

MARKETING WITH BIG DATA: THE POWER OF ANALYTICS

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CONTEXT

DATA

MEASUREMENT

TARGETING

INSIGHTS

CAREERS

Industry and Partners

- **Consumer Packaged Goods (CPG)** industry includes everyday consumable goods

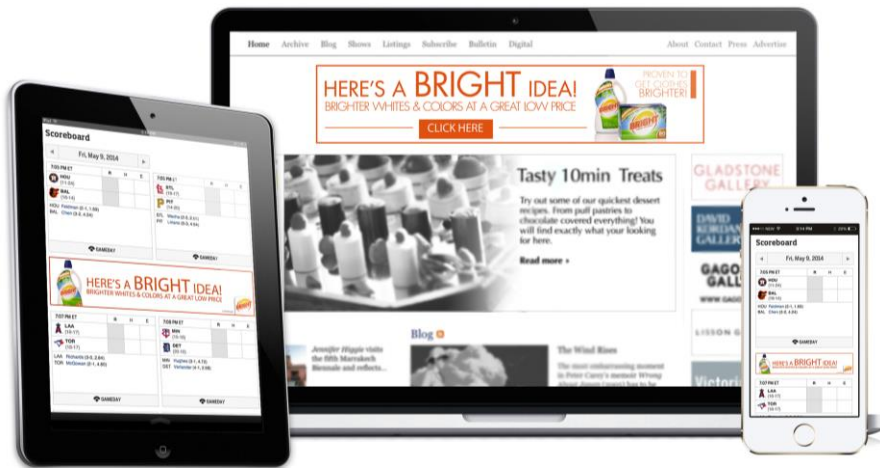


- Some of our retail partners



Company

- Catalina provides personalized digital media (i.e., **data-driven, targeted marketing**)
- You've probably seen our in-store printed coupons



- But we do digital advertising as well

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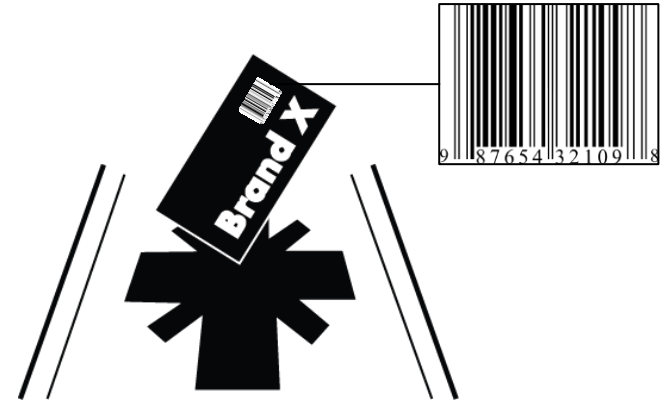
TARGETING

INSIGHTS

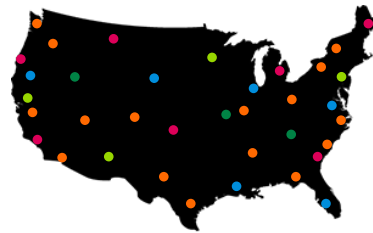
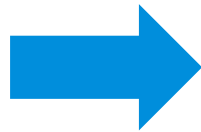
CAREERS

Data Acquisition

- Each retail partner shares transactional data, including every item scanned



80 retailers



~30,000 stores



16.1 billion
transactions/year

Data Acquisition

- Also get unique ID associated with each shopper
 - **Over 260 million** IDs covering **76%** of US households
- 3-year rolling history of purchase behavior...
- ...updated nightly



Data Storage

- Data stored on a Netezza cluster consisting of **864 nodes** and **140 TB** of disk space
- SAS (on a separate server) used to pull/analyze data



