Predicting & Preventing Banking Customer Churn by Unlocking Big Data

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Customer Churn: A Key Performance Indicator for Banks:

“In 2012, 50% of customers, globally, either changed their banks or were planning to change. In the US and Canada, customers who changed their banks increased from 38% in 2011 to 45% in 2012.” – Global Consumer Banking Survey 2012, Ernst & Young.

Customer churn and engagement has become one of the top issues for most banks. It costs significantly more to acquire new customers than retain existing ones, and it costs far more to re-acquire defected customers. In fact, several empirical studies and models have proven that churn remains one of the biggest destructors of enterprise value for banks and other consumer intensive companies. Churn has an equal or greater impact on Customer Lifetime Value (CLTV) when compared to one of the most regarded KPI’s (Key Performance Indicator) such as ARPU (Average Revenue Per User).

The quality of service and banking fees seem to be the top two drivers for customers to consider another alternative. In today’s networked economy, every poor customer experience, or seemingly unfair fee, can snowball into a shift in customer sentiment, risk of churn and major revenue loss. A recent Forbes magazine article on “Top 10 Reasons Why CEO’s Don’t Understand Their Customers” states -- “C-level executives estimated that the lack of positive, consistent and brand-relevant customer experience could cause them to lose out on a staggering 20% in annual revenue”. We are talking about hundreds of
millions of dollars in revenues lost for any sizable banking enterprise. On the other hand, over 40% of leading banks’ customers possesses only one banking product. This segment represents both an opportunity and a risk. Customers with only one product are an opportunity if the banks understand their needs, their sentiments, behavior, and preferences to be able to target them with very personalized cross-sell and up-sell marketing offers. The bank’s ability to move them to multi-product customers not only increases revenues but also reduces their propensity to switch to a competitor. At the same time, customers with only one product are a risk since their barrier to switch is low.

Essentially, understanding your customer’s needs, preferences, sentiments, behavior and propensity to switch has become paramount for banks.

**How SoLoMo is affecting customer sentiment and churn?**

In today’s interconnected world, bad news spreads rapidly via exploding social media interactions that reflect customer sentiment as well as influence the sentiment of others. Many leading banks get anywhere between 10,000 to hundreds of thousands of social media mentions within just 30 days. The real questions are – what are these customers saying about the bank? Do they like the bank? How are they reacting to your marketing offers? Do they like your competitors? Why?

According to an Ernst and Young survey, in the US, 63% of customers use online personal networks and communities as a trusted source for information on banking products. And 45% of customers comment on the level of service they received in social media channels. Similarly, not only do social leaders have higher Average Revenue Per User (ARPU) than others but also the positive influence of social leaders significantly increases ARPU of other banking customers who are part of their influence network.
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The ability to track customer sentiment gives banks early indicators into customer service issues or pricing issues. It also allows banks to be proactive in improving the customer experience, their engagement with the brand, and saves significant downstream costs and revenues loss.

However, the information about a customer’s sentiment and their experience across multiple channels lies in many structured and unstructured data sources. The information could be in the form of logs from a customer’s bank visits, website interactions, call center logs, Tweets, Facebook interactions, community forums, customer emails, and customer surveys. More importantly the information is almost always locked within functional and application silos. This makes it challenging for the banks to get a holistic understanding of their customers, understand the shift in the sentiment or detect early warning signs and proactively engage them with retention or cross-sell marketing offers.

**The key issue: knowing the customer and predicting churn**

In order to identify early signs of potential churn you first need to start getting a holistic 360-degree view of your customers and their interactions across multiple channels such as bank visits, calls to customer service departments, Web-based transactions, mobile banking and social media interactions.

Once you are able to aggregate the customer information across multiple channels, you start focusing on several key indicators that can flag propensity to churn:

- Customers who possess only one banking product such as a checking account
• Decrease in the assets in a customer’s accounts
• Sale of one or more financial products such as loans, stocks or bonds
• Cancellation of automatic incoming credits or outgoing payments
• Negative customer interactions on customer calls
• Drop off in Web-based banking activities
• Drop off in mobile payments and the value of mobile transactions
• Customer complaints about specific issues on social media

If you can detect these early signs, you can take specific actions such as free credit card offers or discount on annual fees, or lower introductory rates on loan products to prevent churn. Additionally, if you know the preferences and behavior of potential churners and understand how your loyal customers with similar preferences and behaviors reacted to different retention offers, you can dramatically improve the “take rate” of the retention offers to the potential churners.

However, the totality of information about the customer is typically locked within functional and application silo’s that makes it very difficult to first detect early warning signs and then take actions to course correct in real time. As a result, the banks end up strategizing and operating on the most basic of slices of incomplete information from each individual silo and make themselves vulnerable to churn and massive revenue loss.

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**How Big Data Can Help you predict potential churn**

The growth in volume, variety and velocity of data generated about customers
and their interactions across multiple channels makes it almost impossible to store, analyze and retrieve meaningful insights using traditional data management technologies. There are several key limitations of traditional technologies, which are inhibitors for gaining a holistic, 360-degree view of customers:

- A bank’s ability to store transactional data is fairly restricted due to storage and retrieval limitations. You can only store information for a short time interval.
- The cost of storing large volumes of data becomes prohibitive if you are using traditional technologies.
- The inability to manage unstructured and semi-structured data – which is growing the fastest and does provide the most real-time insights about customer sentiments or early warning signs.
- Without sophisticated data matching, simply storing data into a single platform does not unlock the information from application or functional silos. It does not connect the dots to identify all interactions of a unique customer across multiple channels.
- Batch-mode analytics provides an outdated view of customers and their sentiments. It often becomes too late for retention programs to be effective.
- There is a lot of incomplete information (the Veracity problem) about the customer that is being generated across multiple channels and it becomes very difficult to account for this incomplete information and turn it into meaningful insights.

