MKTG/STAT 476/776
Applied Probability Models in Marketing

Spring 2020

Class Preparation Exercise

One of the most fundamental problems facing marketing managers today is the issue of *forecasting customer churn/retention*. It is vitally important for firms to be able to anticipate the number of customers who will remain active for 1, 2, … , T periods (e.g., years or months) after they are first "acquired" by the firm The following dataset, adapted from a popular book on data-mining (Berry and Linoff, *Data Mining Techniques,* 2004), documents the "survival" pattern over seven years for a sample of 1000 customers (who were all "acquired" in the same period).

Your job is straightforward: build some models to capture this pattern, then use each model to project the survival curve over the next five years (i.e., out to T=12). As you create your model(s) I want you to think very carefully about the assumptions you are making and the criteria you are using to judge the "goodness" of any given model.

When you have come up with your single best model please take a moment to upload your forecast (i.e., the number of active customers at T=12) on Canvas. And be prepared to discuss and defend your model/forecast during our first class session.

Year	Number	% Alive
0	1000	100.0%
1	869	86.9%
2	743	74.3%
3	653	65.3%
4	593	59.3%
5	551	55.1%
6	517	51.7%
7	491	49.1%