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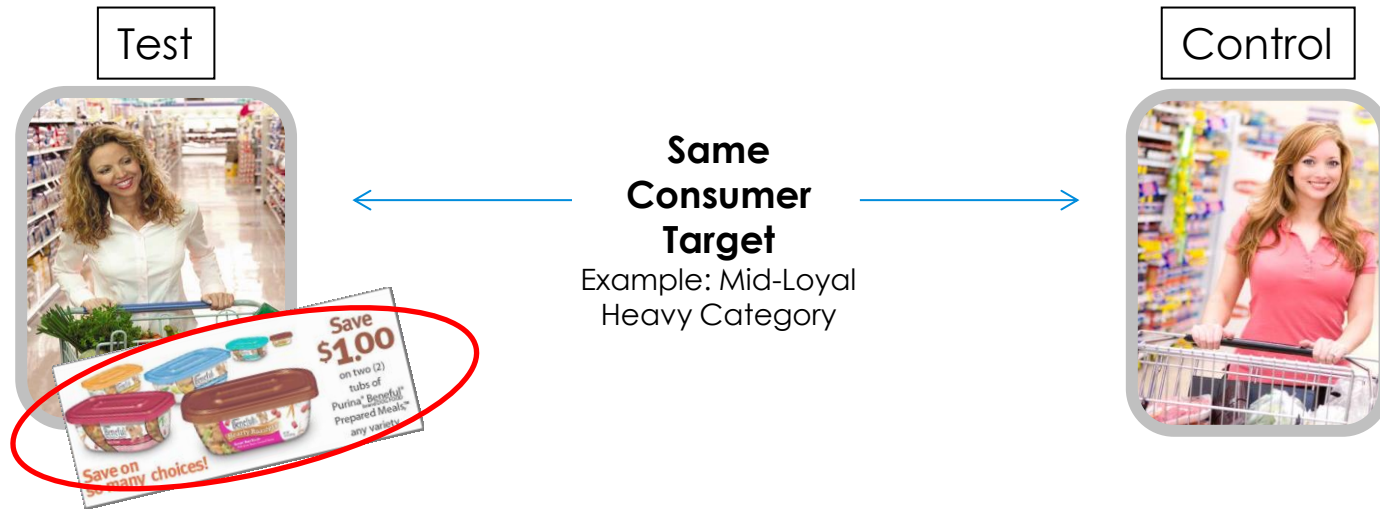
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Campaign Performance

- ID-level data allows for Test vs. Control analysis

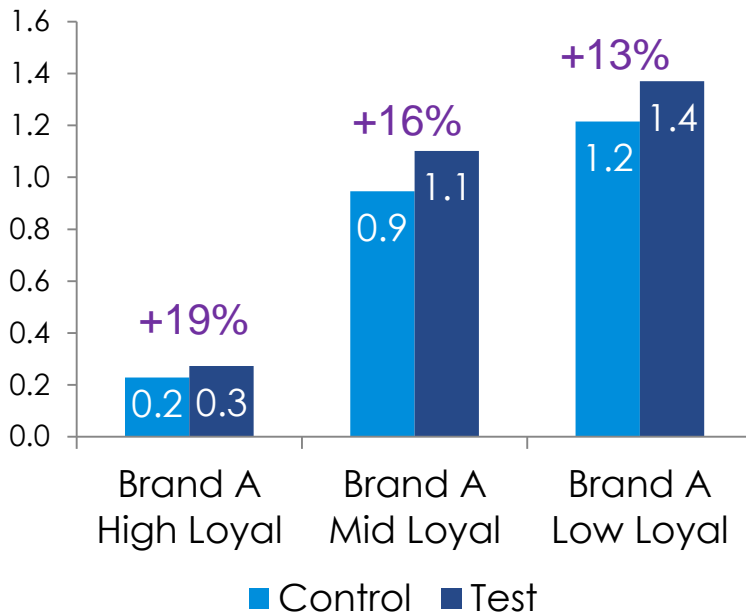


- General linear modeling (GLM)** used to control for differences among shoppers such as pre-period sales and retailer

