Predictive Modeling for Organizational Effectiveness

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Laurent de Janvry
UC Berkeley - University Relations

Presentation Prepared by Sarah Baker
Director, Prospect Development
University of California, Berkeley
Definitions

- Data mining: provides basic insights into a population’s general characteristics and behavior

- Predictive modeling: provides a systematic way to score constituents according to the likelihood of a desired behavior
Define your business needs

- Do you want to increase participation rates?
- Do you want to increase return on investment?
- Do you want to prioritize prospect visits?
- Do you want to target your alumni relations programs more effectively?
- Do you want to market your Planned Giving program to a more responsive audience?
- Then - do you have the data to answer these questions?
Predictive models

- Predicting response (yes/no)
- Predicting inclination
- Predicting level of gift
- Predicting retention
- Predicting gift upgrades
- Predicting event attendance
- Predicting message preference
Annual Fund/Response model

- Business need:
  Increase ROI for direct marketing

- Analyzed a random sample of 10,000 donors to Cal Fund (our annual fund) in previous fiscal year

- Determined variables that predict giving to Cal Fund
Annual Fund/Response model

• +3 for alumni who are lifetime members of the California Alumni Association
• +2 for alumni with both undergraduate & graduate degrees from Cal
• +2 for alumni with Cal activities listed
• +2 for alumni with Cal children
• +2 for alumni with Cal spouse
• +2 for alumni with current annual membership of California Alumni Assoc.
• +2 for alumni who have given to campus, excluding Cal Fund (annual giving fund)
• +1 for alumni with lapsed membership of the California Alumni Association
• +1 for alumni with undergrad degree only
• +1 for alumni with bus. phone in database
• +1 for alumni with an e-mail in database
• +1 for alumni with Mrs. stated as a prefix
• +1 for alumni with Dr. stated as a prefix
• +1 for alumni with an interest listed in db
• +1 for alumni in San Mateo & Santa Clara
• +1 for alumni from Col. of Letters & Science
• +1 for alumni with marital status married
• +1 for alumni with marital status divorced
• +1 for alumni with marital status widowed
• +1 for alumni with Cal parents
Annual Fund model-results

Revenue FYTD

<table>
<thead>
<tr>
<th>FY01YTD</th>
<th>FY02YTD</th>
<th>FY03YTD</th>
<th>FY04YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>$706,195</td>
<td>$574,707</td>
<td>$687,642</td>
<td>$759,450</td>
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</tbody>
</table>

Average Gift

<table>
<thead>
<tr>
<th>FY01YTD</th>
<th>FY02YTD</th>
<th>FY03YTD</th>
<th>FY04YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>$157</td>
<td>$166</td>
<td>$207</td>
<td>$235</td>
</tr>
</tbody>
</table>
Annual Fund model-results

Response Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY01YTD</td>
<td>2.0%</td>
</tr>
<tr>
<td>FY02YTD</td>
<td>1.8%</td>
</tr>
<tr>
<td>FY03YTD</td>
<td>2.0%</td>
</tr>
<tr>
<td>FY04YTD</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Net Return on Investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Return on Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY01YTD</td>
<td>$2.30</td>
</tr>
<tr>
<td>FY02YTD</td>
<td>$1.72</td>
</tr>
<tr>
<td>FY03YTD</td>
<td>$1.73</td>
</tr>
<tr>
<td>FY04YTD</td>
<td>$5.59</td>
</tr>
</tbody>
</table>
Annual Fund model-results

- After first application of model:
  - ✓ Revenue increased
  - ✓ Average gift increased
  - ✓ Response rate and ROI stayed the same

- BUT
  - ✗ Number of donors decreased

- AND
  - ✗ Acquisition of young alumni donors reduced
### Annual/Cal Fund strategy

#### Class Reunion Cycle

<table>
<thead>
<tr>
<th></th>
<th>1\textsuperscript{st} Year</th>
<th>2\textsuperscript{nd} Year</th>
<th>3\textsuperscript{rd} Year</th>
<th>4\textsuperscript{th} Year</th>
<th>Reunion Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donors to Cal Fund</td>
<td>Cal Fund mailing</td>
<td>Cal Fund mailing</td>
<td>Cal Fund mailing</td>
<td>Cal Fund mailing</td>
<td>Cal Fund mailing</td>
</tr>
<tr>
<td>Selected non-donors to Cal Fund (with high score)</td>
<td>Increased frequency of Cal Fund mailing</td>
<td>Increased frequency of Cal Fund mailing</td>
<td>Increased frequency of Cal Fund mailing</td>
<td>Increased frequency of Cal Fund mailing</td>
<td>Increased frequency of Cal Fund mailing</td>
</tr>
<tr>
<td>Other non-donors (with low score)</td>
<td>No Cal Fund mailing</td>
<td>No Cal Fund mailing</td>
<td>No Cal Fund mailing</td>
<td>No Cal Fund mailing</td>
<td>Increased frequency of Cal Fund mailing</td>
</tr>
</tbody>
</table>

- Donors to Cal Fund continue to receive regular mailings
- Selected non-donors (based on higher score) receive increased frequency of mailings
- Other non-donors (with lower score) only receive mailings in reunion year, but increased frequency - negative ROI
- New program for young alumni - negative ROI in short term
Major Gift/Inclination model

