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CRM in Banking Sector
with special reference to New Age Banks

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ABSTRACT

Customer Relationship Management is really much more a human function than a technology implementation. And while banks need to constantly orient their employees and vendors towards never losing focus of the customer, technology can be harnessed

to enable the human aspect to function more effectively. Starting with building a comprehensive view of the customer, the first step begins with putting in place an Analytic CRM (A-CRM) framework - one that automates data capture across channels and during every contact with the customer. Central to the system is its ability to integrate data from multiple contacts made with a single customer for various product and service [1]offerings. This would typically provide the bank with a birds-eye-view of the customer, his saving, spending and buying patterns.

The next logical step is to use this 360 degree view of the customer, juxtapose it against predictive, descriptive modeling and forecasting techniques in order to zero in on the best way to reach a particular customer. For E.g.: A customer whose debit card reflects frequent travel is probably best reached on his hand phone as compared to a direct mailer sent to a residential address.

Additionally the solution is also capable of performing market basket analyses to predict which customers will be good candidates for cross-sell opportunities. After analyzing demographics, purchase history and other significant data, it creates profiles of common customer behavior patterns basis which current as well as new customers can be approached with specific products rather than random ones. Another functionality of A-CRM is segmentation and profiling which will typically allow a bank to identify specific segments within its customer base and design marketing strategies customized for these segments.

The core theme of all CRM and relationship marketing perspectives is its focus on co-operative and collaborative relationships between the firm and its customers, and/or other marketing factors.

INTRODUCTION

A primary objective of CRM is to provide the entire organization with a complete, 360 – degree view of the customer, no matter where the information resides or where the customer touch point occurred. Today, many businesses manage different customer relationships with multiple information systems, which weaken customer service and ultimate reduce total sales potential. To realize the benefits of CRM, it is important to have an integrated solution across all customers' information systems, tying together the front and front offices for a complete view of the customers in order to serve them better.

Why is it necessary?

Many companies are turning to customer relationship management systems to better understand customer wants and needs. CRM applications often used in combination

[1]www.financialexpress.com/news/crm-more-of-business-less-of.../0
[2] www.scribd.com/doc/.../CSCI-599-FINAL-PROJECT-REPORT

with data warehousing e-commerce application and call-centre, which allows companies to assess information about customers buying history, preferences, complaints and other data so they can better anticipate what customer will want. The goal is to instil greater customer loyalty.

Other benefits include:

- The ability to provide faster response to customer inquiries.
- Increase efficiency through automation.
- Having a deeper knowledge of customers.
- Getting more marketing of cross selling opportunities.
- Identifying the most profitable customers.
- Receiving the customer feedback that leads to new and improved product and services.
- Doing One to One marketing.

Why now?

What makes CRM appropriate for today's environment? While there are many number of environmental factors and business advancement that impact and enable the real importance for CRM in today's environment is competitive and differentiation. CRM promises to be competitive and differentiation in today's environment.

Organization today is finding it difficult to compete on the basis of product. Technology advancement has enabled the near immediate replication of product features and functions. It is just a matter of weeks between a product launch and saturation of the market. Just think about it, are there many products out there that are truly unique?

Price, which has traditionally been another basis of competitive differentiation, is no longer a means for many to compete. Complex channel networks have caused parity pricing.

Promotion strategies have similarly lessened as a means of differentiation. Clubs abound, special offer are the norm, and sales are continual.
Place of distribution has likewise become less influential in the success or failure of a business. The Internet has created an avenue for even the smallest business to compete.

While all these factors are still important, none of them can alone support the success of most business. CRM –the ability to provide a more meaningful sales and service experience promises to be means of differentiating, of providing customers with a reason to frequent your business rather than that of your competitors.

Ownership of customer relationship provides exponentially greater rewards than differences in product, price, promotion or place of distribution could ever offer. All of these factors can even be mitigated if you can serve as the one stop provider that can identify, quantify, and service customer's need.

Effective CRM starts by focusing on the development of business strategies and by aligning an organization to serve customers. These business strategies are then executed using CRM technology solutions. The most successful business strategies are

developed only after an organization learns about customers‟ behavior patterns and attitudes. Behavior studies show what products or services have been purchased in the past and what products or services are currently being bought.

Customer relationship management (CRM) is developing into a major element of corporate strategy for many organizations. CRM, also known by other terms such as relationship marketing and customer management, is concerned with creation, development and enhancement of individualized customer relationships with carefully targeted customers and customer groups resulting in maximizing their customer life time value.

