Information- and Technology-based Marketing

What is the whole story about?

- "Information- and Technology-based Marketing" addresses how to use information technology to learn about and market to individual customers.

Two main effects of Information Technology on Marketing?

Firstly, many firms now possess much more information about consumers' choices and reactions to marketing campaigns than ever before. However, few firms have the expertise to intelligently act on such information. We need to learn what it takes to collect, analyze, and act on customer information.

Two main effects of Information Technology on Marketing?

The second effect of information technology is that it has changed the competitive environment for many firms: consumers have more information about competitive offerings, the Internet has allowed many competitors to market to consumers directly, and so on. Hence, we need to know how to adapt marketing strategy to an environment of more informed customers, more flexible competitors, and additional ways of reaching consumers.

The notion of the customer lifecycle and CLM

- **Customer Lifecycle Management, or CLM** is the measurement of multiple customer related metrics, which, when analyzed for a period of time, indicate performance of a business.[1] The overall scope of the CLM implementation process encompasses all domains or departments of an organization, which generally brings all sources of static and dynamic data, marketing processes, and value added services to a unified decision supporting platform through iterative phases of customer acquisition, retention, cross and up-selling, and lapsed customer win-back.[2]
- Some detailed CLM models further breakdown these phases into acquisition, introduction to products, profiling of customers, growth of customer base, cultivation of loyalty among customers, and termination of customer relationship.[3]
- According to a DM Review magazine article by Claudia Imhoff, et al, "The purpose of the customer life cycle is to define and communicate the stages through which a customer progresses when considering, purchasing and using products, and the associated business processes a company uses to move the customer through the customer life cycle."[4]

The concept of customer profitability

Customer profitability (CP) is the difference between the revenues earned from and the costs associated with the customer relationship in a specified period.

- According to Philip Kotler,"a profitable customer is a person, household or a company that overtime, yields a revenue stream that exceeds by an acceptable amount the company's cost stream of attracting, selling and servicing the customer".

Uses

- Although CP is nothing more than the result of applying the business concept of profit to a customer relationship, measuring the profitability of a firm's customers or customer groups can often deliver useful business insights.
- Quite often a very small percentage of the firm's best customers will account for a large portion of firm profit. Although this is a natural consequence of variability in profitability across customers, firms benefit from knowing exactly who the best customer are and how much they contribute to firm profit.
- At the other end of the distribution, firms sometimes find that their worst customers actually cost more to serve than the revenue they deliver. These unprofitable customers actually detract from overall firm profitability. The firm would be better off if they had never acquired these customers in the first place.

Cautions

- Like other profit measures, customer profitability is historical. It is a financial summary of what happened in a previous period. And although the past is often indicative of the future, it is easy to imagine situations in which relationships that were unprofitable in the past might become profitable in the future (and vice versa). The forward-looking measure of the value to be derived by serving a customer is called customer lifetime value. Unprofitable customers can have high customer lifetime values (and vice versa).

Customer Lifetime Value

- In marketing, **customer lifetime value** (CLV), **lifetime customer value** (LCV), or **lifetime value** (LTV) and a new concept of "customer life cycle management" is the present value of the future cash flows attributed to the customer relationship. Use of customer lifetime value as a marketing metric tends to place greater emphasis on customer service and long-term customer satisfaction, rather than on maximizing short-term sales.

The basics of lifetime value calculations

- The specific calculation depends on the nature of the customer relationship. Customer relationships are often divided into two categories. In contractual or retention situations, customers who do not renew are considered "lost for good". Magazine subscriptions and car insurance are examples of customer retention situations. The other category is referred to as customer migrations situations. In customer migration situations, a customer who does not buy (in a given period or from a given catalog) is still considered a customer of the firm because she may very well buy at some point in the future. In customer retention situations, the firm knows when the relationship is over. One of the challenges for firms in customer migration situations is that the firm may not know when the relationship is over (as far as the customer is concerned).

Most models to calculate CLV apply to the contractual or customer retention situation. These models make several simplifying assumptions and often involve the following inputs:

- **Churn rate** The percentage of customers who end their relationship with a company in a given period. One minus the churn rate is the **retention rate**. Most models can be written using either churn rate or retention rate. If the model uses only one churn rate, the assumption is that the churn rate is constant across the life of the customer relationship.
- **Discount rate** The cost of capital used to discount future revenue from a customer. Discounting is an advanced topic that is frequently ignored in customer lifetime value calculations. The current interest rate is sometimes used as a simple (but incorrect) proxy for discount rate.
- **Retention cost** The amount of money a company has to spend in a given period to retain an existing customer. Retention costs include customer support, billing, promotional incentives, etc.
- **Period** The unit of time into which a customer relationship is divided for analysis. A year is the most commonly used period. Customer lifetime value is a multi-period calculation, usually stretching 3-7 years into the future. In practice, analysis beyond this point is viewed as too speculative to be reliable. The number of periods used in the calculation is sometimes referred to as the model **horizon**.
- **Periodic Revenue** The amount of revenue collected from a customer in the period.
- **Profit Margin** Profit as a percentage of revenue. Depending on circumstances this may be reflected as a percentage of gross or net profit. For incremental marketing that does not incur any incremental overhead that would be allocated against profit, gross profit margins are acceptable.

