Customer Loyalty in the Swedish Telecommunication Industry

A case study at Telia

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Foreword

This Master’s thesis is the last course carried out for attaining a Master’s Degree in Industrial Engineering and Management from Linköping University. The thesis is conducted within the field of Quality Technology and Management, which is a two years specialization program with courses in advanced level. The requirements for this thesis are to conduct a research within the specialized field and use the knowledge acquired from the courses to carry out the research. Furthermore it should be a full-time work corresponding to 30 credits, which gives the extent of 20 weeks. Our thesis is conducted at a Swedish telecommunication company from January 2015 to June 2015.

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And for everybody else, we wish you a rewarding reading!

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Summary

There are two main purposes of this thesis. The first one is to get a better understanding of the aspects affecting customers’ loyalty in the telecommunication industry, in the context of when customers are using the services. The second purpose is to look into what the case company gains by having customers that are more loyal, where the degree of loyalty is measured by the Net Promoter Score metric.

The methodology used to carry out the research is a case study with an approach that is both qualitative and quantitative. Where the quantitative approach has the largest share. Two datasets have been used in this thesis, one collected by the authors by sending out surveys and one collected beforehand at the case company. The survey created by the authors aim to let customers assess the satisfaction level with technical and non-technical aspects that can affect loyalty. The dataset that is already collected by the case company document the initial degree of loyalty of customers along with the revenue per customers over a period of years. The two datasets are used for the two different research purposes respectively. The statistical analysis for the data is conducted using the statistical tool Minitab.

The findings for the first purpose are that our survey questions can be split into three categories using factor analysis. The categories are Perceived mobile multimedia quality, Perceived broadband multimedia quality and General perceptions. The first two categories are driving customer loyalty and the third category are indicators of customer loyalty. For the second purpose the findings are that the case company has different gains of more loyal customers depending on if the customers are either mobile or broadband customers. More loyal mobile customers stay longer as customers and also buy more. More loyal broadband customers only stay longer as customers.

The practical implications of the findings are that the case company has to think of customer loyalty in new ways. There are more indicators of if a customer is loyal than the Net Promoter Score, these are for example customer satisfaction, perceived brand value, perceived overall quality, perceived customization etc. Therefore it would be better to measure customer loyalty not only with the Net Promoter Score Metric but to pick out 2-3 indicators to ask the customer and create an average index for all the questions that can represent the customers’ loyalty. Furthermore there are not a specific variable that drives customer loyalty more or less, several aspects are acting together in two high level groups. Another practical implication is that the gains of more loyal customers are higher for mobile customers since they buy more from the case company and stay longer as customers. However, for broadband customers, they only stay longer. Therefore the Net Promoter Score is not as useful to track for broadband customers. Either the broadband customers should have more opportunities to buy more or another metric should be used for broadband customers.

Keywords: Net Promoter Score, loyalty, satisfaction, retention, mobile services, broadband services, multimedia streaming.
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1 Introduction
The aim of this section is to introduce the reader to the telecommunication industry and the problems faced in this environment of continuous change. In addition, the increase in efforts to understand and improve the customer experience is explained. After this, the goal and scopes of the project are presented and motivated.

1.1 Background
In the last decade, there has been a rapid growth in the usage of ICT (Information and Communication Technologies). Data traffic growth has increased exponential from 2007 to 2012, in both fixed and mobile networks, according to Ericsson (2013) and are estimated to be growing 10 fold from 2014 to 2018 (CISCO, 2015). According to Rich (2012), telecom service providers are also challenged with changing operating environments: growing proportion of broadband users, growing peak traffic load and introduction of 4G are some examples. CISCO (2015) predicts that by 2017 more than half of the mobile data in the world will be 4G. In both local and global markets there are fierce competitions between telecom operators to provide the best solutions to the best price for customers. Together with a low switching barrier in the industry the core challenge for telecom service providers are to retain customers and continue to generate growth in the future.

Looking at the telecommunication trends in Sweden, there are mainly two distinct developments. The usage of mobile broadband has increased yearly from 2006 to 2013 and the Dial-up has decreased yearly during the same period (Wigren & Fransén, 2013). According to Telia (2013a), smart phones have increased every year over all segments from 2010 to 2013 in Sweden. Furthermore almost half of the Swedish households had at least one tablet in 2013 and all mobile services have been undergoing growth since 2007. The adaptation pace has also increased, making people more willing to adapt to new technologies and solutions (Telia, 2013b). According to Bilbao-Osorio et al. (2014) Sweden is ranked number 1 in the world for access and use of ICT by individuals in the world.

Moreover, todays customers are more demanding than before and have a higher churn rate (percentage of customer leaving the current service provider each year) if expectations are not met, which put further pressure on the telecommunication industry to have better understanding of customers experience with the services (Rich, 2012). Swedish Quality Index (Svenskt kvalitetsindex, 2014) has mapped the customer’s opinion of the telecommunication industry between 1996 and 2014, and found that the gap between customer’s expectations and their actual experience of service performance is increasing each year. This clearly points out the challenge for Swedish telecommunication service providers to deliver services that meet customers’ expectations. According to Rich (2012) service providers in the telecom industry are behind other industries in customer experience. Since customers in this business are so demanding and they want instant gratification. How can Telecommunication companies maintain the customer’s loyalty within this context?

1.2 Purpose
There are two purposes of this study. The first one is to understand customers’ experience with the services in the telecommunication industry and find the most important variables affecting customer loyalty. The second purpose is to research the advantages for telecommunication companies to have more
loyal customers. The motive for improving loyalty is according to literature that there is a positive relationship between the levels of customers’ loyalty and revenue for a company (Reichheld, 2006).

1.2.1 Objectives and goals
With the two purposes stated in the paragraph above two research questions are formulated:

1. Which are the variables affecting customers’ loyalty during the usage of the services?
2. What is the relationship between customer loyalty and customer revenue?

These research questions are approached by a case study at the case company Telia, which is a branch of TeliaSonera AB. Telia is focussing their strategy on improving customer’s loyalty with the goal of becoming the telecommunication company with the highest scores of customer loyalty among Swedish competitors by 2018 (Telia, 2014). Therefore these two research questions are very interesting for Telia to answer.

1.2.2 Scopes and boundaries
In order to meet the time requirements some scopes are introduced. This thesis will take into consideration only customer experience during usage of mobile and broadband services, since there is a gap in the understanding for what affects customer loyalty during use. How the loyalty degree are affected when customers join the company or call in to get help are omitted. Among all the services through Telia’s networks, multimedia streaming is chosen to measure customers’ experience during usage since this class of service represents half of the network traffic, see Appendix A. Furthermore customers with both broadband and mobile services at Telia with at least 0.5GB of mobile traffic are chosen for this study. The mobile data limitation is to maximize the likelihood of the customers using multimedia streaming services. Moreover, the non-respondents for the survey that is created and send out are not analysed. In addition, an “End-to-End” approach is used to reduce the level of complexity. For the data used to analyse the relationship between customer loyalty and customer revenue, a boundary is that data is collected by Telia with Telia specifications.
2 Theoretical Background

Chapter two introduces the reader to the basic theory used for this study. The chapter is subdivided in six parts. The first three parts describes the concepts customer satisfaction, loyalty and retention respectively. Part four addresses the relationship between these three terms. Part five discusses different acknowledged metrics to measure satisfaction and loyalty. Finally, part six illustrates the concept customer experience and the relationship of this with satisfaction.

2.1 Customer Satisfaction

Customer satisfaction is not a new term; it has been widely discussed in literature. Even so, the definition is a bit “fuzzy” and different authors define it in different ways. For this work, we decide to use the definitions provided by Gerpott et al. (2001) and Kima et al. (2004). Both definitions are applied to the telecommunication industry. For instance, Gerpott et al. (2001) defines customer’s satisfaction as:

“An experience-based assessment made by the customer of how far his own expectations about the individual characteristics or the overall functionality of the services obtained from the provider have been fulfilled” (Gerpott et al., 2001).

Kima et al. (2004) states a slightly different definition of customer satisfaction as:

“Customer reaction to the state of fulfillment and customer judgment of the fulfilled state”, and “the main factor determining customer satisfaction is the customers’ own perceptions of service quality” (Kima et al., 2004).

In addition, the author defines service quality as the customer’s satisfaction or dissatisfaction formed by the experience of the customer using the service or product (Kima et al., 2004). According to the previous definitions (Gerpott et al., 2001) (Kima et al., 2004), the satisfaction score for a customer is higher or lower in relation to if the service or product has actually exceeded or fell short of what was expected (Gerpott et al., 2001).

Customer satisfaction is an important topic among different industries because of the advantages of tracking and improving it. For motivating the advantages of tracking customer satisfaction the reasons stated by Oliver (1999) are presented: The measure of customer satisfaction through customer-surveys can provide a clear picture of the attributes of the service or product which delight the customers the most (Oliver, 1999). On the other hand, the reasons to improve the customer satisfaction applied for the case of the telecommunication industry are according to Kima et al. (2004) that it increases customer loyalty (customer loyalty is discussed further in next section) and prevents customer to leave the company. In addition, the same author explains that increases in customer satisfaction will decrease the customers’ price sensitivity, reduce the cost of failed marketing campaigns and the price of new customer creation. This will in turn increase the number of customers. Last but not least the increase of customer satisfaction levels will improve the effectiveness of advertising and the brand value (Kima et al., 2004).

There are special implications when the relationship between customer and service provider is continuous as in the case of the “Communications Ecosystem”. For this case, Bolton (1998) states satisfaction as a cumulative concept where there are a prior satisfaction level and current actual assessment of satisfaction. Hence, Satisfaction is modeled as:

“a function of current perceptions of the service, where current perceptions depends on prior expectations and the most recent service transaction” (Bolton, 1998).
Another important implication stated by the author is that customer assessment of a service varies over time: The longer the relationship between customer and service provider, the more important is the prior expectation compared to new information for the customer (Bolton, 1998).

2.2 Customer Loyalty
Oliver (1999) writes about different conceptualizations regarding customer loyalty in his article. Earlier concepts defined customer loyalty as the customers’ behaviour of re-buying a brand. Ultimate customer loyalty is the willingness to do this against all odds and at all costs. Later studies have shown that only looking at customer’s action of rebuying is not enough for defining the concept of customer loyalty

To start with the concepts of loyalty stated by Oliver (1997) the process of a customer becoming loyal is described by the author in a four level framework. The four loyalty phases are:

1. **Cognitive loyalty** - one brand is preferable over another for the consumer.
2. **Affective loyalty** - consumer gets a pleasurable fulfilment of buying from the brand.
3. **Conative loyalty** - consumer has repeated positive affect towards the brand.
4. **Action loyalty** - consumer intentions to rebuy are turned into action. Consumer is even willing to overcome obstacles in order to rebuy the brand.

