Chapter 8.7
Classification of 3G Mobile Phone Customers

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ABSTRACT

In this article we discuss how we have predicted the third generation (3G) customers using logistic regression analysis and statistical tools like Classification and Regression Tree (CART), Multivariate Adaptive Regression Splines (MARS), and other variables derived from the raw variables. The basic idea reflected in this paper is that the performance of logistic regression using raw variables standalone can be improved upon, by the use for various functions of the raw variables and dummies representing potential segments of the population.

INTRODUCTION

An Asian telecommunication operator which has successfully launched a 3G mobile telecommunications network would like to make use of existing customer usage and demographic data
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to identify which customers are likely to switch to using their 3G network.

The objective of this competition was to develop a prioritization mechanism that will accurately predict as many current 3G customers as possible from the “holdout” sample provided. It also involved identifying the profiles of 3G customers that can be used in identifying potential 3G customers among the existing second generation (2G) base.

The competition organizers were provided with a sample of 24,000 mobile phone subscribers, out of which customer type was provided for 18,000 subscribers, 15,000 being 2G and the rest 3G. Around 250 variables describing call and usage-related information was provided for all of the 18,000 subscribers. A holdout sample of another 6,000 subscribers was provided with the same set of variables, but without the 2G/3G flag. The task was to accurately predict as many 3G customers as possible from the holdout sample.

The organization of the article is as follows: We discuss the methodology approach taken and the modeling techniques used to develop the logistic model. Then we discuss the model results and the cutoff we have selected to generate the predictions. Finally, we discuss an alternative approach that we have tried.

Figure 1. A typical snapshot of a CART run