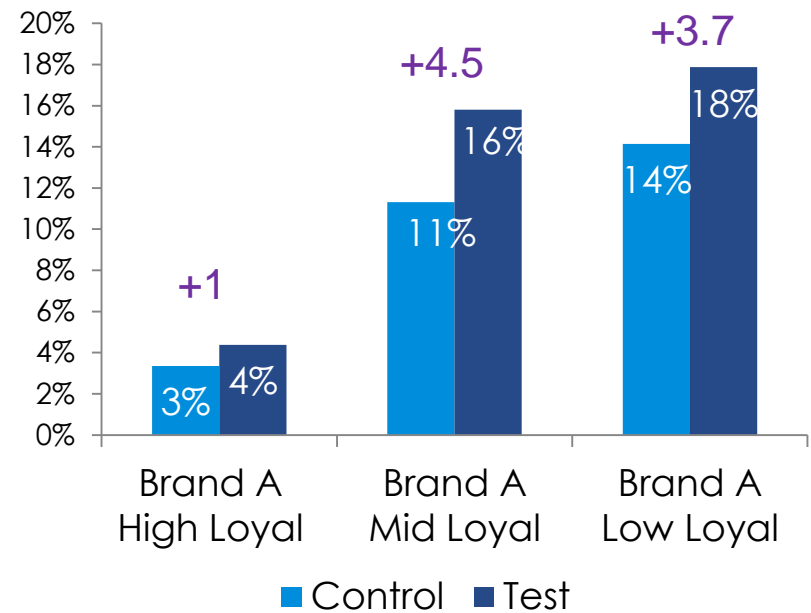
Sample Measurement Results

- Double digit volume increase among all target groups
- Low penetration increase on Brand A High Loyals relative to Mid- and Low-Loyals

Volume Lift Test vs. Control (lbs.)



Penetration Lift Test vs. Control



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Targeting Capabilities

- ID-level data + purchase history allows for very specific targeting

- Why is this important?

- Different offer values
- Different creatives
- Different likelihood of purchasing

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Mid Loyal Shoppers

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High Loyal Shoppers

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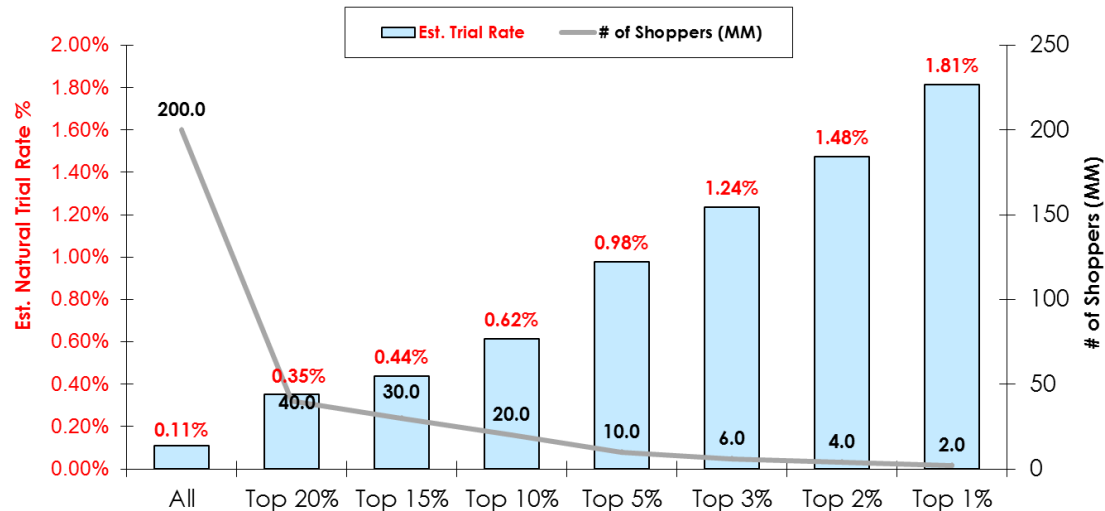
Common Targets

- Often send offers/advertisements to:
 - Loyal shoppers
 - Competitive brand buyers
 - Complementary product buyers
 - Category shoppers
 - Defectors
 - Lapsed buyers
 - Purchased in recent X weeks



Predictive Modeling

- Use **logistic regression** to identify shoppers who are “likely to try” or “likely to defect”
- Model based on
 - 200+ million shoppers
 - 80,000+ brands
 - Several variables per brand: recency, frequency, \$ spend, volume