In each of these phases there are threats to customer loyalty, consumer idiosyncrasies and switching incentives are defined as the two main obstacles. Consumer idiosyncrasies express the consumer’s willingness to seek variation. This can be explained by consumer being multi-brand loyal, changing needs or withdrawal from a product or service. Switching incentives is when customers are lured to buy from a competitive company by better offerings. These two obstacles are most prominent for the customers in the first phase of cognitive loyalty and is less of a threat when customer moves up to higher loyalty levels. (Oliver, 1999)

Action loyalty is the highest level of customer loyalty above. However it does not necessarily imply that customers are loyal if they overcome obstacles in order to rebuy. Loyalty should not only equal willingness to rebuy. Instead the customer could be in a state of inertia, indifference or trapped by exit barriers according to Reichheld (2003). Example of these could be that the customer only rebuys from a company since the services offered match the current need. In contrary, if the customer’s need of a product or a service decreases the rebuy rate will also reduce but it may not mean that the customer is not loyal any longer. Therefore, Reichheld (2003) states that a better indicator of customer loyalty is when the customer recommends the company to others.

How can a company then secure customer loyalty in practice? Jones (1996) describes this through a five stage approach.

1. **Clearly define target customers**- those that the company can serve best, let go of unhappy customers since they need a lot of resources.
2. **Measure customer satisfaction systematically**- use process assurance
3. **Use a variety of measurement methods**- surveys, feedback systems, market research etc.
4. **Translate customer-satisfaction information to loyalty measurement**- be aware of false loyalty.
5. **Completely satisfy customers**—provide top-notch services and listen carefully to find out how target customers perceive service experience and what they want the most.

Kima et al (2004) states in their study about how customer satisfaction together with switching barriers affects customer loyalty, that the concept of loyalty is in an early stage of research in the mobile telecommunication industry: A mere handful of paper has been published on the topic due to the short history of the industry. According to Kima et al (2004), loyalty in the mobile communications industry can be divided into three categories: behavioural, attitudinal and integrated approach. The last approach integrates customers’ behaviour of rebuying with their positive attitude towards the brand and is the approach used in the authors study. Kima et al (2004) also point to that customer loyalty in the mobile telecommunication business is strongly related with a company’s future growth. Kima et al (2004) states that when the market is mature and the competition strong it is better to strive for retaining existing customers than to induce potential customers.

### 2.3 Customer Retention

Customer Retention is defined as the maintenance of a business relationship between a supplier and a customer (Gerpott et al., 2001). The same author defines in two ways how this situation can be achieved: On one hand, by subsequent purchases by the customer, or extending the contract between supplier and customer over a time period. On the other hand, by customers’ intention of continuing purchasing in the future, or not ending the contract with the supplier.

There are different reasons for the maintaining of a business relationship between customer and supplier. The author Gerpott et al. (2001) describes them as following: The first one is when there are barriers that prevent the customer from changing suppliers. This is an involuntary retention of the customer. The second reason is when the customer feels attached to the supplier and voluntarily wants to keep the actual relationship with the supplier. This is the desired retention by the supplier, the retention due to customer loyalty.

Hence, customer retention is something that cannot be observed directly (Gerpott et al., 2001). In addition, there is not a threshold value for the frequency of subsequent purchases or the intention to extend the contract between supplier and customer when we can say that we have achieved a retention state (Gerpott et al., 2001). Thus, customer retention is usually represented as a function of other observable factors such as customer satisfaction and customer loyalty. The relationship between these three terms are explained further in the next section.

### 2.4 Relationship between satisfaction, loyalty and retention

In the previous sections, three concepts have been introduced: customer satisfaction, customer loyalty and customer retention. The relationships between these concepts have been discussed in literature and even nowadays the link is not specified properly as it is stated by Oliver (1999). Gerpott et al. (2001) proposes a framework to explain this relationship where the three concepts are seen as subsequent and linked states, see Figure 1 below.
Oliver (1999) explains that satisfaction and loyalty are inevitably linked. However, this relation is asymmetric: Loyal customer is satisfied but satisfied customer does not need to be loyal. This means that satisfaction is a condition for loyalty (Oliver, 1999). The same author analyses the main frameworks that explains this relationship and concludes that the most precise definition of the link between customer loyalty and satisfaction is where satisfaction is transformed into loyalty: Loyalty as the final step of a process where satisfaction is the starting point (Oliver, 1999). In addition to satisfaction, other factors such as personal determination and social support are needed for the customer to reach the loyal state (Oliver, 1999).

Similar to Oliver (1999) there are other authors pointing to the same relation between customer satisfaction and loyalty. For instance, Jones (1996) states a positive relation between both concepts. He discusses that this link depends on the industry and the conditions of the market. However, independently of the industry, high levels of satisfaction will increase the customer loyalty (Jones, 1996). An important idea discussed by this author is that: “the only truly loyal customers are totally satisfied customers” (Jones, 1996). This is a different view of the satisfaction level that is needed to create a loyal customer. From the study carried out by Jones (1996) it is shown that companies need to outperform the satisfaction levels of the customers and focus on creating a base of totally satisfied customer. At this point, the author (Jones, 1996) makes a difference between merely satisfied and totally satisfied customers, where total satisfaction is a condition for loyalty. Hence, the approach used for Jones (1996) goes through creating total satisfied customers instead of merely satisfied in order to increase the amount of loyal customers (Jones, 1996). This approach is more aggressive than the one by Oliver (1999) where the merely satisfaction is enough.

The relationship between satisfaction and loyalty has been discussed as well for the telecommunication industry context. For this work we refer to the research carried out by two different authors: Gerpott et al. (2001) and Kima et al. (2004). Each one of them has conducted studies in order to create a model for this relationship. For instance, Gerpott et al. (2001) states that customer loyalty is the product of customer satisfaction and switching barriers. Switching barrier is here the costs related with the change from one company to a competitor. Kima et al. (2004) found as well a positive correlation between customer satisfaction and loyalty.
satisfaction and loyalty. The main difference with the study carried out by Gerpott et al. (2001) is that Kima et al (2004) includes a new factor affecting the customer loyalty in a negative way: Image of the competitors. This is in concordance with the idea of customer loyalty as a concept dependent of external factors stated by Oliver (1999) and commented previously in this section.

As we discussed in previous sections there is also a link between customer loyalty and customer retention. For instance, Gerpott et al. (2001) explained that one reason to subsequent purchases or to extending the contract between customer and supplier is the intention of the customer to do so. This is a voluntary retention by the customer and it is due to customer loyalty. Hence, customer loyalty is a requirement for this voluntary retention. However, retention does not mean loyalty. There is another case when customer continues the relationship with the actual supplier because of the switching barriers. This kind of retention does not include loyalty as a requirement. In concordance with this result, Gerpott et al. (2001) states that approximately 50% of the customer retention are explained through customer loyalty, establishing a direct link between both concepts.

2.5 Customer satisfaction, loyalty and experience metrics
The following section introduces two metrics used for explaining how satisfaction and loyalty respectively can be measured. The satisfaction metric that is introduced is the American Customer Satisfaction Index. The loyalty metric is the Net Promoter Score.

2.5.1 ACSI’s Model
The American customer satisfaction index (ACSI) is developed by University of Michigan's Ross School of Business (ACSI, 2015). The ACSI can be explained by a cause-and-effect model, see Figure 2 below, which express the main components driving satisfaction on the left. The degree of satisfaction will in turn create output components on the right. All the components in the model are interrelated and dependent and form altogether a multi-equational model (ACSI, 2015). According to ACSI (2015) the inputs for the driving components of satisfaction are customer evaluations from interviews, and can each be represented by a final score between 0-100. These three driving components are therefore called indexes. The indexes are in turn weighted to form the index for customer satisfaction (ACSI).
The three drivers for customer satisfaction are according to ACSI (2015): Perceived Quality, Customer Expectations and Perceived Value. The meaning of these three drivers are explained briefly below:

- Perceived Quality is defined as “customer's evaluation via recent consumption experience of the quality of a company's products or services” and are measuring the customization and the reliability of the products or services. (ACSI, 2015)
- Customer Expectations is defined as “customer's anticipation of the quality of a company's products or services” and are measuring both prior experience like word-of-mouth and the future ability for a company to deliver. (ACSI, 2015)
- Perceived Value means “value for money” and measures in what degree a customer gets the quality paid for. (ACSI, 2015)

2.5.2 Net promoter Score (NPS)
Customer Loyalty is an important topic for our work. An acknowledged metric of loyalty, Net Promoter Score (NPS) was introduced by Reichheld (2003) in the article with the title “The one number you need to grow” (Reichheld, 2003) published in the Harvard Business Review. Reichheld (2003) claims that NPS is a measurement of customer loyalty with highest correlation with a firm’s revenue growth (Reichheld, 2003). Reichheld’s work about customer loyalty was the beginning of firms shifting focus from improving customer satisfaction, to improving customer loyalty.

The concept of NPS is that only the question of “willingness to recommend” is enough for predicting customer loyalty. “Willingness to recommend” question are formulated with: “How likely is it that you would recommend this company to friends or colleagues?”. Reichheld (2003) developed this concept from a survey study involving 4000 customers in a cross-industry study (Satmetrix, 2014a). He asked different questions linked with loyalty. After getting the responses he matched the responses with the actual behaviour of the customer and saw that the “willingness to recommend” question had the highest correlation. In other words, they examined the correlation in terms of absolute magnitude for different loyalty related questions and found that a single loyalty questions presented the highest
correlation among all the industries in despite of their initial thoughts that it would depend on the industry (Satmetrix, 2014a). The question was “likelihood or willingness to recommend” which probed to be correlated with a coefficient of 0.8 with actual customer’s behaviour (Satmetrix, 2014a). An important derivation of the work of Reichheld (2003) and Satmetrix (2014a) is that a customer who is willing to recommend the company is as well willing to buy more from this company and create additional value by referring the company to a friend or college.

Another analysis was carried out by Reichheld (2003) and Satmetrix (2014a) in order to find the link between “willingness to recommend” and a company’s growth. For this, a survey data base was used with 150,000 survey responses across 400 companies in different industries. The results were clear and proved that there is a close relationship between NPS and growth. Companies which maintain a high level of NPS also shows a high growth rate (Satmetrix, 2014a). The opposite result is described as well by Satmetrix (2014a), companies keeping a low level of NPS also has a low growth rate.

The NPS gives a score of customer loyalty ranging between -100 to +100. The score is based on the survey question “How likely is it that you would recommend this company to friends or colleagues?” The answer is presented in a self-reported Likert scale, from 0-10. Where 0 meaning that the customer would not at all recommend the company and 10 meaning that the customer extremely likely would recommend the company. The customers will then be categorized into three groups depending on how they answer the questions:

- **Detractors**: 0 – 6
- **Passives**: 7 – 8
- **Promoters**: 9 – 10

![Figure 3: NPS segmentation by Reichheld (2006)](image)

To calculate the NPS, Reichheld (2003) states the following formula:

\[ NPS = \%promoters - \%detractors \]

With this segmentation (See Figure 3), it is possible to group the customers according to their loyalty, and therefore behaviour (Satmetrix, 2014a). In other words, this segmentation states a difference between behaviours since we can point to the customers according to “what they say” and “what they actually do” (Satmetrix, 2014a).
Detractors are unhappy customers, passives are satisfied though not enthusiastic and can easily change company, promoters are loyal customers who enthusiastically rebuy from the company and recommend their friends to do this too (Reichheld, 2006). The NPS is then achieved by taking the percentage of promoters and subtract the percentage of detractors. According to (Satmetrix, 2014a) a promoter tends to spend more at the company while detractors spend less. Thus, there is a difference across the segments when it comes to purchase value. In addition, there are differences in the referral value due to the effect of “word to mouth”, defined by Satmetrix (2014a): Promoters tend to recommend the service creating added value to the purchase value.

