td>5.9%</td>
<td>$2.81</td>
<td>3.1%</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>$2,666</td>
<td>3.4%</td>
<td>1,169</td>
<td>1.1%</td>
<td>$2.28</td>
<td>2.3%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>$2,521</td>
<td>-1.4%</td>
<td>3,619</td>
<td>-2.4%</td>
<td>$0.70</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cooking Veg</td>
<td>$1,841</td>
<td>3.4%</td>
<td>1,071</td>
<td>-1.0%</td>
<td>$1.72</td>
<td>4.4%</td>
</tr>
<tr>
<td>Value-Add Veg</td>
<td>$1,754</td>
<td>8.7%</td>
<td>564</td>
<td>5.6%</td>
<td>$3.11</td>
<td>2.9%</td>
</tr>
<tr>
<td>Onions</td>
<td>$1,530</td>
<td>-1.9%</td>
<td>1,527</td>
<td>-2.6%</td>
<td>$1.00</td>
<td>0.7%</td>
</tr>
<tr>
<td>Peppers</td>
<td>$1,471</td>
<td>5.0%</td>
<td>657</td>
<td>3.9%</td>
<td>$2.24</td>
<td>1.1%</td>
</tr>
<tr>
<td>Lettuce</td>
<td>$1,312</td>
<td>3.2%</td>
<td>709</td>
<td>0.2%</td>
<td>$1.85</td>
<td>3.1%</td>
</tr>
<tr>
<td>Carrots</td>
<td>$878</td>
<td>-2.5%</td>
<td>516</td>
<td>-2.8%</td>
<td>$1.70</td>
<td>0.3%</td>
</tr>
<tr>
<td>Mushroom</td>
<td>$863</td>
<td>3.3%</td>
<td>347</td>
<td>1.3%</td>
<td>$2.49</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen FCA dataset, March 2016.
US Retail Bag Salad Dollar Sales, Shares by Key Salad Type, 2014 vs 2015

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen, March 2016.
Growing demand for organic fresh produce

• 2015 organic produce FCA sales: $3.9 billion. Q1 and Q2 2016 organic produce sales each $1.1 B.

• Organic fresh produce accounted for 8.3% of 2015 produce dept. sales; (9% of Q2 2016).

• 2015 organic bag salad share of bag sales=19%.

• 30% of households purchased organic fruit in supermarkets on 2 trips/yr, 2014

• 51% of households purchased organic veg in supermarkets on 4 trips/yr, 2014

Sources: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends Reports: Q2 2016, Q1 2015; 2015; and 2014. United Fresh Produce Association and Nielsen.

Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. Includes UPC, random weight, and retailer assigned codes.
## Organic Fruit and Vegetable Sales and Pricing in Key US Food Retailers, 2015 vs. 2014

<table>
<thead>
<tr>
<th>Organic Produce</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2014</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2014</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veg</td>
<td>$2,362</td>
<td>14</td>
<td>841</td>
<td>13</td>
<td>$2.81</td>
<td>0.7</td>
</tr>
<tr>
<td>Fruit</td>
<td>$1,245</td>
<td>16</td>
<td>622</td>
<td>22</td>
<td>$2.00</td>
<td>-5.5</td>
</tr>
</tbody>
</table>

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen, March 2016.
Penetration Rates: % of US Households Buying Fresh Fruit at Retail, by Category, 2015, (Scanner data so actual purchases)

- Bananas: 86%
- Citrus: 80%
- Apples: 79%
- Berries: 79%
- Grapes: 70%
- Melons: 58%
- Stone Fruits: 51%
- Avocados: 49%
- Cherries: 36%
- Value-add fruit: 35%

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen, March 2016.
Penetration Rates: % of US Households Buying Fresh Vegetables at Retail, by Category, 2015 (Scanner data so actual purchases)

- Potato: 87%
- Onion: 83%
- Tomato: 81%
- Carrot: 78%
- Bag Salad: 76%
- Lettuce: 75%
- Cooking Veg: 73%
- Peppers: 61%
- Mushroom: 50%
- Value-add veg: 49%

