Enhancing Direct Marketing using Data Mining: A Case of YAA Asantewaa Rural Bank Ltd. in Ghana

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Abstract

With fields like the banking industry, data are being generated massively on a regular basis. So Managers and Administrators are finding ways to turn these data into very valuable information. Marketing risk is one of the most serious problems of every bank. Fortunately, all marketing promotions are highly dependent on the data about customers stored in electronic format. Data mining, machine learning and artificial intelligence promise the use of models to go through and analyse huge data that are very difficult for human brains. This study is conducted to demonstrate with practical methods, experiments and dataset that data mining can be used to assist in direct marketing. The classifiers used are J48 decision tree and Naïve Bayes. The University of Waikato open source data mining software (Weka) is used to perform all the experiments. Confusion matrix is used to calculate the accuracy, sensitivity and specificity which are used to evaluate the performance of the classifiers. Receiver Operating Characteristic curves are also used to pictorially display the performance of the model. The results of the experiments show DT performs better than NB. It also denotes with high precision that the models can be used in detecting prospects for marketing campaigns. The decision tree and the
Naive Bayes classifiers produced an accuracy of 92.5% of 91.6% respectively.

References


Index Terms

Computer Science Information Sciences

Keywords