A new form of cross-functional marketing, i.e. CRM is replacing narrow functionally based traditional marketing. The traditional approach marketing has been continuously questioned in recent years. This approach emphasized on the management of the key marketing mix elements such as product, price, promotion, and place within the functional context of the marketing department.

The new CRM approach, while recognizing these key elements still need to be addressed, reflect the need to create an integrated cross functional which focus on marketing – one which emphasizes keeping as well as winning customers. Thus the focus is shifting from customer acquisition to customer retention and ensuring the appropriate amount of time, money and managerial resources are directed towards these tasks.

The adoption of CRM is being filled by a recognition that long-term relationship with customers is one of the most important assets of the organization and that information – enabled systems must be developed that will give them “customer ownership”. Successful ownership will create competitive advantage, which result in improved customer retention and profitability for the company.

INCORPORATING CUSTOMER RELATIONSHIP MANAGEMENT

Businesses today are continually looking for ways to achieve a competitive advantage. Margins are shrinking, competition is increasing and industries are consolidating. While customer expectation intensify for quality, service and delivery, businesses are reducing staff and the same time searching for ways to arm employees with information to make better decisions and innovate.

Customer is the most important asset in businesses. Consequently, applying some management resources to improve the customer’s experience and maximize the profit, potential of that asset is important. The concept of CRM as a strategy reflects the business process and technology that can be combined to optimize revenue, profitability and customer royalty.

The CRM market is evolving rapidly and is one of the fastest growing market segments in application software .CRM has captured the mind share of senior executives across a variety of industries.

With a rapid growth of E-customer applications and the increasing need to sell to and support customers through Internet, CRM solutions must provide a focal point for all the customers- facing activities across the channels.

The effective use of CRM principles requires a three-pronged approach. First, all CRM efforts should begin with a well-defined strategy. Second, an infrastructure must be developed to achieve appropriate objectives.
Specifically, the infrastructure should align product and sales goals to meet customer needs, according to their preferences, in the most cost-efficient manner. Third, continuous analytic intelligence should be used to determine and modify customer interaction.

In addition to the above approach, implementing CRM involves collecting and reviewing the most relevant customer data. Relevant customer data can uncover needed information about behavior patterns and attitudes. Once identified, the customer data should be incorporated into the infrastructure so that effective marketing plans can be developed. The execution of marketing plans is driven both by analytic insights obtained about customers and by any existing marketing communication plans. After appropriate customer data analysis and marketing plan development is complete, the multi-channel customer contact strategies can be implemented within the CRM technology infrastructure.

CUSTOMER EQUITY DURING DIFFERENT ECONOMIC CYCLES

Customer relationships are an important company asset. A firm can use this customer equity to improve its growth and profitability prospects during economic downturns and upturns. Just as a squirrel buries nuts in anticipation of winter, a smart business will build customer equity during good times in order to produce more business during bad times.
Companies should know who their Most Valuable Customers (MVCs) are. More resources should be used to market relevant products and services to these MVCs while fewer resources should be expended on unprofitable customers. The goal is to make the right offer to the right customer at the right time. Such customer knowledge can immediately and significantly reduce total cost while, at the same time, increase sales with individual customers. This strategy enables an organization to anticipate greater returns from its campaigns, a reduction in costs, an increase in conversion rates, and more one-to-one communication initiatives.

The “Picket Fence” strategy can be used to isolate the firm’s MVCs from the broader customer base. For each customer behind the picket fence, there is a particular objective and a strategy for achieving that objective by the management team.

In an upturn economy, business strategies should involve growth. This includes acquiring new customers and increasing the number of current customers. In a downturn economy, business strategies should involve harvesting. Harvesting implies that an organization gets the most from every existing relationship by selling more to current customers. The concept of harvesting is sometimes referred to as cheap growth.

PRODUCT VERSUS CUSTOMER-CENTRIC BUSINESS STRATEGY

Traditionally, banking and financial organizations are organized around product-centred and function-centred models rather than a customer-centred model. By becoming truly customer-centred, a bank or financial organization can achieve the following benefits:

- Higher returns on invested capital
- More profitable customers
- Lower capital costs (due to the consistency of financial results that comes from those long- term, carefully managed customer relationships)
- Larger investment opportunities (due to their understanding of customer finances and unmet needs).

SMART CUSTOMER EQUITY ASSET MANAGEMENT DATA INFRASTRUCTURE

Many components play a pivotal role in the management of the customer asset base, especially now, with complex business environments and fierce global competition. Two of the most important components include effectively serving the existing MVC base and growing the MVC base.