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2015, United Fresh Produce Association and Nielsen, March 2016.
Distribution of U.S. Households by Income Level, Share of Total Fresh Produce Expenditures/Income Level & Ave. Fresh Produce Expenditures/Income Level, 2014

- $843  33%
- $70,000-$99,999  13%
- $50,000-$69,999  14%
- $489  14%
- $445  17%
- $350  13%
- $280  8%
- $15,000-$29,999  18%
- $30,000-$49,999  19%
- $100,000+  20%

$ = Average fresh produce expenditures per income group
%
= Percent of total fresh produce expenditures contributed by each income group

Source: Calculations by Roberta Cook from the Food Institute's Demographics of Consumer Food Spending, 2016.
Forces stimulating fresh produce consumption

• More consumer education about the benefits of fresh produce including: MyPlate; salad bars in schools; produce in school lunches and breakfasts; PBH; Alliance for a Healthier Generation; PMA, Partnership for a Healthier America and Sesame Workshop have joined forces to create the Eat Brighter! movement.

• Culinary Institute of America and Harvard School of Public Health Dept of Nutrition Initiative: Menus of Change, The Business of Healthy, Sustainable, Delicious Food Choices. This is designed to introduce more fresh produce on foodservice menus.

• Stealth health trend in foodservice.
Per Capita Consumption of Fruits and Vegetables, All Product Forms

• Changes in total consumption mask significant changes in:
  • product form
  • product mix
  • diversity within product segments
• Cannibalization is rampant (one item substitutes for another)
• Fresh share of total fruit/veg growing
US Per Capita Vegetable Utilization/Consumption, 1976-2015\(^p\), (all channels, foodservice and retail; includes fresh-cut and organic), pounds

- **Processed includes frozen, dried and canned.**
- **Fresh includes fresh-cut and bulk.**

Source: USDA/ERS, Vegetables and Pulses Yearbook #89011, March 30, 2016, reposted online April 25, 2016 with errata. Figures compiled by Dr. Roberta Cook, UC Davis, fresh and processed sweet potato share of total sweet potatoes is estimated; processed vegetables includes lentils and dry peas, and excludes dry beans.
US Per Capita Consumption of Select Fresh Vegetables, 1985-2015\textsuperscript{p} (includes fresh-cut and bulk, all marketing channels - foodservice and retail)

US Per Capita Utilization/Consumption of Lettuce, by Type, 1985-2015° (includes fresh-cut and bulk, foodservice and retail channels)

Head/Iceberg

Romaine

Leaf

All - 24.5

3.6

7.4

13.5

Lbs. Per Capita

Sources: USDA/ERS, Vegetables and Pulses Yearbook #89011 March 30, 2016 for iceberg and unpublished ERS data for leaf and romaine.
US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2015\textsuperscript{P})

Pounds per capita

Specialty and Greenhouse Tomatoes

Y.E.L.O. Youth, Energy, Life, Om...™
Specialty and Greenhouse Tomatoes
US Fresh Tomato Category Sales in Key Retailers: Shares in Quantity and Dollars, by Key Tomato Type, 2014

**Quantity**
- Roma: 30%
- Snacking: 20%
- Field Round: 14%
- HH Round: 13%
- TOV: 23%

**Dollars**
- Roma: 17%
- Snacking: 31%
- Field Round: 13%
- HH Round: 13%
- TOV: 26%

Source: Nielsen Perishables Group FreshFacts®, Historical 2010-2014. Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. It includes UPC, random weight and retailer assigned codes.
US Per Capita Total Fruit Consumption/Disappearance 1976-2014, (all channels, foodservice and retail)

Source: 2015 Fruit and Tree Nuts Yearbook, ERS/USDA
US Per Capita Consumption/Disappearance of Selected Fresh Fruit, 1985-2014 (all have positive health messages, and all but kiwis have generic promotion*)

Pounds per capita

Source: 2015 Fruit and Tree Nuts Yearbook, ERS/USDA

*Kiwis slashed generic promotion in the late 90's and were unable to sustain growth and capitalize on a positive health message.
US Per Capita Consumption/Utilization of Selected Fresh Fruit, 1985-2014

Source: 2015 Fruit and Tree Nuts Yearbook, ERS/USDA
US Per Capita Consumption/Disappearance of Selected Fresh Fruit 1985-2014

pounds per capita

Source: 2015 Fruit and Tree Nuts Yearbook, ERS/USDA
Plant Varieties and Flavor

Cotton Candy

“These Cotton Candy grapes really do taste like cotton candy! What a fun, healthy way to enjoy everyone’s favorite flavor from the fair. Let me know if you agree.”

