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NEW MEMBERS ACQUISITION USING SEM



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Note: This case was developed from Abhishek Rajpurohit's Directed Research on Intelligence Layer over Web Analytics Data-Smart Keyword Research under the supervision of Dr. Arif Ansari.

The clustering of Google Ad words was developed by Dr. Arif Ansari, and the Dash Board for evaluating the selected keywords was developed by Abhishek Rajpurohit and modified by Dr. Arif Ansari.

Case 3: NEW MEMBER ACQUISITION USING SEARCH ENGINE MARKETING

(This case is adapted from the “Applichem (A) (Abridgege)” HBS Case 9-694-030)

Success at Smart Partyware corporation

Vijay’s success in using data-mining methods to find customers with high propensity to buy Smart Partyware (SPW) made him a celebrity at SPW. His strong personality and high level of energy motivated him to do more. He has already trained two new employees in building data-mining models on a regular basis. Every marketing campaign at SPW now starts with trial marketing followed by building data-mining models and then selecting appropriate members to send the partyware by UPS. Richard Ellison was impressed by John Runner, and Vijay and has signed a Memorandum of Understanding (MOU) with SPW. They will acquire 10 percent of SPW for an undisclosed sum and have an option to buy up to a total of 49% in the following year at current valuation determined by independent evaluators.

Creation of Chief Analytical Officer Position

John Runner has a vested interest—he wanted to increase the revenue and profit of SPW so that the valuation of SPW in a year will be high and Applichem will have to pay more for the shares of SPW. John and other executives’ contracts with SPW allowed them to sell up to 25% of their shares as part of the deal with Applichem. John Runner was sure his prodigy Vijay would be able to do his magic once again and would be able to increase revenue and profit. John and the executive team of SPW offered Vijay the Vice President of Technology position in the company and offered to increase his salary and pay a huge performance bonus if he could increase the revenue by 50% or more in a year. Vijay took the offer on the condition that the title should be Chief Analytical Officer. Vijay knew that this is the most coveted title currently in the corporate world and that within few years he would be able to join a Forbes 100 corporation in a similar role.

First Failure

Vijay knew he had fully leveraged the power of data mining; increasing the efficiency of the algorithms would not increase the revenue and profit by 50%. He was a basically an analytical person and not yet business savvy. He was aware that the other executives would not allow him to buy similar companies to increase the number of members. He started to think about ways to acquire new members because the head count is the key to increased revenue and profit. His first approach was to buy a potential member list from data brokers to increase the number of members at SPW. Two months passed, and his analysis showed that the additional revenue from new members was not substantial. In fact, the profit from new members was negligible after taking into account the amount

of money paid for the data acquisition and the cost of phone-based marketing to enroll them as new members. Vijay had his first taste of failure.

Call from old friend

Vijay's friend Olga Kaspersky gave him a call. She had just published her first paper and wanted to take time off, and she wanted to visit him and learn about the company and his new role in the company. Vijay was not his usual self—his voice was low, and immediately Olga asked him what the problem was. Vijay had waited for someone to hear about his great success and first failure at SPW and started narrating what had happened at SPW in the past few months. Olga listened to his story and asked him whether he had considered Search Engine Marketing (SEM) to get new customers, and she reminded him that her area of research was in SEM. Immediately Vijay got excited, and in a flash he started seeing a new strategy to bring customers to SPW and convert them into new members. Right away, he offered Olga Kaspersky a job at SPW. Olga gently denied his offer but said she would consult with her advisor and get his permission to work at SPW as an intern for the next three months. Vijay was sure once Olga started her internship at SPW and started seeing the amount of money that can be made with analytical methods she would join him in a full-time position.

Analysis of Failure

Olga received her advisor's approval and immediately began working as an intern at SPW. Vijay and Olga started to analyze the failure of acquiring customers through data brokers. They came to the conclusion that the main reason for failure was that there is no way of knowing whether the customer is an upscale customer who likes to have theme-based parties and is willing to spend more to get new partyware for the parties. They hypothesized that the people who are searching for "partyware" on the Internet are more likely to become members with the SPW company. Generic partyware is commonly available in local supermarkets and other stores, but if a person searches for partyware on the internet then that person is looking for something unique and is an ideal target for SPW.

Review of SPW website

In 2009, SPW launched its Website to promote its products and sell returned products. The Website offers free membership to join its personalized partyware club. Despite having an appealing site, the company finds itself receiving only a small amount of Internet traffic and has signed up few new subscribers. Olga started a two-pronged strategy:

- Increase the relevance of the Website by doing Search Engine Optimization (SEO).
- Sign up with Google AdSense to start search engine marketing (SEM).