BUILDING CUSTOMER INFORMATION SYSTEMS

Almost every major bank or financial organization that has been in business for the last a few decades has typical account servicing legacy systems. These systems facilitate account opening, balance maintenance, and support a monthly or periodic statement-generating process. However, these legacy systems lack the capabilities to manage and grow MVCs because their sole objective is to service the transaction activity of an account. Building an intelligent Customer Information System (CIS) is the fundamental first step required to manage customer equity in this scenario.

The focus of the CIS should be to collect, store, and maintain the following types of information on the customers in a data warehouse:

- Customer or Household Identification (name, phone, address, title, company name)
- Rating (size, value level, or profitability contribution)
- Background (demographic, lifestyle characteristics)
- Communication Record (contact with company, participation in marketing programs, types of information or services required, channels of contact, requests for information, complaint frequency or recency)
- Purchase Behaviour (recency, frequency, monetary value)
- Credit-worthiness
- Performance Ratings or Credit Scoring, and History (performance evaluation, loyalty, and likelihood to refer the company to others)
- Customer Survey Data Collection

The next generation of advanced CIS is called a Knowledge Discovery Database (KDD). Instead of mining layers upon layers of customer transactional and lifestyle data for knowledge nuggets, KDDs establish a set of flexible knowledge-required algorithms.

The available data is then searched to find any exceptions. [2]

Any good CIS or KDD must be able to provide the launching pad to evaluate, classify, acquire, grow, and support the efficient servicing capabilities of customer equity asset management activities.

CHALLENGES TO IMPLEMENTING CUSTOMER EQUITY ASSET MANAGEMENT

The following key challenges face those that try to implement customer equity asset management:

• *Limited Scope:* Many existing CIS tools are very limited in scope, and do not support customer equity management.

• *Complex Technology*: Technology solutions sold by vendors have become very complex to use, expensive to maintain, and contain irrelevant information for data mining.

• *No Pertinent Data:* Most of the existing data warehouses lack information on recency, frequency, and monetary values. They also offer information that is insufficient for supporting predictive modelling and predictive scoring.

• *Extended Time to Market:* The addition of new capabilities to existing data warehouses is cost prohibitive and takes a long time to bring into production stage capabilities (or even to catch up with the fast-changing dynamic nature of the market place).

• *Multi-Vendor Tools and Capabilities:* Over the years, many major financial organizations have developed data warehouses by purchasing diverse sets of software tools and then building data warehouses in-house. For example, Data Quality and Cleansing tools, Extract Transform Load (ETL) tools, database management and storage tools, data mining, and campaign management solutions from various vendors. [3]

• *Overburdened Internal Information Technology Organization:* Information technology organizations have had to employ individuals who have specialized vendor product skill sets to support multi-vendor tools. This can increase organizational expenses significantly.

• *Lack of Integrated Capabilities:* The focus of many CIS systems has shifted to service only ad hoc reporting and to provide simple querying capabilities rather than becoming an infrastructure for efficient customer equity management or for enabling some sort of KDD.

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[8] www.pdfpedia.com/.../180-29-crm-making-it-simple-for-the
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CRM IN NEW AGE BANKING

Banks Become Customer-Centric

The post-liberalized banking sector in India has been witnessing spectacular changes. The major reasons for the recent radical changes in banking industry's portfolio are competition, consolidation, information technology and the need to be customer-centric. Banks could improve the profitability by adopting strategies like market segmentation, innovation, price bundling and relationship. Technology has a major role to play in retail banking, but its role is complementary to customer service initiatives.

Due to increased financial market products like commercial paper and variety of financial instruments, big corporate clientele of several commercial banks have shifted their loyalty, and have been raising resources from the market directly and commercial banks have become more retail customer-centric by offering wide range of services. Banks have identified new customer segments like students, workingwomen, and high rich net worth individuals.

In the era of cut throat competition globally as well as locally, Data Mining is used by almost all the proactive corporations and organizations to build and manage customer relationships. Data Mining helps to retain the customers by understanding and fulfilling their needs proactively and thus delighting them in the long run. Earlier it was very difficult to understand and manage the data. But now with the usage of CRM Software from companies like SAP, Siebel, Oracle, Amdocs and others; many companies are utilizing the benefits of enhancing customer loyalty through Customer Relationship Management. In the banking sector in India, New Age Private Banks like ICICI Bank, HDFC Bank, Axis Bank are at the forefront of utilizing the data mining techniques to enhance the customer relationship.

