Managing the Customer Life Cycle

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Focus of this talk

Considerations and tools for the management of the customer life cycle

- **Terms and Issues**
  - Customer relationship management (CRM)
  - Customer lifetime value
  - Customer acquisition, retention and attrition (churn)
  - Cross-selling, up-selling, and reducing attrition

- **Tools**
 - RFM Analysis
  - Logistic regression
  - Decision trees

Customers and Life Cycles

- Customer Life Cycle
  - The stages of the relationship between a customer and a business
- Contrast with: Consumer's Personal Life Cycle (Life stages)
  - Important events in consumers' lives
    - School, first car, first job, purchasing a home, marriage, children, retirement
- The customer life cycle is important because it relates to long-term or lifetime customer value (LTV)
- Three ways to increase value of customers
  - Increase their usage/purchase of the products they already use
  - Sell them more or higher-margin products
  - Keep them for a longer period of time

The Customer Life Cycle
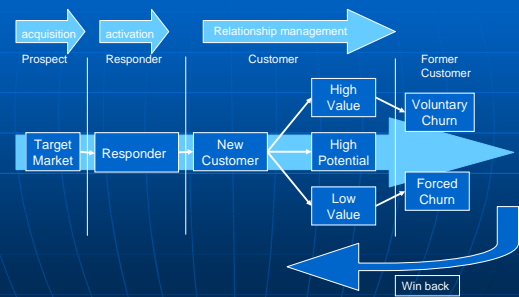
Customer Life Cycle Events
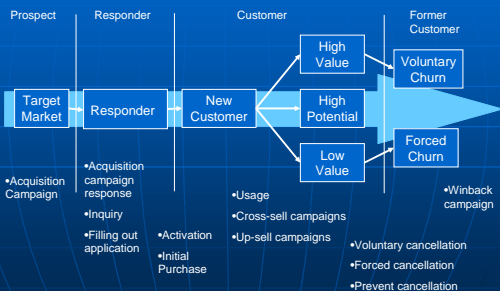
Customer Data

What is CRM?

- *Customer Relationship Management* is "A business strategy which pro-actively builds a bias or preference for an organization with its individual employees, channels and customers resulting in increased retention and increased performance."
  - Carlson Marketing Group

Customer Data

- Databases of individual-level customer data are what make (modern) CRM possible
- How big are these databases?
  - Answer: sometimes in the terabytes and beyond
  - Question: How big is a terabyte?
  - US Library of Congress =
    - 17 million books =
      - (approx.) 17 terabytes =
        - Package-level detail database at UPS
  - In other words, a single company has as much data on where and when its customers are shipping packages as is contained in all the books in the US Library of Congress.

Customer Data Sources

- Inside company
  - Accounts, account activity
  - Customer contacts
- Outside company
  - Public sources: phonebooks, tax records, home purchases, Census
  - Membership lists
  - Subscription lists
 - Specialty list companies
  - Et cetera ...

What Should be Done with Customer Data?

Understanding customer-level value helps

- Choose which 'cash streams' we are willing to invest in:
  - Segment our customer base and focus retention efforts on our higher value customers.
  - Acquire more profitable customers.
- Implement long-term marketing strategies
- Measure a marketing program based on its ability to increase the value of our customers
- Adjust service levels according to customer value

Lifetime Value definition

- A profitable customer is "a person, household, or company whose revenues over time exceed, by an acceptable amount, the company costs of attracting, selling, and servicing that customer." (Kotler & Armstrong, 1996)
- LTV is that excess (appropriately discounted).   (Berger & Nasr, 1998)

