CAN **Contemporary Analysis**
Work smart.

Lending & Predictive Analytics:

Selecting the right prospects.

What if it was easy to determine who was most likely to need your services?

What's the hardest part of sales? It's not presenting, writing contracts, or negotiating. Those skills are simply prerequisites to sales. The hardest part is finding people to sell to. Success in sales requires knowing who to call and what to sell them.

The problem of not knowing who to call stems from a basic misunderstanding, that prospects have to be previously untouched. Supposedly, they can't be current customers, previous customers, or past prospects. Those are people who have already been sold, if they need something they know who to call, right? This is simply not true.

The truth is, customers don't know what you have, don't realize what they need, or simply don't realize there are new and better products for their situation. By failing to realize this truth, sales people miss out on hundreds of cross-sell, re-sell, and upsell opportunities. In fact, most sales organizations have huge loyalty issues because they utilize these tactics.

Most Customer Relationship Management (CRM) systems don't provide a solution because they only track what salespeople know has happened (past tense), not what is happening (present tense) or what might happen (future tense). To stay competitive, salespeople need to know who is shopping, who most likely needs help and who might be exploring the competition. This is a natural application for predictive analytics in sales. In this case study we will describe how we used predictive analytics to help a credit union improve their sales by selecting the right prospects.

The Problem:

We were approached by the president of a 12,000 member credit union. During the last several years their net growth had stagnated to nothing or had even been negative. At first it appeared that the problem was sales and new membership. However, upon further investigation, their sales were actually growing slightly but their churn (membership loss) was negating that growth each month. And the problem was only getting worse.

We started to investigate why members were leaving. It turned out that members were leaving to purchase new products, for example business loans, mortgages, auto loans. Most of these were products the credit union had, but most members had never been exposed to them. Members were actually leaving because they weren't being sold the right products.

Part of the problem was that loan officers had built a sales system in the early 90's that was reactive in nature. They waited for members to

call them, and then qualify whether they could get a loan or should be a member. Times have changed, consumers of all ages are not in the habit of relying on salespeople for information. They have been empowered by the Internet to research their options before calling a sales person. The credit union had not kept up.

As potential members stopped calling and current members stopped reaching out to enroll in new products, the demand for loans and member activity dropped considerably. Marketing campaigns that were traditionally able to gather new members were not effective, and sales managers were not hitting their goals. If the credit union wanted to grow profitably, a proactive sales approach was needed.

After assessing the situation, CAN determined that the credit union needed to understand their current members were first. Knowing more about their members, was key to reducing churn and finding new members. We need to know who they were good at attracting, and what members were the most profitable. The team decided to focus on understanding and selling to current members. Current members needed to be assessed on if they were in the correct products and that their cross-sell, up-sell, and resell needs were met. This was the first step into attracting new members.

The Solution

CAN worked with the executive team to determine our priorities. We set three objectives for the project: identify who was most likely to need an auto loan, identify who was most likely to need a home mortgage, and who was most likely to leave the credit union or become inactive. Our goal was to make an impact as quickly as possible.

CAN set out to build a system that would rank the current membership by each objective. We used predictive analytics and data science to see if we could use life changes and spending habits to predict purchasing or loyalty patterns and provide a list of names that the loan officers could call that would have the highest chance of success. The goal was to not call all 12,000 members, but those of the 12,000 that actually had a need.

The Results

To meet the 3 objectives, CAN built three models. The following explain the results of the models including the number of prospects identified, the probabilities that members would take a predicted action, and what variables were identified as strong predictors.

The first model that CAN built was to predict which members are ready for an auto loan. Members were scored from 1 to 100, the higher the score the more likely they were to need an auto loan in the next 3 months. CAN identified 1,069 members that scored a 60 or higher. CAN identified the following independent variables as strong predictors that a member would have the need, willingness, and resources for an auto loan:

- **Member Age**
- **Members with Children Ages 11 to 15**
- **Members with Travel Credit Cards**
- **Estimated Income**
- **Residence Length**

The second model was to predict which members are ready for a second mortgage or a home improvement loan. CAN identified 65 members that had a greater than 70% likelihood of needing a second home loan, and 13 of the 65 had a 90% or higher likelihood. These 13 people would have been 13 missed loans as none of them were currently shopping their need with the credit union. CAN identified the following independent variables as strong predictors that a member would have the need, willingness, and resources for a second home loan or home improvement loan:

- **Member Age**
- **Number of Children**
- **Zip code**
- **Income**
- **Working Spouse**
- **Marital Status**
- **Number of Credit Cards**
- **Current Home Equity Line of Credit**

The third model that CAN built was to predict which members are most likely to leave. CAN identified 514 members that were more than 70% likely to leave the credit union in the next 3 months. CAN identified the following independent variables as strong predictors that a member would have the need, willingness, and resources to leave.

- **Member Age**
- **Home Value**
- **Whether they owned or Rented their primary residence**
- **Average Account Balance**
- **Estimated Income**
- **Marital Status**

To validate each model we ran mathematical tests, but more importantly we allowed everyone on the team to interact with the model. We created a simulation and allowed executives, loan officers and mortgage specialists to change the variables of the model and see the outcomes. This let them run predictions on themselves and other members. This process built trust in the model by validating that it was not just mathematically sound but that it produced results that reflected reality. We were able to involve the people that would use the results.

Implementation was simple. We provided the sales teams with access to each member and their score. They were able rank the list and pursue the best prospects. Once loan officers and mortgage specialists started calling members, they began receiving emails like:

"I think it would be a good idea to sit down and talk about this as it's been on my mind. I'm not sure if it will be the end result of the conversation, but I would like to look at options. "

As the team continued to reach out, they found that they could, in fact, do proactive sales. There were many, many members who did need their help, and were looking outside the credit union for products they could get within the credit union.

Conclusion

After 3 months, numbers are beginning to show an upward trend in retention. Auto loans and secondary home loans have increased as well. The sales manager knows that her team is spending their time wisely by calling upon the members that a need and a desire to be helped.

The credit union is also revamping their marketing campaigns for a new member campaign later in the year. They are taking the insights of the three models to know who to market to and who to call to attain profitable members.

CAN has also been retained by the credit union to do further models into profitability, CD sales, Christmas accounts, and checking accounts, as well as a study of product usage and a seasonality study for the selling of products.

If you're a bank or a credit union and you would like to know who in your current client base is ready to purchase another product or service from your institution, please email us at: info@canworksmart.com

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Since 2008, Contemporary Analysis has used predictive analytics and data science to help companies of all sizes work smart.

We help our clients improve their sales, marketing, customer service, management, and strategic plans.

Our solutions are used by fast-growing technology companies, Fortune 500s, as well as small- and medium-sized organizations. Our clients are in a variety of industries including agribusiness, heavy construction, insurance, education, healthcare, government, manufacturing, industrial, software, and engineering.

Our vision is to make predictive analytics simple and affordable because all companies, not just the largest, should be able to benefit from predictive analytics and data science.

Our principles:

1. We care about business.
Each business deserves a custom solution. Problems are our passion.

2. We solve core business problems.
We make a big impact quickly. Value is our focus.

3. We don't have all the answers.
We help our clients make better decisions. Less wrong is the goal.

4. We are technology agnostic.
We focus on the solution. Technology is just a tool.

5. Our job is to solve problems, not introduce complexity.
Our solutions are simple because our clients are busy.