Data Mining

Data mining is the principle of sorting through large amounts of data and picking out relevant information. It is usually used by business intelligence organizations, and financial analysts, but it is increasingly used in the sciences to extract information from the enormous data sets generated by modern experimental and observational methods.
The Internet and technology opens up a wealth of information 24 hours a day, seven days a week, thereby heightening the transparency of the markets. Customers use the Internet to quickly shop around and see what competitors can provide. As a consequence, the attention span of customers has decreased, and customer loyalty is subject to new laws. Customers are looking beyond products to assess whether the overall solution you provide addresses their individual needs and priorities.

Technology has also paved the way for a new dimension of customer relationship management. The falling costs for computing power and the arrival of new software tools for capturing and analyzing mass data have provided the main thrust behind the increase in importance of analytical solutions in general. Powerful hardware and software give better ways than ever before to understand and leverage customer relationships. Data mining is one of the technologies which provide analytical ability to the organizations for leveraging on customer relationships and thus customer loyalty and this paper analyzes the potential of data mining for building and managing better relationships. (META, 2007)

Data Mining uses a variety of techniques to find hidden patterns and relationships in large pools of data and infer rules from them that can be used to predict future behavior and guide decision making. To use data mining effectively for managing customer relationships the data must be categorized in some manner if it is to be accessed, re-used, organized, or synthesized to build a picture of the organization's competitive environment or solve a specific business problem (Pearlson, 2001, p.196).

Customer relationship Management form a learning relationships with the customers by noticing their needs with the use of online transaction processing i.e. operational CRM, remember their preferences with the use of Decision support Data warehouses and learn how to serve them with the use of Data mining. There may be number of channels by which company interfaces with its customers for example direct mail, Email, telemarketing etc. Analytical CRM (Laudon, 2006) includes applications that analyze customer data generated by operational CRM applications to provide information for improving business performance management. For example, it's use in developing customer profiles, analyzing customer profitability etc.

Data Mining is defined as exploration and analysis of large quantities of data by automatic or semi-automatic means to discover meaningful patterns and rules and these patterns allow a company to better understand its customers, improve its marketing, sales, and customer support operations. (Berry and Linoff, 1997) The process of extracting hidden key information from a large pool of available data is data mining.

Advanced statistical tools are used in data mining to understand current behaviour and to predict future behavioural patterns. Mathematics, genetics, cybernetics and other fields of research make extensive use of data mining. In CRM, Web mining (pertaining to Web-related information) is used to gain insights into customer behavior. Interesting little poll over on KD Nuggets today - readers were asked where they had applied data mining in the last 12 months. The top 5 were CRM (26.1% of respondents), Banking (23.9%), Direct Marketing/ Fundraising (20.3%), Science (18.8%) and Fraud Detection (18.8%).

Customer Relationship Management

CRM can be defined as the process of predicting customer behavior and selecting actions to influence that behavior to benefit the company (Jenkins, 1999), usually leveraging on information technology and database-related tools.

CRM initiatives usually seek to fulfill several objectives. One of the objectives is to get closer to the customer by utilizing the data "hidden" in scattered enterprise databases. Examining and analyzing the data can turn raw data into valuable information about customer's needs. By predicting customer needs in advance, businesses can then market the right products to the right segments at the right time through the right delivery channels. Customer satisfaction can also be improved through more effective marketing. Another objective of the CRM initiative is to transform the company into customer-centric organizations with a greater focus on customer profitability as compared to line profitability. The insights gained from CRM enable companies to calculate or estimate the profitability of individual accounts. Other CRM objectives include increased cross-selling possibilities, better lead management, better customer response and improved customer loyalty (Chin, 2000).

Current Status of e-CRM in Indian Banks

Internet has enabled banking at the click of the mouse. At present there are five functional categories for online banking sites – on line brochure centre, interactive bank, e-mails, calculations and cyber banks, which offer customers access to account information, inter-branch funds transfer and utility bill payments. Banks have tied up with service providers in telecom and power sectors like MTNL, BSES and cellular service providers for allowing their customers to make bill payments online. In India, new private sector banks like ICICI Bank, HDFC Bank, Global Trust Bank and UTI Bank, have taken the lead in e-banking. Among the foreign banks, Citibank, has noticeable presence, while others like Federal Bank, HSBC Bank, Deutsche Bank and ABN Amro Bank, are moving towards becoming big players in e-banking. Even the state run banks like SBI and Union Bank of India have realised the advantages of such services.

ICICI Bank, the first bank to offer e-banking services in India has more than one lakh regular internet user accounts, of which more than 25 percent are of NRIs. The bank has viewed advanced information technology as a managerial and competitive tool and has tried to harness technology to the maximum possible extent to deliver superior customer services.