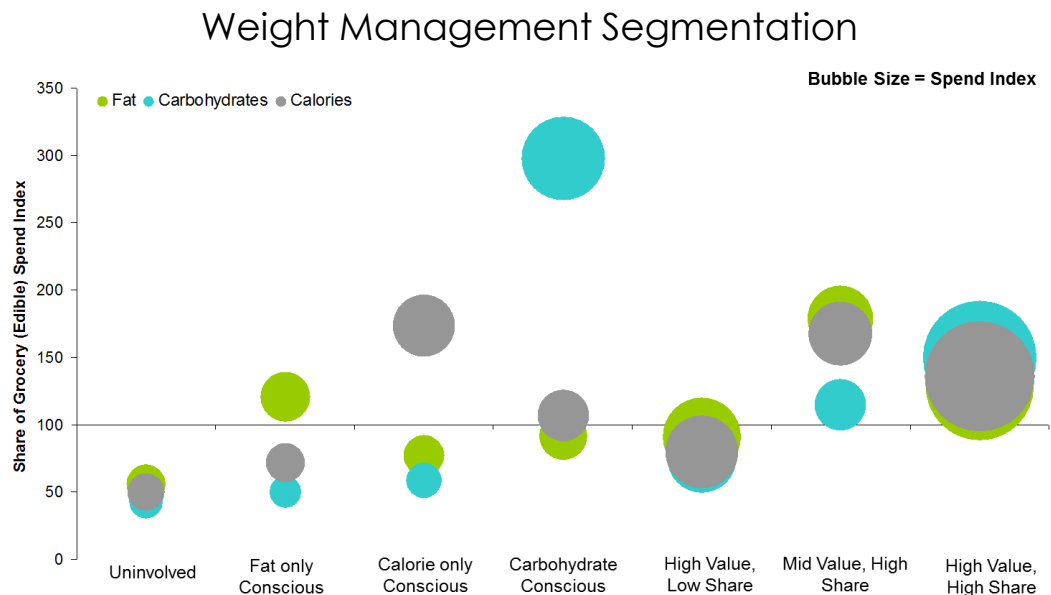
Predictive Modeling

Example: What are the top indicators for a new brand trier?

ATTRIBUTE	CATEGORY/PRODUCT DESCRIPTION	IMPORTANCE
Tenure	CAT 702 (COFFEE - INSTANT & SUBSTITUTES) NESCAFE TASTERS CHOICE	1
Tenure	Folgers (UPC File Brand Group)	2
Tenure	CAT 702 (COFFEE - INSTANT & SUBSTITUTES) PL	3
Date	Last Shopping Date	4
Tenure	CAT 3704 (SOUP - BOUILLON) KNORR	5
Tenure	CAT 917 (TORTILLAS - FRESH) GUERRERO	6
Tenure	CAT 3632 (SOFT DRINK - FLAVORS, INC DIET) FANTA	7
Tenure	CAT 3709 (SOUP - DRY ORIENTAL NOODLE) MARUCHAN INSTANT LUNCH	8
Tenure	CAT 2121 (JUICE - S/S NECTARS ALL SIZES) JUMEX	9
Date	First Date Coupon Used	10
Tenure	CAT 8201 (SERVICE DELI) PL	11
Units	CAT 3108 (SALT - REGULAR & SEASONED) MORTON	12
Trips	CAT 826 (SAUCES - HOT/CAJUN) VALENTINA	13
Recency	CAT 3202 (OIL - COOKING & SALAD) MAZOLA	14
Tenure	CAT 2501 (MILK - CONDENSED) NESTLE LA LECHERA	15
Tenure	CAT 5707 (YOGURT - REFRIG. CHILDREN'S) DANNON DANIMALS SMOOTHIE	16

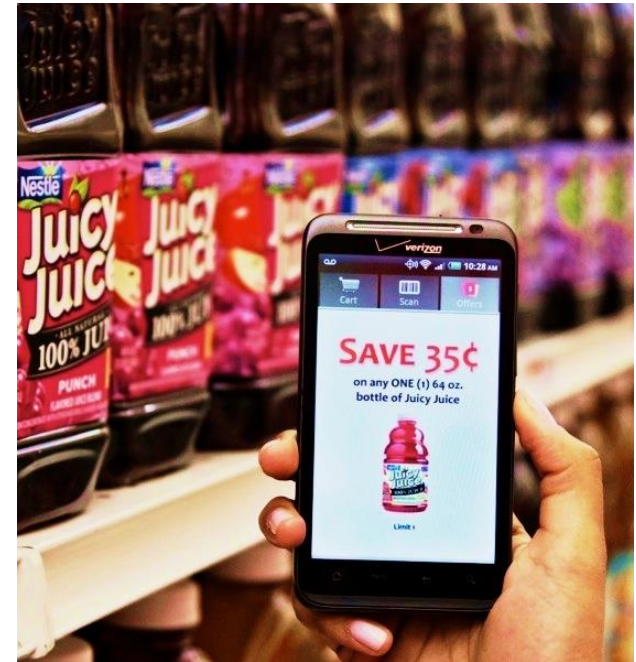
Segmentations

- Built with **cluster analysis** to identify shoppers with similar (and meaningful) purchase behaviors
- Sample segmentations:
 - Weight Management
 - Heart Healthy
 - Organic
 - Gluten Free
 - Wine/Beer Drinkers