Goals for Internet Team

The following goals were assigned to the SPW Internet team:

- Start collecting click-stream data
- Do Search Engine Optimization Analysis

- Increase the amount of sales through the Internet
- Make the sign-up process easy for prospective new customers.

Search Engine Marketing

Olga signed up with Google AdSense and created an account with Google, and she immediately realized that it was no longer research—she would be spending real money on search terms, and there was no guarantee that the money spent on Ad words would convert into lucrative new members. As the first step, she used the Google AdSense Keyword tool to find the type of terms people would use who are searching for “partyware.” Based on her selection of Broad, Exact, and Phrase types of words, Google AdSense gave a list of nearly 800 keywords and phrases that people normally search, along with the level of competition, the number of local monthly searches, and the approximate cost per click (CPC). Olga calculated the total cost of bidding on these key words. She discovered that the total amount spent per month on the “partyware” keyword was approximately \$250,000, and she realized that SPW would not spend such a large amount of money to bring customers to its Website. Immediately, she consulted with Vijay on the amount of money SPW would be willing to spend on Search Engine Marketing. Vijay agreed to allocate \$20,000 for the first month, and based on the success or failure the next month’s budget would be decided.

Exhibit 1: Sample Keywords from Google AdSense

Keyword	Competition	Local Monthly Searches	Approximate CPC	Cost
Party supplies paper	0.46	22200	\$0.92	\$20,424.00
Blue party supplies	0.95	6600	\$0.81	\$5,346.00
Elegant party supplies	0.92	1900	\$1.15	\$2,185.00
Elegant disposable plates	1	1900	\$1.10	\$2,090.00
Bamboo plates disposable	1	1300	\$1.46	\$1,898.00
Elegant disposable tableware	1	720	\$1.03	\$741.60
Elegant disposable dinnerware	1	720	\$1.10	\$792.00
Disposable plastic dinnerware	1	720	\$1.02	\$734.40
Fancy disposable plates	0.98	260	\$1.21	\$314.60
Disposable catering platters	0.98	210	\$1.49	\$312.90

Second Failure

Olga knew that in order to launch an Internet marketing campaign through Search Engine Marketing (SEM) you need to start with a research of keywords against which you want your ad to be displayed in the paid search listings. Selecting the right keywords is crucial for many reasons, including the fact that users are more likely to click on your ad if it is “relevant” to their search query. With hundreds of keywords available to choose from at Google AdSense, selecting the optimal combination of keywords to advertise on could be quite a daunting task. The process of selecting a keyword is typically based on multiple factors such as the search audience, estimated CPC, estimated bidding competition, etc. Olga tried to select keywords based on heuristics and budget constraints, but with nearly 800 keywords to select from, getting the correct set of keywords became an impossible task. Her strategy of bidding on the top 50 keywords after cleaning up the sample keyword file was a failure. She exhausted her monthly budget within two weeks, and the number of conversions from click to sales to membership was low. Olga was confident that the list provided by Google AdSense was a gold mine but that the heuristic approach to selecting the keywords was not the correct approach. If she had 6 months of time with repeated bidding and analyzing the click-stream data, she might be able to find the best set of keywords, but time was not on her side. She decided to come up with a new way to mine the Google AdSense keywords, and she needed Vijay’s help in this, so she set up an appointment with Vijay.

Analysis of Second Failure

Olga explained to Vijay the process of bidding on keywords: once you select your set of keywords, you perform some analysis to get to the projected financials—your cost and expected revenue. Most often, the expected financials after the first selection round are not acceptable, and thus you need to do more rounds of selection, and consequently financial analysis of each of them, until you reach acceptably good estimated financials. This is often a very tiring process, given the multiple selection factors and the high volume of keywords in a typical campaign (anywhere from 200 to 800). This ad hoc process of selecting keywords is tedious, time consuming, and not efficient. Olga stated that not all keywords are alike—some keywords have high cost per click and the conversion rate is a mystery unless you have past click-stream data from your Web server collecting this information. Olga stated that they had to come with a different strategy to select the right set of keywords. Vijay agreed with her and said he would think about a new way to do SEM.

