CRM Analytics – *KEY* to ROI on CRM

Introduction

The customer of 21st century is writing rules of business. There has been unprecedented change in the customers' buying habit in the last decade. Recognizing this, companies today are likely to observe their customer tastes and preferences even more minutely now.

Most challenging of the assignments is to manage a customer relationship differently. Alongside, companies have to deal with many other challenges, that of, minimal product differentiation with competitors and highly dynamic partner relationships.

Over the last decade, several companies globally started developing strategies for encountering these challenges. Companies decided to take major initiatives in IT to facilitate in managing and implementing changes. Consequently, IT spending for companies rose ten-fold during this time.

Initially, companies' business strategies focused on bringing efficiency in operation and controlling cost. To achieve these benefits they started implementing ERP (Enterprise Resource Planning). Similarly, companies focused on controlling material handling costs, coordinating sophisticated manufacturing and distribution processes. To achieve these companies started implementing SCM (Supply Chain Management). These initiatives helped the companies in achieving better back office process management.

Yet, these initiatives failed to answer major challenges faced by the companies in the last decade - the challenges of how to control major tenets of customer relationships, like, higher customer attrition rate, higher customer acquisition cost and increasing customer lifetime value.

The challenge was to manage customers as an asset to the company. Companies realized they needed to focus on how to keep and create loyal customers. CRM (Customer Relationship Management) thus became an essential business strategy that enabled companies to grow their customer base, build and manage long-term customer relationships with existing customers.

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Market Drivers

CRM initiatives benefited companies by automating front-end processes like sales, customer service and marketing process. It also helped in creating one single customer repository of all customer information making that information available to all employees – anywhere, anytime. However, latest research states that the majority of CRM projects have failed to meet their objectives because of lack of focus on a customer-centric business strategy - promoting customer satisfaction and loyalty. In all the CRM projects, there was complete inability to manage and effect change in the customer relationship thereby improving the return in the customer relationship.

In addition, there is no sign of the results expected out of implementation of CRM projects. The key decision makers of the companies were looking to get massive improvement in the bottom line with CRM in place, but are not sure where to look for it.

Similarly, companies that implemented operational systems such as ERP, SCM and CRM, were able to collect enormous amount of data every day – information about orders, inventory, accounts payable, point-of-sale transactions, customer demographic and purchasing data. Unfortunately, the data is not analyzed to dig-out trends and patterns of customer behavior. A recent survey states that over 93% of the corporate data is not used in the business-decision making process.

To find answers to issues like increased revenue, reduced cost, increased loyal customers to gauge ***ROI on CRM***, companies need to move forward to a recent CRM arena – **CRM Analytics**

Nowadays customer bases are too large and complicated for marketing and sales departments to discern customer behavior. Various CRM systems allow executing an action triggered by a threshold levels, based on computations that are simple and linear. However, companies are now looking at accomplishing the action by computation of multiple variables, with some of them involving human behavior to augment the computation. CRM analytics drills down on data to accurately pinpoint inflections in customer behavior. **To achieve this, companies have to emphasize CRM analytics - the latest phase in the evolution of CRM.**

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What is CRM analytics?

Data itself has little worth. It is merely a representation of transactions or actions. The real value of data lies in the insight it can offer and ultimately in the positive, customer-oriented action it triggers. The insight to measure effectiveness, cut costs, reduce churn, understand relationships, anticipate trends, predict demand, optimize promotions, or segment the market - must be used as a catalyst for action.

Since the value of data lies in its use, and in taking the appropriate action, true ROI is realized once there is a system in place that exploits the insight by driving the appropriate action; CRM analytics helps you in achieving this.

CRM analytics is defined as focused analysis of data created by the operational side of CRM and legacy applications for the purpose of business performance management. CRM analytics is necessarily dependent on the existence of a data warehouse infrastructure that integrates CRM data and facilitates access to it. It therefore, enables organizations to identify and balance needs, patterns, opportunities, risks, and cost associated with existing and potential customers to maximize the overall customer lifetime value.

CRM analytics can help in achieving following key business objectives:

1. It helps in transforming the raw data into customer specific behavior measurements.
2. It helps in detecting customer behavior patterns, analyzing and choosing channels to market.
3. It helps in creating 360 degree view of the customer.
4. It helps companies focus on revenue generation and customer loyalty.

Types of CRM analytics

CRM analytics differs from the traditional Query and Reporting tools. The query and reporting tools simply provides retrospective, dynamic data delivery at record level. Whereas, CRM analytics uses statistical analysis and predictive models to support decision-making, process improvement and other intangible or soft benefits.