The Bank has emerged leader in B2B and B2C initiatives. B2B solutions (i-payments) aim at facilitating online supply-chain management to it corporate clients by linking them with their suppliers and dealers in a closed business loop. All members in this loop are required to maintain the account with the bank. This product has gained considerable market acceptance and the bank has already entered into memorandum of understanding with over 100 large Indian companies.

The Bank became the first bank in India to introduce utility bill payment through Internet. Bank has entered into tie-ups with leading telecom companies such as MTNL, Tata teleservices, VSNL and cellular operators such as BPL Mobile, Airtel and Usha Martin. Tie-ups have been established with BEST & BSES for electricity payment in Mumbai. The bank with its net banking service called ‘Infinity’ goes a step forward by allowing the account holder to transfer fund into another person’s account with the bank. Also one can intimate about the loss of an ATM card over the net when using Infinity. Corporate sector can issue letter of credit and make inquiries regarding bills sent for collection via this service. It also provides facility for nicknaming all accounts to avoid remarking lengthy accounts number.

UTI bank has tied up with Cosmat Max, to create a communication network for its customers. The network will have VSAT terminals at strategic locations, which will help in ATM servicing and internal management information system. The bank has signed a memorandum of understanding with equitymaster.com for e-brokering activities of the site. This will enable the bank to leverage its database for e-commerce and other initiatives with data-warehousing and data-mining, where information of the customer spending habits will be used to sell other co-related products like credit cards.

HDFC Bank has, for the first time in India made the e-shopping experience secure online and real time with the launch of its payment gateway. This will allow any Visa/Master credit card holder anywhere in the world to make payments for global services over the Internet.

The bank has tied up with 15 portals and is in talk with several others to offer secure business to customer e-com, credit card transactions. The first secure, on-line and real-time e-com. credit card transaction in the country was done on the Easy.2 shoppe.com shopping mall, enabled by HDFC bank on a Visa card, heralding the launch of the payment gateway. HDFC Bank also offers a direct debit option whereby its customer can pay for the goods or services by a secure password enabled transfer of funds from their account to the merchant account.

E-CRM Techniques used by Banks in India

Banks leveraging technology can develop innovative customer solutions to attain growth with profitability within the framework of sound risk-management practices. Techno-savvy banks are tapping into online services to initiate a new era in relationship management to create one to one relationships as well as one too many relationships to enhance their competitive advantage.

Recent developments in critical areas of IT have changed the way banks are managing their customer relationships.

The following are some of the latest e-CRM techniques used by banks in offering new products and services to its customers.

Internet banking

Internet is being used by banks to disseminate information to customers about bank's products and services through their websites. The banking services are provided through Net with convenience of ease and accessibility. Internet banking offers many benefits to the banks viz. vast reach, reduced transaction costs, direct marketing and cross selling, build bank's brand, etc. It also offers benefits to customers' viz. reduced cost, convenience, banking with the bank and not the branch, speed, better cash management, etc. The new private sector banks – ICICI Bank, HDFC Bank, UTI Bank and the Global Trust Bank have taken the lead in Net Banking.

Data Warehousing and Data Mining

This technique is used to develop and use customer data to check their profile, retention and loyalty patterns. They provide valuable inputs for retaining customers and developing products and services for the future.

ATMs

At present installed number of ATMs in the country is 1800, which is likely to be more than 4000 by next year. Most of the demand for this technology is coming from State owned banks. Until now, ATM services have been confined to deposits and withdrawal from bank accounts by customers. The growth in ATMs has been fuelled by a race among banks to expand their customer base by going in for more value added services (bill payments and ticketing services) on these machines.

Telebanking or Mobile banking

These services empower the customer with an instant access to routine queries and transaction or check bank balances.

Computerized decision support system
This helps the banks in applying optimization techniques in functional areas such as, asset–liability management, optimization of investment portfolios and asset portfolios through linear programming. This is a practical tool which helps the bank managers and customers in optimizing investment decisions.

E-mail
Banks can maintain the list of its best customers and inform these members through E-mail the various services and schemes offered by the bank. These days this is considered as one of the cheapest and effective means of communication.

Computer networking
Networking between the branches of divisional, regional, zonal and head office of banks provide access to customer data base from the executive desk. This will integrate the front-office applications with back-office requirements, thus generating MIS for branch managers and executives at the different controlling offices including Head office for accurate, speedy and cost-effective customer services.

Customer smart cards
These cards are issued to key customers which carries all the relevant information, details of previous and repeat purchases, to make it convenient for the customers to recall and for the banks to keep a track of the behavioural and purchase trends. Utilities like BEST in Mumbai are already using smart cards for ticketing in its luxury buses.