Acquisition
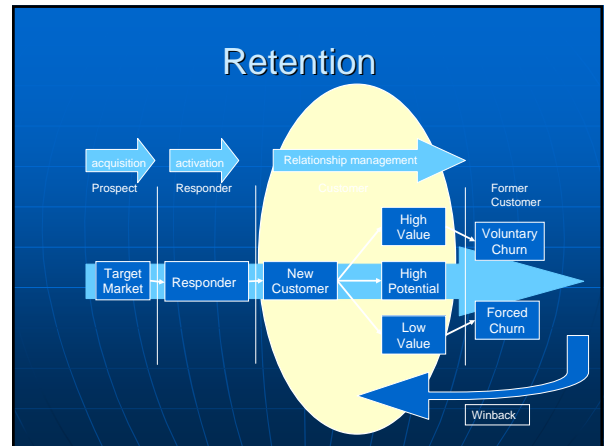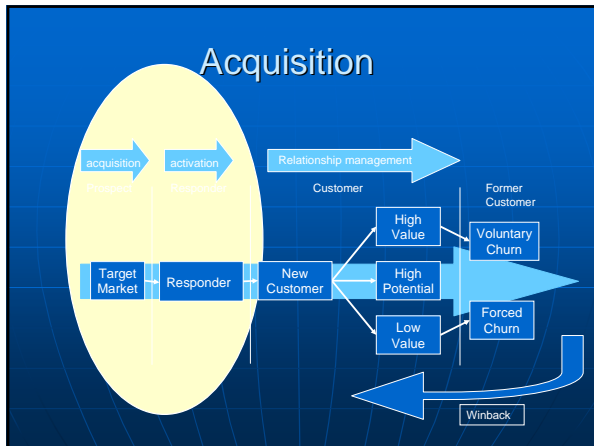
Retention

Retention Factoids

- Retention rates average about 65%

- It costs 5 times as much to acquire a customer as to service existing customers

- Over 90% of unhappy customers will never again buy from the firm

- Unhappy customers tell 9 others on average about their dissatisfaction

The Value of Customer Relationships

- Determining lifetime customer value (LTV) involves identifying the cash flows received from a customer or group, the outflow of cash necessary to establish and maintain the relationship, and the period over which the relationship will continue.
- Inflows:
  - Intrinsic customer value is the stream of net cash flows from the customer. Its size and value depend on
    - volume of purchases per period
    - margin on those purchases
    - duration of the relationship
  - Discounted - it represents the value of the relationship if it were costless to establish and maintain.

The Value of Customer Relationships

- Outflows (ADR)
  - acquisition costs = investments made to attract and qualify customers
  - development costs = expenditures made to increase and maintain the value of existing relationships
  - retention costs = expenditures to increase the duration of relationships, to reduce attrition or to reactivate customers
- Customer Lifetime Value is the difference between the inflows and the outflows (discounted to the present)

Applying Lifetime Value

LTV Uses over the Life Cycle

Acquisition
- Invest to acquire a customer if expected NPV of future cash flows is equal to or greater than the acquisition costs
- Acquisition costs are sunk costs and irrelevant after the customer has been acquired

Retention
- The value of a customer can be raised by increasing the volume of purchases, the margin on purchases, or the period over which purchases are made
- Invest in customer development and retention until, at the margin, the increases in customer value attributable to changes in volume, margin and duration are equal to the costs of achieving them
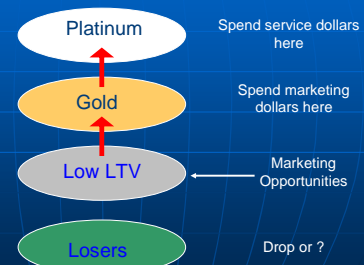
Customers are not Equal

- All prospects and customers are not of equal value – they differ in responsiveness and profitability

- Therefore, target the most attractive with the largest effort and budget

Profitability 'Curves'
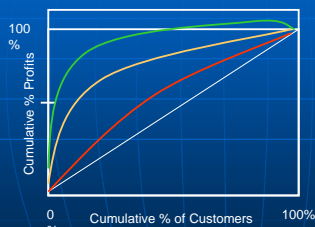
First Manhattan Bank: 20% account for more than 200% of profits in retail business!

Strategies based on LTV

Platinum — Spend service dollars here
Gold — Spend marketing dollars here
Low LTV — Marketing Opportunities
Losers — Drop or ?