In-Store mCommerce

- Mobile self-scan, bag, and go system
 - Available at Stop & Shop (Northeast)
 - Pilot programs at Meijer and Marsh
- Targeting
 - In-store, real-time promotional offers
 - Algorithm-driven auditing system for loss prevention



Mobile Geo Targeting

- Partnered with 4INFO to provide location-based targeting on mobile devices
- Built database using location tags in ad requests + pattern-based analysis



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Shopping Basket Analysis

- What other brands/categories do target shoppers purchase?

Chobani Greek Yogurt

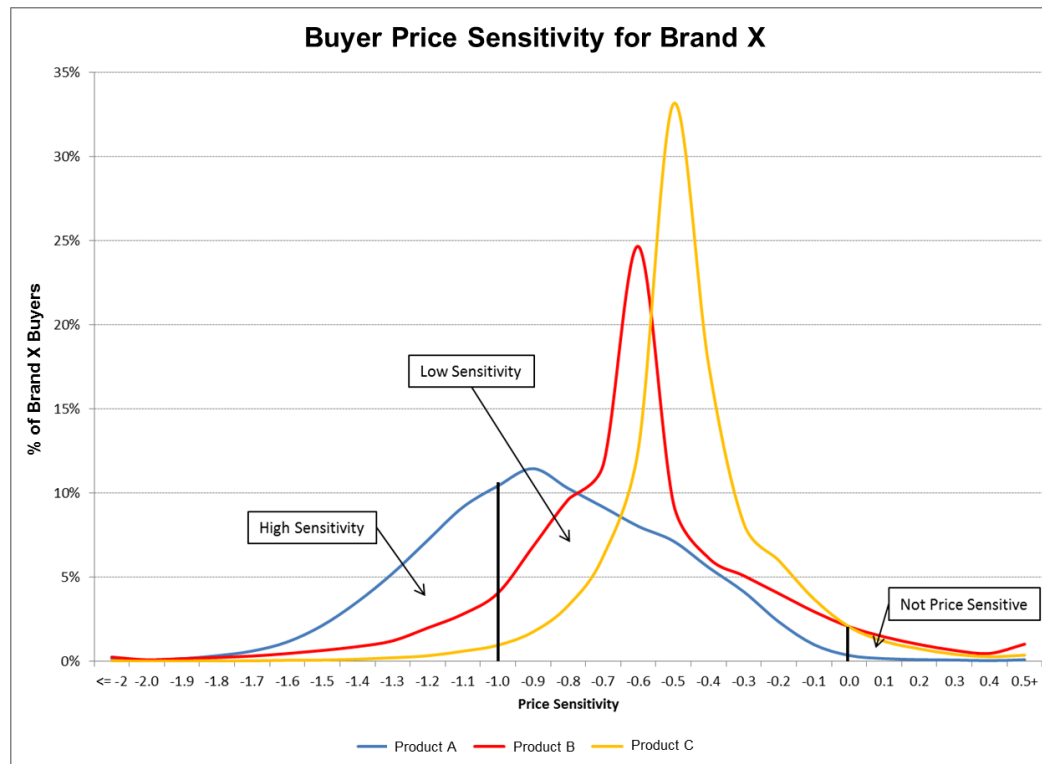
Category	Cross Brand	Index
5710 YOGURT - REFRIG. GREEK	CHOBANI OATS	6,425
5710 YOGURT - REFRIG. GREEK	CHOBANI SIMPLY 100	5,615
5710 YOGURT - REFRIG. GREEK	CHOBANI FLIP	2,571
501 CEREAL - RTE	KIND HEALTHY GRAINS	1,312
501 CEREAL - RTE	KASHI GO LEAN CRUNCH	1,037
501 CEREAL - RTE	CASCADIAN FARM ORGANIC	937
516 BARS - GRANOLA	KASHI	935
5609 CHEESE - COTTAGE	BREAKSTONES	917
2927 RICE MIXES-PREMIUM/GOURMET	NEAR EAST	873
2301 PASTA - DRY	BARILLA PLUS	865

