Predictive Cross-Sales Targeting

PREDICTIVE ANALYTICS WORLD--SAN FRANCISCO, CA

PRESENTED BY

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Contemporary Analysis

CAN uses data science and predictive analytics to help companies become better at making decisions using their data. We specialize in Manufacturing, Industrial, Agriculture, Mining, and Transportation.
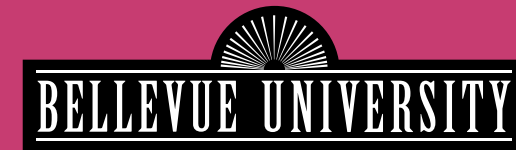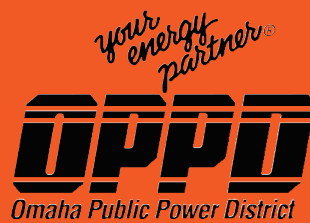
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CAN **Contemporary Analysis**
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Our past clients.

#394 OF FORTUNE 500

Mutual of Omaha

#243 OF FORTUNE 500

Kiewit

TOP 10 ONLINE UNIVERSITY

BELLEVUE UNIVERSITY

12TH LARGEST PUBLIC UTILITY

OPPD
Omaha Public Power District

**BCBS NEBRASKA**

#150 OF FORTUNE 500

CenturyLink

- Metropolitan Community College
- University of Nebraska
- Georgia Regional Transit Authority

- Werner Enterprises
- 37 Signals
- Yamaha

- Catholic Health Systems
- West Corporation
- TS Bank

- Physician's Mutual
- Signal 88
- Lindsay Corporation

- Mutual First Federal Credit Union
- Continuum Worldwide
- Farm Credit Services of America

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your energy partner®

OPPD

Omaha Public Power District
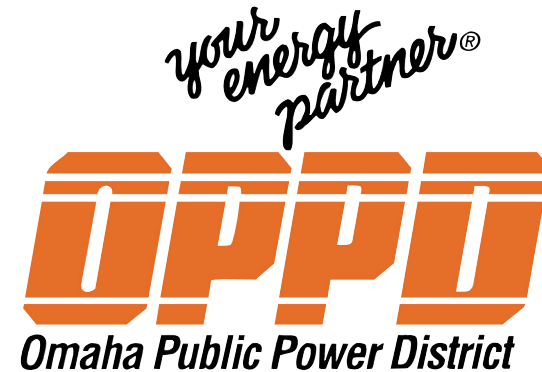
- 12th Largest Public Power Utility
- Generating Capacity: 3,080 MW
- 420 MW in Renewable Energy
  (400+MW of additional Renewable Generation by 2017)
- 15,731 Miles of Electric Line
- Serves 55 towns and cites
- 13 county, 5,000+ square mile service area
- 1B+ in Operating Revenue
- 6 Power Plants, (1 Nuclear Plant)
- 14 Wind Farms

Problem:

- Underutilization of products by their customers

- Inability to focus marketing to specific customers who have a statistical chance of purchase

Solution:

Ran Statistical Significance of all of the data they currently collect:

Location by zip code
Payment types (ebill, Budget pay, level pay)
Landlord Info
Revenue
Product Churn
Energy Usage
Start Date for each type of Service

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Added Data:

Census Data

County Assessor Data

Purchased Demographic Data:

- Home age
- Number of children
- Pet Owner
- Head of Household Gender
- Head of Household has store card
- High Tech