How lifetime value can be used to guide marketing decisions?

- Customer lifetime value has intuitive appeal as a marketing concept, because in theory it represents exactly how much each customer is worth in monetary terms, and therefore exactly how much a marketing department should be willing to spend to acquire each customer. In reality, it is difficult to make accurate calculations of customer lifetime value due to the complexity of and uncertainty surrounding customer relationships.

Uses of Lifetime Value

Lifetime Value is typically used to judge the appropriateness of the costs of acquisition of a customer. For example, if a new customer costs $50 to acquire (CPNC, or Cost Per New Customer), and their lifetime value is $60, then the customer is judged to be profitable, and acquisition of additional similar customers is acceptable. For this reason, the costs involved in the first purchase are typically not included in LTV, but rather, in the Cost Per New Customer calculation.

To consider different types of analytic methods

- Companies with large databases of customer information risk being "data rich and information poor." As a result, a considerable amount of attention is paid to the analysis of data. For instance, companies often segment their customers based on the analysis of differences in behavior, needs, or attitudes of their customers. A common method of behavioral segmentation is RFM, in which customers are placed into subsegments based on the recency, frequency, and monetary value of past purchases. Van den Poel (2003) gives an overview of the predictive performance of a large class of variables typically used in database-marketing modeling.
- They may also develop predictive models, which forecast the propensity of customers to behave in certain ways. For instance, marketers may build a model that rank orders customers on their likelihood to respond to a promotion. Commonly employed statistical techniques for such models include logistic regression and neural networks.

To understand the premise behind RFM analysis

- **FM** is a method used for analyzing customer behavior and defining market segments. It is commonly used in database marketing and direct marketing and has received particular attention in retail.
- RFM stands for
- **R**ecency - *When was the last order?*
- **F**requency - *How many orders have they placed with us?*
- **M**onetary Value - *What is the value of their orders?*

To introduce how to implement an RFM campaign

- To create an RFM analysis, one creates categories for each attribute. For instance, the Recency attribute might be broken into three categories: customers with purchases within the last 90 days; between 91 and 365 days; and longer than 365 days. Such categories may be arrived at by applying business rules, or using a data mining technique, such as CHAID, to find meaningful breaks.
- Once each of the attributes has appropriate categories defined, segments are created from the intersection of the values. If there were three categories for each attribute, then the resulting matrix would have twenty-seven possible combinations (one well-known commercial approach uses five bins per attributes, which yields 125 segments). Companies may also decide to collapse certain subsegments, if the gradations appear too small to be useful. The resulting segments can be ordered from most valuable (highest recency, frequency, and value) to least valuable (lowest recency, frequency, and marketing). Identifying the most valuable RFM segments can capitalize on chance relationships in the data used for this analysis. For this reason, it is highly recommended that another set of data be used to validate the results of the RFM segmentation process.
- Advocates of this technique point out that it has the virtue of simplicity: no specialized statistical software is required, and the results are readily understood by business people. In the absence of other targeting techniques, it can provide a lift in response rates for promotions

Database Marketing

- a form of direct marketing using databases of customers or potential customers to generate personalized communications in order to promote a product or service for marketing purposes. The method of communication can be any addressable medium, as in direct marketing.
- The distinction between direct and database marketing stems primarily from the attention paid to the analysis of data. Database marketing emphasizes gathering all available customer, lead, and prospect information into a central database and using statistical techniques to develop models of customer behavior, which are then used to select customers for communications. As a consequence, database marketers also tend to be heavy users of data warehouses, because having a greater amount of data about customers increases the likelihood that a more accurate model can be built.
- The "database" is usually name, address, and transaction history details from internal sales or delivery systems, or a bought-in compiled "list" from another organization, which has captured that information from its customers. Typical sources of compiled lists are charity donation forms, application forms for any free product or contest, product warranty cards, subscription forms, and credit application forms.
- The communications generated by database marketing may be described as junk mail or spam, if it is unwanted by the addressee. Direct and database marketing organizations, on the other hand, argue that a targeted letter or e-mail to a customer, who wants to be contacted about offerings that may interest the customer, benefits both the customer and the marketer.
- Some countries and some organizations insist that individuals are able to prevent entry to or delete their name and address details from database marketing lists.

introduce a key model for predicting choices: logistic regression

- In statistics, **logistic regression** is a model used for prediction of the probability of occurrence of an event by fitting data to a logistic curve. It makes use of several predictor variables that may be either numerical or categorical. For example, the probability that a person has a heart attack within a specified time period might be predicted from knowledge of the person's age, sex and body mass index. Logistic regression is used extensively in the medical and social sciences as well as marketing applications such as prediction of a customer's propensity to purchase a product or cease a subscription.
- Other names for logistic regression used in various other application areas include **logistic model**, logit **model**, and **maximum-entropy classifier**.
- Logistic regression is one of a class of models known as generalized linear models.