Analyses of the NPS have been carried out by Satmetrix (2014b) when it comes to the wireless Industry. The objective is to validate the original NPS statements regarding a single question to assess loyalty and the link between NPS and growth for the special context of the wireless industry. According to the author loyalty programs like NPS are a “must-to-do” in the industry since the average cost to get a new customer is 300$ while to retain a customer costs 25$ (Satmetrix, 2014b). The same authors states that there is a singularity in this industry and there is no difference in the average spent amount between detractors, neutrals and promoters compared to other industries. In other words, the purchase value is the same across the three segments for the wireless Industry. The reasons for this are that unlike other services in the wireless industry loyal customers do not have the chance to spend incrementally more (Satmetrix, 2014b). For this industry, customer agrees on a monthly fee which gives them access to the networks. However, loyalty programs are a key part of this Industry because the relationship between loyalty and retention (Kima et al., 2004). The value of the loyalty programs are to maximize customer retention (decreasing the churn) and increase the “word to mouth” value (Satmetrix, 2014b). The same author calculates total customer worth for the wireless industry taking into account the purchase value and referral value for a customer with a result of 1,700$ for a promoter and -300$ for a detractor. This states the importance of decreasing the amount of detractors and increasing the number of promoters for the wireless industry.

Net Promoter Score (NPS) is not just a metric. It is the base of the so-called Customer Loyalty Programs. For our work we will use the terms introduced by Satmetrix (2014c) where there are four basic pillars of the system:

1. Executive Foundation: The support by high management in order to implement the system.
2. Organizational Alignment: The commitment of the employees with the loyalty program.
3. System Infrastructure: All the systems needed to gather the data and find the relationships in-between.
4. Process Integration: Using of customer’s feedback inside a process in order to “close the loop”

All these four aspects should be taken into account in order to carry out a successful implementation of NPS.
There are many aspects of NPS that are criticized. Keiningham et al. (2007a) for example points out that Reichheld base the NPS metric on a study carried out in Satmetrix Systems and Bain & Company, and conclude from this study that the intention to recommend is the best metric for predicting customers’ loyalty behaviour. Keiningham et al. (2007a) further claims that the study of NPS was based on 14 cases and a customer level analysis. The relationship between recommend intention and customer behaviours has neither been peer-reviewed nor scientifically examined. Keiningham et al. (2007a) carried out a study with 8000 customers from retail banking, mass-merchant retail and Internet Service providers and concluded that recommend intention could not be used as an indicator of customer’s future recommend behaviour. A study by Keiningham et al. (2007b) compared Reichheld’s Net Promoter data to a different set of data from firms tracked with ACSI. It is shown from the data analysis that there is no way Net Promoter Score can be the single most reliable indicator of a company’s ability to grow. Keiningham et al. (2007b) argues that Reichheld has stated that ACSI are not linked with a firm’s revenue growth, but according to their data comparison, they cannot see a difference in how the ACSI data and the NPS data are correlating to growth. The conclusion is that NPS is not a superior metric for indicating a firm’s revenue growth. Kristensen & Eskildsen (2014) have carried out a study using data from a Danish Business-to-Customer company and compared the NPS to the ACSI and the EPSI. The authors highlight many criticisms towards the NPS throughout the year. For example that it does not take into account cultural differences in the way rating scales are used. The rating scale itself are exposed to information loss since only two categorizations (promoters and detractors) are used to calculate the NPS according to Reichheld’s formula (2003) instead of the initial three categories- detractors, neutrals and promoters. In their own research they demonstrate the poor precision of NPS compared to other metrics and that it is difficult to say how NPS more precisely can influence a company’s growth. This finding is based on the argument that if a company can measure their customer loyalty with NPS it should be a relationship between their NPS and other customer relationship performance measurements. The authors use measurements as image, expectations, product and service quality and value for money as comparison with NPS and can only find that these measurements predicts 60% of the cases correctly (Kristensen &
Eskildsen, 2014). They further shows that the lack of a “no answer” or “do not know” category leads to an artificially low NPS, since most of the people in their study would select 0 to 5 if they were forced to choose in the scale instead of picking the “do not know”.

2.6 Customer experience
There are different definitions for the term customer experience (some papers refer to it as User Experience). In addition, the concept presents ambiguities for practitioners and researchers alike (Palmer, 2010). For instance, Tullis et al. (2013) defines customer experience as: “User experience refers to all aspects of someone’s interaction with a product, application, or system” (Tullis et al., 2013). Another definition especially useful in the case of a continuous service provider is the definition by Rich (2012) of customer experience as “the result of the sum of observations, perceptions, thoughts and feelings arising from interactions and relationships between customers and their service providers” (Rich, 2012). Both definitions use the concept of interaction with the service provider. This is due to the view of the customer experience with the provider as a journey. The same idea is discussed by Palmer (2010) where he defines customer experience as: “Interaction with different elements of a context created by the service provider” (Palmer, 2010). This far, customer experience is defined as an interaction between customer and service provider. The sum of all these experiences is the customer satisfaction. To validate this statement we can recall the definition of customer satisfaction by Meyer & Schwager (2007): “culmination of a series of customer experiences”.

2.6.1 A framework for Customer Experience
This far, the concept of customer experience is clearly stated through different definitions. The reader might now think about the different components affecting it. For this, we introduce the integrated framework by Palmer (2010) in Figure 5 below. The three main components affecting the interaction of the customer experience are: Quality, Brand and Relationships. The last step: Attitude, is the equivalent to satisfaction as it has been described previously in this paper.
Customer Experience is becoming an important concept lately. Customer Experience Management is a management system driven by the customer experience. To define the concept we recall the definition provided by Meyer & Schwager (2007) where a CEM is a management system which “captures and distributes what a customer thinks about a company” (Meyer & Schwager, 2007). This thought is captured at points of customer interactions which are defined as touch points. There are several advantages for focusing on the customer experience by a service provider. For instance Rich (2012) states that CEM programs will improve customer loyalty, increasing profitability through customer retention. This definition is important since the NPS system can be seen as a CEM system applying all the theory of CEM into NPS (Satmetrix, 2014d).

2.6.2 A key factor of Customer Experience: Quality of Experience (QoE)
As it has been stated previously one of the components affecting the customer experience and ultimately the customer satisfaction is the quality perceived by customers. Quality of Experience is a synonym of this concept defined by Kilkki (2008) as:

"The overall acceptability of an application or service, as perceived subjectively by the end-user” (Kilkki, 2008).

The same author creates a framework for this concept where six different modules are defined: user, application, network, network operator, service provider, and customer. Figure 6 below contains these elements as the author stated (Kilkki, 2008):
An important implication of this framework is the clear differentiation between Quality of Service (QoS) and Quality of Experience (QoE). Where QoS is a technical measurement used to define the technical capacities needed to meet the requirements by the users’ applications (Kilkki, 2008). On the other hand, QoE is the interface between user and application defined as the quality perceived by customer (Kilkki, 2008). This is a key element since it was stated previously that the quality of the services and products is one of the three construction affecting the customer experience and ultimately customer satisfaction (Palmer, 2010).
3 Corporate description

The study is carried out at the Swedish branch of TeliaSonera AB. Services provided at region Sweden are under the Telia brand and is shown in Table 1. The mobile service provider is also under the Halebop brand (Telia, 2014b). Shown in Table 1 below is an overview of region Sweden’s numbers of subscriptions for 2014, Q4:

Table 1: Services for Region Sweden (Telia, 2014b)

<table>
<thead>
<tr>
<th>Services</th>
<th>Subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>6,578,000</td>
</tr>
<tr>
<td>Fixed telephony</td>
<td>2,054,000</td>
</tr>
<tr>
<td>Broadband</td>
<td>1,275,000</td>
</tr>
<tr>
<td>TV</td>
<td>697,000</td>
</tr>
<tr>
<td>Total</td>
<td><strong>10,604,000</strong></td>
</tr>
</tbody>
</table>

There have been numerous studies conducted about how customer loyalty and retention are driving a company’s profit (Rich, 2012; Oliver, 1999). TeliaSonera has found out that these customer factors are directly linked with the company’s growth and have therefore started to focus more on improving customer’s experience to reach higher customer loyalty. Telia has the brand strategy to be more customer centric and find their target customers in a specific segment (Telia, 2014a). With the base of the new brand strategy Telia has defined customer’s expectation (Telia, 2014d):

“Customers demanding bandwidth and quality with more usage, anytime, anywhere and need help dealing with complexity” (Telia, 2014d).

From this customer expectation Telia has developed an “end-to-end” KPI framework, consisting of three kinds of KPI’s driving customer satisfaction:

- Descriptive KPIs (Voice of Performance): service levels, network availability, speed, delivery time etc.
- Perception KPIs (Voice of Customer): Transactional NPS and Relationship NPS.
- Outcome KPIs: Churn, ARPU etc.

The KPIs that are directly linked with measuring customer loyalty are the Perception KPIs that consist of Net Promoter Score (NPS) metric. This metric is split for mobile and broadband services and further into transactional (customer join or ask for help) and relationship (customers usage of services). It is concluded that by improving Descriptive KPIs that have strong correlation to Perception KPIs there is an impact on the KPI NPS.

The Net Promoter Score (NPS) was first introduced in 2007 by TeliaSonera’s Estonian company, Elion, which began to use the NPS metric to measure their customer loyalty in Mobility and Broadband Services (Telia, 2013b). They split the NPS into a part measuring transactional aspects (customer join or ask for help) and a part measuring relationship aspects (customer’s usage of services). Relationship and transactional surveys were created, the purpose was to drive service improvements and loyalty at the same time (Telia, 2013b). According to Telia’s NPS Program Concept Book (2013b), Elion improved their
NPS from 2 to 29 from 2008 to 2011. This was the starting point of the implementation of NPS in TeliaSonera’s other companies in Scandinavia and Lithuania.

Telia has used NPS since 2012 and many adjustments have been made to the NPS program since the start in order to better map customer loyalty, e.g. survey questions have been updated and changed along the time (Telia, 2013b). Currently there are 6 different survey types depending on whether it is regarding transactional or relationship aspects, “Business to Business” (B2B) or “Business to Customer” (B2C) and mobile or fixed network. The surveys consist of a NPS question and specific questions that are formulated differently depending on if it is transactional or relationship survey. For Telia the NPS is split into fixed network (with a score of -3) and mobile network (with a score of 11) (Telia, 2015), these are from September 2014. With these numbers the current NPS status for Telia is at the state of “slightly better than competitors” (Telia, 2015).

The relationship survey is carried out twice per year and the transactional survey is carried out daily after each customer interaction with Telia. The NPS system implementation and development are carried out by an external party, Satmetrix. Currently Telia is having good insight and many KPIs for the transactional NPS, but for the relationship NPS there are still information gaps and further studies are required in order to understand in a deeper level the quality of experience when customers use Telia’s services.
4 Methodology

The purpose of this chapter is to reach a set of initial hypotheses to be tested. The chapter is subdivided into four parts. Part one explores the research strategy used for this research and attempts to formulate the initial hypotheses. Part two and three address the data collection methods and data analysis methods respectively. Finally, chapter four attempts to present an overview of the methodology and possible criticisms to our method.

