Forewarned is forearmed:
Preventing defections of our best customers

Fabio Marchetti, Filippo Avigo - BIPOP CARIRE
Alberto Saccardi, Salvina Piccarreta - NUNATAC

BIPOP-CARIRE operates through a network of over 600 among branches and financial shops mainly located in Northern and Central Italy.
In the spring of 2000, under the supervision of the Marketing Department, Bipop-Carire started its CRM project.
In September 2000, in cooperation with Nunatac, a company focused on building decision support systems, took place the start-up of the activities concerning the development of Data Mining environments, analysis models and tools to interface with branches and financial planners during marketing campaigns.
Our presentation will illustrate one of the most significant actions adopted in the winter of 2001-2002 aimed at preventing customer defections. Specifically, the operational process we implemented included the following steps:
- *Development of a churn model to identify **the customers most likely to defect**;*
- *Creation of a model to single out, based on their profile, **customers who may be targeted as likely buyers of insurance products, which have proved to reinforce customer loyalty;***
- *Customer assessment based on their **current and potential values**;*
- *Development of a three-dimension matrix - the three dimensions being the three measures generated by the models above - to identify marketing actions targeted to preventing best customers defections.*

Enterprise Miner™ allowed us to accomplish the project in few months. SAS/AF® was the front end application we used as the tool for communication to branches and financial planners and for easy and immediate reporting of results.

1. Introduction

Over the last decade, increased competition has clearly pointed to the ability to meet customers' wants and expectations through a comprehensive offering as a key factor in determining how strong a company's market positioning will be. This ability can and must be continuously *measured* and *improved* to achieve a strategic advantage sustainable over time.
BIPOP-CARIRE decided to implement data mining activities to support marketing with instruments capable of assessing its customer purchasing potential while providing an integrated offering to maximize marketing campaigns and cross-selling results.
Specifically, one pivotal requirement was securing customer loyalty, especially for those customers the bank considered most profitable.
Multivariate analysis techniques were used. They enable to assess the relations among certain variables and interpret customer choices along multiple dimensions by looking at them as a cluster of intertwined needs. The variables included in the project concerned customer banking behavior, since they had the advantage of being already available for all customers and descriptive of their *real* habits and wishes.

The purpose of the project is to satisfy the expectations of internal customers as well as end customers at large. The key variables, which determined the degree of satisfaction of internal customers have been identified in:

a) Prompt delivery of information for Decision Support
b) Support for multiple marketing campaigns within a tight schedule
c) Overall quality of services.

2. Presentation of BipopCarire[i] and Nunatac[*]

2.1. Bipop Carire

BIPOP-CARIRE operates through a network of about 320 branches and almost 300 financial shops mainly located in Northern and Central Italy.

The Bank is committed to broadening and diversifying its traditional sales network with the objective to improve customer service continuously and to sell its products all over the country. Traditional banking and related services are offered directly by BIPOP-CARIRE along with asset-management and insurance products, branded Cisalpina Gestioni and Cisalpina Previdenza respectively, as well as leasing and factoring products, branded Fineco Leasing and Fineco Factoring.

2.2. Nunatac

NUNATAC is a consulting firm Quality Partner of the SAS Institute, composed of a group of professional consultants with statistical, computing and marketing skills.

The defining characteristic of NUNATAC is the combination of specific abilities and a well developed "know-how" in the field of Database Marketing.

Over the course of the last 7 years, Nunatac has developed vertical market capabilities in the following sectors: Banking, Insurance, Telecom and the Automotive Industry.

3 Logical Data Model

The detail tables of BIPOP CARIRE's Marketing Datamart play the role of an historical repository from which to gain a better knowledge of customer profiles. In this detailed data structure you have to collect all the pieces of information about each single account, each single contact between the bank and the client, over a significant series of periods.

That means the detailed tables are not the proper input datasets for a customer centric data mining activity. In fact, in order to perform this activity, you have to deal with denormalized datasets where:

> one customer corresponds to one record,
> columns summarise the different relevant aspects of the client's characteristics and behaviours.

We call such datasets Customer Tables.

The Logical Data Model of the Datamart detail structure attempts to reach an ideal compromise between:

> adherence to the business model,
> consistency and integrity,
> the opportunity to keep track of history,
> maximum granularity,
> access simplicity and data extraction efficency.

Customer Tables are thematic tables, organized by customer identification code. They contain summarized data regarding:

> the analysis variables, in the data warehousing terminology the facts, e.g. the number of account transactions;
> the class variables, the dimensions, e.g. account classification by product type;
> the interaction between facts and dimensions;
> the fixed time lag for summarizing the data.

