THE ART & SCIENCE OF PRICING DECISIONS
a predictive analytics framework for CCMs

Brandon Stine, Sequoya Analytics
ART
- Scenarios
- Objectives
- Constraints
- Competition

SCIENCE
- Self-Elasticity
- Cross-Elasticity
- Price Quadrants
- Price Thresholds
ART
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The ART of Pricing Decisions: When?
The ART of Pricing Decisions: When?

Can smarter pricing and promotion reduce the emphasis on discounting?
How to make price and promotion work harder

80%
More than 80% of PPGs and retailers we studied could improve volume, revenue or profitability by changing their everyday prices.

50%
About 50% could improve profitability by taking their price up, with limited impact on volume or revenue.

Adjusting everyday pricing will improve performance

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The **ART** of Pricing Decisions: Considerations

**Pricing Decision**
- Objectives
- Constraints
- Competition
- Sensitivity

**Internal Factors**

**External Factors**
The **ART** of Pricing Decisions: Considerations - Objectives

- **Gross Rev**
- **Margin**
- **Net Rev**
- **Share**
Is there a correlation between Promo Price & ROI?  
(All products with Regular Price = $1.29)

Don’t Forget:

- Marketing Mix Objectives / Strategy
- Non-Pricing Positioning

<table>
<thead>
<tr>
<th>Promo Price (rounded)</th>
<th>Avg Event ROI</th>
<th>Avg Event MFR Margin %</th>
<th>Avg Trade Rate %</th>
<th>Avg Unit Lift %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.36</td>
<td>15%</td>
<td>32%</td>
<td>2425%</td>
</tr>
<tr>
<td></td>
<td>1.09</td>
<td>11%</td>
<td>36%</td>
<td>634%</td>
</tr>
<tr>
<td></td>
<td>2.55</td>
<td>32%</td>
<td>16%</td>
<td>482%</td>
</tr>
<tr>
<td></td>
<td>2.13</td>
<td>35%</td>
<td>13%</td>
<td>163%</td>
</tr>
<tr>
<td></td>
<td>1.76</td>
<td>32%</td>
<td>16%</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>1.18</td>
<td>35%</td>
<td>13%</td>
<td>32%</td>
</tr>
</tbody>
</table>

The ART of Pricing Decisions: Considerations - Objectives
The **ART** of Pricing Decisions: Considerations - Constraints

**Economic Conditions**

Affects perception of value; may mute or exaggerate consumer response

**Legal Constraints**

- CPGs Don’t Set Price
  - List Price
  - EDLC
  - Incentives

**Third Parties**

How are resellers and distributors affected? How might they react?
The ART of Pricing Decisions: Considerations - Constraints

LIST PRICE

SEGMENTATION

LOGISTICS

PRODUCT

Channel Differentiation
Trade Funds Tiers

Channel Differentiation
Trade Funds Tiers

Incentives
Fees

Reformulation
Packaging (Up / Down)
How might your competitors react?
1. How Elastic are we on Regular Price?

2. Who do we interact with?

3. How Elastic are our competitors on Reg Price?

4. What Price Strategies do our Elasticities suggest?

5. How do we identify the role Price Thresholds play?

6. How do we use this information to forecast financial scenarios and choose an optimal scenario?

7. Final considerations

Key Sensitivity Analytics & Demand Forecasting

The SCIENCE of Pricing Decisions: Sensitivity Analytics
Key Sensitivity Analytics & Demand Forecasting

What You Need to Get Started:

- Full category syndicated data (Week / UPC / Banner)
- Assumptions
  - Dates, Retailer, Competitor
- Costs (Past, Current, Future)
  - COGS / List / Trade / Etc
- Modeling Capabilities
Price Elasticity Defined

Price elasticity of demand is used to evaluate and understand the relationship between the change in quantity demanded as it relates to a change in price.
Price Elasticity: How to interpret

Suppose we take a 10% price increase......

+10%

Price Increase

Elasticity of -1.0
The price increase of 10% results in a 10% loss in sales
(-1.0 elasticity means a 1% increase in price resulted in a
1% decrease in sales)

-10%

Impact on Sales

Price Elasticity = \( \frac{\% \Delta \text{Qty}}{\% \Delta \text{Price}} \)
Price Elasticity – Decisions?

