

## Paper 180-29

**CRM: Making it Simple for the Banking Industry**

Aslam Chaudhry, SAS Institute Inc., Cary, NC

**ABSTRACT**

Executing Customer Relationship Management (CRM) for the financial and banking industry involves many issues, including the use of unique processes and solutions. To be successful with CRM, financial and banking organizations must define and develop a business strategy as well as a supporting infrastructure for that strategy. SAS® Banking Intelligence Solutions can be used to complete these tasks smoothly and efficiently – even by the non-technical banking business user community.

With SAS Banking Intelligence Solutions, banking and financial industry business users can quickly learn how to segment, cross-sell, up-sell, and retain customers. Additionally, the users can monitor customer life-cycle trends to aid customer portfolio management with a “customer equity” assets management focus.

**INTRODUCTION**

CRM is a business model that aligns product and sales strategies with customer requirements and preferences. Services are then provided in a timely manner using the channels that are preferred by the customers. 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. Attitudes studies show what customers are thinking and feeling about future buying decisions.

Uncovering customers' behavior patterns and attitudes involves collecting relevant transactional and survey data, placing the data into a data repository, and then applying analytical techniques. After the information is collected from the data, an actionable business plan can be developed to create the multi-channel customer contact strategies that offer the optimal products or services.

This paper explores the traditional approaches to implementing CRM projects in the banking or financial industry. It also highlights the major issues facing the industry in implementing such solutions. Additionally, the paper describes the SAS Banking Intelligence Solutions, and how these solutions can be used to lower CRM costs and to provide a better understanding of an organization's customer base.

**INCORPORATING CUSTOMER RELATIONSHIP MANAGEMENT**

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. These 'drivers' can be used to place customers in pre-identified groups or to support triggers and scores that identify specific individual behavior patterns.

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 RELATIONSHIP MANAGEMENT COMPONENTS**

There is an evolutionary approach to CRM that focuses heavily on “customer equity” assets management. This approach begins with business strategy development. Next, a data infrastructure is created that supports customer interactions. Then, a technology infrastructure is designed to produce CRM results. Finally, customer communication channel strategies are created, and strategy execution technology is used to create an on-going dialog with the customers.

### **BUSINESS STRATEGY DEVELOPMENT**

Customer-focused organizations can benefit most from CRM. These organizations develop business strategies that use CRM to identify the needs and the “hurt points” of existing customers. It is not that customer-focused organizations ignore potential customers, but they do understand the importance of keeping existing customers, especially during difficult economic times. For example, a customer-focused organization might use CRM to help create incentives that produce more business from existing customers, such as offering priority service, free delivery, and so on.

Managing customer relationships promotes cheap growth by selling products and services to those customers who are most likely to buy, while wasting less time and resources trying to sell to those customers who are less likely to buy. Customers will pay more for a product or service if they have a long-standing relationship with a provider that they believe is responsive to their needs. Successful customer initiatives often include one or more of the following characteristics: they are affordable, they help companies generate Return on Investment (ROI) through higher profit margins, they produce greater wallet share, and they improve operational and administrative efficiency.

Investments in CRM process changes can be made incrementally. In some ways, the move toward an incremental or a modular rollout of customer initiatives is part of the natural maturation of CRM. For example, emergent pilot programs (programs designed to address problems or capture “low-hanging ROI”) require a piecemeal approach. Whether modular or not, to be effective, a customer initiative must have enterprise-wide impact.

#### **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 (which will gradually replace the organization’s previous dependence on mass marketing tactics).

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-centered and function-centered models rather than a customer-centered model. By becoming truly customer-centered, 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 Behavior (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 modeling 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.
- **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.

#### **SAS® BANKING INTELLIGENCE SOLUTIONS: AN INNOVATIVE SOLUTIONS SUITE**

SAS has developed SAS Banking Intelligence Solutions, an innovative solution suite that can be used to efficiently manage customer equity assets.

### ABOUT THE SAS BANKING INTELLIGENCE SOLUTIONS SUITE

The SAS Banking Intelligence Solutions suite provides the industry-specific data management, analytics, and reporting capabilities needed to transform organizational data into actionable intelligence about customers, risk, and operations. The customer analytics capabilities of the solutions optimize the profitability and retention of valued customer relationships. Based on open, extensible banking data architecture, SAS software enables banks and financial organizations to maximize the effectiveness of:

- customer segmentation
- cross-selling and up-selling
- customer retention
- marketing automation.

