Direct marketing optimization using client relational graphs

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In the present paper we give an insight into some problems which occur in a bank and can be represented by graphs. We will show the network building possibilities on specific data and apply them to enhance or replace the present methods of the sector. We give a detailed examination of the corporate transaction graph and a retail client relational graph based on data of the OTP Bank. Our main result is the optimization of the response rates of Direct Marketing (DM) campaigns using the relational network (built on the known attributes such as common telephone number, same family name, etc.). According to our new approach - in contrast to the traditional banking methods - we did not use the clients personal data itself or their account behaviours, we only used the structure of networks to find the consequences. Networks can also give us forecasting models: we constrict sending DM offers only to certain clients who are meeting with some graph theoretical requirements. By our method we raised the DM offer acceptance rate by 1.5-2 times the average of the previous DM campaigns.