Jack Pandol
3rd Generation California Grape Grower
email: jackpandol@grapery.biz
WE’VE RAISED TABLE GRAPES WITH WORLD CLASS FLAVOR

Welcome. Grapery® grows and develops the most flavorful, all-natural, highest quality table grapes in the world—flavor no other brand can match.

Day after day we walk the fields, paying close attention to our grapevines every step of the way. We're more than meticulous. During harvest, our team picks only those grapes that are absolutely, positively ripe and ready to be carefully packed and shipped to your grocery store so you can share the juiciest, best tasting grapes in the world with your family and friends.

We invite you to learn more about our extraordinary products and discover where we are headed in the future.
Demographic Trends, Consumer Segments, Differences in Attitudes
KEY CONSUMER SEGMENTS: MORE PEOPLE ARE PROACTIVE WITH THEIR HEALTH

HEALTHY LEADERS

WELL BEINGS®
- 20%
- Most health pro-active and the most green
  - High income
  - Older
  - Most trips
  - Highest food spend/trip
  - Produce $ sales/1000 households index=$134

HEALTHY MAINSTREAM

FOOD ACTIVES®
- 16%
- Mainstream Healthy and eco-minded
  - Older
  - Many trips
  - Lowest food spend/trip
  - Produce $ sales/1000 households index=$101

FENCE SITTERS®
- 25%
- ‘Wannabe’ healthy and eco-minded
  - Younger
  - Fewest trips
  - Average food spend/trip
  - Produce $ sales/1000 households index=$95

MAGIC BULLETS®
- 21%
- Lower commitment to healthy lifestyle
  - Low income
  - Older
  - Many trips
  - High food spend/trip
  - Produce $ sales/1000 households index=$90

DON’T CARE

EAT, DRINK, & BE MERRYS®
- 18%
- Least health active
  - Low income
  - Younger
  - Fewer trips
  - Low food spend/trip
  - Produce $ sales/1000 households index=$85

Source: NMI’s Health & Wellness Trends Database® as included in a presentation on health and wellness from Nielsen, June 2016.
## Those Most Engaged in H&W Shop and Spend More (Total Retail Grocery Channels), 2015

### Shopping Trips per Household

<table>
<thead>
<tr>
<th>Segment</th>
<th>Trips per Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Beings</td>
<td>154</td>
</tr>
<tr>
<td>Food Actives</td>
<td>152</td>
</tr>
<tr>
<td>Magic Bullets</td>
<td>147</td>
</tr>
<tr>
<td>Fence Sitters</td>
<td>141</td>
</tr>
<tr>
<td>Eat, Drink &amp; Be Merry's</td>
<td>132</td>
</tr>
</tbody>
</table>

### Basket Ring $ per Trip

<table>
<thead>
<tr>
<th>Segment</th>
<th>Basket Ring $ per Trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Beings</td>
<td>$50.17</td>
</tr>
<tr>
<td>Food Actives</td>
<td>$45.46</td>
</tr>
<tr>
<td>Magic Bullets</td>
<td>$48.87</td>
</tr>
<tr>
<td>Fence Sitters</td>
<td>$48.94</td>
</tr>
<tr>
<td>Eat, Drink &amp; Be Merry's</td>
<td>$48.40</td>
</tr>
</tbody>
</table>

### Basket Ring $ per Household

<table>
<thead>
<tr>
<th>Segment</th>
<th>Basket Ring $ per Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Beings</td>
<td>$7,726</td>
</tr>
<tr>
<td>Food Actives</td>
<td>$6,889</td>
</tr>
<tr>
<td>Magic Bullets</td>
<td>$7,165</td>
</tr>
<tr>
<td>Fence Sitters</td>
<td>$6,886</td>
</tr>
<tr>
<td>Eat, Drink &amp; Be Merry's</td>
<td>$6,401</td>
</tr>
</tbody>
</table>

**WELL BEINGS** are active shoppers & spend the most annually.

Source: Homescan, NMI H&W segmentations, 52 weeks ending 12/26/2015. UPC-coded & non-UPC-coded items.
Consumer Engagement with Food Influences Buying Behavior: US Consumer Segments, 2015

Core: intense engagement, early adopters, evangelists, trendsetters

Mid-level: mainstream, actively seek new food experiences, possess greater articulation around distinctions like local, seasonal, H&W.

