

# INTENSITY OPTIMIZATION: RECOVERY PROCESSES

CASE STUDY: PREDICTIVE ANALYTICS in BFSI

Insurance Portfolio

## Objective

Design & validate optimal strategies using optimal usages of customer-segmented treatment channels in customer retention services.

## Background and Challenges

A large BPO company caters to the banking and industry sectors with its collections and recovery campaigns that has country wide reputation. The company bagged a recovery portfolio from an insurance major and the insurance company gave a clear mandate to focus on generating more revenue than the number of recoveries using a revenue-shared business model.

The BPO company has been using its home-grown rule based customer segmentation schemes but never considered using advanced concepts in predictive modeling. With the volume of the work and variability contained in the portfolio, it made absolute sense to optimally utilize the three channels of a customer reach — SMS, IVR, and Outbound Call. This is to be achieved using ‘statistically chosen’ treatment channels for each customer that meets the following objectives:

- a) Reaching low-value customers in a cost-effective iterative way.
- b) Bring those customers directly to the voice agents who have a high propensity to pay & exhibit a positive response to SMS & IVR channels.

*“I was amazed to see that good customers captured in their top and bottom Deciles are in the ratio of 20:1. We didn’t need to focus on the bottom 60% of the customers this way and that made the difference.”*

*- Business Head  
Financial Services Company*



### Insights into Recovery Scorecards

- Prefer Behavioral over Demographic Variables
- Create Variables to capture shift in monthly behaviors
- Update Scorecard every 6-10 months

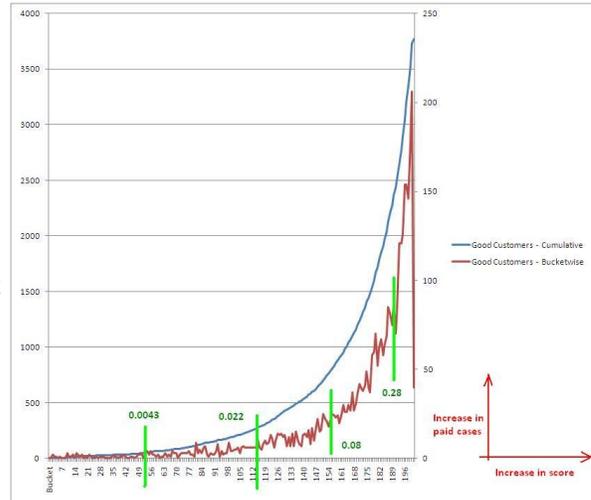
Collection & Recovery Managers tend to rely on their gut based strategy rather than facts

# Our Approach

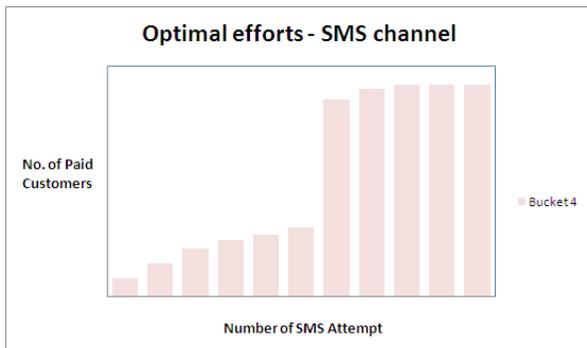
Method: Logistic Regression

Tests Performed: Correlations, ANOVA, t - Tests

**Data Preparation for Data Modeling:** The insurance company allowed two months of campaign activity post receiving of the customer data. It was decided to select random and uniformly distributed samples of customers on various channels of multimedia for 7 days and capture their behavioral data (response captured as: contactable, not-contactable, calls picked, calls dropped, reply to SMS, etc.). The new data generated is then coupled with the demographics to create an extensive data pool of the customers hence combining demographics and behavioral data for each of the default customers. Meanwhile, all other customers (not included in sample) are given multimedia treatments to capture behavioral data for a later use.