Analytical CRM
Analytical CRM aims at storing, analyzing and applying the knowledge about ways to approach customers, typically using data mining. Analyzing customer relationships from a lifetime perspective is critical for success.

The Data Monitors report titled "Analytical CRM," forecasts that global enterprise investment in analytical CRM will grow from an estimated $2.3 billion today to more than $3 billion in 2009. By employing analytical CRM analytics, businesses stand to gain a fuller understanding of their customers in order to serve them better, thus increasing customer longevity and generating more profit. Analytical CRM is the active collection, concentration and analysis of data gathered about the customer and his interactions with the business.

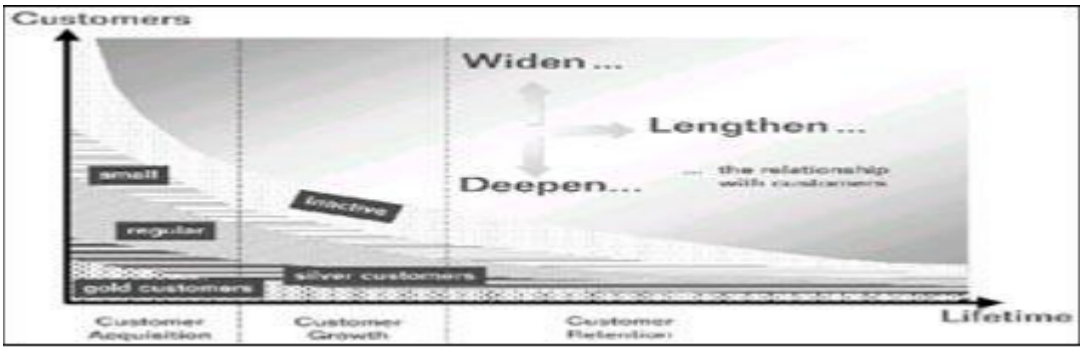


Figure 1: Customer Life Cycle

Widening the relationship with customers by acquiring new and profitable customers

To widen your customer relationships, Data mining can answer questions like:

- Which kind of customers would you like to acquire?
- Which kind of customers will drive your growth in future?
- Which new customers are likely to be interested in your products?

Customer acquisition is the number one issue for small company marketers. As corporations increase budgets to attract and obtain new customers, data mining becomes a critical tool for profiling good customers, performing market segmentation, and improving the results of direct-marketing campaigns. The number of campaigns that can be managed in a given time period is often much lower than what the business demands. Data mining solves these problems by putting tools in the hands of the marketers driving these campaigns -- it keeps control where the need is. As a result, marketers can be much more responsive to creating new campaigns and can implement a direct feedback loop to improve their efforts on a regular basis.

Lengthening the relationship with your top customers by targeting existing resources and strengthening the foundation of those relationships

To lengthen your customer relationships, Data mining can answer these questions:

- Which customers in particular do you want to keep?
- Which customers will drive most of your profits?
- Which customers might switch to your competitors and why?
- Which customers are dissatisfied with your services and products?

Customer retention: This retention is also a major issue for all businesses. One Harvard study suggests: "Reducing customer attrition by 5 per cent can double a company's profits." Given the high Cost of finding new customers, a key issue for many organisations is customer retention. Often referred to as chum, customer turnover is a difficult problem to manage because it usually occurs without warning. For example, when a customer calls their long-distance carrier to have their account closed in favour of a competitor, the telecommunications provider knows only at that moment that their valued customer is churning. Once they are predisposed to leave, it is unlikely that the customer can be convinced to stay.

Data mining introduces a major paradigm shift to churn management by adding predictive capabilities. Data-mining tools can be used to model the patterns of past churning customers by examining billing histories, demographic information, and other customer data. Then, the same model can be used to predict other good customers who are likely to leave in the near future. Armed with this information, the marketer can proactively instigate campaigns to keep their customer, rather than fighting to get them back later.

Deepening the relationship with customers by transforming minor customers into highly profitable ones.

Intensifying and deepening customer relationships also require Data mining tools to answer essential questions, such as:

- With which customers can you increase the share of wallet?
- Which products and services interest a particular customer?
- Which products are typically bought together? Which cross selling opportunities should you consider?

Cross-selling: Growing a customer's value is yet another critical marketing function. The notion of increasing customer share is a key to most organisations. Unlike increasing market share, which focuses on obtaining a greater number of customers, increasing customer share refers to getting more of the dollars each individual customer has to spend. Two common methods for this are customer-based product-launch campaigns, and cross-selling.

