A Social-3 White Paper

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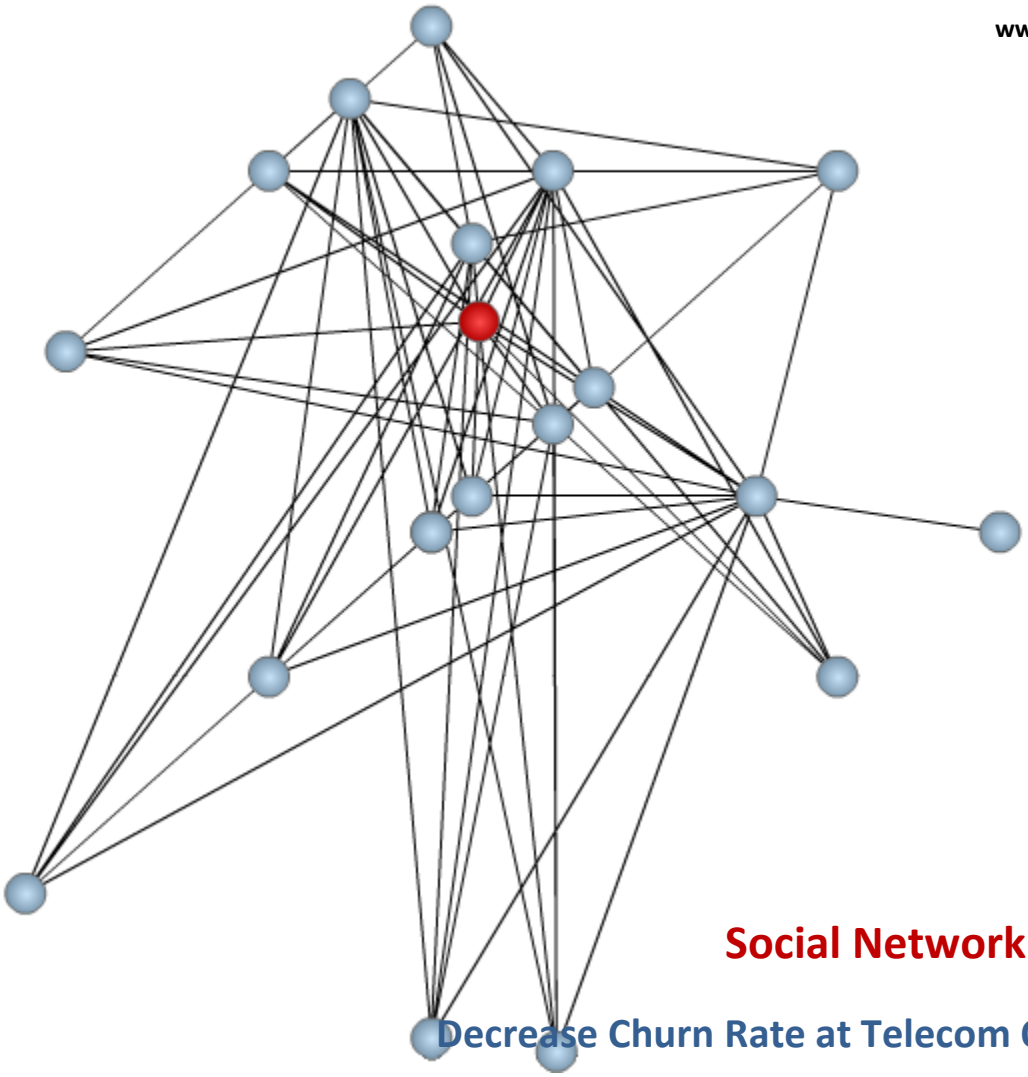

Social Network Analysis

Decrease Churn Rate at Telecom Operators

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INTRODUCTION

In today's highly complex and dynamic market the ability of telecom operators to retain customers and cross-sell products and services is of critical importance. As telecom penetration is increasing and even approaching saturation, the focus of telecom business intelligence is shifting from customer acquisition to customer retention; telecoms must work harder than ever to hold onto their customer base and attempt to draw numbers from their rivals.

Further investments are being made into customer profiling, to obtain a detailed picture of customer segments and individual customers. However, traditional methods of generating customer insight to achieve these goals continue to miss a key dimension. The key to better targeting and treatment is to gain insight into the relationships customers have with other people in their (call) network.

SOCIAL NETWORK ANALYSIS (SNA) IS A FAST EMERGING DISCIPLINE FOR PREDICTING AND INFLUENCING CONSUMER BEHAVIOR. IT FOCUSES ON HOW RELATIONSHIPS ARE BUILT AND HOW THEY CONTRIBUTE TO INFLUENCING INDIVIDUALS WITHIN SOCIAL GROUPS.

Integrating SNA in marketing campaigns and customer retention has shown on several accounts that churn can be reduced significantly in Telecom operators (prepaid/postpaid, fixed/mobile).

CHURN IN TELECOM IS A PROBLEM

Churn and customer value are critical to telecoms. If a customer spends $50/month and you have 5M customers then 0.5% churn is $1.25M/mo every month from then on. Annual churn rates in the prepaid segment average between a significant 50 to 70 percent. Lowering this churn percentage has a large effect on the bottom line.

