15CSE03 - CUSTOMER RELATIONSHIP MANAGEMENT

UNIT I Cross Selling

- Relationship between a company and customer is a constantly moving process

- The relationship can be further optimized to
  - Maximize the length of the relationship
  - Maximize the number of interactions during the relationship
  - Maximize the profit associated with each interactions

Eg. Mega Mergers of companies

Tata and Jaguar ($ 2.6 billion)
Wallmart bought flipkart ($16 billion)
Facebook acquired WhatsApp ($19 million)

- Increased Customer base
- Company increases the sales
- Availability of New products
- win-win situation (profitability for the seller and an advantage to the customer.

Cross Selling

What is Cross-Selling?

Cross selling is the process by which you offer your existing customers new products and services.

Cross Selling (selling the customer additional, related, products)

Examples of Cross-Selling

An electronics retailer offering a deal on a computer case, mouse, and screen cleaning wipes to a customer who purchases a new laptop.

An insurance provider offering renters' insurance to its car policyholders

Upselling

One form of cross-selling sometimes called “up-selling”. i.e. selling the customer a more expensive version of the product.

One example of upselling would be a cable television provider selling a premium plan with a more extensive selection of channels to a current subscriber of a basic package. Upselling may also entail approaching the customer at the point of sale for one product, offering a more advanced alternative.

Ways to improve cross selling

- **Use 360-Degree Contact View to Gain Insight**

Having a complete view about your customer's buying behaviors and patterns means you can understand their needs.

- **Use Feedback to Pitch More Features and Upgrades**

Every business has a feedback column, form or tool where customers can input their opinions and ideas. A CRM makes it easier for you to look at and filter that feedback. Analyze the data and look for opportunities where you can cross-sell or upsell by pitching related features/upgrades.

- **Track Web Habits to See What Your Buyer Wants**

A great way to identify sales opportunities is to see what your buyer is doing online. Using a CRM, you can analyze what web pages your customers are checking, what type of content they are reading and what offers/content upgrades they are downloading.

- **Track Renewal Periods to Pitch New Features and Upgrades**

one-year plans and the like have a deadline that can turn into a lost sales opportunity if you aren't alerted at the right time. With a CRM, you can set up alerts for such users. Once you get a notification that a user's free trial is up, you can send an email not only with a renewal reminder, but also an upgrade/feature inclusion.

How cross selling works?

Data about the purchasing behavior of customers (which can be derived Using data mining) is the starting point of cross selling.

Sometime analysis for cross selling is similar to acquisition of single-product customer.

Eg. Assume that you are a marketing manager for a mid-size bank.

- The products available for your customers are
  - Savings account
  - Current account
  - Standard credit card
  - Gold credit card
  - Platinum credit card
  - Primary mortgage
  - Secondary mortgage

- He is responsible for marketing mortgage products to the customers.
- He needs to identify interested customers in mortgage offerings at least 60 days before they would apply for loan. (2 months is a reasonable lead time to establish the relationship)
- Identify the customers based on their account status, transactions and other parameters into

1.Customers preparing to buy a new home

2. Customers preparing to refinance an existing home

3. Customers preparing to add a second mortgage

Primary mortgage : getting Loan from the bank directly, no documents are to be deposited

Secondary mortgage : Finance broker will arrange, sufficient documents need to be deposited

Steps in the process

1. Before cross selling decide the offers that are given to the customers.

Eg. In the bank there are three offers

- New first mortgage
- Refinance of first mortgage
- Second mortgage

At a time only one offer is made to a single customer

2. Collect data about customers to support the analysis. Data warehouse can be source for the data.

Target a customer with only one offer.

- For some predictive models, customer information from a banking CRM is not enough. In this case, a bank will need to **incorporate additional data sources** in its model. They are

- Channel preferences
- Social media insights
- Consumer ratings and reviews
- Bill payment behavior
- Personal financial management (e.g., a customers' financial goals)
- Geolocation
- Current events

- 3. Build a predictive model. Eg. To predict the probability that a customer will sign-up for a mortgage with your company.

- At this step, data analysts (or data scientists) create a model that will **define the probability that a certain event will happen in the future**. To do this, they employ machine learning (ML) methods of various complexity, from linear regression to deep learning.

4. Rank the customers by their predicted probability. i.e the best prospects will be identified

In the above eg.

DW – contains historical information about the customers

i.e. Customers demographic and account level information about the customers.

Demographic : age, income, marital status and ZIP code

Account level : Transactional information (recent balances, no. of purchases and type of purchases

Consider the customers those who have completed the mortgage with your company. Set a window (60 days eg.) and look for +ve and –ve responses about each offer.

Analysis Begins

The actual data mining process contains three different steps when doing cross-sell analysis.

