



# Attribution Case Study Showcase

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**CONCENTRIC**



# Objectives

Our aim was to find the right strategy to invest \$85M for a portfolio of appliance brands in 2017.

1. Evaluate the effectiveness of 2015-2016 strategy.
2. Forecast what is likely to happen in 2017 for Brand 1 and Brand 2.
3. Test what-if scenarios to forecast the likely impact of new strategies.



# Questions answered

- Effects of different touchpoints on sales, consideration, and perceptions
- Long term impacts on brand equity
- Optimal spend across portfolio of brands
- Effects of competitors pricing below market
- The impact of product feature changes
- The value of in-store promotions vs minimum advertised price
- Time decay trend by media channel
- Sensitivity to consumer preference and perception changes

# Sources of data

Data Source	Time Period	Granularity
Sales over time (1 <sup>st</sup> party and 3 <sup>rd</sup> party for competitive)	July 2012 - Dec 2016	Weekly
Price over time (1 <sup>st</sup> party and 3 <sup>rd</sup> party for competitive)	July 2012 - Dec 2016	Weekly
Brand tracker (3 <sup>rd</sup> party)	July 2014 - Dec 2016	Quarterly
Product launch schedules (1 <sup>st</sup> party)	July 2014 - Dec 2016	Weekly
Appliance company's own marketing investment (1 <sup>st</sup> party - agency)	July 2014 - Dec 2016	Weekly
Marketing investment and usage by competitor (3 <sup>rd</sup> party - Competitrack)	July 2014 - Dec 2016	Weekly
Consumer segmentation (1 <sup>st</sup> party)	Jan 2015 - Jan 2016	Total
Creative audit (1 <sup>st</sup> party)	Jan 2015 - July 2016	Monthly
Marketing mix modeling results (3 <sup>rd</sup> party)	October 2015	Total

# Marketing touchpoints

<b>Earned Media</b>	<b>Digital</b>	<b>Promo Month Campaign</b>	<b>Social Media</b>	<b>Offline</b>	<b>Retailers</b>	<b>Ratings and Reviews</b>
Word-of-mouth	Online Video (OLV)	Promo OLV	Facebook	TV	Pricing	Online Reviews
Customer Experience	Online Audio (OLA)	Promo OLA	Twitter	TV – Campaign 1	Discounts	
	SEM	Promo Facebook	Facebook – Consumer Electronics Show (CES)	TV – Campaign 2	Rebates	
		Promo Rebates	Twitter - CES	TV – Grammys	Sales Recs	
			Experiential - CES	Email	SPIFFs - Commission	
			Pinterest	PR Earned	Home Depot OLA	
				PR Paid		
				Print		



# Modeling Approach

- We use Concentric Market®, an analytics platform that helps business leaders make better strategic decisions. Concentric Market® incorporates:
  - **Agent-based modeling:** A consumer-level simulation of the market.
  - **Behavioral economics:** A multi-attribute, multi-alternative decision-making model.
  - **Network science:** A small-world network to replicate the real-world social network of consumers.
  - **Marketing analytics:** Response curves for reach and impact.
  - **Machine learning:** A simulated annealing algorithm to derive the latent variables of the model.



# Why Concentric Market®

The approach was used because it is the only way today to:

- **Unify the analytics** from different departments
- **Forecast what-if scenarios** about sales and brand metrics
- **Speed-up recommendations** delivered from months to minutes