4.1 Research Strategy

A case study methodology is used for this thesis. The choice of this methodology is due to the reasons stated by Voss et al. (2002) for using a case study. A case study allows us to study our phenomenon in its natural setting, through a case study we can answer the questions “why”, “what” and “how” to have a full understanding of the nature of the studied phenomenon. A single case study is chosen to generate a deeper understanding of the studied case. This allows us to focus on this case and generate a wider knowledge about the topic (Voss et al, 2002). This case study presents a three stages sequent according to the purpose categories defined by Voss et al. (2002):

- A first stage where the purpose is to explore and uncover areas of research for the creation of the research questions.
- A second step for theory building around the interesting areas pointed during the previous phase. The main goal here is to identify variables and the links between them.
- Later on, a final step for the theory testing through the verification of the theory created during the previous step.

The main drawback of this approach is the weakness of a single case study when it comes to the generalization of the results (Voss et al., 2002). However, due to the internationalization of the telecommunication industry and the presence of the case sample in different markets, this generalization weakness is decreased. To sum up the case, the research framework for each of our research question can be summarized in the following table:

<table>
<thead>
<tr>
<th>Research question</th>
<th>No. of cases</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which are the variables affecting customers’ loyalty during the usage of the services?</td>
<td>1</td>
<td>Theory building, Theory testing</td>
</tr>
<tr>
<td>What is the relationship between customer loyalty and customer revenue?</td>
<td>1</td>
<td>Theory testing</td>
</tr>
</tbody>
</table>

In this study, a scientific design based on a combination of induction and deduction is used. Due to the initial uncertainties around the case of study, an approach based on induction is used. Where an initial understanding of the specific case is carried out in order to create hypotheses to explain the relations found (Patel et al., 2011). Afterwards, the scientific approach is shifted into a deductive approach for the verification of our hypothesis based on the literature and widely accepted theories about the studied topic. This combination of induction and deduction allows us to have the needed flexibility to defeat the initial
uncertainty around the case, create suitable hypothesis for the relations found and afterwards test these hypotheses (Patel et al., 2011).

Related to the research design, a combination of qualitative and quantitative research is used to suit each step of the study. For the initial step of induction, a detailed description of the research topic is carried out through a qualitative research approach where interviews, internal reports and literature are the main source of data. Data collected through this method is not organized into any specific group or set. However, the variety of this data allows us to form a base to continue with the research through creation of several hypotheses. This leads to the creation of new knowledge, which is one of the reasons of using a qualitative approach according to Creswell (2013). After the creation of hypothesis and the first description of the case of study a quantitative approach is used in order to test our hypothesis. At this step, data presents a defined structure, which facilitates our gathering of data with respect to the initial step where a qualitative approach is used. To sum up the research design, a mixed method approach is used in this study employing strategies to collect both quantitative and qualitative data to best understand the research problems (Creswell, 2013).

The hypotheses used for this study are shown in the next figure:
For the research question: “Which are the variables affecting customers’ loyalty during the usage of the services?”, we want to emphasize that we are studying the link between NPS and revenue, instead of NPS and financial growth for Telia. Previously for the literature review, Reichheld’s (2006) statements of the link between financial growth and NPS have been introduced. However the term “financial growth” has not been defined more in detail by the author. For Telia, there is not a study of how NPS are linked with financial growth. Instead, the revenue is used. This approach is in line with Telia’s actual method using revenue to establish the link. In addition, Reichheld (2006) states as well a link between loyalty and behaviour which will lead to higher revenue from customers with high loyalty. Satmetrix (2014b) specifies this relation as well. Therefore, we chose to use this approach with revenue to establish the link with loyalty.

4.2 Data Collection
There are several stages in carrying out a research, which often require different data collection techniques (Sapsford and Jupp, 2006). For this case study, two research questions with different purposes are studied. The data collected are both qualitative and quantitative, and the collection methods used are different between the two research questions in some stages.

Primary data is collected by the researcher directly from the source, in our case they are interviews and a survey. Secondary data is in contrast data not collected by the researcher directly from the source. It can be defined as “data collected by others, not specifically for the research question at hand” (Cowton, 1998). In our case these are internal objective data, internal documents, and published articles and books.

4.2.1 Primary Data

Interview Methodology
The first form of primary data collection are interviews, which are under the category of qualitative data. According to Voss et al. (2002) the effectiveness of interviews depends partly on the skills of the interviewer. The author further points to the advantages of multiple interviewers since it can increase the confidence in the findings. When interviewing in pairs the reliability of the conclusions are higher since the degree of agreement of the interpretations can be checked (Voss et al., 2002). With this discussion in mind, we are conducting all interviews in pairs in this study. There are different approaches of conducting an interview, ranging from unstructured interviews to structured interviews with pre-determined questions. The unstructured approach is more commonly used when the interview has an explorative purpose. The structured approach is more suitable when the purpose is to test hypotheses (Kvale, 1997, ch.5). For this study we are mainly carrying out interviews for the purpose of getting inputs in order to create frameworks and survey questions. We want to let the interviews be a complement to information we collect from secondary data sources, such as internal documents and literature. Therefore we choose to use semi-structured interviews. Internally, 10 interviews are conducted with 10 employees, them having the following knowledge areas: NPS implementation at Telia, performance metrics, customer relationship, brand management, statistics behind NPS and surveys. The interviews are usually around 1 hour long. For finding people to interview we use probability sampling with the snowball sampling approach. This means that we choose people of a target group we can locate and ask them further about other people to recommend for our further study (Babbie, 2015, ch.7). This approach might not be the best in terms of having a broad range of inputs. But due to the limited time frame and lack of contact people we see this as the most appropriate sampling in this case.
Survey Methodology

According to Elg (2014) a survey is a procedure where a large sample of people from a population is selected in order to collect a small amount of data to make some inference about the wider population. In order to get usable answers from a survey the goal of the survey has to be clear (Creative Research Systems, 2014). In addition, Elg (2014) states that a single, clear and explicit research question has to be addressed by the survey. Studies which try to answer diverse questions are often weak (Elg, 2014). For this study, we use a survey to answer one single research question: “Which are the variables affecting customers’ loyalty during the usage of the services?” We create different levels of questions to answer the previous research question. A step in-between is asking about a customer’s overall satisfaction. A 10 unit answer-scale is used in order to give the respondents a wide range of choices, which also makes it easier for us when analysing the responses.

For the survey in this study, probability sampling is used. We aim to pick out a sample that can represent the whole population to be study (Babbie, 2015, ch.7). The features of our population are chosen in order to increase the chances that the asked customers are using multimedia streaming on both mobile and fixed devices:

- Customers that are between 18-65 years old.
- Customers that have more than 0,5 GB monthly mobile data.
- Customers that subscribe to both mobile and broadband services.

The confidence interval is chosen to be 95 % with a precision of +/- 5. This gives us a sample size of 380 customers. The survey is sent out to 9864 customers. The survey sent out to the customers can be seen in Appendix B. With 26 questions defined by us, and 5 questions in the end asked in order to be able to identify segment customers according to Telia’s segmentation model. This segmentation is only for Telia and is not presented as a part of our results.

There are different kinds of method for sending out surveys. In this study, an email is sent out to customers asking them to take the survey. An internal online survey system is conducting the survey and collecting the responses. The main advantages according to Creative Research Systems (2014) of email surveys are: low price, responses that are fast to gather and the possibility to include media into the survey questionnaire. The main disadvantage is: grouping of the population into those who possess an email direction. This can be a bias depending of the studied target group. Since our survey is meant to study customers’ behaviour when using telecommunication services, we can make the assumption that all the customers have an email direction. This eliminates the main disadvantage of e-mail surveys.

4.2.2 Secondary Data

The secondary data that are collected consist of internal documents, internal data, published articles and published books. We keep in mind that there is a higher risk of uncertainty to collect secondary data since we need to trust the creator of the secondary data. At the same time, it is inevitable to gather these data since they are affecting our research questions. For the research questions for finding the link between NPS and ARPU, we have to base our statistical study on data collected by Telia. The data are collected based on probability sampling, where 2525 customers (called wave 1 by Telia) are randomly selected from all the customers and the monthly amount spent at Telia during 26 months are tracked. The time ranges from March 2012 to April 2014.
For the research questions of finding quality drivers of loyalty, we base our hypotheses on internal documents showing former research from Telia and literature. The search of internal documents is based on probability sampling, with the approach of snowball sampling. As mentioned earlier, snowball sampling allows us to check internal documents that are recommended to us. For collection of articles related to our studied topics, we use non-probability sampling with the approach of purposive sampling. Purposive sampling is also called judgmental sampling and is driven by the researchers' subjective thought of selecting sample units that are most useful for the intended goal. Our judgment will here be used to favour gathering articles with higher citations and recommended by our supervisor at University. We carry out the searches for literature on academic databases such as Scopus, which is established by Linköping University library and in some cases Google Scholar. This is to increase the reliability and validity for our findings.

4.3 Data Analysis
As it is stated previously during this section, both qualitative and quantitative data is used in a mixed research design to get a better understanding of the researched topics. The techniques performed depend on which type of data is being analysed. Therefore, the different methods used for analysing the data can be split into quantitative and qualitative data analysis.

4.3.1 Quantitative Data Analysis

Data tabulation and descriptive methods
A first screening of the data is carried out in order to have a general view of the data features and decide which approach is the most suitable for this data. The statistical tools of histograms, basic statistical descriptors as the average and variation are used to have a detailed picture of the data characteristics. According to Brook (2010) this must be the “1st Pass Analysis” of any data in order to identify critical factors in the data. The aim of this step is to gain clues from the data and understand how the processes generating this data really work (Brook, 2010). This method is applied as a first step to the data regarding both research questions: Drivers of loyalty and NPS link with revenue.

Analytical methods
The main analytical methods used in order to generate results for this thesis are inside the statistical fields hypothesis testing, factor analysis and correlation analysis. For the analysis of the data regarding the drivers or loyalty, an initial factor analysis without limiting the numbers of factors is carried out. The purpose of using factor analysis is to explain the relationships between the questions, in order to group them under different factors according to the correlation between them (Minitab, 2015a). The Scree Plot of eigenvalues from the factor analysis is studied to find optimal numbers of factors to use. The optimal number of factors is chosen through the check of eigenvalues higher than 1.0 (Minitab, 2015a). A second factor analysis with VARIMAX rotation is afterwards carried out with the optimal number of factors in order to see which variables (survey questions) belong to which factors. The purpose of carrying out VARIMAX rotation is to maximize the variance of the squared loading of a factor on all the variables in a factor matrix. This way we make it as easy as possible to identify each question belonging to a single factor. The threshold value of the factor loading is 0.40 (Minitab, 2015a). These new factors are expressed in a new framework and compared to our initial hypothetical framework (See Figure X). In order to test the internal consistency among the questions in each factor, the Cronbach’s alpha value is calculated for each factor. Internal consistency measures in which degree a customer answers consistently to all the
questions inside on factor. The threshold value used is 0.7. After internal consistency is checked for each factor, an index of average for each factor is calculated. This index is the average score of the questions inside a factor. The scores of the questions with scale 0-10 are ranged to the scale 1-10 before creating the index.

