UNIVERSITI TEKNOLOGI MARA

ACQUISITION OF NEW SUBSCRIBERS USING ANALYTICAL MODELS IN THE TELECOMMUNICATION INDUSTRY

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ABSTRACT

The telecommunication industry has experienced a massive growth in the last decade, and many reports have suggested that the growth is expected to get even bigger in the next one. The bright future of this industry has attracted a lot of new players that wanting to get a piece of the lucrative pie. As the industry gets more mature, the cost of acquisition also increases as telco organizations are fighting for what becoming a smaller and smaller piece of pie. Many studies have shown that the cost of acquisition is at least four to five times higher than the cost of retention. The higher cost of acquisition has prompted many companies to put more efforts and resources into retaining their current customers and very little effort in acquiring new ones. Some companies disregard the importance of acquisition to an extent that it is treated only as a means of compensating failed retention management effort rather than being the company's strategy to push for market growth. However, studies have shown that acquisition plays equal, if not stronger, role in pushing the growth of the company. This research investigates the use of analytical models, specifically optimization and predictive model, to help company to analytically acquire new customers to help them achieve their target mobile revenue. The goal of using optimization is to minimize the number of acquisition while still meeting the set target mobile revenue. Acquisition effort cannot be ignored as it contributes to the growth of the company and it can help to prevent shrinking and aging of customer base. Two objectives have been formed for this research. The first is to identify the determinants of churn in the telecommunication industry to be used in an acquisition optimization model through literature analysis. The second is to design and develop an analytical acquisition model using optimization that will assist in achieving organization's target mobile revenue by adopting modeling techniques. There are five key determinants of churn that have been identified from the literature review which are service quality, price, brand image, tenure and age. Network quality which is a subset of service quality is chosen to be applied as one of the constraints in the optimization model. Network quality is used in the model by finding out the maximum number of new subscribers that can be added into a given district without causing any network quality drop to the current customers in the same district. The algorithm is developed for the analytical acquisition model and the result shows that the model managed to achieve the set target mobile revenue with only a small number of subscribers. The proposed algorithm for building the analytical acquisition model benefits the Data Science community to explore the use of optimization model in their work domain. In addition, the findings of this research provide empirical evidence in the use of optimization model for acquisition of new subscribers.

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