ABSTRACT

To build customer loyalty, PT. Telkom *issued customer priority programs* (CPP) *in 2012 which is a special program for customer who have total billing plain old telephone service* (POTS), Speedy, and Grovia *more than* 1.000.000 IDR. *But in practice, the result of of predictive customer loyalty program held by* PT. Telkom *is less effective, reviewed from number of customer loyalty program customer which tends to go down each month. So that* PT. Telkom *needs to fix the customer predictions model.*

Neural Network and Decision Tree is data mining algorithm for prediction modeling. So it could be used as customer prediction model of PT. Telkom. *Based on CRISP-DM methodology, there are several stages to be done before modeling, which is business understanding, data understanding, and data preparation.*

In POTS *customer prediction modeling, used 3 attributes there are* NCLI, ARPU, *and age of subscribe. From modeling with Neural Network obtained the value of importance of two predictor is same, which is* 50% *for* ARPU, *and* 50% *for age of subscribe. From modeling with Decision Tree obtained the higest value of importance predictor is age of subscribe with* 57% *value.*

In Speedy *customer prediction modeling, used 4 attributes there are* NCLI, ARPU, *age of subscribe, and usage. From modeling with Neural Network obtained the higest value of importance predictor is usage with* 55% *value. From modeling with Decision Tree obtained the higest value of importance predictor is usage with* 94% *value.*

The selection of best model using Factor Rating method by comparing three criteria of good prediction model, there are predictive accuracy, robustness, and interpretability. From Factor Rating method obtained that the best model for POTS, *and* Speedy *customer prediction is Decision Tree model.*

Keywords: Data Mining, Decision Tree, Neural Network, Factor Rating, loyality, POTS, Speedy