For the research question regarding NPS link revenue, data is analysed using hypothesis testing. For this purpose, an “outlier study” is carried out to erase the samples which are due to special root causes. There are two special root causes: Negative revenue due to refund and zero revenue due to inactive customer. A customer who is inactive is defined as a customer who pays 0 SEK during the last period of 6 months. Afterwards, the annual ARPU is calculated for each customer as the revenue per customer during 12 months. Since we want to compare the ARPU for year 2013 against 2014 to check if there is an increasing trend, the inflation for the specified period, -0.06%, is applied to the ARPU for year 2013. Hence, both units can be compared eliminating inflation effects. Afterwards, a normality test is carried out followed by a Box-Cox data transformation to reach a higher grade of normality. This is done because normality is one condition for hypothesis testing (Brook, 2010). The Box-Cox transformation allows a set of ‘lambda’ values under which the final transformed data is a normal distributed data (Brook, 2010). For this thesis a hypothesis testing of different sets of data is desired. For instance, promoters, passives, and detractors’ data. Therefore, a lambda value is calculated for each dataset in order to get normal data. After the transformation, a normality test is carried out to guarantee normality. Hypothesis testing is a needed tool since, when the total amount of data is sampled, there are confidence intervals in the statistics which provide a range within which the true process statistics will fall (Brook, 2010). This condition does not allow us to take the statistic results as an absolute truth because there is always a potential for error (Brook, 2010). When the comparison is between three or more factors, an initial ANOVA analysis with an alpha equal to 5% is carried out to test if there is at least one factor which rejects the null hypothesis. If so, a Tukey test with a family error of 5% is carried out. Afterwards, the adjusted p-values are compared with an alpha of 5%. The election of Tukey is done due to the fact that it is the most powerful test when we want to do all the pairwise comparisons (Minitab, 2015b). On the other hand, when we compare linked data, as the data for promoters’ revenue in 2013 against 2014, a paired t-Test is carried out due to the fact that for linked data this is the test with the most trustworthiness (Minitab, 2015b). This procedure is carried out in the following sequence: Active customers (Both mobile and broadband customers), active mobile customers, and active broadband customers. This is due to the fact that mobile and broadband customers could present differences when it comes to NPS link revenue.

4.3.2 Qualitative Data Analysis

Documentation
As it is stated during the section dedicated to the data collection techniques, several interviews and observations were carried out in order to gather data. For the purpose of managing this data, a documentation process is carried out immediately after each interview and observation to get a way of developing and outlining the analytical process (Schutt, 2001, ch.10). In addition, the documentation encourages the next step of qualitative data analysis: Conceptualization. An unstructured model of notes is used to give flexibility to the information recorded. According to Schutt (2001, ch.10), this increases the complexity of tracking the data later on. However, this approach is needed because of the initial uncertainty for this project: There is not a standard form which can allocate the widely range of
information managed for this study without delimiting the variety of this information and, therefore, losing information.

**Conceptualization**

Once the data is documented, conceptualization is the next step. The goal of this technique is to define concepts based on the data and then create analytical insights which are continuously tested and redefined according to the observations (Schutt, 2001, ch.10). This loop is carried out through this entire thesis during the initial induction stage.

For finding the drivers of loyalty, a workshop is carried out with specialists in order to define the quality factors in the network affecting customer satisfaction during Multimedia streaming. The outcome of the workshop is presented in Appendix C. The low-level quality factors are then translated into four categories for audio and video streaming on broadband and mobile networks. These categories are: start time, continuous playback, sound quality and picture quality. Together with multimedia streaming the coverage and the mobile device together forms the group called “Perceived quality”. See Figure 9.

For the research question about the NPS linkage with revenue, the conceptualization is done using the internal reports, literature and interviews as main sources. All this information is grouped throughout a conceptualization exercise of the researchers.

**Examination of relationships**

One centrepiece of this project for answering our research questions is to define the relationship between the different concepts. According to Schutt (2001, ch.10) this step answers the question: “why things happen as they did with those people in that setting” (Schutt, 2001, ch.10). For each research question in this thesis, the relationships between the different concepts are examined in the data collection process through literature, interviews and internal documents. The outcome of the examination and analysis are two frameworks.

In order to find the drivers of loyalty, the different concepts are cross-compared with the ACSI model to explain customer satisfaction and Kilki’s (2008) and Palmer’s (2010) models to explain Quality of Experience (QoE). We want to emphasize that we will measure perceptions instead of the “real” performance since the perceptions is the element affecting the customer experience according to Kilki (2008). The outcome of this comparison is three new groups apart from “Perceived quality” see Figure 8. These three groups are:

- “Perceived technical value” with two questions asking about customization and value for money.
- “User’s skills” with one questions asking about technical skills. This is a specific question for the telecommunication industry since the customer satisfaction depend on a degree of technical skills.
- “Brand expectation” with two questions asking about the user’s own brand perception and the brand perception the user think the friends and families have.

A hypothetical framework to explain the relationships between the groups can be seen in the Figure 8 below, where Q stands for which survey questions are represented in the respective group:
For the analysis of the NPS link revenue, a relationship analysis is carried out as well. We use the existing theory (Satmetrix, 2014b) to create a model with the different economic effects of NPS. This model can be checked in Figure 9 below:
### 4.4 Overview of method

Table 3 below summarizes the kinds of data collection and data analyzing methods used for each of the hypotheses. For a detailed overview of the methods carried out in general for the two research questions, a reference is made to Appendix D.

Table 3: Methods used for hypotheses

<table>
<thead>
<tr>
<th>Research question</th>
<th>Hypotheses</th>
<th>Data collection method</th>
<th>Data analyze method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Which are the variables affecting customers’ loyalty during the usage of the services?</strong></td>
<td>H1 Higher levels of satisfaction are associated with higher levels of loyalty</td>
<td>Internal document, Published articles</td>
<td>Documentation, Conceptualization, Data tabulation, Analytical methods: factor analyse</td>
</tr>
<tr>
<td></td>
<td>H2 Higher levels of perceived quality are associated with higher levels of loyalty</td>
<td>Interviews, Survey</td>
<td>Documentation, Conceptualization, Analytical methods: factor analyse</td>
</tr>
<tr>
<td></td>
<td>H3 There are both technical and non-technical variables highly associated with loyalty</td>
<td>Internal document, Survey</td>
<td>Conceptualization, Examination of relationships, Analytical methods: factor analyse</td>
</tr>
<tr>
<td></td>
<td>H4 There are different levels of association with loyalty for different variables</td>
<td>Internal document, Published articles</td>
<td>Examination of relationships</td>
</tr>
<tr>
<td></td>
<td>H5 The variables can be grouped into different factors according to the correlation between them</td>
<td>Published articles, Interviews, Survey</td>
<td>Examination of relationships</td>
</tr>
<tr>
<td></td>
<td>H6 There are different levels of association with loyalty for different factors</td>
<td>Published articles</td>
<td>Examination of relationships</td>
</tr>
<tr>
<td><strong>What is the relationship between customer loyalty and customer revenue?</strong></td>
<td>H7 The revenue for promoters is higher than for passives and detractors</td>
<td>Internal document, Interviews, Published articles</td>
<td>Data tabulation, Conceptualization, Analytical methods: hypothesis testing</td>
</tr>
<tr>
<td></td>
<td>H8 The revenue for promoters increases along time</td>
<td>Internal document, Interviews</td>
<td>Analytical methods: hypothesis testing</td>
</tr>
<tr>
<td></td>
<td>H9 There is a referral value for both promoters and detractors</td>
<td>Published articles</td>
<td>Documentation, Conceptualization, Examination of relationships</td>
</tr>
<tr>
<td></td>
<td>H10 Customer retention is higher among promoters than among detractors and passives</td>
<td>Published articles</td>
<td>Documentation, Conceptualization, Examination of relationships</td>
</tr>
</tbody>
</table>
4.5 Method Discussion
This section aims to address the weaknesses in our data collection and data analysis methods described above, for the purpose of creating awareness of possible improvement areas for future work.

4.5.1 Data Collection Reliability
In our study, data are collected using different methods for studying the same phenomenon. The use of different methods, also called triangulation, provides an increased reliability of data and an increased validity of the findings (Voss et al., 2002). Both primary and secondary data are collected, with the purpose of giving more thoroughly answers to our research questions.

A sampling frame shows the kind of limitations we choose to have when collecting data. There are two kinds of high level sampling frames: Probability sampling and non-probability sampling. Inside non-probability is Snowball sampling (Babbie, 2005, ch.7). For this thesis, Snowball sampling is used to pick up the people to interview. The reason for this is that there is a large network of people around us, and it is the fastest way to allocate the people with the right knowledge. The weakness is that we might not get the information from the person that has the most knowledge but have to rely on others network of contacts. Another vulnerability is that in some cases we only carry out one interview with one person and do not check that persons reliability by interviewing someone else with the same questions. An example is that we only carry out interviews with one person regarding how Telia works with survey data analysis. This is because this person has a large experience in this area and we did not see the need to look for other people to confirm the results of these interviews.

For the collection of the revenue data, the weakness is that this data is collected by Telia. Hence, our analysis is limited to the parameters collected. For this dataset, we miss the information related to the products bought by the customer. In our discussion is established clearly this limitations and stated as a future research to collect more parameters for future collections. When it comes to sending out the survey, the vulnerability is that we did not have control of the process of sending out. Instead we had to rely on someone else in this step of the process. To overcome this, we are in continuous contact with the person in charge of this.

4.5.2 Data Analysis Reliability
We make a distinction of rigor between quantitative and qualitative approach. According to Morse et al. (2008), the nature of the qualitative and quantitative knowledge is different and both require different approaches to ensure reliability and validity. The same author states that due to this difference, a better term instead of reliability and validity for the qualitative approach is “trustworthiness” which is formed by credibility, fittingness, auditability, and conformability (Morse et al., 2008). Throughout this study, this approach is used to ensure rigor. Morse et al. (2008) states that independently of the kind of research, achievement of rigor has to be a linear process with the research itself and not to be left to the end of the project. This validation in the end of the study is called “standard” in the qualitative research by Morse et al. (2008) and it has the drawback of expressing the relative worth of a research at the end when it is too late to correct problems. Checking the study at the end as a whole by an external reviewer is not the optimal procedure according to Morse et al. (2008). Instead, he proposes a linear process consisted of different methods carried out by the researchers during the study. In the following sections of this section all the techniques used to ensure validity and reliability (for quantitative) and “trustworthiness” (qualitative) are explained.
Quantitative Data Analysis Reliability: Rigor of the Analysis

“Rigor” defined as the combination of validity and reliability (Morse et al., 2008) is a key element of this study. According to Morse et al. (2008):

“It is the researcher’s creativity, sensitivity, flexibility and skill in using the verification strategies that determines the reliability and validity of the evolving study” (Morse et al., 2008).

The approach applied to reach validity and reliability for the empirical research is a continuous process applied to each step of the analysis. For factor analysis, only eigenvalues higher than 1.0 are chosen in order to find out the optimal number of factors. Later on, a threshold value of 0.4 for the rotated VARIMAX matrix is chosen to guarantee the belonging of a variable to a factor. Afterwards, the internal consistency of each factor is secured through Cronbach’s alpha higher than 0.7. Another approach to carry out this analysis is to use Structural Modelling Equation (SEM), SEM is a method based on a combination of statistical tools used to test a conceptual framework (Hooper, et al., 2008). This approach brings more validation due to the fact of the usage of several statistical tools combined (Hooper, et al., 2008). However, due to limitations of time, the researchers use factor analysis instead of SEM. The validation of the results through factor analysis is considered to be appropriate by the researchers in order to accomplish with the aim of this thesis.

