POWER OF PREDICTION

Your Behavior is Being Predicted

By…

- Business
- Government
- Non-profit institutions
- Universities
- And more
POWER OF PREDICTION

Simon

• What is it? How does it work?
• Predictive vs. regular analytics
• New trends
• Privacy and compliance Issues

Jay

• Prediction in practice
• Model development, test structure, attribution
POWER OF PREDICTION

What is Predictive Analytics?

Some say…
• Black Swan Theory – futile, inherent unpredictability

For our use…
• Forward looking
• Using past events to anticipate the future
• Learn from data to make predictions about what each individual will do
POWER OF PREDICTION

Creating a Predictive Model

Data from Yesterday → Modeling Process → Predictive Model

Using *yesterday* to predict *today*...
POWER OF PREDICTION

Applying Model to Give Each a Score

Data from Today ➞ Predictive Models ➞ Prediction

Using today to predict tomorrow…
1. Be better than guess work, directional
2. A little prediction can go a long way, tipping the balance
3. Attain the knowledge to predict and the power to act
POWER OF PREDICTION

Five Stages of Analytic Maturity

1. Reporting: What happened?
2. Monitor: Happening now?
3. Analysis: Why did it happen?
4. Prediction: Might happen?
5. Optimization: Should happen?

Predictive analytics is inductive – pull out meaningful relationships and patterns
POWER OF PREDICTION

Examples

• FICO Credit Score
• Who’s getting married in the next 3 years?
• 95% of relationships can be predicted by analyzing as few as 10 characteristics per profile

• Members on Twitter have shorter relationships (messages allow only up to 140 characters)

• Republicans more willing to connect with Democrats than the reverse
Big data helps business leaders make decisions more accurately, objectively, and economically.
POWER OF PREDICTION

Why are analytics becoming more prevalent?

• More operational data is being created and captured because of the use of technology

• More unstructured data is being captured and stored (web transactions, social media data)

• Computing power is up and cost is down significantly
**POWER OF PREDICTION**

**NETFLIX**

- **Business Objective:**
  Improve Netflix's ability to predict what movies users would like by 10%.

- **Action:**
  Analyze customer buying patterns to create a recommendation optimizing tastes and inventory condition.

- **Result:**
  Grew from $5 million revenue in 1999 to $3.2 billion revenue in 2011 as a result of becoming an analytics competitor.
Best Buy
7% of its customers accounted for 43% of its sales
Reorganized to concentrate on those customers’ needs

American Express
People with large bills that register a new address in Florida
Greater likelihood to declare bankruptcy

Internal Revenue Service
Walks through its gigabytes of data on taxpayers
Find and ferret out cheaters

NBA
Analyzes the movements of players
Help coaches orchestrate plays and strategies
POWER OF PREDICTION

Target

• Mailed coupons using data analytics
• Predicted motherhood
• Reach them as early as possible

Privacy?
Retail Store Parallels to Credit Unions

• What services are your members using?
• How are they accessing your services? online, branch, ATM?
• What branches are they visiting and when?
• Where are they shopping?
POWER OF PREDICTION

Predictive Modeling for Credit Unions

• Marketing and Acquisition
• Risk Management (FICO)
• Credit Cards
• Customer Retention
• Fraud Detection
• Next Best Contact
• Branch Placement
POWER OF PREDICTION

Building and Deploying Analytics

• Data is your core asset
• Gives you insights to improve your business
• Discover business rules that will give you insight and are decisionable
• Build predictive analytics to automate these decisions
# POWER OF PREDICTION

## New Trends of Predictive Analytics

<table>
<thead>
<tr>
<th>From Traditional Marketing Risk to...</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crime and Punishment</td>
<td>Human Resources</td>
</tr>
<tr>
<td>Political Elections</td>
<td>Life Insurance</td>
</tr>
<tr>
<td>Healthcare</td>
<td>National Security</td>
</tr>
<tr>
<td>Marriage</td>
<td>and more…</td>
</tr>
</tbody>
</table>
POWER OF PREDICTION

Dangers in Analytics

• Privacy and Civil Liberty Concerns
• Security
• Using only data that supports our gut decisions

“With great power comes great responsibility”

DEPLOY RESPONSIBLY
POWER OF PREDICTION
IN PRACTICE
Leverage three areas of data content to evaluate needs, preferences, opportunities.

Determine probability of success by media and channel.

Segmentation develops clear picture target, for each relevant message and positioning.

Used to assign right message, right channel, at the right time.

Message/creative designed to be highly responsive to target audience.

Evaluate results and adjust findings for future opportunities.

Analysis at an aggregate level and in more detail. (contact history, model prediction, demographics)
POWER OF PREDICTION

Predictive Models in Practice

Mailing Members

• Random selection process—mailing top 40% of your member file, expect to yield 40% of total responses

• With predictive model—mailing 40% yields 65% of total responses
POWER OF PREDICTION

Predictive Models in Practice

Addressable Advertising

• Targeting IP addresses for web advertisements
POWER OF PREDICTION

Predictive Models in Practice
Determining Staff Needs for Call Center

- Response Volume
- Weekly Call Volume
- Daily Call Volume
- Hourly Call Volume

STAFF NEEDS
Predictive Models in Practice
Outbound Potential Leads

- More efficient lead contact strategy
- Score and prioritize contacts
- Invest in those most likely to respond; take out those least likely to respond
POWER OF PREDICTION

Directing Your Dollars
Where to attribute the success?

Last Interaction – last touch point would receive 100% credit

First Interaction – first touch point would receive 100% credit

Linear – each touch point in the conversion path would receive equal credit

Time Decay – the more recent the touch point the more credit received

Position Based – the first and the last touch point receive more credit
Questions & Discussion

Simon Gao
Vice President,
Consumer Analytics
CUNA Mutual Group

Jay Nadboralski
Senior Manager,
Consumer Analytics
CUNA Mutual Group
Thank You!

Simon Gao
Vice President, Consumer Analytics
CUNA Mutual Group
608-665-4572
Simon.Gao@cunamutual.com

Jay Nadboralski
Sr. Manager, Consumer Analytics
CUNA Mutual Group
608-665-7459
Jay.Nadboralski@cunamutual.com