Totino's Pizza Rolls

Category	Cross Brand	Index
5119 FROZEN SNACKS/APPETIZERS-OTHER	TOTINOS BOLD	12,936
5122 FROZEN/REFRIG REGULAR SANDWICH	STATE FAIR	3,939
5119 FROZEN SNACKS/APPETIZERS-OTHER	FOSTER FARMS	3,693
5134 FROZEN SNACKS/APTZERS-PZA&CHS	BAGEL BITES	3,603
5134 FROZEN SNACKS/APTZERS-PZA&CHS	ORE IDA BAGEL BITES	3,281
5133 FROZEN SNACKS/APTZERS-MEXICAN	JOSE OLE	3,255
5134 FROZEN SNACKS/APTZERS-PZA&CHS	FARM RICH	3,171
5133 FROZEN SNACKS/APTZERS-MEXICAN	EL MONTEREY	2,814
5134 FROZEN SNACKS/APTZERS-PZA&CHS	TGI FRIDAYS	2,600
4902 FROZEN POTATOES - BAKED	TGI FRIDAYS	2,465

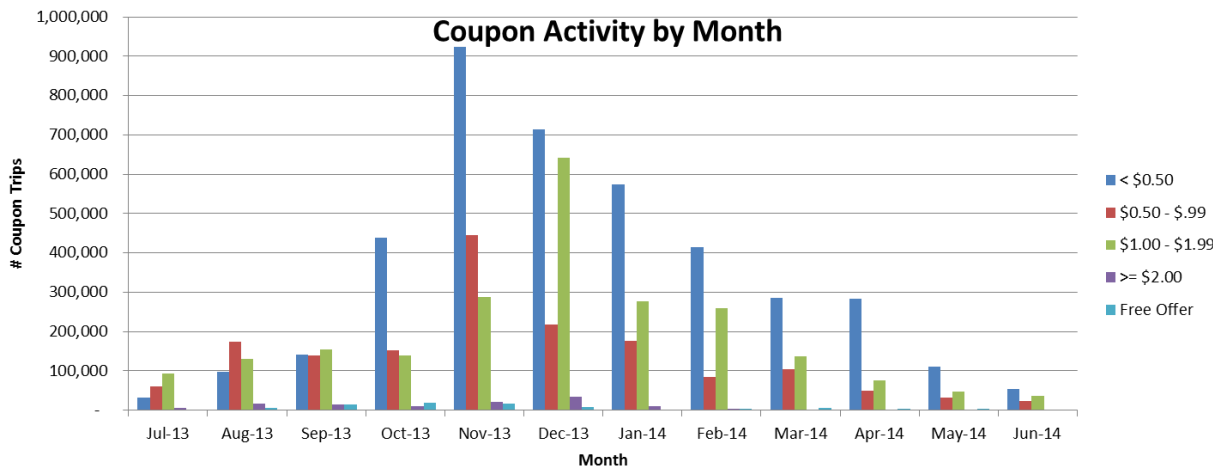
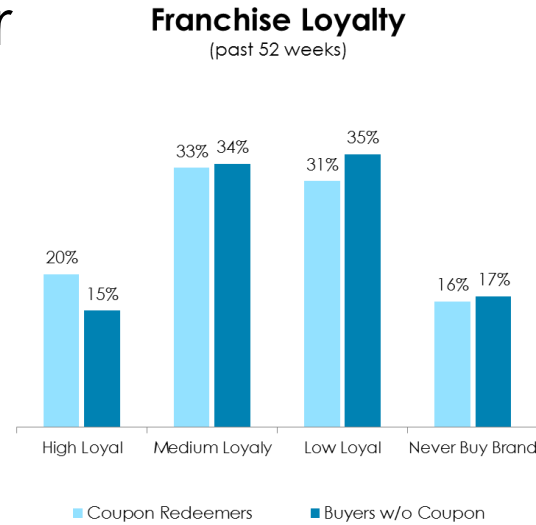
Price Sensitivity

- How much does volume change due to price fluctuations?
- Fit a **linear mixed-effects model** to account for shopper-level random effects



Coupon Usage

- Who redeems our coupons?
- Who redeems our competitors' coupons?



