

### Variable description for Bucket-pricing and Winback.

| Variable Name in Dataset | Definition   | Comments  |           |         |       |
|--------------------------|--|---|-----------|---------|-------|
| customer_id              | The unique identifier of each customer in the dataset.   |   |           |         |       |
| month                    | Number of months that the customer has been staying with the company.  | All the observations are organized on a monthly basis.  |           |         |       |
| cmonth                   | Calendar month of the observation, starting from August of 2000  | cmonth = 0 for August 2000, and increase by as an additional month passes by.   |           |         |       |
| tot_tenure               | Number of total months that are observed for the consumer in the dataset.                                    |   |           |         |       |
| choice                   | Choice made in the current month.  | Choice  | Plan Name | Price   | Quota |
|                          |  | 0   | Stay out  | --      | --    |
|                          |  | 1   | Standard  | \$19.95 | 6.4   |
|                          |  | 2   | Premium   | \$27.95 | 9.6   |
|                          |  | 3   | Advantage | \$37.95 | 16.0  |
|                          |  | 4   | Elite     | \$57.95 | 22.5  |
|                          |  | 5   | Lite      | \$12.95 | 3.2   |
|                          |  | 6   | Economy   | \$9.95  | 2     |
|                          |  | The price includes a discount of \$5 for all the plans.   |           |         |       |
| nswitch                  | Number of plan switching across the entire observation period of the consumer.                               | This should be a good indicator of whether a customer is value-conscious and enjoys cherry-picking.   |           |         |       |
| sensor_index             | Percentage of DVDs sent to a customer in the current month with an MPAA rating of <i>PG-13</i> or <i>R</i> . | For example, if a consumer rented 4 movies in a month, and three of these movies are either R or PG-13, then the sensor_index is calculated as $(\frac{3}{4}) * 100\% = 75\%$ |           |         |       |

|                        |  |   |
|------------------------|--|---|
| <b>priority rating</b> | Average Priority Scores for DVDs sent to a customer in the current month.<br>Average peer-based rating for DVDs sent to a customer in the current month. |   |
| <b>consumption</b>     | Number of DVDs sent to the customer  |   |
| <b>totconsumption</b>  | Total number of DVDs sent to the customer during her relationship with the rental company.   | This is a constant and could be used as the measure of the total variable cost incurred to serve this customer.               |
| <b>acconsump</b>       | Accumulated consumption of the customer.   | This is the running sum of number of DVDs sent to the customer.   |
| <b>quota</b>           | Maximal number of DVDs that could be consumed, given the quota restriction of the chosen plan.   | Please see the “choice” row for reference about the specific quota associated with each plan.                                 |
| <b>payment</b>         | Monthly payment made by the customer.  | This is defined as the subscription price received from the customer in the given month, which includes any discount and tax. |
| <b>uprice</b>          | Per-rental price based on the maximal number of DVDs allowed by the plan.  |   |
| <b>ucprice</b>         | Per-rental price based on the actual consumption   | Not defined when the actual consumption is zero.  |
| <b>ngenre</b>          | Number of genres the customer watched during her entire lifetime.  | This measure should capture the variety-seeking behavior of the customer.   |
| <b>op</b>              | Short for “over-purchase”, defined as the difference between quota and the actual consumption.   |   |
| <b>lead_op</b>         | Amount of over-purchase in the previous period.  | Lagged value of OP, this is defined as zero for the first period.   |

|               |   |   |
|---------------|---|---|
| <b>stay</b>   | A dummy variable that takes value 1 if the consumer chooses to stay with the company and zero otherwise.  | This variable is 1 as long as any of choice #1-#6 is chosen               |
| <b>defect</b> | A dummy variable that takes value 1 if the consumer has ever attempted to defect the company and zero otherwise.  |   |
| <b>accept</b> | A dummy variable that takes value 1 if the consumer accepted either of the rescue plans offered by the company, conditional on that she has attempted defection | This value is missing (valued -99) for consumers who have never defected. |