Even a small reduction in churn can mean big savings—the cost of retaining a client is estimated to be only one-fifth that of acquiring one. And these consumers could ultimately help decrease the churn within their own social circles, amounting to even more potential savings.

ADDED VALUE OF SNA

Attributes derived from SNA may be used alone or as input to classic predictive models to help improve their accuracy. Marketing campaigns aimed at retaining existing subscribers can be enriched by the intelligence gained through SNA capabilities. SNA helps to pinpoint influential customers who are the most likely to drop their service or jump to a competitor.

IMPROVE EXISTING MODELS

Integrating the social network parameters into existing predictive models increase the model performance by a factor of ten or more and the retention campaigns see an even better uplift (10 – 25 times).

PREDICT CHURN STANDALONE

Even if no other predictive model is available at a Telco, it is still possible by means of simply analyzing existing call data, to calculate the probability that if one user churns, that other people in his network will churn.

IMPROVE MARKETING CAMPAIGNS

By having detailed influence parameters per target, marketing campaigns can be better segmented and therefore cheaper and more efficient.

HOW TO IMPLEMENT SNA

IDENTIFY INFLUENCERS IN YOUR NETWORK

Influencers are people that are more or more strongly connected. Not only will their impact on the network be larger than for people with an average amount of connections, they are also an ideal target for a marketing campaign. Research has shown that network neighbours – customers who are linked to an existing consumer – adopt a service at a rate three to five times greater than customers selected using marketing best practices. Because those influencers will have contact with more potential customers, the ROI of a marketing campaign will increase significantly when targeted to the influencers in your network.

MODULES OF SOCIAL NETWORK ANALYSIS

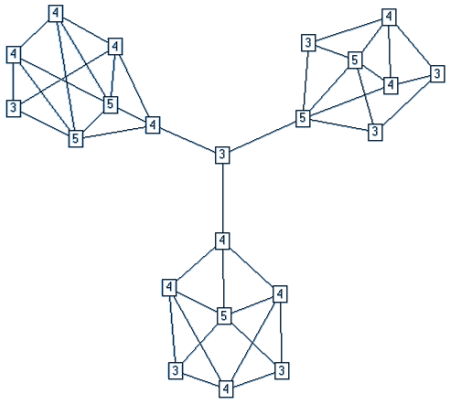
CONSTRUCTING THE NETWORK

This is the basis of all the detailed analysis.

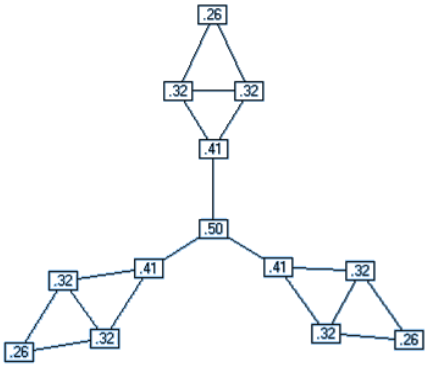
Data is already available on-site in your Call Data database. The processing step can be time consuming but social networks do not change drastically overnight, and therefore monthly or quarterly processing of the call data records is sufficient.

Several centrality parameters are determined:

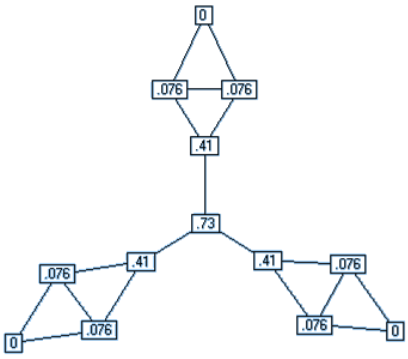
- Degree Centrality: Number of direct ties to other people in the network.



- Closeness Centrality: Capacity to reach the rest of the network.



- Betweenness Centrality: A node on a communication path controls the communication flow, and therefore important (node value .73).



- Eigenvector Centrality (Reach) is a measure of the importance of your nodes in the network. Google's PageRank is a variant of the Eigenvector centrality measure.

Depending on the type of marketing campaign one of the above metrics will determine which customer to select:

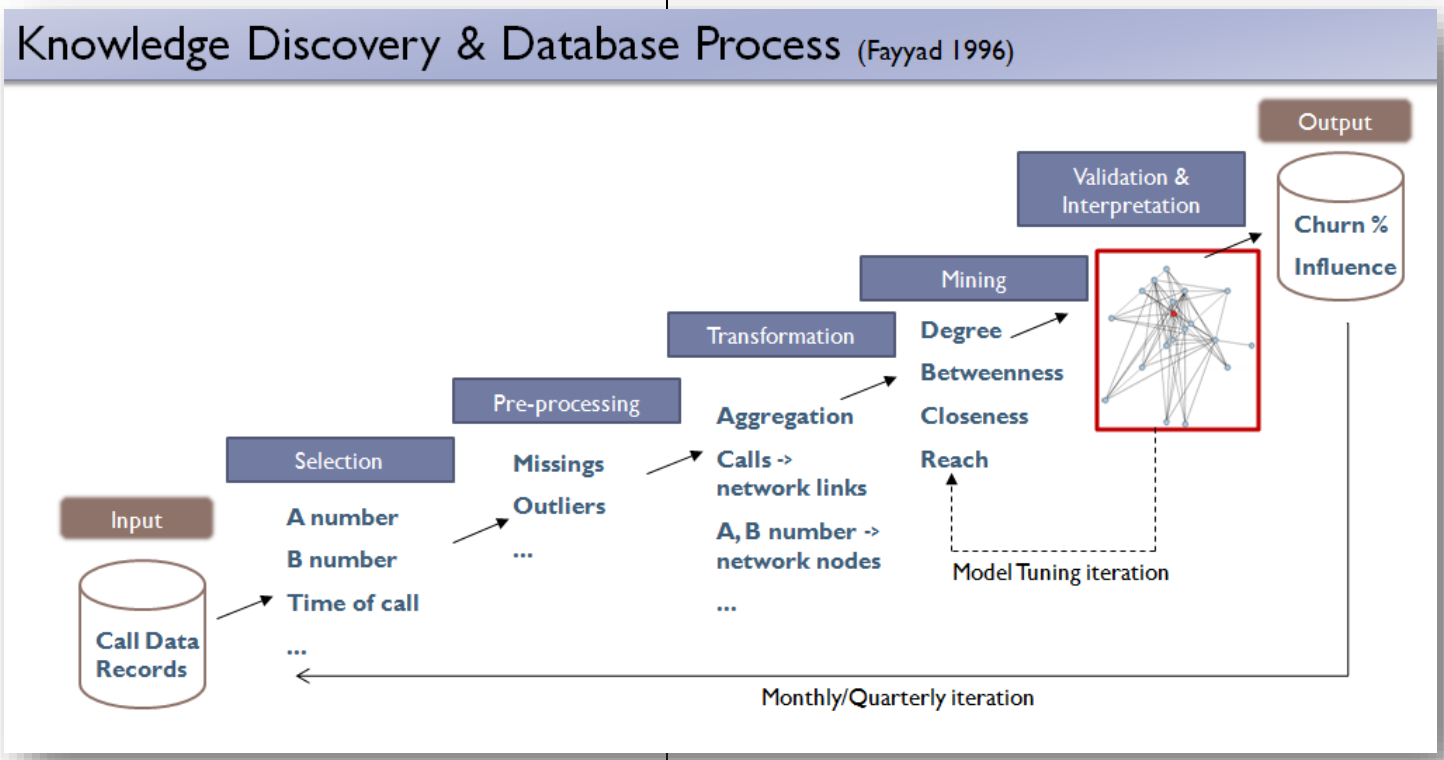
If you simply want to spread your message to as many people as possible, you want to seed your campaign with members that have high Degree Centrality.

IF YOU WANT TO SPREAD YOUR MESSAGE AS FAST AS POSSIBLE, YOU WILL NEED TO TARGET MEMBERS WITH A HIGH CLOSENESS VALUE.

If conversion is important you must choose the influencers that have a large reach.

DEEPER DIGGING

- Find families and head of households.
- Identify rotational churners (spinners). Sometimes people leave and come back; try to keep them for good.
- Anomaly detection is not a direct way to reduce churn, but identifying anomalies in the network can keep those nodes out of the calculations, so that the normal ones provide cleaner results.



METHODOLOGY

Social-3 follows the Fayyad methodology for Knowledge Discovery in its SNA solution.

The iterative nature is important for constant learning and tuning of the model. The centrality parameters in a way, are "just" numbers, and need to be properly weighed for their influence of churn in your network.

By contrasting these results with your list of actual churners and other socio-demographic and CRM data, the model can be further optimized.

LET US ANALYZE YOUR CALL DATA

Social-3 has the algorithms in place to analyze your CDR data. We will discuss with all stakeholders how we will select, pre-process, transform and mine your data. The "Validation & Interpretation" step requires your business knowledge and assistance, together with Social-3's statistical analyst. Social-3 has the underlying support from the Department of professor Bart Baesens, University of Leuven (Belgium).

The output can be stored in your database and integrated in your business process to set up marketing campaigns.

Our solution is offered in a SaaS business model. However, for privacy reasons, the solution can be also be deployed locally within your existing IT infrastructure.

SUMMARY

Social Network Analysis provides ways to help you to lower customer churn significantly and can decrease the cost of your marketing campaign through better selection of the target customer population.

ABOUT SOCIAL-3

Social-3 is a social analytics company specialized in social network analysis and predictive analytics using customer behavior data and social media data. Our flagship product is SNALizzner, a marketing analytics platform for analyzing customer engagement and influencer identification. This big data, cloud-based platform has several modules.

ABOUT THE AUTHORS

Rudy Jacob has 20 years of international experience with Telecom BSS systems and is Managing Partner of Social-3.

Philippe Kerremans has 25 years of experience as an IT professional and is an expert in virtual world and social network analytics.

We collaborate with the academic world, and take the opportunity to thank prof. Bart Baesens of the University of Leuven, Belgium (www.econ.kuleuven.be) for his input for this white paper.