SAS software enables managers to analyze data from virtually any source to develop a deep understanding of customer behavior, propensities, and profitability. Organizations can identify their best customers, implement and measure strategies to retain them, cross-sell and up-sell to them, and make the most effective use of all available assets and channels.

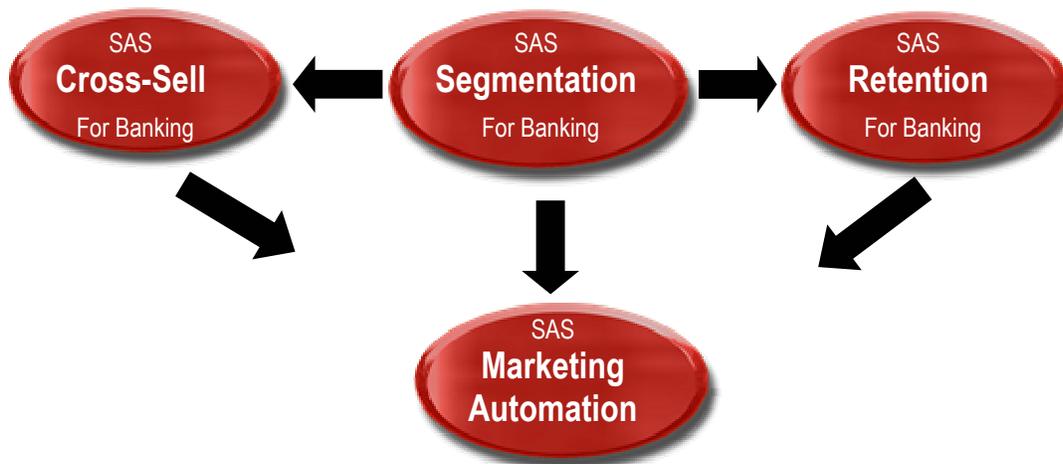


Figure 1 – Customer Analytics Components Interactions

### BANKING INTELLIGENCE ARCHITECTURE

The advanced customer analytics used by SAS Banking Intelligence Solutions are possible because of the open, flexible architecture on which the software is built. This architecture, completely driven by metadata rather than hard-coded functionality, enables banks to customize interfaces and analytics to suit their own needs. Banks can surface any available information to conduct customized analyses. The pre-built “starter” analytic models included with the solutions enable banks to reduce the length of implementation cycles and to achieve significant ROI more quickly.

The SAS Banking Intelligence Solutions architecture includes several components that facilitate flexibility and rapid implementation. The detailed data store (DDS) is constructed using pre-built logical and physical data models, along with pre-set metadata definitions, which help banks quickly organize customer data. Extraction, transformation and loading (ETL) logic loads and prepares customer data, based on each bank’s specific requirements, for analysis in analytic data marts. These data marts provide data structures for the segmentation, cross-sell or retention analysis that will occur when queried or scheduled by the interface. To view and control the analysis that SAS performs, the customer analytics modules of SAS Banking Intelligence Solutions include customizable, Web-based interfaces that enable business users to view the most important information for particular types of analysis.

The flexibility of the SAS banking architecture to perform segmentation, retention, and cross-sell analysis also enables additional customer intelligence components of SAS Banking Intelligence Solutions:

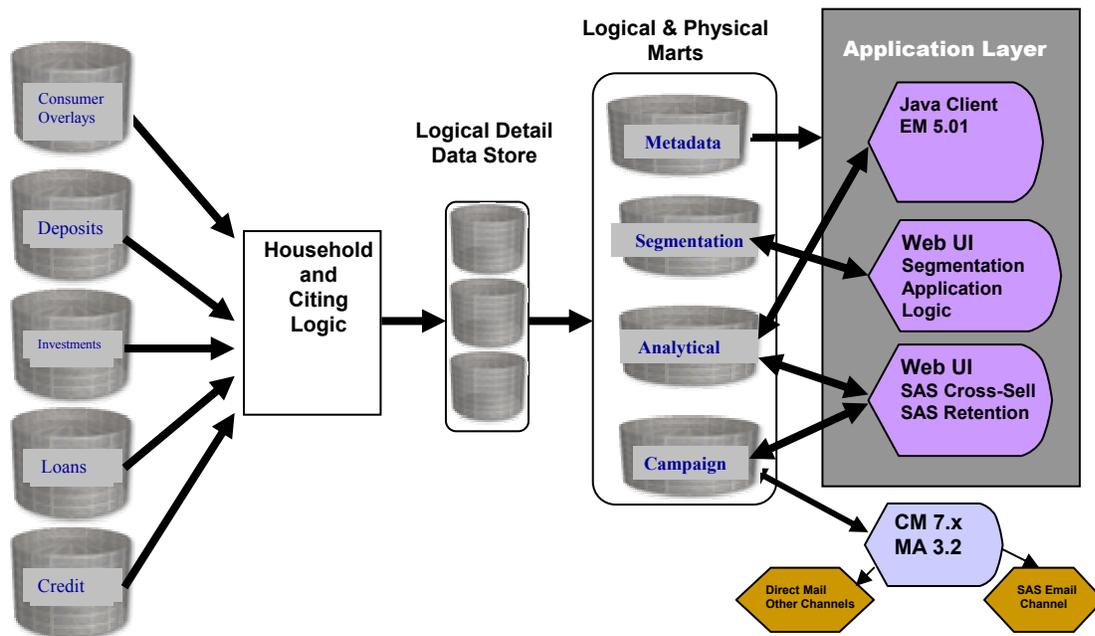


Figure 2 – SAS Banking Intelligence Solutions Architectural Overview

#### CUSTOMER LIFE CYCLE MANAGEMENT

The Customer Analytics components of the SAS Banking Intelligence Solutions can help banks or financial institutions to understand their customers better. This knowledge can be used to develop and execute effective customer acquisition, to cross-sell and up-sell, and to implement retention business strategies.

Business trends suggest that banks and financial institutions are trying to evolve into the customer-centric business model. However, the day-to-day business operational model for most of these organizations still focuses around products. Recognizing this reality, the SAS Banking Intelligence Solutions suite enables organizations to develop and execute both product-centric and customer-centric business strategies.

#### GROUP INTELLIGENCE - SEGMENTATION

The SAS Banking Intelligence Solutions suite includes capabilities that enable organizations to view their customer base as groups. Organizations can then try to understand the group behavior patterns, demographics, and attitudes. Such analysis enables organizations to develop appropriate product offering strategies or to identify MVCs.

The SAS Banking Intelligence Solutions suite offers advanced statistical tools that are easy to use and that enable users to understand their customer base. Specifically, group intelligence features are made possible by using the following tools:

- Statistical Segmentation (grouping, prediction, factor analysis, cluster)
- Manual Segmentation/Tree
- Market Basket Analysis (product opening sequences)

#### ONE-TO-ONE INTELLIGENCE – PREDICTIVE ANALYSIS

After an organization has segmented its customers into meaningful groups or clusters, the organization might want to drill down to learn more about individuals. The SAS Banking Intelligence Solutions suite supports this need. Using the solutions suite, the banker and the analytic expert can work together to develop advanced predictive models, score each individual in a group, and determine each customer's response or propensity to take an interest in another offering from an organization. After the bank or financial institution knows the level of

interest about certain offerings, this information can be communicated using multiple channels through SAS Banking Intelligence Solutions campaign management tools. The following built-in tools enable the one-to-one intelligence:

- Selection, Data Preparation and Extraction
- Predictive Model Development (Neural Net, Logistic Regression, Log-linear, and so on)
- Model Scoring (product, customer, household, and scoring integration for usage)

#### SAS CUSTOMER SEGMENTATION FOR BANKING

This component of the SAS Banking Intelligence Solutions can be used to identify and categorize the customer base into distinct groupings with similar characteristics. Demographic, geographic, attitudinal, and behavioral data from across the enterprise, as well as information from analytic applications (such as cross-sell/up-sell and retention modules), can be incorporated into the analysis to develop highly accurate segments.