A critical step in designing a customer table is deciding the level of the interaction between facts and dimensions to control the level of granularity.

4 Goal of the Project: to implement a Business Intelligence Factory in the most efficient and effective manner.

The following is a description of the key rules of the project and our approach to them:

a) Security - given the confidential nature of the information we process, the whole Warehouse was built internally;

b) Data quality: continuous, automatic Data Audit process was implemented. The reports generated enable in-house human resources to assess the quality of available data;

c) Openness and conformity to company standards: in order to support and improve the system over time

d) Scalability- as we will gather and analyze more information over time: all the projects were implemented using Enterprise Miner™ , which makes them easy to duplicate and refresh.

e) Independence- we do not want to impact on other operational systems and Ease of use - to guarantee users' independence a customized campaign management environment was set up using SAS/AF®. From here, the lists of customers to be contacted can be sent over the intranet to branches and financial planners. The system checks for any overlapping campaigns in terms of both time and customers. Data is published in HTML format, because considered easier to use by financial planners.

f) Performance and reliability: to guarantee the efficiency of the Data Mining Group: a system was set up to generate campaign reports. It combines the Warehouse data with information given by branches via intranet. This allows to appreciate the actual ROI of marketing campaigns. It also provides valuable insight into customers' wants and needs, along with the possibility to promptly implement corrective measures or improvements.

5 Campaigns organized for customer loyalty

To date, two actions were implemented to build customer loyalty:
 a campaign to cross-sell life insurance products
 a campaign to reduce the churn rate of customers with assets management

In both cases, having easy-to-use data and software proved vitally important. This enabled a precise, analysis-based definition of the event to monitor. The reports generated did not simply concentrate on the reaction to the specific sale proposal but it included the overall customer response to the sale contact. Statistical models that allow to interpret the results gathered was used. In addition to better control over results, these models gave us the possibility to share the solution selected with portfolio managers and to collect more information about customers and their behavior.

Marketing campaign to cross-sell life insurance products

This two-step campaign was organized for two different products. In both cases, branches received a list of the customers most likely to buy the product promoted. The list was extrapolated from the outcome of statistical models generated by Enterprise Miner™ .
The goal of this campaign was to find out the best customers for insurance products at a predetermined target premium. Thus, the purchase of the target amount was picked as the event to monitor. Corruption of the model was carefully avoided in assembling the reference population. The outcome of the campaign can be considered good even though it clearly showed how important accord and close cooperation with branches are.

Marketing campaign to reduce the churn rate of customers with assets management

The goal of this campaign is to retain profitable customers at high defection risk. In cooperation with branches, it was determined that this customer profile fitted holders of mutual funds, assets management and insurance products.
An initial problem was how to define active customers based on asset management data, so as to correctly anticipate the likely defection time and make the action effective. In selecting the statistical model, great importance was attached to its '*robustness*' (by validating the model against data bases referring to different points in time) and the reaction margin given to branches (defection is forecast within 60 days of the time of update) even though this meant forgetting superior performance. Considering that data bases are uploaded with a one-month time lag, building a model that loses significance in a couple of months would have been meaningless. And giving branches a list of customers who have already defected would have been equally useless. When they meet customers, branch managers fill out a form with data used to supplement customer information.
At a later stage, this data is summarized to understand customer needs and the reason why they may defect. A loop in which outcomes add new information and an easy- to-duplicate model built by Enterprise Miner™ are the elements of a process targeted to improving the attrition model. This model tries to blend customer behavioral data with the leads provided by financial planners.

6 Conclusions and Future Developments

To date, the retention campaign was test-launched on a representative sample of branches. Results are extremely good. Branches have in fact confirmed that 60% of highlighted customers can be considered at risk.
Nonetheless, thanks to the weapons made available by the interaction with Marketing Department, they have become more effective at retaining customers at high defection risk.

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[i] **BIPOP-CARIRE Spa Via Leonardo da Vinci 74, 25122 Brescia – (Italy)**
Tel.+39 030 39931 Fax +39 030 3993874
E-mail: fabio_marchetti@bipop.it filippo_avigo@bipop.it

[*] **NUNATAC Via Crocefisso 5, 20122 Milano – (Italy)**
Tel.+39 02 86996848   Fax. +39 02 89012074
E-mail: salvina.piccarreta@nunatac.it
alberto.saccardi@nunatac.it