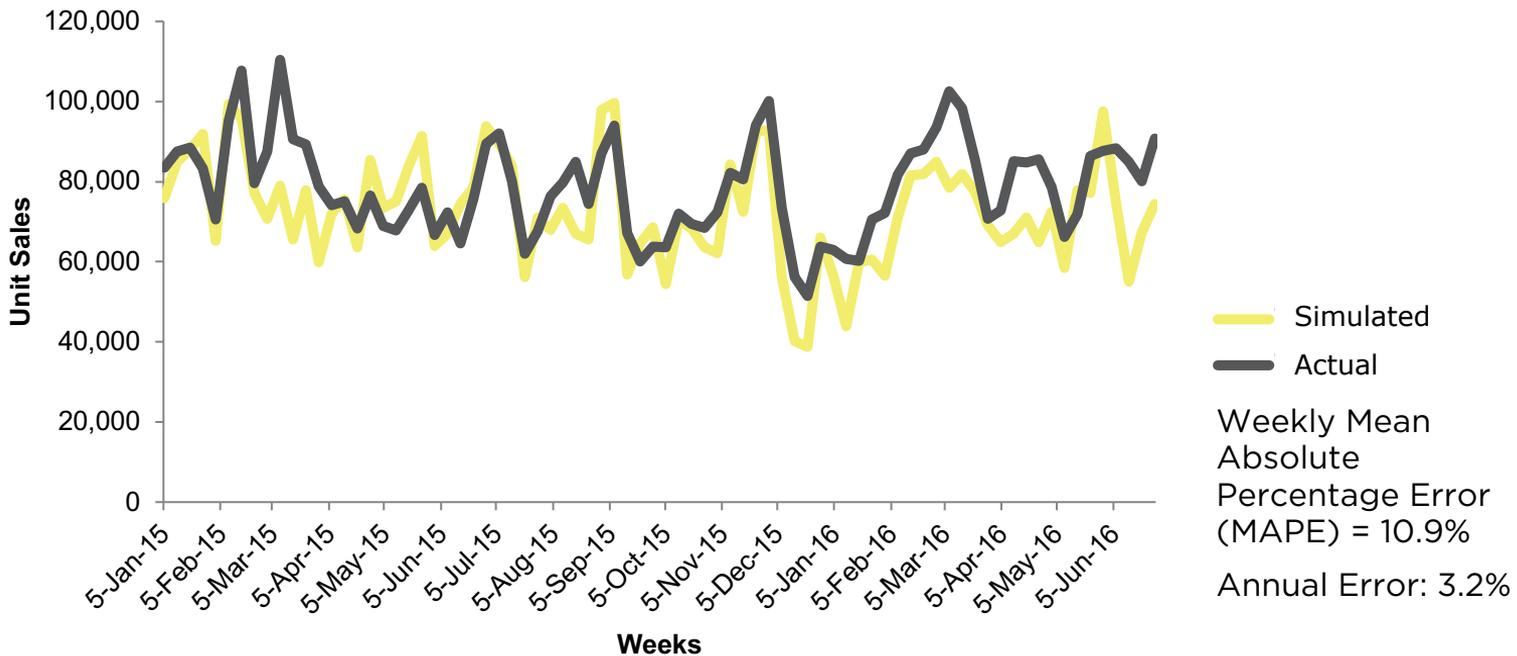


# Results

1. The current marketing strategy is likely to lose market share.
2. TV boosts brand consideration and long-term sales.
3. Higher online ratings and more sales recommendations maximize short-term sales.
4. If we improve the perception of the product's technology, we can increase in price by 15%.
5. Planned competitive discounts are likely to cut our market share by 3.5% to 8%.
6. Retailer A closures likely benefit two of our products, but losses of the third product will likely offset these gains.
7. The current allocation of investment across products and touchpoints is close to optimal.