Kroger Great food. Low prices.

"How about these fresh choices and low prices!"

Whole Golden Pineapple Medium **99¢** ea With Card

Michigan Honeycrisp Apples **1.99** lb With Card

Assorted Pork Chops **2.79** lb With Card

USDA Choice Boneless Chuck Roast **3.99** lb With Card

Coca-Cola or 7UP **3\$10** for With Card

Chicken of the Sea Chunk Light Tuna **2\$1** for With Card

Oscar Mayer Lunchables **10\$10** for With Card

So many ways to save!

Kroger Cheese **4\$9** for With Card

Kroger Deluxe Ice Cream or Sherbet **2\$5** for With Card

Arm & Hammer **2.99** With Card

Gatorade or G2 **69¢** ea With Card

DIET COLA **1.98** With Card

Big K **1.98** With Card

When You BUY 10 FINAL COST

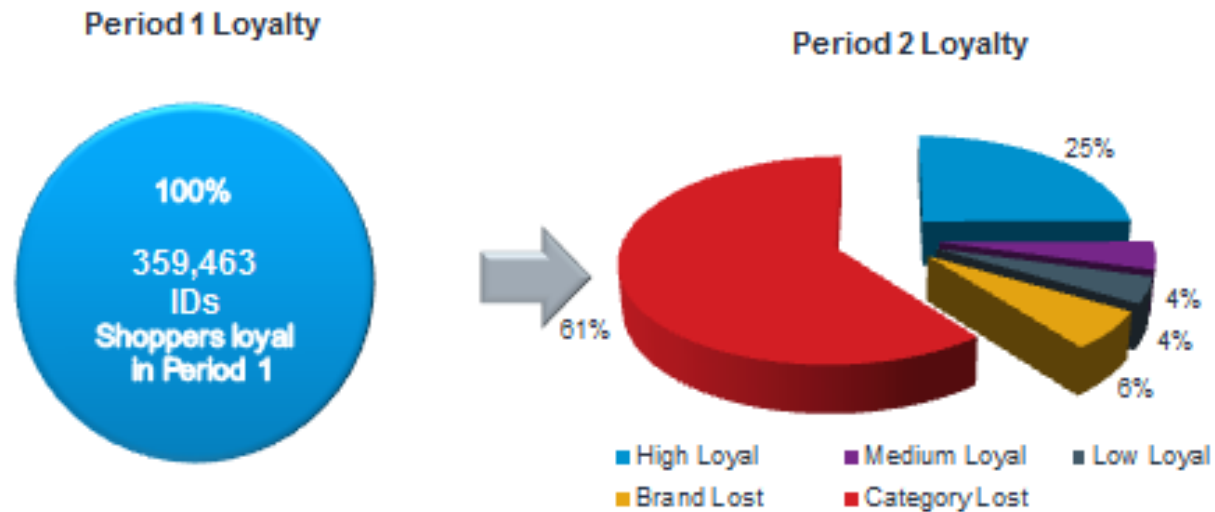
SALE DATE: 7am Thursday, September 25 through midnight Wednesday, October 1, 2014

