Data Driven Development

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SUNGARD HIGHER EDUCATION

A Community of Learning

Introduction

- Utilize your alumni data to statistically determine which traits indicate a likely donor

- and -

- Incorporate basic principles of statistical analysis and predictive modeling

- to -

- Uncover new prospects that traditional approaches may overlook.

- and -

- Apply the results to improve returns with wisely targeted investments.

Agenda Slide

- Data Acquisition and Cleanup (~10 min)
- Data Analysis (~15 min)
- Predictive Modeling (~10 min)
- Adoption Strategy (~5 min)
- Questions (~15 min)

Data Acquisition & Cleanup

It is a capital mistake to theorize before one has data.
-- Sherlock Holmes

Data Acquisition (In-house)

- **Telethons**
  - Have callers confirm contact information such as e-mail address, mailing address, etc. Ask for family updates.
- **Calling Officers**
  - Encourage calling officers to submit call reports and business cards received to confirm current information.
- **Electronic Communications**
  - Always provide a link to update information in header or footer.
  - Send periodic “data audits” out to constituents asking them to review and update any outdated information
- **Postcard Campaign**
  - Remind constituents of the benefits to maintaining updated e-mail and mailing addresses frequently

Data Acquisition (In-house) II

- **Behavioral Data**
  - Track user behavior for the following:
    - E-mail open
    - Link click-through
    - Action response
    - Frequency of above

- **Event Attendance Data**
  - Code event registrants for alumni gatherings, Homecoming, reunion weekends, networking events, etc.

Data Cleanup (In-house)

- **Returned Print Mail**
  - Postage sent first class will be returned to sender
    - Will alert you to a potentially “lost” alumni for research
- **Returned E-mail**
  - E-mails returned as undeliverable can be queried against your distribution list for identification
    - Purge invalid address from the database
    - Send print mail postcard to constituent, asking for updated address
- **Post “Lost Alumni” lists**
  - Leverage your alumni base to locate “lost” alumni via reunion class, student activity affiliation, etc.

Data Cleanup (Outsourced)

- Facebook.com
- Harris Connect
- AlumniFinder.com

- CASS
- NCOA

Questions?

“There are these four ways of answering questions.

Which four?

#1. There are questions that should be answered categorically [straightforwardly yes, no, this, that].”

-- Buddha

Data Analysis

Intuition becomes increasingly valuable in the new information society precisely because there is so much data.

-- John Naisbitt

Course of Attack

- **Action: Statistically analyze alumni characteristics (input variables) to determine which are strong or weak and are positively or negatively correlated to giving/action (output variable).**
  - **Analyze at least 10,000 constituents**
- **Methodology: Create a predictive formula using strong positive and negative input variables that produces a raw score for each of your constituents.**
  - **Example: Variable1 + V2 + V3 + V4 – V5 +1 = Score**
- **Goal: Use resulting score to find new, high-scoring donors who have the most characteristics similar to high-value current donors.**

Tools of the Trade

- **Software: Data Desk Academic by Data Description Inc.**
  - **Cost: $430 per copy**
  - **Statistical Program to analyze your data file**

- **Data: Delimited Data File from your database**
  - **Each row represents a unique constituent and their data**
  - **Each column contains data about your constituents (name, class, birth date, etc) as a unique input or output variable**
  - **File should contain at least 10,000 solicitable constituents**

Working with Potential Input Variables

- Extract any type of data that you may suspect to be useful into a delimited file including:
  - Family Information
    - Spouse, Children, Legacy Status
  - Address Information
    - Residential, Business, Seasonal, Foreign
  - Contact Information
    - Cell, Fax, Pager, Home, Business, E-mail
  - Alumni Activities
    - Event Attendance, Volunteer Status, Survey Response, Participation, Readership, E-mail Click-Through
  - Student Life
    - Study Abroad, Degrees, Scholarship, Activities/Groups, Major/Minor, Greek, Honors
- This is not an exact science. It takes exploration!

Include Output Variable(s)

- Extract giving information, usually as Lifetime Giving
- May want to include other optional output variables:
  - Dollars given, past five years
  - Number fiscal years given
  - Number of gifts made, past five years
  - Gift last year?
  - Gift two years ago?
- Why is Giving an output variable?

Beginning your Analysis

- Convert null values to zeroes
  - Every cell in your data file now has data!
- "Coarsen" your input variables
  - Convert to Boolean (1/0)
    - If there's data then "1" else "0"
  - Convert to ~3-4 "Chunks"
    - Number of Degrees, Events Attended, Surveys Returned, Children, etc.
    - Assign chunks numeric values 0, 1, 2, etc.*
- Look for strong positive and strong negative correlation to your output variables
  - The "Wow" factor

Beginning your Analysis

- **Analyze using simple, effective methods**
  - **Summary Report by Group**
    - **Compare multiple input values to relative output**

Greek vs. Lifetime Giving	Count	Tot. Giving	Avg. Giving
Non-Greek	5,022	$668,020	$133.02
Greek	4,814	$882,108	$183.24