Periphery: least food engaged, seek pleasure, sustenance more than knowledge.

Source: Hartman Culture of Food, 2015, New Appetites, New Routines
## Changing Structure of the Modern Family

<table>
<thead>
<tr>
<th></th>
<th>1970</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married-couple households are on the decline</td>
<td>81%</td>
<td>66%</td>
</tr>
<tr>
<td>Married-couple households with children are on the decline</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Households and families are becoming smaller</td>
<td>3.1 persons</td>
<td>2.6 persons</td>
</tr>
</tbody>
</table>

Projected US Population

2010: 310.233 million

- Hispanic: 16%
- Black: 13%
- Asian: 5%
- Non-Hisp. Whites: 66%
- Other: 2%

2030: 373.504 million

- Hispanic: 23%
- Black: 13%
- Asian: 7%
- Non-Hisp. Whites: 57%
- Other: 2%

Source: www.census.gov
Foodservice contributes to the evolution of food trends and ethnicity leads the way, Authentic and Fusion, benefiting fresh produce.
### Average Annual Household Fresh Produce Expenditures in Food Stores, by Ethnicity, 2014

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Fresh Fruit</th>
<th>Fresh Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>274</td>
<td>399</td>
</tr>
<tr>
<td>White and Other</td>
<td>283</td>
<td>374</td>
</tr>
<tr>
<td>Asian</td>
<td>244</td>
<td>179</td>
</tr>
<tr>
<td>Black</td>
<td>157</td>
<td>179</td>
</tr>
<tr>
<td>Hispanic</td>
<td>281</td>
<td>335</td>
</tr>
</tbody>
</table>

US Shoppers’ Average Number of Trips/Year by Store Format and Age Group, 2015

<table>
<thead>
<tr>
<th>Store Format</th>
<th>Milenial</th>
<th>Gen X</th>
<th>Baby Boomer</th>
<th>Greatest Generat’n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollar</td>
<td>10</td>
<td>13</td>
<td>15</td>
<td>149</td>
</tr>
<tr>
<td>C-store</td>
<td>39</td>
<td>48</td>
<td>58</td>
<td>153</td>
</tr>
<tr>
<td>Drug</td>
<td>106</td>
<td>130</td>
<td>149</td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Superctr</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Club</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Grocery</td>
<td>106</td>
<td>130</td>
<td>149</td>
<td>153</td>
</tr>
</tbody>
</table>

Changing age structure of the US population

• Millennials represent about 1/4 of the pop., surpassing boomers. (77-83 million in 2015 depending on how they are defined.)

• But boomers spend much more than millennials.

• Millennials:
  - are value-conscious but willing to spend on what matters to them.
  - 38% more likely to buy natural/organics vs older consumers.
  - Make fewer grocery shopping trips but spend $54/trip vs $43 for boomers.
  - Enjoy playful brand interaction and “fresh” emphasis.
  - When they cook they like “discovery.”
  - Millennials and boomers have striking similarities and influence each other.

## Five Growing Categories in Millennial Spending

* Spending plan over the next 12 months

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Spending More*</th>
<th>Percent Spending Less*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh fruits and vegetables</td>
<td>37</td>
<td>8</td>
</tr>
<tr>
<td>Organic food</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Natural products</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>Environ. friendly home cleaning items</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Fresh meat</td>
<td>19</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Food Institute Report, September 15, 2014
Question: How important is each factor in deciding what to buy?

