

## **ABSTRACT**

In 2019, Telkomsel's core business shifted its main services from Voice and SMS services to Data and Digital services, since a declining trend of revenue starting 2014. However, voice service still contributed 29.4% to the revenue and was the second largest therefore, will be impacted in the revenue significantly decline. This research predicts voice package buyers using predictive analytics to identify customer profiles and significant variables to form appropriate target customer segmentation. Logistic regression was used to predict customers who would buy voice packages using 15 input variables. Next, analytics was done by dividing the data into 70% training data sets and 30% testing data obtained from customer voice package user data. The model accuracy gained 97.2% and top seven significant variables were formed. Then five clusters of customer segmentation were formed based on top significant variables using the K-Means clustering technique. Based on the results of the prediction model and clustering, behavioral targeting was conducted to provide targeted gimmick products based on five segmentations formed, then it was divided into two main target customers by considering similarity of behaviors based on revenue voice, minutes of voice usage, voice transactions, day of voice usage and data payload, thus it was more targeted.