To introduce neural networks and their application

- An **artificial neural network (ANN)**, often just called a "neural network" (NN), is a mathematical model or computational model based on biological neural networks. It consists of an interconnected group of artificial neurons and processes information using a connectionist approach to computation. In most cases an ANN is an adaptive system that changes its structure based on external or internal information that flows through the network during the learning phase.
- In more practical terms neural networks are non-linear statistical data modeling tools. They can be used to model complex relationships between inputs and outputs or to find patterns in data.

To introduce decision trees and their application

- In data mining and machine learning, a **decision tree** is a predictive model; that is, a mapping from observations about an item to conclusions about its target value. More descriptive names for such tree models are **classification tree** (discrete outcome) or **regression tree** (continuous outcome). In these tree structures, leaves represent classifications and branches represent conjunctions of features that lead to those classifications. The machine learning technique for inducing a decision tree from data is called decision tree learning, or (colloquially) **decision trees**.

Benefits of product tailoring

- **Micromarketing** is the practice of tailoring products, brands (microbrands), and promotions to meet the needs and wants of microsegments within a market. Micromarketing is all about digital content and innovative ways of distributing it.

customer retention is a major problem for various industries

- **Customer Retention** is the activity that the selling organization undertakes to reduce customer account defections. The success of this activity is when the customer account places an additional order before a 12-month period has expired. Note that ideally these orders will need to contribute similar financial amounts to the previous 12 months.
- It can also be described as a series of actions that the selling organization undertakes to reduce defections. This is the selling organization's perspective of what they have to implement after the agreement in principle stage of the buying cycle.
- The success of the customer retention process is measured when the customer places an additional order before a 12-month period has expired.
- Retention Rate is the percentage of the total number of customers who have repeatedly placed an order (or made a transaction) during a twelve month period measured over a number of years, compared to the total number of customers in the same period.

What is Customer Relationship Management?

- **Customer relationship management** (**CRM**) is a term applied to processes implemented by a company to handle its contact with its customers. CRM software is used to support these processes, storing information on current and prospective customers. Information in the system can be accessed and entered by employees in different departments, such as sales, marketing, customer service, training, professional development, performance management, human resource development, and compensation. Details on any customer contacts can also be stored in the system. The rationale behind this approach is to improve services provided directly to customers and to use the information in the system for targeted marketing and sales purposes.
- While the term is generally used to refer to a software-based approach to handling customer relationships, most CRM software vendors stress that a successful CRM strategy requires a holistic approach. CRM initiatives often fail because implementation was limited to software installation without providing the appropriate motivations for employees to learn, provide input, and take full advantage of the information systems.[1]

CRM Overview

- From the outside, customers interacting with a company perceive the business as a single entity, despite often interacting with a variety of employees in different roles and departments. CRM is a combination of policies, processes, and strategies implemented by a company that unify its customer interaction and provides a mechanism for tracking customer information.
- CRM includes many aspects which relate directly to one another:
- Front office operations — Direct interaction with customers, e.g. face to face meetings, phone calls, e-mail, online services etc.
- Back office operations — Operations that ultimately affect the activities of the front office (e.g., billing, maintenance, planning, marketing, advertising, finance, manufacturing, etc.)
- Business relationships — Interaction with other companies and partners, such as suppliers/vendors and retail outlets/distributors, industry networks (lobbying groups, trade associations). This external network supports front and back office activities.
- Analysis — Key CRM data can be analyzed in order to plan target-marketing campaigns, conceive business strategies, and judge the success of CRM activities (e.g., market share, number and types of customers, revenue, profitability).

Different Types/Variations of CRM

- There are several different approaches to CRM, with different software packages focusing on different aspects. In general, Campaign Management and Sales Force Automation form the core of the system (with SFA being the most popular
- Operational CRM
- Sales Force Automation (SFA)
- Analytical CRM
- Sales Intelligence CRM
- Campaign Management
- Collaborative CRM
- Geographic CRM

Operational CRM

- Operational CRM provides support to "front office" business processes, e.g. to sales, marketing and service staff. Interactions with customers are generally stored in customers' contact histories, and staff can retrieve customer information as necessary.
- The contact history provides staff members with immediate access to important information on the customer (products owned, prior support calls etc.), eliminating the need to individually obtain this information directly from the customer.