When it comes to hypothesis testing, the normality of the data is checked before proceeding with the testing. Confidence intervals of 95% are used for the calculations. In addition, p-value is tested to be smaller than an alpha value of 0.05 in each step. When it is a Tukey cross-comparison, the adjusted p-value is used to take into account the family error. In addition, when comparisons of revenue between two different years are made, the inflation is applied to the revenue.

Qualitative Data Analysis Reliability: “Trustworthiness” of the Analysis

In the first section of this section the term “Trustworthiness” stated by Morse et al. (2008) as a substitute of validity and reliability for qualitative approaches is used. Following Morse et al. (2008), the researchers of this study need to prove credibility, fittingness, auditability, and conformability throughout this report. The same author states different methods to ensure the “Trustworthiness” of a qualitative research. The techniques used for this study are listed below:

1 Methodological coherence: During this study the research questions were modified at different points in order to guarantee the correspondence between our method and the research questions.
2 Appropriate sample: A saturation and replication approach is used. As it is stated in the previous section, a non-probability sampling is applied to choose the participants of the interviews according to our possibilities at the moment. To overcome this weakness, we ensure that the results tend to saturate and replicate among the different interviews.
3 Concurrently collection and analysing of data: This can be defined as “mutual interaction between what is known and what one needs to know” (Morse et al., 2008). In order to meet trustworthiness, this is one key element of our method.
4 Theoretical thinking: The research is a loop process, where the ideas emerged from data is reconfirmed with new data. For this study a solid foundation is built with each step of the process.

In addition to the previous techniques, a post-hoc validation of “trustworthiness” is carried out. Morse et al. (2008) states the different drawbacks of relying all the trustworthiness of the study on a post-hoc
evaluation. Previously, we have stated that we use the linear approach of Morse et al. (2008) consisting of a continuous checking of trustworthiness by the researchers. However, we include as well these final “post-hoc evaluations” because the widely use in the qualitative research (Morse et al., 2008). We see these evaluations as complements to our continuous checking of trustworthiness, and an increase of the validation and reliability, or trustworthiness according Morse et al. (2008), of our qualitative research.

For the case of this thesis, a post-hoc analysis is applied for both research questions. For the drivers of loyalty, an authentication is carried out in the form of a workshop review, of all the different concepts created during the step of conceptualization at the workshop, with a specialist. A middle step for gathering quantitative data for this research question has been a survey. The authentication of this questionnaire is tested with a series of reviews with different specialists on survey methodology and a pilot test of the survey is carried out with 10 participants before having the final survey (See Appendix E). Finally, for NPS link revenue, a review of the concepts and relationships is carried out with a specialist in the NPS group.
5 Results

Chapter five present the results of our analysis. The aim of this section is to test our initial hypothesis. The chapter is subdivided into two parts. Part one argues that there are two main groups driving loyalty and there are one group that are indicators of loyalty. Part two discusses that with the data gathered for this study, a link between revenue and the loyalty metric of NPS can be established for customer with mobile services. However, such a link cannot be stated for broadband services.

5.1 Drivers of Loyalty

5.1.1 Tabulation and description

The survey described in the method section (See page 20) is sent out to 9864 customers through Telia’s CRM team. The survey is released the 5th of May and collected the 8th of May, 4 days later. Out of 9864 customers, 460 respondents answered the survey, giving us a response rate of 4.69 %. The analysis of the non-respondents is outside of our scope and is proposed as future research. Table 4 below shows the response characteristics for our 26 survey questions, the five segmentation questions are not analysed as stated previously (See page 20).

<table>
<thead>
<tr>
<th>Question</th>
<th>No. Answers</th>
<th>Mean</th>
<th>StDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Overall loyalty</td>
<td>459</td>
<td>7,09</td>
<td>2,49</td>
</tr>
<tr>
<td>Q2: Overall satisfaction</td>
<td>455</td>
<td>7,09</td>
<td>2,10</td>
</tr>
<tr>
<td>Q3: Overall quality of services</td>
<td>459</td>
<td>7,39</td>
<td>1,96</td>
</tr>
<tr>
<td>Q4: Pricing (Value for money) satisfaction</td>
<td>456</td>
<td>5,75</td>
<td>2,25</td>
</tr>
<tr>
<td>Q5: Mobile device satisfaction</td>
<td>453</td>
<td>7,71</td>
<td>2,14</td>
</tr>
<tr>
<td>Q6: Customization of services satisfaction</td>
<td>454</td>
<td>7,23</td>
<td>2,17</td>
</tr>
<tr>
<td>Q7: Self-assessment of technical skills</td>
<td>457</td>
<td>7,59</td>
<td>1,87</td>
</tr>
<tr>
<td>Q8: Brand perception</td>
<td>451</td>
<td>6,94</td>
<td>2,04</td>
</tr>
<tr>
<td>Q9: External brand perception</td>
<td>415</td>
<td>6,09</td>
<td>1,80</td>
</tr>
<tr>
<td>Q10: Mobile coverage satisfaction</td>
<td>456</td>
<td>7,13</td>
<td>2,38</td>
</tr>
<tr>
<td>Q11: Overall video streaming satisfaction on mobile</td>
<td>422</td>
<td>6,71</td>
<td>2,06</td>
</tr>
<tr>
<td>Q12: Video streaming on mobile starting time satisfaction</td>
<td>419</td>
<td>6,26</td>
<td>2,21</td>
</tr>
<tr>
<td>Q13: Video streaming on mobile smoothness satisfaction</td>
<td>424</td>
<td>6,49</td>
<td>2,22</td>
</tr>
<tr>
<td>Q14: Video streaming on mobile video quality satisfaction</td>
<td>419</td>
<td>6,98</td>
<td>2,01</td>
</tr>
<tr>
<td>Q15: Overall audio streaming satisfaction on mobile</td>
<td>416</td>
<td>7,47</td>
<td>2,04</td>
</tr>
<tr>
<td>Q16: Audio streaming on mobile starting time satisfaction</td>
<td>410</td>
<td>7,22</td>
<td>2,08</td>
</tr>
<tr>
<td>Q17: Audio streaming on mobile smoothness satisfaction</td>
<td>414</td>
<td>7,37</td>
<td>2,08</td>
</tr>
<tr>
<td>Q18: Audio streaming on mobile audio quality satisfaction</td>
<td>414</td>
<td>7,63</td>
<td>1,90</td>
</tr>
<tr>
<td>Q19: Overall video streaming satisfaction on broadband</td>
<td>431</td>
<td>7,53</td>
<td>2,09</td>
</tr>
<tr>
<td>Q20: Video streaming on broadband starting time satisfaction</td>
<td>432</td>
<td>7,27</td>
<td>2,25</td>
</tr>
<tr>
<td>Q21: Video streaming on broadband smoothness satisfaction</td>
<td>432</td>
<td>7,31</td>
<td>2,21</td>
</tr>
<tr>
<td>Q22: Video streaming on broadband video quality satisfaction</td>
<td>431</td>
<td>7,63</td>
<td>2,04</td>
</tr>
<tr>
<td>Q23: Overall audio streaming satisfaction on broadband</td>
<td>416</td>
<td>8,04</td>
<td>1,95</td>
</tr>
<tr>
<td>Q24: Audio streaming on broadband starting time satisfaction</td>
<td>415</td>
<td>7,88</td>
<td>2,02</td>
</tr>
<tr>
<td>Q25: Audio streaming on broadband smoothness satisfaction</td>
<td>419</td>
<td>7,95</td>
<td>1,97</td>
</tr>
<tr>
<td>Q26: Audio streaming on broadband audio quality satisfaction</td>
<td>419</td>
<td>8,02</td>
<td>1,94</td>
</tr>
</tbody>
</table>
We can see from Table 4 above that the respondents have an average satisfaction score between 5.75-8.04, out of a 0-10 scale for Q1, and 1-10 scale for Q2-Q26. Furthermore the questions related to Perceived Quality presents a higher numbers of “I do not know” together with Q9. Q9 is asking about the perceived external Brand Value.

5.1.2 Factor analysis
After the first screening of the data collected, the next step is to check how each variable can fit into different groups, called factors. By looking at the eigenvalues through a Scree Plot, we see that four factors is the optimal number in order to group the variables. Each variable are grouped into one of the four factors by looking at the rotated factor loadings. Depending on the type of variables that are inside each factor, the factor is given appropriate labels to represent the variables. The factors are given the labels: Broadband multimedia quality, Mobile multimedia quality, General perceptions and Technical skills. The internal insistency among the variables in each factor is proved with Cronbach’s Alpha and shows the following results:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived broadband multimedia quality</td>
<td>0.9743</td>
</tr>
<tr>
<td>Perceived mobile multimedia quality</td>
<td>0.9487</td>
</tr>
<tr>
<td>General perceptions</td>
<td>0.9328</td>
</tr>
<tr>
<td>Perceived technical Skills</td>
<td>- (one variable)</td>
</tr>
</tbody>
</table>

The high level of Cronbach’s Alpha for each factor shows that we cannot state any difference in the level of association between the variables inside a factor. The alpha value tells us that all of them are extremely highly associated/correlated (alpha higher than 0.95) and therefore we cannot make distinctions. In other words, customers assess in a same way the variables (questions) inside a factor. This means that an index can be created for each factor in order to find the association between them.

Figure 10 below shows the new framework for the drivers of loyalty. The factors are at the same time split into two categories: Drivers and indicators. Indicators cannot be addressed directly because they are internal customer’s perceptions. However, drivers can be approached in order to affect the indicators, and therefore loyalty. These concepts are explained in detail in further in the text (See Conclusions and Discussion, page 39):
Figure 10: New framework from factor analysis

As seen in Figure 10 above, we can see that there are three factors with correlations between them. The factor with only Technical skills as a variable has no correlation to the other three factors. Therefore, it is erased from our mode. A further factor analysis that splits the customers into detractors, passives and promoters could give us a different model regarding the NPS category. However, it cannot be carried out since it would not be valid due to the low sample size. Table 6 below shows which variables (questions) belong to which factor. See Appendix B for the complete survey questions asked.

Table 6: Survey questions in each factor

<table>
<thead>
<tr>
<th>Perceived broadband multimedia quality</th>
<th>Perceived mobile multimedia quality</th>
<th>General perceptions</th>
<th>Perceived technical skills</th>
</tr>
</thead>
</table>
Figure 11 below shows the mean for the satisfaction level of the three factors through the indexes created after the factor analysis. What can be seen is that the factor General perceptions has the lowest score (6.7) followed by “Multimedia mobile quality” (7.1) and “Multimedia broadband quality” (7.6):

![Interval Plot of Multim. Broad., Multi. Mobile and Gen. Perceptions](image.png)

**Figure 11: Satisfation level for the three correlated factors**

For the loyalty question (Q1), the distribution of the NPS categories among the customers for this survey is 33.7% detractors, 30.5% promoters and 35.7% passives. This makes a total NPS score of -3.2 (-4.57 Error). Hence, the value for our customer sample is different than the official value of 1.1 for customer with both mobile and broadband services (NB: This value has been calculated with historical data from Telia in a relationship context, precautions must be taken to compare with our result that is a general NPS).