Broadly, there are two types of CRM Analytics technology – OLAP and Data mining.

Online Analytical Processing (OLAP) allows you to examine data with multiple variables. It provides retrospective, dynamic data delivery at multiple levels.

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Therefore, using OLAP you are able to map and analyze the trends and patterns of customer behavior from their historical data. It helps in providing summaries, comparisons, and forecasts hence supports a companies' decision-making process. OLAP is good in providing drill-down analysis for more specific details.

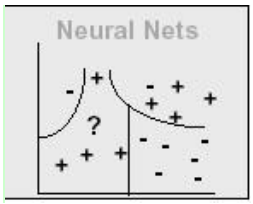
In essence, the key driver for OLAP technology is in providing multidimensional view to the data. So, if a user wants to view monthly sales volume data (Time dimension) for a set of products (Product dimension) across different market segment (Market dimension) across different customer groups (Customer dimension), OLAP aids in providing this view.

OLAP is optimized for multidimensional query and report. OLAP cubes store pre-computed results of data at various levels and hence multidimensional query results are returned faster.

Data mining technology, on the other hand, is prospective, proactive data delivery. While Query & Reporting and OLAP tools are good at allowing users to drill-down and understand what has happened in the past, data mining tools go beyond that to analyze the past and use it to predict future. Data mining goes deeper into the data to reveal useful patterns and insights into the data that are hidden due to volume and complexity of data.

Data mining technology works on a bottoms-up approach. Data mining "sifts" through the data, one record and one variable at a time, uncovering previously hidden information. A number of data mining and machine learning algorithm exist to find patterns in data, such as:

- **Neural Networks** – It is a non-linear predictive model that resembles biological neural network in structure. Key characteristics are:



    - Based on Biology
    - Inputs transformed via a network of simple processors
    - Processor combines (weighted) inputs and produces an output value
    - It has ability to handle non-linear relationships well
    - Works well with numeric attributes but can't handle very many attributes

- ***K*-Nearest Neighbors / Clustering –** This technique classifies each record in a dataset based on a combination of the classes of the K record(s) most

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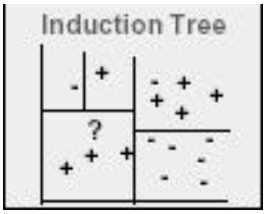
similar to it in a historical dataset. Key characteristics are:

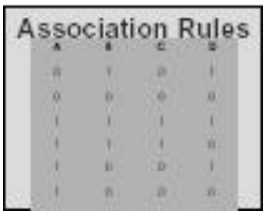
- Uses entire training database as a model
- Find nearest data point and do the same thing as was done with the record
- Implementation is easy, difficult to use

- **Decision trees –** These tree shaped structures represent sets of decisions. These decisions generate rules for the classification of a dataset. Specific decision tree methods include Classification and Regression Trees (CART) and Chi Square Automatic Interaction Detection (CHAID). Key characteristics of CART and CHAID are:



  - **CART**
    - Binary splits
    - Continuous variables
    - Grow, then prune using cross validation
  - **CHAID**
    - N-way splits
    - Categorically variables
    - Grow, then stop when finished

- **Rule Induction / Association Rules –** This technique uses extraction of "if-then" rules from data based on statistical significance. Key characteristics are:



  - Looks at all the possible variable combinations
  - Compute probabilities of combinations
  - Looks only at rules that predict relevant behavior
  - No ability to handle numeric attributes

Future of CRM analytic

Predictive models – As the statistical techniques evolved new learning starts to show its impact on the practical usability of data mining tools. Other data mining techniques have also started to show results that are more accurate.

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Techniques such as Association rules provide an insight into tastes and preferences of the customer, for example – if customer has bought a product A and B then he/she is likely to buy product C. These insights allow companies to predict customer behavior in real-time and draw more value from the customer relationship.

Enhanced data mining models – Early data mining tools relied on the sampling, whereas enhanced data mining models have evolved to utilize tree-based classifiers to build models against very large data sets. They are able to handle a greater number of attributes and dimensions. Currently, the models provide front-end intelligent segmentation capabilities that hasten in deriving actionable customer segments. This allows marketers to use more data and build models that are more accurate and predictive.

Cost-effective modeling - Data mining algorithms are increasingly getting externalized with business-logic driven rule that is comprehensible to the business managers, much as decision trees currently help the layman visualize complex problems better than neural nets.

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