Riddled with as much guesswork and gut instinct as they are today, these methods are often not as effective as they could be. Data-mining tools improve product launches to an installed base, as well as cross-selling activities by helping marketers understand which customers are most likely to purchase new products, and which products are typically purchased together. This results in a more focused effort to customers ready to spend additional dollars.

Personalization provides relevant and specific recommendations for individuals, taking into account personal preferences, demographics, and behavior. Personalization permits delivering recommendations with the touch and timing of someone who knows you well.

Personalization uses data mining technology to analyze the large amounts of data gathered from Web sites and other applications to find patterns within purchase, demographic, ratings, and navigational data.
Personalization collects customer profile data and uses them to build predictive models that support personalized recommendations. The underlying rules derived through data mining can be more sophisticated and thus yield better results than the other techniques noted above. For example, "a person who has clicked links x and y and who has demographic characteristics a and b is likely to buy".

We have explored the CRM analytics with the following example of ICICI Bank, where they use data mining as tool for building and managing customer relationship.

In India, ICICI Bank is using the techniques of data mining to acquire new customers. These customers may be totally new to ICICI or in most of the cases; ICICI Bank taps their customer base and offers them various other services. For example: If you are having an ICICI Bank Account, you have special privilege offers from[4] the bank for new services like Home Loans, Car Loans, Credit Cards, Personal Loans and others. ICICI Bank has also got Loan on Phone Scheme and Pre Approved Offers into each of their services; so that the relationship with the customer can not only be maintained, but will also make them more loyal of offering new services. Ultimately in the long run, the business of ICICI Bank will grow manifold by using the data mining techniques.

[20] www.indianmba.com/Faculty_Column/FC792/fc792.html
[21] www.coursehero.com › Malaysia

Data mining as a tool for CRM

The first analytical step in data mining data description– for example, summary of statistical attributes (such as means and standard deviations), may represented by using charts and graphs, and look at the distribution of values of the fields in your data.

One needs to build a predictive model based on patterns determined from known results, and then test that model on results outside the original sample. A good model should never be confused with reality, but it can be a useful guide to understanding the business.

Data mining can be used for both classification and regression problems. In classification problems you're predicting what category something will fall into-for example, whether a person will be a good credit risk or not, or which of several offers someone is most likely to accept. In regression problems is like predicting a number such as the probability that a person will respond to an offer.

In CRM, data mining is frequently used to assign a score to a particular customer or prospect indicating the likelihood that the individual will behave in the way organization wants. For example, a score could measure the propensity to respond to a particular offer or to switch to a competitor's product. It is also frequently used to identify a set of attributes (called a profile) that segments customers into groups with similar behaviors, such as buying a particular product.

A special type of classification can recommend items based on similar interests held by groups of customers. This is sometimes called collaborative filtering.

There are some basic steps of data mining for CRM analytics:

1. Defining the business problem

Each CRM application will have one or more business objectives for which you will need to build the appropriate model. Depending on your specific goal, such as "increasing the response rate" or "increasing the value of a response," you will build a very different model. An effective statement of the problem will include a way of measuring the results of your CRM project.

2. Building a marketing database

To build the marketing database, the data cleaning up process is required for building good models. The data needed may reside in multiple data resources such as the customer database, product database, and usage databases. [5]This means integrate and consolidate the data into a single marketing database and reconcile differences in data values from the heterogeneous sources. There are often large differences in the way data is defined and used in different databases. Some inconsistencies may be easy to uncover, such as different addresses for the same customer. Making it more difficult to resolve these problems is that they are often subtle. For example, the same customer may have different names or multiple customer identification numbers may exist.

[22] www.123eng.com › ... › Management zone › CAT / MBA INDIA Forum

[23] www.indianmba.com/Faculty_Column/FC792/fc792.html

3. Exploring the data

Before building good predictive models, one must understand the consolidated data. Graphing and visualization tools are a vital aid in data preparation, and their importance to effective data analysis cannot be overemphasized. Data visualization most often provides good insights. Some of the common and very useful graphical displays of data are histograms or box plots that display distributions of values. Some may also want to look at scatter plots in two or three dimensions of different pairs of variables. The ability to add a third, overlay variable greatly increases the usefulness of some types of graphs.

4. Preparing data for modelling

This is the final data preparation step before building models and the step where the most "art" comes in. There are four main parts to this step:

First select the variables on which to build the model. Ideally, take all the variables, feed them to the data mining tool and let it find those which are the best predictors.

The next step is to construct new predictors derived from the raw data. For example, forecasting credit risk using a debt-to income ratio rather than just debt and income as predictor variables may yield more accurate results that are also easier to understand.