To sum up our results, Table 7 below shows the validation of the initial hypotheses. Together with Figure 10 we see a more complex relationships among the different variables (questions) than our initial hypothetical framework (See Figure 8). The high level of Cronbach’s alpha for each factor is telling us that we can confirm that all the questions for a factor are measuring the same. Hence, it gives us the needed reliability to state the result in Figure 10. As it was stated previously with the results of the Cronbach’s alpha, an index is created for each factor and the associations (correlations) are calculated with the result that the factor including Technical skills is isolated and the rest are associated with correlations between 54-62% (See Figure 10). In addition, because loyalty and overall satisfaction are inside the same factor, we can state a high association between them. The same conclusion is applied for perception of quality and loyalty since they belong to the same factor. Perceived value, customization and brand related questions are also inside this factor. This means that there is a high association between technical (Perceived quality) and non-technical (Loyalty, satisfaction, perceived value, customization and brand) variables for this factor. In other words, loyalty and satisfaction are highly associated with technical and non-technical variables.
Table 7: Validation of hypotheses for the first research question

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Validation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher levels of satisfaction are associated with higher levels of loyalty.</td>
<td>True</td>
<td>Highly correlated since they belong to the same factor.</td>
</tr>
<tr>
<td>Higher levels of perceived quality are associated with higher levels of loyalty.</td>
<td>True</td>
<td>Highly correlated since they belong to the same factor.</td>
</tr>
<tr>
<td>There are both technical and non-technical variables highly associated with loyalty.</td>
<td>True</td>
<td>There are three factors highly associated (See Figure 10) which are formed by both technical and non-technical aspects.</td>
</tr>
<tr>
<td>There are different levels of association with loyalty for different variables.</td>
<td>Unknown</td>
<td>The result shows complex relationship between the variables. We cannot say that an individual variable has an effect on another. Instead, we can confirm these associations in a factor level.</td>
</tr>
<tr>
<td>The variables can be grouped into different factors according to the correlation between them.</td>
<td>True</td>
<td>See Figure 10</td>
</tr>
<tr>
<td>There are different levels of association with loyalty for different factors.</td>
<td>True</td>
<td>We can state different correlation scores between the factors. See Figure 10</td>
</tr>
</tbody>
</table>

5.2 NPS linkage with revenue

5.2.1 Tabulation and description
For wave 1, there are 2525 customers tracked during 26 months (March 2012- April 2014). Customers who left the company are removed from this dataset. There are a total of 53 customers who left, leaving a total of 2472 customers who continued at Telia (active customers) by the end of the tracked data. According to the type of customer: Mobile 1616 customers (65.4%) and broadband 854 (34.6%). The exact distribution of the NPS categories needed to calculate the NPS for this data is kept confidential. However, the data shows that the bulk of customers who left the company (inactive customers) belonged to detractors and passive (Both categories together: 81.1%), with promoters (18.9%) as the minority (For both mobile and broadband customers). In addition, active customers have significant higher values of NPS than inactive customers.
Interval plots with 95% confidence intervals for the mean of the revenue according to the NPS category, and for the mean of promoters’ revenue according to the year, are shown in Figure 12 and Figure 13 below:

Figure 12: Interval plot for annual ARPU for Mobile and Broadband customers

Figure 13: Interval plot for promoters’ ARPU along the time

Figure 12 and Figure 13 above tells us that an increasing trend for the revenue is possible in both cases. This is in line with our initial hypotheses (See Research Strategy, page 17). However, it needs to be tested through further statistical analysis (See Hypothesis testing, page 36).
Later on, customers are split according to the type of service: mobile or broadband. Figure 14 and Figure 15 below show the annual ARPU among the NPS categories for year 2013 and year 2014. An important fact is that the overlapping between the NPS categories is prominent for broadband customers. This is tested further in this study throughout hypothesis testing.

Figure 14: Interval plot for annual ARPU for Mobile customers.

Figure 15: Interval plot for annual ARPU for Broadband customers.
5.2.2 Hypothesis testing

In order to give validation to the initial hypotheses, most of the hypotheses can be tested statistically. Table 8 below shows the results from the ANOVA and Tukey test for the different NPS categories and the Table 9 shows the paired t-Test for comparison of the ARPU between the two years:

Table 8: Comparison of ARPU according to the NPS category. Adjusted p-values

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passive-Detra</td>
<td>Promoter-Detra</td>
</tr>
<tr>
<td>M+B</td>
<td>One-way-ANOVA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Tukey</td>
<td>0.001</td>
</tr>
<tr>
<td>M</td>
<td>One-way-ANOVA</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Tukey</td>
<td>0.022</td>
</tr>
<tr>
<td>B</td>
<td>One-way-ANOVA</td>
<td>0.083</td>
</tr>
<tr>
<td></td>
<td>Tukey</td>
<td>0.164</td>
</tr>
</tbody>
</table>

Table 9: Comparison 2013 vs. 2014. P-values for paired t-test

<table>
<thead>
<tr>
<th>Type of customer</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M+B</td>
<td>0.053</td>
</tr>
<tr>
<td>M</td>
<td>0.121</td>
</tr>
<tr>
<td>B</td>
<td>0.088</td>
</tr>
</tbody>
</table>

With the results above, the hypotheses can be validated. When mobile and broadband customers are combined, we have a statistical difference for the revenue among the three NPS categories with promoter as the factor with the largest mean, followed by passives and detractors. This is true for both year 2013 and year 2014. Because mobile customers are roughly the 70% of the customers in the dataset, the analysis needs to be carried out on both mobile and broadband customers independently. When the customers are split according to the type of customer there is a different result according to the type of customer. On one hand, mobile customers present a statistical difference in the annual ARPU according to the NPS category. Promoters show the largest ARPU followed by passives and detractors, for both year 2013 and year 2014. On the other hand, for broadband customers there is not a statistical difference among the NPS categories, only between promoters and detractors in year 2014. Hence, the results of the dataset with both types of customers are influenced by mobile customers who are the majority. When the customers are split we can confirm the difference in ARPU according to the three NPS categories only for mobile customers. For the retention value we can see that the bulk of customers who left the company belonged to detractors and passive, with promoters as the minority (For both mobile and broadband customers). Therefore, we can see that only one of our initial hypotheses could be validated as true: Retention is higher among promoters than detractors. The two hypotheses regarding higher revenue for
Telia’s promoters are according to Telia true, but is proved it false with our results. The last hypotheses about referral value could not be tested since Telia has not gathered this kind of data from customers.

**Table 10: Validation of hypotheses for the second research question**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Validation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>The revenue for promoters is higher than for passives and detractors.</td>
<td>False*</td>
<td>Re-defined: “The revenue for promoters is higher than for passives and detractors. Mobile customers”. *For the original hypothesis, we do not have enough evidence to prove it.</td>
</tr>
<tr>
<td>The revenue for promoters increases along time.</td>
<td>False*</td>
<td>There is a trend indicating increase for this dataset. More data needs to be tracked to test this hypothesis with a larger term. *For the original hypothesis, we do not have enough evidence to prove it.</td>
</tr>
<tr>
<td>There is a referral value for both promoters and detractors.</td>
<td>Unknown</td>
<td>This cannot be tested because currently referral data is not tracked.</td>
</tr>
</tbody>
</table>
| Customer retention is higher among promoters than among detractors and passives. | True       | Inactive customers for this dataset:  
  - 18.9% promoters  
  - 81.1% passives+detractors  

Customers who continued at Telia have higher NPS than customer who left Telia.

The validation of the hypotheses above allows us to test our initial framework (See Figure 9) explaining the link between NPS and revenue. The result is shown for mobile customers and broadband customers separately, since we have found differences according to the type of customer. The “referral value” is not included in this framework because it could not be validated with the available data. The actual frameworks are shown in Figure 16 below.
Figure 16: Frameworks for explaining NPS linkage with revenue
6 Conclusions and Discussion
The chapter is subdivided into three parts. Part one argues about the importance of user experience and the needed shift into this perspective to address drivers of loyalty. Part two concludes that the case company might consider other possibilities to approach the portfolio of broadband services instead of the loyalty metric of NPS. Finally, this chapter argues for the different possible research topics emerged throughout this study.

6.1 Drivers of loyalty
In this study, we want to emphasize that we have studied customers’ perceptions on different aspects and not the “real” performance of the aspects. A hypothetical framework for loyalty was created (See Figure 8) to explain how the survey questions could be grouped into four factors affecting the overall satisfaction and through this loyalty. This framework is following Gerpott et al.’s (2001) ideas, which state the relationship between satisfaction and loyalty as a subsequent path where satisfaction is a starting step and loyalty a further step. This idea is in line with Oliver’s (1999) statement that loyalty is the final step of a process where satisfaction is the starting point. After receiving the survey answers and carrying out factor analysis we have been able to create the actual framework for our case study (See Figure 10). What have been found out is that the variables can be grouped into three groups, with two groups that are driving loyalty and one group that is indicators of loyalty. The variables inside a group are perceived as the same by the customer. The indicators of loyalty are called “General perceptions”, and the drivers “Perceived Mobile multimedia quality” and “Perceived Broadband multimedia quality”. However, technical skills of the customer do not seem to be affecting customer loyalty. Therefore, an interesting thought is that Telia cannot think that teaching customers how to use their services will improve their loyalty.

A major difference of our result framework with the initial one is that satisfaction, together with the questions related with brand, value, customization and overall quality are all measurements of loyalty. Hence, this finding is opposed to Oliver’s (1999) and Gerpott et al.’s (2001) ideas. However, it is aligned with Jones’s (1999) framework of satisfaction and loyalty as the same thing. The implication for Telia of this result is that all these variables can explain how customers perceive loyalty. Therefore Telia has to take into account all these variables when they think of improving customer’s loyalty. However, approach these variables directly is complicated since they are customer’s internal perceptions. They are inside customer’s head acting together to create loyalty, and therefore Telia needs to approach what we call drivers of loyalty. These elements can be approached directly due to the modifiable nature of them. In order to get a more accurate measurement of customer loyalty, we recommend Telia to ask customers not only the NPS question but together with more indicators. Afterwards, an average index can be created with these questions and use it as a more reliable measurement of customer loyalty.

Another difference of the result framework with respect to the initial one is that the questions related to technical aspects of multimedia streaming can be split into two groups, “Perceived Mobile multimedia quality” and “Perceived Broadband multimedia quality”. These two groups are the drivers of loyalty since Telia can modify them directly in order to affect customer loyalty due to the link between them and the group “General Perceptions”. For these drivers, there is not a key element driving loyalty. Instead, the driving of loyalty is in a group level way. The implication of that “Perceived Mobile multimedia quality” and “Perceived Broadband multimedia quality” are in two separate groups is that Telia’s customers present a different attitude towards Mobile and Broadband services. This means that customers assess broadband and mobile services differently. Hence, the customer perceptions on mobile do not have
necessarily an effect on the customer perceptions on broadband services. Therefore Telia might need to address Mobile services and Broadband services with different approaches when it comes to multimedia streaming. What is interesting for the “Perceived Mobile multimedia quality” is that there are two more variables apart from the variables about streaming. They are coverage and device. The fact that these variables form a group with the mobile streaming variables indicate that the customers does not assess them independently, which is logical since they all are related to mobile aspects. Another implication of this is that the mobile device, an external element to Telia, is even driving customer loyalty to Telia. This brings the idea of increasing the collaboration with the device providers.