PHOTOS AND DESIGN BY STEPHEN J. AND JENNIFER M. HARRIS FOR KROGER STORES

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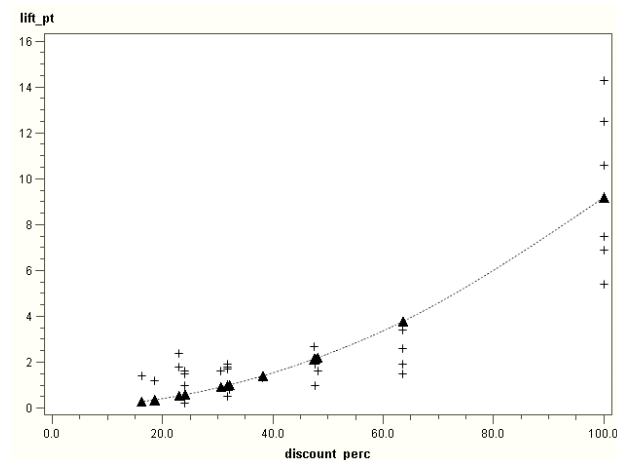
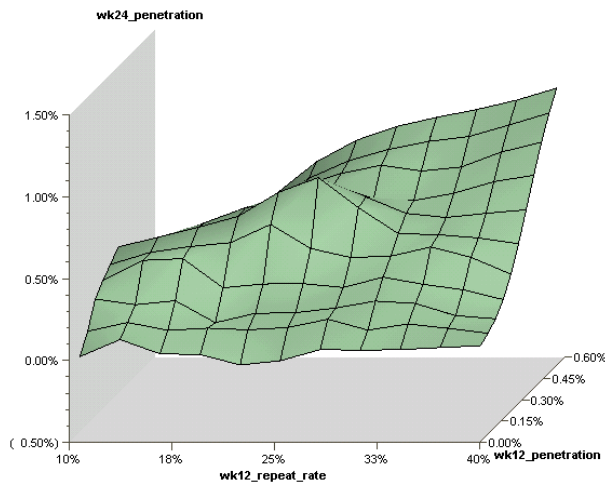
Loyalty Churn

- How many loyal shoppers remain with the brand from year to year?



Other Insights

- Custom insights to answer any questions the client might have:
 - Do consumers tend to trade up or down in package size over time?
 - Can new product performance be predicted?
 - Can volume lift be predicted based on offer value?
 - Do consumers behave differently across retailers?
 - Etc.



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Career Outlook

- Not just a top business trend anymore... now we expect “**advanced, pervasive, and invisible analytics**”*
- Consistent projections of job growth and workforce shortages
- More than just marketing analytics:
 - Sales
 - Accounting
 - Finance
 - Operations
 - Customer Service
 - Research & Development

Key Search Terms

- Analytics/Analyst
- X Analytics (Business, Marketing, Web, Etc.)
- Data Science/Scientist
- Data Mining
- Business Intelligence
- Big Data
- [Predictive] Modeler

*Gartner's Top 10 Strategic Technology Trends for 2015

Key Skillsets

- In addition to **statistical** acumen (for analyzing data), try to gain experience in the following areas
 - **Data architecture**: understand relational databases and how to gather data from several different tables
 - **Programming**: useful for most statistical packages (SAS, R) as well as automating Excel tasks through VBA; also SQL
 - **Data visualizations**: including how to explain them; data must be presented in a client-friendly format
 - **Business processes**: any general business/organizational exposure would help
 - **Teaching/mentoring**: for client-facing roles, this is an important skill for explaining complex concepts and managing the client relationship

A Day in the Life...

8:45 AM	Arrive at work; review materials for day's tasks/meetings
9:30 AM	Leave office for client meeting
10:00 AM	Review competitive product analysis with Brand A
11:00 AM	Regroup with Sales Director A (in the lobby) to prioritize questions posed by the client
11:30 AM	Discuss last-minute marketing campaign changes with Brand B
12:00 PM	Drive back to the office; quick lunch
1:00 PM	Discuss with VP the potential impact (and analysis) of federal nutrition assistance program on Brand C
2:00 PM	Review campaign measurement questions with Sales Director A
2:30 PM	Determine most appropriate parameters for campaign measurement and run statistical models
4:00 PM	Sales Director B shows up with an urgent last-minute strategic question (he's traveling to meet with Brand D the next day); write SAS code to pull appropriate data
5:00 PM	Send campaign results and/or follow-up questions to Sales Director A; run custom SAS code; head home
9:00 PM	SAS code is taking too long to run; logic error discovered; need to re-run

Catalina Opportunities

- Catalina often has opportunities in the Analytics organization
- Search for “analytics” at www.catalinamarketing.com/catalina/careers
- Current openings:
 - **Sr. Analyst, Data Science** (Schaumburg, IL; St. Petersburg, FL)
 - **Manager, Data Science** (Schaumburg, IL)
 - **Manager, Data Mining** (Schaumburg, IL)
 - **Director, Brand Marketing Analytics** (St. Petersburg, FL; Cincinnati, OH)
 - **Sr. Director, Data Science** (St. Petersburg, FL)

THANK YOU!

QUESTIONS?

