Optimizing Customer Lifetime Value in Retail Banking

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The aim of this Master thesis was to develop and implement an algorithm optimizing marketing campaigns in the retail banking industry with respect to Customer Lifetime Value (CLV).

Keywords:

- Customer Lifetime Value
- Markov Chain
- Markov Decision Process
- Retail Banking
- Marketing Campaigns

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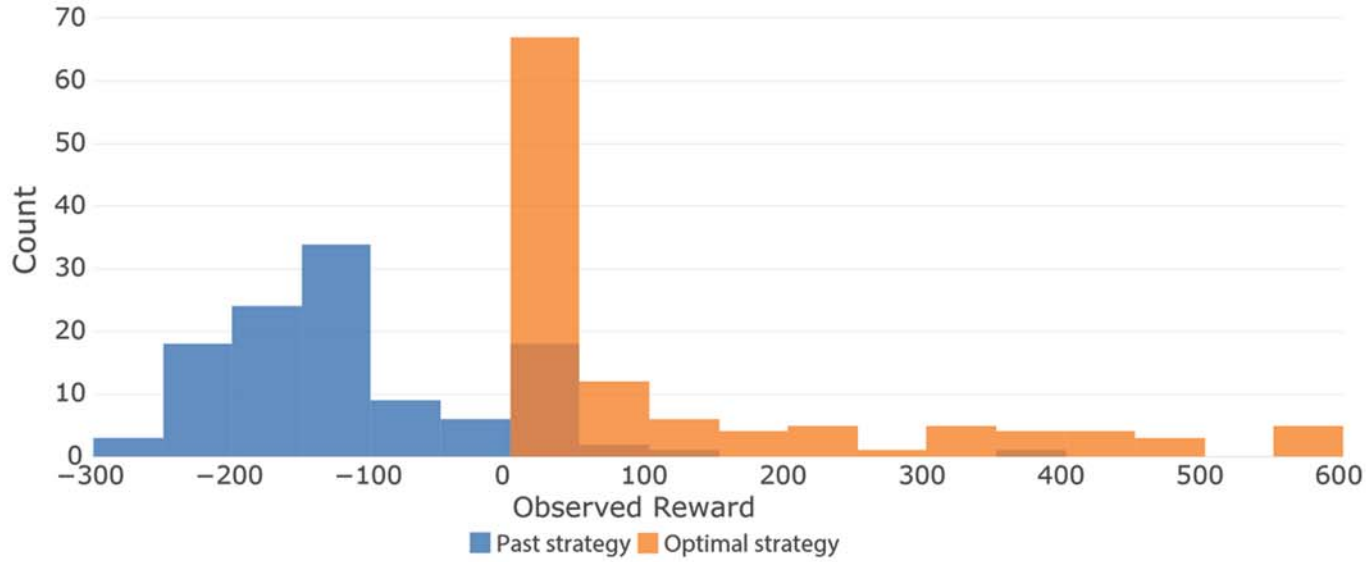
Each year banking institutions spend billions of dollars on marketing incentives to stay competitive. Whilst focusing on short-term metrics e.g. profit or revenue, they promote products and services which do not completely fit customer's needs. To measure the impact of marketing campaigns on customer loyalty and future behavior, a customer-centric model based on Customer Lifetime Value in combination with a Markov chain model is suggested. Treating customers as company's assets is an essential assumption for long-term profitability and growth. To optimize the marketing resource allocation, it is crucial to cover not only one step marketing campaigns (e.g. next best offer), but the overall marketing strategy, bearing in mind all possible consequences. Such an approach can be compared to strategic games and is best described by a Markov Decision Process.



The proposed method, which covers the whole retail banking marketing process from the campaign definition up to the result optimization, can be regarded as the main contribution of the thesis. The comparison of existing and CLV optimal marketing strategies (mentioned in the figure above) of a mid-size European bank is provided to validate the modeling approach on a dataset containing more than 5 million customers.