This knowledge empowers the bank to create more targeted product communications and bundled services, producing greater returns at a lower cost. When the attributes, needs, and preferences of each customer group is known, it is easy to identify the best predictors of customer behavior (as well as buying patterns). The bank can then plan programs or campaigns that appeal to appropriate groups.

For example, a bank with a significant MVC customer base in the New York area might like to know how long customers have been living there, their gender, and their marital status. The following figure depicts how this type of group intelligence can be gathered by using segmentation features:

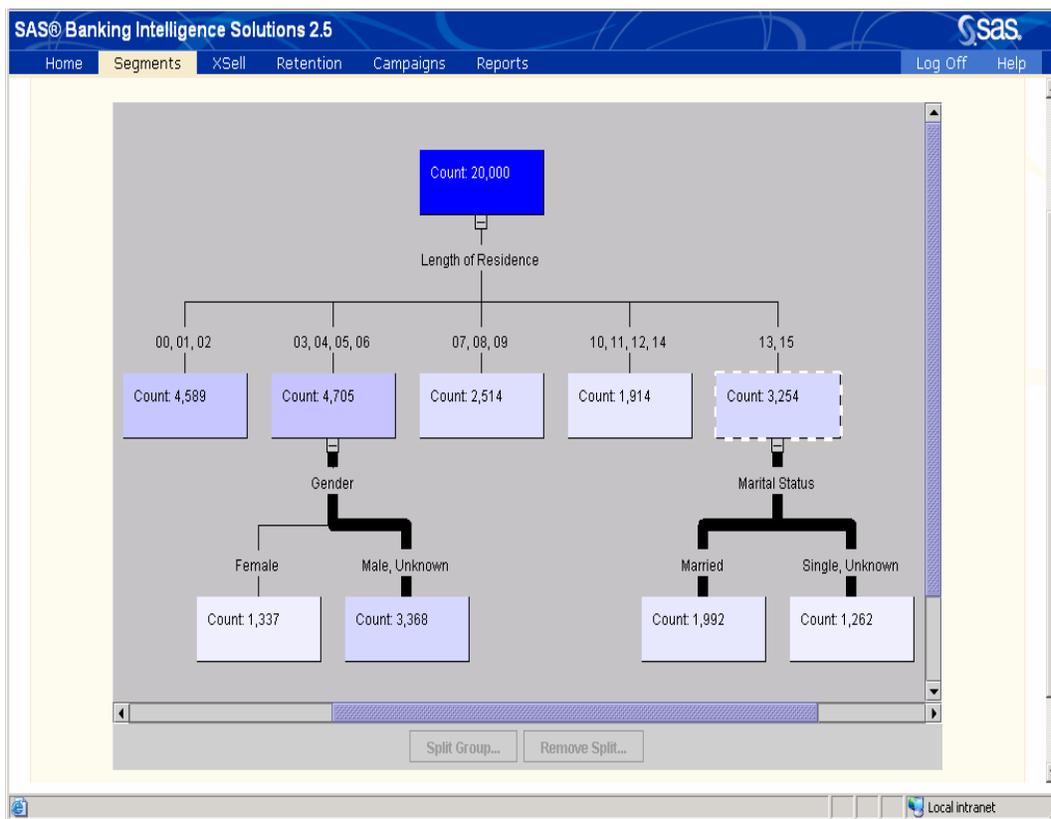


Figure 3 – Manual Segmentation Options

### SAS CROSS-SELL AND UP-SELL FOR BANKING

This component of the SAS Banking Intelligence Solutions helps banks understand which products and services customers have purchased. This knowledge is used to accurately predict which products and services customers are most likely to purchase in the future. Prebuilt analytic models reveal product affinities by looking for an association between selection of one banking product and another — whether they are sold at the same time or separately. Banks can then derive profiles of customers that show this behavior. Other customers that match these profiles can be identified and assigned a “propensity-to-buy” score that drives highly targeted marketing efforts.

For example, an organization could segment and profile customers who hold numerous accounts or lines of credit, and then apply similar analytics to other customers to determine which ones are good candidates for cross-selling and up-selling. By identifying the path that certain customers take from simple checking and savings accounts to installment loans and home mortgages, organizations can score customers and direct marketing efforts at others who are likely to follow the same path.

