Fine cocoa market dynamics -- bid for the future
XOCO

• Private company founded 2007 focused on fine cocoa
• Honduras, Nicaragua, Guatemala, Belize
• Selected cocoa varieties for flavor
• Planted 1.2m+ trees with 600 outgrower farmers and on own farm
THERE IS A CLEAR FLAVOR DIFFERENCE BETWEEN FINE AND BULK

World cocoa bean production
% by segment, 100% = 4m tons/year

<table>
<thead>
<tr>
<th></th>
<th>Fine flavor</th>
<th>vs. Bulk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Genetic variety</strong></td>
<td>Rare</td>
<td>Common</td>
</tr>
<tr>
<td><strong>Flavor notes</strong></td>
<td>Complex, fruity, nutty, long aftertaste</td>
<td>Flat, earthy, astringent</td>
</tr>
<tr>
<td><strong>% world production</strong></td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td><strong>Mostly from...</strong></td>
<td>Upper Latin America</td>
<td>Africa, Indonesia, Brazil</td>
</tr>
</tbody>
</table>
SMALL MARKET FOR FINE COCOA BUT POTENTIAL FOR GROWTH

Fine flavor beans segmentation
FOB bean producer price, USD

- **Ultra**
  - 50 tons
  - $7 to $10+/kg.

- **Hi End**
  - 7,000 tons
  - $5 to $7/kg.

- **Regular Fine**
  - 40,000 tons?
  - $3.5 to $5/kg.

- **Low Fine**
  - 150,000 tons?
  - $3.0 to $3.5/kg.

- **FOB bean producer price, USD**
  - $3.0/kg.

Premium chocolate market grows by 7% to 10% CAGR
The premium chocolate market is where the growth will be found for chocolate companies in the future, driven by consumer focus on quality and health.

Market researchers

Consumers are growing increasingly sophisticated about foods: Be that coffee, cheeses, wines or chocolate. They want better, more complex taste experiences.

Specialty food executive

PREMIUM SEGMENT GROWS 2X FASTER THAN BULK

Avrg. CAGR* Percent

3-6% 7-10%

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Avrg. CAGR* Percent

3-6% 7-10%

*Compounded Annual Growth Rate, 5 year historical and future forecast.
Source: Packaged Facts, Mintel research, Nestlé, Team analysis
FINE COCOA GROWING IS COSTLY AND FARMERS NEED A HIGH PRICE TO BE PROFITABLE

<table>
<thead>
<tr>
<th>Economics of new fine cocoa project</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>New green field fine cocoa project. Price for NPV to be zero (profitability). 100 ha. Disc. Rate: 16.6%. Labor rate: 59/day</td>
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<tr>
<td>Peak production: 1 kg. dry per tree</td>
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<td>Yr.</td>
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<td>8</td>
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<td>10</td>
</tr>
<tr>
<td>Prepare and clean land, labor</td>
<td>$ 100</td>
<td>$ 10</td>
<td>$ 10</td>
<td>$ 10</td>
<td>$ 10</td>
<td>$ 10</td>
<td>$ 10</td>
<td>$ 10</td>
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<tr>
<td>Graft and plant trees</td>
<td>$ 150</td>
<td>$ 15</td>
<td>$ 15</td>
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<tr>
<td>Maintenance, labor (pruning, pest control, fertilization, weed control, other)</td>
<td>$ 65</td>
<td>$ 70</td>
<td>$ 70</td>
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<td>$ 70</td>
<td>$ 70</td>
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</tr>
<tr>
<td>Maintenance, materials (fertilizer, other)</td>
<td>$ 25</td>
<td>$ 20</td>
<td>$ 20</td>
<td>$ 20</td>
<td>$ 20</td>
<td>$ 20</td>
<td>$ 20</td>
<td>$ 20</td>
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<td>$ 20</td>
</tr>
<tr>
<td>Fermentation-drying, storage, vehicles, other</td>
<td>$ 35</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
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</tr>
<tr>
<td>Administration (Manager, Collection, Post-Harvest, Accountant, travel, communications, office, other)</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
<td>$ 50</td>
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</tr>
<tr>
<td>Sales and marketing (website, travel, samples)</td>
<td>$ 2</td>
<td>$ 2</td>
<td>$ 2</td>
<td>$ 2</td>
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<td>$ 2</td>
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</tr>
<tr>
<td>Total cost</td>
<td>$ 360</td>
<td>$ 145</td>
<td>$ 195</td>
<td>$ 160</td>
<td>$ 150</td>
<td>$ 150</td>
<td>$ 150</td>
<td>$ 150</td>
<td>$ 150</td>
<td>$ 150</td>
</tr>
<tr>
<td>Bean production curve (% peak)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5%</td>
<td>10%</td>
<td>25%</td>
<td>45%</td>
<td>65%</td>
<td>75%</td>
<td>90%</td>
</tr>
<tr>
<td>Bean production (tons)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>10</td>
<td>25</td>
<td>45</td>
<td>65</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Bean sales price, ex works, per ton</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
<td>$ 5.83</td>
</tr>
<tr>
<td>Total revenues</td>
<td>$ 58</td>
<td>$ 146</td>
<td>$ 263</td>
<td>$ 379</td>
<td>$ 438</td>
<td>$ 525</td>
<td>$ 583</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBITDA</td>
<td>$(360)</td>
<td>$(145)</td>
<td>$(195)</td>
<td>$(102)</td>
<td>$(4)</td>
<td>$113</td>
<td>$229</td>
<td>$288</td>
<td>$375</td>
<td>$433</td>
</tr>
</tbody>
</table>