1. Modeling of individual behaviors
2. Scoring data with predictive models
3. Optimization of the scoring matrices.

Build a Model

Model is a mathematical function that can map customers with offers. There will be one model for each offer. Apply the model for each new customer. Find out the prediction.

Scoring

The scores are the outcome of the models – Probability of availing an offer by a customer.

In this eg., there will be 3 scores for each customer

Customer Id	Offer 1 Probability	Offer 2 Probability	Offer 3 Probability

Score Matrix

Table 11-1

Customer Matrix

Customer ID	New Mortgage Score	Refinance Score	Second Mortgage Score
1391193	0.2422	0.4926	0.0872
1401936	0.8600	0.4465	0.0982
1491969	NULL	0.9700	0.4453
1623144	0.7854	NULL	NULL
1701338	0.5063	NULL	NULL
1810529	0.8210	0.5014	0.6386
1940842	NULL	0.5067	0.9177
1980368	0.2226	0.1352	0.0685
2039145	0.2928	0.1732	0.5244

Optimization

Final step is the optimization of scoring matrix – selecting which of the multiple offers will be made to each customer.

Determine which offer to make to which customer from the cross-sell matrix.

Optimize the scoring matrix to decide the best customer to the best offer.

There are four levels of optimization starting from simple to complex.

1. Naïve
2. Average economic
3. Individual economic
4. Constraint optimized

1. Naïve Optimization

   From the customer matrix, select the highest scoring offer for each customer. It chooses the offer that a customer is most likely to respond.

   Adv : simplicity. Each customer record needs to examined only once per model which allows for quick selection process.

2. Average economic Optimization

   It incorporates financial information about the value of each offer so that total economic value can be maximized.

   Each offer has a financial value associated with it. It is derived from the prospects or potential customers' information available in the historical dataset. (average value)

For eg. The value for a New mortgage might be on average $6000 per customer so

score = value of the offer x model score

Customer 1 = 6000 x 0.2422 = $ 1,452

Refinance $2500

A second mortgage might only contribute $5000 per customer on average.

3. Individual economic Optimization

Expected return of an offer is computed based on individual customers' financial information

Eg. Use existing mortgage balance to decide the other offers.

Difference between the above method and this is the value associated with each customer/offer combination is unique.

4. Constraint optimization

External constraints are applied on the selection process. Some possible constraints include the following

- Maximum spending limit
- Minimum and/or maximum numbers of offers per offer type
- Minimum and/or maximum numbers of offers per geographic region
- Minimum and/or maximum numbers of offers per segment of customer base.

Table 11-2

Naïve campaign selections are highlighted

Customer ID	New Mortgage Score	Refinance Score	Second Mortgage Score
1391103	0.2422	**0.4926**	0.0872
1403936	**0.8660**	0.4465	0.0932
1491969	NULL	**0.9700**	0.4453
1622144	**0.7854**	NULL	NULL
1701338	**0.5063**	NULL	NULL
1810539	**0.8210**	0.5014	0.6356
1940842	NULL	0.5067	**0.9177**
1980368	**0.5226**	0.1852	0.0858
2039145	0.2928	0.1732	**0.5244**

Table 11-3

Highest expected economic return is highlighted

Customer ID	New Mortgage Score	Refinance Score	Second Mortgage Score
1391193	$1,452.94	$985.28	$435.95
1401936	$5,160.14	$893.04	$490.80
1491969	NULL	$1,939.97	$2,226.57
1623144	$4,712.41	NULL	NULL
1701338	$3,037.68	NULL	NULL
1810539	$4,925.71	$1,002.75	$3,192.89
1940642	NULL	$1,011.48	$4,588.70
1980368	$1,335.85	$270.34	$443.90
2039145	$1,757.01	$346.34	$2,621.97

Table 11-4

The effect on customer selection when financial characteristics of individual customers are used to estimate the economic value of a particular offer

Customer ID	New Mortgage Score	Refinance Score	Second Mortgage Score
1391183	$1,060.76	**$1,432.80**	$120.20
1401936	**$4,511.21**	$132.04	$537.02
1491969	NULL	**$5,355.15**	$968.12
1623144	**$4,377.96**	NULL	NULL
1701338	**$1,444.20**	NULL	NULL
1810529	**$2,749.17**	$273.83	$864.60
1940642	NULL	$518.22	**$1,741.13**
1980368	$588.32	**$646.69**	$94.34
2039145	$856.38	$804.93	**$2,080.90**

Customer Retention

As industries become more competitive and as the cost of acquiring new customers increases, the value of retaining customers also increases

Customer churn is the term used in the cellular telephone industry to denote the movement of cellular telephone customers from one provider to another

In many industries this is called customer attrition

Data Mining Techniques used to predict churn :