  - **Contingency Table**
    - **Compare multiple input values to multiple output ranges**
    - **More granular idea of "what's going on"**

Greek vs. Giving by Level	Count	$0	$1-99	$100+
Non-Greek	5,022	3,872	567	583
Greek	4,814	3,076	808	930

Analyze for Positive Boolean Variables

- Input Variable: Marital Status, Output Variable: Lifetime Giving
- Summary Report by Group

Group	Count	Avg. Lifetime Giving
Single	7,370	$62.82
Non-single	2,466	$440.85 (~725%)

- Contingency Table

Group	Count	$0	$1-99	$100+
Single	7,370	5,783	902	685
% of group		78%	12%	9%
Non-single	2,466	1,165	473	828
% of group		47%	19%	34%

Analyze for Negative Boolean Variables

- Input: Alumni Degree-holding Status, Output: Lifetime Giving
- Summary Report by Group

Group	Count	Avg. Lifetime Giving
Alumni	8,973	$170.10
Non-degree holding Alumni	863	$27.61 (~15%)

- Contingency Table

Group	Count	$0	$1-99	$100+
Alumni	8,973	6,127	1,352	1,494
% of group		68%	15%	17%
Non-degree holding Alumni	863	821	23	19
% of group		95%	3%	2%

Another Positive Boolean Variable

- Input Variable: Job Title exists, Output: Lifetime Giving
- Summary Report by Group

Group	Count	Avg. Lifetime Giving
Job Title exists	5,174	$216.86 (~236%)
No Job Title	4,662	$91.82

- Contingency Table

Group	Count	$0	$1-99	$100+
No Job Title	4,662	3,909	426	327
% of group		83%	9%	7%
Job Title exists	5,174	3,039	949	1,186
% of group		59%	18%	23%

Another Negative Boolean Variable

- Input Variable: Age 20-24, Output: Lifetime Giving
- Summary Report by Group

Group	Count	Avg. Lifetime Giving
20-24	3,728	$30.45
24+	6,108	$235.19 (~771%)

- Contingency Table

Group	Count	$0	$1-99	$100+
24+	6,108	3,822	951	1335
% of group		63%	16%	22%
20-24	3,728	3,126	424	178
% of group		84%	11%	5%

“Chunk” Variables

- Input Variable: Alumni Service Codes, Output: Lifetime Giving

Group	Count	Average Lifetime Giving
No codes	8,457	117.25
1-3 codes	975	371.24 (~317%)
4-6 codes	404	486.64 (~415%)

Group	Count	$0	$1-99	$100+
No codes	8,457	6,273	1,090	1,094
% of group		74%	13%	13%
1-3 codes	975	465	198	312
% of group		47%	20%	32%
4-6 codes	404	210	87	107
% of group	5%	51%	21%	26%

Non-Indicators

- Input: WFU Affinity Email Address, Output: Lifetime Giving
- Summary Report by Group

Group	Count	Mean
Do not have	3,631	$152.84
Have affinity email	6,205	$160.37

- Contingency Table

Group	Count	$0	$1-99	$100+
Do not have	3,631	2,827	387	417
% of group		77%	11%	12%
Have affinity email	6,205	4,121	988	1,096
% of group		66%	16%	18%

Other Useful Indicators

- **Strong Indicators:**
  - Business Address or Phone on file
  - Legacy Status
  - Surveys Returned
  - Children Known
  - Reunions Attended
- **Other, more granular indicators may include:**
  - Business/Econ/Math majors and minors
  - Specific zip code ranges
  - Certain Greek organizations
  - Name Suffixes (Esq., II, III, IV)
  - E-mail address domains (@aol or @yahoo vs. @boa.com)
  - U.S. Regions
  - Address includes: “Apartment” or “#” or third address line
- **Exploration is key!**

External Prospect Scoring (Advanced)

- If available, add any external information
  - Charitable Giving Capacity
  - Kintera Echelon Scores
  - Stock Holdings
  - Real Estate

Questions?

"There are these four ways of answering questions.

Which four?

#2. There are questions that should be answered with an analytical (qualified) answer [defining or redefining the terms]."

-- Buddha

Predictive Modeling

The purpose of models is not to fit the data but to sharpen the questions.
-- Samuel Karlin

Creating your Model

- In statistical program, create new variable to contain your formula

- Add strong positive variables and subtract strong negative variables
  - Increase weight of variables that are very strong or very weak by repeating them in the formula
  - “Wow” factor

- Add a constant to prevent negative scores
  - Example: Variable1 + V2 - V3 + V4 +1 = Score
    - *Negative Grouped variables