Sales Force Automation (SFA) CRM

Sales Force Automation automates sales force-related activities such as:

- Scheduling sales calls or mailings
- Tracking responses
- Generating reports

Analytical CRM

- Analytical CRM analyzes customer data for a variety of purposes:
- Designing and executing targeted marketing campaigns
- Designing and executing campaigns, e.g. customer acquisition, cross-selling, up-selling
- Analysing customer behavior in order to make decisions relating to products and services (e.g. pricing, product development)
- Management information system (e.g. financial forecasting and customer profitability analysis)
- Analytical CRM generally makes heavy use of data mining.

Sales Intelligence CRM

Sales Intelligence CRM is similar to Analytical CRM, but is intended as a more direct sales tool. Features include alerts sent to sales staff regarding:

- Cross-selling/Up-selling/Switch-selling opportunities
- Customer drift
- Sales performance
- Customer trends
- Customer margins

Campaign Management CRM

- Campaign management combines elements of Operational and Analytical CRM. Campaign management functions include:
- Target groups formed from the client base according to selected criteria
- Sending campaign-related material (e.g. on special offers) to selected recipients using various channels (e.g. e-mail, telephone, post)
- Tracking, storing, and analyzing campaign statistics, including tracking responses and analyzing trends

Collaborative CRM

Collaborative CRM covers aspects of a company's dealings with customers that are handled by various departments within a company, such as sales, technical support and marketing. Staff members from different departments can share information collected when interacting with customers. For example, feedback received by customer support agents can provide other staff members with information on the services and features requested by customers. Collaborative CRM's ultimate goal is to use information collected by all departments to improve the quality of services provided by the company.[2]

Geographic CRM

Geographic CRM (GCRM) combines geographic information system and traditional CRM. Geographic data can be analyzed to provide a snapshot of potential customers in a region or to plan routes for customer visits.

Strategies for CRM Implementation

- Several commercial CRM software packages are available, and they vary in their approach to CRM. However, as mentioned, CRM is not just a technology but rather a comprehensive, customer-centric approach to an organization's philosophy of dealing with its customers. This includes policies and processes, front-of-house customer service, employee training, marketing, systems and information management. Hence, it is important that any CRM implementation considerations stretch beyond technology toward the broader organizational requirements.
- The objectives of a CRM strategy must consider a company's specific situation and its customers' needs and expectations. Information gained through CRM initiatives can support the development of marketing strategy by developing the organization's knowledge in areas such as identifying customer segments, improving customer retention, improving product offerings (by better understanding customer needs), and by identifying the organization's most profitable customers.[3]
- CRM strategies can vary in size, complexity, and scope. Some companies consider a CRM strategy only to focus on the management of a team of salespeople. However, other CRM strategies can cover customer interaction across the entire organization. Many commercial CRM software packages provide features that serve the sales, marketing, event management, project management, and finance industries.

CRM Implementation Issues

- While there are numerous reports of "failed" implementations of various types of CRM projects,[4] these are often the result of unrealistic high expectations and exaggerated claims by CRM vendors.
- Many of these "failures" are also related to data quality and availability. Data cleaning is a major issue. If a company's CRM strategy is to track life-cycle revenues, costs, margins, and interactions between individual customers, this must be reflected in all business processes. Data must be extracted from multiple sources (e.g., departmental/divisional databases such as sales, manufacturing, supply chain, logistics, finance, service etc.), which requires an integrated, comprehensive system in place with well-defined structures and high data quality. Data from other systems can be transferred to CRM systems using appropriate interfaces.
- Because of the company-wide size and scope of many CRM implementations, significant pre-planning is essential for smooth roll-out. This pre-planning involves a technical evaluation of the data available and the technology employed in existing systems This evaluation is critical to determine the level of effort needed to integrate this data.
- Equally critical is the human aspect of the implementation. A successful implementation requires an understanding of the expectations and needs of the stakeholders involved. An executive sponsor should also be obtained to provide high-level management representation of the CRM project.
- An effective tool for identifying technical and human factors before beginning a CRM project is a pre-implementation checklist.[5] A checklist can help insure any potential problems are identified early in the process.

Privacy and data security in CRM systems

- One of the primary functions of CRM software is to collect information about customers. When gathering data as part of a CRM solution, a company must consider the desire for customer privacy and data security, as well as the legislative and cultural norms. Some customers prefer assurances that their data will not be shared with third parties without their prior consent and that safeguards are in place to prevent illegal access by third parties.