- Business need:
  Prioritize major gift work to maximize ROI

- Also: rank unqualified prospects
  - Prospecting
  - Cold call lists
  - Database screenings
Major Gift/Inclination model

- 2662 $50K+ donors
- 10,000 random sample – donors < $50K (5,140) and non-donors (4,860)
- 242 data points downloaded from donor database (for prospect and spouse)
- Split into Test and Control samples
- Used statistical package (Data Desk) to analyze variables that predict major giving
Variables

- Created 1/0 variable “$50K donor” - each prospect is either a $50K donor (yes/1) or not (no/0)
- “$50K donor” variable is dependent variable - what we are trying to predict
- Created 1/0 variable “10+ gifts” - independent variable - as variable changes, so does level of giving
Major Gift Top predictors

- Prospect has given 10 or more gifts
- Prospect or spouse has at least one contact recorded in database
- Prospect or spouse has attended at least one event
- Prospect or spouse has been rated
- Prospect or spouse's first gift amount was greater than $100
- Prospect's employer is listed in database
- Prospect's business zip code is listed in database
- Prospect's business telephone is listed in database
- Prospect or spouse has at least one affiliation listed in database
- Prospect is aged 50 years or more
- Spouse's birth date is listed in database
- Prospect made their first gift to Cal 25 years or more ago, or their spouse made their first gift to Cal five or more years ago
- Prospect is/was a member of a campaign committee or volunteer
Testing the Major Gift model

- Cold call testing
  - responsiveness to call
  - visits scheduled
  - outcome of visit
- Mail/phone survey
- High level annual fund ask
- New donor gifts
- Major gifts received
Major gift test-on large sample

96.5% of donors of $50K or more, in random sample of 50,000, have a score of 14+

Quartiles: divide sample so that each quartile has 25% of total population

$50K+ donors by Score Quartile for random sample of 50,000 donors

Median Gift by Score Quartile for random sample of 50,000 donors
Major gift test-on annual fund

Average gift to Cal Fund by Major Gift Score for sample of 32,000 solicited

- All donors: $261
- Score 0-17: $121
- Score 18+: $357

Average gift to Cal Fund 2000-01: $239
Average gift to Cal Fund 2001-02: $386
Major Gift model-live testing

- Parallel testing:
  - Class reunion campaign program
  - Special gift annual giving program ($10K/year)
  - Business School major gift group
  - East Coast regional major gift group
  - College of Letters & Science major gift group
Class Reunion Campaign

- In-house strategies for selecting “top” prospects
- Combined with prospects selected according to major gift score
- Includes prospects with high & low scores
- Invited to kick-off events
- Follow-up personal visits by class reunion staff
Class Reunion kick-off event

Percentage of Class Reunion alumni accepting kick-off event invitation by Major Gift Score
Special Gifts Annual Giving

- 5,000 prospects based on major gift score (high score only)
- Used in conjunction with rating
- Selection based on other criteria - gift & contact history, event attendance, etc
- Targeted for higher level of annual giving ($10K/annum)
- Lists to be reviewed over the summer for Fall mailing
## Major gift testing

- **Business School major gift group**
- **Prospect lists for cold calls**
- **Blind test - high & low scored prospects**
- **Fundraiser to complete simple survey**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>Contacted?</th>
<th>If yes, indicate interest level:</th>
<th>Did meeting occur?</th>
<th>If yes, indicate result:</th>
<th>Is this a Major Gift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect 1</td>
<td>Y</td>
<td>Interested</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Prospect 2</td>
<td>Y</td>
<td>Interested</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Prospect 3</td>
<td>Y</td>
<td>Interested</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Prospect 4</td>
<td>Y</td>
<td>Interested</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Interest level:**
- "Interested" - Interested in meeting.
- "Not now" - Interested in meeting but not now.
- "No interest" - No interest in meeting.

**Sample results:**
- "Positive" or "negative"
- "Further cultivation required"
- "Potential volunteer"
Major gift testing

- East Coast regional major gift group
- Results will be available more quickly

- College of Letters & Sci. major gift group
- Not blind test - explain model in simple terms with impressive graphs & diagrams
## Major gift testing - results

<table>
<thead>
<tr>
<th>Interest Level</th>
<th>High Score (49-82)</th>
<th>Medium Score (30-48)</th>
<th>Low Score (0-29)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of prospects interested</strong></td>
<td>23</td>
<td>11</td>
<td>17</td>
<td>51</td>
</tr>
<tr>
<td><strong>Number of prospects interested but not now</strong></td>
<td>20</td>
<td>18</td>
<td>18</td>
<td>56</td>
</tr>
<tr>
<td><strong>Number of prospects with no interest</strong></td>
<td>10</td>
<td>23</td>
<td>17</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>53</td>
<td>52</td>
<td>52</td>
<td>157 contacts</td>
</tr>
</tbody>
</table>
Models for the future

- Retention model
- Upgrade model
- Acquisition model – young alumni, major donors
- Alumni relations activities model
- Events model
- Generational profiling model
- Saturation model
- Telemarketing model
- Planned Giving model
- Stewardship model
Predictive Modeling for Organizational Effectiveness

- Modeling enables you to target/prioritize specific populations, thus reduce costs & increase efficiency and ROI.
- Modeling can be done by small or large shops, higher ed. or other non-profits.
- As long as you have some data you can analyze it and draw conclusions.