The following figure shows the next likely product(s) to sell to customers. If the customers have already opened a checking account with the bank and activated their ATM cards, then there is a 32% chance that they will respond positively to a Visa Gold Card offer. If those customers also have a Single Maturity 250,000 dollar CD, then the chance that they would react positively to the Visa Gold Card offer increases to 73%. With this information, the marketer can target customers who have a 73% chance of accepting the offer rather than customers who have only a 32% chance of accepting the offer.

**SAS® Banking Intelligence Solutions 2.5**

Home Segments XSell Retention Campaigns Reports Log Off Help

**Market Basket Analysis • Step 5 of 6**  
 Introduction → People → Products Owned → Target Products → **Results** → Segments

Create segments from: [US Demand Depositors](#)

Product Ownership: [Purchase Sequences](#) [Ownership Over Time](#) [Ownership Percentages](#)

**Customers who own: Regular ATM Card** Show overlap among selected groups

Select	Top Target Products	Confidence	Count Not Owning
<input type="checkbox"/>	Visa Gold Card	32%	816
<input type="checkbox"/>	First Mortgage Conventional	30%	770

**Customers who own: Regular ATM Card, Single Maturity 250,000 CD** Show overlap among selected groups

Select	Top Target Products	Confidence	Count Not Owning
<input type="checkbox"/>	Visa Gold Card	73%	357
<input type="checkbox"/>	First Mortgage Conventional	72%	353
<input type="checkbox"/>	Retirement Investment	59%	288
<input type="checkbox"/>	Master Gold Card	51%	253
<input type="checkbox"/>	First Mortgage FHA - Regular	51%	250

Local intranet

Figure 4 – Market Basket Analysis

Next, consider that a banker would like to gather intelligence on their MVC product portfolios by using the SAS Cross-Sell and Up-Sell feature. Figure 5 depicts the product penetration sequence: first, second, third, and fourth products acquired by the customer (in that order). This information could help the banker to analyze the trend for how the bank's MVC customer base would like to expand future relationships.