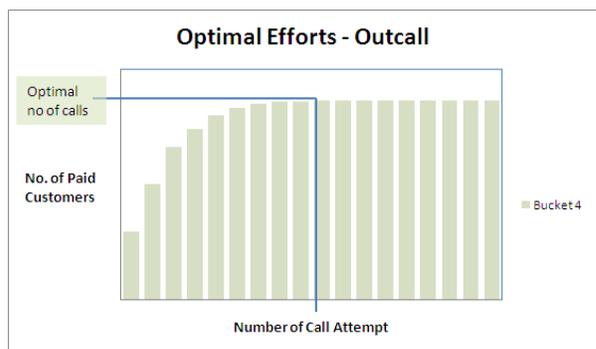
**Figure 1:** Number of Payment cases in each segment increase with the 'Predicted Score'.



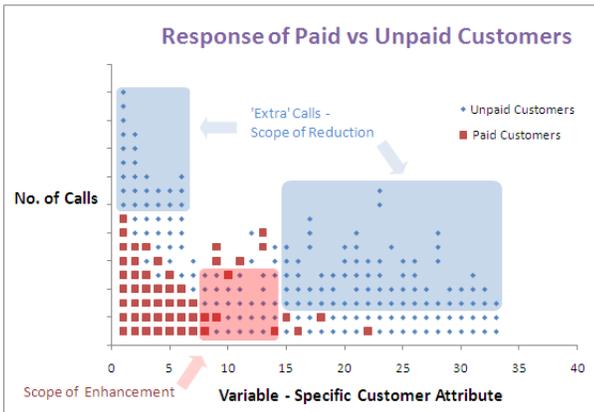
**Figure 2:** Optimal number of SMS sent before the first Outcall - paid cases in Bucket 4.

**Predictive Model:** New variables are created & tested using multiple statistical techniques while carefully choosing 14 variables to capture elements of a customer profile. Logistic Regression is used to build the predictive model and output values (also known as 'model scores') lying between 0 & 1 are calculated to predict the propensity of a customer in paying pay back the recovery amount. 50% of the sample data is used to build the model while the models are validated on the remaining 50% customers. In Validation, buckets are created to contain customers with similar propensities. Expected payments vs. actual payments received are studied for five buckets (Figure 1).

**Intensity Optimization:** The responses of customers on the various multimedia channels (SMS/IVR/Outcall) are analyzed with identifying customer segments in each bucket having high likelihood of making payments using a series of low-cost channels viz. SMS and IVR. As the data suggested optimal effort to be allocated to the two low-cost channels (SMS: please refer Figure 2), the optimal usage of outcalling is studied to get prediction strength to quantify the efforts to be put on 'non - juicy customers (Figure 3). Knowing the optimal efforts to recover payments from an otherwise low-propensity customer, strategies are designed to put subsequent efforts on the



**Figure 3:** Optimal number of Outcalling efforts for bucket 4.



**Figure 4:** Scope of regulating the intensity of treatments in bucket 4. Blue region indicates overutilization of efforts, red region reflects scope of recovery.

'juicy but left out customers' of the portfolio only to result into more paid cases (Figure 4). Because the Insurance company allowed only two months of campaign activity for every data batch, this kind of selecting and pumping efforts for a selective segment of customers allowed the recovery efforts to be fully utilized. Because

the customer segmentation schema is integrated with the databases hence it is viable for the business manager to pick out a handful of customers and test a strategy to observe effects.

## Results and Implementation

Using the predictive analytics, the BPO company is able to harness the potential of the portfolio in a much better way. The company is able to reach the recovery target by collecting 46% more recoveries than anticipated at the beginning of the exercise. The analyses also gave way for the company to monitor recovery portfolios and standardize strategies of recoveries to generate maximal revenues at low-cost. The analytics involved also later gave the company a map to measure the potential of an offered portfolio and thus negotiate the terms of recoveries with the Insurance and Banking Companies.

### Contact Us

- Collection Scorecards
- Recovery Scorecards
- Cross - Sell Scorecards

Feel free to give us a call for more information on our services:

#### White Capers

Level 6,  
JMD Regent Square,  
Mehrauli Gurgaon Road,  
Gurgaon 122002.

(+91) 11-41619309

info@whitecapers.com

Visit us on the web at  
www.whitecapers.com