Price Increase + Low Elasticity = Negative Units and Positive Dollars

Price Increase + High Elasticity = Negative Units and Negative Dollars

Price Decrease + Low Elasticity = Positive Units and Negative Dollars

Price Decrease + High Elasticity = Positive Units and Positive Dollars

Price Elasticity = \( \frac{\% \Delta \text{Qty}}{\% \Delta \text{Price}} \)
How Do I Compare My Elasticities by PPG?

- Percent drop in quantity sold won’t outpace percent price increase.
- Percent drop in quantity sold will slightly outpace percent price increase.
- Significant quantity drops with price increase.

The SCIENCE of Pricing Decisions: Sensitivity Analytics

Price Elasticity = \( \frac{\% \Delta \text{Qty}}{\% \Delta \text{Price}} \)
"Self" elasticity is the measure of what happens to Item X’s volume when Item X’s price changes.

"External Cross" elasticity indicates the amount of volume going to external or out-of-portfolio competitors due to a price increase on Item X.

"Internal Cross" elasticity indicates the amount of volume going to internal, in-portfolio competitors due to a price increase on Item X.

Item X total everyday price elasticity -2.8

0

-1.5

-1

-0.5

-0.2

-0.4

-1.3

Brand A

Brand B

Brand C

Internal

External Cross / Gap

Internal Cross / Gap

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Regular Price Elasticity

Promotional Price Elasticity

-3.5 -3 -2.5 -2 -1.5 -1 -0.5 0 0.5

High Everyday Price Elasticity: Consumers are sensitive to regular price changes
Low Everyday Price Elasticity: Consumers are not as sensitive to regular price changes
High Promo Price Elasticity: Consumers are sensitive to promotion prices/discounts
Low Promo Price Elasticity: Consumers are not as sensitive to promotion prices/discounts
Pricing Strategy

The SCIENCE of Pricing Decisions: Sensitivity Analytics

Promo Price Elasticity vs. Regular Price Elasticity

- **Strategy: Hi-No**
  - Higher Regular Price & No discounting

- **Strategy: Hi-Lo**
  - Higher Regular Price & Frequent Discounting

- **Strategy: Options**
  - Hi-Lo or EDLP

- **Strategy: EDLP**
  - Everyday Low Price

Bubble size denotes volume

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Price Thresholds

Threshold Price: The specific price point beyond which sales change

- In addition to everyday price elasticities, price thresholds can be used to understand additional unit sales loss
Scenario: Is there a way to increase manufacturer revenue by optimizing price?
Background

We are supporting a major manufacturer that competes in the *craft* bottled water segment. We are going to evaluate their product: *cH2Onvoluted*, a non-GMO, organic, 12oz bottle – at one of their largest customers.
What is my Regular Price Elasticity?

-2.5

-1.6

-0.7

-3 -2.5 -2 -1.5 -1 -0.5 0

Regular Price Elasticity

12 fl oz.

10 fl oz.

8 fl oz.

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How Elastic are my products on Regular Price?

- 12 fl oz:
  - Own: -0.2
  - To Internal Competitors: -0.3
  - To external competitors: -2.0

- 10 fl oz:
  - Own: -0.1
  - To Internal Competitors: -0.5
  - To external competitors: -1.0

- 8 fl oz:
  - Own: -0.1
  - To Internal Competitors: -0.1
  - To external competitors: -0.5

CATEGORIES: Low, Moderate, High

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What products do I interact with?

<table>
<thead>
<tr>
<th>Size</th>
<th>External Competitors</th>
<th>Elast.</th>
<th>Internal Competitors</th>
<th>Elast.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 fl oz.</td>
<td>Gluten-Free Water 8 fl oz.</td>
<td>-0.1</td>
<td>cH2Onvoluted lite 8 fl oz.</td>
<td>-0.1</td>
</tr>
<tr>
<td>10 fl oz.</td>
<td>Gluten-Free Water 10 fl oz.</td>
<td>-0.1</td>
<td>cH2Onvoluted lite 10 fl oz.</td>
<td>-0.5</td>
</tr>
<tr>
<td>12 fl oz.</td>
<td>Gluten-Free Water 12 fl oz.</td>
<td>-0.2</td>
<td>cH2Onvoluted lite 12 fl oz.</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homemade Water 12 fl oz.</td>
<td>-0.2</td>
</tr>
</tbody>
</table>
Competitive Landscape