- Min. 100 ha. to enable fermentation
- Expensive: SG&A, Capex, Labor rates, Cost of capital
- Need at least USD 5.83 per kilo dry to be profitable

Note: Costs vary based on a number of factors, hereunder management, soil and general conditions.
FARMERS ARE CHALLENGED ON PRICE AND PRODUCTIVITY

Price per kilo dry for new project NPV = 0
FOB bean producer price, USD

Source: Team analysis
Note 1: Super high=1.6/kg. Per tree, 1,300 trees per ha.; hi yielding=1.2 kg/tree, 1000 trees per ha.; avrg. Yielding=0.5 kgs. Per tree, 800 trees per ha.
Note 2: Discount rate: 16.6%. Labor rate USD 9 per day
### CHOCOLATE MAKERS HAVE SIMILAR CHALLENGES

- Economies of scale at work
- Artisan high mfg and distribution costs
- Premium player lower prices (because of low segment fine beans?)

<table>
<thead>
<tr>
<th>100 g 70% dark chocolate bar</th>
<th>Artisan Gourmet</th>
<th>Mid Premium</th>
<th>Bulk player</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low volume, little cash, little own distribution, hi end beans</td>
<td>High volume, cash rich, established distri., low end fine</td>
<td>High volume, cash rich, mainstream hi vol. distrib., bulk beans</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost/Price</th>
<th>Cost/Price</th>
<th>Cost/Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials, cocoa, landed fact</td>
<td>$ 0.55</td>
<td>$0.35</td>
</tr>
<tr>
<td>Raw materials, sugar, other</td>
<td>$ 0.05</td>
<td>$0.03</td>
</tr>
<tr>
<td>Labor, machinery, wrapping, other</td>
<td>$ 0.46</td>
<td>$0.30</td>
</tr>
<tr>
<td>COGS</td>
<td>$ 1.06</td>
<td>$0.68</td>
</tr>
<tr>
<td>SG &amp; A</td>
<td>$ 1.15</td>
<td>$0.47</td>
</tr>
<tr>
<td>Manufacturer operating profit</td>
<td>$ 1.00</td>
<td>$0.16</td>
</tr>
<tr>
<td>Mfg. sales price to distributor</td>
<td>$ 3.21</td>
<td>na</td>
</tr>
<tr>
<td>Distribution markup/expense</td>
<td>$ 0.84</td>
<td>$0.12</td>
</tr>
<tr>
<td>Sales price to retailer</td>
<td>$ 4.05</td>
<td>$1.43</td>
</tr>
<tr>
<td>Retailer markup</td>
<td>$ 4.05</td>
<td>$1.43</td>
</tr>
<tr>
<td>Taxes, VAT 10%</td>
<td>$0.90</td>
<td>$0.31</td>
</tr>
<tr>
<td>Retail price to consumer</td>
<td>$ 8.99</td>
<td>$3.17</td>
</tr>
</tbody>
</table>

Source: Team analysis. Hershey, Nestlé and Lindt&Sprunghi annual reports, 2014 and 2015.
Note: Numbers are estimated based on interviews and, for medium and bulk players, ratios from Annual Reports, and are therefore indicative rather than exact. Each chocolate maker will have a unique situation, especially in manufacturing and distribution.
MANY ARTISAN GOURMET MAKERS STRUGGLING

*Back-of-the-envelope:*
- If 200 artisan chocolate makers use 2,800 tons of fine beans they can make app. 2,800,000 70% chocolate bars a year
- If they make $1 per bar, on average they make USD 14,000 a year
- If 50 hour work week, hourly salary is $6.67…

*Shake out?*  
*Consolidation?*  
*Market maker?*
DISTRIBUTION CHALLENGE FOR THE MARKET MAKER: WHICH ONE?

$2.5

$7
WHICH ONE?

$10

$3
WHICH ONE?

$3.5

$9
WHICH ONE?

$8

$3
WHAT EVER WENT WRONG?

“Choosing our chocolate is one way you can honor farmers and support sustainable farming practices. We pay a social premium for our ingredients to ensure that farmers are supported and species are protected. Please take a look at our certifications by clicking on the logos below”
SIZING THE OPPORTUNITY

Percentage specialty market of total market
Value

Sources: Specialty Coffee Association (2012, US); Brewers´ Association (2015, US); SFSU; USDA Dairy products 2000, CBS-Global (2010, US), Statista (2013, wine selling for more than $15 a bottle). Note that the very high end coffee market is estimated at 7% of total.
“FAIR SHARE” OF 10% OF MARKET = $10 BN

Possible value of revenues distribution
USD

$10 Bn.

$5 Bn.  Retailer

$3 Bn.  Chocolate maker

$2 Bn.  Bean producer
NEXT STEPS

Alliance for a market maker?

What is the "magic price point" to reach fair share?
   Bulk wine to specialty ($6 to $15)
   Indicate perhaps $5 to $6 retail for bar

Act up people