Some Customer Life Cycle Management Tools

RFM
Logistic Regression
Decision Trees

RFM

Three Magic Terms: Recency, Frequency, Monetary Value

RFM: Past Behavior is predictive of the future

- **Recency** (R) = how long ago the customer last made a purchase
- **Frequency** (F) = how many purchases the customer has made (sometimes within a given time period)
- **Monetary value** (M) = how much each customer has spent in total (sometimes within a given time period)

- Appropriate for *existing customers* and widely used for segmenting and targeting

RFM: The Details

- Pick a variable of interest (e.g. Recency, Frequency, Monetary Value or other, such as LTV)
- Sort or rank the database from best to worst on that variable
- For quintiles, divide into 5 equal sized groups
  - top group is quintile 1, next is quintile 2, etc.
  - note: sometimes the 'top group' is 5 and the bottom is labeled 1. It doesn't matter as long as we know which is which! (and are consistent in whether a '1' is best or worst)
- More generally, can specify deciles (10 groups) or any other n-tile
- Now, we can summarize other variables of interest by n-tile
  - ex: customer LTV, response to test mailing, etc.

Applying RFM: 'Different strokes for different folks'

- What marketing program would you propose for these 'cells'?

R	F	M	(where 1=best, 5 is worst)
1	1	4	
4	1	1	
5	5	5	
1	4	4	

Logistic Regression

Building a Better Mousetrap?

RFM is useful, but...

- Not very 'sophisticated'
- Clearly other variables are also important
- Could a more complex, specially designed model do better?

What is Logistic Regression?

- Also known as Logit
- Used when we want to predict an outcome with two possibilities
- Examples:
  - Response to mailing: Yes – no
  - Good credit risk – bad credit risk
  - Buyer – not buyer
  - Defected - stayed (attrition models)

Logit Use: Cross-Selling Models

Individual Propensity Models that 'vote'
- Build a propensity-to-buy model for each product and each customer (e.g. credit card, money market account, home loan, auto loan, etc.)
  - Prob (wanting auto loan) = f(income, age, assets, …)
  - Prob (wanting home equity loan) = f(owning home, income, …)
- Score each customer on each product
- Best next offer is one with highest propensity to purchase

Logit Use: Attrition Models

- Increasingly used by banks, financial institutions, telephone companies, clubs and continuity programs in the US and elsewhere
- Use historical data on those who defected and those who stayed, score current customers on probability of defecting and decide whether to act or not (depending on LTV)

Decision Trees

Mining data for nuggets

Twenty Questions

- Are you an animal?
  - Do you have 4 legs?
    - Do you fly?
      - Are you native to South America?...
- In decision trees, like the game of Twenty Questions, the answer to the first question determines what follow-up question is asked next.
- Goal is to determine which strategic questions to ask that will separate the target entities into homogeneous groups in as simple a way as possible (i.e. with the fewest questions).
- Want groups consisting, ideally, of all the same category (e.g. good risks vs. bad risks, buyers vs. non-buyers)

Some uses of Decision Trees

- Direct mail
  - Determine which groups have the highest response rate, use this to maximize response to future mailings
- Attrition Models
  - Use past history and other data on customers who have left and those who haven't, to understand and predict who is likely to leave
- Credit Scoring
  - Use an individual's credit history and other data to make credit decisions

Concluding thoughts

Tools are not enough!

Use tools to get ideas
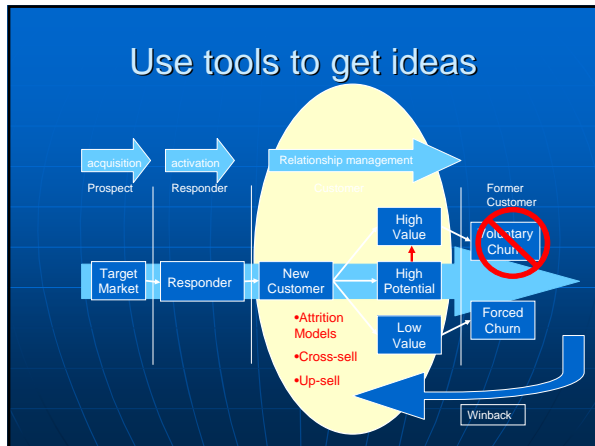
Tools are simply aids to Creativity!

- Information has been equated with power

- But information is everywhere!

- Creativity is power!

Questions? Comments?

What are your thoughts?