- Likely High Internet User
- Home Equity Estimate
- Likely Heavy Coupon User
- Cooking
- Diet and Weight Loss
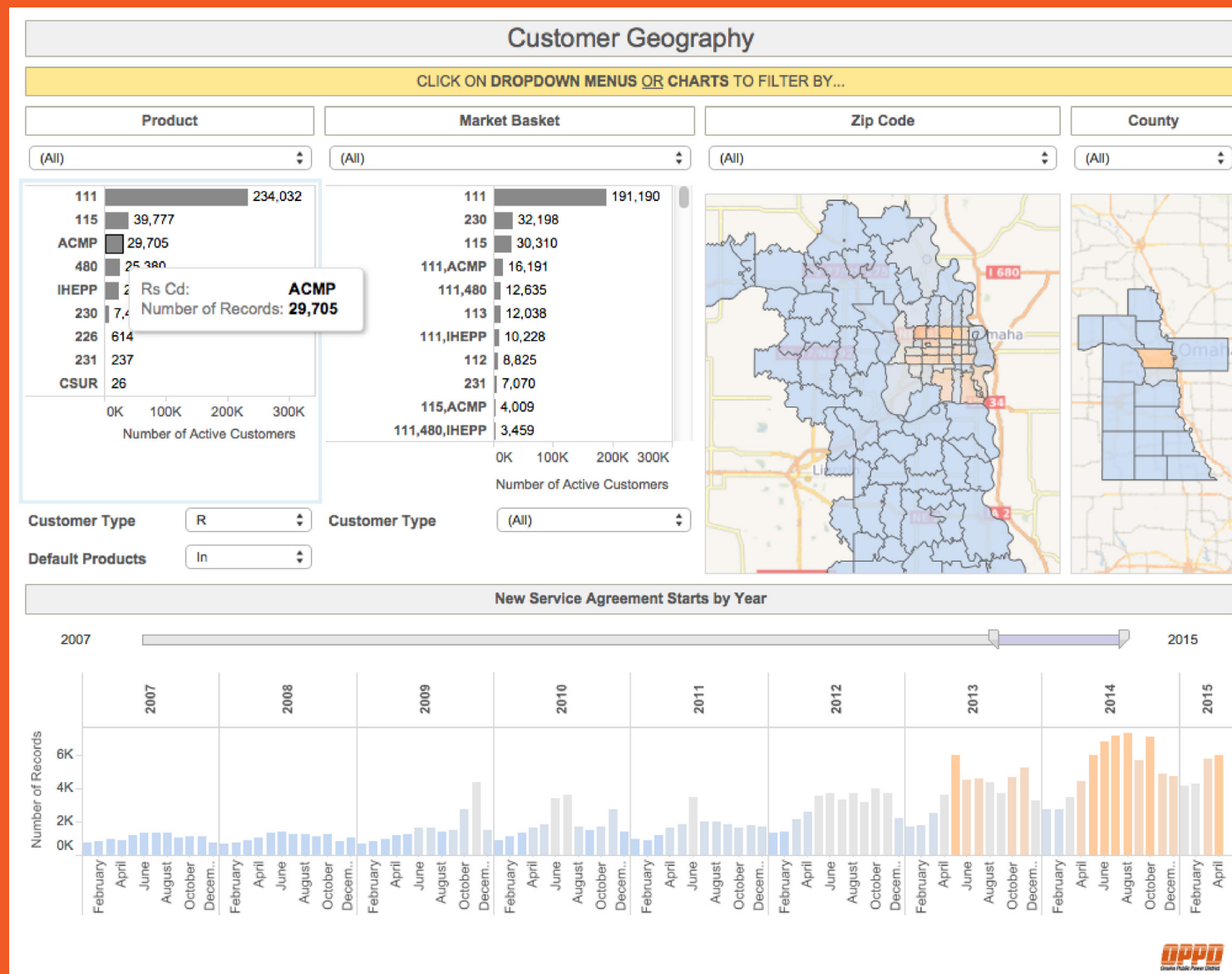- Likely Physical Fit Club Membership

Delivery:

Dashboard in Tableau:

Allowed them to view Customer Data in an easy-to-use framework available to everyone.
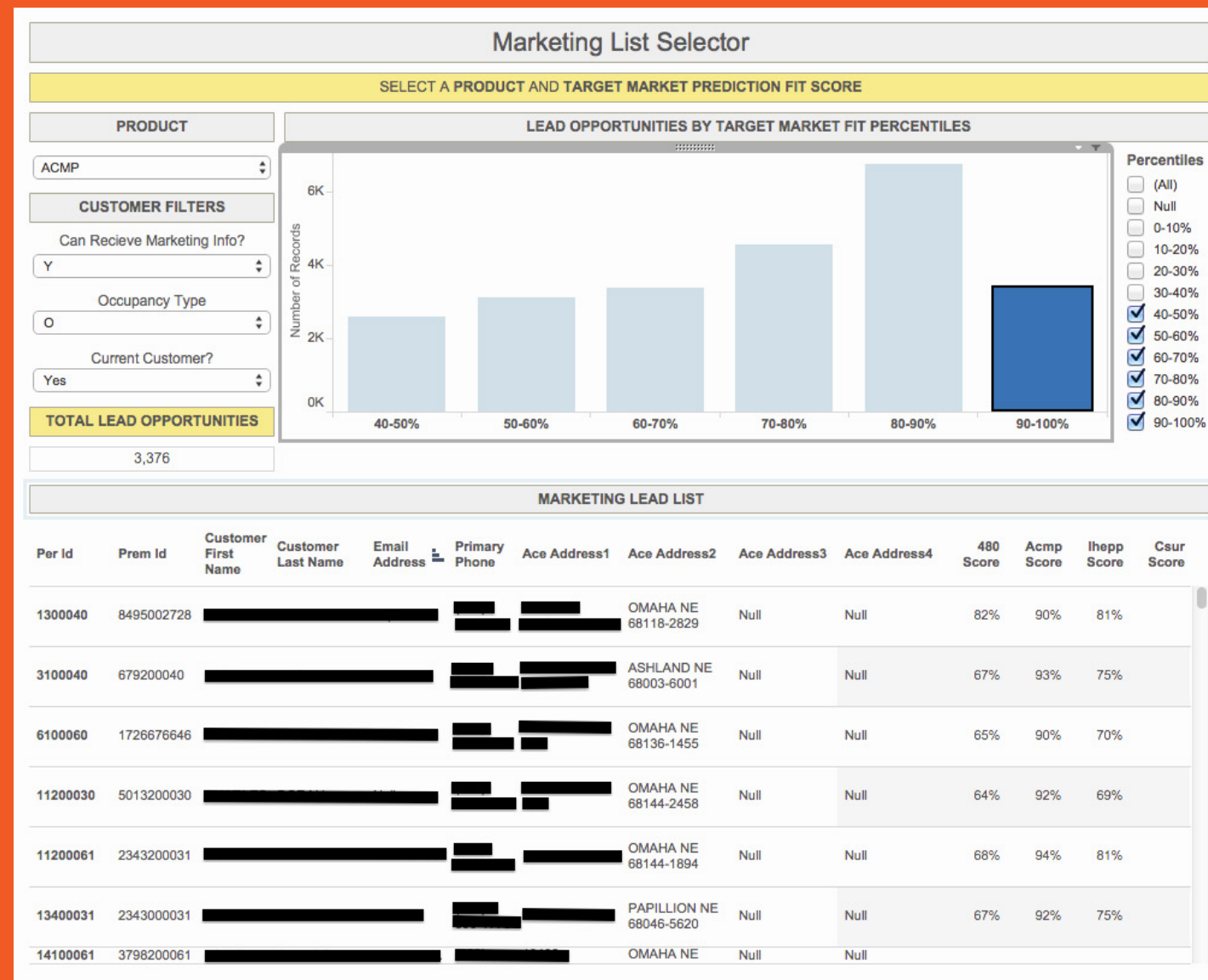
Allowed them to identify potential customers for marketing/sales campaigns by product.

Allowed them to do additional self discovery and self-exploration of data to find other trends.

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Delivery:

![Contemporary Analysis — Work smart. logo]

Delivery:

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How:

1. Data sets were big:

    in .csv, excel wouldn't open.

    had to break into 5 parts.

2. Performed data compression and massive preprocessing

3. Jackknife resampling for missing entries

4. Performed more than a dozen types of regression modeling and robust model testing

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How:

5. Selected the 3 best performing models.

6. Created composite model(Ensemble method).

7. Normalization of data to make it more digestible for client (0-100).

8. Articulated the accuracy of models to client to better understand.

9. Could look cross-product to see which product had highest ranking.

Challenges:

Variation in # of positive consumption.

No indication of rejection.

(who received advertising but didn't act)

2 of the 4 products had large adoption sizes, 2 were not sold well.

We received very little as far as who had been marketed to but not chosen and who had chosen but had never been marketed to.

*Sample balancing using standardized consumption rate

Challenges:

Missing Data.

During preprocessing, we were missing data from many of the variables.

Purchased data came with 300+ columns of data on each individual

Imputed the data when had over 60% of fields filled--Jackknife

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Take Aways:

Purchased Data.

While they had quite a lot of data, it only accounted for the 20% of the model fit. 80% came from the purchased and acquired data.

Data Collection.

We were missing the negative outcomes. (people who would have been marketed to but not purchased). This decreases the ability to see who wouldn't buy regardless of marketing.

Ensemble Methodology.

No one sampling method had great fit, it was only after we combined model methodology that we achieved superior results.

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QUESTIONS OR COMMENTS?

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