CART – Classification and Regression Trees

CHAID – Chisquare Automatic Interaction Detector

C 4.5 – Decision Tree

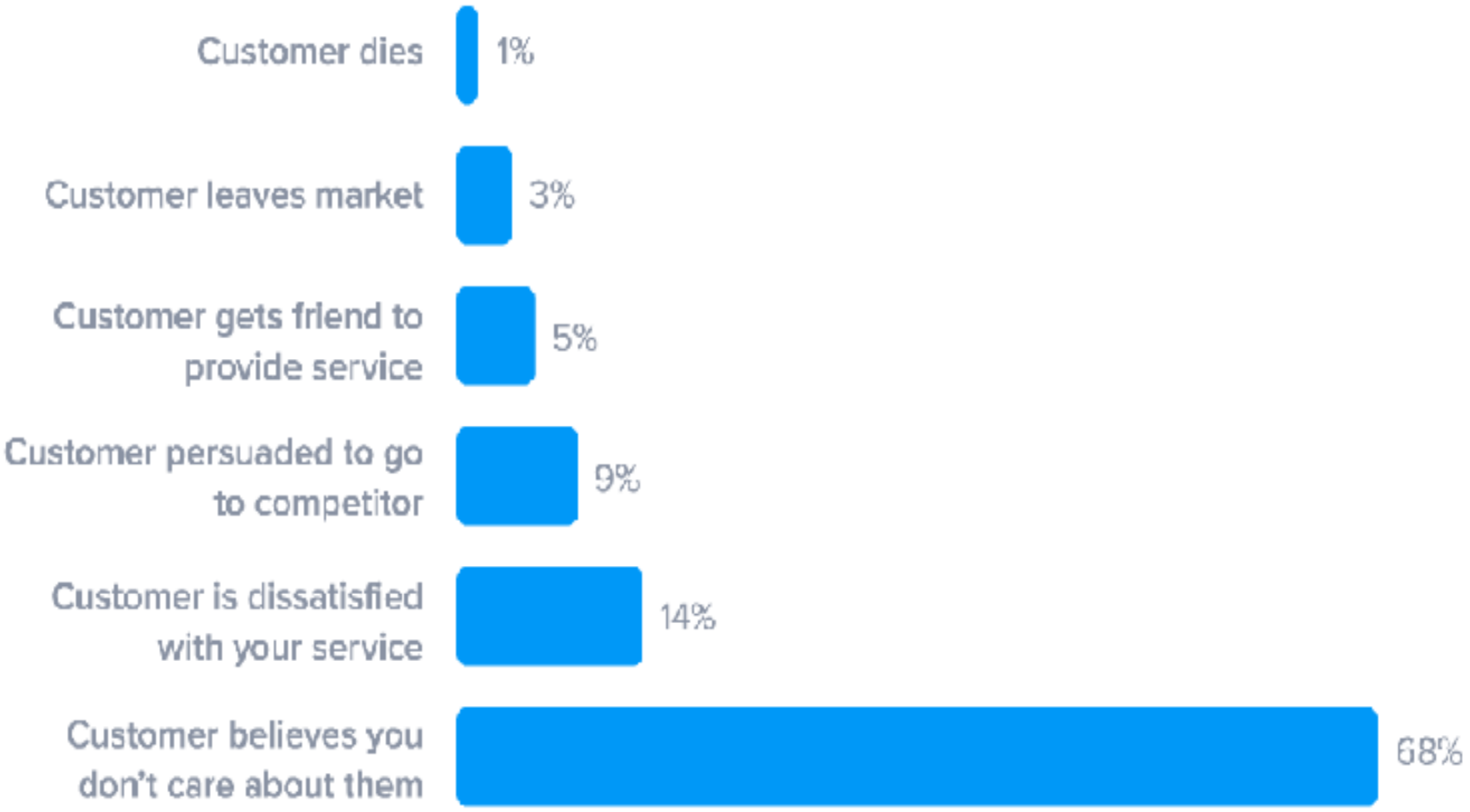
Why should you care about existing customers?

Here are three reasons why you should care.

- Achieve better conversion rates. Existing customers have already bought from you, so if they had good experience they will buy from you again. Trust and confidence has already been established and you know something about them already and therefore, it's easier to identify their needs.
- Lower cost of marketing. You'll spend less time finding them and convincing them that you are the one they should buy from. In addition, existing customers can give you valuable feedback on your performance. Was your customer service good enough? Did your product meet their expectations? Was it good value for money? You can use this feedback to continue to improve your product and service.

- Increase profits. Selling to existing customers will be less focused on price as opposed to new customers, as you might not need as many discounts that you would usually use to attract new customers. And since your existing customers trust you it may be possible to convince the customer to become interested in even more of your products or services through upselling and cross-selling.

Why Do Customers Leave a Company?



Most Significant Retail Revenue Drivers

Retention vs acquistion costs