Model Results

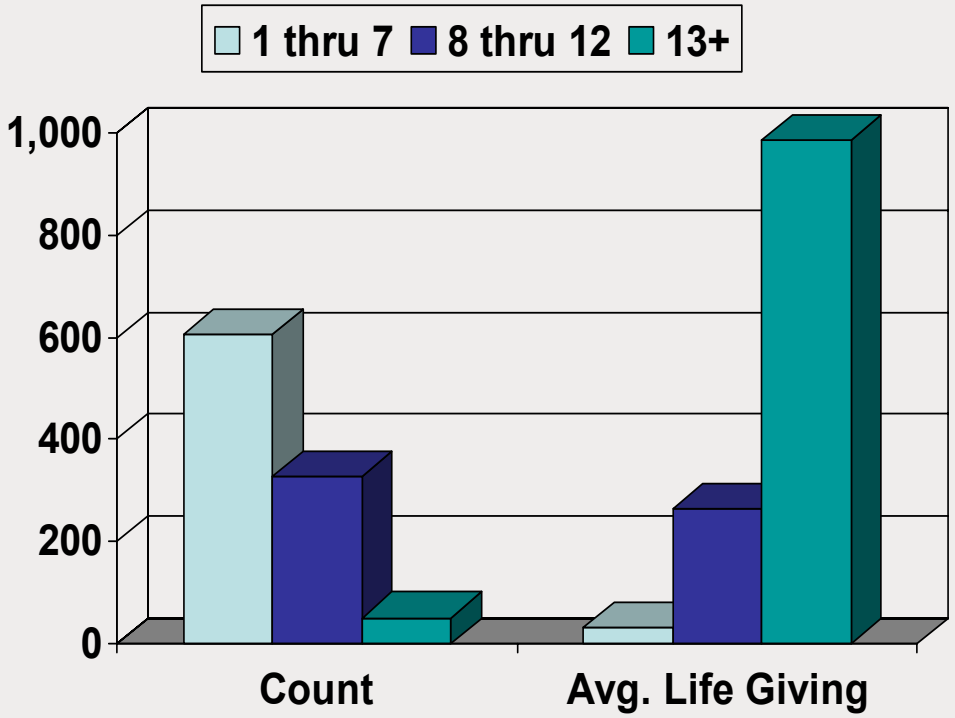
- **Final results**
  - Input: Formula,
  - Output: Lifetime Giving
- **Example from WFU Young Alumni Model**
  - Uses 17 positive variables
  - Three negative variables
  - Constant of +3
- **Notice three distinct groups**

Score	Count	Average
2	255	$31.59
3	707	$11.74
4	926	$10.03
5	1,532	$22.13
6	1,440	$30.85
7	1,209	$67.04
8	891	$145.01
9	698	$264.12
10	630	$353.59
11	579	$260.02
12	461	$385.50
13	307	$629.45
14	139	$1,298.80
15	41	$2,176.15
16	16	$1,438.44
17	4	$3,627.50

Model Results Explained

- 103 of the 507 high-scoring alumni have never given.
- 1,583 of the 3,259 mid-range scoring alumni have never given.

Group	Count	Avg. Lifetime Giving	Change
1-7	6,070	$30.48	
8-12	3,259	$265.29	~870%
13+	507	$987.22	~3,239%



Model Results Explained

- Giving Participation, by score group by year

Giving Participation	Group Total	FY 05	FY 06	Change	Pct Change
Low Score	6,070	213	194	-19	-9%
Moderate Score	3,259	697	793	96	14%
High Score	507	192	235	43	22%

- Giving Dollars, by score group by year

Giving Dollars	FY 05	FY 06	Change	Pct Change
Low Score	$7,196	$10,235	$3,039	42%
Moderate Score	$62,788	$73,360	$10,572	17%
High Score	$19,307	$23,217	$3,910	20%

What Now?

- Export score results with Unique ID
- DBAs upload data
  - External Ratings tables
- Share your results with your staff!
  - Adoption requires education and excitement
  - New prospects, similar to good donors!

Questions?

"There are these four ways of answering questions.

Which four?

#3. There are questions that should be answered with a counter-question."

-- Buddha

Adoption Strategy

No great marketing decisions have ever been made on quantitative data.

-- John Sculley

Critical Adopters

- **Solicitation Specialists**
  - Increase ROI
    - Print Mailings
    - Telethons
- **Calling Officers**
  - Invite likely donors
    - Meetings
    - Sporting
    - Networking

- **Add as standard field on reports**
  - Increase exposure/availability

Skeptical?

- Test on your data
  - Create simple model in Excel
    - Use basic variables described:
      - Business Address
      - Age
      - Marital Status
      - E-mail Address
      - Home Phone
  - Score constituents and compare lifetime giving of score ranges

- Test in reality
  - Send solicitation to an equal number of random subset of high, middle, and low scoring constituents
  - Compare results

Questions?

"There are these four ways of answering questions.
Which four?
#4. There are questions that should be put aside."
-- Buddha

Summary

- Your data is valuable; take care of it!
  - Can't solicit who you can't contact
- Analyze as much of your data as possible, from many angles, to find strong indicators
- Create models where applicable, for each professional school and for larger subsets of populations
  - One size does not fit all!
- Share the stats; encourage adoption
- Don't be afraid to try new things and test your results
  - Encourage targeted strategy

Thank You!

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