### Environmental Concerns

- **Millennials**: 22% in 2011, 34% in 2014
- **Gen X**: 21% in 2011, 26% in 2014
- **Boomers**: 22% in 2011, 25% in 2014

### Social Justice and Well-being

- **Millennials**: 22% in 2011, 36% in 2014
- **Gen X**: 17% in 2011, 26% in 2014
- **Boomers**: 19% in 2011, 29% in 2014

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Question: When preparing meals at home, which BEST describes how the task is approached?

- Meals prep’d with variety of ingredients (fresh, frozen, pkgd)
  - Millennial: 31%
  - Gen X: 43%
  - Boomer: 44%

- Use fresh prep’d food from local grocery or restaurant
  - Millennial: 19%
  - Gen X: 14%
  - Boomer: 8%

- Meals prep’d mostly with fresh ingred’s bought same day
  - Millennial: 18%
  - Gen X: 12%
  - Boomer: 6%

- Relies on frozen meals heated in microwave or oven
  - Millennial: 15%
  - Gen X: 10%
  - Boomer: 12%

- Mostly prepare meals with all fresh ingred’s / from scratch
  - Millennial: 13%
  - Gen X: 17%
  - Boomer: 24%

- Rely on pantry canned, pkgd, frozen (no fresh)
  - Millennial: 4%
  - Gen X: 5%
  - Boomer: 7%

Convenience is key
- Millennials plan less and tend to use prepared options at home
- Fewer cook from scratch and more rely on frozen meals

Millennials are spontaneous
- They are more likely to buy fresh ingredients the day they cook them

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Question: How important is each factor in deciding what food you eat?

- Made with natural ingredients
  - Millennials: 52%
  - Gen X: 44%
  - Boomers: 36%

- No GMOs
  - Millennials: 45%
  - Gen X: 39%
  - Boomers: 37%

- No allergens
  - Millennials: 41%
  - Gen X: 31%
  - Boomers: 39%

- Made with organic ingredients
  - Millennials: 29%
  - Gen X: 29%
  - Boomers: 19%

- Grown locally
  - Millennials: 39%
  - Gen X: 33%
  - Boomers: 31%

- Manufactured locally
  - Millennials: 36%
  - Gen X: 32%
  - Boomers: 26%

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Reasons for Buying Locally Grown at Retail, 2014

- Freshness: 86%
- Support local economy: 75%
- Taste: 61%
- Like knowing source/how produced: 56%
- Nutritional value: 39%
- Price: 39%
- Enviro impact of long distance: 31%
- Appearance: 30%
- Long term personal health effects: 24%

Source: FMI U.S. Grocery Shopper Trends 2014
Frequency of Purchases of Locally Grown Products, 2015

- Occasionally: 83%
- Always: 11%
- Never: 6%

Source: FMI U.S. Grocery Shopper Trends 2015
Definition of “Locally Grown” Products according to Shoppers, 2015

Note: Consumers identified an average of 87 miles as the limit for local.

Source: US Grocery Shopper Trends 2015, FMI.
Conclusions: Need for Shopper-Centrism

• Flavor is where it’s at!

• Creative marketing and merchandising that communicates a product’s benefits to consumers.

• Reaching consumers in multi-channels and utilizing mobile technology, especially for millennials, can stimulate purchases.

• Tell a story.

• Generational differences must be understood and consumers properly targeted but many strategies can work for both boomers and millennials.
Conclusions

- Unmet potential for fresh produce demand expansion in foodservice channels, potentially convenience stores, dollar stores, pharmacies, and online.
- Consumption gains in some items are at the expense of others, we need to understand more about the role of substitutes and complements.
- Firms need to better understand diverse consumer segments and their needs at the individual produce item level.
- Consumer research is exploding due to the internet.
- Social media is making it much more cost-effective and feasible to conduct micro marketing.
Conclusions

• Continuing reduction in the unemployment rate and economic growth will stimulate fresh produce demand.

• Changing public policy, industry-govt. partnerships, trade association and firm-level efforts may gain traction and change consumer behavior - not just attitudes; time will tell.

• To be healthy it must be safe, the fresh produce industry must not relinquish this positioning!

• Consumer expectations are growing for industry accountability, making traceability, sustainability, social responsibility and food safety standards ever more important.