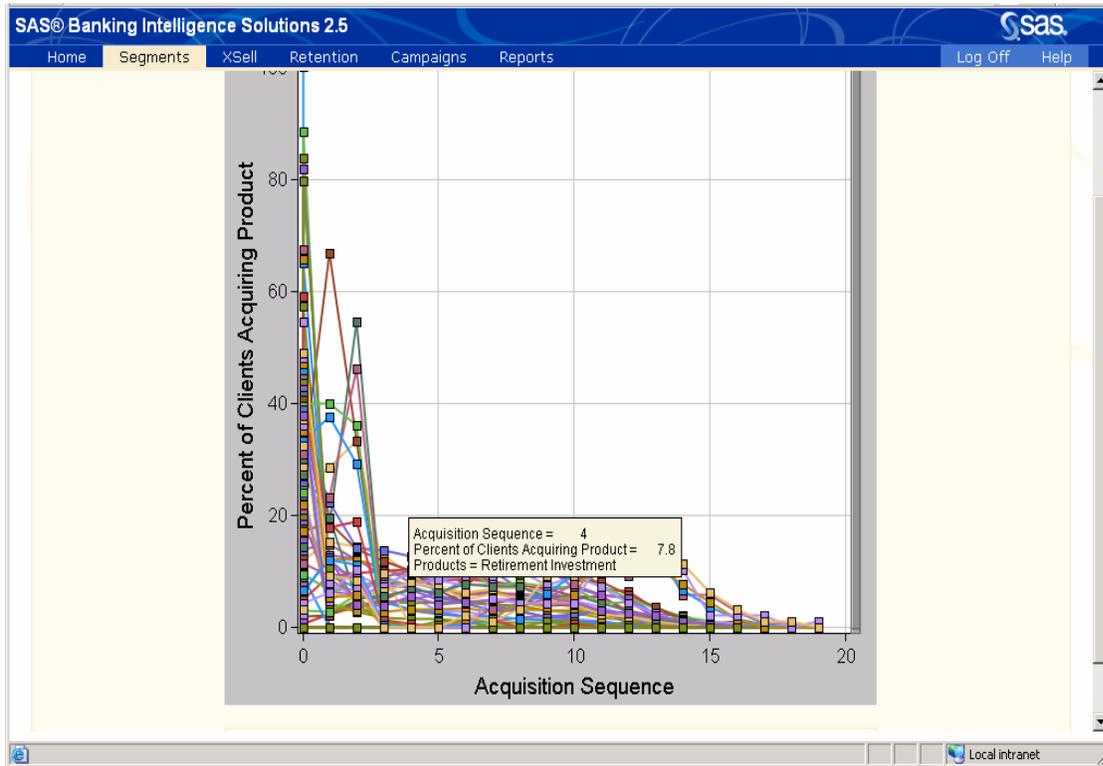


Figure 5 – Product Acquisition Sequence

#### SAS® CUSTOMER RETENTION FOR BANKING

This component of the SAS Banking Intelligence Solutions is built on the principle that successful retention starts with the first customer contact and continues throughout the entire lifetime of a relationship. SAS Customer Retention for Banking enables an organization to quickly understand the variables that influence customer attrition. This enables an organization to determine not only which customers are likely to cancel service or leave altogether, but also why. Was it because a loan or request to increase a credit limit was denied? Was it because a processing error went uncorrected? Was it because a competitor offered a more attractive rewards program or interest rate? Was it because the annual fee or the credit interest rate was too high? The answers to these questions require analysis of a broad range of information, not just reports of account closures or balances paid off.

Figure 6 shows that some customers have closed their first, second, and third product. It also shows that there is a 33% and a 35% chance that they will close the Master Gold Card product and Secured Other Loan products next. The banker can look for insights about the customer trend towards closing product portfolios with the bank.