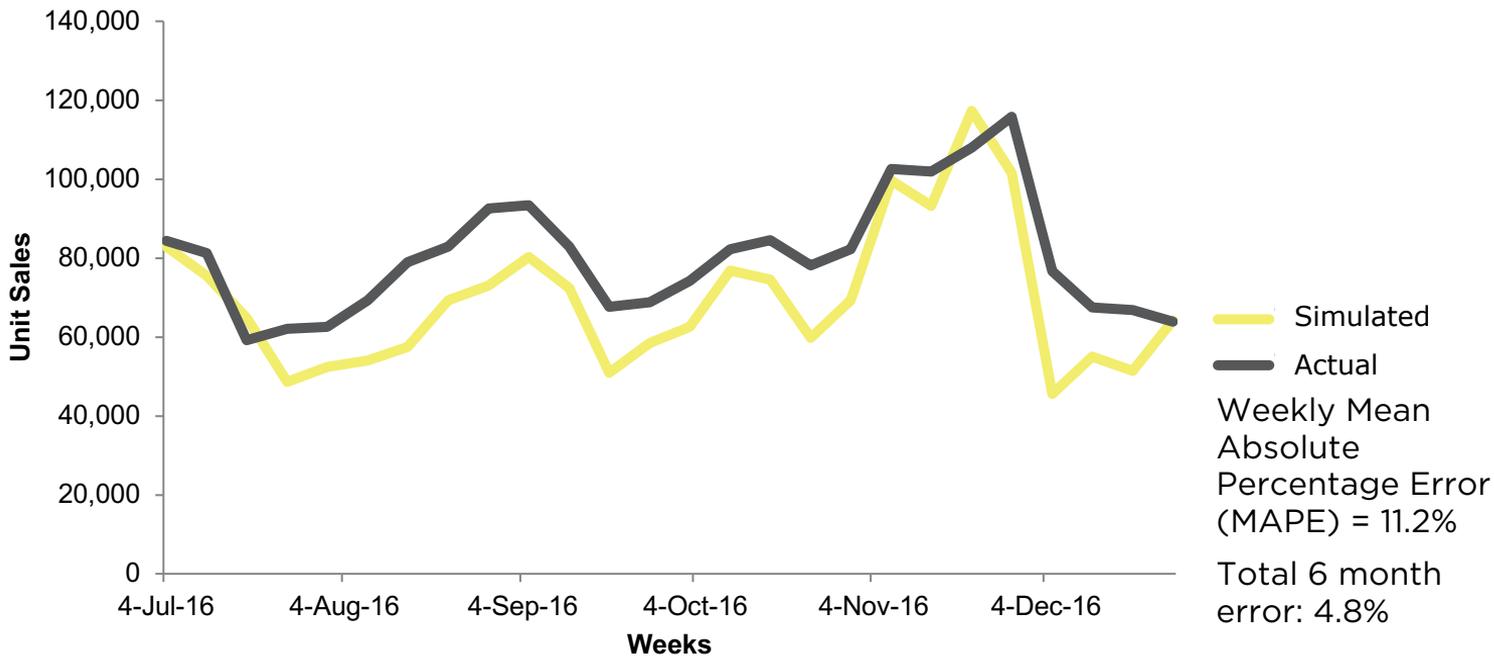
# Validation (Calibration period)

## Simulated vs Actual (2015-2016)



# Validation (Hold-out Period)

## Simulated vs Actual (Jul 2016 - Dec 2016)





# How Results Were Used

1. Increased recommendations budget which drove sales increases.
2. Focused on “technology” positioning for longer-term gains.
3. Kept TV investment at the same levels.
4. Influenced government regulations to manage competitors’ below market pricing.
5. Continued to use Concentric Market® prior to decision making.

These uses allowed the team to mitigate the losses due to the closing of a key retailer.



# Learning / Implications for Attribution Analysis

Attribution for the sake of evaluating the past is no longer enough.

Simulation sets the stage to:

1. Perform attribution and sensitivity analysis
2. Provide forecasts to what-if scenarios
3. Answer business users' questions as they arise in the market
4. Continuously validate the results to real-world performance
5. Automate the model building and validation as new data is available



# Biggest Challenge

This approach requires the participation of:

- Marketing
- Research
- Brand teams
- Analytics
- IT

The greatest challenge is in the orchestration of the process, so that the organization takes advantage of the two greatest benefits:

1. Recommendations happen in real-time
2. Multiple business users can answer various questions at any time