

Will the Frog Change into a Prince?: Predicting Future Customer Profitability

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More and more companies have customer databases that enable them to analyze customer profitability over time. These companies often seek to determine the most important customers as indicated by their current or historical profitability, and focus attention on them. Focusing on profitable customers can result in more efficient use of marketing resources, but such an approach neglects the fact that customers can evolve over time. Some customers begin as low-profit customers, but eventually develop into high-profit customers. Others may start out as high-profit customers, but become unprofitable over time. Previous efforts to predict future profitability have been relatively unsuccessful, with relatively simple, naïve models often performing just as well as, or better than, more sophisticated ones. Our paper presents a new approach to predicting customer profitability in future periods, in the case where the company possesses a longitudinal customer database. Our model simulates future purchasing scenarios, one customer at a time. By averaging over many possible futures for each customer, we obtain a more accurate prediction of future profitability. We estimate the model on data from a high-tech company in a business-to-business context, and validate the model's prediction ability on a holdout sample. The results show that our model outperforms previous models in predicting which customers will increase in profitability and which customers will decrease in profitability over time.