New Paradigm

The next day, Vijay recalled the previous day’s discussion with Olga and realized that he had heard a similar statement before that “all consumers are not all alike.” This sentence kept ringing in his ears. He remembered his marketing professor stating that “not every offering will be right for every customer, nor will every customer be equally responsive to marketing efforts. Segmentation is a way of organizing customers into groups with similar traits, product preferences, or expectations. Once segments are identified, marketing messages and in many cases even products can be customized for each segment.” Like magic, he came up with a new paradigm—why not apply the same approach to keywords? There should be natural clusters of words in the approximately 800 keywords provided by Google AdSense on most search topics. Vijay thought, if they could find these clusters, and among those clusters if they could identify the clusters relevant for Smart Partyware, then they would be able to attract potential new customers to their Website. Vijay immediately called Olga to discuss the new way to do SEM. Olga, on hearing that segmentation of keywords might be the best approach to find the right set of keywords, realized the value in clustering and segmentation

methods—instead of dealing with large number of words, it would be easier to deal with 6 to 10 clusters. Olga was also concerned about which clusters would be relevant for SPW, as it is not easy to evaluate clusters. Vijay calmed her and said he would help her to enrich the data provided by Google AdSense as well as create a Dashboard for easy evaluation of clusters. It seemed to Olga that the dark clouds surrounding her were slowly clearing, and she could see clearly the future of enrolling new members to SPW.

Action Plan

Vijay had informed John Runner last month about the campaign to enroll new members and had asked him for a budget of \$300,000 for Adwords Marketing. John Runner had sanctioned Vijay request for money and was eager to know the progress in enrolling profitable new customers. John asked Vijay to submit a report on the Google Adword campaign in the next two weeks.

Vijay discussed with Olga to create an action plan which will used to write his report to John Runner. Vijay and Olga agreed on to submit a report to include the following; currently they are given \$20,000 for the month to bid on keywords.

1. Build a K-Means Clustering Model to predict the right set of keywords to bid

MODEL 1

- i) $K = 6$ (select the number of clusters to be 6)
- ii) Bid on the following Clusters, Cluster1, Cluster5 and Cluster6 – Cluster 1 has large monthly searches, Cluster5 is competitor (Smarty had a party) website (trying to lure competitor customers to your website) and Cluster6 is high competition

Answer the following questions,

- a) Provide the cluster Means and cluster standard deviations.
- b) Interpret Cluster1, Cluster5 and Cluster 6 based on the means
- c) What is the net profit
- d) What is the estimated signups per month
- e) What is the estimated signups per year
- f) How many estimated monthly clicks are allowed
- g) How many estimated monthly clicks are allowed if there is no budget constraints

2. Rebuild a K-Means Clustering Model to predict the right set of keywords to bid

MODEL 2

- i) $K = 5$ (select the number of clusters to be 5)
- ii) Bid on the following Clusters, Cluster1, Cluster2 and Cluster3

Answer the following questions,

- a) Provide the cluster Means and cluster standard deviations.
- b) Interpret Cluster1, Cluster2 and Cluster 3 based on the means
- c) What is the net profit
- d) What is the estimated signups per month
- e) What is the estimated signups per year
- f) How many estimated monthly clicks are allowed

g) How many estimated monthly clicks are allowed if there is no budget constraints

3. Build a Hierarchical Clustering Model to predict the right set of keywords to bid

MODEL 3

- i) $K = 6$ (select the number of clusters to be 6)
- ii) Bid on the following Clusters, Cluster1, Cluster3 and Cluster4 – Cluster 1 has large monthly searches etc.,

Answer the following questions,

- a) What is the net profit
- b) What is the estimated signups per month
- c) What is the estimated signups per year
- d) How many estimated monthly clicks are allowed
- e) How many estimated monthly clicks are allowed if there is no budget constraints

4. Adjust the Hierarchical Clustering Model to predict the right set of keywords to bid

MODEL 4

- i) $K = 5$ (select the number of clusters to be 5)
- ii) Bid on the following Clusters, Cluster1, Cluster2 and Cluster3

Answer the following questions,

- a) What is the net profit
- b) What is the estimated signups per month
- c) What is the estimated signups per year
- d) How many estimated monthly clicks are allowed
- e) How many estimated monthly clicks are allowed if there is no budget constraints

5. Which is the best Clustering Model among the four models?

- a) Based on Profit
- b) Based on Number of Signups

6. Build your own Best Model (Points for this question will depend on signups), Based on your Model,

- a) What is the Profit
- b) What is the Number of Signups

7. Possible extension for team analysis. Please choose the following topic to extend the analysis.

- a. Creative Thinking - What other solutions are possible (outside of Search Engine Marketing) to increase the number of new members (relevant and valuable)?
- b. Critical Thinking - SEM is a process, review the process, what are the areas in the SEM process that can be modified to increase the number of new members (relevant and valuable)?