
Customer Satisfaction and Network Experience in Mobile Telecommunications

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Extended Abstract

The purpose of this extended abstract is to serve as a problem statement for our intended research.

Mobile telecommunications services are increasingly becoming a commodity. In saturated markets with mobile telephone penetration above 100%, e.g. The Netherlands, new customers are hard to find. An operator, in order to grow, has to attract customers from competition, and at the same time retain its existing customer base.

Keeping the current customers satisfied can be a powerful means in achieving both these goals. Customer satisfaction is defined as a customer's overall evaluation of the performance of an offering to date (Johnson and Fornell 1991). But, just measuring customer satisfaction shows neither the ways of achieving it, nor ways of battling poor customer satisfaction. According to the proponents of Customer Experience Management, "customer satisfaction is essentially the culmination of a series of customer experiences or, one could say, the net result of the good ones minus the bad ones" (Meyer & Schwager, 2007). Customer experience is the internal and subjective response customers have to any direct or indirect contact with a company. Data about these experiences are collected at "touch points": instances of direct contact either with the product or service itself or with representations of it by the company or some third party (Meyer & Schwager, 2007). In our previous work, we have created a framework for measuring customer experience in Mobile Telecommunications (Radosavljevik, van der Putten & Kylesbech Larsen, 2010), which we intend to use in this research as well.

For several reasons, the focus of the intended research will be on the Mobile Telecom network. First of all, the mobile network is the most frequent touch point between the customers and the operator. Most of the customers' experiences occur here. Furthermore, deteriorated network performance can be seen as a

relational trigger for re-evaluation of the relationship with the operator (Gustafsson, Johnson, & Roos, 2005). For these reasons, the customers' network experience and their satisfaction with the network can be seen as drivers for the overall customer satisfaction with the operator.

Therefore, identifying network quality parameters that drive customer satisfaction or dissatisfaction, and their respective thresholds, is of high importance to operators, as they can serve as guidance for network improvements. We intend to achieve this in the following manner. First, we will perform a survey on a random customer sample, in order to establish their level of satisfaction with the mobile network. Next, the customers' network experience prior to the survey will be measured on the same sample and will focus mainly on the quality and quantity of interactions with the network, as well as the means for these interactions, the phone. Then, these values would be cross correlated to establish possible dependencies between customer satisfaction and network quality. Finally, we intend to build a predictive model using these network quality parameters, which in turn could be used to predict the satisfaction level of the entire customer base. Also, we intend to cluster customers based on network quality parameters and satisfaction.

We do not assume that all customer (dis)satisfaction with an operator's network stems from objective network quality parameters. First of all, as much as the customer's satisfaction with the operator's network can drive the overall customer's satisfaction, it is conceivable that an opposite causality may exist. An answer to this "chicken or egg" question could provide operators with guidelines for their investments efforts. Next, customers' peers can be a very influential factor as well. For example, some customers may have low satisfaction with the mobile telecom network, i.e. perception of its quality, not because of low values in their own network quality parameters, but because they are in the same social network with a person having a large number of network problems or with a person who has a perception of the telecom network quality as low. Contrary to this, a customer experiencing frequent network problems could be unaware of them, or ignore them, and still be satisfied with the network quality due

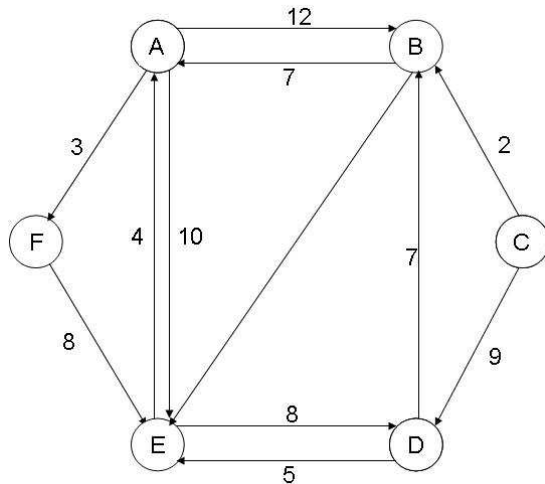


Figure 1. A Theoretical communication graph

to the influence of highly satisfied peers or because they are satisfied with the operator in general. For these reasons, the link between Customer Satisfaction and Network Experience in Telecommunications can also be formulated as a relational learning problem.

The relevance of the Social Networks within mobile telecom customers is already in the focus of research literature (Dasgupta, 2008). Therefore, we intend to derive a social network using the communication graph of the surveyed customers within a given timeframe, e.g. one month, and repeat the procedure we described in the previous paragraph, in order to establish how important is the social network effect on this phenomenon. A simplified version of this communication graph is shown on Figure 1. It is a directed weighted graph, where the direction depends on who initiated the communication (e.g. call, SMS). The graph can be weighted on different parameters such as the count of calls initiated by customer A to customer B, the duration of these calls, the number of SMS messages that customer A sent to customer B, or any combination of these parameters. Each of the nodes (customers) on this graph has attributes that are used in traditional data mining in telecommunications (Radosavljevik, van der Putten & Kylesbech Larsen, 2010).

Finally, as future research, we intend to investigate the spreading of satisfaction and dissatisfaction through the graph, using diffusion theory as background. Here, we treat satisfaction and dissatisfaction separately because it is debatable whether dissatisfied customers engage in more Word-of-Mouth, and if so, by how much (Anderson, 1998)?

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