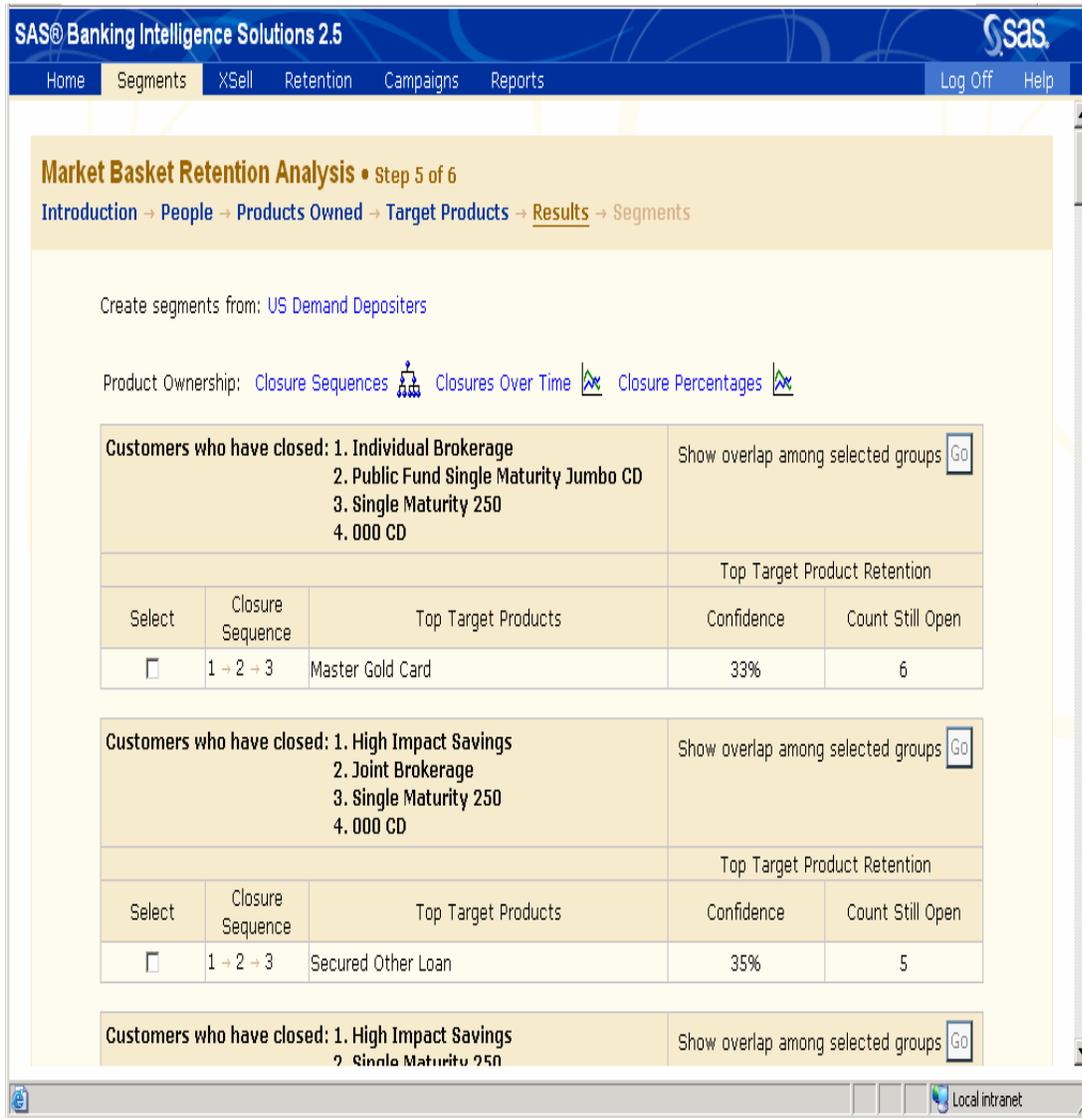


Figure 6 – Product Closing Analysis

Figure 7 depicts the product closure sequence trends at a portfolio level. Using the SAS Customer Retention for Banking component, the banker can see very visible trends that identify when customers are coming in and leaving. In addition, a banker can gauge the customer's moods and determine how long they will continue with this bank or whether they will leave the bank before reaching "break-even maturity" during the customer life cycle.

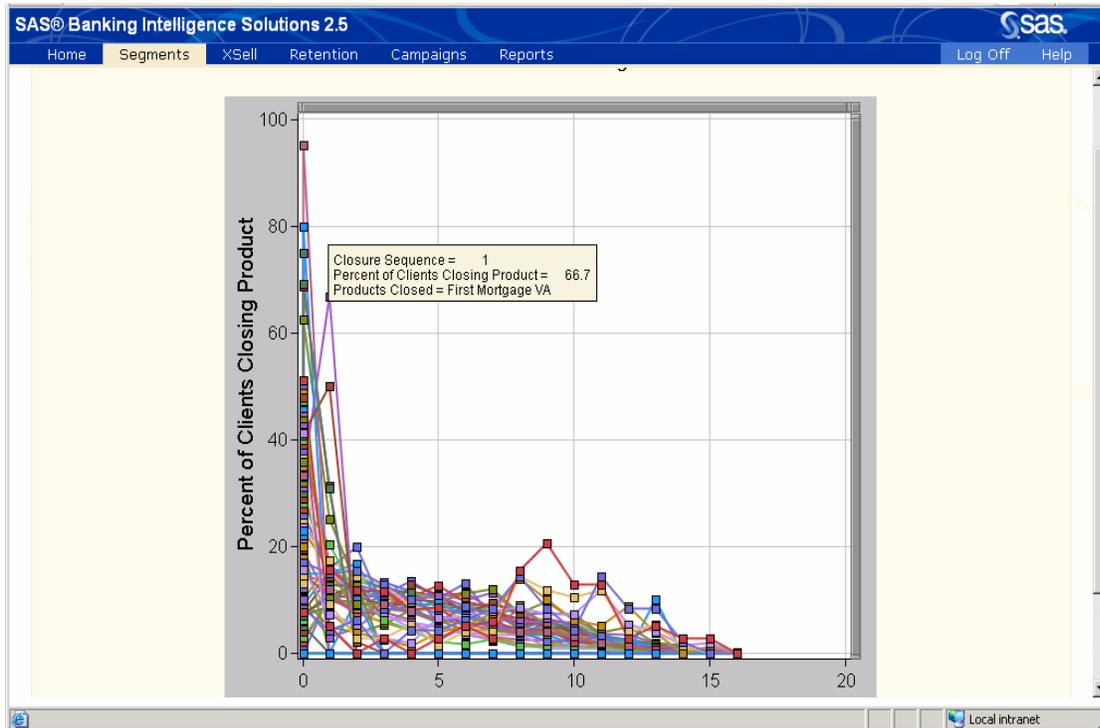


Figure 7 – Product Closing Portfolio Analysis

## THE BENEFITS OF THE SAS BANKING INTELLIGENCE SOLUTIONS SUITE

The SAS Banking Intelligence Solutions suite provides four key benefits which, when combined, are unparalleled in enabling a bank or financial institution to implement effective CRM:

- **Transition from a Product-Centric to a Customer-Centric Organization**  
At present, most banks and financial institutions are not fully customer-centric. These institutions are still organized around products, functions, and territories. To determine if an organization is truly customer-centric, the following three-step test can be conducted:
  1. No single individual owns the customer.
  2. No one is accountable for customer profitability (and unprofitability).
  3. The company makes little effort to differentiate customers and treat them differently. [4]

The SAS Banking Intelligence Solutions can enable an organization to understand the existing product-centered approaches, and then assist in developing the business strategies that are needed to become a customer-centered organization.

SAS provides an integrated infrastructure and proven technology base to build and maintain the CIS systems required to solve business problems. The SAS product line incorporates solutions that provide data quality, householding, data warehousing, predictive modeling, and campaign management. This eliminates the need to integrate multiple vendor products to build efficient, business-responsive CIS systems.

- **Proven Infrastructure Framework**  
SAS provides the banking and financial industry with proven data architectures, various built-in ETL, LOB specific predictive models, and the model management and model scoring infrastructure needed to produce quick implementation turnarounds with short deployment cycles. In this way, banks and financial institutions reap the benefits of a faster product implementation cycle and reduce project costs through decreased staff attrition.

- **Integrated Analytic Intelligence**  
The SAS Banking Intelligence Solutions mirror the complete life cycle of a customer, from prospecting through cross-selling and retention. The suite offers a number of segment-level or individual-level analytics to develop sound business rules and analytical models. These rules and models lead to effective targeting.
- **Rapid “Decision to Action” Deployment**  
Incorporating the marketing automation component in SAS Banking Intelligence Solutions ensures that an organization’s decisions can be acted upon immediately and seamlessly.

## CONCLUSION

CRM technology vendors have oversold the banking and financial industries with solutions. Unfortunately, these industries have quickly learned that effective CRM requires more than just a software application; it requires a business strategy. That business strategy should

- focus on customer equity assets
- enable organizational structures to support a customer-centered business model (as well as a product-centered or function-centered model)
- provide a mechanism to develop data that supports the customer-centered model
- incorporate a technology infrastructure that optimizes customer relationships.

The SAS Banking Intelligence Solutions can help organizations achieve an appropriate business strategy. This suite of SAS software enables organizations to develop a deeper understanding of their MVCs (at a group level or at an individual level) through data mining. By understanding MVCs better, the organization can determine when it is best to use product-centered, function-centered, or customer-centered approaches to achieve and sustain business. This same customer information can be used to further develop customer-centered programs and align business channels and human resources to support such programs.

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.

Other brand and product names are trademarks of their respective companies.

## REFERENCES

- [1] Peppers & Rogers Group. 2003. Peppers & Rogers Group white paper. *CRM in a Down Economy... Revisited. Weathering the Economic Storm through Customer Relationship Strategies.*
- [2] Griffin, Jill and Lowenstein, Michael W. 2001. *Customer Winback – How to Recapture Lost Customers and Keep Them Loyal.* JOSSY-BASS. San Francisco, CA.
- [3] Smith, Sylvana. 2003. SAS Institute white paper. *SAS® Banking Intelligence Solutions for Customer Relationship Management.*
- [4] Colvin, Geoffrey and Selden, Larry. 2003. *Angel Customers & Demon Customers.* Portfolio. NY, NY.

## CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Aslam Chaudhry  
SAS Institute Inc.  
SAS Campus Drive  
Cary, NC 27513

Email: [Aslam.Chaudhry@SAS.com](mailto:Aslam.Chaudhry@SAS.com)