Comparing our result model with Oliver’s (1999) framework for explaining the four different phases of loyalty, we can see that by looking at the average customer in our survey, they can be included inside the third phase of “Conative loyalty”. In this phase, the customer might value all the variables equally. For the two previous phases in Oliver’s (1999) framework: “Cognitive”, and “Affective loyalty”, those variables related with the “value for money” have a higher impact on loyalty, since better offerings from competitors are the main vulnerability to switch. This means that “value for money” would be a different factor for customer at this phase since it is a different factor from loyalty/satisfaction.

We want to highlight that Telia is in a highly changing business environment. As stated by Telia (2013b), Swedish people are more willing to adapt to new technologies and solutions than before. Moreover, by taking into account that Sweden is a leading country when it comes to access and use of ICT by individuals (Bilbao-Osorio et al., 2014), the value of our findings can only be generalized to the Swedish telecommunication Industry. When other countries reach the same level of ICT as Sweden the findings could also be applied to those countries. For the Swedish telecommunication industry, our study indicates that loyalty can be measure using more questions than the NPS question. In addition, mobile and broadband customers have different perceptions of the services provided. Therefore the strategy of a company could be formed to suit the specific attributes of these two customer segments. Furthermore, the mobile device, which is an external product for a telecommunication service provider should also be taken into account in the customer loyalty work. Moreover, our study indicates that there are not a key variable driving customer loyalty. Therefore it is very critical for all the departments to collaborate improving together customer loyalty. For Telia, this means that Technology Department and Business Department must work more cross-functional.

6.2 NPS linkage with revenue
In this study, a model to explain the impact of loyalty on revenue is used, letting three branches represent the effects: purchase value, referral value and retention value (See Figure 9). Purchase value is the term used to highlight the differences in the annual amount paid by customers. Satmetrix (2014b) states that the purchase value depends on the NPS category which customer belongs to. Throughout this study, we prove that this is true only for mobile customers. Another branch of the model is referral value, this is the positives or negatives references by customers that modify the total revenue of a customer (Satmetrix, 2014b). This branch could not be checked in this study due to the lack of data regarding referrals. The last branch of the model is retention value, which is the trend to stay longer at the company for higher levels of loyalty (Satmetrix, 2014b). This study proves this statement as true for both mobile and broadband customers. In the view of these results, we can establish different customer’s behaviour when it comes to purchase power and retention for mobile customers. For broadband customer, there is only a link between
retention and loyalty. Furthermore, we can partially prove Reichheld’s (2006) statements that customers have a behaviour linked with their loyalty.

When it comes to purchase value, according to Satmetrix (2014b), our broadband customers should present a different purchase value according to the NPS category, with promoters as the highest. For mobile customers, Satmetrix (2014b) states no difference in the purchase value among the categories. However, the results show the contrary for this study: There is not a difference in the purchase value among the NPS categories for broadband customers. However, there is a difference for mobile customers. Our analysis of the reasons for this different behaviour between broadband and mobile customers lies in the differences in the pricing model for the two services. For broadband services, Telia offers four packages with different surf speed and fixed monthly prices. The natural explanation is therefore that even if a broadband customer is a promoter, they will not pay more since they already get everything in the package they choose, same reasoning can be applied to neutrals and detractors. Telia claims that these packages are designed according to customers´ preferences. Therefore, it is difficult to include add-on services for broadband. In contrast, if we look at the mobile services offered, there are a lot of more variation in the prices and much more different choices and add-on services provided to the customers. Another aspect is that Telia has stated that the purchase value for promoters is increasing along the time (Telia, 2013c). This is rejected after our analysis for both mobile and broadband.

For retention value, our results are that the bulk of customer who leave the company is among detractors and passives, with promoter being only an 18.1% of those who left. Therefore, the link between loyalty and retention stated by Satmetrix (2014b) for the case of the NPS is validated. However, the retention can be due to switching barriers. According to our analysis, the barriers are mainly the lack of choices in the market, the cost represented by quitting from a company where you family/friends are subscribed, and the move-out costs specified by contracts. The last branch for our NPS model is the referral value. From a discussion with a team member of the NPS team, we found out that the referral data is not being tracked. Hence, the referral value cannot be included in our calculation for the total revenue of a customer according to the NPS category and, thus, we cannot validate the branch of our model for referral value.

The implications of our study for the Swedish telecommunication industry are that loyalty in term of NPS is linked with customer´s behaviour for mobile customers when it comes to how much they spend and how long they stay. However, this link is very weak for broadband customers since loyalty is only linked with how long they stay. This conclusion is made taking into account purchase value and retention value, once the referral value is included in this study, the previous results could change. As it looks like now, we cannot state that NPS is a good metric for broadband customers. Once again, we repeat the conclusion stated in the previous section related with drivers of loyalty: The strategy of the company could be formed to suit the specific attributes of these two customer segments. This conclusion is in line with Keiningham et al.’s (2007a) statements that NPS is not taking into account differences between markets and industries.
6.3 Future Work

We propose to carry out factor analysis for each NPS category and study the different frameworks for each category. The different frameworks can mean different drivers of loyalty according to the NPS category. Furthermore, an interesting study would be to analyse the non-respondents.

Several changes have been done to the NPS surveys without a clear documentation of the reason for such changes. This makes it difficult for an external part to get involved in the NPS work, and for the people currently working to perform in the most efficient way. Therefore, an interesting topic for the future is to study the NPS process at Telia in order to document the actual state and compare it with the “CEM pillars” model by Satmetrix (2014c). For the two pillars of “Executive foundation” and “Organizational alignment”, several implementation issues are found out during this research. We were told by a manager involved with the NPS work in a group level that the NPS was not included in the group strategy until 2014. This means a lack of high-level support for the NPS implementation through the initial phases at Telia from 2009 to 2014. For the “Organizational alignment”, the researchers found that the NPS initiatives are not spread through the company and the NPS local team is carrying out a “stand-alone” work. For all this, we propose to study how these two pillars “Executive foundation” and “Organizational alignment” can be either implemented or improved in order to have the base for a Customer Experience Management (CEM) System as the NPS. Another issue regarding the NPS implementation at Telia is that currently the referral value is not being tracked. We propose to study further how this measurement can be introduced. In addition, we recommend to track the subscribed services for each customer together with the revenue.

Since mobile and broadband customers seem to behave different according to our results, we propose to treat both of them as separate units and study alternatives/modification to NPS for each portfolio. In addition, we propose the combination of NPS with other frameworks as ACSI, previously stated during this study (See ACSI’s Model, page 7). This integration could improve the CEM system as it is stated by Keininham (2007b) for NPS and ACSI. Another topic is the increase in purchase power, we propose to continue tracking data for this customer “wave” and repeat the analysis with a longer timeframe in order to find out if this trend is enough to validate the increase in purchase value statistically.
References


Satmetrix, 2014d. 5 Mistakes companies make when implementing a Net Promoter Program and how you can avoid them. [Online] Available at: http://info.satmetrix.com/satmetrix-white-paper-5-mistakes-companies-make-when-implementing-a-net-promoter-program-and-how-you-can-avoid-them
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Appendix
Appendix A: Mobile and Broadband bandwidth share
Vill du hjälpa oss att bli bättre?
Hej!


Läs mer om hur Telia arbetar med kundundersökningar på www.telia.se/partners

Med vänlig hälsning,
Andreas Dahlqvist
Head of Operational Excellence
All the Questions asked in the online survey

1. Hur troligt är det att du skulle rekommendera Telia till en kollega eller en vän? 0=inte alls sannolikt, 10=högst sannolikt


4. Tycker du att de tjänster du köper från Telia är värt priset? 1=Inte alls prisvärt, 10=Mycket prisvärt.


6. Hur väl uppfyller de tjänster du köper från Telia ditt behov? 1=Uppfyller inte alls, 10=Uppfyller helt


8. Vad är din uppfattning om Telia som företag? 1=Mycket negativ, 10=Mycket positiv.


När du spelar upp ett videoklipp på din mobiltelefon ansluten till det mobila nätet, till exempel tittar på Youtube eller en Play-tjänst,


När du spelar upp ett ljudklipp på din mobiltelefon ansluten till det mobila nätet, till exempel lyssnar på Spotify, radio eller en podcast,

15. Hur nöjd, totalt sett, är du med hela din upplevelse? 1= Mycket missnöjd, 10= Mycket nöjd.


17. Hur nöjd är du med ljudklippets uppspelning? (att det spelas upp utan att stanna/frysa) 1= Mycket missnöjd, 10= Mycket nöjd.


När du spelar upp ett videoklipp på din dator ansluten till ditt fasta bredband, till exempel tittar på Youtube eller en Play-tjänst,


När du spelar upp ett ljudklipp på din dator ansluten till ditt fasta bredband, till exempel lyssnar på Spotify, radio eller en podcast,


25. hur nöjd är du med ljudklippets uppspelning? (att det spelas upp utan att stanna/frysa) 1= Mycket missnöjd, 10= Mycket nöjd.

26. hur nöjd är du med ljudklippets ljudkvalitet? 1= Mycket missnöjd, 10= Mycket nöjd.

Och nu till några påståenden om dig själv:

27. Jag vill ha produkter som åtminstone är lika moderna som de som mina vänner använder. 1= Instämmer inte alls, 7= Instämmer helt.

28. Jag letar hela tiden efter de mest tekniskt avancerade produkter som finns tillgängliga. 1= Instämmer inte alls, 7= Instämmer helt.

29. Jag tycker det är svårt att använda de flesta elektroniska apparater. 1= Instämmer inte alls, 7= Instämmer helt.

30. Jag tycker att mobiltelefoner, datorer, sociala nätverk m.m. tar upp alldeles för stor del av våra liv och jag tar mer och mer avstånd från det digitala livet. 1= Instämmer inte alls, 7= Instämmer helt.

31. Det är viktigt för mig att ha tillgång till Internet oavsett var jag befinner mig. 1= Instämmer inte alls, 7= Instämmer helt
Appendix C: Workshop finding technical drivers

Multimedia Streaming

Broadband

- Video start time
- Resolution/Picture Quality
- Packet loss
- Average Bandwidth
- Buffering/ Adaptation (premium)
- Freezing/Rebuffering
- Encoding

Mobile

- Video start time
- Buffering
- No freezing
- High quality
- Smoothness

Voice over IP (almost never problems)

- Delay
- Delay variation/ Glitter
- Packet loss
**Appendix D: Method overview for the two research questions**

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<tr>
<th>Drivers of loyalty</th>
<th>NPS relationship with revenue</th>
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<td>Interviews with Telia employees regarding drivers of loyalty</td>
<td>Interviews with Telia employees regarding drivers of loyalty</td>
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<td>Check published articles on the topic</td>
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<td>Check correlation between factors</td>
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# Appendix E: Pilot Test

P= Participant  
Q= Question  

**Green highlight** = understand correctly  
**Red highlight** = do not understand correctly  

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