Next decide to select a subset or sample of data to build predictive models. If there is lot of data, however, using all data may take too long or require buying a bigger computer than you would like. Working with a properly selected random sample usually results in no loss of information for most CRM problems. Given a choice of either investigating a few models built on all the data or investigating more models built on a sample, the latter approach will usually help to develop a more accurate and robust model of the problem.

Last, transform variables in accordance with the requirements of the algorithm for building the model.

5. Building Data mining model

The most important thing to remember about model building is that it is an iterative process. Explore alternative models to find the one that is most useful in solving business problem.

Most CRM applications are based on a protocol called supervised learning. Start with customer information for which the desired outcome is already known. For example, use historical data because previously mailed to a list very similar to the contemporary one. Or conduct a test mailing to determine how people will respond to an offer. Then split this data into two groups. On the first group train or estimate the model. Then test it on the remainder of the data. A model is built when the cycle of training and testing is completed.

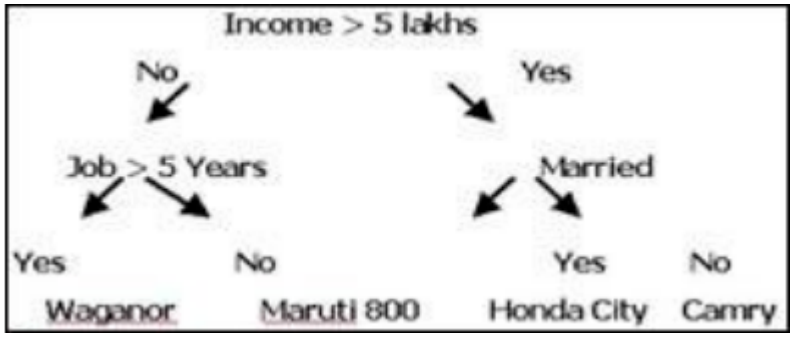
6. Evaluating results

Perhaps the most overrated metric for evaluating results is accuracy. Suppose an offer to which only 1% of the people will respond. A model that predicts "nobody will respond" is 99% accurate and 100% useless. Another measure that is frequently used is lift. Lift measure the improvement achieved by a predictive model. However, lift does not take into account cost and revenue, so it is often preferable to look at profit or ROI.

7. Incorporating data mining in CRM solution

In building a CRM application, data mining is often only a small, albeit critical, part of the product. For example, predictive patterns through data mining may be combined with the knowledge of domain experts and incorporated in a large application used by many different kinds of people. [6]

The way data mining is actually built into the application is determined by the nature of the customer interaction. There are two main ways of interactions with the customers' i.e. inbound or outbound interactions. The deployment requirements are quite different.



Outbound interactions are characterized by our company originating the contact such as in a direct mail campaign. Thus selecting the people to whom you mail by applying the model to customer database. Another type of outbound campaign is an advertising campaign. In this case you would match the profiles of good prospects shown by your model to the profile of the people your advertisement would reach.

For inbound transactions, such as a telephone order, an Internet order, or a customer service call, the application must respond in real time. Therefore the data mining model is embedded in the application and actively recommends an action.

In either case, one of the key issues you must deal with in applying a model to new data is the transformations you used in building the model. Thus if the input data contains age, income, and gender fields, but the model requires the age-to-income ratio and gender has been changed into two binary variables, you must transform your input data accordingly.

CONCLUSION

In an e-world where, business is done at the speed of thought, the real challenge for the future lies in anticipating the demands of the new age and providing sustainable solutions. CRM strategy must cover all the market segments such as retail customers, Indian corporate sector, trade and agricultural sector for their banking requirements. The banks must adopt e-CRM 'Customer-centric' focus approach, as it is believed that products should be devised for the customers and not the other way around.

[24] www.crmmarketplace.com/.../Building-Profitable-Customer-Relations
[25] www.indianmba.com/Faculty_Column/FC792/fc792.html

Banks must build their brand image in assuring customers about the safety of their money and security of transaction on the Net. Moreover, CRM based alone on Internet will seems to be a wrong strategy for banks in India. Jose Fonellosa of Spain BBVA, which acquired first e-CRM, says internet is at best a zero sum game for banks. For high end products, customer cannot only rely on e-banking. For social interactions, people would like to visit their traditional brick and mortar branches.

Thus Customer Relationship Management is essential to compete effectively in today's marketplace.

The more effectively you can use the information about your customers to meet their needs the more profitable you will be. Operational CRM with the help of analytical CRM with predictive data mining models as its core provides the business a cutting edge to maintain and enhance relationship. The path of a successful business like ICICI Bank and innumerable other corporations and organizations is build on data mining as the guiding factor.

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