Big Data helps you solve these challenges and allows you to leverage both structured and unstructured data from multiple channels such as bank visits, customer call logs, web interactions, transactional data such as credit card histories, and social media interactions.

Native Big Data technologies solve data management challenges posed by
traditional technologies:

• With Big Data, banks can store, analyze and retrieve a massive volume and variety of structured and unstructured data to aggregate the totality of information about the customer into a single Big Data platform.
• Native Big Data technologies allow banks the economical advantage of storing such massive data on commodity hardware and scale it elastically to expand with the data volume growth.
• Native Big Data technologies allow you tap into a real-time data and customer interactions that provide clear insight into early warning signals or customer sentiments to insure timely retention offers and preservation of enterprise value.
• Sophisticated data matching capabilities allow you to eliminate the data silos, connect the dots of a customer's interactions across multiple channels and build a comprehensive holistic customer profile to gain a real-time, 360-degree view.

Essentially, it all starts with knowing your customer holistically and unlocking the slices of information from multiple silos into actionable 360-degree customer insights. Native Big Data technologies allow banks to know their customers better and understand several parameters that can play a crucial role in predicting the churn:

• Length of the customer’s relationship with the bank
• Type of cards owned such as cash, credit or pre-paid cards
• Type of financial products owned such as stocks, loans and mortgages
• Transaction histories across multiple channels
• Type of products corresponding to maximum value transactions

It all starts with knowing your customer holistically and unlocking the slices of information from multiple silos into actionable 360-degree customer insights. Native Big Data technologies allow banks to know their customers better.
• Automatic payments and credits
• Web-based channel and online banking usage
• Locational information and use of mobile payment applications
• Social media engagement and sentiment
• Logs from branch visits or customer service calls

Once you have a holistic view of your customers, and their interactions with the bank, you need to build a churn prevention model that will allow you to predict the churn, identify the drivers of the churn and execute retention campaigns.

**Building a churn prediction model:**

The big question is – would the 360-degree customer view alone be sufficient for a bank to predict potential churners in an efficient manner? By leveraging the holistic customer information, you need to build a churn prevention model. For building an optimal churn model, you need to start with answering several key questions:

• What is your definition of voluntary churn? Some segments such as bad payers or rotational churners are not worth targeting, as their retention will not create value.
• What bank products have the highest churn? You can target the low hanging fruit first by selecting high churn products.
• What is the time frame between the event, or an early warning, and actual churn?
• What is the segment that demonstrates the most churn?
• What is the historic impact of retention campaigns on churn? You will have a baseline of current results that would allow you to demonstrate a clear *lift* in retention.
• Does churn evolve over a customer’s lifetime? How do time and barrier to switch correlate?
Once you have the baseline information, you can define the initial sample learning data sets on which you can run your initial model. Based on these results, you can learn more about the variables and model. You can then start tweaking your churn model until you discover a model that shows high score, indicating the highest propensity to churn. The churn prediction model with a high quality score will arm you with the insights to identify the high-risk “real” churn targets and eliminate the “other” churners such as bad payers, by leveraging business rules. Additionally, for each churn model, you can create lift charts to graphically represent the improvement that the churn model provides against random targeting of potential churners. By comparing the lift scores for different models, you can identify the best model and the most critical drivers of churn. This not only allows your retention campaigns to be far more effective, with significantly greater redemption rates, but also reduces the cost of retention campaigns, as you are not targeting the segments such as bad payers that are not contributing to the enterprise value.

Being able to predict churn within specific segments is not enough if you cannot determine marketing offers that should be delivered to each individual customer. Most generic marketing offers based on broader segmentation lead to lower redemption rates and limited success in prevention of churn. You need to be far more precise and make the offers very targeted and personalized to see a sizable reduction in churn. Machine Learning algorithms such as Collaborative Filtering can be very effective in offering very personalized marketing recommendations. With collaborative filtering, banks can recommend similar retention offers that were successful with other customers with similar profiles, behaviors, preferences and tastes. In essence, by leveraging machine learning, recommendations can be
made to each potential churner, such as free credit cards or discounts on banking fees that the loyal customers with similar profiles and preferences liked, and responded to, in the past.

**Customer Intelligence Management for Reducing Churn:**

Customer intelligence management solutions can enable banks to know their customers better, prevent churn and massive revenue losses. Native Big Data technologies can make a profound impact on a bank's business by enabling them to understand their customer’s preferences, needs, sentiments, behavior and propensity to churn. This unique 360-degree customer view when coupled with sophisticated churn prevention models would allow banks to foresee things before they happen – such as identifying early warning signs about potential churn. The churn prevention models based on holistic customer intelligence enables banks to target the “real” churners to optimize the effectiveness and cost of the retention campaigns. Banks can further enhance the targeting and redemption rates of their retention campaigns by leveraging Machine Learning techniques and a Recommendation Engine for personalized marketing actions.

In a nutshell, customer intelligence management based on deep business process knowhow and the use of Big Data and sophisticated machine learning enables banks a distinct competitive advantage with an ability to prevent churn, drive cross-sell and build customer loyalty.

For more information about NGDATA, the customer intelligence management solutions company, visit [www.NGDATA.com](http://www.NGDATA.com).