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The SCIENCE of Pricing Decisions:
Sensitivity Analytics

Pricing Strategy

Promotional Price Elasticity

Regular Price Elasticity

Bubble size denotes volume

Strategy: Hi-No
Higher Regular Price & No discounting

Strategy: Hi-Lo
Higher Regular Price & Frequent Discounting

Strategy: Options
Hi-Lo or EDLP

Strategy: EDLP
Everyday Low Price

cH2Onvoluted
Other Brands
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Evaluating the Impact and Identifying Price Thresholds

How do I know what is optimal?
# Price and Promo Strategy (Scenarios)

<table>
<thead>
<tr>
<th></th>
<th>Current Scenario</th>
<th>Scenario 1 -2% Price Change</th>
<th>Scenario 2 -2% Price Change</th>
<th>Scenario 3 -5% Price Change</th>
<th>Scenario 4 -5% Price Change</th>
<th>Scenario 5 -8% Price Change</th>
<th>Scenario 6 -8% Price Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Price</td>
<td>$3.55</td>
<td>$3.48</td>
<td>$3.48</td>
<td>$3.37</td>
<td>$3.37</td>
<td>$3.27</td>
<td>$3.27</td>
</tr>
<tr>
<td>Promo Price</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
</tr>
<tr>
<td>Competitive Response</td>
<td>N/A</td>
<td>Does not follow</td>
<td>Follows</td>
<td>Does not follow</td>
<td>Follows</td>
<td>Does not follow</td>
<td>Follows</td>
</tr>
</tbody>
</table>

The SCIENCE of Pricing Decisions: Sensitivity Analytics
**Recommendation**

<table>
<thead>
<tr>
<th></th>
<th>Current Scenario</th>
<th>Scenario 1 -2% Price Change</th>
<th>Scenario 2 -2% Price Change</th>
<th>Scenario 3 -5% Price Change</th>
<th>Scenario 4 -5% Price Change</th>
<th>Scenario 5 -8% Price Change</th>
<th>Scenario 6 -8% Price Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFR Volume</td>
<td>345,510</td>
<td>362,785</td>
<td>369,333</td>
<td>383,881</td>
<td>387,763</td>
<td>394,454</td>
<td>396,854</td>
</tr>
<tr>
<td>MFR Revenue</td>
<td>$1.23M</td>
<td>$1.3M</td>
<td>$1.31M</td>
<td>$1.41M</td>
<td>$1.45M</td>
<td>$1.5M</td>
<td>$1.54M</td>
</tr>
<tr>
<td>Competitive Response</td>
<td>N/A</td>
<td>Does not follow</td>
<td>Follows</td>
<td>Does not follow</td>
<td>Follows</td>
<td>Does not follow</td>
<td>Follows</td>
</tr>
<tr>
<td>Margin</td>
<td>$615</td>
<td>$650</td>
<td>$655</td>
<td>$705</td>
<td>$725</td>
<td>$750</td>
<td>$770</td>
</tr>
</tbody>
</table>

**Diminishing Returns**

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# Next Steps – Combining Art with Science

<table>
<thead>
<tr>
<th>Step</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build promo plan</td>
<td>- discount depth and promo price may change</td>
</tr>
<tr>
<td></td>
<td>- may hit / not hit old promo price thresholds</td>
</tr>
<tr>
<td>Check constraints</td>
<td>- can optimal scenario be implemented?</td>
</tr>
<tr>
<td></td>
<td>- are assumptions realistic?</td>
</tr>
<tr>
<td>Check competition</td>
<td>- how will price gaps change?</td>
</tr>
<tr>
<td></td>
<td>- are assumptions realistic?</td>
</tr>
<tr>
<td>Consider marketing mix</td>
<td>- does optimal scenario fit strategy?</td>
</tr>
<tr>
<td>Consider economic conditions</td>
<td>- any variables not present in analysis?</td>
</tr>
<tr>
<td>If executed, measure success</td>
<td>- did consumer respond as forecasted?</td>
</tr>
<tr>
<td></td>
<td>- did demand change due to regular price?</td>
</tr>
<tr>
<td></td>
<td>- was financial growth positive?</td>
</tr>
</tbody>
</table>
bstine@sequoya.com
THANKS!